



# Monthly Receiving Waters Monitoring Report for the Point Loma Ocean Outfall

(Point Loma Metropolitan Wastewater Treatment Plant)

NPDES Permit No. CA0107409

# September 2015



City of San Diego  
Ocean Monitoring Program  
Public Utilities Department  
Environmental Monitoring and Technical Services Division





THE CITY OF SAN DIEGO

October 30, 2015

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 September 2015 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 Public Utilities Director

TDS:asb

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

**Environmental Monitoring and Technical Services Division • Public Utilities**

2392 Kincaid Road • San Diego, CA 92101-0811

Tel (619) 758-2300 Fax (619) 758-2309





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## 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). 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.

Van Dorn bottles are used to collect seawater samples from discrete depths at the kelp bed stations. The bottles are arrayed at the required depths and messenger-tripped in series. 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. However, it should be noted that the CTD measurements and bacteriological samples are taken from separate hydrocasts.

### ***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 2009 COP compliance standards.

Monitoring at all offshore sites includes measurements of *Enterococcus* bacteria, water temperature, salinity, density, dissolved oxygen, pH, chlorophyll *a*, transmissivity, chromomimetic 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 2009 California Ocean Plan. The seven standards are defined as follows:

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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.

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

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

Single Sample Maximums:

- (1) 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 2015 Quality Assurance Report, which will be completed in March 2016.

## SUMMARY OF RESULTS

### *Shore Stations*

- During September 2015, each of the eight shore stations were in compliance with the water-contact standards specified in the Ocean Plan for total coliform, fecal coliform, and *Enterococcus* bacteria.
- 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 (<http://www.sandiego.gov/mwwd/environment/oceanmonitor/reports/index.shtml>).
- 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 September (i.e. September 4, 10, 15, 21, 27).

- During September, each of the kelp bed stations were in compliance with the water-contact standards specified in the Ocean Plan for total coliform, fecal coliform, and *Enterococcus* bacteria.
- Water column temperatures ranged from 14.98 to 23.94°C during the month. The difference between surface and bottom waters ranged from 1.66 to 7.96°C, indicating that the water column was stratified at the kelp bed stations during the month.
- Chlorophyll *a* concentrations ranged from 0.35 to 1.81 µg/L during September, suggesting the absence of phytoplankton blooms during the month.
- There were no notable visual observations for September.

