



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

## **POINT LOMA METROPOLITAN WASTEWATER TREATMENT PLANT**

NPDES PERMIT No. CA 0107409  
SDRWQCB Order No. R9-2009-0001

## **JUNE 2017**

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**Public Utilities Department**

Environmental Monitoring & Technical Services Division

July 31, 2017

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

Attention: POTW Compliance Unit

Dear Mr. Gibson:

Enclosed is the June 2017 Monthly Receiving Waters Monitoring Report for the Point Loma Ocean Outfall, Point Loma Wastewater Treatment Plant as required per Order No. R9-2009-0001, NPDES Permit No. CA0107409.

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

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

Sincerely,

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

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

TS/gfw

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



## REPORT OUTLINE

### **INTRODUCTION**

### **METHODS**

### **SUMMARY OF RESULTS**

### **TABLES AND FIGURES**

#### **Station Locations (Map)**

#### **Shore Stations**

Total Coliform Compliance Summary, Geometric Mean Standard  
Fecal Coliform Compliance Summary, Geometric Mean Standard  
*Enterococcus* Bacteria Compliance Summary, Geometric Mean Standard  
Total Coliform Single Sample Maximum  
Fecal Coliform Single Sample Maximum  
*Enterococcus* Bacteria Single Sample Maximum  
Fecal:Total Coliform Ratio Single Sample Maximum  
Shore Station Water Quality Summary Data  
Visual Observations

#### **Kelp Stations**

Total Coliform Compliance Summary, Geometric Mean Standard  
Fecal Coliform Compliance Summary, Geometric Mean Standard  
*Enterococcus* Bacteria Compliance Summary, Geometric Mean Standard  
Total Coliform Single Sample Maximum  
Fecal Coliform Single Sample Maximum  
*Enterococcus* Bacteria Single Sample Maximum  
Fecal:Total Coliform Ratio Single Sample Maximum  
Kelp Station Water Quality Summary Data  
Visual Observations  
CTD Profile Data  
CTD Profile Graphics

### **APPENDIX A**

#### **Quality Assurance**

Water Quality Summary Data



## 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. R9-2009-0001, 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 monitored at eight shore stations (D4, D5, D7–D12). These stations range from the tip of the Point Loma Peninsula to west of Mission Bay (see station locations map). Due to site inaccessibility, station D8 has been temporarily abandoned and replaced with station D8-A. This new location will be sampled until access is restored at the original location. Seawater samples are collected from the surf zone at each station five times during the month. These samples are 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 are also recorded at the time of sample collection. Wind speed and direction are measured using a hand-held anemometer with a compass.

### ***Kelp Bed Stations***

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

Routine weekly monitoring at each of the kelp bed sites consists primarily of collecting seawater samples at discrete depths to determine concentrations of indicator bacteria (i.e., total coliforms, fecal coliforms, and *Enterococcus*). Additional samples for ammonium analysis are collected at these same sites and depths on a quarterly basis in order to correspond to sampling at the offshore stations located within State waters that is typically scheduled during the months of February, May, August, and November. Water column profiles of various physical/chemical parameters are also generated during each sampling event, and visual observations of weather and water conditions are recorded at each station.

Seawater samples at the kelp bed stations are primarily collected using a CTD-integrated rosette sampler with Niskin bottles. Aliquots for ammonium and bacteriological analyses are then drawn from these bottles into sterile sample bottles for processing at the City's Toxicology Laboratory (ammonium) and Marine Microbiology Laboratory (bacteria), respectively. Water column profiles of temperature, transmissivity, dissolved oxygen, pH, salinity, density, chlorophyll *a* are generated using a Sea-Bird conductivity, temperature, and depth instrument (CTD), which collects these data

at a rate of eight scans per second. These scans are then internally averaged to create water column profiles with data readings at a rate of one per meter. The CTD data are presented in both graphical and tabular form. Additionally, data for depths closest to those where bacteriological samples are collected are extracted from the CTD profiles and 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. Monitoring at sites within State waters also include the collection of discrete grab samples for ammonium analysis (see Table 4.2).

Seawater samples for ammonium and bacteriological analyses at the offshore stations are primarily 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. The CTD profile data are then presented in both graphical and tabular form. Additionally, data for depths closest to those at which bacteriological samples are collected are extracted from the CTD profiles and presented with the bacteriological data.

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

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

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

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

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

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

- (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 2017 Quality Assurance Report, which will be completed in March 2018.

## SUMMARY OF RESULTS

### ***Shore Stations***

- During June, one of the eight shore stations was out of compliance with a water-contact standard specified in the Ocean Plan as summarized below.
  - o The single sample maximum (SSM) standard for *Enterococcus* was exceeded at station D11 on June 28.
  - o Per permit requirements, a resample was collected in response to the above SSM exceedance (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 *Point Loma Ocean Outfall Annual Receiving Waters Monitoring and Assessment Report* for details (<https://www.sandiego.gov/mwwd/environment/oceanmonitor/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 June (i.e. June 3, 7, 13, 18, 29).
- During June, each of the eight kelp bed stations was in compliance with all water-contact standards specified in the Ocean Plan.

- Water column temperatures ranged from 10.58 to 20.58°C during the month. The difference between surface and bottom waters ranged from 0.55 to 9.91°C, indicating that the water column was stratified at some of the kelp bed stations during the month.
- Chlorophyll *a* concentrations ranged from 0 to 17.65 µg/L during June, suggesting the presence of phytoplankton blooms during the month.
- There were no notable visual observations for June.

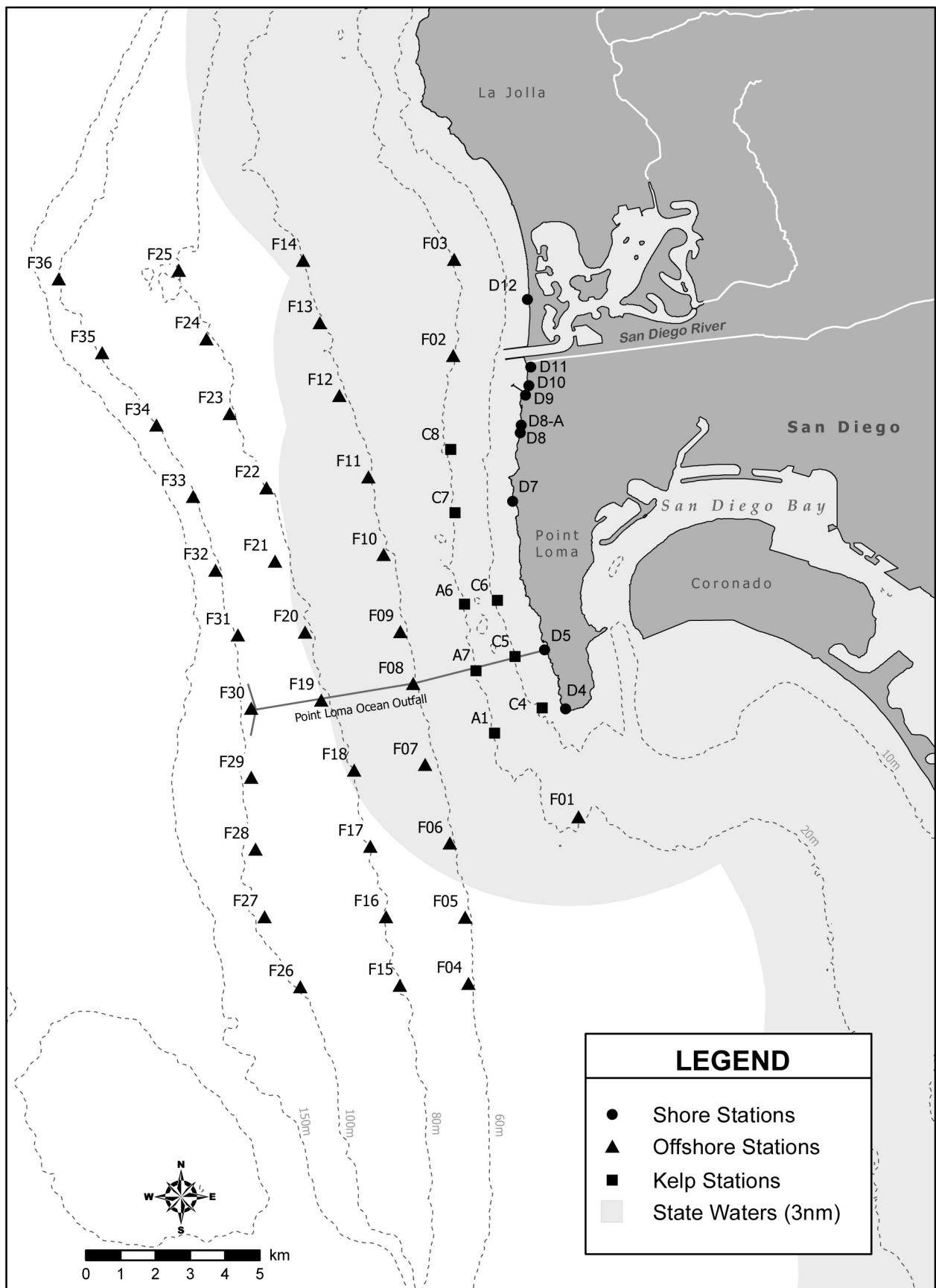
### ***Offshore Stations***

- Quarterly sampling was not conducted during June at the offshore stations. The next quarterly sampling is scheduled for August 2017.



## TABLES AND FIGURES





**Figure 1.1** Station Map

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# 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-A	D9	D10	D11	D12
01 Jun 2017	5	36	16	14	30	76	45	8
02 Jun 2017	5	36	16	14	30	76	45	8
03 Jun 2017	5	36	16	14	30	76	45	8
04 Jun 2017	8	50	20	23	36	87	39	13
05 Jun 2017	8	50	20	23	36	87	39	13
06 Jun 2017	8	50	20	23	36	87	39	13
07 Jun 2017	8	50	20	23	36	87	39	13
08 Jun 2017	8	50	20	23	36	87	39	13
09 Jun 2017	8	50	20	23	36	87	39	13
10 Jun 2017	8	58	20	23	29	55	25	13
11 Jun 2017	8	58	20	23	29	55	25	13
12 Jun 2017	8	58	20	23	29	55	25	13
13 Jun 2017	8	58	20	23	29	55	25	13
14 Jun 2017	8	58	20	23	29	55	25	13
15 Jun 2017	8	58	20	23	29	55	25	13
16 Jun 2017	8	58	20	23	38	48	25	13
17 Jun 2017	8	58	20	23	38	48	25	13
18 Jun 2017	8	58	20	23	38	48	25	13
19 Jun 2017	8	58	20	23	38	48	25	13
20 Jun 2017	8	58	20	23	38	48	25	13
21 Jun 2017	8	58	20	23	38	48	25	13
22 Jun 2017	13	36	32	32	48	48	25	13
23 Jun 2017	13	36	32	32	48	48	25	13
24 Jun 2017	13	36	32	32	48	48	25	13
25 Jun 2017	13	36	32	32	48	48	25	13
26 Jun 2017	13	36	32	32	48	48	25	13
27 Jun 2017	13	36	32	32	48	48	25	13
28 Jun 2017	9	24	32	32	42	36	25	13
29 Jun 2017	13	24	32	32	42	36	25	13
30 Jun 2017	13	24	32	32	42	36	25	13

\* Geometric mean calculated using n<5

ns = not sampled

**Table 2.2**

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

Date	D4	D5	D7	D8-A	D9	D10	D11	D12
01 Jun 2017	2	2	2	4	2	3	3	2
02 Jun 2017	2	2	2	4	2	3	3	2
03 Jun 2017	2	2	2	4	2	3	3	2
04 Jun 2017	2	2	2	4	2	3	3	2
05 Jun 2017	2	2	2	4	2	3	3	2
06 Jun 2017	2	2	2	4	2	3	3	2
07 Jun 2017	2	2	2	4	2	3	3	2
08 Jun 2017	2	2	2	4	2	3	3	2
09 Jun 2017	2	2	2	4	2	3	3	2
10 Jun 2017	2	2	3	4	2	4	3	2
11 Jun 2017	2	2	3	4	2	4	3	2
12 Jun 2017	2	2	3	4	2	4	3	2
13 Jun 2017	2	2	3	4	2	4	3	2
14 Jun 2017	2	2	3	4	2	4	3	2
15 Jun 2017	2	2	3	4	2	4	3	2
16 Jun 2017	2	2	3	4	2	5	3	2
17 Jun 2017	2	2	3	4	2	5	3	2
18 Jun 2017	2	2	3	4	2	5	3	2
19 Jun 2017	2	2	3	4	2	5	3	2
20 Jun 2017	2	2	3	4	2	5	3	2
21 Jun 2017	2	2	3	4	2	5	3	2
22 Jun 2017	2	2	5	3	2	5	3	2
23 Jun 2017	2	2	5	3	2	5	3	2
24 Jun 2017	2	2	5	3	2	5	3	2
25 Jun 2017	2	2	5	3	2	5	3	2
26 Jun 2017	2	2	5	3	2	5	3	2
27 Jun 2017	2	2	5	3	2	5	3	2
28 Jun 2017	2	2	5	2	2	5	4	2
29 Jun 2017	2	2	5	2	2	5	4	2
30 Jun 2017	2	2	5	2	2	5	4	2

\* 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-A	D9	D10	D11	D12
01 Jun 2017	2	2	4	3	3	2	4	2
02 Jun 2017	2	2	4	3	3	2	4	2
03 Jun 2017	2	2	4	3	3	2	4	2
04 Jun 2017	2	2	4	3	2	2	3	2
05 Jun 2017	2	2	4	3	2	2	3	2
06 Jun 2017	2	2	4	3	2	2	3	2
07 Jun 2017	2	2	4	3	2	2	3	2
08 Jun 2017	2	2	4	3	2	2	3	2
09 Jun 2017	2	2	4	3	2	2	3	2
10 Jun 2017	2	2	4	3	2	2	3	2
11 Jun 2017	2	2	4	3	2	2	3	2
12 Jun 2017	2	2	4	3	2	2	3	2
13 Jun 2017	2	2	4	3	2	2	3	2
14 Jun 2017	2	2	4	3	2	2	3	2
15 Jun 2017	2	2	4	3	2	2	3	2
16 Jun 2017	2	2	4	3	2	2	3	2
17 Jun 2017	2	2	4	3	2	2	3	2
18 Jun 2017	2	2	4	3	2	2	3	2
19 Jun 2017	2	2	4	3	2	2	3	2
20 Jun 2017	2	2	4	3	2	2	3	2
21 Jun 2017	2	2	4	3	2	2	3	2
22 Jun 2017	3	2	6	2	2	4	3	2
23 Jun 2017	3	2	6	2	2	4	3	2
24 Jun 2017	3	2	6	2	2	4	3	2
25 Jun 2017	3	2	6	2	2	4	3	2
26 Jun 2017	3	2	6	2	2	4	3	2
27 Jun 2017	3	2	6	2	2	4	3	2
28 Jun 2017	3	2	3	2	3	5	7	2
29 Jun 2017	3	2	3	2	3	5	5	2
30 Jun 2017	3	2	3	2	3	5	5	2

\* Geometric mean calculated using n<5

ns = not sampled

**Table 2.4**

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

Date	D4	D5	D7	D8-A	D9	D10	D11	D12
04 Jun 2017	IC	IC	IC	IC	IC	IC	IC	IC
10 Jun 2017	IC	IC	IC	IC	IC	IC	IC	IC
16 Jun 2017	IC	IC	IC	IC	IC	IC	IC	IC
22 Jun 2017	IC	nd	IC	IC	IC	IC	IC	IC
28 Jun 2017	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

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-A	D9	D10	D11	D12
04 Jun 2017	IC	IC	IC	IC	IC	IC	IC	IC
10 Jun 2017	IC	IC	IC	IC	IC	IC	IC	IC
16 Jun 2017	IC	IC	IC	IC	IC	IC	IC	IC
22 Jun 2017	IC	IC	IC	IC	IC	IC	IC	IC
28 Jun 2017	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

**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-A	D9	D10	D11	D12
04 Jun 2017	IC	IC	IC	IC	IC	IC	IC	IC
10 Jun 2017	IC	IC	IC	IC	IC	IC	IC	IC
16 Jun 2017	IC	IC	IC	IC	IC	IC	IC	IC
22 Jun 2017	IC	IC	IC	IC	IC	IC	IC	IC
28 Jun 2017	IC	IC	IC	IC	IC	IC	E	IC
29 Jun 2017	ns	ns	ns	ns	ns	ns	IC	ns

IC = In Compliance

E = Exceedance

ns = not sampled

**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-A	D9	D10	D11	D12
04 Jun 2017	IC	IC	IC	IC	IC	IC	IC	IC
10 Jun 2017	IC	IC	IC	IC	IC	IC	IC	IC
16 Jun 2017	IC	IC	IC	IC	IC	IC	IC	IC
22 Jun 2017	IC	nd	IC	IC	IC	IC	IC	IC
28 Jun 2017	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

nd = no data

**Table 2.8**

Summary of water quality parameters at the PLOO shore stations for each sample date. Densities of total coliform (Total), fecal coliform (Fecal), and *Enterococcus* (Enter) are reported as CFU/100 mL. The fecal:total coliform ratio (F:T) is unitless. Comments follow the data summary.

<b>Station</b>	<b>Date</b>	<b>Time</b>	<b>Total</b>	<b>Fecal</b>	<b>Enter</b>	<b>F:T</b>
D4	04 Jun 2017	1050	<20	<2	<2	0.10
	10 Jun 2017	901	<20	<2	2e	0.10
	16 Jun 2017	933	2e	<2	<2	1.00
	22 Jun 2017	757	<200	<2	14e	0.01
	28 Jun 2017	907	<2	<2	<2	1.00
D5	04 Jun 2017	1103	20e	<2	2e	0.10
	10 Jun 2017	843	40e	<2	<2	0.05
	16 Jun 2017	919	<20	<2	<2	0.10
	22 Jun 2017	745	nd	2e	<2	nd
	28 Jun 2017	849	<20	<2	<2	0.10
D7	04 Jun 2017	1025	20e	<2	<2	0.10
	10 Jun 2017	924	20e	12e	<2	0.60
	16 Jun 2017	956	<20	<2	<2	0.10
	22 Jun 2017	829	<200	40e	20e	0.20
	28 Jun 2017	940	<20	<2	<2	0.10
D8-A	04 Jun 2017	1012	<20	2e	<2	0.10
	10 Jun 2017	937	20e	4e	<2	0.20
	16 Jun 2017	1008	<20	<2	<2	0.10
	22 Jun 2017	839	<200	<2	2e	0.01
	28 Jun 2017	1004	<20	<2	<2	0.10
D9	04 Jun 2017	1002	20e	2e	<2	0.10
	10 Jun 2017	950	20e	<2	<2	0.10
	16 Jun 2017	1017	80e	<2	<2	0.02
	22 Jun 2017	904	<200	<2	4e	0.01
	28 Jun 2017	1024	<20	<2	4e	0.10
D10	04 Jun 2017	945	40e	6e	2e	0.15
	10 Jun 2017	1001	<20	16e	6e	0.80
	16 Jun 2017	1028	20e	6e	2e	0.30
	22 Jun 2017	923	<200	<2	28e	0.01
	28 Jun 2017	1038	<20	2e	6e	0.10
D11	04 Jun 2017	932	20e	<2	2e	0.10
	10 Jun 2017	1014	60e	6e	6e	0.10
	16 Jun 2017	1046	<20	<2	2e	0.10
	22 Jun 2017	950	20e	<2	4e	0.10
	28 Jun 2017	1054	<20	<20	130e	1.00

<b>Station</b>	<b>Date</b>	<b>Time</b>	<b>Total</b>	<b>Fecal</b>	<b>Enteric</b>	<b>F:T</b>
D11	29 Jun 2017	1349	ns	ns	<2	ns
D12	04 Jun 2017	920	20e	2e	4e	0.10
D12	10 Jun 2017	1038	20e	<2	<2	0.10
D12	16 Jun 2017	1108	2e	<2	2e	1.00
D12	22 Jun 2017	1010	<20	<2	<2	0.10
D12	28 Jun 2017	1117	<20	<2	<2	0.10

ns = not sampled

nd = no data

**Table 2.9**

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

Station	Date	Parameter	Value
D4	04 Jun 2017	Arrive Time	1050
D4	04 Jun 2017	Weather	Cloudy
D4	04 Jun 2017	Wind Speed (kts)	1
D4	04 Jun 2017	Wind Dir	W
D4	04 Jun 2017	Animal Life	None
D4	04 Jun 2017	Floatables	None
D4	04 Jun 2017	Water Color	Green
D4	04 Jun 2017	Current Direction	N
D4	04 Jun 2017	Wave Height Low (ft)	2
D4	04 Jun 2017	High Tide (ft)	3.6
D4	04 Jun 2017	High Tide Time	655
D4	04 Jun 2017	Low Tide (ft)	1
D4	04 Jun 2017	Low Tide Time	1243
D4	04 Jun 2017	Comments	Kelp; Seagrass; Algae; Water clear
D4	10 Jun 2017	Arrive Time	901
D4	10 Jun 2017	Weather	Drizzle
D4	10 Jun 2017	Wind Speed (kts)	3.1
D4	10 Jun 2017	Wind Dir	SW
D4	10 Jun 2017	Animal Life	None
D4	10 Jun 2017	Floatables	None
D4	10 Jun 2017	Water Color	Green
D4	10 Jun 2017	Current Direction	SW
D4	10 Jun 2017	Wave Height Low (ft)	1
D4	10 Jun 2017	High Tide (ft)	3.6
D4	10 Jun 2017	High Tide Time	1101
D4	10 Jun 2017	Low Tide (ft)	-0.5
D4	10 Jun 2017	Low Tide Time	445
D4	10 Jun 2017	Comments	Kelp; Seagrass; Algae; Water clear
D4	16 Jun 2017	Arrive Time	933
D4	16 Jun 2017	Weather	Foggy
D4	16 Jun 2017	Wind Speed (kts)	1.1
D4	16 Jun 2017	Wind Dir	W
D4	16 Jun 2017	Animal Life	None
D4	16 Jun 2017	Floatables	None
D4	16 Jun 2017	Water Color	Green
D4	16 Jun 2017	Current Direction	W
D4	16 Jun 2017	Wave Height Low (ft)	1
D4	16 Jun 2017	High Tide (ft)	4
D4	16 Jun 2017	High Tide Time	1554
D4	16 Jun 2017	Low Tide (ft)	0.5
D4	16 Jun 2017	Low Tide Time	857
D4	16 Jun 2017	Comments	Kelp; Seagrass; Algae; Water clear
D4	22 Jun 2017	Arrive Time	757
D4	22 Jun 2017	Weather	Cloudy
D4	22 Jun 2017	Wind Speed (kts)	8.7
D4	22 Jun 2017	Wind Dir	SW
D4	22 Jun 2017	Animal Life	None
D4	22 Jun 2017	Floatables	None

Station	Date	Parameter	Value
D4	22 Jun 2017	Water Color	Green
D4	22 Jun 2017	Current Direction	N
D4	22 Jun 2017	Wave Height Low (ft)	3
D4	22 Jun 2017	High Tide (ft)	4.1
D4	22 Jun 2017	High Tide Time	854
D4	22 Jun 2017	Low Tide (ft)	-1
D4	22 Jun 2017	Low Tide Time	245
D4	22 Jun 2017	Comments	Kelp; Seagrass; Water clear
D4	28 Jun 2017	Arrive Time	907
D4	28 Jun 2017	Weather	Sunny
D4	28 Jun 2017	Wind Speed (kts)	1.7
D4	28 Jun 2017	Wind Dir	W
D4	28 Jun 2017	Animal Life	None
D4	28 Jun 2017	Floatables	None
D4	28 Jun 2017	Water Color	Green
D4	28 Jun 2017	Current Direction	W
D4	28 Jun 2017	Wave Height Low (ft)	1
D4	28 Jun 2017	High Tide (ft)	4.3
D4	28 Jun 2017	High Tide Time	1411
D4	28 Jun 2017	Low Tide (ft)	-0.4
D4	28 Jun 2017	Low Tide Time	732
D4	28 Jun 2017	Comments	Kelp; Seagrass; Algae; Water clear
D5	04 Jun 2017	Arrive Time	1103
D5	04 Jun 2017	Weather	Cloudy
D5	04 Jun 2017	Wind Speed (kts)	0.8
D5	04 Jun 2017	Wind Dir	W
D5	04 Jun 2017	Animal Life	None
D5	04 Jun 2017	Floatables	None
D5	04 Jun 2017	Water Color	Green
D5	04 Jun 2017	Current Direction	N
D5	04 Jun 2017	Wave Height Low (ft)	2
D5	04 Jun 2017	High Tide (ft)	3.6
D5	04 Jun 2017	High Tide Time	655
D5	04 Jun 2017	Low Tide (ft)	1
D5	04 Jun 2017	Low Tide Time	1243
D5	04 Jun 2017	Comments	Kelp; Seagrass; Algae; Water clear
D5	10 Jun 2017	Arrive Time	843
D5	10 Jun 2017	Weather	Drizzle
D5	10 Jun 2017	Wind Speed (kts)	3.1
D5	10 Jun 2017	Wind Dir	S
D5	10 Jun 2017	Animal Life	None
D5	10 Jun 2017	Floatables	None
D5	10 Jun 2017	Water Color	Green
D5	10 Jun 2017	Current Direction	S
D5	10 Jun 2017	Wave Height Low (ft)	2
D5	10 Jun 2017	High Tide (ft)	3.6
D5	10 Jun 2017	High Tide Time	1101
D5	10 Jun 2017	Low Tide (ft)	-0.5
D5	10 Jun 2017	Low Tide Time	445
D5	10 Jun 2017	Comments	Kelp; Seagrass; Algae; Water clear
D5	16 Jun 2017	Arrive Time	919

Station	Date	Parameter	Value
D5	16 Jun 2017	Weather	Foggy
D5	16 Jun 2017	Wind Speed (kts)	1
D5	16 Jun 2017	Wind Dir	W
D5	16 Jun 2017	Animal Life	None
D5	16 Jun 2017	Floatables	None
D5	16 Jun 2017	Water Color	Green
D5	16 Jun 2017	Current Direction	W
D5	16 Jun 2017	Wave Height Low (ft)	1
D5	16 Jun 2017	High Tide (ft)	4
D5	16 Jun 2017	High Tide Time	1554
D5	16 Jun 2017	Low Tide (ft)	0.5
D5	16 Jun 2017	Low Tide Time	857
D5	16 Jun 2017	Comments	Seagrass; Algae; Water clear
D5	22 Jun 2017	Arrive Time	745
D5	22 Jun 2017	Weather	Cloudy
D5	22 Jun 2017	Wind Speed (kts)	4
D5	22 Jun 2017	Wind Dir	SW
D5	22 Jun 2017	Animal Life	None
D5	22 Jun 2017	Floatables	None
D5	22 Jun 2017	Water Color	Green
D5	22 Jun 2017	Current Direction	N
D5	22 Jun 2017	Wave Height Low (ft)	3
D5	22 Jun 2017	High Tide (ft)	4.1
D5	22 Jun 2017	High Tide Time	854
D5	22 Jun 2017	Low Tide (ft)	-1
D5	22 Jun 2017	Low Tide Time	245
D5	22 Jun 2017	Comments	Kelp; Seagrass; Water clear
D5	28 Jun 2017	Arrive Time	849
D5	28 Jun 2017	Weather	Sunny
D5	28 Jun 2017	Wind Speed (kts)	2.7
D5	28 Jun 2017	Wind Dir	S
D5	28 Jun 2017	Animal Life	1 Seal
D5	28 Jun 2017	Floatables	None
D5	28 Jun 2017	Water Color	Green
D5	28 Jun 2017	Current Direction	S
D5	28 Jun 2017	Wave Height Low (ft)	1
D5	28 Jun 2017	High Tide (ft)	4.3
D5	28 Jun 2017	High Tide Time	1411
D5	28 Jun 2017	Low Tide (ft)	-0.4
D5	28 Jun 2017	Low Tide Time	732
D5	28 Jun 2017	Comments	Kelp; Seagrass; Algae; Water clear
D7	04 Jun 2017	Arrive Time	1025
D7	04 Jun 2017	Weather	Cloudy
D7	04 Jun 2017	Wind Speed (kts)	2.8
D7	04 Jun 2017	Wind Dir	W
D7	04 Jun 2017	Animal Life	None
D7	04 Jun 2017	Floatables	None
D7	04 Jun 2017	Water Color	Green
D7	04 Jun 2017	Current Direction	N
D7	04 Jun 2017	Wave Height Low (ft)	3
D7	04 Jun 2017	High Tide (ft)	3.6
D7	04 Jun 2017	High Tide Time	655

Station	Date	Parameter	Value
D7	04 Jun 2017	Low Tide (ft)	1
D7	04 Jun 2017	Low Tide Time	1243
D7	04 Jun 2017	Comments	Kelp; Seagrass; Algae; 6 Persons; 21 Surfers; Water clear
D7	10 Jun 2017	Arrive Time	924
D7	10 Jun 2017	Weather	Cloudy
D7	10 Jun 2017	Wind Speed (kts)	4.1
D7	10 Jun 2017	Wind Dir	W
D7	10 Jun 2017	Animal Life	None
D7	10 Jun 2017	Floatables	None
D7	10 Jun 2017	Water Color	Green
D7	10 Jun 2017	Current Direction	W
D7	10 Jun 2017	Wave Height Low (ft)	2
D7	10 Jun 2017	High Tide (ft)	3.6
D7	10 Jun 2017	High Tide Time	1101
D7	10 Jun 2017	Low Tide (ft)	-0.5
D7	10 Jun 2017	Low Tide Time	445
D7	10 Jun 2017	Comments	Seagrass; 8 Persons; Water clear
D7	16 Jun 2017	Arrive Time	956
D7	16 Jun 2017	Weather	Foggy
D7	16 Jun 2017	Wind Speed (kts)	1.1
D7	16 Jun 2017	Wind Dir	W
D7	16 Jun 2017	Animal Life	None
D7	16 Jun 2017	Floatables	None
D7	16 Jun 2017	Water Color	Green
D7	16 Jun 2017	Current Direction	W
D7	16 Jun 2017	Wave Height Low (ft)	1
D7	16 Jun 2017	High Tide (ft)	4
D7	16 Jun 2017	High Tide Time	1554
D7	16 Jun 2017	Low Tide (ft)	0.5
D7	16 Jun 2017	Low Tide Time	857
D7	16 Jun 2017	Comments	Kelp; Seagrass; Algae; 9 Persons; 15 Surfers; 3 Swimmers; Water clear
D7	22 Jun 2017	Arrive Time	829
D7	22 Jun 2017	Weather	Cloudy
D7	22 Jun 2017	Wind Speed (kts)	6
D7	22 Jun 2017	Wind Dir	SW
D7	22 Jun 2017	Animal Life	None
D7	22 Jun 2017	Floatables	None
D7	22 Jun 2017	Water Color	Green
D7	22 Jun 2017	Current Direction	N
D7	22 Jun 2017	Wave Height Low (ft)	3
D7	22 Jun 2017	High Tide (ft)	4.1
D7	22 Jun 2017	High Tide Time	854
D7	22 Jun 2017	Low Tide (ft)	-1
D7	22 Jun 2017	Low Tide Time	245
D7	22 Jun 2017	Comments	Kelp; Seagrass; Water clear
D7	28 Jun 2017	Arrive Time	940
D7	28 Jun 2017	Weather	Sunny
D7	28 Jun 2017	Wind Speed (kts)	1.5
D7	28 Jun 2017	Wind Dir	W
D7	28 Jun 2017	Animal Life	None