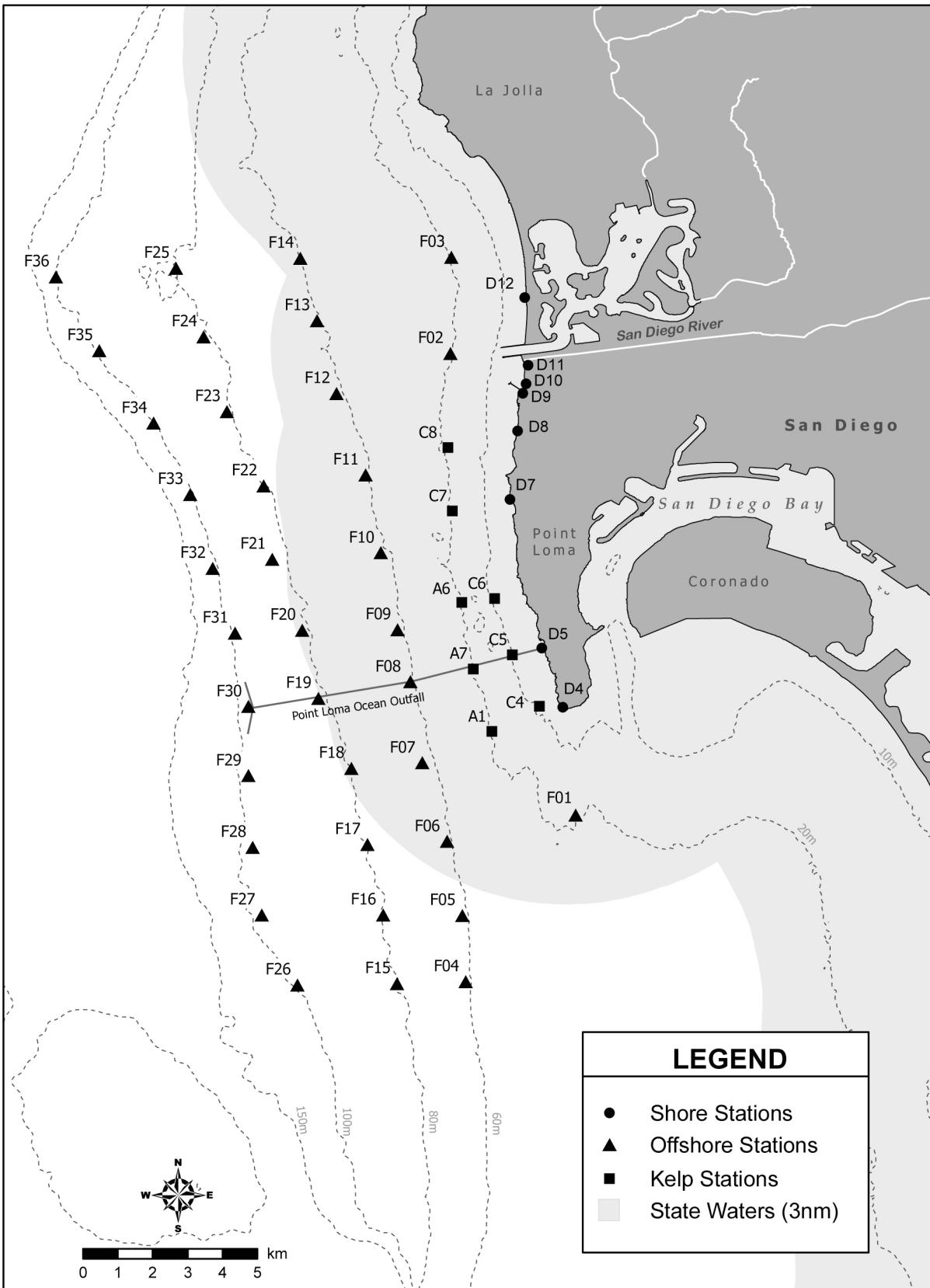
#### ***Offshore Stations***

- Quarterly sampling was not conducted during September at the offshore stations. The next quarterly sampling is scheduled for November 2015.



## TABLES AND FIGURES





**Figure 1.1** Station Map



# Shore Stations



**Table 2.1**

Summary of compliance with the 2009 Ocean Plan's 30-day Geometric Mean standard for total coliforms 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	D9	D10	D11	D12
01 Sep 2015	8	20	20	20	11	29	23	13
02 Sep 2015	13	20	20	20	10	52	26	13
03 Sep 2015	13	20	20	20	10	52	26	13
04 Sep 2015	13	20	20	20	10	52	26	13
05 Sep 2015	13	20	20	20	10	52	26	13
06 Sep 2015	13	20	20	20	10	52	26	13
07 Sep 2015	13	20	20	20	10	52	26	13
08 Sep 2015	13	20	32	39	10	48	23	13
09 Sep 2015	13	20	32	39	10	48	23	13
10 Sep 2015	13	20	32	39	10	48	23	13
11 Sep 2015	13	20	32	39	10	48	23	13
12 Sep 2015	13	20	32	39	10	48	23	13
13 Sep 2015	13	20	32	39	10	48	23	13
14 Sep 2015	13	32	50	39	10	48	35	13
15 Sep 2015	13	32	50	39	10	48	35	13
16 Sep 2015	13	32	50	39	10	48	35	13
17 Sep 2015	13	32	50	39	10	48	35	13
18 Sep 2015	13	32	50	39	10	48	35	13
19 Sep 2015	13	32	50	39	10	48	35	13
20 Sep 2015	14	50	58	72	13	36	30	20
21 Sep 2015	14	50	58	72	13	36	30	20
22 Sep 2015	14	50	58	72	13	36	30	20
23 Sep 2015	14	50	58	72	13	36	30	20
24 Sep 2015	14	50	58	72	13	36	30	20
25 Sep 2015	14	50	58	72	13	36	30	20
26 Sep 2015	23	50	105	72	32	58	48	20
27 Sep 2015	23	50	105	72	32	58	48	20
28 Sep 2015	23	50	105	72	32	58	48	20
29 Sep 2015	23	50	105	72	32	58	48	20
30 Sep 2015	23	50	105	72	32	58	48	20

\* Geometric mean calculated using an n<5

**Table 2.2**

Summary of compliance with the 2009 Ocean Plan's 30-day Geometric Mean standard for fecal coliform 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	D9	D10	D11	D12
01 Sep 2015	2	2	3	3	2	4	7	3
02 Sep 2015	2	2	3	5	2	5	8	2
03 Sep 2015	2	2	3	5	2	5	8	2
04 Sep 2015	2	2	3	5	2	5	8	2
05 Sep 2015	2	2	3	5	2	5	8	2
06 Sep 2015	2	2	3	5	2	5	8	2
07 Sep 2015	2	2	3	5	2	5	8	2
08 Sep 2015	2	2	3	4	2	5	8	2
09 Sep 2015	2	2	3	4	2	5	8	2
10 Sep 2015	2	2	3	4	2	5	8	2
11 Sep 2015	2	2	3	4	2	5	8	2
12 Sep 2015	2	2	3	4	2	5	8	2
13 Sep 2015	2	2	3	4	2	5	8	2
14 Sep 2015	2	2	3	5	2	5	6	2
15 Sep 2015	2	2	3	5	2	5	6	2
16 Sep 2015	2	2	3	5	2	5	6	2
17 Sep 2015	2	2	3	5	2	5	6	2
18 Sep 2015	2	2	3	5	2	5	6	2
19 Sep 2015	2	2	3	5	2	5	6	2
20 Sep 2015	2	2	3	6	2	3	4	2
21 Sep 2015	2	2	3	6	2	3	4	2
22 Sep 2015	2	2	3	6	2	3	4	2
23 Sep 2015	2	2	3	6	2	3	4	2
24 Sep 2015	2	2	3	6	2	3	4	2
25 Sep 2015	2	2	3	6	2	3	4	2
26 Sep 2015	2	2	6	6	2	3	4	2
27 Sep 2015	2	2	6	6	2	3	4	2
28 Sep 2015	2	2	6	6	2	3	4	2
29 Sep 2015	2	2	6	6	2	3	4	2
30 Sep 2015	2	2	6	6	2	3	4	2

\* Geometric mean calculated using an n<5

**Table 2.3**

Summary of compliance with the 2009 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	D9	D10	D11	D12
01 Sep 2015	2	2	3	3	2	10	6	3
02 Sep 2015	2	2	3	2	2	6	5	2
03 Sep 2015	2	2	3	2	2	6	5	2
04 Sep 2015	2	2	3	2	2	6	5	2
05 Sep 2015	2	2	3	2	2	6	5	2
06 Sep 2015	2	2	3	2	2	6	5	2
07 Sep 2015	2	2	3	2	2	6	5	2
08 Sep 2015	2	2	2	3	3	8	4	2
09 Sep 2015	2	2	2	3	3	8	4	2
10 Sep 2015	2	2	2	3	3	8	4	2
11 Sep 2015	2	2	2	3	3	8	4	2
12 Sep 2015	2	2	2	3	3	8	4	2
13 Sep 2015	2	2	2	3	3	8	4	2
14 Sep 2015	2	2	3	4	3	7	6	2
15 Sep 2015	2	2	3	4	3	7	6	2
16 Sep 2015	2	2	3	4	3	7	6	2
17 Sep 2015	2	2	3	4	3	7	6	2
18 Sep 2015	2	2	3	4	3	7	6	2
19 Sep 2015	2	2	3	4	3	7	6	2
20 Sep 2015	2	2	4	5	3	5	5	2
21 Sep 2015	2	2	4	5	3	5	5	2
22 Sep 2015	2	2	4	5	3	5	5	2
23 Sep 2015	2	2	4	5	3	5	5	2
24 Sep 2015	2	2	4	5	3	5	5	2
25 Sep 2015	2	2	4	5	3	5	5	2
26 Sep 2015	3	2	5	6	3	4	6	3
27 Sep 2015	3	2	5	6	3	4	6	3
28 Sep 2015	3	2	5	6	3	4	6	3
29 Sep 2015	3	2	5	6	3	4	6	3
30 Sep 2015	3	2	5	6	3	4	6	3