Station	Date	Parameter	Value
D7	28 Jun 2017	Floatables	None
D7	28 Jun 2017	Water Color	Green
D7	28 Jun 2017	Current Direction	W
D7	28 Jun 2017	Wave Height Low (ft)	1
D7	28 Jun 2017	High Tide (ft)	4.3
D7	28 Jun 2017	High Tide Time	1411
D7	28 Jun 2017	Low Tide (ft)	-0.4
D7	28 Jun 2017	Low Tide Time	732
D7	28 Jun 2017	Comments	Kelp; Seagrass; Algae; 3 Persons; 2 Surfers; Water clear
D8-A	04 Jun 2017	Arrive Time	1012
D8-A	04 Jun 2017	Weather	Drizzle
D8-A	04 Jun 2017	Wind Speed (kts)	1.8
D8-A	04 Jun 2017	Wind Dir	W
D8-A	04 Jun 2017	Animal Life	None
D8-A	04 Jun 2017	Floatables	None
D8-A	04 Jun 2017	Water Color	Green
D8-A	04 Jun 2017	Current Direction	N
D8-A	04 Jun 2017	Wave Height Low (ft)	2
D8-A	04 Jun 2017	High Tide (ft)	3.6
D8-A	04 Jun 2017	High Tide Time	655
D8-A	04 Jun 2017	Low Tide (ft)	1
D8-A	04 Jun 2017	Low Tide Time	1243
D8-A	04 Jun 2017	Comments	Kelp; Seagrass; Algae; Water clear
D8-A	10 Jun 2017	Arrive Time	937
D8-A	10 Jun 2017	Weather	Cloudy
D8-A	10 Jun 2017	Wind Speed (kts)	3.2
D8-A	10 Jun 2017	Wind Dir	S
D8-A	10 Jun 2017	Animal Life	None
D8-A	10 Jun 2017	Floatables	None
D8-A	10 Jun 2017	Water Color	Green
D8-A	10 Jun 2017	Current Direction	S
D8-A	10 Jun 2017	Wave Height Low (ft)	2
D8-A	10 Jun 2017	High Tide (ft)	3.6
D8-A	10 Jun 2017	High Tide Time	1101
D8-A	10 Jun 2017	Low Tide (ft)	-0.5
D8-A	10 Jun 2017	Low Tide Time	445
D8-A	10 Jun 2017	Comments	Kelp; Seagrass; Algae; Water clear
D8-A	16 Jun 2017	Arrive Time	1008
D8-A	16 Jun 2017	Weather	Partly Cloudy
D8-A	16 Jun 2017	Wind Speed (kts)	1.4
D8-A	16 Jun 2017	Wind Dir	NW
D8-A	16 Jun 2017	Animal Life	None
D8-A	16 Jun 2017	Floatables	None
D8-A	16 Jun 2017	Water Color	Green
D8-A	16 Jun 2017	Current Direction	NW
D8-A	16 Jun 2017	Wave Height Low (ft)	2
D8-A	16 Jun 2017	High Tide (ft)	4
D8-A	16 Jun 2017	High Tide Time	1554
D8-A	16 Jun 2017	Low Tide (ft)	0.5
D8-A	16 Jun 2017	Low Tide Time	857
D8-A	16 Jun 2017	Comments	Kelp; Seagrass; Algae; 1 Person; Water clear

Station	Date	Parameter	Value
D8-A	22 Jun 2017	Arrive Time	839
D8-A	22 Jun 2017	Weather	Cloudy
D8-A	22 Jun 2017	Wind Speed (kts)	1.8
D8-A	22 Jun 2017	Wind Dir	SW
D8-A	22 Jun 2017	Animal Life	None
D8-A	22 Jun 2017	Floatables	None
D8-A	22 Jun 2017	Water Color	Green
D8-A	22 Jun 2017	Current Direction	N
D8-A	22 Jun 2017	Wave Height Low (ft)	3
D8-A	22 Jun 2017	High Tide (ft)	4.1
D8-A	22 Jun 2017	High Tide Time	854
D8-A	22 Jun 2017	Low Tide (ft)	1.3
D8-A	22 Jun 2017	Low Tide Time	1409
D8-A	22 Jun 2017	Comments	Kelp; Seagrass; Algae; Water clear
D8-A	28 Jun 2017	Arrive Time	1004
D8-A	28 Jun 2017	Weather	Sunny
D8-A	28 Jun 2017	Wind Speed (kts)	2.1
D8-A	28 Jun 2017	Wind Dir	SW
D8-A	28 Jun 2017	Animal Life	None
D8-A	28 Jun 2017	Floatables	None
D8-A	28 Jun 2017	Water Color	Green
D8-A	28 Jun 2017	Current Direction	SW
D8-A	28 Jun 2017	Wave Height Low (ft)	1
D8-A	28 Jun 2017	High Tide (ft)	4.3
D8-A	28 Jun 2017	High Tide Time	1411
D8-A	28 Jun 2017	Low Tide (ft)	-0.4
D8-A	28 Jun 2017	Low Tide Time	732
D8-A	28 Jun 2017	Comments	Kelp; Seagrass; Algae; Water clear
D9	04 Jun 2017	Arrive Time	1002
D9	04 Jun 2017	Weather	Cloudy
D9	04 Jun 2017	Wind Speed (kts)	2
D9	04 Jun 2017	Wind Dir	W
D9	04 Jun 2017	Animal Life	None
D9	04 Jun 2017	Floatables	None
D9	04 Jun 2017	Water Color	Green
D9	04 Jun 2017	Current Direction	N
D9	04 Jun 2017	Wave Height Low (ft)	2
D9	04 Jun 2017	High Tide (ft)	3.6
D9	04 Jun 2017	High Tide Time	655
D9	04 Jun 2017	Low Tide (ft)	1
D9	04 Jun 2017	Low Tide Time	1243
D9	04 Jun 2017	Comments	Kelp; Seagrass; 6 Persons; Water clear
D9	10 Jun 2017	Arrive Time	950
D9	10 Jun 2017	Weather	Cloudy
D9	10 Jun 2017	Wind Speed (kts)	7.1
D9	10 Jun 2017	Wind Dir	S
D9	10 Jun 2017	Animal Life	None
D9	10 Jun 2017	Floatables	None
D9	10 Jun 2017	Water Color	Green
D9	10 Jun 2017	Current Direction	S
D9	10 Jun 2017	Wave Height Low (ft)	2
D9	10 Jun 2017	High Tide (ft)	3.6

Station	Date	Parameter	Value
D9	10 Jun 2017	High Tide Time	1101
D9	10 Jun 2017	Low Tide (ft)	-0.5
D9	10 Jun 2017	Low Tide Time	445
D9	10 Jun 2017	Comments	Kelp; Seagrass; Water clear
D9	16 Jun 2017	Arrive Time	1017
D9	16 Jun 2017	Weather	Partly Cloudy
D9	16 Jun 2017	Wind Speed (kts)	2.9
D9	16 Jun 2017	Wind Dir	SW
D9	16 Jun 2017	Animal Life	None
D9	16 Jun 2017	Floatables	None
D9	16 Jun 2017	Water Color	Green
D9	16 Jun 2017	Current Direction	SW
D9	16 Jun 2017	Wave Height Low (ft)	1
D9	16 Jun 2017	High Tide (ft)	4
D9	16 Jun 2017	High Tide Time	1554
D9	16 Jun 2017	Low Tide (ft)	0.5
D9	16 Jun 2017	Low Tide Time	857
D9	16 Jun 2017	Comments	Kelp; Seagrass; Algae; 20 Persons; Water clear
D9	22 Jun 2017	Arrive Time	904
D9	22 Jun 2017	Weather	Cloudy
D9	22 Jun 2017	Wind Speed (kts)	2.8
D9	22 Jun 2017	Wind Dir	W
D9	22 Jun 2017	Animal Life	None
D9	22 Jun 2017	Floatables	None
D9	22 Jun 2017	Water Color	Green
D9	22 Jun 2017	Current Direction	N
D9	22 Jun 2017	Wave Height Low (ft)	3
D9	22 Jun 2017	High Tide (ft)	4.1
D9	22 Jun 2017	High Tide Time	854
D9	22 Jun 2017	Low Tide (ft)	1.3
D9	22 Jun 2017	Low Tide Time	1409
D9	22 Jun 2017	Comments	Kelp; Seagrass; Water clear
D9	28 Jun 2017	Arrive Time	1024
D9	28 Jun 2017	Weather	Sunny
D9	28 Jun 2017	Wind Speed (kts)	5
D9	28 Jun 2017	Wind Dir	S
D9	28 Jun 2017	Animal Life	None
D9	28 Jun 2017	Floatables	None
D9	28 Jun 2017	Water Color	Green
D9	28 Jun 2017	Current Direction	S
D9	28 Jun 2017	Wave Height Low (ft)	2
D9	28 Jun 2017	High Tide (ft)	4.3
D9	28 Jun 2017	High Tide Time	1411
D9	28 Jun 2017	Low Tide (ft)	-0.4
D9	28 Jun 2017	Low Tide Time	732
D9	28 Jun 2017	Comments	Seagrass; Algae; 2 Persons; Water clear
D10	04 Jun 2017	Arrive Time	945
D10	04 Jun 2017	Weather	Drizzle
D10	04 Jun 2017	Wind Speed (kts)	2.4
D10	04 Jun 2017	Wind Dir	W
D10	04 Jun 2017	Animal Life	None

Station	Date	Parameter	Value
D10	04 Jun 2017	Floatables	None
D10	04 Jun 2017	Water Color	Green
D10	04 Jun 2017	Current Direction	N
D10	04 Jun 2017	Wave Height Low (ft)	3
D10	04 Jun 2017	High Tide (ft)	3.6
D10	04 Jun 2017	High Tide Time	655
D10	04 Jun 2017	Low Tide (ft)	1
D10	04 Jun 2017	Low Tide Time	1243
D10	04 Jun 2017	Comments	Kelp; Seagrass; 20 Persons; Water clear
D10	10 Jun 2017	Arrive Time	1001
D10	10 Jun 2017	Weather	Cloudy
D10	10 Jun 2017	Wind Speed (kts)	6
D10	10 Jun 2017	Wind Dir	S
D10	10 Jun 2017	Animal Life	None
D10	10 Jun 2017	Floatables	None
D10	10 Jun 2017	Water Color	Green
D10	10 Jun 2017	Current Direction	S
D10	10 Jun 2017	Wave Height Low (ft)	3
D10	10 Jun 2017	High Tide (ft)	3.6
D10	10 Jun 2017	High Tide Time	1101
D10	10 Jun 2017	Low Tide (ft)	-0.5
D10	10 Jun 2017	Low Tide Time	445
D10	10 Jun 2017	Comments	Kelp; 26 Persons; 15 Surfers; 2 Swimmers; Water clear
D10	16 Jun 2017	Arrive Time	1028
D10	16 Jun 2017	Weather	Sunny
D10	16 Jun 2017	Wind Speed (kts)	3.3
D10	16 Jun 2017	Wind Dir	W
D10	16 Jun 2017	Animal Life	None
D10	16 Jun 2017	Floatables	None
D10	16 Jun 2017	Water Color	Green
D10	16 Jun 2017	Current Direction	W
D10	16 Jun 2017	Wave Height Low (ft)	2
D10	16 Jun 2017	High Tide (ft)	4
D10	16 Jun 2017	High Tide Time	1554
D10	16 Jun 2017	Low Tide (ft)	0.5
D10	16 Jun 2017	Low Tide Time	857
D10	16 Jun 2017	Comments	Kelp; Seagrass; 28 Persons; 5 Surfers; 12 Swimmers; Water clear
D10	22 Jun 2017	Arrive Time	923
D10	22 Jun 2017	Weather	Cloudy
D10	22 Jun 2017	Wind Speed (kts)	1
D10	22 Jun 2017	Wind Dir	W
D10	22 Jun 2017	Animal Life	None
D10	22 Jun 2017	Floatables	None
D10	22 Jun 2017	Water Color	Green
D10	22 Jun 2017	Current Direction	N
D10	22 Jun 2017	Wave Height Low (ft)	4
D10	22 Jun 2017	High Tide (ft)	4.1
D10	22 Jun 2017	High Tide Time	854
D10	22 Jun 2017	Low Tide (ft)	1.3
D10	22 Jun 2017	Low Tide Time	1409
D10	22 Jun 2017	Comments	Kelp; Seagrass; 5 Persons; 3 Surfers; 2 Swimmers; Water clear

Station	Date	Parameter	Value
D10	28 Jun 2017	Arrive Time	1038
D10	28 Jun 2017	Weather	Sunny
D10	28 Jun 2017	Wind Speed (kts)	4.4
D10	28 Jun 2017	Wind Dir	SW
D10	28 Jun 2017	Animal Life	None
D10	28 Jun 2017	Floatables	None
D10	28 Jun 2017	Water Color	Green
D10	28 Jun 2017	Current Direction	SW
D10	28 Jun 2017	Wave Height Low (ft)	3
D10	28 Jun 2017	High Tide (ft)	4.3
D10	28 Jun 2017	High Tide Time	1411
D10	28 Jun 2017	Low Tide (ft)	-0.4
D10	28 Jun 2017	Low Tide Time	732
D10	28 Jun 2017	Comments	Kelp; 65 Persons; 25 Surfers; 30 Swimmers; Water clear
D11	04 Jun 2017	Arrive Time	932
D11	04 Jun 2017	Weather	Drizzle
D11	04 Jun 2017	Wind Speed (kts)	2.1
D11	04 Jun 2017	Wind Dir	W
D11	04 Jun 2017	Animal Life	None
D11	04 Jun 2017	Floatables	None
D11	04 Jun 2017	Water Color	Green
D11	04 Jun 2017	Current Direction	N
D11	04 Jun 2017	Wave Height Low (ft)	3
D11	04 Jun 2017	High Tide (ft)	3.6
D11	04 Jun 2017	High Tide Time	655
D11	04 Jun 2017	Low Tide (ft)	1
D11	04 Jun 2017	Low Tide Time	1243
D11	04 Jun 2017	Comments	Kelp; Seagrass; 20 Persons; 10 Surfers; Water clear
D11	10 Jun 2017	Arrive Time	1014
D11	10 Jun 2017	Weather	Cloudy
D11	10 Jun 2017	Wind Speed (kts)	6.7
D11	10 Jun 2017	Wind Dir	SW
D11	10 Jun 2017	Animal Life	None
D11	10 Jun 2017	Floatables	None
D11	10 Jun 2017	Water Color	Green
D11	10 Jun 2017	Current Direction	SW
D11	10 Jun 2017	Wave Height Low (ft)	2
D11	10 Jun 2017	High Tide (ft)	3.6
D11	10 Jun 2017	High Tide Time	1101
D11	10 Jun 2017	Low Tide (ft)	-0.5
D11	10 Jun 2017	Low Tide Time	445
D11	10 Jun 2017	Comments	Kelp; Seagrass; 31 Persons; 6 Surfers; Water clear
D11	16 Jun 2017	Arrive Time	1046
D11	16 Jun 2017	Weather	Sunny
D11	16 Jun 2017	Wind Speed (kts)	4
D11	16 Jun 2017	Wind Dir	W
D11	16 Jun 2017	Animal Life	None
D11	16 Jun 2017	Floatables	None
D11	16 Jun 2017	Water Color	Green
D11	16 Jun 2017	Current Direction	W
D11	16 Jun 2017	Wave Height Low (ft)	2
D11	16 Jun 2017	High Tide (ft)	4

Station	Date	Parameter	Value
D11	16 Jun 2017	High Tide Time	1554
D11	16 Jun 2017	Low Tide (ft)	0.5
D11	16 Jun 2017	Low Tide Time	857
D11	16 Jun 2017	Comments	Kelp; Seagrass; 21 Persons; 19 Surfers; 2 Swimmers; Water clear
D11	22 Jun 2017	Arrive Time	950
D11	22 Jun 2017	Weather	Cloudy
D11	22 Jun 2017	Wind Speed (kts)	2.7
D11	22 Jun 2017	Wind Dir	SW
D11	22 Jun 2017	Animal Life	None
D11	22 Jun 2017	Floatables	None
D11	22 Jun 2017	Water Color	Green
D11	22 Jun 2017	Current Direction	N
D11	22 Jun 2017	Wave Height Low (ft)	3
D11	22 Jun 2017	High Tide (ft)	4.1
D11	22 Jun 2017	High Tide Time	854
D11	22 Jun 2017	Low Tide (ft)	1.3
D11	22 Jun 2017	Low Tide Time	1409
D11	22 Jun 2017	Comments	Kelp; Seagrass; 6 Persons; 4 Surfers; 4 Swimmers; Water clear
D11	28 Jun 2017	Arrive Time	1054
D11	28 Jun 2017	Weather	Sunny
D11	28 Jun 2017	Wind Speed (kts)	4.2
D11	28 Jun 2017	Wind Dir	NW
D11	28 Jun 2017	Animal Life	None
D11	28 Jun 2017	Floatables	None
D11	28 Jun 2017	Water Color	Green
D11	28 Jun 2017	Current Direction	NW
D11	28 Jun 2017	Wave Height Low (ft)	2
D11	28 Jun 2017	High Tide (ft)	4.3
D11	28 Jun 2017	High Tide Time	1411
D11	28 Jun 2017	Low Tide (ft)	-0.4
D11	28 Jun 2017	Low Tide Time	732
D11	28 Jun 2017	Comments	Kelp; 42 Persons; 6 Surfers; 12 Swimmers; Water clear
D11	29 Jun 2017	Arrive Time	1349
D11	29 Jun 2017	Weather	Sunny
D11	29 Jun 2017	Wind Speed (kts)	6.5
D11	29 Jun 2017	Wind Dir	W
D11	29 Jun 2017	Animal Life	None
D11	29 Jun 2017	Floatables	None
D11	29 Jun 2017	Water Color	Green
D11	29 Jun 2017	Current Direction	N
D11	29 Jun 2017	Wave Height Low (ft)	3
D11	29 Jun 2017	High Tide (ft)	4.4
D11	29 Jun 2017	High Tide Time	1511
D11	29 Jun 2017	Low Tide (ft)	0.1
D11	29 Jun 2017	Low Tide Time	823
D11	29 Jun 2017	Comments	Kelp; Seagrass; 50 Persons; 2 Swimmers; Water clear
D12	04 Jun 2017	Arrive Time	920
D12	04 Jun 2017	Weather	Drizzle
D12	04 Jun 2017	Wind Speed (kts)	2.2
D12	04 Jun 2017	Wind Dir	W
D12	04 Jun 2017	Animal Life	None

Station	Date	Parameter	Value
D12	04 Jun 2017	Floatables	None
D12	04 Jun 2017	Water Color	Green
D12	04 Jun 2017	Current Direction	N
D12	04 Jun 2017	Wave Height Low (ft)	3
D12	04 Jun 2017	High Tide (ft)	3.6
D12	04 Jun 2017	High Tide Time	655
D12	04 Jun 2017	Low Tide (ft)	1
D12	04 Jun 2017	Low Tide Time	1243
D12	04 Jun 2017	Comments	Kelp; Seagrass; 20 Persons; Water clear
D12	10 Jun 2017	Arrive Time	1038
D12	10 Jun 2017	Weather	Cloudy
D12	10 Jun 2017	Wind Speed (kts)	6.8
D12	10 Jun 2017	Wind Dir	W
D12	10 Jun 2017	Animal Life	None
D12	10 Jun 2017	Floatables	None
D12	10 Jun 2017	Water Color	Green
D12	10 Jun 2017	Current Direction	W
D12	10 Jun 2017	Wave Height Low (ft)	2
D12	10 Jun 2017	High Tide (ft)	3.6
D12	10 Jun 2017	High Tide Time	1101
D12	10 Jun 2017	Low Tide (ft)	2
D12	10 Jun 2017	Low Tide Time	1555
D12	10 Jun 2017	Comments	Kelp; Seagrass; 38 Persons; 4 Surfers; 2 Swimmers; Water clear
D12	16 Jun 2017	Arrive Time	1108
D12	16 Jun 2017	Weather	Sunny
D12	16 Jun 2017	Wind Speed (kts)	3.3
D12	16 Jun 2017	Wind Dir	W
D12	16 Jun 2017	Animal Life	None
D12	16 Jun 2017	Floatables	None
D12	16 Jun 2017	Water Color	Green
D12	16 Jun 2017	Current Direction	W
D12	16 Jun 2017	Wave Height Low (ft)	1
D12	16 Jun 2017	High Tide (ft)	4
D12	16 Jun 2017	High Tide Time	1554
D12	16 Jun 2017	Low Tide (ft)	0.5
D12	16 Jun 2017	Low Tide Time	857
D12	16 Jun 2017	Comments	Kelp; Seagrass; 50 Persons; 9 Surfers; 32 Swimmers; Water clear
D12	22 Jun 2017	Arrive Time	1010
D12	22 Jun 2017	Weather	Cloudy
D12	22 Jun 2017	Wind Speed (kts)	4.6
D12	22 Jun 2017	Wind Dir	SW
D12	22 Jun 2017	Animal Life	None
D12	22 Jun 2017	Floatables	None
D12	22 Jun 2017	Water Color	Green
D12	22 Jun 2017	Current Direction	N
D12	22 Jun 2017	Wave Height Low (ft)	3
D12	22 Jun 2017	High Tide (ft)	4.1
D12	22 Jun 2017	High Tide Time	854
D12	22 Jun 2017	Low Tide (ft)	1.3
D12	22 Jun 2017	Low Tide Time	1409
D12	22 Jun 2017	Comments	Kelp; Seagrass; 12 Persons; Water clear

<b>Station</b>	<b>Date</b>	<b>Parameter</b>	<b>Value</b>
D12	28 Jun 2017	Arrive Time	1117
D12	28 Jun 2017	Weather	Sunny
D12	28 Jun 2017	Wind Speed (kts)	4.2
D12	28 Jun 2017	Wind Dir	W
D12	28 Jun 2017	Animal Life	None
D12	28 Jun 2017	Floatables	None
D12	28 Jun 2017	Water Color	Green
D12	28 Jun 2017	Current Direction	W
D12	28 Jun 2017	Wave Height Low (ft)	2
D12	28 Jun 2017	High Tide (ft)	4.3
D12	28 Jun 2017	High Tide Time	1411
D12	28 Jun 2017	Low Tide (ft)	-0.4
D12	28 Jun 2017	Low Tide Time	732
D12	28 Jun 2017	Comments	80 Persons; 15 Surfers; 20 Swimmers; Water clear

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# 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 Jun 2017	3*	5*	7*	2*	3*	3*	3*	3*
02 Jun 2017	3*	5*	7*	2*	3*	3*	3*	3*
03 Jun 2017	2	4	5	2	3	3	3	3
04 Jun 2017	2	4	5	2	3	3	3	3
05 Jun 2017	2	4	5	2	3	3	3	3
06 Jun 2017	2	4	5	2	3	3	3	3
07 Jun 2017	3	3	5	3	3	3	3	2
08 Jun 2017	3	3	5	3	3	3	3	2
09 Jun 2017	3	3	5	3	3	3	3	2
10 Jun 2017	3	4	4	4	4	3	3	2
11 Jun 2017	3	4	4	4	4	3	3	2
12 Jun 2017	3	4	4	4	4	3	3	2
13 Jun 2017	3	4	4	4	4	3	3	2
14 Jun 2017	3	4	4	4	4	3	3	2
15 Jun 2017	3	4	4	4	4	3	3	2
16 Jun 2017	3	4	4	4	4	3	3	2
17 Jun 2017	3	4	4	4	4	3	3	2
18 Jun 2017	3	4	5	4	4	4	3	3
19 Jun 2017	3	4	5	4	4	4	3	3
20 Jun 2017	3	4	5	4	4	4	3	3
21 Jun 2017	3	4	5	4	4	4	3	3
22 Jun 2017	3	4	5	4	4	4	3	3
23 Jun 2017	3	4	5	4	4	4	3	3
24 Jun 2017	3	3	4	5	4	3	3	3
25 Jun 2017	3	3	4	5	4	3	3	3
26 Jun 2017	3	3	4	5	4	3	3	3
27 Jun 2017	3	3	4	5	4	3	3	3
28 Jun 2017	3	3	4	5	4	3	3	3
29 Jun 2017	3	3	4	5	4	3	3	4
30 Jun 2017	3	3	4	5	4	3	3	4

\* 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 Jun 2017	2*	2*	2*	2*	2*	2*	2*	2*
02 Jun 2017	2*	2*	2*	2*	2*	2*	2*	2*
03 Jun 2017	2	2	2	2	2	2	2	2
04 Jun 2017	2	2	2	2	2	2	2	2
05 Jun 2017	2	2	2	2	2	2	2	2
06 Jun 2017	2	2	2	2	2	2	2	2
07 Jun 2017	2	2	2	2	2	2	2	2
08 Jun 2017	2	2	2	2	2	2	2	2
09 Jun 2017	2	2	2	2	2	2	2	2
10 Jun 2017	2	2	2	2	2	2	2	2
11 Jun 2017	2	2	2	2	2	2	2	2
12 Jun 2017	2	2	2	2	2	2	2	2
13 Jun 2017	2	2	2	2	2	2	2	2
14 Jun 2017	2	2	2	2	2	2	2	2
15 Jun 2017	2	2	2	2	2	2	2	2
16 Jun 2017	2	2	2	2	2	2	2	2
17 Jun 2017	2	2	2	2	2	2	2	2
18 Jun 2017	2	2	2	2	2	2	2	2
19 Jun 2017	2	2	2	2	2	2	2	2
20 Jun 2017	2	2	2	2	2	2	2	2
21 Jun 2017	2	2	2	2	2	2	2	2
22 Jun 2017	2	2	2	2	2	2	2	2
23 Jun 2017	2	2	2	2	2	2	2	2
24 Jun 2017	2	2	2	2	2	2	2	2
25 Jun 2017	2	2	2	2	2	2	2	2
26 Jun 2017	2	2	2	2	2	2	2	2
27 Jun 2017	2	2	2	2	2	2	2	2
28 Jun 2017	2	2	2	2	2	2	2	2
29 Jun 2017	2	2	2	2	2	2	2	2
30 Jun 2017	2	2	2	2	2	2	2	2

\* Geometric mean calculated using n<5

**Table 3.3**

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

Date	A1	A6	A7	C4	C5	C6	C7	C8
01 Jun 2017	2*	2*	2*	2*	2*	2*	2*	2*
02 Jun 2017	2*	2*	2*	2*	2*	2*	2*	2*
03 Jun 2017	2	2	2	2	2	2	2	2
04 Jun 2017	2	2	2	2	2	2	2	2
05 Jun 2017	2	2	2	2	2	2	2	2
06 Jun 2017	2	2	2	2	2	2	2	2
07 Jun 2017	2	2	2	2	2	2	2	2
08 Jun 2017	2	2	2	2	2	2	2	2
09 Jun 2017	2	2	2	2	2	2	2	2
10 Jun 2017	2	2	2	2	2	2	2	2
11 Jun 2017	2	2	2	2	2	2	2	2
12 Jun 2017	2	2	2	2	2	2	2	2
13 Jun 2017	2	2	2	2	2	2	2	2
14 Jun 2017	2	2	2	2	2	2	2	2
15 Jun 2017	2	2	2	2	2	2	2	2
16 Jun 2017	2	2	2	2	2	2	2	2
17 Jun 2017	2	2	2	2	2	2	2	2
18 Jun 2017	2	2	2	2	2	2	2	2
19 Jun 2017	2	2	2	2	2	2	2	2
20 Jun 2017	2	2	2	2	2	2	2	2
21 Jun 2017	2	2	2	2	2	2	2	2
22 Jun 2017	2	2	2	2	2	2	2	2
23 Jun 2017	2	2	2	2	2	2	2	2
24 Jun 2017	2	2	2	2	2	2	2	2
25 Jun 2017	2	2	2	2	2	2	2	2
26 Jun 2017	2	2	2	2	2	2	2	2
27 Jun 2017	2	2	2	2	2	2	2	2
28 Jun 2017	2	2	2	2	2	2	2	2
29 Jun 2017	2	2	2	2	2	2	2	2
30 Jun 2017	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
03 Jun 2017	IC							
07 Jun 2017	IC							
13 Jun 2017	IC							
18 Jun 2017	IC							
29 Jun 2017	IC							

IC = In Compliance

E = Exceedance

ns = not sampled

**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
03 Jun 2017	IC							
07 Jun 2017	IC							
13 Jun 2017	IC							
18 Jun 2017	IC							
29 Jun 2017	IC							

IC = In Compliance

E = Exceedance

ns = not sampled

**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
03 Jun 2017	IC							
07 Jun 2017	IC							
13 Jun 2017	IC							
18 Jun 2017	IC							
29 Jun 2017	IC							

IC = In Compliance

E = Exceedance

ns = not sampled

**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
03 Jun 2017	IC							
07 Jun 2017	IC							
13 Jun 2017	IC							
18 Jun 2017	IC							
29 Jun 2017	IC							

IC = In Compliance

E = Exceedance

ns = not sampled

**Table 3.8**

Summary of water quality parameters at the PLOO kelp stations for each sample date. Densities of total coliform (Total), fecal coliform (Fecal) and *Enterococcus* (Entero) bacteria are reported as CFU/100 mL; the fecal:total coliform ratio (F:T) is unitless; ammonium (N-NH<sub>3</sub>) values are reported as mg/L; values for temperature (Temp, °C), transmissivity (XMS, %), dissolved oxygen (DO, mg/L), salinity (Sal, ppt) and pH were extracted from CTD profile data for depths closest to those at which the bacteriological samples were collected. Comments follow the data summary.