\* Geometric mean calculated using an n<5

**Table 2.4**

Summary of compliance at the PLOO shore stations with the 2009 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	D9	D10	D11	D12
02 Sep 2015	IC	IC	IC	IC	IC	IC	IC	IC
08 Sep 2015	IC	IC	IC	IC	IC	IC	IC	IC
14 Sep 2015	IC	IC	IC	IC	IC	IC	IC	IC
20 Sep 2015	IC	IC	IC	IC	IC	IC	IC	IC
26 Sep 2015	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

**Table 2.5**

Summary of compliance at the PLOO shore stations with the 2009 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	D9	D10	D11	D12
02 Sep 2015	IC	IC	IC	IC	IC	IC	IC	IC
08 Sep 2015	IC	IC	IC	IC	IC	IC	IC	IC
14 Sep 2015	IC	IC	IC	IC	IC	IC	IC	IC
20 Sep 2015	IC	IC	IC	IC	IC	IC	IC	IC
26 Sep 2015	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 2009 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	D9	D10	D11	D12
02 Sep 2015	IC	IC	IC	IC	IC	IC	IC	IC
08 Sep 2015	IC	IC	IC	IC	IC	IC	IC	IC
14 Sep 2015	IC	IC	IC	IC	IC	IC	IC	IC
20 Sep 2015	IC	IC	IC	IC	IC	IC	IC	IC
26 Sep 2015	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

**Table 2.7**

Summary of compliance at the PLOO shore stations with the 2009 Ocean Plan's Single Sample Maximum standard for total coliforms 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	D9	D10	D11	D12
02 Sep 2015	IC	IC	IC	IC	IC	IC	IC	IC
08 Sep 2015	IC	IC	IC	IC	IC	IC	IC	IC
14 Sep 2015	IC	IC	IC	IC	IC	IC	IC	IC
20 Sep 2015	IC	IC	IC	IC	IC	IC	IC	IC
26 Sep 2015	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

**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	02 Sep 2015	1018	<20	<2	<2	0.100
	08 Sep 2015	944	<20	<2	<2	0.100
	14 Sep 2015	1010	<20	<2	2e	0.100
	20 Sep 2015	917	40e	<2	4e	0.050
	26 Sep 2015	958	<20	<2	4e	0.100
D5	02 Sep 2015	1031	<20	<2	<2	0.100
	08 Sep 2015	1013	<20	<2	2e	0.100
	14 Sep 2015	1024	<200	2e	<2	0.010
	20 Sep 2015	938	<200	6e	<2	0.030
	26 Sep 2015	1016	<20	<2	<2	0.100
D7	02 Sep 2015	956	<20	<2	2e	0.100
	08 Sep 2015	1109	<200	<2	2e	0.010
	14 Sep 2015	946	<200	10e	8e	0.050
	20 Sep 2015	849	40e	4e	4e	0.100
	26 Sep 2015	917	400e	36e	28e	0.090
D8	02 Sep 2015	929	<20	14e	2e	0.700
	08 Sep 2015	1053	600e	<2	10e	0.003
	14 Sep 2015	934	20e	8e	14e	0.400
	20 Sep 2015	835	400e	4e	8e	0.010
	26 Sep 2015	903	<20	8e	4e	0.400
D9	02 Sep 2015	917	<20	<2	<2	0.100
	08 Sep 2015	914	20e	<2	10e	0.100
	14 Sep 2015	918	<20	<2	2e	0.100
	20 Sep 2015	819	20e	<2	2e	0.100
	26 Sep 2015	849	<200	<2	2e	0.010
D10	02 Sep 2015	907	400e	<20	6e	0.050
	08 Sep 2015	853	20e	<2	6e	0.100
	14 Sep 2015	905	20e	2e	<2	0.100
	20 Sep 2015	800	<20	<2	<2	0.100
	26 Sep 2015	839	<200	<2	12e	0.010
D11	02 Sep 2015	854	<200	<20	14e	0.100
	08 Sep 2015	843	20e	<2	<2	0.100
	14 Sep 2015	858	160e	4e	14e	0.025
	20 Sep 2015	748	<20	<2	2e	0.100
	26 Sep 2015	827	20e	2e	12e	0.100

<b>Station</b>	<b>Date</b>	<b>Time</b>	<b>Total</b>	<b>Fecal</b>	<b>Enter</b>	<b>F:T</b>
D12	02 Sep 2015	817	<20	<2	<2	0.100
D12	08 Sep 2015	818	<20	6e	2e	0.300
D12	14 Sep 2015	837	<20	2e	6e	0.100
D12	20 Sep 2015	727	<20	2e	2e	0.100
D12	26 Sep 2015	805	<20	2e	6e	0.100

ns = not sampled

**Table 2.9**

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

Station	Date	Parameter	Value
D4	02 Sep 2015	Arrive Time	1018
D4	02 Sep 2015	Weather	Sunny
D4	02 Sep 2015	Wind Speed (kts)	3.8
D4	02 Sep 2015	Wind Dir	W
D4	02 Sep 2015	Animal Life	None
D4	02 Sep 2015	Floatables	None
D4	02 Sep 2015	Water Color	Green
D4	02 Sep 2015	Current Direction	W
D4	02 Sep 2015	Wave Height Low (ft)	3
D4	02 Sep 2015	High Tide (ft)	5.6
D4	02 Sep 2015	High Tide Time	1221
D4	02 Sep 2015	Low Tide (ft)	0.7
D4	02 Sep 2015	Low Tide Time	607
D4	02 Sep 2015	Comments	Kelp; Seagrass; Algae; Water clear
D4	08 Sep 2015	Arrive Time	944
D4	08 Sep 2015	Weather	Sunny
D4	08 Sep 2015	Wind Speed (kts)	5
D4	08 Sep 2015	Wind Dir	W
D4	08 Sep 2015	Animal Life	None
D4	08 Sep 2015	Floatables	None
D4	08 Sep 2015	Water Color	Green
D4	08 Sep 2015	Current Direction	W
D4	08 Sep 2015	Wave Height Low (ft)	3
D4	08 Sep 2015	High Tide (ft)	4.2
D4	08 Sep 2015	High Tide Time	743
D4	08 Sep 2015	Low Tide (ft)	2
D4	08 Sep 2015	Low Tide Time	1302
D4	08 Sep 2015	Comments	Kelp; Seagrass; Water turbid
D4	14 Sep 2015	Arrive Time	1010
D4	14 Sep 2015	Weather	Cloudy
D4	14 Sep 2015	Wind Speed (kts)	2.7
D4	14 Sep 2015	Wind Dir	S
D4	14 Sep 2015	Animal Life	None
D4	14 Sep 2015	Floatables	None
D4	14 Sep 2015	Water Color	Green
D4	14 Sep 2015	Current Direction	S
D4	14 Sep 2015	Wave Height Low (ft)	2
D4	14 Sep 2015	High Tide (ft)	5.1
D4	14 Sep 2015	High Tide Time	1016
D4	14 Sep 2015	Low Tide (ft)	0.6
D4	14 Sep 2015	Low Tide Time	412
D4	14 Sep 2015	Comments	Kelp; Seagrass; Algae; Water clear
D4	20 Sep 2015	Arrive Time	938
D4	20 Sep 2015	Weather	Sunny
D4	20 Sep 2015	Wind Speed (kts)	1
D4	20 Sep 2015	Wind Dir	W
D4	20 Sep 2015	Animal Life	None
D4	20 Sep 2015	Floatables	None