Station	Date	Time	Depth	Total	Fecal	Entero	F:T	N-NH <sub>3</sub>	Temp	XMS	DO	Sal	pH
A1	03 Jun 2017	809	1	2e	<2	<2	1.00	ns	16.2	73.77	8.0	33.51	8.1
A1	03 Jun 2017	809	12	<2	<2	<2	1.00	ns	12.4	80.24	3.8	33.54	7.8
A1	03 Jun 2017	809	18	<2	<2	<2	1.00	ns	11.4	85.91	3.8	33.52	7.7
A1	07 Jun 2017	751	1	<2	<2	<2	1.00	ns	17.4	78.08	9.9	33.52	8.3
A1	07 Jun 2017	751	12	4e	<2	<2	0.50	ns	15.2	79.98	4.8	33.51	8.1
A1	07 Jun 2017	751	18	4e	<2	<2	0.50	ns	12.6	84.66	3.8	33.53	7.8
A1	13 Jun 2017	821	1	<2	<2	<2	1.00	ns	17.5	78.76	9.2	33.54	8.3
A1	13 Jun 2017	821	12	4e	<2	<2	0.50	ns	13.5	86.60	5.0	33.48	7.9
A1	13 Jun 2017	821	18	16e	6e	<2	0.38	ns	12.1	87.35	4.4	33.51	7.8
A1	18 Jun 2017	754	1	<2	<2	<2	1.00	ns	20.5	80.56	8.3	33.55	8.2
A1	18 Jun 2017	754	12	<2	<2	<2	1.00	ns	11.4	82.90	3.5	33.46	7.8
A1	18 Jun 2017	754	18	<2	2e	<2	1.00	ns	10.7	88.36	3.5	33.53	7.8
A1	29 Jun 2017	842	1	<2	<2	<2	1.00	ns	15.4	66.47	10.4	33.52	8.2
A1	29 Jun 2017	842	12	<2	<2	<2	1.00	ns	13.1	65.15	6.8	33.52	8.0
A1	29 Jun 2017	842	18	<2	<2	<2	1.00	ns	12.1	73.30	5.3	33.52	7.8
C4	03 Jun 2017	943	1	6e	<2	<2	0.33	ns	16.8	65.52	8.1	33.53	8.1
C4	03 Jun 2017	943	3	6e	<2	<2	0.33	ns	15.9	67.79	8.2	33.53	8.1
C4	03 Jun 2017	943	9	<2	<2	<2	1.00	ns	13.4	78.81	2.9	33.53	7.9
C4	07 Jun 2017	931	1	<20	<2	<2	0.10	ns	17.2	73.68	9.0	33.52	8.3
C4	07 Jun 2017	931	3	<20	<2	<2	0.10	ns	17.2	72.78	9.1	33.52	8.2
C4	07 Jun 2017	931	9	<20	<2	<2	0.10	ns	16.9	76.36	7.8	33.52	8.2
C4	13 Jun 2017	959	1	<2	<2	<2	1.00	ns	18.1	75.77	8.6	33.55	8.2
C4	13 Jun 2017	959	3	<20	<2	<2	0.10	ns	17.8	75.25	8.5	33.54	8.2
C4	13 Jun 2017	959	9	<2	<2	<2	1.00	ns	17.3	49.58	6.8	33.54	8.1
C4	18 Jun 2017	920	1	<2	<2	<2	1.00	ns	19.8	82.39	8.6	33.56	8.3
C4	18 Jun 2017	920	3	<2	<2	<2	1.00	ns	19.0	82.16	8.1	33.55	8.3
C4	18 Jun 2017	920	9	<2	<2	<2	1.00	ns	13.4	81.78	3.6	33.47	8.1
C4	29 Jun 2017	1028	1	<2	<2	<2	1.00	ns	17.0	73.35	8.8	33.53	8.2
C4	29 Jun 2017	1028	3	<2	<2	<2	1.00	ns	16.1	74.43	6.8	33.53	8.1
C4	29 Jun 2017	1028	9	<2	<2	<2	1.00	ns	12.7	85.61	4.4	33.50	7.8
C5	03 Jun 2017	932	1	<2	<2	<2	1.00	ns	17.3	80.88	8.1	33.51	8.2
C5	03 Jun 2017	932	3	<2	<2	<2	1.00	ns	17.1	80.59	6.8	33.50	8.2
C5	03 Jun 2017	932	9	<2	<2	<2	1.00	ns	13.2	85.18	4.3	33.51	7.9
C5	07 Jun 2017	919	1	<20	<2	<2	0.10	ns	17.5	74.68	7.7	33.54	8.1
C5	07 Jun 2017	919	3	4e	<2	<2	0.50	ns	17.5	74.50	7.4	33.54	8.1

Station	Date	Time	Depth	Total	Fecal	Enter	F:T	N-NH3	Temp	XMS	DO	Sal	pH
C5	07 Jun 2017	919	9	<2	<2	<2	1.00	ns	15.6	80.78	4.4	33.52	8.0
C5	13 Jun 2017	947	1	<2	<2	<2	1.00	ns	18.1	78.41	8.5	33.54	8.2
C5	13 Jun 2017	947	3	<2	<2	<2	1.00	ns	18.0	79.97	8.4	33.54	8.2
C5	13 Jun 2017	947	9	<20	<2	<2	0.10	ns	14.6	79.11	3.7	33.49	8.0
C5	18 Jun 2017	910	1	<2	<2	<2	1.00	ns	20.2	84.63	8.8	33.57	8.3
C5	18 Jun 2017	910	3	<2	<2	<2	1.00	ns	19.4	84.15	8.3	33.55	8.3
C5	18 Jun 2017	910	9	<2	<2	<2	1.00	ns	12.6	86.92	4.9	33.45	7.9
C5	29 Jun 2017	1015	1	<2	<2	<2	1.00	ns	16.6	77.07	8.9	33.53	8.2
C5	29 Jun 2017	1015	3	<2	<2	<2	1.00	ns	15.2	77.27	8.1	33.53	8.1
C5	29 Jun 2017	1015	9	<2	<2	<2	1.00	ns	12.8	82.58	4.6	33.51	7.9
A6	03 Jun 2017	835	1	<2	<2	<2	1.00	ns	16.9	82.64	7.7	33.50	8.1
A6	03 Jun 2017	835	12	<2	<2	<2	1.00	ns	12.8	83.42	4.9	33.52	7.9
A6	03 Jun 2017	835	18	<2	<2	<2	1.00	ns	11.3	86.63	3.9	33.56	7.7
A6	07 Jun 2017	818	1	<2	<2	<2	1.00	ns	17.5	69.57	9.4	33.52	8.3
A6	07 Jun 2017	818	12	<2	<2	<2	1.00	ns	13.3	83.46	5.1	33.49	7.9
A6	07 Jun 2017	818	18	<2	<2	<2	1.00	ns	13.0	85.00	4.4	33.52	7.8
A6	13 Jun 2017	847	1	<2	<2	<2	1.00	ns	18.6	81.94	8.0	33.54	8.2
A6	13 Jun 2017	847	12	12e	<2	<2	0.17	ns	14.1	83.36	5.3	33.45	8.0
A6	13 Jun 2017	847	18	<2	<2	<2	1.00	ns	12.1	87.07	4.3	33.51	7.8
A6	18 Jun 2017	819	1	<2	<2	<2	1.00	ns	20.5	85.87	8.9	33.57	8.3
A6	18 Jun 2017	819	12	<2	<2	4e	1.00	ns	14.6	74.10	6.4	33.44	8.2
A6	18 Jun 2017	819	18	<2	<2	<2	1.00	ns	11.5	87.63	3.9	33.48	7.8
A6	29 Jun 2017	908	1	<20	2e	<2	0.10	ns	15.8	66.39	9.2	33.52	8.1
A6	29 Jun 2017	908	12	2e	<2	<2	1.00	ns	14.4	61.80	7.5	33.53	8.1
A6	29 Jun 2017	908	18	<2	<2	<2	1.00	ns	13.2	70.93	6.6	33.51	7.9
C6	03 Jun 2017	923	1	<2	<2	<2	1.00	ns	17.4	81.03	7.6	33.49	8.2
C6	03 Jun 2017	923	3	<2	<2	<2	1.00	ns	17.0	81.18	6.1	33.47	8.2
C6	03 Jun 2017	923	9	<2	<2	<2	1.00	ns	12.7	85.00	5.3	33.52	7.9
C6	07 Jun 2017	906	1	<2	<2	<2	1.00	ns	17.8	66.81	9.9	33.53	8.3
C6	07 Jun 2017	906	3	<2	<2	<2	1.00	ns	17.7	68.25	7.6	33.52	8.3
C6	07 Jun 2017	906	9	<2	<2	<2	1.00	ns	14.9	85.38	5.2	33.51	7.9
C6	13 Jun 2017	936	1	<2	<2	<2	1.00	ns	18.3	69.48	7.4	33.55	8.2
C6	13 Jun 2017	936	3	<20	<2	<2	0.10	ns	18.2	69.29	7.1	33.55	8.2
C6	13 Jun 2017	936	9	<2	<2	<2	1.00	ns	13.1	67.21	4.2	33.48	7.9
C6	18 Jun 2017	900	1	<2	<2	<2	1.00	ns	20.6	86.07	8.9	33.57	8.3
C6	18 Jun 2017	900	3	<20	<2	<2	0.10	ns	20.1	85.51	8.3	33.55	8.3
C6	18 Jun 2017	900	9	<2	<2	<2	1.00	ns	12.2	87.40	4.6	33.44	7.9
C6	29 Jun 2017	1004	1	<2	<2	<2	1.00	ns	16.9	73.54	8.9	33.52	8.2
C6	29 Jun 2017	1004	3	<2	<2	<2	1.00	ns	15.5	73.75	7.9	33.53	8.2
C6	29 Jun 2017	1004	9	2e	<2	<2	1.00	ns	12.7	79.97	5.2	33.52	7.9
A7	03 Jun 2017	822	1	<2	<2	<2	1.00	ns	16.6	75.89	8.4	33.52	8.2

Station	Date	Time	Depth	Total	Fecal	Enter	F:T	N-NH3	Temp	XMS	DO	Sal	pH
A7	03 Jun 2017	822	12	<2	<2	<2	1.00	ns	14.1	75.02	4.9	33.53	8.0
A7	03 Jun 2017	822	18	2e	2e	<2	1.00	ns	11.7	86.81	3.8	33.55	7.7
A7	07 Jun 2017	804	1	<2	<2	<2	1.00	ns	17.2	72.60	9.5	33.53	8.2
A7	07 Jun 2017	804	12	4e	<2	<2	0.50	ns	14.3	83.61	4.5	33.51	7.9
A7	07 Jun 2017	804	18	<2	<2	<2	1.00	ns	12.6	85.67	4.2	33.53	7.8
A7	13 Jun 2017	836	1	<2	<2	<2	1.00	ns	18.3	82.21	8.3	33.54	8.2
A7	13 Jun 2017	836	12	2e	2e	<2	1.00	ns	14.0	84.89	5.3	33.48	8.0
A7	13 Jun 2017	836	18	12e	2e	<2	0.17	ns	12.4	85.55	4.6	33.49	7.8
A7	18 Jun 2017	807	1	<2	<2	<2	1.00	ns	20.0	82.50	8.4	33.56	8.2
A7	18 Jun 2017	807	12	2e	<2	<2	1.00	ns	12.3	76.16	4.8	33.46	8.0
A7	18 Jun 2017	807	18	10e	<2	<2	0.20	ns	10.6	88.80	3.4	33.56	7.8
A7	29 Jun 2017	856	1	<2	<2	<2	1.00	ns	15.7	73.28	9.0	33.53	8.1
A7	29 Jun 2017	856	12	<20	<2	<2	0.10	ns	14.3	62.79	7.8	33.53	8.1
A7	29 Jun 2017	856	18	<2	<2	<2	1.00	ns	12.6	75.33	5.9	33.53	7.9
C7	03 Jun 2017	849	1	<2	<2	<2	1.00	ns	17.5	84.08	7.6	33.50	8.1
C7	03 Jun 2017	849	12	<2	<2	<2	1.00	ns	11.2	86.96	3.6	33.52	7.7
C7	03 Jun 2017	849	18	<2	<2	<2	1.00	ns	11.2	86.87	3.8	33.55	7.7
C7	07 Jun 2017	833	1	4e	<2	<2	0.50	ns	18.0	82.95	9.1	33.51	8.2
C7	07 Jun 2017	833	12	<2	<2	<2	1.00	ns	15.8	78.70	5.8	33.50	8.1
C7	07 Jun 2017	833	18	<2	<2	<2	1.00	ns	13.2	86.41	4.1	33.51	7.9
C7	13 Jun 2017	904	1	<2	<2	<2	1.00	ns	18.7	86.13	8.0	33.53	8.2
C7	13 Jun 2017	904	12	<2	<2	<2	1.00	ns	13.1	71.18	5.0	33.47	7.9
C7	13 Jun 2017	904	18	6e	<2	<2	0.33	ns	11.4	87.13	4.1	33.50	7.8
C7	18 Jun 2017	833	1	<2	<2	<2	1.00	ns	20.4	83.66	8.8	33.57	8.3
C7	18 Jun 2017	833	12	2e	<2	<2	1.00	ns	12.1	84.52	4.2	33.46	7.9
C7	18 Jun 2017	833	18	2e	<2	<2	1.00	ns	10.9	88.49	3.8	33.53	7.8
C7	29 Jun 2017	925	1	<2	<2	<2	1.00	ns	16.4	74.70	8.7	33.52	8.2
C7	29 Jun 2017	925	12	6e	<2	<2	0.33	ns	13.2	70.14	6.3	33.48	8.0
C7	29 Jun 2017	925	18	2e	<2	<2	1.00	ns	12.0	84.63	4.8	33.52	7.8
C8	03 Jun 2017	901	1	<2	<2	<2	1.00	ns	17.7	83.42	8.4	33.50	8.2
C8	03 Jun 2017	901	12	<2	<2	<2	1.00	ns	12.9	79.73	5.3	33.41	8.0
C8	03 Jun 2017	901	18	2e	<2	<2	1.00	ns	11.1	84.76	3.7	33.52	7.8
C8	07 Jun 2017	844	1	<2	<2	<2	1.00	ns	18.0	77.91	9.2	33.51	8.2
C8	07 Jun 2017	844	12	<2	<2	<2	1.00	ns	14.2	83.12	4.0	33.48	8.0
C8	07 Jun 2017	844	18	<2	<2	<2	1.00	ns	12.2	85.21	4.3	33.50	7.8
C8	13 Jun 2017	917	1	<2	<2	<2	1.00	ns	18.5	79.73	7.8	33.55	8.2
C8	13 Jun 2017	917	12	<2	<2	<2	1.00	ns	16.1	81.56	7.0	33.49	8.1
C8	13 Jun 2017	917	18	2e	<2	<2	1.00	ns	12.0	82.71	4.5	33.46	7.8
C8	18 Jun 2017	843	1	2e	<2	<2	1.00	ns	20.1	76.29	8.0	33.57	8.2
C8	18 Jun 2017	843	12	46	<2	<2	0.04	ns	11.7	82.14	3.3	33.45	7.8
C8	18 Jun 2017	843	18	<2	<2	<2	1.00	ns	10.7	88.09	3.8	33.53	7.8

Station	Date	Time	Depth	Total	Fecal	Enter	F:T	N-NH3	Temp	XMS	DO	Sal	pH
C8	29 Jun 2017	942	1	<2	<2	<2	1.00	ns	16.6	75.07	9.6	33.51	8.2
C8	29 Jun 2017	942	12	<20	4e	<2	0.20	ns	13.3	71.07	5.0	33.50	8.0
C8	29 Jun 2017	942	18	14e	<2	<2	0.14	ns	11.6	83.63	4.4	33.51	7.8

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	03 Jun 2017	Depth (m)	18
A1	03 Jun 2017	Arrive Time	809
A1	03 Jun 2017	Depart Time	814
A1	03 Jun 2017	Air Temp (C)	16
A1	03 Jun 2017	Weather	Fog
A1	03 Jun 2017	Visibility (mi)	1
A1	03 Jun 2017	Wind Speed (kts)	3
A1	03 Jun 2017	Wind Dir	E
A1	03 Jun 2017	Water Color	Greenish-Brown
A1	03 Jun 2017	Wave Ht Low (ft)	3
A1	03 Jun 2017	Wave Period (sec)	9
A1	03 Jun 2017	Sea State	Calm
A1	03 Jun 2017	High Tide (ft)	3.7
A1	03 Jun 2017	High Tide Time	550
A1	03 Jun 2017	Low Tide (ft)	0.8
A1	03 Jun 2017	Low Tide Time	1200
A1	03 Jun 2017	Comments	
A1	07 Jun 2017	Depth (m)	17
A1	07 Jun 2017	Arrive Time	751
A1	07 Jun 2017	Depart Time	757
A1	07 Jun 2017	Air Temp (C)	16
A1	07 Jun 2017	Weather	Overcast
A1	07 Jun 2017	Visibility (mi)	7
A1	07 Jun 2017	Wind Speed (kts)	5
A1	07 Jun 2017	Wind Dir	E
A1	07 Jun 2017	Water Color	Green
A1	07 Jun 2017	Wave Ht Low (ft)	4
A1	07 Jun 2017	Wave Period (sec)	13
A1	07 Jun 2017	Sea State	Wind ripples
A1	07 Jun 2017	High Tide (ft)	3.7
A1	07 Jun 2017	High Tide Time	911
A1	07 Jun 2017	Low Tide (ft)	1.6
A1	07 Jun 2017	Low Tide Time	1424
A1	07 Jun 2017	Comments	
A1	13 Jun 2017	Depth (m)	18
A1	13 Jun 2017	Arrive Time	821
A1	13 Jun 2017	Depart Time	829
A1	13 Jun 2017	Air Temp (C)	16
A1	13 Jun 2017	Weather	Haze
A1	13 Jun 2017	Visibility (mi)	7
A1	13 Jun 2017	Wind Speed (kts)	4
A1	13 Jun 2017	Wind Dir	NW
A1	13 Jun 2017	Water Color	Greenish-Blue
A1	13 Jun 2017	Wave Ht Low (ft)	5
A1	13 Jun 2017	Wave Period (sec)	7
A1	13 Jun 2017	Sea State	Light chop
A1	13 Jun 2017	High Tide (ft)	3.5
A1	13 Jun 2017	High Tide Time	1311
A1	13 Jun 2017	Low Tide (ft)	-0.1

Station	Date	Parameter	Value
A1	13 Jun 2017	Low Tide Time	636
A1	13 Jun 2017	Comments	Kelp
A1	18 Jun 2017	Depth (m)	19
A1	18 Jun 2017	Arrive Time	754
A1	18 Jun 2017	Depart Time	802
A1	18 Jun 2017	Air Temp (C)	17
A1	18 Jun 2017	Weather	Fog
A1	18 Jun 2017	Visibility (mi)	7
A1	18 Jun 2017	Wind Speed (kts)	2
A1	18 Jun 2017	Wind Dir	N
A1	18 Jun 2017	Water Color	Bluish-Green
A1	18 Jun 2017	Wave Ht Low (ft)	4
A1	18 Jun 2017	Wave Period (sec)	13
A1	18 Jun 2017	Sea State	Wind ripples
A1	18 Jun 2017	High Tide (ft)	3.5
A1	18 Jun 2017	High Tide Time	427
A1	18 Jun 2017	Low Tide (ft)	0.9
A1	18 Jun 2017	Low Tide Time	1047
A1	18 Jun 2017	Comments	Kelp debris
A1	29 Jun 2017	Depth (m)	18
A1	29 Jun 2017	Arrive Time	842
A1	29 Jun 2017	Depart Time	846
A1	29 Jun 2017	Air Temp (C)	16
A1	29 Jun 2017	Weather	Overcast
A1	29 Jun 2017	Visibility (mi)	7
A1	29 Jun 2017	Wind Speed (kts)	7
A1	29 Jun 2017	Wind Dir	S
A1	29 Jun 2017	Water Color	Bluish-Green
A1	29 Jun 2017	Wave Ht Low (ft)	4
A1	29 Jun 2017	Wave Period (sec)	16
A1	29 Jun 2017	Sea State	Wind ripples
A1	29 Jun 2017	High Tide (ft)	4.4
A1	29 Jun 2017	High Tide Time	1511
A1	29 Jun 2017	Low Tide (ft)	0.1
A1	29 Jun 2017	Low Tide Time	823
A1	29 Jun 2017	Comments	Kelp
C4	03 Jun 2017	Depth (m)	9
C4	03 Jun 2017	Arrive Time	943
C4	03 Jun 2017	Depart Time	948
C4	03 Jun 2017	Air Temp (C)	16
C4	03 Jun 2017	Weather	Fog
C4	03 Jun 2017	Visibility (mi)	1
C4	03 Jun 2017	Wind Speed (kts)	0
C4	03 Jun 2017	Wind Dir	
C4	03 Jun 2017	Water Color	Brownish-Green
C4	03 Jun 2017	Wave Ht Low (ft)	3
C4	03 Jun 2017	Wave Period (sec)	9
C4	03 Jun 2017	Sea State	Calm
C4	03 Jun 2017	High Tide (ft)	3.7
C4	03 Jun 2017	High Tide Time	550
C4	03 Jun 2017	Low Tide (ft)	0.8
C4	03 Jun 2017	Low Tide Time	1200

Station	Date	Parameter	Value
C4	03 Jun 2017	Comments	Kelp; Boats
C4	07 Jun 2017	Depth (m)	10
C4	07 Jun 2017	Arrive Time	931
C4	07 Jun 2017	Depart Time	937
C4	07 Jun 2017	Air Temp (C)	16
C4	07 Jun 2017	Weather	Overcast
C4	07 Jun 2017	Visibility (mi)	8
C4	07 Jun 2017	Wind Speed (kts)	7
C4	07 Jun 2017	Wind Dir	N
C4	07 Jun 2017	Water Color	Green
C4	07 Jun 2017	Wave Ht Low (ft)	4
C4	07 Jun 2017	Wave Period (sec)	13
C4	07 Jun 2017	Sea State	Light chop
C4	07 Jun 2017	High Tide (ft)	3.7
C4	07 Jun 2017	High Tide Time	911
C4	07 Jun 2017	Low Tide (ft)	1.6
C4	07 Jun 2017	Low Tide Time	1424
C4	07 Jun 2017	Comments	Kelp debris
C4	13 Jun 2017	Depth (m)	9
C4	13 Jun 2017	Arrive Time	959
C4	13 Jun 2017	Depart Time	1001
C4	13 Jun 2017	Air Temp (C)	17
C4	13 Jun 2017	Weather	Partly Cloudy
C4	13 Jun 2017	Visibility (mi)	7
C4	13 Jun 2017	Wind Speed (kts)	3
C4	13 Jun 2017	Wind Dir	NE
C4	13 Jun 2017	Water Color	Green
C4	13 Jun 2017	Wave Ht Low (ft)	4
C4	13 Jun 2017	Wave Period (sec)	7
C4	13 Jun 2017	Sea State	Light chop
C4	13 Jun 2017	High Tide (ft)	3.5
C4	13 Jun 2017	High Tide Time	1311
C4	13 Jun 2017	Low Tide (ft)	-0.1
C4	13 Jun 2017	Low Tide Time	636
C4	13 Jun 2017	Comments	Kelp; Kelp debris
C4	18 Jun 2017	Depth (m)	10
C4	18 Jun 2017	Arrive Time	920
C4	18 Jun 2017	Depart Time	926
C4	18 Jun 2017	Air Temp (C)	18
C4	18 Jun 2017	Weather	Overcast
C4	18 Jun 2017	Visibility (mi)	10
C4	18 Jun 2017	Wind Speed (kts)	5
C4	18 Jun 2017	Wind Dir	W
C4	18 Jun 2017	Water Color	Bluish-Green
C4	18 Jun 2017	Wave Ht Low (ft)	4
C4	18 Jun 2017	Wave Period (sec)	13
C4	18 Jun 2017	Sea State	Wind ripples
C4	18 Jun 2017	High Tide (ft)	3.5
C4	18 Jun 2017	High Tide Time	427
C4	18 Jun 2017	Low Tide (ft)	0.9
C4	18 Jun 2017	Low Tide Time	1047
C4	18 Jun 2017	Comments	Kelp

Station	Date	Parameter	Value
C4	29 Jun 2017	Depth (m)	9
C4	29 Jun 2017	Arrive Time	1028
C4	29 Jun 2017	Depart Time	1034
C4	29 Jun 2017	Air Temp (C)	17
C4	29 Jun 2017	Weather	Overcast
C4	29 Jun 2017	Visibility (mi)	8
C4	29 Jun 2017	Wind Speed (kts)	5
C4	29 Jun 2017	Wind Dir	SW
C4	29 Jun 2017	Water Color	Green
C4	29 Jun 2017	Wave Ht Low (ft)	4
C4	29 Jun 2017	Wave Period (sec)	16
C4	29 Jun 2017	Sea State	Wind ripples
C4	29 Jun 2017	High Tide (ft)	4.4
C4	29 Jun 2017	High Tide Time	1511
C4	29 Jun 2017	Low Tide (ft)	0.1
C4	29 Jun 2017	Low Tide Time	823
C4	29 Jun 2017	Comments	Kelp
C5	03 Jun 2017	Depth (m)	9
C5	03 Jun 2017	Arrive Time	932
C5	03 Jun 2017	Depart Time	936
C5	03 Jun 2017	Air Temp (C)	16
C5	03 Jun 2017	Weather	Fog
C5	03 Jun 2017	Visibility (mi)	1
C5	03 Jun 2017	Wind Speed (kts)	2
C5	03 Jun 2017	Wind Dir	W
C5	03 Jun 2017	Water Color	Green
C5	03 Jun 2017	Wave Ht Low (ft)	3
C5	03 Jun 2017	Wave Period (sec)	9
C5	03 Jun 2017	Sea State	Calm
C5	03 Jun 2017	High Tide (ft)	3.7
C5	03 Jun 2017	High Tide Time	550
C5	03 Jun 2017	Low Tide (ft)	0.8
C5	03 Jun 2017	Low Tide Time	1200
C5	03 Jun 2017	Comments	Kelp
C5	07 Jun 2017	Depth (m)	9
C5	07 Jun 2017	Arrive Time	919
C5	07 Jun 2017	Depart Time	923
C5	07 Jun 2017	Air Temp (C)	16
C5	07 Jun 2017	Weather	Overcast
C5	07 Jun 2017	Visibility (mi)	8
C5	07 Jun 2017	Wind Speed (kts)	7
C5	07 Jun 2017	Wind Dir	SE
C5	07 Jun 2017	Water Color	Green
C5	07 Jun 2017	Wave Ht Low (ft)	4
C5	07 Jun 2017	Wave Period (sec)	13
C5	07 Jun 2017	Sea State	Light chop
C5	07 Jun 2017	High Tide (ft)	3.7
C5	07 Jun 2017	High Tide Time	911
C5	07 Jun 2017	Low Tide (ft)	1.6
C5	07 Jun 2017	Low Tide Time	1424
C5	07 Jun 2017	Comments	Kelp

Station	Date	Parameter	Value
C5	13 Jun 2017	Depth (m)	9
C5	13 Jun 2017	Arrive Time	947
C5	13 Jun 2017	Depart Time	951
C5	13 Jun 2017	Air Temp (C)	17
C5	13 Jun 2017	Weather	Partly Cloudy
C5	13 Jun 2017	Visibility (mi)	7
C5	13 Jun 2017	Wind Speed (kts)	3
C5	13 Jun 2017	Wind Dir	NW
C5	13 Jun 2017	Water Color	Green
C5	13 Jun 2017	Wave Ht Low (ft)	5
C5	13 Jun 2017	Wave Period (sec)	7
C5	13 Jun 2017	Sea State	Light chop
C5	13 Jun 2017	High Tide (ft)	3.5
C5	13 Jun 2017	High Tide Time	1311
C5	13 Jun 2017	Low Tide (ft)	-0.1
C5	13 Jun 2017	Low Tide Time	636
C5	13 Jun 2017	Comments	Kelp; Kelp debris
C5	18 Jun 2017	Depth (m)	10
C5	18 Jun 2017	Arrive Time	910
C5	18 Jun 2017	Depart Time	915
C5	18 Jun 2017	Air Temp (C)	18
C5	18 Jun 2017	Weather	Overcast
C5	18 Jun 2017	Visibility (mi)	8
C5	18 Jun 2017	Wind Speed (kts)	2
C5	18 Jun 2017	Wind Dir	E
C5	18 Jun 2017	Water Color	Bluish-Green
C5	18 Jun 2017	Wave Ht Low (ft)	4
C5	18 Jun 2017	Wave Period (sec)	13
C5	18 Jun 2017	Sea State	Wind ripples
C5	18 Jun 2017	High Tide (ft)	3.5
C5	18 Jun 2017	High Tide Time	427
C5	18 Jun 2017	Low Tide (ft)	0.9
C5	18 Jun 2017	Low Tide Time	1047
C5	18 Jun 2017	Comments	
C5	29 Jun 2017	Depth (m)	10
C5	29 Jun 2017	Arrive Time	1015
C5	29 Jun 2017	Depart Time	1021
C5	29 Jun 2017	Air Temp (C)	17
C5	29 Jun 2017	Weather	Overcast
C5	29 Jun 2017	Visibility (mi)	7
C5	29 Jun 2017	Wind Speed (kts)	5
C5	29 Jun 2017	Wind Dir	SW
C5	29 Jun 2017	Water Color	Green
C5	29 Jun 2017	Wave Ht Low (ft)	4
C5	29 Jun 2017	Wave Period (sec)	16
C5	29 Jun 2017	Sea State	Wind ripples
C5	29 Jun 2017	High Tide (ft)	4.4
C5	29 Jun 2017	High Tide Time	1511
C5	29 Jun 2017	Low Tide (ft)	0.1
C5	29 Jun 2017	Low Tide Time	823
C5	29 Jun 2017	Comments	Kelp
A6	03 Jun 2017	Depth (m)	18

Station	Date	Parameter	Value
A6	03 Jun 2017	Arrive Time	835
A6	03 Jun 2017	Depart Time	839
A6	03 Jun 2017	Air Temp (C)	16
A6	03 Jun 2017	Weather	Fog
A6	03 Jun 2017	Visibility (mi)	1
A6	03 Jun 2017	Wind Speed (kts)	0
A6	03 Jun 2017	Wind Dir	
A6	03 Jun 2017	Water Color	Greenish-Brown
A6	03 Jun 2017	Wave Ht Low (ft)	3
A6	03 Jun 2017	Wave Period (sec)	9
A6	03 Jun 2017	Sea State	Calm
A6	03 Jun 2017	High Tide (ft)	3.7
A6	03 Jun 2017	High Tide Time	550
A6	03 Jun 2017	Low Tide (ft)	0.8
A6	03 Jun 2017	Low Tide Time	1200
A6	03 Jun 2017	Comments	Kelp
A6	07 Jun 2017	Depth (m)	19
A6	07 Jun 2017	Arrive Time	818
A6	07 Jun 2017	Depart Time	823
A6	07 Jun 2017	Air Temp (C)	17
A6	07 Jun 2017	Weather	Overcast
A6	07 Jun 2017	Visibility (mi)	7
A6	07 Jun 2017	Wind Speed (kts)	4
A6	07 Jun 2017	Wind Dir	SE
A6	07 Jun 2017	Water Color	Green
A6	07 Jun 2017	Wave Ht Low (ft)	4
A6	07 Jun 2017	Wave Period (sec)	13
A6	07 Jun 2017	Sea State	Wind ripples
A6	07 Jun 2017	High Tide (ft)	3.7
A6	07 Jun 2017	High Tide Time	911
A6	07 Jun 2017	Low Tide (ft)	1.6
A6	07 Jun 2017	Low Tide Time	1424
A6	07 Jun 2017	Comments	
A6	13 Jun 2017	Depth (m)	18
A6	13 Jun 2017	Arrive Time	847
A6	13 Jun 2017	Depart Time	850
A6	13 Jun 2017	Air Temp (C)	17
A6	13 Jun 2017	Weather	Haze
A6	13 Jun 2017	Visibility (mi)	7
A6	13 Jun 2017	Wind Speed (kts)	2
A6	13 Jun 2017	Wind Dir	SW
A6	13 Jun 2017	Water Color	Greenish-Blue
A6	13 Jun 2017	Wave Ht Low (ft)	5
A6	13 Jun 2017	Wave Period (sec)	7
A6	13 Jun 2017	Sea State	Light chop
A6	13 Jun 2017	High Tide (ft)	3.5
A6	13 Jun 2017	High Tide Time	1311
A6	13 Jun 2017	Low Tide (ft)	-0.1
A6	13 Jun 2017	Low Tide Time	636
A6	13 Jun 2017	Comments	
A6	18 Jun 2017	Depth (m)	18
A6	18 Jun 2017	Arrive Time	819

Station	Date	Parameter	Value
A6	18 Jun 2017	Depart Time	823
A6	18 Jun 2017	Air Temp (C)	18
A6	18 Jun 2017	Weather	Fog
A6	18 Jun 2017	Visibility (mi)	7
A6	18 Jun 2017	Wind Speed (kts)	0
A6	18 Jun 2017	Wind Dir	
A6	18 Jun 2017	Water Color	Bluish-Green
A6	18 Jun 2017	Wave Ht Low (ft)	4
A6	18 Jun 2017	Wave Period (sec)	13
A6	18 Jun 2017	Sea State	Wind ripples
A6	18 Jun 2017	High Tide (ft)	3.5
A6	18 Jun 2017	High Tide Time	427
A6	18 Jun 2017	Low Tide (ft)	0.9
A6	18 Jun 2017	Low Tide Time	1047
A6	18 Jun 2017	Comments	Kelp debris
A6	29 Jun 2017	Depth (m)	19
A6	29 Jun 2017	Arrive Time	908
A6	29 Jun 2017	Depart Time	913
A6	29 Jun 2017	Air Temp (C)	17
A6	29 Jun 2017	Weather	Overcast
A6	29 Jun 2017	Visibility (mi)	7
A6	29 Jun 2017	Wind Speed (kts)	4
A6	29 Jun 2017	Wind Dir	E
A6	29 Jun 2017	Water Color	Green
A6	29 Jun 2017	Wave Ht Low (ft)	4
A6	29 Jun 2017	Wave Period (sec)	16
A6	29 Jun 2017	Sea State	Wind ripples
A6	29 Jun 2017	High Tide (ft)	4.4
A6	29 Jun 2017	High Tide Time	1511
A6	29 Jun 2017	Low Tide (ft)	0.1
A6	29 Jun 2017	Low Tide Time	823
A6	29 Jun 2017	Comments	Kelp
C6	03 Jun 2017	Depth (m)	9
C6	03 Jun 2017	Arrive Time	923
C6	03 Jun 2017	Depart Time	925
C6	03 Jun 2017	Air Temp (C)	16
C6	03 Jun 2017	Weather	Fog
C6	03 Jun 2017	Visibility (mi)	1
C6	03 Jun 2017	Wind Speed (kts)	4
C6	03 Jun 2017	Wind Dir	S
C6	03 Jun 2017	Water Color	Green
C6	03 Jun 2017	Wave Ht Low (ft)	3
C6	03 Jun 2017	Wave Period (sec)	9
C6	03 Jun 2017	Sea State	Calm
C6	03 Jun 2017	High Tide (ft)	3.7
C6	03 Jun 2017	High Tide Time	550
C6	03 Jun 2017	Low Tide (ft)	0.8
C6	03 Jun 2017	Low Tide Time	1200
C6	03 Jun 2017	Comments	Kelp
C6	07 Jun 2017	Depth (m)	9
C6	07 Jun 2017	Arrive Time	906
C6	07 Jun 2017	Depart Time	912