Station	Date	Parameter	Value
D4	20 Sep 2015	Water Color	Green
D4	20 Sep 2015	Current Direction	W
D4	20 Sep 2015	Wave Height Low (ft)	2
D4	20 Sep 2015	High Tide (ft)	4.5
D4	20 Sep 2015	High Tide Time	1402
D4	20 Sep 2015	Low Tide (ft)	2.7
D4	20 Sep 2015	Low Tide Time	659
D4	20 Sep 2015	Comments	Kelp; Seagrass; Water turbid
D4	26 Sep 2015	Arrive Time	958
D4	26 Sep 2015	Weather	Partly Cloudy
D4	26 Sep 2015	Wind Speed (kts)	1.2
D4	26 Sep 2015	Wind Dir	W
D4	26 Sep 2015	Animal Life	None
D4	26 Sep 2015	Floatables	None
D4	26 Sep 2015	Water Color	Green
D4	26 Sep 2015	Current Direction	W
D4	26 Sep 2015	Wave Height Low (ft)	2
D4	26 Sep 2015	High Tide (ft)	5.5
D4	26 Sep 2015	High Tide Time	827
D4	26 Sep 2015	Low Tide (ft)	0.4
D4	26 Sep 2015	Low Tide Time	1431
D4	26 Sep 2015	Comments	Seagrass; Algae; Water clear
D5	02 Sep 2015	Arrive Time	1031
D5	02 Sep 2015	Weather	Sunny
D5	02 Sep 2015	Wind Speed (kts)	1.1
D5	02 Sep 2015	Wind Dir	W
D5	02 Sep 2015	Animal Life	None
D5	02 Sep 2015	Floatables	None
D5	02 Sep 2015	Water Color	Green
D5	02 Sep 2015	Current Direction	W
D5	02 Sep 2015	Wave Height Low (ft)	2
D5	02 Sep 2015	High Tide (ft)	5.6
D5	02 Sep 2015	High Tide Time	1221
D5	02 Sep 2015	Low Tide (ft)	0.7
D5	02 Sep 2015	Low Tide Time	607
D5	02 Sep 2015	Comments	Kelp; Seagrass; Water clear
D5	08 Sep 2015	Arrive Time	1013
D5	08 Sep 2015	Weather	Sunny
D5	08 Sep 2015	Wind Speed (kts)	5
D5	08 Sep 2015	Wind Dir	W
D5	08 Sep 2015	Animal Life	None
D5	08 Sep 2015	Floatables	None
D5	08 Sep 2015	Water Color	Green
D5	08 Sep 2015	Current Direction	W
D5	08 Sep 2015	Wave Height Low (ft)	4
D5	08 Sep 2015	High Tide (ft)	4.2
D5	08 Sep 2015	High Tide Time	743
D5	08 Sep 2015	Low Tide (ft)	2
D5	08 Sep 2015	Low Tide Time	1302
D5	08 Sep 2015	Comments	Kelp; Seagrass; Water turbid
D5	14 Sep 2015	Arrive Time	1024