Station	Date	Parameter	Value
C6	07 Jun 2017	Air Temp (C)	16
C6	07 Jun 2017	Weather	Overcast
C6	07 Jun 2017	Visibility (mi)	8
C6	07 Jun 2017	Wind Speed (kts)	8
C6	07 Jun 2017	Wind Dir	SW
C6	07 Jun 2017	Water Color	Green
C6	07 Jun 2017	Wave Ht Low (ft)	4
C6	07 Jun 2017	Wave Period (sec)	13
C6	07 Jun 2017	Sea State	Light chop
C6	07 Jun 2017	High Tide (ft)	3.7
C6	07 Jun 2017	High Tide Time	911
C6	07 Jun 2017	Low Tide (ft)	1.6
C6	07 Jun 2017	Low Tide Time	1424
C6	07 Jun 2017	Comments	Kelp
C6	13 Jun 2017	Depth (m)	9
C6	13 Jun 2017	Arrive Time	936
C6	13 Jun 2017	Depart Time	939
C6	13 Jun 2017	Air Temp (C)	17
C6	13 Jun 2017	Weather	Partly Cloudy
C6	13 Jun 2017	Visibility (mi)	7
C6	13 Jun 2017	Wind Speed (kts)	2
C6	13 Jun 2017	Wind Dir	SE
C6	13 Jun 2017	Water Color	Green
C6	13 Jun 2017	Wave Ht Low (ft)	5
C6	13 Jun 2017	Wave Period (sec)	7
C6	13 Jun 2017	Sea State	Light chop
C6	13 Jun 2017	High Tide (ft)	3.5
C6	13 Jun 2017	High Tide Time	1311
C6	13 Jun 2017	Low Tide (ft)	-0.1
C6	13 Jun 2017	Low Tide Time	636
C6	13 Jun 2017	Comments	Kelp
C6	18 Jun 2017	Depth (m)	9
C6	18 Jun 2017	Arrive Time	900
C6	18 Jun 2017	Depart Time	904
C6	18 Jun 2017	Air Temp (C)	18
C6	18 Jun 2017	Weather	Overcast
C6	18 Jun 2017	Visibility (mi)	8
C6	18 Jun 2017	Wind Speed (kts)	3
C6	18 Jun 2017	Wind Dir	NE
C6	18 Jun 2017	Water Color	Bluish-Green
C6	18 Jun 2017	Wave Ht Low (ft)	4
C6	18 Jun 2017	Wave Period (sec)	13
C6	18 Jun 2017	Sea State	Wind ripples
C6	18 Jun 2017	High Tide (ft)	3.5
C6	18 Jun 2017	High Tide Time	427
C6	18 Jun 2017	Low Tide (ft)	0.9
C6	18 Jun 2017	Low Tide Time	1047
C6	18 Jun 2017	Comments	Kelp
C6	29 Jun 2017	Depth (m)	8
C6	29 Jun 2017	Arrive Time	1004
C6	29 Jun 2017	Depart Time	1010
C6	29 Jun 2017	Air Temp (C)	17

Station	Date	Parameter	Value
C6	29 Jun 2017	Weather	Overcast
C6	29 Jun 2017	Visibility (mi)	7
C6	29 Jun 2017	Wind Speed (kts)	3
C6	29 Jun 2017	Wind Dir	S
C6	29 Jun 2017	Water Color	Green
C6	29 Jun 2017	Wave Ht Low (ft)	4
C6	29 Jun 2017	Wave Period (sec)	16
C6	29 Jun 2017	Sea State	Wind ripples
C6	29 Jun 2017	High Tide (ft)	4.4
C6	29 Jun 2017	High Tide Time	1511
C6	29 Jun 2017	Low Tide (ft)	0.1
C6	29 Jun 2017	Low Tide Time	823
C6	29 Jun 2017	Comments	Kelp; Seagrass
A7	03 Jun 2017	Depth (m)	18
A7	03 Jun 2017	Arrive Time	822
A7	03 Jun 2017	Depart Time	825
A7	03 Jun 2017	Air Temp (C)	16
A7	03 Jun 2017	Weather	Fog
A7	03 Jun 2017	Visibility (mi)	1
A7	03 Jun 2017	Wind Speed (kts)	2
A7	03 Jun 2017	Wind Dir	N
A7	03 Jun 2017	Water Color	Greenish-Brown
A7	03 Jun 2017	Wave Ht Low (ft)	3
A7	03 Jun 2017	Wave Period (sec)	9
A7	03 Jun 2017	Sea State	Calm
A7	03 Jun 2017	High Tide (ft)	3.7
A7	03 Jun 2017	High Tide Time	550
A7	03 Jun 2017	Low Tide (ft)	0.8
A7	03 Jun 2017	Low Tide Time	1200
A7	03 Jun 2017	Comments	Boats; Kelp
A7	07 Jun 2017	Depth (m)	18
A7	07 Jun 2017	Arrive Time	804
A7	07 Jun 2017	Depart Time	809
A7	07 Jun 2017	Air Temp (C)	16
A7	07 Jun 2017	Weather	Overcast
A7	07 Jun 2017	Visibility (mi)	7
A7	07 Jun 2017	Wind Speed (kts)	5
A7	07 Jun 2017	Wind Dir	N
A7	07 Jun 2017	Water Color	Green
A7	07 Jun 2017	Wave Ht Low (ft)	4
A7	07 Jun 2017	Wave Period (sec)	13
A7	07 Jun 2017	Sea State	Wind ripples
A7	07 Jun 2017	High Tide (ft)	3.7
A7	07 Jun 2017	High Tide Time	911
A7	07 Jun 2017	Low Tide (ft)	1.6
A7	07 Jun 2017	Low Tide Time	1424
A7	07 Jun 2017	Comments	
A7	13 Jun 2017	Depth (m)	18
A7	13 Jun 2017	Arrive Time	836
A7	13 Jun 2017	Depart Time	839
A7	13 Jun 2017	Air Temp (C)	16
A7	13 Jun 2017	Weather	Haze

Station	Date	Parameter	Value
A7	13 Jun 2017	Visibility (mi)	7
A7	13 Jun 2017	Wind Speed (kts)	4
A7	13 Jun 2017	Wind Dir	W
A7	13 Jun 2017	Water Color	Greenish-Blue
A7	13 Jun 2017	Wave Ht Low (ft)	5
A7	13 Jun 2017	Wave Period (sec)	7
A7	13 Jun 2017	Sea State	Light chop
A7	13 Jun 2017	High Tide (ft)	3.5
A7	13 Jun 2017	High Tide Time	1311
A7	13 Jun 2017	Low Tide (ft)	-0.1
A7	13 Jun 2017	Low Tide Time	636
A7	13 Jun 2017	Comments	Kelp debris; Seagrass
A7	18 Jun 2017	Depth (m)	19
A7	18 Jun 2017	Arrive Time	807
A7	18 Jun 2017	Depart Time	812
A7	18 Jun 2017	Air Temp (C)	17
A7	18 Jun 2017	Weather	Fog
A7	18 Jun 2017	Visibility (mi)	7
A7	18 Jun 2017	Wind Speed (kts)	0
A7	18 Jun 2017	Wind Dir	
A7	18 Jun 2017	Water Color	Bluish-Green
A7	18 Jun 2017	Wave Ht Low (ft)	4
A7	18 Jun 2017	Wave Period (sec)	13
A7	18 Jun 2017	Sea State	Wind ripples
A7	18 Jun 2017	High Tide (ft)	3.5
A7	18 Jun 2017	High Tide Time	427
A7	18 Jun 2017	Low Tide (ft)	0.9
A7	18 Jun 2017	Low Tide Time	1047
A7	18 Jun 2017	Comments	Kelp debris
A7	29 Jun 2017	Depth (m)	18
A7	29 Jun 2017	Arrive Time	856
A7	29 Jun 2017	Depart Time	901
A7	29 Jun 2017	Air Temp (C)	16
A7	29 Jun 2017	Weather	Overcast
A7	29 Jun 2017	Visibility (mi)	7
A7	29 Jun 2017	Wind Speed (kts)	6
A7	29 Jun 2017	Wind Dir	SW
A7	29 Jun 2017	Water Color	Green
A7	29 Jun 2017	Wave Ht Low (ft)	4
A7	29 Jun 2017	Wave Period (sec)	16
A7	29 Jun 2017	Sea State	Wind ripples
A7	29 Jun 2017	High Tide (ft)	4.4
A7	29 Jun 2017	High Tide Time	1511
A7	29 Jun 2017	Low Tide (ft)	0.1
A7	29 Jun 2017	Low Tide Time	823
A7	29 Jun 2017	Comments	
C7	03 Jun 2017	Depth (m)	18
C7	03 Jun 2017	Arrive Time	849
C7	03 Jun 2017	Depart Time	854
C7	03 Jun 2017	Air Temp (C)	16
C7	03 Jun 2017	Weather	Fog
C7	03 Jun 2017	Visibility (mi)	1

Station	Date	Parameter	Value
C7	03 Jun 2017	Wind Speed (kts)	2
C7	03 Jun 2017	Wind Dir	SE
C7	03 Jun 2017	Water Color	Green
C7	03 Jun 2017	Wave Ht Low (ft)	3
C7	03 Jun 2017	Wave Period (sec)	9
C7	03 Jun 2017	Sea State	Calm
C7	03 Jun 2017	High Tide (ft)	3.7
C7	03 Jun 2017	High Tide Time	550
C7	03 Jun 2017	Low Tide (ft)	0.8
C7	03 Jun 2017	Low Tide Time	1200
C7	03 Jun 2017	Comments	Kelp
C7	07 Jun 2017	Depth (m)	18
C7	07 Jun 2017	Arrive Time	833
C7	07 Jun 2017	Depart Time	838
C7	07 Jun 2017	Air Temp (C)	16
C7	07 Jun 2017	Weather	Overcast
C7	07 Jun 2017	Visibility (mi)	8
C7	07 Jun 2017	Wind Speed (kts)	7
C7	07 Jun 2017	Wind Dir	E
C7	07 Jun 2017	Water Color	Green
C7	07 Jun 2017	Wave Ht Low (ft)	4
C7	07 Jun 2017	Wave Period (sec)	13
C7	07 Jun 2017	Sea State	Wind ripples
C7	07 Jun 2017	High Tide (ft)	3.7
C7	07 Jun 2017	High Tide Time	911
C7	07 Jun 2017	Low Tide (ft)	1.6
C7	07 Jun 2017	Low Tide Time	1424
C7	07 Jun 2017	Comments	
C7	13 Jun 2017	Depth (m)	17
C7	13 Jun 2017	Arrive Time	904
C7	13 Jun 2017	Depart Time	910
C7	13 Jun 2017	Air Temp (C)	17
C7	13 Jun 2017	Weather	Haze
C7	13 Jun 2017	Visibility (mi)	7
C7	13 Jun 2017	Wind Speed (kts)	2
C7	13 Jun 2017	Wind Dir	SE
C7	13 Jun 2017	Water Color	Greenish-Blue
C7	13 Jun 2017	Wave Ht Low (ft)	5
C7	13 Jun 2017	Wave Period (sec)	7
C7	13 Jun 2017	Sea State	Light chop
C7	13 Jun 2017	High Tide (ft)	3.5
C7	13 Jun 2017	High Tide Time	1311
C7	13 Jun 2017	Low Tide (ft)	-0.1
C7	13 Jun 2017	Low Tide Time	636
C7	13 Jun 2017	Comments	Kelp debris; Unable to obtain station depth of 18 m within 0.05 nm of station due to low tide
C7	18 Jun 2017	Depth (m)	18
C7	18 Jun 2017	Arrive Time	833
C7	18 Jun 2017	Depart Time	838
C7	18 Jun 2017	Air Temp (C)	18
C7	18 Jun 2017	Weather	Fog
C7	18 Jun 2017	Visibility (mi)	7

Station	Date	Parameter	Value
C7	18 Jun 2017	Wind Speed (kts)	0
C7	18 Jun 2017	Wind Dir	
C7	18 Jun 2017	Water Color	Bluish-Green
C7	18 Jun 2017	Wave Ht Low (ft)	4
C7	18 Jun 2017	Wave Period (sec)	13
C7	18 Jun 2017	Sea State	Wind ripples
C7	18 Jun 2017	High Tide (ft)	3.5
C7	18 Jun 2017	High Tide Time	427
C7	18 Jun 2017	Low Tide (ft)	0.9
C7	18 Jun 2017	Low Tide Time	1047
C7	18 Jun 2017	Comments	
C7	29 Jun 2017	Depth (m)	17
C7	29 Jun 2017	Arrive Time	925
C7	29 Jun 2017	Depart Time	935
C7	29 Jun 2017	Air Temp (C)	17
C7	29 Jun 2017	Weather	Overcast
C7	29 Jun 2017	Visibility (mi)	7
C7	29 Jun 2017	Wind Speed (kts)	1
C7	29 Jun 2017	Wind Dir	E
C7	29 Jun 2017	Water Color	Green
C7	29 Jun 2017	Wave Ht Low (ft)	4
C7	29 Jun 2017	Wave Period (sec)	16
C7	29 Jun 2017	Sea State	Wind ripples
C7	29 Jun 2017	High Tide (ft)	4.4
C7	29 Jun 2017	High Tide Time	1511
C7	29 Jun 2017	Low Tide (ft)	0.1
C7	29 Jun 2017	Low Tide Time	823
C7	29 Jun 2017	Comments	Kelp
C8	03 Jun 2017	Depth (m)	18
C8	03 Jun 2017	Arrive Time	901
C8	03 Jun 2017	Depart Time	905
C8	03 Jun 2017	Air Temp (C)	16
C8	03 Jun 2017	Weather	Fog
C8	03 Jun 2017	Visibility (mi)	1
C8	03 Jun 2017	Wind Speed (kts)	5
C8	03 Jun 2017	Wind Dir	NW
C8	03 Jun 2017	Water Color	Green
C8	03 Jun 2017	Wave Ht Low (ft)	3
C8	03 Jun 2017	Wave Period (sec)	9
C8	03 Jun 2017	Sea State	Calm
C8	03 Jun 2017	High Tide (ft)	3.7
C8	03 Jun 2017	High Tide Time	550
C8	03 Jun 2017	Low Tide (ft)	0.8
C8	03 Jun 2017	Low Tide Time	1200
C8	03 Jun 2017	Comments	
C8	07 Jun 2017	Depth (m)	19
C8	07 Jun 2017	Arrive Time	844
C8	07 Jun 2017	Depart Time	849
C8	07 Jun 2017	Air Temp (C)	16
C8	07 Jun 2017	Weather	Overcast
C8	07 Jun 2017	Visibility (mi)	8
C8	07 Jun 2017	Wind Speed (kts)	6

Station	Date	Parameter	Value
C8	07 Jun 2017	Wind Dir	SW
C8	07 Jun 2017	Water Color	Green
C8	07 Jun 2017	Wave Ht Low (ft)	4
C8	07 Jun 2017	Wave Period (sec)	13
C8	07 Jun 2017	Sea State	Wind ripples
C8	07 Jun 2017	High Tide (ft)	3.7
C8	07 Jun 2017	High Tide Time	911
C8	07 Jun 2017	Low Tide (ft)	1.6
C8	07 Jun 2017	Low Tide Time	1424
C8	07 Jun 2017	Comments	
C8	13 Jun 2017	Depth (m)	18
C8	13 Jun 2017	Arrive Time	917
C8	13 Jun 2017	Depart Time	919
C8	13 Jun 2017	Air Temp (C)	17
C8	13 Jun 2017	Weather	Haze
C8	13 Jun 2017	Visibility (mi)	7
C8	13 Jun 2017	Wind Speed (kts)	3
C8	13 Jun 2017	Wind Dir	W
C8	13 Jun 2017	Water Color	Greenish-Blue
C8	13 Jun 2017	Wave Ht Low (ft)	5
C8	13 Jun 2017	Wave Period (sec)	7
C8	13 Jun 2017	Sea State	Light chop
C8	13 Jun 2017	High Tide (ft)	3.5
C8	13 Jun 2017	High Tide Time	1311
C8	13 Jun 2017	Low Tide (ft)	-0.1
C8	13 Jun 2017	Low Tide Time	636
C8	13 Jun 2017	Comments	Seagrass
C8	18 Jun 2017	Depth (m)	18
C8	18 Jun 2017	Arrive Time	843
C8	18 Jun 2017	Depart Time	848
C8	18 Jun 2017	Air Temp (C)	18
C8	18 Jun 2017	Weather	Fog
C8	18 Jun 2017	Visibility (mi)	7
C8	18 Jun 2017	Wind Speed (kts)	3
C8	18 Jun 2017	Wind Dir	W
C8	18 Jun 2017	Water Color	Bluish-Green
C8	18 Jun 2017	Wave Ht Low (ft)	4
C8	18 Jun 2017	Wave Period (sec)	13
C8	18 Jun 2017	Sea State	Wind ripples
C8	18 Jun 2017	High Tide (ft)	3.5
C8	18 Jun 2017	High Tide Time	427
C8	18 Jun 2017	Low Tide (ft)	0.9
C8	18 Jun 2017	Low Tide Time	1047
C8	18 Jun 2017	Comments	
C8	29 Jun 2017	Depth (m)	18
C8	29 Jun 2017	Arrive Time	942
C8	29 Jun 2017	Depart Time	949
C8	29 Jun 2017	Air Temp (C)	17
C8	29 Jun 2017	Weather	Overcast
C8	29 Jun 2017	Visibility (mi)	7
C8	29 Jun 2017	Wind Speed (kts)	2
C8	29 Jun 2017	Wind Dir	S

Station	Date	Parameter	Value
C8	29 Jun 2017	Water Color	Green
C8	29 Jun 2017	Wave Ht Low (ft)	4
C8	29 Jun 2017	Wave Period (sec)	16
C8	29 Jun 2017	Sea State	Wind ripples
C8	29 Jun 2017	High Tide (ft)	4.4
C8	29 Jun 2017	High Tide Time	1511
C8	29 Jun 2017	Low Tide (ft)	0.1
C8	29 Jun 2017	Low Tide Time	823
C8	29 Jun 2017	Comments	Kelp debris

**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	03 Jun 2017	1	16.20	73.77	8.0	33.51	8.1	24.6	6.51
A1	03 Jun 2017	2	15.79	73.63	7.7	33.52	8.1	24.7	6.45
A1	03 Jun 2017	3	15.35	72.42	7.5	33.52	8.1	24.8	6.36
A1	03 Jun 2017	4	15.09	72.92	7.3	33.52	8.1	24.8	6.30
A1	03 Jun 2017	5	14.95	73.45	7.3	33.52	8.0	24.8	6.22
A1	03 Jun 2017	6	14.85	73.70	7.3	33.52	8.0	24.9	6.10
A1	03 Jun 2017	7	14.86	73.82	7.1	33.52	8.0	24.9	5.13
A1	03 Jun 2017	8	14.82	73.85	6.2	33.52	8.0	24.9	4.02
A1	03 Jun 2017	9	14.56	73.75	5.2	33.51	8.0	24.9	3.08
A1	03 Jun 2017	10	14.12	74.66	4.3	33.52	7.9	25.0	2.81
A1	03 Jun 2017	11	13.43	77.20	3.9	33.49	7.9	25.1	2.67
A1	03 Jun 2017	12	12.44	80.24	3.8	33.54	7.8	25.4	2.10
A1	03 Jun 2017	13	12.51	83.17	3.5	33.50	7.8	25.3	2.00
A1	03 Jun 2017	14	11.65	84.54	3.4	33.53	7.7	25.5	1.75
A1	03 Jun 2017	15	11.52	85.27	3.6	33.52	7.7	25.5	1.63
A1	03 Jun 2017	16	11.45	85.47	3.7	33.52	7.7	25.5	1.59
A1	03 Jun 2017	17	11.40	85.35	3.7	33.52	7.7	25.6	1.68
A1	03 Jun 2017	18	11.39	85.91	3.8	33.52	7.7	25.6	1.99
A1	07 Jun 2017	1	17.43	78.08	9.9	33.52	8.3	24.3	8.23
A1	07 Jun 2017	2	17.43	78.10	9.7	33.52	8.3	24.3	9.59
A1	07 Jun 2017	3	17.41	78.77	8.9	33.52	8.3	24.3	8.07
A1	07 Jun 2017	4	17.30	79.09	8.2	33.51	8.3	24.3	7.25
A1	07 Jun 2017	5	16.83	76.54	8.0	33.52	8.2	24.4	6.53
A1	07 Jun 2017	6	16.67	74.24	8.1	33.52	8.2	24.5	5.96
A1	07 Jun 2017	7	16.60	74.97	8.0	33.51	8.2	24.5	4.66
A1	07 Jun 2017	8	16.53	75.48	7.7	33.51	8.2	24.5	3.45
A1	07 Jun 2017	9	16.47	75.84	7.0	33.51	8.2	24.5	2.69
A1	07 Jun 2017	10	16.18	76.69	6.0	33.51	8.1	24.6	2.06
A1	07 Jun 2017	11	15.91	78.70	5.2	33.51	8.1	24.6	1.66
A1	07 Jun 2017	12	15.17	79.98	4.8	33.51	8.1	24.8	1.20
A1	07 Jun 2017	13	14.35	81.22	4.6	33.52	8.0	25.0	0.98
A1	07 Jun 2017	14	14.18	81.91	4.3	33.50	7.9	25.0	0.91
A1	07 Jun 2017	15	13.63	83.10	4.1	33.52	7.9	25.1	0.89
A1	07 Jun 2017	16	13.41	84.84	3.9	33.50	7.8	25.2	0.84
A1	07 Jun 2017	17	12.87	85.22	3.8	33.51	7.8	25.3	0.80
A1	07 Jun 2017	18	12.56	84.66	3.8	33.53	7.8	25.3	0.76
A1	07 Jun 2017	19	12.49	84.49	4.0	33.53	7.8	25.4	0.76
A1	13 Jun 2017	1	17.50	78.76	9.2	33.54	8.3	24.3	1.38
A1	13 Jun 2017	2	17.50	79.67	9.2	33.54	8.3	24.3	1.56
A1	13 Jun 2017	3	17.50	80.51	9.1	33.54	8.3	24.3	1.96
A1	13 Jun 2017	4	17.46	80.77	8.8	33.53	8.3	24.3	2.26
A1	13 Jun 2017	5	17.27	80.74	8.4	33.53	8.3	24.3	2.75
A1	13 Jun 2017	6	17.12	80.64	7.3	33.53	8.2	24.4	3.28
A1	13 Jun 2017	7	16.56	80.65	6.4	33.50	8.2	24.5	4.38
A1	13 Jun 2017	8	15.62	81.49	6.0	33.52	8.1	24.7	3.86
A1	13 Jun 2017	9	15.16	83.33	5.6	33.49	8.1	24.8	2.71
A1	13 Jun 2017	10	14.56	82.76	5.3	33.49	8.0	24.9	2.30
A1	13 Jun 2017	11	13.78	83.81	5.2	33.48	8.0	25.1	2.11

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )
A1	13 Jun 2017	12	13.52	86.60	5.0	33.48	7.9	25.1	2.07
A1	13 Jun 2017	13	12.92	87.34	4.9	33.48	7.9	25.2	2.09
A1	13 Jun 2017	14	12.68	86.99	5.0	33.48	7.9	25.3	1.94
A1	13 Jun 2017	15	12.68	87.43	4.7	33.48	7.9	25.3	1.65
A1	13 Jun 2017	16	12.34	87.63	4.6	33.49	7.9	25.4	1.51
A1	13 Jun 2017	17	12.21	87.54	4.5	33.50	7.8	25.4	1.42
A1	13 Jun 2017	18	12.12	87.35	4.4	33.51	7.8	25.4	1.05
A1	13 Jun 2017	19	12.05	87.18	4.1	33.50	7.8	25.4	0.92
A1	13 Jun 2017	20	11.70	86.81	4.0	33.53	7.8	25.5	0.72
A1	18 Jun 2017	1	20.53	80.56	8.3	33.55	8.2	23.5	1.74
A1	18 Jun 2017	2	20.16	74.05	8.3	33.56	8.2	23.6	3.81
A1	18 Jun 2017	3	19.41	79.05	8.0	33.55	8.2	23.8	7.62
A1	18 Jun 2017	4	17.72	79.31	7.7	33.50	8.2	24.2	9.56
A1	18 Jun 2017	5	16.00	72.95	7.3	33.49	8.2	24.6	9.09
A1	18 Jun 2017	6	14.38	70.77	6.4	33.45	8.1	24.9	9.47
A1	18 Jun 2017	7	13.29	69.32	5.1	33.46	8.1	25.1	8.20
A1	18 Jun 2017	8	12.46	70.65	4.3	33.41	8.0	25.3	4.56
A1	18 Jun 2017	9	11.98	72.98	4.2	33.42	7.9	25.4	3.26
A1	18 Jun 2017	10	11.77	74.02	3.9	33.42	7.9	25.4	2.57
A1	18 Jun 2017	11	11.58	78.25	3.6	33.43	7.9	25.4	1.80
A1	18 Jun 2017	12	11.40	82.90	3.5	33.46	7.8	25.5	1.47
A1	18 Jun 2017	13	11.29	85.26	3.7	33.46	7.8	25.5	1.35
A1	18 Jun 2017	14	11.15	86.52	3.8	33.48	7.8	25.6	1.23
A1	18 Jun 2017	15	11.11	87.64	3.8	33.48	7.8	25.6	0.96
A1	18 Jun 2017	16	11.12	87.94	3.8	33.49	7.8	25.6	0.69
A1	18 Jun 2017	17	11.07	87.97	3.5	33.49	7.8	25.6	0.54
A1	18 Jun 2017	18	10.74	88.36	3.5	33.53	7.8	25.7	0.54
A1	18 Jun 2017	19	10.62	88.44	3.6	33.55	7.8	25.7	0.57
A1	29 Jun 2017	1	15.41	66.47	10.4	33.52	8.2	24.7	8.50
A1	29 Jun 2017	2	15.37	66.46	10.3	33.53	8.2	24.8	9.58
A1	29 Jun 2017	3	15.34	66.47	10.1	33.52	8.2	24.8	10.46
A1	29 Jun 2017	4	15.23	66.11	9.9	33.53	8.2	24.8	11.11
A1	29 Jun 2017	5	15.05	65.52	9.7	33.53	8.2	24.8	11.24
A1	29 Jun 2017	6	14.95	66.01	9.6	33.53	8.2	24.8	11.38
A1	29 Jun 2017	7	14.81	66.27	9.1	33.53	8.2	24.9	11.58
A1	29 Jun 2017	8	14.69	66.39	8.2	33.53	8.2	24.9	12.26
A1	29 Jun 2017	9	13.95	66.22	7.4	33.57	8.1	25.1	12.83
A1	29 Jun 2017	10	13.35	65.16	7.2	33.55	8.1	25.2	12.74
A1	29 Jun 2017	11	13.20	65.08	7.0	33.52	8.0	25.2	12.75
A1	29 Jun 2017	12	13.09	65.15	6.8	33.52	8.0	25.2	12.25
A1	29 Jun 2017	13	12.98	65.81	6.3	33.51	8.0	25.2	11.71
A1	29 Jun 2017	14	12.81	66.52	5.5	33.52	8.0	25.3	10.93
A1	29 Jun 2017	15	12.48	67.73	5.0	33.53	7.9	25.4	9.48
A1	29 Jun 2017	16	12.22	69.81	4.9	33.53	7.9	25.4	8.15
A1	29 Jun 2017	17	12.16	71.25	5.1	33.52	7.8	25.4	8.12
A1	29 Jun 2017	18	12.13	73.30	5.3	33.52	7.8	25.4	8.02
A1	29 Jun 2017	19	12.13	74.43	5.3	33.52	7.8	25.4	8.04
C4	03 Jun 2017	1	16.79	65.52	8.1	33.53	8.1	24.4	5.63
C4	03 Jun 2017	2	16.42	67.01	8.2	33.52	8.1	24.5	7.24
C4	03 Jun 2017	3	15.93	67.79	8.2	33.53	8.1	24.6	7.12
C4	03 Jun 2017	4	15.77	67.82	7.7	33.52	8.1	24.7	5.66
C4	03 Jun 2017	5	15.30	67.84	7.0	33.51	8.1	24.8	3.41

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )
C4	03 Jun 2017	6	15.00	70.68	5.5	33.52	8.1	24.8	1.60
C4	03 Jun 2017	7	14.71	72.02	3.8	33.50	8.1	24.9	0.88
C4	03 Jun 2017	8	13.96	76.02	3.0	33.52	8.0	25.1	0.64
C4	03 Jun 2017	9	13.40	78.81	2.9	33.53	7.9	25.2	0.55
C4	03 Jun 2017	10	13.07	79.59	3.3	33.53	7.8	25.2	0.57
C4	03 Jun 2017	11	13.04	75.55	3.7	33.53	7.8	25.2	0.72
C4	07 Jun 2017	1	17.23	73.68	9.0	33.52	8.3	24.3	6.96
C4	07 Jun 2017	2	17.20	73.67	8.9	33.52	8.3	24.3	7.34
C4	07 Jun 2017	3	17.18	72.78	9.1	33.52	8.2	24.3	7.19
C4	07 Jun 2017	4	17.18	72.12	9.1	33.52	8.2	24.3	6.66
C4	07 Jun 2017	5	17.18	72.14	8.9	33.52	8.2	24.3	5.38
C4	07 Jun 2017	6	17.17	72.16	8.5	33.52	8.2	24.3	3.61
C4	07 Jun 2017	7	17.15	72.36	7.8	33.52	8.2	24.3	2.32
C4	07 Jun 2017	8	17.10	73.68	7.3	33.52	8.2	24.4	2.77
C4	07 Jun 2017	9	16.89	76.36	7.8	33.52	8.2	24.4	4.18
C4	07 Jun 2017	10	16.68	76.92	8.6	33.53	8.1	24.5	4.07
C4	13 Jun 2017	1	18.06	75.77	8.6	33.55	8.2	24.1	3.49
C4	13 Jun 2017	2	17.87	75.83	8.6	33.54	8.2	24.2	4.01
C4	13 Jun 2017	3	17.79	75.25	8.5	33.54	8.2	24.2	4.49
C4	13 Jun 2017	4	17.79	74.79	8.3	33.54	8.2	24.2	4.59
C4	13 Jun 2017	5	17.73	74.10	8.0	33.54	8.2	24.2	3.97
C4	13 Jun 2017	6	17.62	71.17	7.7	33.55	8.2	24.3	3.31
C4	13 Jun 2017	7	17.49	61.48	7.4	33.55	8.1	24.3	2.26
C4	13 Jun 2017	8	17.43	53.15	7.1	33.54	8.1	24.3	1.67
C4	13 Jun 2017	9	17.32	49.58	6.8	33.54	8.1	24.3	1.67
C4	13 Jun 2017	10	16.64	51.41	7.3	33.57	8.1	24.5	1.82
C4	18 Jun 2017	1	19.76	82.39	8.6	33.56	8.3	23.7	1.89
C4	18 Jun 2017	2	19.47	82.58	8.1	33.55	8.3	23.8	2.08
C4	18 Jun 2017	3	19.01	82.16	8.1	33.55	8.3	23.9	2.57
C4	18 Jun 2017	4	18.76	80.32	8.0	33.54	8.3	24.0	2.90
C4	18 Jun 2017	5	18.12	79.87	7.3	33.51	8.3	24.1	2.04
C4	18 Jun 2017	6	16.96	80.22	6.0	33.51	8.2	24.4	1.29
C4	18 Jun 2017	7	15.87	79.86	4.6	33.50	8.2	24.6	0.84
C4	18 Jun 2017	8	14.66	80.65	3.7	33.48	8.2	24.9	0.70
C4	18 Jun 2017	9	13.40	81.78	3.6	33.47	8.1	25.1	0.71
C4	18 Jun 2017	10	12.90	80.15	4.6	33.48	7.9	25.2	0.90
C4	29 Jun 2017	1	16.97	73.35	8.8	33.53	8.2	24.4	1.85
C4	29 Jun 2017	2	16.87	73.48	7.9	33.52	8.2	24.4	1.63
C4	29 Jun 2017	3	16.12	74.43	6.8	33.53	8.1	24.6	1.22
C4	29 Jun 2017	4	15.39	75.86	5.6	33.52	8.1	24.7	0.94
C4	29 Jun 2017	5	14.45	78.85	4.7	33.52	8.0	24.9	0.75
C4	29 Jun 2017	6	13.81	82.28	4.3	33.50	8.0	25.1	0.74
C4	29 Jun 2017	7	13.09	84.72	4.2	33.51	7.9	25.2	0.68
C4	29 Jun 2017	8	13.03	86.16	4.2	33.50	7.8	25.2	0.63
C4	29 Jun 2017	9	12.72	85.61	4.4	33.50	7.8	25.3	0.59
C4	29 Jun 2017	10	12.77	84.57	4.7	33.49	7.8	25.3	0.54
C5	03 Jun 2017	1	17.29	80.88	8.1	33.51	8.2	24.3	1.59
C5	03 Jun 2017	2	17.27	80.62	7.6	33.51	8.2	24.3	2.00
C5	03 Jun 2017	3	17.09	80.59	6.8	33.50	8.2	24.3	2.34
C5	03 Jun 2017	4	16.42	80.24	5.9	33.51	8.1	24.5	2.41

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )
C5	03 Jun 2017	5	15.39	80.20	5.3	33.48	8.1	24.7	2.40
C5	03 Jun 2017	6	14.36	82.20	5.1	33.53	8.0	25.0	1.84
C5	03 Jun 2017	7	14.00	82.92	4.8	33.51	8.0	25.0	1.25
C5	03 Jun 2017	8	13.57	84.17	4.4	33.51	7.9	25.1	0.93
C5	03 Jun 2017	9	13.23	85.18	4.3	33.51	7.9	25.2	0.85
C5	03 Jun 2017	10	12.80	85.18	4.5	33.53	7.9	25.3	0.81
C5	03 Jun 2017	11	12.78	83.47	4.8	33.53	7.9	25.3	1.04
C5	07 Jun 2017	1	17.49	74.68	7.7	33.54	8.1	24.3	2.81
C5	07 Jun 2017	2	17.49	74.52	7.6	33.54	8.1	24.3	2.02
C5	07 Jun 2017	3	17.48	74.50	7.4	33.54	8.1	24.3	1.35
C5	07 Jun 2017	4	17.46	74.79	7.0	33.54	8.1	24.3	0.99
C5	07 Jun 2017	5	17.40	75.45	6.6	33.53	8.1	24.3	0.82
C5	07 Jun 2017	6	17.30	77.70	5.7	33.53	8.1	24.3	0.73
C5	07 Jun 2017	7	16.95	79.76	4.8	33.52	8.1	24.4	0.68
C5	07 Jun 2017	8	16.37	80.70	4.3	33.52	8.0	24.5	0.67
C5	07 Jun 2017	9	15.65	80.78	4.4	33.52	8.0	24.7	0.71
C5	07 Jun 2017	10	15.22	79.30	5.6	33.53	7.9	24.8	0.81
C5	13 Jun 2017	1	18.06	78.41	8.5	33.54	8.2	24.1	2.00
C5	13 Jun 2017	2	18.06	78.82	8.5	33.54	8.2	24.1	3.06
C5	13 Jun 2017	3	17.97	79.97	8.4	33.54	8.2	24.2	3.78
C5	13 Jun 2017	4	17.89	78.36	8.2	33.54	8.2	24.2	3.52
C5	13 Jun 2017	5	17.79	77.51	7.7	33.54	8.2	24.2	1.99
C5	13 Jun 2017	6	17.71	77.72	6.6	33.53	8.2	24.2	1.01
C5	13 Jun 2017	7	17.13	77.97	5.3	33.52	8.2	24.3	0.71
C5	13 Jun 2017	8	16.25	80.00	4.3	33.51	8.1	24.5	0.61
C5	13 Jun 2017	9	14.62	79.11	3.7	33.49	8.0	24.9	0.68
C5	13 Jun 2017	10	12.70	70.21	4.0	33.49	7.9	25.3	0.67
C5	18 Jun 2017	1	20.25	84.63	8.8	33.57	8.3	23.6	1.86
C5	18 Jun 2017	2	20.10	84.57	9.0	33.55	8.3	23.6	2.63
C5	18 Jun 2017	3	19.45	84.15	8.3	33.55	8.3	23.8	1.70
C5	18 Jun 2017	4	18.63	83.41	6.7	33.52	8.3	24.0	0.89
C5	18 Jun 2017	5	17.38	80.76	5.4	33.49	8.2	24.3	0.70
C5	18 Jun 2017	6	15.43	79.48	4.7	33.49	8.1	24.7	0.71
C5	18 Jun 2017	7	13.92	81.82	4.5	33.47	8.0	25.0	0.72
C5	18 Jun 2017	8	13.15	85.20	4.6	33.46	8.0	25.2	0.69
C5	18 Jun 2017	9	12.57	86.92	4.9	33.45	7.9	25.3	0.70
C5	18 Jun 2017	10	12.34	87.34	5.2	33.45	7.9	25.3	0.70
C5	29 Jun 2017	1	16.64	77.07	8.9	33.53	8.2	24.5	4.43
C5	29 Jun 2017	2	16.11	77.29	8.5	33.52	8.2	24.6	10.00
C5	29 Jun 2017	3	15.23	77.27	8.1	33.53	8.1	24.8	11.65
C5	29 Jun 2017	4	14.83	71.57	7.4	33.52	8.1	24.9	9.01
C5	29 Jun 2017	5	14.29	65.29	6.7	33.52	8.1	25.0	5.07
C5	29 Jun 2017	6	14.01	65.47	5.8	33.51	8.1	25.0	5.52
C5	29 Jun 2017	7	13.34	73.85	5.1	33.52	8.0	25.2	3.43
C5	29 Jun 2017	8	12.93	80.73	4.8	33.52	7.9	25.3	2.46
C5	29 Jun 2017	9	12.78	82.58	4.6	33.51	7.9	25.3	1.83
C5	29 Jun 2017	10	12.51	84.12	4.7	33.51	7.8	25.3	1.81
C5	29 Jun 2017	11	12.48	84.23	4.9	33.51	7.8	25.3	1.74
A6	03 Jun 2017	1	16.93	82.64	7.7	33.50	8.1	24.4	7.07
A6	03 Jun 2017	2	16.65	82.62	7.0	33.49	8.1	24.4	8.57

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )
A6	03 Jun 2017	3	15.21	81.27	6.1	33.50	8.1	24.8	6.50
A6	03 Jun 2017	4	14.31	75.48	5.5	33.50	8.0	25.0	5.27
A6	03 Jun 2017	5	13.80	71.98	5.3	33.51	8.0	25.1	4.52
A6	03 Jun 2017	6	13.56	72.81	5.4	33.50	7.9	25.1	4.36
A6	03 Jun 2017	7	13.43	75.87	5.4	33.50	7.9	25.1	3.74
A6	03 Jun 2017	8	13.39	78.94	5.3	33.50	7.9	25.2	3.45
A6	03 Jun 2017	9	13.27	80.10	5.2	33.50	7.9	25.2	3.03
A6	03 Jun 2017	10	13.09	81.16	5.1	33.51	7.9	25.2	2.83
A6	03 Jun 2017	11	13.00	82.60	5.0	33.51	7.9	25.2	2.59
A6	03 Jun 2017	12	12.82	83.42	4.9	33.52	7.9	25.3	2.47
A6	03 Jun 2017	13	12.73	84.15	4.8	33.52	7.9	25.3	2.08
A6	03 Jun 2017	14	12.70	84.81	4.5	33.52	7.9	25.3	1.59
A6	03 Jun 2017	15	12.61	84.74	3.9	33.52	7.8	25.3	1.15
A6	03 Jun 2017	16	12.19	84.79	3.4	33.53	7.8	25.4	1.09
A6	03 Jun 2017	17	11.55	85.39	3.4	33.55	7.8	25.5	1.27
A6	03 Jun 2017	18	11.27	86.63	3.9	33.56	7.7	25.6	1.32
A6	07 Jun 2017	1	17.53	69.57	9.4	33.52	8.3	24.3	6.66
A6	07 Jun 2017	2	17.45	69.54	8.2	33.52	8.3	24.3	4.46
A6	07 Jun 2017	3	17.25	70.20	6.3	33.52	8.3	24.3	3.16
A6	07 Jun 2017	4	16.52	73.91	5.0	33.50	8.2	24.5	2.96
A6	07 Jun 2017	5	15.43	78.18	4.9	33.52	8.1	24.7	2.94
A6	07 Jun 2017	6	14.73	82.44	5.0	33.51	8.0	24.9	3.05
A6	07 Jun 2017	7	14.29	83.99	5.0	33.50	8.0	25.0	3.00
A6	07 Jun 2017	8	13.81	83.47	5.1	33.49	7.9	25.1	3.16
A6	07 Jun 2017	9	13.57	83.09	5.2	33.49	7.9	25.1	2.65
A6	07 Jun 2017	10	13.51	82.87	5.1	33.49	7.9	25.1	2.63
A6	07 Jun 2017	11	13.45	83.03	5.0	33.49	7.9	25.1	2.65
A6	07 Jun 2017	12	13.35	83.46	5.1	33.49	7.9	25.2	2.29
A6	07 Jun 2017	13	13.13	83.89	5.0	33.49	7.9	25.2	1.93
A6	07 Jun 2017	14	13.10	83.29	4.7	33.49	7.9	25.2	1.75
A6	07 Jun 2017	15	13.10	82.92	4.7	33.50	7.8	25.2	1.69
A6	07 Jun 2017	16	13.09	83.32	4.7	33.51	7.8	25.2	1.51
A6	07 Jun 2017	17	13.06	84.06	4.6	33.51	7.8	25.2	1.34
A6	07 Jun 2017	18	13.01	85.00	4.4	33.52	7.8	25.2	1.34
A6	07 Jun 2017	19	12.89	85.43	4.5	33.52	7.8	25.3	1.31
A6	13 Jun 2017	1	18.55	81.94	8.0	33.54	8.2	24.0	0.97
A6	13 Jun 2017	2	18.51	82.11	7.9	33.54	8.2	24.0	1.18
A6	13 Jun 2017	3	18.35	81.17	7.7	33.54	8.2	24.1	1.85
A6	13 Jun 2017	4	18.16	82.10	7.4	33.52	8.2	24.1	2.40
A6	13 Jun 2017	5	17.51	81.91	7.1	33.53	8.2	24.3	3.31
A6	13 Jun 2017	6	16.88	81.78	6.5	33.50	8.1	24.4	4.73
A6	13 Jun 2017	7	15.59	81.99	6.2	33.49	8.1	24.7	5.13
A6	13 Jun 2017	8	14.64	81.39	6.1	33.49	8.0	24.9	4.59
A6	13 Jun 2017	9	14.46	80.28	5.9	33.48	8.0	24.9	4.67
A6	13 Jun 2017	10	14.32	80.48	6.0	33.47	8.0	24.9	4.77
A6	13 Jun 2017	11	14.32	82.74	5.8	33.47	8.0	24.9	3.28
A6	13 Jun 2017	12	14.08	83.36	5.3	33.45	8.0	25.0	2.18
A6	13 Jun 2017	13	13.54	84.63	5.4	33.48	8.0	25.1	1.93
A6	13 Jun 2017	14	13.42	85.91	5.4	33.48	7.9	25.1	1.43
A6	13 Jun 2017	15	13.40	86.42	4.9	33.48	7.9	25.1	1.07
A6	13 Jun 2017	16	13.07	86.62	4.3	33.48	7.9	25.2	0.79
A6	13 Jun 2017	17	12.67	87.06	4.1	33.48	7.9	25.3	0.71
A6	13 Jun 2017	18	12.14	87.07	4.3	33.51	7.8	25.4	0.79

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )
A6	13 Jun 2017	19	12.11	87.19	4.5	33.52	7.8	25.4	0.87
A6	18 Jun 2017	1	20.48	85.87	8.9	33.57	8.3	23.5	1.71
A6	18 Jun 2017	2	20.48	85.53	8.4	33.57	8.3	23.5	2.04
A6	18 Jun 2017	3	20.00	84.82	8.5	33.53	8.3	23.6	2.55
A6	18 Jun 2017	4	18.97	84.31	8.5	33.53	8.2	23.9	3.29
A6	18 Jun 2017	5	18.27	84.26	8.4	33.52	8.2	24.1	3.86
A6	18 Jun 2017	6	17.75	82.66	8.3	33.51	8.2	24.2	4.76
A6	18 Jun 2017	7	17.41	80.71	8.1	33.51	8.2	24.3	6.56
A6	18 Jun 2017	8	17.23	79.40	8.2	33.49	8.2	24.3	7.02
A6	18 Jun 2017	9	16.36	79.16	8.5	33.48	8.2	24.5	7.30
A6	18 Jun 2017	10	15.67	76.63	8.4	33.48	8.2	24.7	9.56
A6	18 Jun 2017	11	15.57	75.19	7.5	33.47	8.2	24.7	8.90
A6	18 Jun 2017	12	14.65	74.10	6.4	33.44	8.2	24.8	6.95
A6	18 Jun 2017	13	13.48	71.11	5.5	33.45	8.1	25.1	5.62
A6	18 Jun 2017	14	12.56	71.31	4.9	33.45	8.0	25.3	3.39
A6	18 Jun 2017	15	12.35	76.11	4.3	33.45	8.0	25.3	2.11
A6	18 Jun 2017	16	12.17	79.85	3.8	33.45	7.9	25.4	1.69
A6	18 Jun 2017	17	11.60	84.98	3.8	33.48	7.9	25.5	1.48
A6	18 Jun 2017	18	11.50	87.63	3.9	33.48	7.8	25.5	1.20
A6	18 Jun 2017	19	11.43	88.12	3.9	33.48	7.8	25.5	1.00
A6	18 Jun 2017	20	11.28	88.33	3.9	33.50	7.8	25.6	0.98
A6	29 Jun 2017	1	15.81	66.39	9.2	33.52	8.1	24.7	10.12
A6	29 Jun 2017	2	15.67	66.43	9.1	33.54	8.1	24.7	11.67
A6	29 Jun 2017	3	15.33	64.20	9.0	33.55	8.1	24.8	12.46
A6	29 Jun 2017	4	15.19	63.36	8.9	33.54	8.1	24.8	12.22
A6	29 Jun 2017	5	15.09	63.32	8.8	33.53	8.1	24.8	12.05
A6	29 Jun 2017	6	14.99	64.25	8.8	33.53	8.1	24.8	11.95
A6	29 Jun 2017	7	14.92	64.90	8.9	33.53	8.1	24.9	12.07
A6	29 Jun 2017	8	14.91	65.04	8.9	33.52	8.1	24.9	11.62
A6	29 Jun 2017	9	14.92	64.97	8.8	33.52	8.1	24.9	11.77
A6	29 Jun 2017	10	14.85	64.78	8.3	33.52	8.1	24.9	12.89
A6	29 Jun 2017	11	14.70	64.17	7.7	33.53	8.1	24.9	14.34
A6	29 Jun 2017	12	14.41	61.80	7.5	33.53	8.1	25.0	15.20
A6	29 Jun 2017	13	14.27	60.95	7.6	33.53	8.1	25.0	15.03
A6	29 Jun 2017	14	14.23	60.84	7.3	33.53	8.0	25.0	15.06
A6	29 Jun 2017	15	14.15	61.04	6.5	33.53	8.0	25.0	13.86
A6	29 Jun 2017	16	13.46	61.55	6.1	33.56	8.0	25.2	12.08
A6	29 Jun 2017	17	13.13	68.46	6.2	33.54	7.9	25.2	11.30
A6	29 Jun 2017	18	13.25	70.93	6.6	33.51	7.9	25.2	11.06
C6	03 Jun 2017	1	17.42	81.03	7.6	33.49	8.2	24.3	1.26
C6	03 Jun 2017	2	17.40	81.10	6.7	33.49	8.2	24.3	1.70
C6	03 Jun 2017	3	17.03	81.18	6.1	33.47	8.2	24.3	2.02
C6	03 Jun 2017	4	15.89	81.46	5.9	33.50	8.1	24.6	1.92
C6	03 Jun 2017	5	15.10	81.88	5.6	33.51	8.1	24.8	1.59
C6	03 Jun 2017	6	14.54	82.54	5.0	33.50	8.0	24.9	1.05
C6	03 Jun 2017	7	13.83	82.95	4.6	33.50	8.0	25.1	0.83
C6	03 Jun 2017	8	13.20	84.09	4.6	33.51	8.0	25.2	0.96
C6	03 Jun 2017	9	12.69	85.00	5.3	33.52	7.9	25.3	1.40
C6	07 Jun 2017	1	17.77	66.81	9.9	33.53	8.3	24.2	7.49
C6	07 Jun 2017	2	17.77	66.16	8.9	33.52	8.3	24.2	4.36
C6	07 Jun 2017	3	17.66	68.25	7.6	33.52	8.3	24.2	2.98

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )
C6	07 Jun 2017	4	17.36	73.60	6.5	33.53	8.3	24.3	2.36
C6	07 Jun 2017	5	16.97	76.50	5.5	33.52	8.2	24.4	1.49
C6	07 Jun 2017	6	16.19	81.40	4.6	33.52	8.1	24.6	1.08
C6	07 Jun 2017	7	15.53	82.69	4.2	33.52	8.0	24.7	0.76
C6	07 Jun 2017	8	15.10	84.00	4.3	33.52	8.0	24.8	0.74
C6	07 Jun 2017	9	14.92	85.38	5.2	33.51	7.9	24.8	1.06
C6	13 Jun 2017	1	18.30	69.48	7.4	33.55	8.2	24.1	1.01
C6	13 Jun 2017	2	18.28	69.74	7.3	33.55	8.2	24.1	1.12
C6	13 Jun 2017	3	18.25	69.29	7.1	33.55	8.2	24.1	0.99
C6	13 Jun 2017	4	18.00	69.48	6.5	33.53	8.2	24.1	0.70
C6	13 Jun 2017	5	17.44	69.76	5.8	33.53	8.1	24.3	0.56
C6	13 Jun 2017	6	16.93	68.87	5.2	33.52	8.1	24.4	0.53
C6	13 Jun 2017	7	15.54	66.78	4.8	33.51	8.0	24.7	0.52
C6	13 Jun 2017	8	15.24	66.77	4.2	33.47	8.0	24.7	0.52
C6	13 Jun 2017	9	13.08	67.21	4.2	33.48	7.9	25.2	0.52
C6	18 Jun 2017	1	20.58	86.07	8.9	33.57	8.3	23.5	1.06
C6	18 Jun 2017	2	20.55	85.78	8.8	33.57	8.3	23.5	1.26
C6	18 Jun 2017	3	20.14	85.51	8.3	33.55	8.3	23.6	0.84
C6	18 Jun 2017	4	19.07	85.58	7.4	33.52	8.3	23.9	0.78
C6	18 Jun 2017	5	17.31	82.15	6.2	33.53	8.2	24.3	0.85
C6	18 Jun 2017	6	15.60	80.94	5.3	33.46	8.2	24.7	0.66
C6	18 Jun 2017	7	13.39	82.98	4.7	33.45	8.1	25.1	0.54
C6	18 Jun 2017	8	12.68	86.26	4.4	33.45	8.0	25.3	0.49
C6	18 Jun 2017	9	12.23	87.40	4.6	33.44	7.9	25.3	0.47
C6	18 Jun 2017	10	12.16	87.71	5.1	33.45	7.9	25.4	0.50
C6	29 Jun 2017	1	16.85	73.54	8.9	33.52	8.2	24.4	5.47
C6	29 Jun 2017	2	16.58	74.08	8.6	33.51	8.2	24.5	14.72
C6	29 Jun 2017	3	15.50	73.75	7.9	33.53	8.2	24.7	17.48
C6	29 Jun 2017	4	14.77	69.45	7.1	33.53	8.1	24.9	15.61
C6	29 Jun 2017	5	14.39	60.77	6.5	33.52	8.1	25.0	13.09
C6	29 Jun 2017	6	13.87	61.33	6.2	33.52	8.0	25.1	10.44
C6	29 Jun 2017	7	13.57	66.92	5.4	33.51	8.0	25.1	5.60
C6	29 Jun 2017	8	13.17	70.89	4.6	33.51	8.0	25.2	2.99
C6	29 Jun 2017	9	12.70	79.97	5.2	33.52	7.9	25.3	4.68
C6	29 Jun 2017	10	12.68	87.62	6.5	33.51	7.8	25.3	7.82
A7	03 Jun 2017	1	16.65	75.89	8.4	33.52	8.2	24.5	5.69
A7	03 Jun 2017	2	16.61	76.17	8.3	33.50	8.2	24.5	6.32
A7	03 Jun 2017	3	16.20	75.50	8.3	33.56	8.2	24.6	6.29
A7	03 Jun 2017	4	15.97	74.94	8.2	33.54	8.1	24.6	6.61
A7	03 Jun 2017	5	15.59	73.82	8.0	33.54	8.1	24.7	6.78
A7	03 Jun 2017	6	15.55	74.12	7.5	33.52	8.1	24.7	6.56
A7	03 Jun 2017	7	15.14	74.02	7.1	33.54	8.1	24.8	6.84
A7	03 Jun 2017	8	14.85	73.56	6.8	33.54	8.1	24.9	6.74
A7	03 Jun 2017	9	14.67	73.65	6.7	33.53	8.0	24.9	6.46
A7	03 Jun 2017	10	14.40	73.89	6.5	33.53	8.0	25.0	5.44
A7	03 Jun 2017	11	14.33	74.27	5.9	33.52	8.0	25.0	3.67
A7	03 Jun 2017	12	14.05	75.02	4.9	33.53	8.0	25.0	2.43
A7	03 Jun 2017	13	13.78	76.21	4.0	33.53	8.0	25.1	1.90
A7	03 Jun 2017	14	12.91	78.49	3.6	33.56	7.9	25.3	1.44
A7	03 Jun 2017	15	12.37	82.64	3.5	33.55	7.8	25.4	1.13
A7	03 Jun 2017	16	12.12	84.83	3.5	33.55	7.8	25.4	1.06

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )
A7	03 Jun 2017	17	11.87	85.91	3.6	33.55	7.8	25.5	0.92
A7	03 Jun 2017	18	11.66	86.81	3.8	33.55	7.7	25.5	1.15
A7	07 Jun 2017	1	17.21	72.60	9.5	33.53	8.2	24.3	7.18
A7	07 Jun 2017	2	17.22	72.61	8.9	33.53	8.2	24.3	5.50
A7	07 Jun 2017	3	17.23	73.17	7.5	33.53	8.3	24.3	4.19
A7	07 Jun 2017	4	16.93	73.11	6.7	33.52	8.2	24.4	3.61
A7	07 Jun 2017	5	16.23	74.39	6.4	33.53	8.2	24.6	3.01
A7	07 Jun 2017	6	16.08	78.56	5.9	33.52	8.1	24.6	2.54
A7	07 Jun 2017	7	15.82	79.67	5.6	33.52	8.1	24.6	2.45
A7	07 Jun 2017	8	15.28	80.99	5.6	33.52	8.0	24.8	2.47
A7	07 Jun 2017	9	15.03	82.33	5.7	33.52	8.0	24.8	2.13
A7	07 Jun 2017	10	14.82	82.92	5.5	33.51	8.0	24.9	1.61
A7	07 Jun 2017	11	14.51	82.76	5.0	33.51	8.0	24.9	1.27
A7	07 Jun 2017	12	14.32	83.61	4.5	33.51	7.9	25.0	1.12
A7	07 Jun 2017	13	13.87	84.61	4.3	33.52	7.9	25.1	1.03
A7	07 Jun 2017	14	13.57	85.78	4.3	33.52	7.9	25.1	1.08
A7	07 Jun 2017	15	13.12	85.88	4.4	33.52	7.8	25.2	1.02
A7	07 Jun 2017	16	13.32	85.87	4.3	33.51	7.8	25.2	0.98
A7	07 Jun 2017	17	12.86	85.64	4.1	33.53	7.8	25.3	1.03
A7	07 Jun 2017	18	12.65	85.67	4.2	33.53	7.8	25.3	0.99
A7	13 Jun 2017	1	18.34	82.21	8.3	33.54	8.2	24.1	1.39
A7	13 Jun 2017	2	18.30	81.62	8.1	33.54	8.2	24.1	2.08
A7	13 Jun 2017	3	18.13	82.33	7.9	33.53	8.2	24.1	2.58
A7	13 Jun 2017	4	17.94	82.35	7.8	33.53	8.2	24.2	3.09
A7	13 Jun 2017	5	17.81	81.51	7.5	33.52	8.2	24.2	3.04
A7	13 Jun 2017	6	17.64	81.11	6.6	33.53	8.2	24.2	2.98
A7	13 Jun 2017	7	17.02	80.56	5.8	33.48	8.2	24.3	3.03
A7	13 Jun 2017	8	15.26	80.97	6.0	33.50	8.1	24.8	2.86
A7	13 Jun 2017	9	15.06	83.14	5.9	33.48	8.0	24.8	2.59
A7	13 Jun 2017	10	14.73	83.76	5.6	33.46	8.0	24.8	2.29
A7	13 Jun 2017	11	14.24	84.24	5.5	33.48	8.0	25.0	1.99
A7	13 Jun 2017	12	14.01	84.89	5.3	33.48	8.0	25.0	1.57
A7	13 Jun 2017	13	13.79	85.32	4.9	33.48	8.0	25.1	1.19
A7	13 Jun 2017	14	13.28	85.35	4.6	33.48	7.9	25.2	0.98
A7	13 Jun 2017	15	12.95	85.53	4.4	33.48	7.9	25.2	0.79
A7	13 Jun 2017	16	12.52	85.50	4.4	33.49	7.9	25.3	0.78
A7	13 Jun 2017	17	12.39	85.69	4.5	33.49	7.8	25.3	0.75
A7	13 Jun 2017	18	12.43	85.55	4.6	33.49	7.8	25.3	0.76
A7	13 Jun 2017	19	12.45	85.71	4.7	33.49	7.8	25.3	0.82
A7	18 Jun 2017	1	19.98	82.50	8.4	33.56	8.2	23.7	3.33
A7	18 Jun 2017	2	19.19	82.64	8.4	33.51	8.2	23.8	5.66
A7	18 Jun 2017	3	17.50	81.69	8.4	33.52	8.2	24.3	6.00
A7	18 Jun 2017	4	15.72	78.01	7.7	33.46	8.2	24.6	7.46
A7	18 Jun 2017	5	14.50	75.08	6.8	33.44	8.2	24.9	8.63
A7	18 Jun 2017	6	13.35	74.56	6.7	33.44	8.1	25.1	9.01
A7	18 Jun 2017	7	12.97	74.31	6.7	33.44	8.1	25.2	9.23
A7	18 Jun 2017	8	12.86	72.50	6.6	33.44	8.0	25.2	8.58
A7	18 Jun 2017	9	12.78	72.15	6.3	33.44	8.0	25.2	6.75
A7	18 Jun 2017	10	12.70	72.75	5.7	33.45	8.0	25.2	4.82
A7	18 Jun 2017	11	12.60	73.67	5.1	33.45	8.0	25.3	3.58
A7	18 Jun 2017	12	12.32	76.16	4.8	33.46	8.0	25.3	3.10
A7	18 Jun 2017	13	12.12	80.23	4.6	33.47	7.9	25.4	2.51

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )
A7	18 Jun 2017	14	11.98	83.74	4.2	33.48	7.9	25.4	1.46
A7	18 Jun 2017	15	11.81	84.62	3.6	33.48	7.9	25.4	0.98
A7	18 Jun 2017	16	11.15	85.91	3.3	33.52	7.8	25.6	0.67
A7	18 Jun 2017	17	10.88	88.03	3.3	33.54	7.8	25.7	0.56
A7	18 Jun 2017	18	10.65	88.80	3.4	33.56	7.8	25.7	0.52
A7	18 Jun 2017	19	10.58	88.77	3.6	33.57	7.8	25.7	0.71
A7	29 Jun 2017	1	15.71	73.28	9.0	33.53	8.1	24.7	7.32
A7	29 Jun 2017	2	15.54	72.51	9.1	33.55	8.1	24.7	10.12
A7	29 Jun 2017	3	15.44	67.58	9.1	33.53	8.1	24.7	12.88
A7	29 Jun 2017	4	15.34	63.54	9.3	33.54	8.1	24.8	14.04
A7	29 Jun 2017	5	15.32	61.32	9.3	33.53	8.1	24.8	13.72
A7	29 Jun 2017	6	15.23	62.45	9.2	33.54	8.1	24.8	13.79
A7	29 Jun 2017	7	15.17	62.62	8.9	33.54	8.1	24.8	13.70
A7	29 Jun 2017	8	15.11	62.73	8.5	33.54	8.1	24.8	14.14
A7	29 Jun 2017	9	14.83	62.84	8.3	33.55	8.1	24.9	13.97
A7	29 Jun 2017	10	14.51	62.62	8.2	33.55	8.1	25.0	13.77
A7	29 Jun 2017	11	14.38	62.64	8.0	33.54	8.1	25.0	14.05
A7	29 Jun 2017	12	14.27	62.79	7.8	33.53	8.1	25.0	14.33
A7	29 Jun 2017	13	14.11	62.79	7.4	33.53	8.1	25.0	13.96
A7	29 Jun 2017	14	14.12	62.26	6.3	33.52	8.1	25.0	12.40
A7	29 Jun 2017	15	13.30	63.15	5.4	33.59	8.0	25.2	9.88
A7	29 Jun 2017	16	12.84	68.02	5.3	33.56	7.9	25.3	8.78
A7	29 Jun 2017	17	12.72	73.20	5.5	33.54	7.9	25.3	7.68
A7	29 Jun 2017	18	12.65	75.33	5.9	33.53	7.9	25.3	7.32
C7	03 Jun 2017	1	17.50	84.08	7.6	33.50	8.1	24.2	2.11
C7	03 Jun 2017	2	17.46	84.06	6.6	33.49	8.1	24.2	2.06
C7	03 Jun 2017	3	17.12	84.39	5.2	33.49	8.1	24.3	2.17
C7	03 Jun 2017	4	15.56	84.59	4.1	33.44	8.1	24.6	2.27
C7	03 Jun 2017	5	12.64	85.49	3.9	33.54	7.9	25.3	2.34
C7	03 Jun 2017	6	12.26	86.60	4.0	33.50	7.9	25.4	2.82
C7	03 Jun 2017	7	11.98	86.52	3.9	33.50	7.8	25.4	2.65
C7	03 Jun 2017	8	11.86	86.26	3.7	33.49	7.8	25.4	2.10
C7	03 Jun 2017	9	11.50	86.22	3.7	33.51	7.8	25.5	2.42
C7	03 Jun 2017	10	11.41	85.90	3.6	33.51	7.8	25.5	1.86
C7	03 Jun 2017	11	11.27	86.44	3.6	33.52	7.7	25.6	1.97
C7	03 Jun 2017	12	11.22	86.96	3.6	33.52	7.7	25.6	1.73
C7	03 Jun 2017	13	11.18	87.04	3.7	33.52	7.7	25.6	1.95
C7	03 Jun 2017	14	11.17	86.94	3.7	33.53	7.7	25.6	1.78
C7	03 Jun 2017	15	11.17	87.11	3.7	33.53	7.7	25.6	1.80
C7	03 Jun 2017	16	11.17	87.09	3.7	33.53	7.7	25.6	1.68
C7	03 Jun 2017	17	11.15	86.99	3.7	33.54	7.7	25.6	1.78
C7	03 Jun 2017	18	11.16	86.87	3.8	33.55	7.7	25.6	1.68
C7	07 Jun 2017	1	17.97	82.95	9.1	33.51	8.2	24.1	3.28
C7	07 Jun 2017	2	17.96	83.22	9.1	33.51	8.2	24.1	4.51
C7	07 Jun 2017	3	17.95	82.66	9.0	33.51	8.2	24.1	9.26
C7	07 Jun 2017	4	17.94	83.13	8.7	33.51	8.2	24.1	13.74
C7	07 Jun 2017	5	17.92	83.21	8.5	33.51	8.2	24.2	12.92
C7	07 Jun 2017	6	17.75	80.78	8.6	33.51	8.2	24.2	10.25
C7	07 Jun 2017	7	17.29	69.57	8.6	33.52	8.2	24.3	8.95
C7	07 Jun 2017	8	17.00	64.73	8.3	33.50	8.2	24.4	7.19
C7	07 Jun 2017	9	16.49	70.16	7.8	33.51	8.2	24.5	5.13
C7	07 Jun 2017	10	16.40	73.58	7.1	33.50	8.2	24.5	3.88

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )
C7	07 Jun 2017	11	16.04	75.86	6.5	33.50	8.1	24.6	3.43
C7	07 Jun 2017	12	15.80	78.70	5.8	33.50	8.1	24.6	2.92
C7	07 Jun 2017	13	15.32	81.53	5.0	33.51	8.1	24.8	2.31
C7	07 Jun 2017	14	14.97	83.52	4.6	33.50	8.0	24.8	2.19
C7	07 Jun 2017	15	14.12	83.76	4.5	33.50	8.0	25.0	2.04
C7	07 Jun 2017	16	13.72	84.96	4.6	33.53	7.9	25.1	1.63
C7	07 Jun 2017	17	13.86	85.90	4.3	33.51	7.9	25.1	1.27
C7	07 Jun 2017	18	13.16	86.41	4.1	33.51	7.9	25.2	0.55
C7	07 Jun 2017	19	13.04	87.11	4.2	33.52	7.8	25.2	0.00
C7	13 Jun 2017	1	18.71	86.13	8.0	33.53	8.2	24.0	0.70
C7	13 Jun 2017	2	18.67	86.80	7.6	33.53	8.2	24.0	1.09
C7	13 Jun 2017	3	18.48	87.16	7.3	33.52	8.2	24.0	1.68
C7	13 Jun 2017	4	17.90	85.18	7.4	33.54	8.1	24.2	2.44
C7	13 Jun 2017	5	17.82	85.21	7.4	33.52	8.1	24.2	2.72
C7	13 Jun 2017	6	17.61	82.19	7.3	33.52	8.1	24.2	3.11
C7	13 Jun 2017	7	17.41	79.55	7.0	33.52	8.1	24.3	4.91
C7	13 Jun 2017	8	16.71	79.70	6.3	33.51	8.1	24.4	10.09
C7	13 Jun 2017	9	15.60	80.36	5.4	33.45	8.1	24.6	12.69
C7	13 Jun 2017	10	13.79	79.68	5.0	33.48	8.0	25.1	14.03
C7	13 Jun 2017	11	13.29	71.95	5.0	33.47	8.0	25.2	12.82
C7	13 Jun 2017	12	13.10	71.18	5.0	33.47	7.9	25.2	8.31
C7	13 Jun 2017	13	12.96	70.09	4.9	33.46	7.9	25.2	4.05
C7	13 Jun 2017	14	12.74	72.00	4.5	33.46	7.9	25.3	1.80
C7	13 Jun 2017	15	12.44	76.00	3.8	33.45	7.9	25.3	0.93
C7	13 Jun 2017	16	11.66	82.27	3.8	33.47	7.8	25.5	1.07
C7	13 Jun 2017	17	11.42	87.13	4.1	33.50	7.8	25.5	1.36
C7	18 Jun 2017	1	20.38	83.66	8.8	33.57	8.3	23.6	1.74
C7	18 Jun 2017	2	20.34	83.49	8.8	33.57	8.3	23.6	1.68
C7	18 Jun 2017	3	19.47	83.83	8.4	33.52	8.3	23.8	3.27
C7	18 Jun 2017	4	18.25	84.10	7.3	33.51	8.3	24.1	5.04
C7	18 Jun 2017	5	15.83	84.36	6.3	33.47	8.2	24.6	5.28
C7	18 Jun 2017	6	14.57	81.24	6.3	33.49	8.1	24.9	4.98
C7	18 Jun 2017	7	14.44	79.45	6.4	33.46	8.1	24.9	4.62
C7	18 Jun 2017	8	14.11	79.35	6.3	33.46	8.1	25.0	3.60
C7	18 Jun 2017	9	13.79	79.20	5.8	33.45	8.0	25.0	2.91
C7	18 Jun 2017	10	13.08	80.92	5.1	33.46	8.0	25.2	3.94
C7	18 Jun 2017	11	12.68	82.37	4.5	33.45	8.0	25.3	4.29
C7	18 Jun 2017	12	12.05	84.52	4.2	33.46	7.9	25.4	3.86
C7	18 Jun 2017	13	11.77	84.96	4.2	33.46	7.9	25.4	2.35
C7	18 Jun 2017	14	11.59	84.90	4.2	33.46	7.8	25.5	1.89
C7	18 Jun 2017	15	11.46	85.47	4.1	33.48	7.8	25.5	1.37
C7	18 Jun 2017	16	11.38	85.62	3.8	33.48	7.8	25.5	0.91
C7	18 Jun 2017	17	11.02	87.61	3.6	33.51	7.8	25.6	1.01
C7	18 Jun 2017	18	10.90	88.49	3.8	33.53	7.8	25.6	1.28
C7	29 Jun 2017	1	16.43	74.70	8.7	33.52	8.2	24.5	13.71
C7	29 Jun 2017	2	16.19	74.80	7.8	33.49	8.2	24.5	13.37
C7	29 Jun 2017	3	14.95	71.18	7.4	33.50	8.1	24.8	11.25
C7	29 Jun 2017	4	14.48	62.84	7.3	33.51	8.1	24.9	10.29
C7	29 Jun 2017	5	14.12	62.32	7.2	33.49	8.1	25.0	9.88
C7	29 Jun 2017	6	13.77	64.62	7.2	33.48	8.0	25.1	9.81
C7	29 Jun 2017	7	13.58	68.07	7.0	33.48	8.0	25.1	9.64
C7	29 Jun 2017	8	13.46	69.50	6.7	33.47	8.0	25.1	9.56

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )
C7	29 Jun 2017	9	13.34	70.33	6.7	33.48	8.0	25.1	9.31
C7	29 Jun 2017	10	13.29	70.28	6.7	33.49	8.0	25.2	9.18
C7	29 Jun 2017	11	13.24	69.95	6.5	33.49	8.0	25.2	8.81
C7	29 Jun 2017	12	13.20	70.14	6.3	33.48	8.0	25.2	8.77
C7	29 Jun 2017	13	13.12	70.46	6.0	33.48	8.0	25.2	6.49
C7	29 Jun 2017	14	12.98	70.96	5.2	33.49	7.9	25.2	3.55
C7	29 Jun 2017	15	12.89	71.93	4.2	33.49	7.9	25.2	2.08
C7	29 Jun 2017	16	12.47	72.66	3.8	33.48	7.9	25.3	1.98
C7	29 Jun 2017	17	11.97	80.04	4.2	33.53	7.8	25.4	2.73
C7	29 Jun 2017	18	11.97	84.63	4.8	33.52	7.8	25.4	3.24
C8	03 Jun 2017	1	17.67	83.42	8.4	33.50	8.2	24.2	2.13
C8	03 Jun 2017	2	17.67	83.50	8.5	33.50	8.2	24.2	2.25
C8	03 Jun 2017	3	17.64	83.31	8.5	33.50	8.2	24.2	2.26
C8	03 Jun 2017	4	17.59	83.35	8.4	33.50	8.2	24.2	2.40
C8	03 Jun 2017	5	17.55	83.26	8.3	33.49	8.2	24.2	2.87
C8	03 Jun 2017	6	17.52	83.12	8.1	33.49	8.2	24.2	3.51
C8	03 Jun 2017	7	17.45	82.75	7.9	33.49	8.2	24.3	4.01
C8	03 Jun 2017	8	16.90	82.46	8.0	33.47	8.2	24.4	4.72
C8	03 Jun 2017	9	15.81	81.59	7.9	33.45	8.1	24.6	5.47
C8	03 Jun 2017	10	14.40	80.21	7.2	33.41	8.1	24.9	5.06
C8	03 Jun 2017	11	13.56	80.41	6.2	33.40	8.1	25.0	5.01
C8	03 Jun 2017	12	12.86	79.73	5.3	33.41	8.0	25.2	4.87
C8	03 Jun 2017	13	12.51	80.88	4.5	33.41	8.0	25.3	4.04
C8	03 Jun 2017	14	11.88	82.24	3.8	33.44	7.9	25.4	3.46
C8	03 Jun 2017	15	11.54	82.98	3.4	33.47	7.9	25.5	2.49
C8	03 Jun 2017	16	11.16	83.77	3.5	33.52	7.8	25.6	1.93
C8	03 Jun 2017	17	11.19	85.60	3.5	33.50	7.8	25.6	2.07
C8	03 Jun 2017	18	11.07	84.76	3.7	33.52	7.8	25.6	2.46
C8	03 Jun 2017	19	11.08	83.58	3.9	33.53	7.8	25.6	2.40
C8	07 Jun 2017	1	18.00	77.91	9.2	33.51	8.2	24.1	8.94
C8	07 Jun 2017	2	18.00	77.53	9.1	33.51	8.2	24.1	11.16
C8	07 Jun 2017	3	18.00	77.59	8.7	33.51	8.2	24.1	9.74
C8	07 Jun 2017	4	17.99	78.52	8.2	33.51	8.2	24.1	7.75
C8	07 Jun 2017	5	17.42	75.94	7.7	33.48	8.2	24.3	6.23
C8	07 Jun 2017	6	16.32	71.09	7.2	33.51	8.2	24.5	5.06
C8	07 Jun 2017	7	16.11	73.74	6.9	33.50	8.1	24.6	4.21
C8	07 Jun 2017	8	15.94	76.21	6.5	33.50	8.1	24.6	3.52
C8	07 Jun 2017	9	15.73	78.49	5.9	33.48	8.1	24.6	2.68
C8	07 Jun 2017	10	15.21	80.00	5.2	33.50	8.1	24.8	1.99
C8	07 Jun 2017	11	14.98	81.56	4.4	33.49	8.0	24.8	1.89
C8	07 Jun 2017	12	14.20	83.12	4.0	33.48	8.0	25.0	1.97
C8	07 Jun 2017	13	13.19	85.18	4.2	33.51	7.9	25.2	1.89
C8	07 Jun 2017	14	12.87	86.08	4.3	33.50	7.8	25.3	1.80
C8	07 Jun 2017	15	12.61	84.82	4.3	33.48	7.8	25.3	1.38
C8	07 Jun 2017	16	12.38	84.58	4.2	33.49	7.8	25.3	1.24
C8	07 Jun 2017	17	12.27	84.22	4.1	33.49	7.8	25.4	1.36
C8	07 Jun 2017	18	12.18	85.21	4.3	33.50	7.8	25.4	1.49
C8	07 Jun 2017	19	12.23	85.41	4.5	33.51	7.8	25.4	1.49
C8	13 Jun 2017	1	18.50	79.73	7.8	33.55	8.2	24.0	1.23
C8	13 Jun 2017	2	18.51	79.51	7.8	33.55	8.2	24.0	1.39
C8	13 Jun 2017	3	18.40	79.65	7.9	33.54	8.2	24.1	1.56
C8	13 Jun 2017	4	18.35	80.09	7.8	33.54	8.2	24.1	1.67

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )
C8	13 Jun 2017	5	18.31	80.60	7.7	33.54	8.2	24.1	1.62
C8	13 Jun 2017	6	18.28	80.45	7.7	33.55	8.2	24.1	1.51
C8	13 Jun 2017	7	18.19	80.26	7.7	33.54	8.2	24.1	1.54
C8	13 Jun 2017	8	18.08	80.98	7.6	33.53	8.2	24.1	2.38
C8	13 Jun 2017	9	17.49	81.86	7.4	33.50	8.2	24.3	3.25
C8	13 Jun 2017	10	16.59	83.36	7.3	33.49	8.2	24.5	3.87
C8	13 Jun 2017	11	15.95	83.41	7.3	33.50	8.1	24.6	4.90
C8	13 Jun 2017	12	16.08	81.56	7.0	33.49	8.1	24.6	6.05
C8	13 Jun 2017	13	15.69	80.04	6.2	33.48	8.1	24.7	4.85
C8	13 Jun 2017	14	15.01	78.26	4.8	33.49	8.1	24.8	2.46
C8	13 Jun 2017	15	14.08	76.27	3.6	33.44	8.0	25.0	1.41
C8	13 Jun 2017	16	12.18	75.18	3.7	33.48	7.9	25.4	1.36
C8	13 Jun 2017	17	12.00	82.73	4.2	33.45	7.8	25.4	1.32
C8	13 Jun 2017	18	12.00	82.71	4.5	33.46	7.8	25.4	1.36
C8	13 Jun 2017	19	12.11	82.33	4.6	33.45	7.8	25.4	1.41
C8	18 Jun 2017	1	20.13	76.29	8.0	33.57	8.2	23.6	3.25
C8	18 Jun 2017	2	20.11	76.30	8.1	33.57	8.2	23.6	5.58
C8	18 Jun 2017	3	19.04	76.34	8.4	33.49	8.2	23.9	7.12
C8	18 Jun 2017	4	16.64	76.38	8.2	33.52	8.2	24.5	10.49
C8	18 Jun 2017	5	16.52	75.46	7.3	33.47	8.2	24.5	10.91
C8	18 Jun 2017	6	14.97	74.60	5.8	33.46	8.2	24.8	8.78
C8	18 Jun 2017	7	13.48	70.72	4.6	33.44	8.1	25.1	7.28
C8	18 Jun 2017	8	12.88	67.54	4.4	33.44	8.0	25.2	5.49
C8	18 Jun 2017	9	12.51	70.24	4.3	33.45	8.0	25.3	3.21
C8	18 Jun 2017	10	12.41	74.48	3.9	33.44	7.9	25.3	1.75
C8	18 Jun 2017	11	11.98	76.71	3.5	33.44	7.9	25.4	1.14
C8	18 Jun 2017	12	11.67	82.14	3.3	33.45	7.8	25.4	0.88
C8	18 Jun 2017	13	11.10	84.84	3.3	33.48	7.8	25.6	0.76
C8	18 Jun 2017	14	10.83	87.16	3.5	33.50	7.8	25.6	0.72
C8	18 Jun 2017	15	10.74	87.79	3.6	33.51	7.8	25.7	0.71
C8	18 Jun 2017	16	10.69	88.15	3.7	33.52	7.8	25.7	0.68
C8	18 Jun 2017	17	10.68	88.13	3.7	33.52	7.8	25.7	0.70
C8	18 Jun 2017	18	10.69	88.09	3.8	33.53	7.8	25.7	0.70
C8	29 Jun 2017	1	16.55	75.07	9.6	33.51	8.2	24.5	13.72
C8	29 Jun 2017	2	16.47	75.50	9.4	33.50	8.2	24.5	16.80
C8	29 Jun 2017	3	16.12	74.48	8.7	33.51	8.2	24.6	17.65
C8	29 Jun 2017	4	15.61	69.35	7.8	33.51	8.2	24.7	16.11
C8	29 Jun 2017	5	15.09	61.96	7.0	33.51	8.2	24.8	14.47
C8	29 Jun 2017	6	14.55	59.88	6.5	33.52	8.1	24.9	13.06
C8	29 Jun 2017	7	14.13	59.70	6.2	33.51	8.1	25.0	12.34
C8	29 Jun 2017	8	13.72	63.08	6.1	33.52	8.0	25.1	10.88
C8	29 Jun 2017	9	13.62	66.70	6.0	33.51	8.0	25.1	9.47
C8	29 Jun 2017	10	13.40	67.73	6.0	33.51	8.0	25.2	6.96
C8	29 Jun 2017	11	13.30	70.06	5.7	33.51	8.0	25.2	4.76
C8	29 Jun 2017	12	13.26	71.07	5.0	33.50	8.0	25.2	3.64
C8	29 Jun 2017	13	12.87	72.54	4.4	33.49	7.9	25.3	3.55
C8	29 Jun 2017	14	12.40	79.73	4.2	33.52	7.9	25.4	3.66
C8	29 Jun 2017	15	12.28	84.45	3.9	33.51	7.8	25.4	3.66
C8	29 Jun 2017	16	11.97	85.18	3.8	33.50	7.8	25.4	3.46
C8	29 Jun 2017	17	11.63	84.44	4.0	33.51	7.8	25.5	3.47
C8	29 Jun 2017	18	11.57	83.63	4.4	33.51	7.8	25.5	3.65

NA = not available

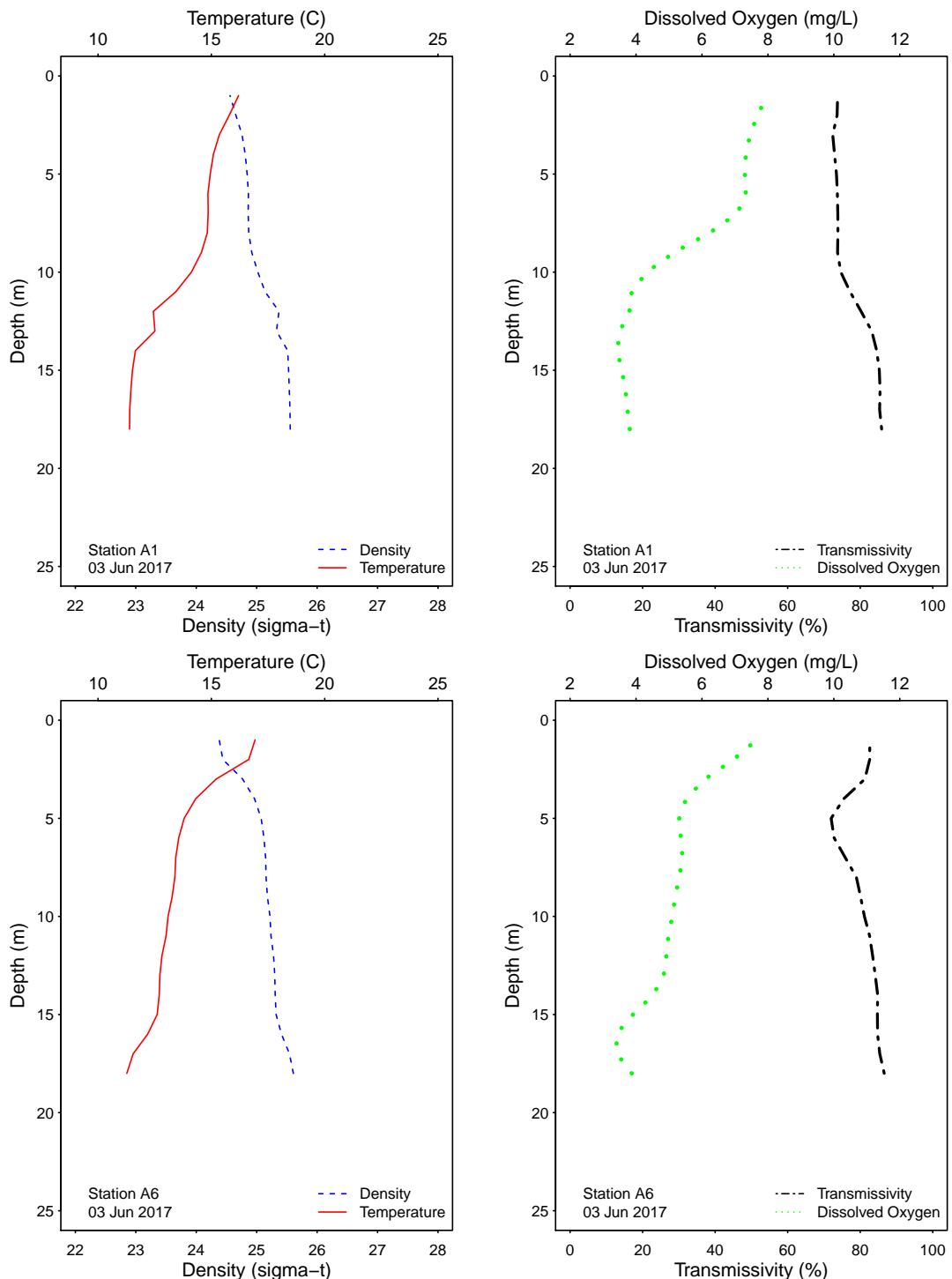


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

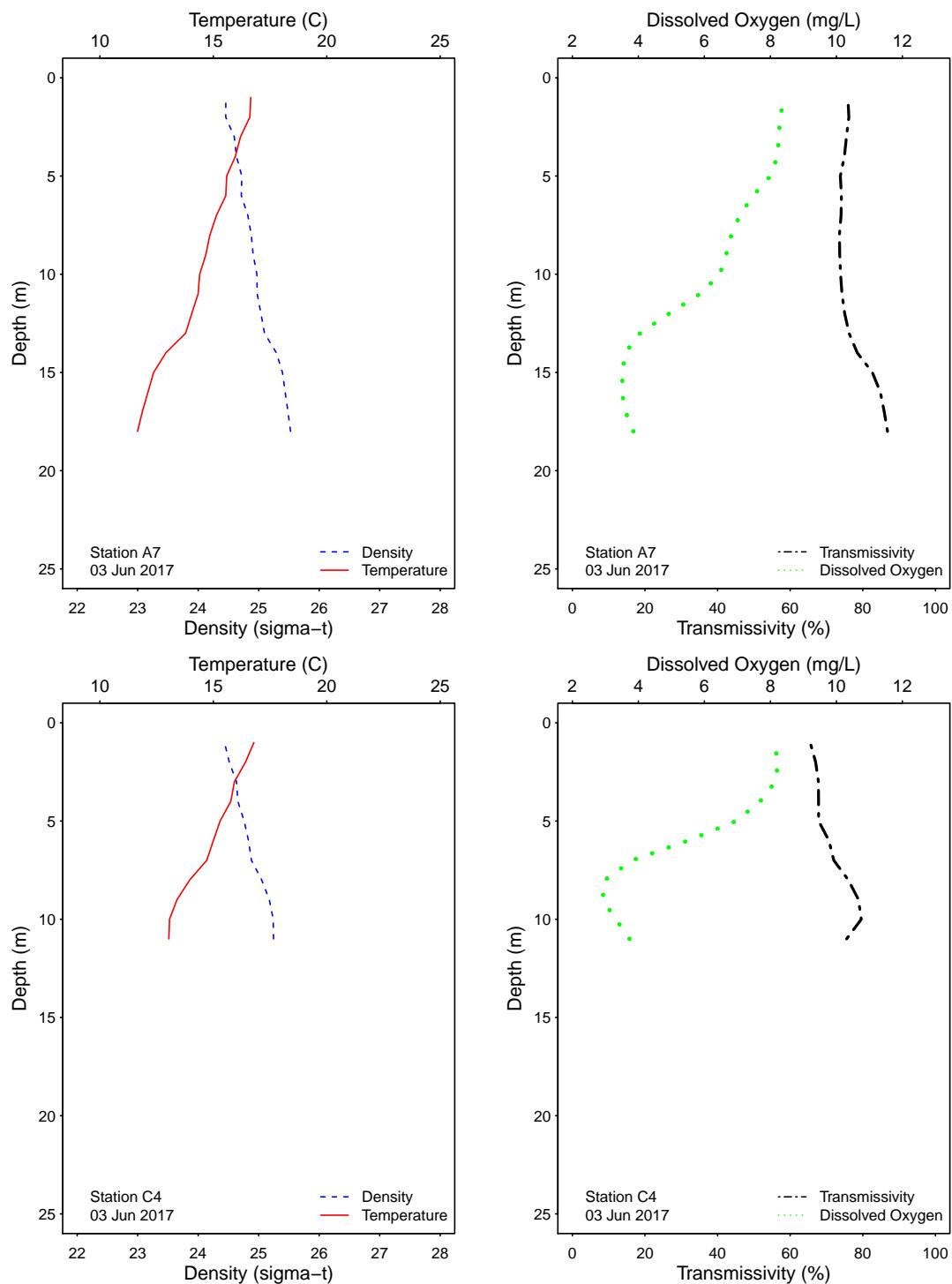


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

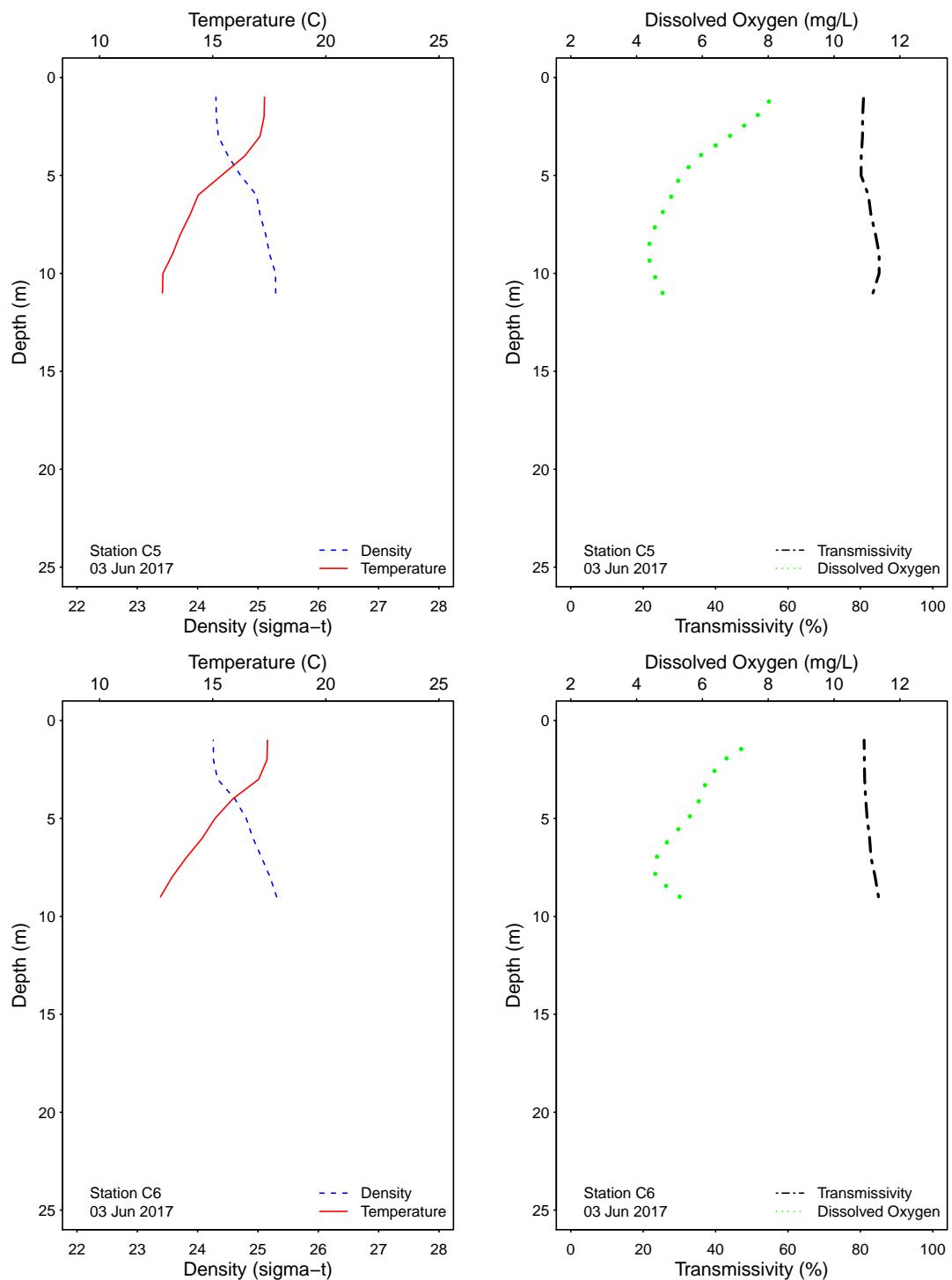


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

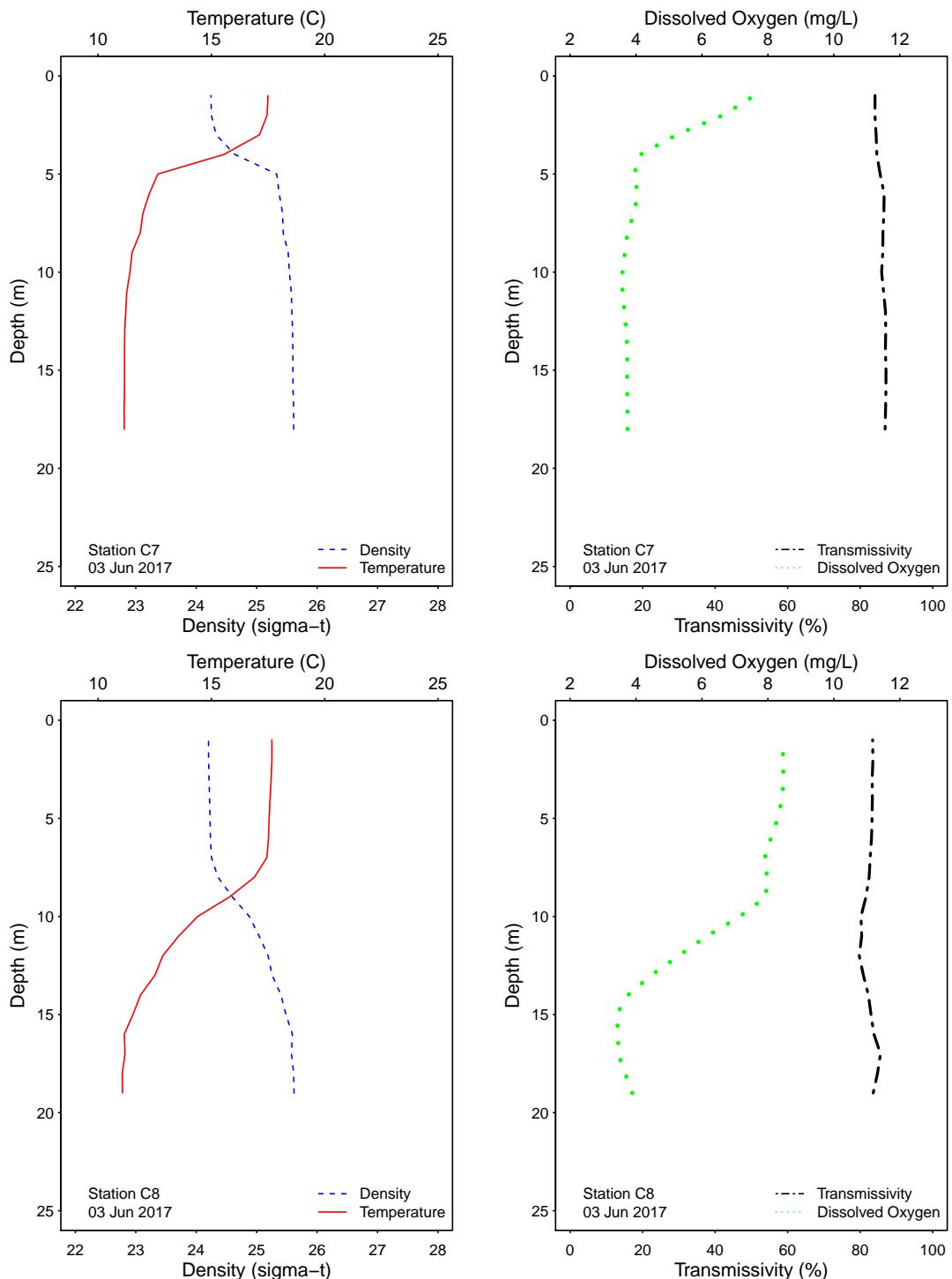


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

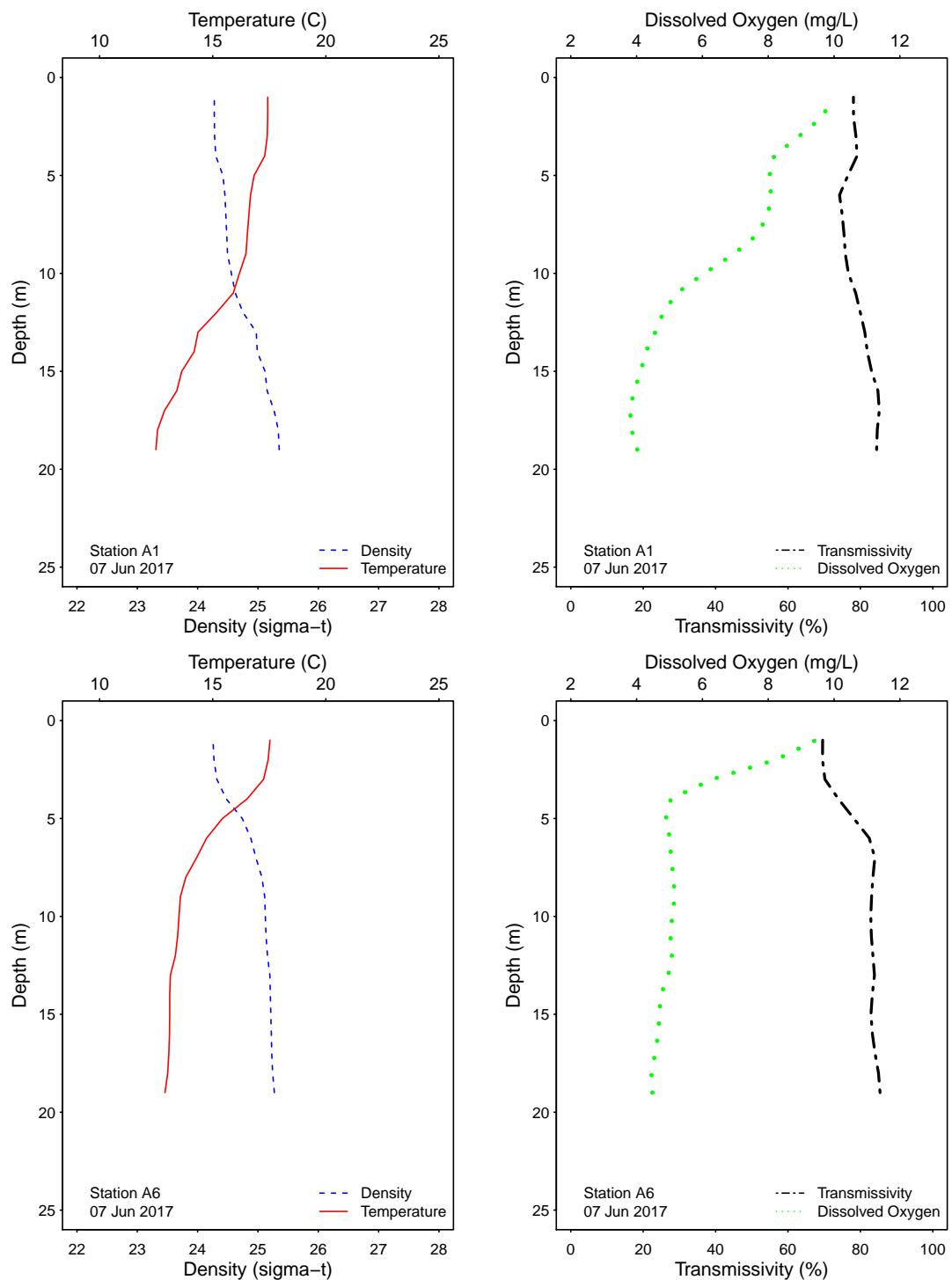


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

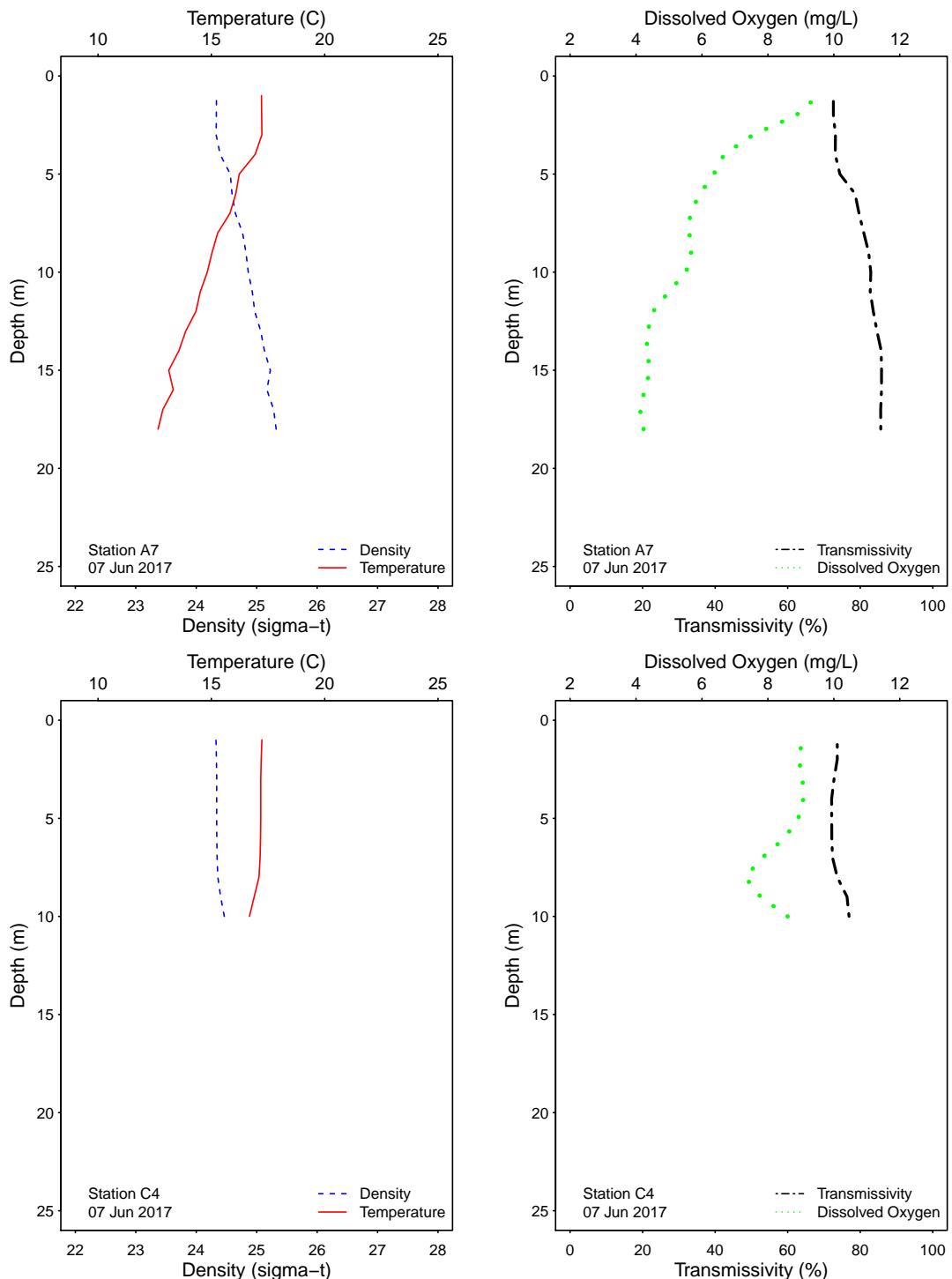


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

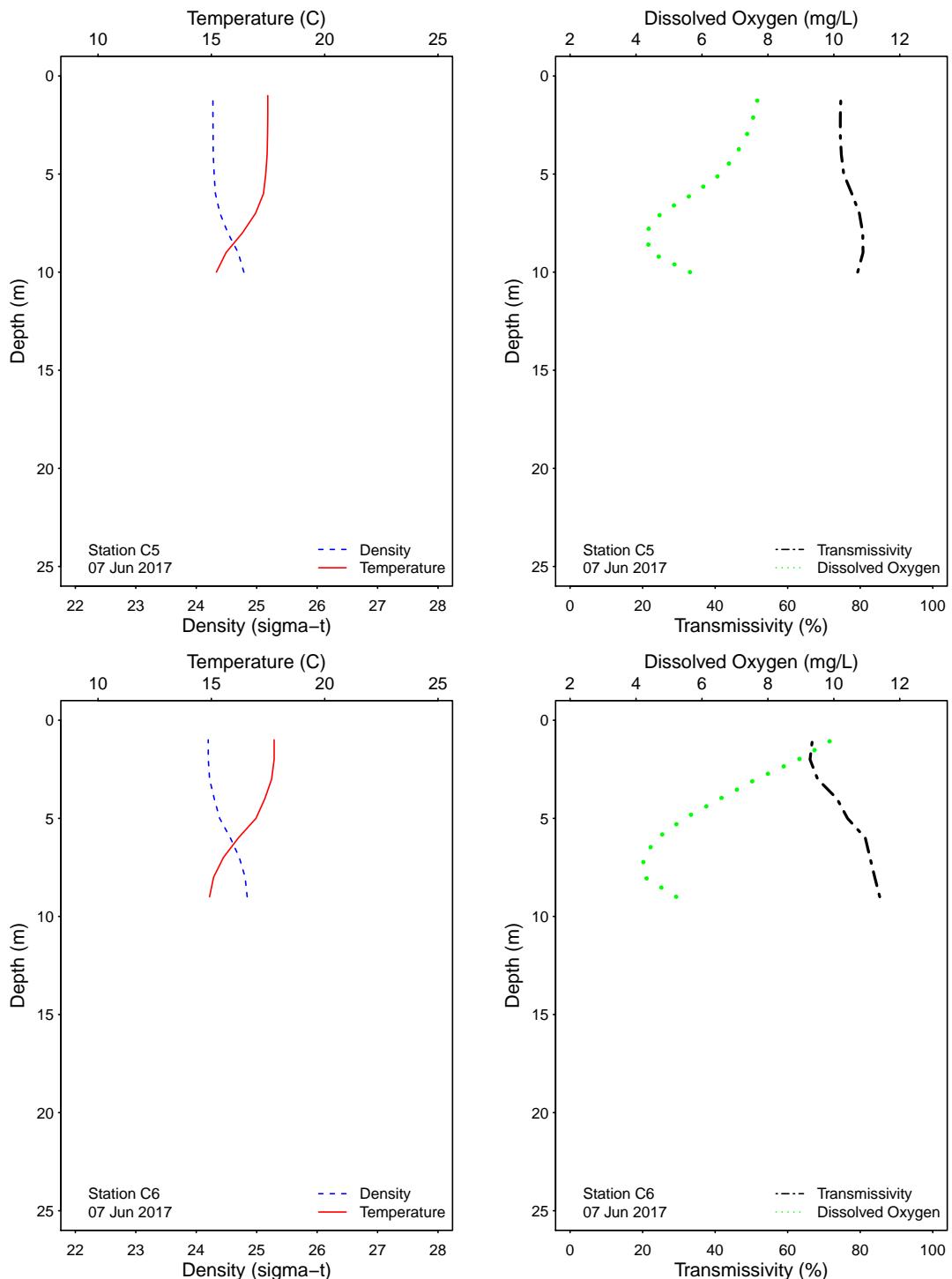


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

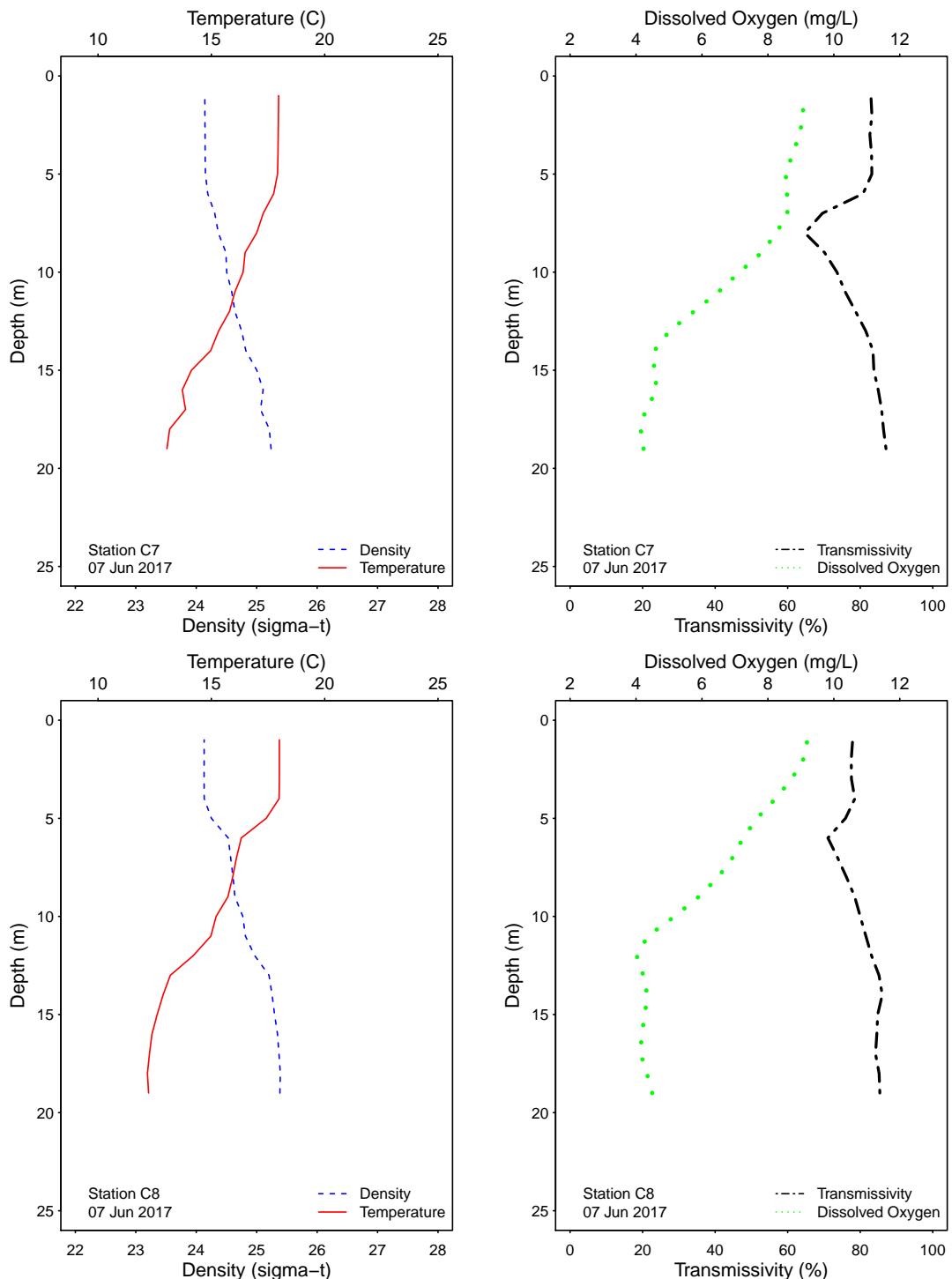


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

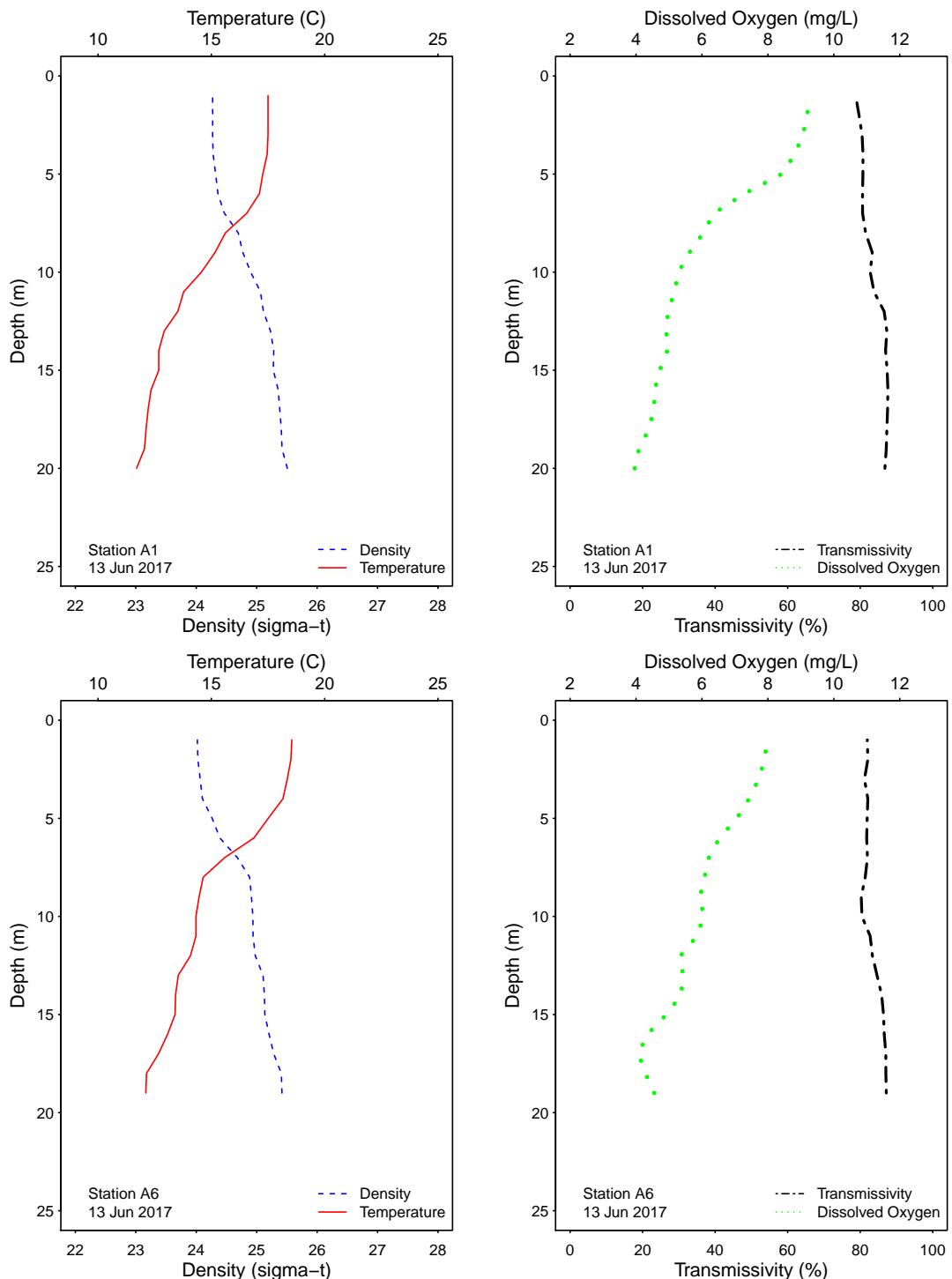


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

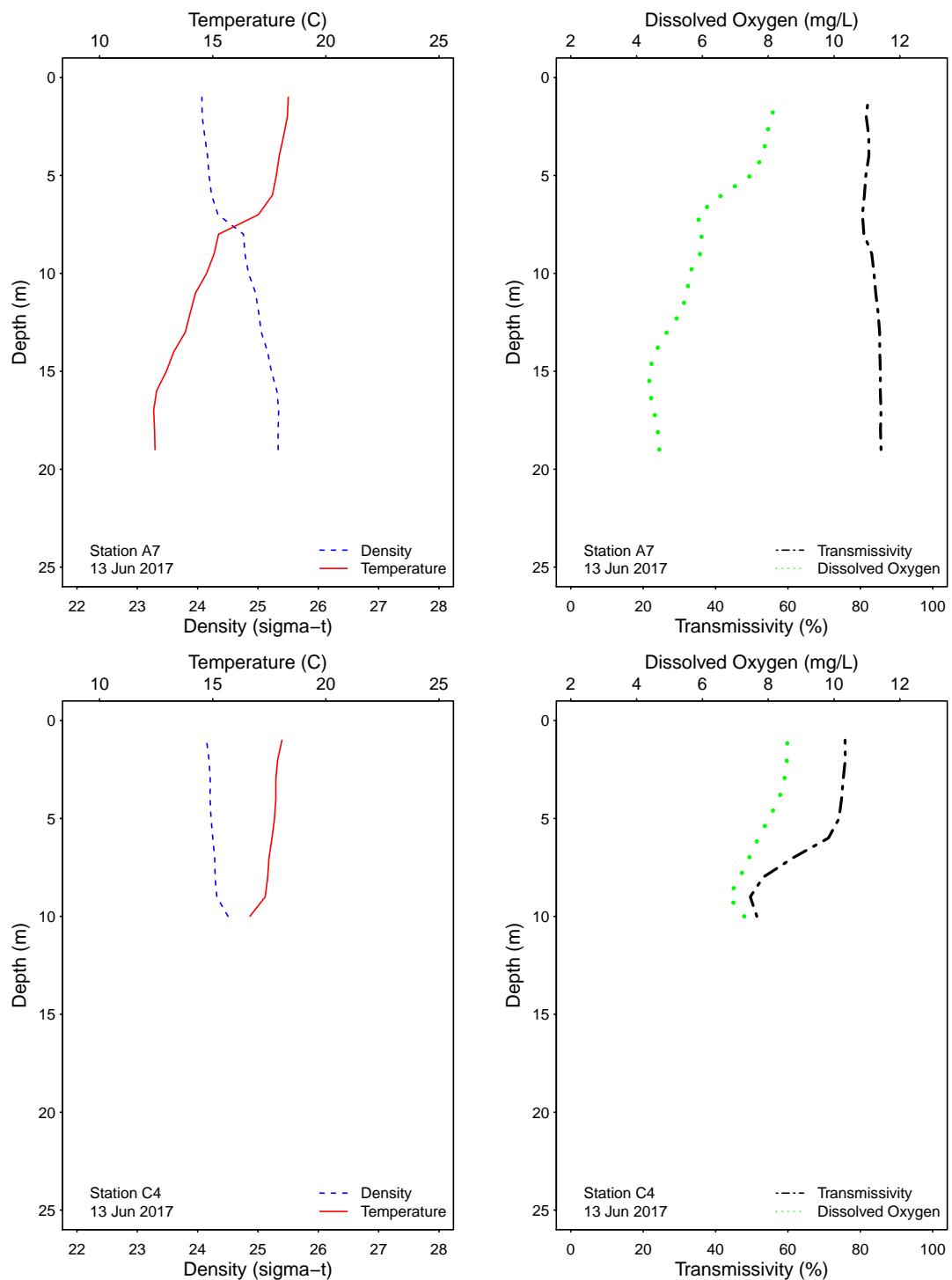


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

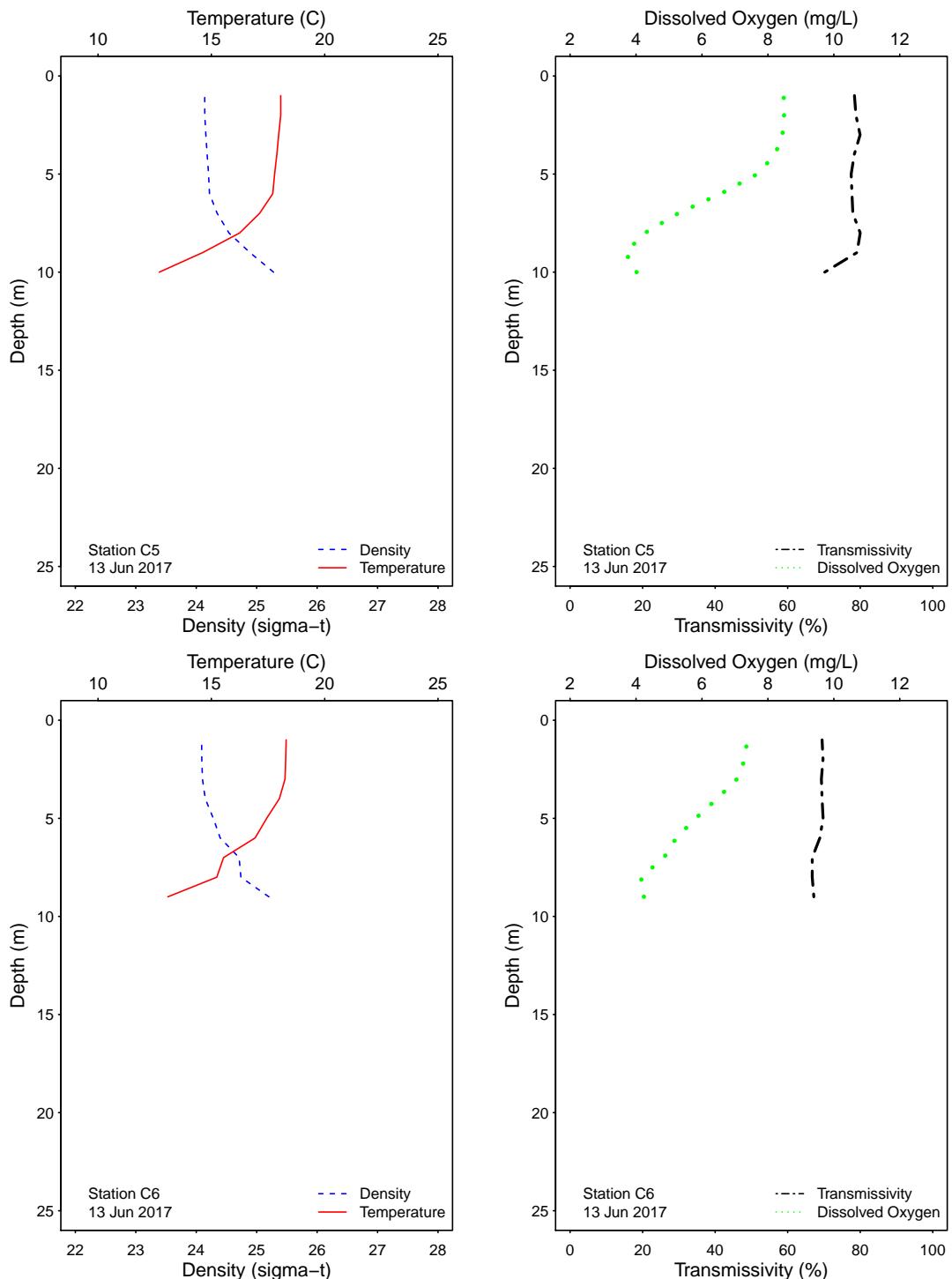


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

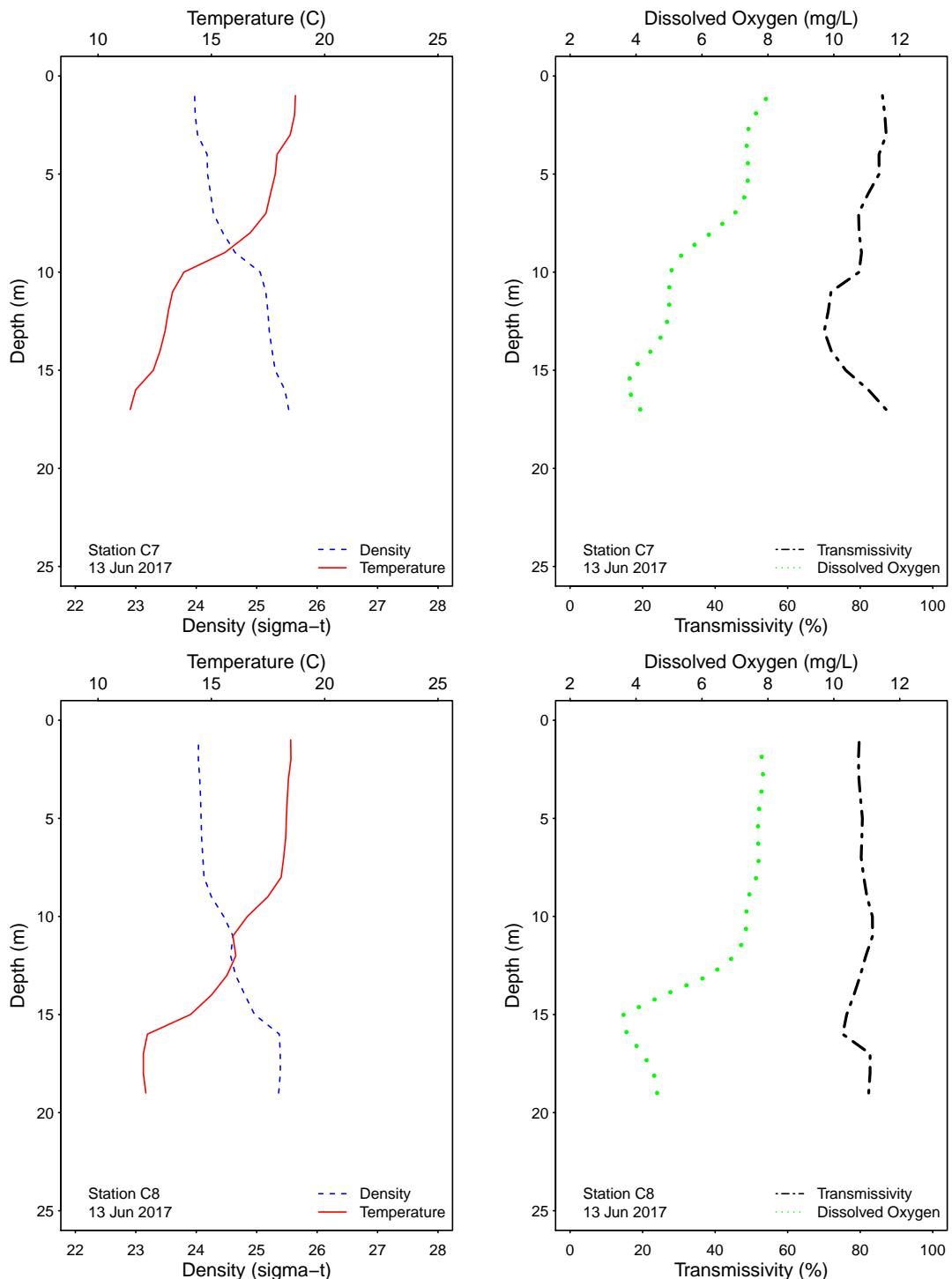


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

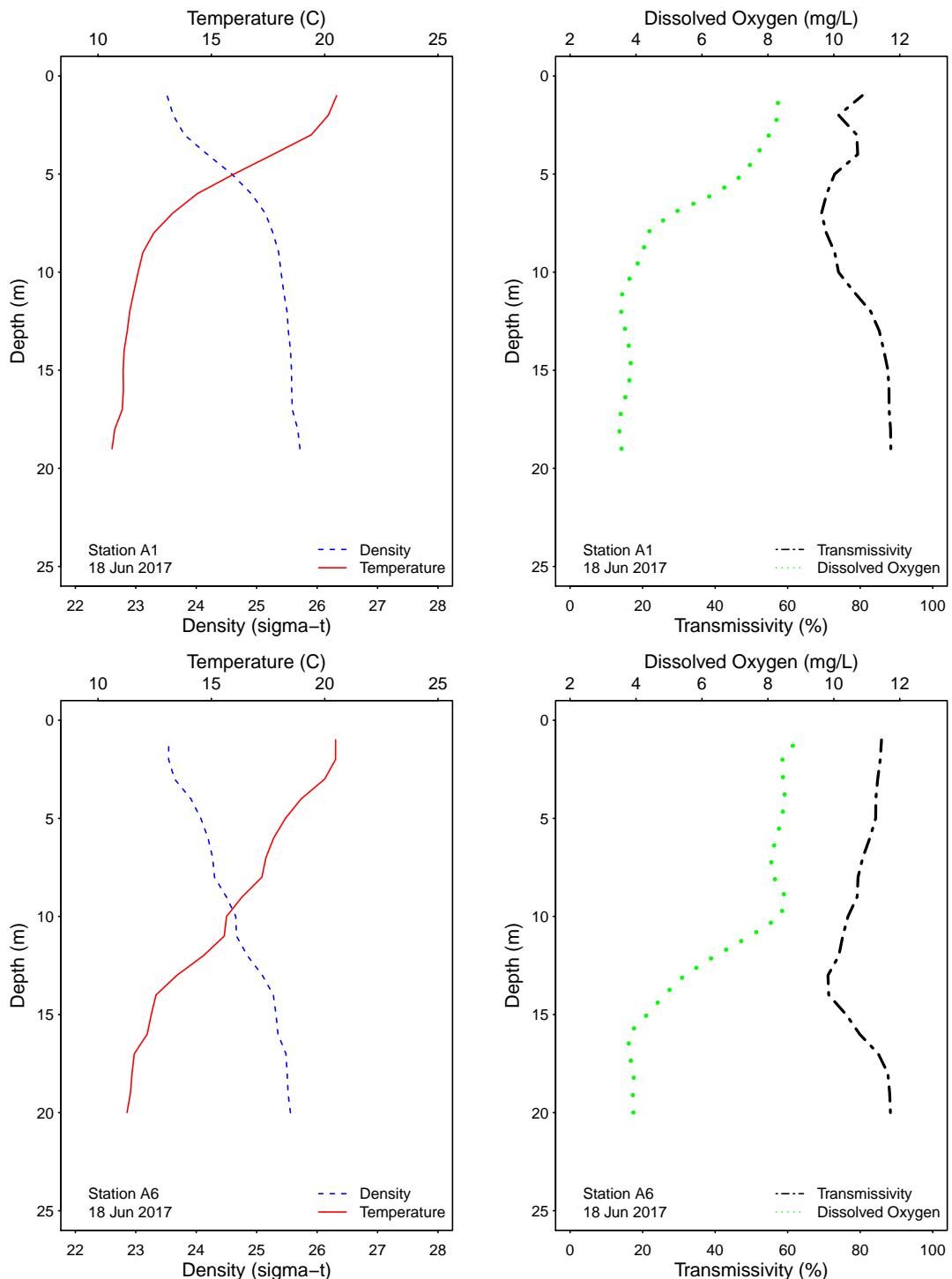


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

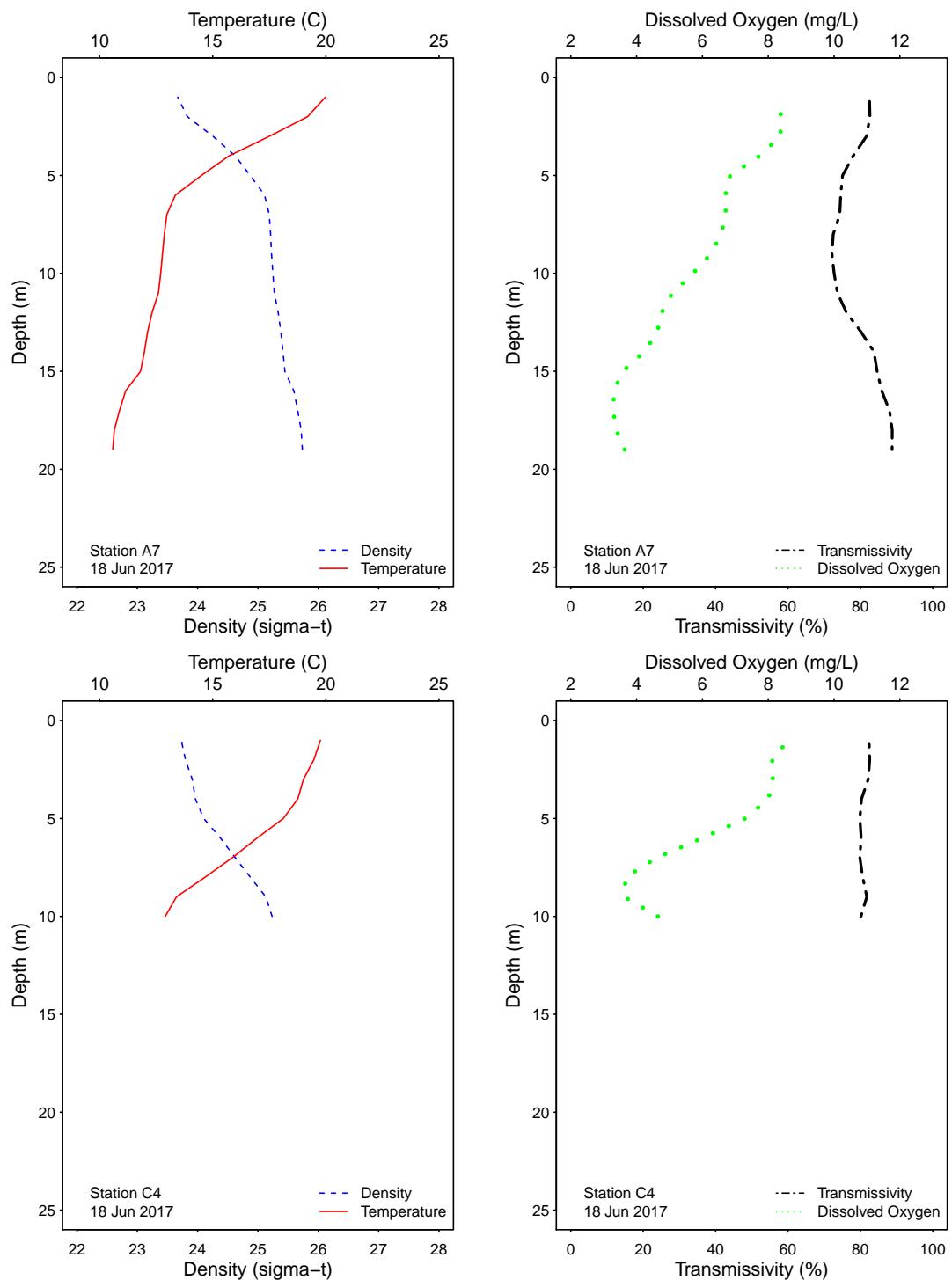


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

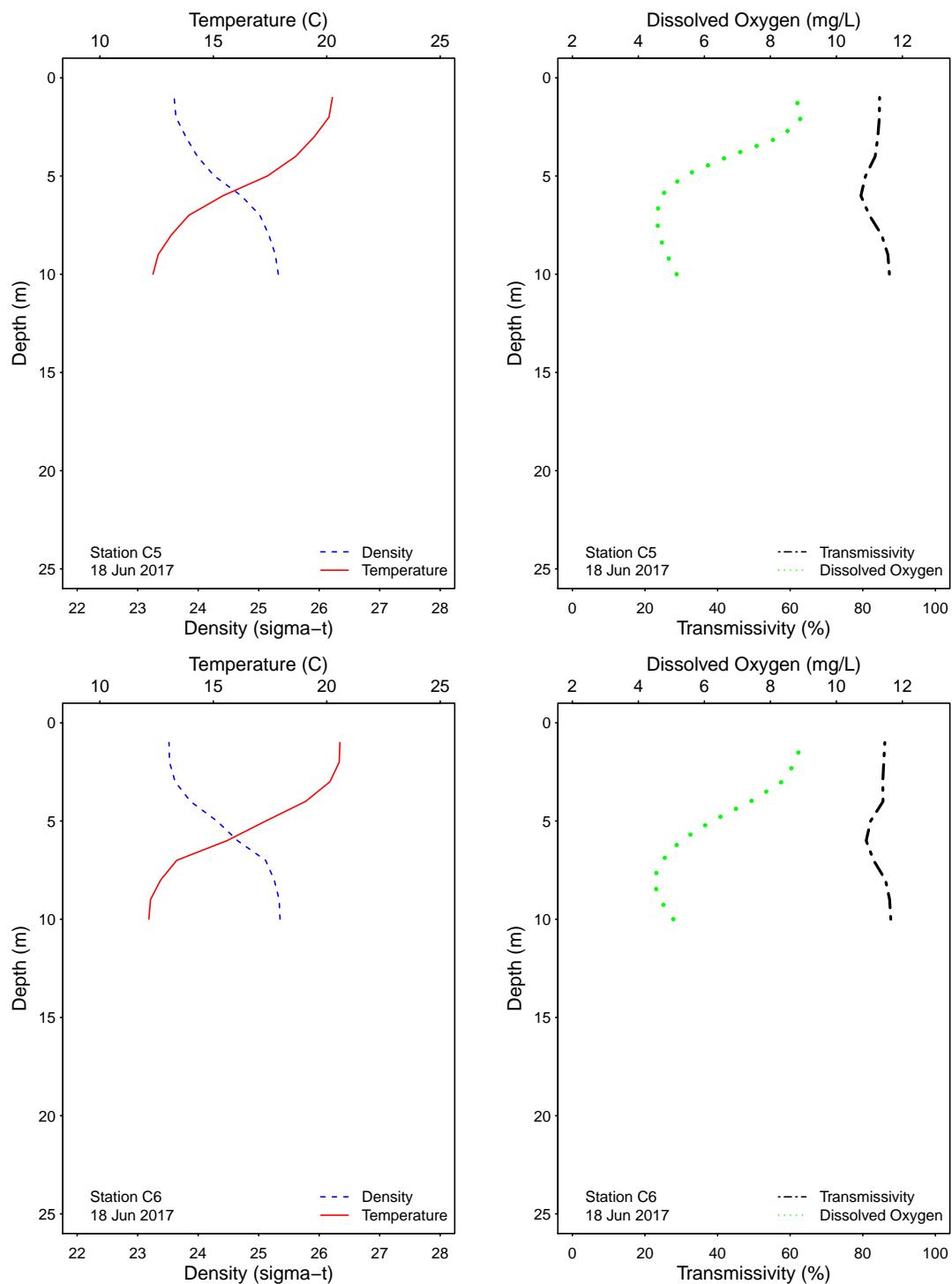


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

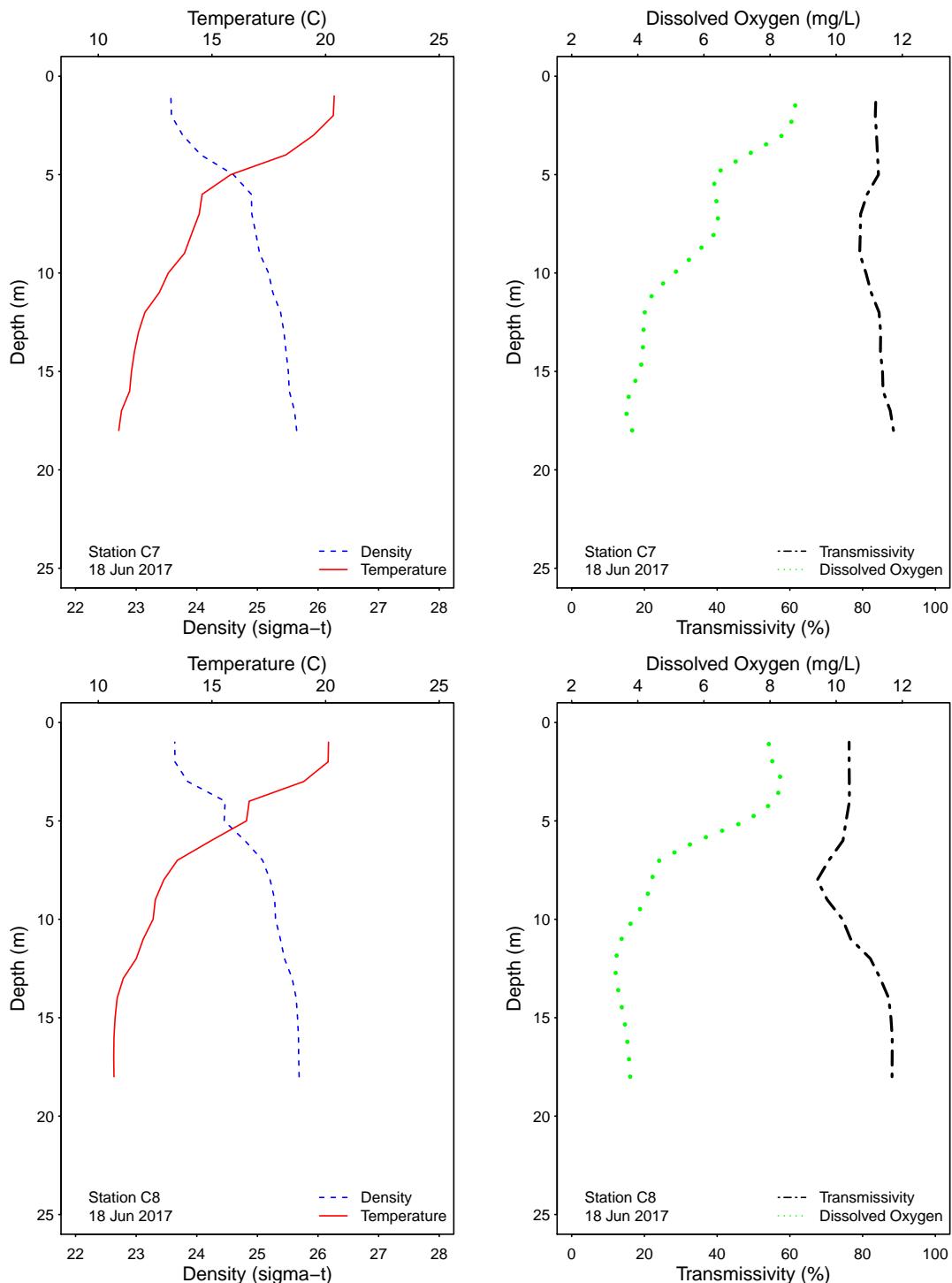


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

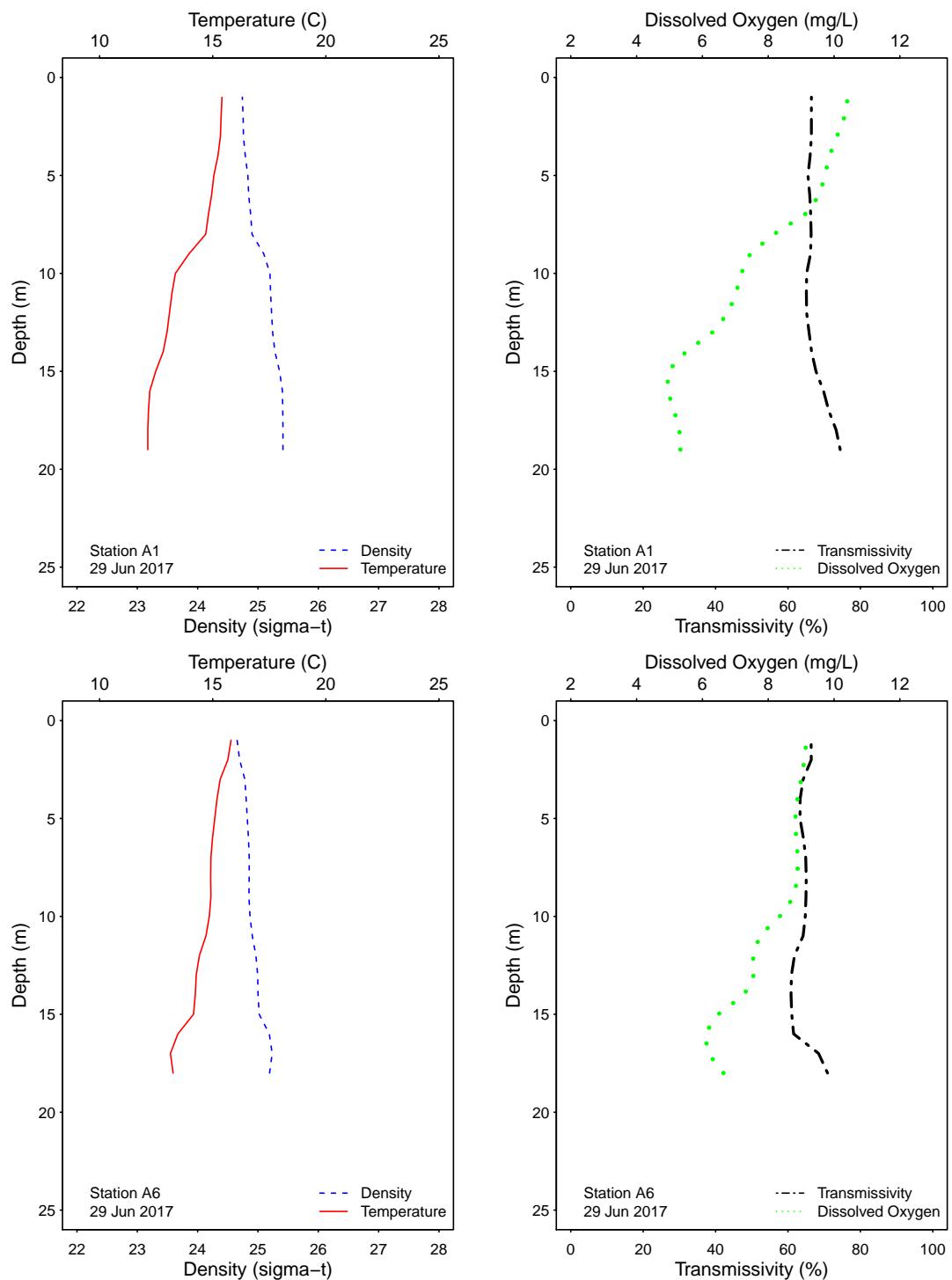


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

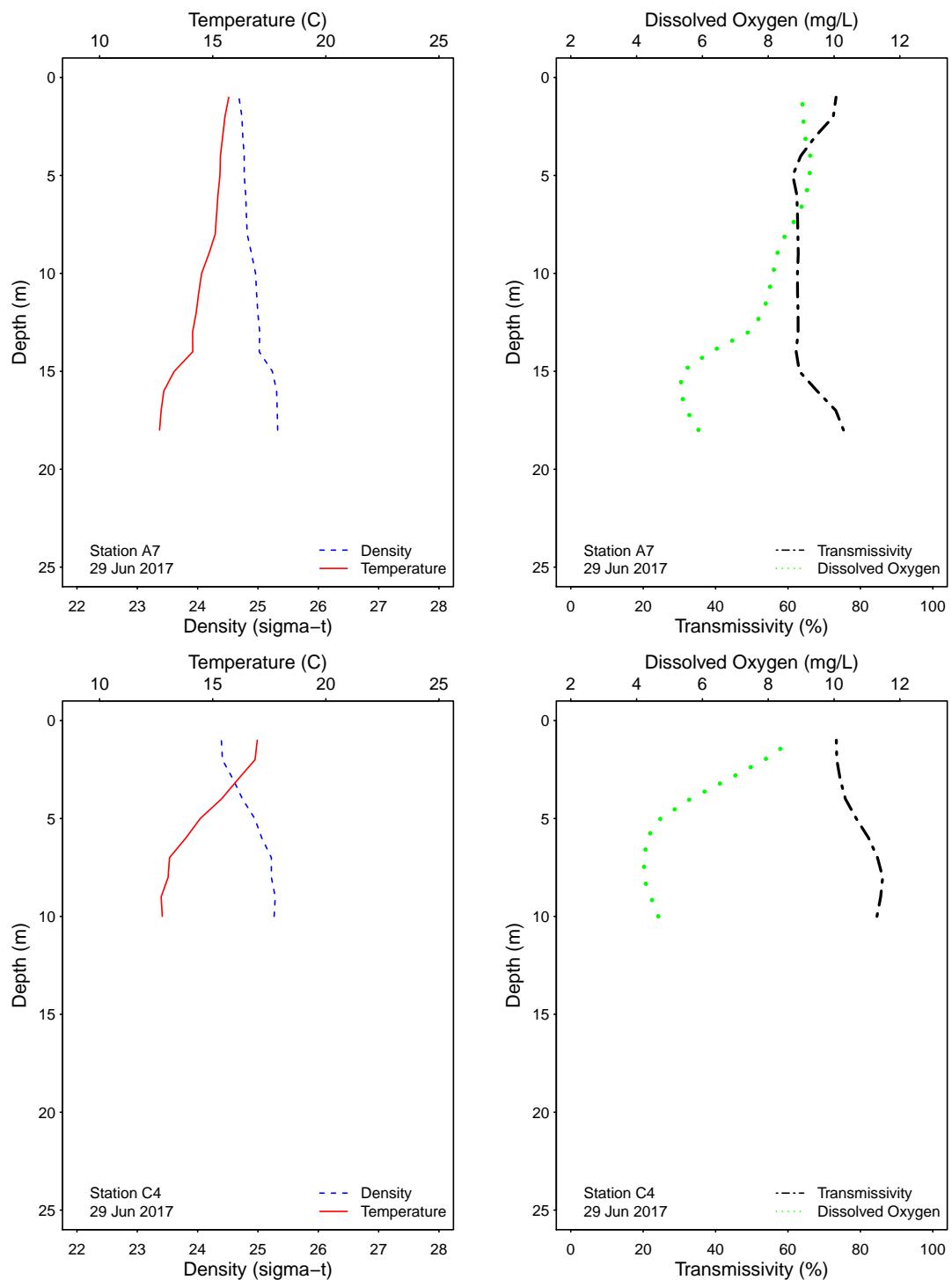


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

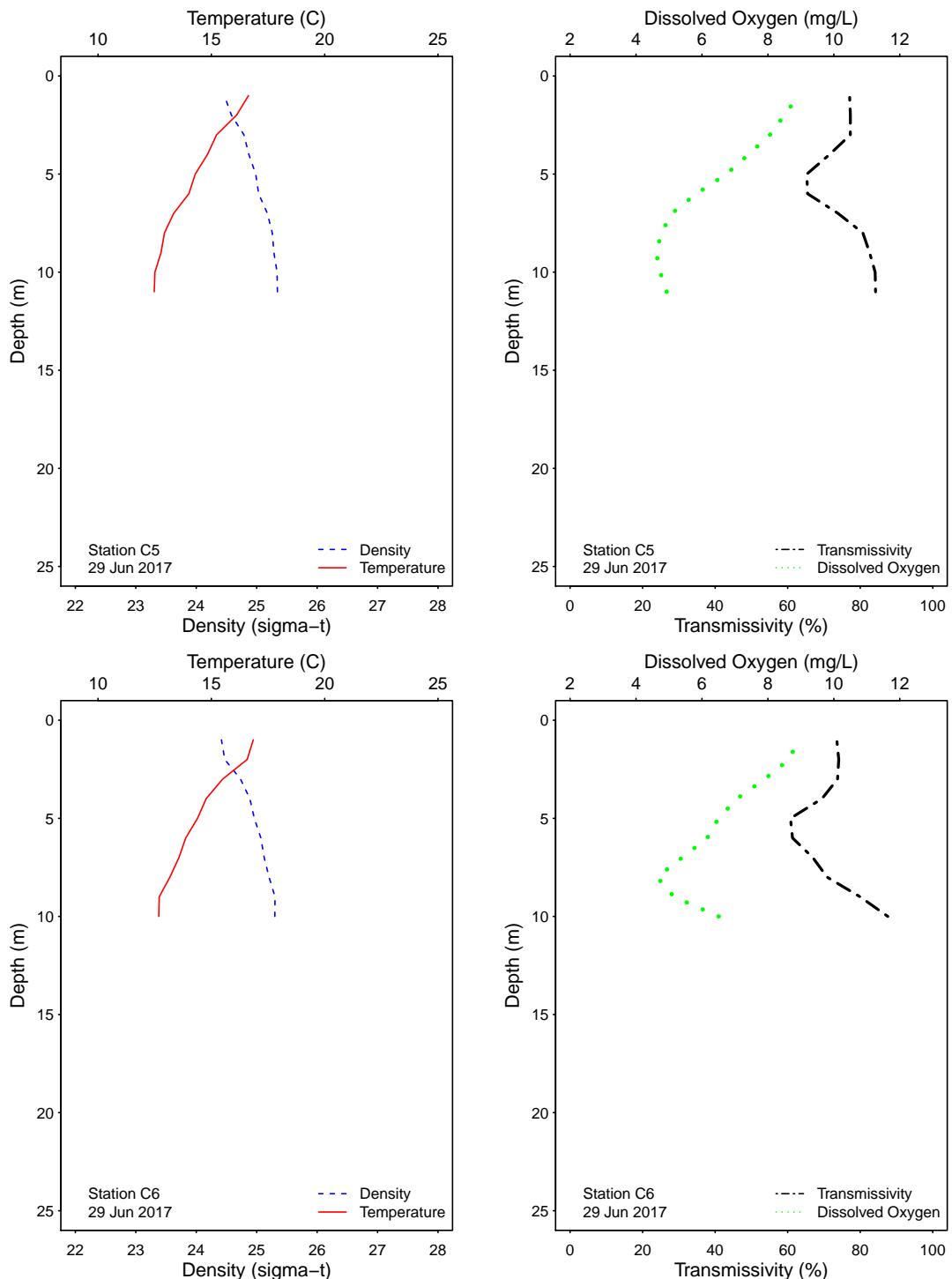


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

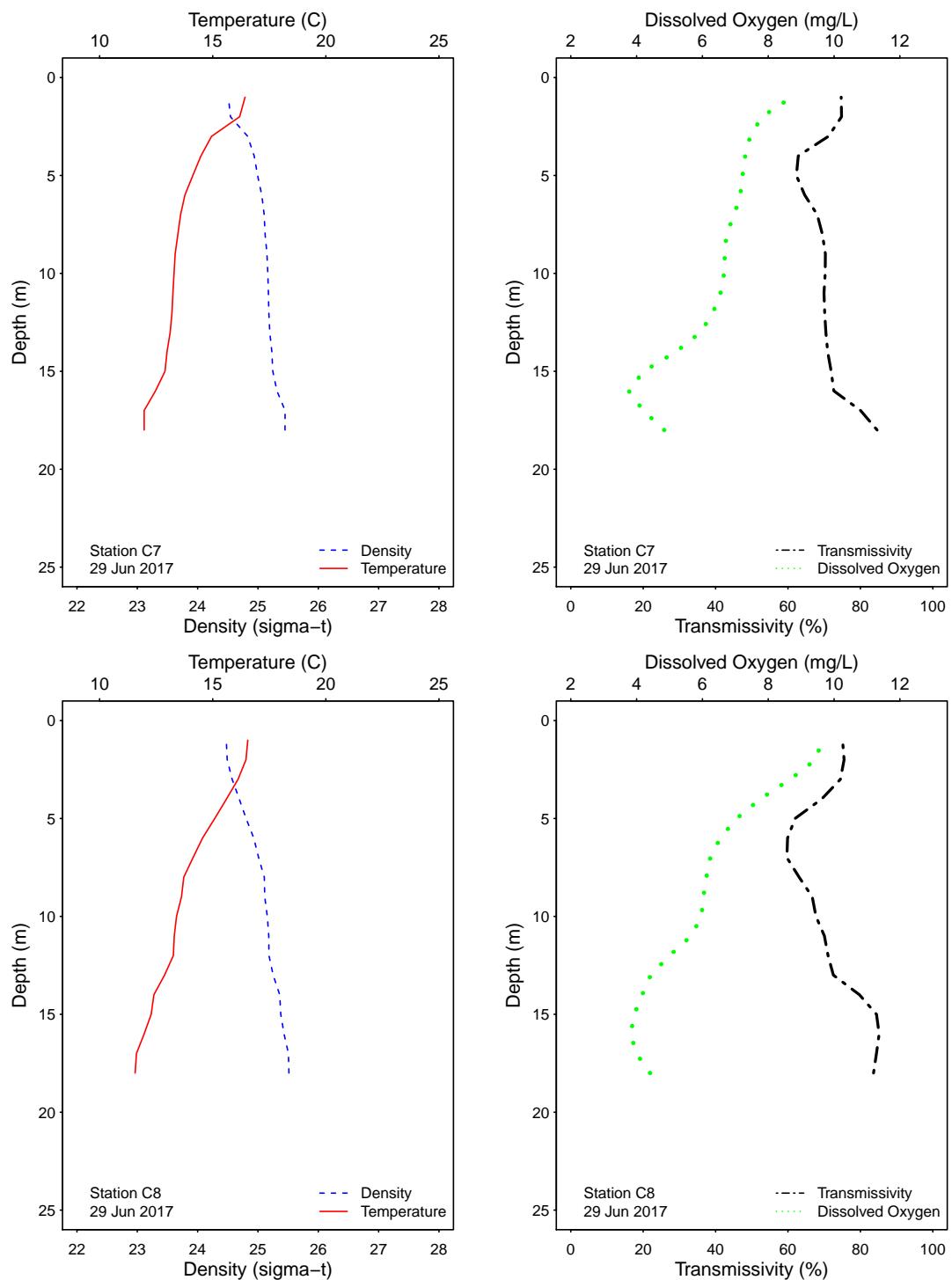


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

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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.

<b>Station</b>	<b>Date</b>	<b>Depth</b>	<b>Analyst</b>	<b>Procedure</b>	<b>Total</b>	<b>Fecal</b>	<b>Enter</b>
A7	03 Jun 2017	18	LMA	LAB DUPLICATE	<2	<2	<2
A7	07 Jun 2017	18	LMA	LAB DUPLICATE	<2	2e	<2
A7	13 Jun 2017	18	ZV	LAB DUPLICATE	8e	2e	<2
A7	18 Jun 2017	18	ZV	LAB DUPLICATE	6e	<2	<2
A7	29 Jun 2017	18	AR	LAB DUPLICATE	<2	ns	<2
A7	29 Jun 2017	18	LMA	LAB DUPLICATE	ns	<2	ns
C7	03 Jun 2017	18	LMA	LAB DUPLICATE	<2	<2	<2
C7	07 Jun 2017	18	LMA	LAB DUPLICATE	<2	<2	<2
C7	13 Jun 2017	18	AE	LAB DUPLICATE	2e	<2	<2
C7	18 Jun 2017	18	ZV	LAB DUPLICATE	4e	<2	<2
C7	29 Jun 2017	18	AR	LAB DUPLICATE	<20	ns	<2
C7	29 Jun 2017	18	LMA	LAB DUPLICATE	ns	<2	ns
C8	03 Jun 2017	12	ZV	LAB DUPLICATE	<2	<2	<2
C8	07 Jun 2017	12	LMA	LAB DUPLICATE	<2	2e	<2
C8	13 Jun 2017	12	LMA	LAB DUPLICATE	<2	<2	<2
C8	18 Jun 2017	12	JT	LAB DUPLICATE	4e	<2	<2
C8	29 Jun 2017	12	AR	LAB DUPLICATE	<2	ns	<2
C8	29 Jun 2017	12	LMA	LAB DUPLICATE	ns	<2	ns
D12	04 Jun 2017		LMA	FIELD DUPLICATE	<20	<2	16e
D12	04 Jun 2017		LMA	LAB DUPLICATE	<20	2e	6e
D12	10 Jun 2017		LMA	FIELD DUPLICATE	<20	2e	2e
D12	10 Jun 2017		LMA	LAB DUPLICATE	2e	2e	<2
D12	16 Jun 2017		LMA	FIELD DUPLICATE	20e	<2	2e
D12	16 Jun 2017		LMA	LAB DUPLICATE	20e	<2	<2
D12	22 Jun 2017		LMA	FIELD DUPLICATE	<200	<2	8e
D12	22 Jun 2017		LMA	LAB DUPLICATE	200e	2e	4e
D12	28 Jun 2017		LMA	FIELD DUPLICATE	<20	<2	2e
D12	28 Jun 2017		LMA	LAB DUPLICATE	<20	<2	<2

ns = not sampled

ND = no data

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