Station	Date	Parameter	Value
D5	14 Sep 2015	Weather	Cloudy
D5	14 Sep 2015	Wind Speed (kts)	3.1
D5	14 Sep 2015	Wind Dir	S
D5	14 Sep 2015	Animal Life	None
D5	14 Sep 2015	Floatables	None
D5	14 Sep 2015	Water Color	Green
D5	14 Sep 2015	Current Direction	S
D5	14 Sep 2015	Wave Height Low (ft)	3
D5	14 Sep 2015	High Tide (ft)	5.1
D5	14 Sep 2015	High Tide Time	1016
D5	14 Sep 2015	Low Tide (ft)	0.6
D5	14 Sep 2015	Low Tide Time	412
D5	14 Sep 2015	Comments	Kelp; Seagrass; Algae; Water clear
D5	20 Sep 2015	Arrive Time	938
D5	20 Sep 2015	Weather	Sunny
D5	20 Sep 2015	Wind Speed (kts)	3
D5	20 Sep 2015	Wind Dir	W
D5	20 Sep 2015	Animal Life	None
D5	20 Sep 2015	Floatables	None
D5	20 Sep 2015	Water Color	Green
D5	20 Sep 2015	Current Direction	W
D5	20 Sep 2015	Wave Height Low (ft)	3
D5	20 Sep 2015	High Tide (ft)	4.5
D5	20 Sep 2015	High Tide Time	1402
D5	20 Sep 2015	Low Tide (ft)	2.7
D5	20 Sep 2015	Low Tide Time	659
D5	20 Sep 2015	Comments	Kelp; Seagrass; Water turbid
D5	26 Sep 2015	Arrive Time	1016
D5	26 Sep 2015	Weather	Partly Cloudy
D5	26 Sep 2015	Wind Speed (kts)	3.2
D5	26 Sep 2015	Wind Dir	W
D5	26 Sep 2015	Animal Life	None
D5	26 Sep 2015	Floatables	None
D5	26 Sep 2015	Water Color	Green
D5	26 Sep 2015	Current Direction	W
D5	26 Sep 2015	Wave Height Low (ft)	2
D5	26 Sep 2015	High Tide (ft)	5.5
D5	26 Sep 2015	High Tide Time	827
D5	26 Sep 2015	Low Tide (ft)	0.4
D5	26 Sep 2015	Low Tide Time	1431
D5	26 Sep 2015	Comments	Seagrass; Algae; Water clear
D7	02 Sep 2015	Arrive Time	956
D7	02 Sep 2015	Weather	Sunny
D7	02 Sep 2015	Wind Speed (kts)	1.3
D7	02 Sep 2015	Wind Dir	S
D7	02 Sep 2015	Animal Life	None
D7	02 Sep 2015	Floatables	None
D7	02 Sep 2015	Water Color	Green
D7	02 Sep 2015	Current Direction	S
D7	02 Sep 2015	Wave Height Low (ft)	4
D7	02 Sep 2015	High Tide (ft)	5.6
D7	02 Sep 2015	High Tide Time	1221

Station	Date	Parameter	Value
D7	02 Sep 2015	Low Tide (ft)	0.7
D7	02 Sep 2015	Low Tide Time	607
D7	02 Sep 2015	Comments	Kelp; Seagrass; Algae; Water clear
D7	08 Sep 2015	Arrive Time	1109
D7	08 Sep 2015	Weather	Sunny
D7	08 Sep 2015	Wind Speed (kts)	5
D7	08 Sep 2015	Wind Dir	W
D7	08 Sep 2015	Animal Life	None
D7	08 Sep 2015	Floatables	None
D7	08 Sep 2015	Water Color	Green
D7	08 Sep 2015	Current Direction	W
D7	08 Sep 2015	Wave Height Low (ft)	4
D7	08 Sep 2015	High Tide (ft)	4.2
D7	08 Sep 2015	High Tide Time	743
D7	08 Sep 2015	Low Tide (ft)	2
D7	08 Sep 2015	Low Tide Time	1302
D7	08 Sep 2015	Comments	Kelp; Seagrass; 7 Surfers; Water turbid
D7	14 Sep 2015	Arrive Time	946
D7	14 Sep 2015	Weather	Cloudy
D7	14 Sep 2015	Wind Speed (kts)	4.7
D7	14 Sep 2015	Wind Dir	SW
D7	14 Sep 2015	Animal Life	None
D7	14 Sep 2015	Floatables	None
D7	14 Sep 2015	Water Color	Green
D7	14 Sep 2015	Current Direction	SW
D7	14 Sep 2015	Wave Height Low (ft)	3
D7	14 Sep 2015	High Tide (ft)	5.1
D7	14 Sep 2015	High Tide Time	1016
D7	14 Sep 2015	Low Tide (ft)	0.6
D7	14 Sep 2015	Low Tide Time	412
D7	14 Sep 2015	Comments	Kelp; Seagrass; Algae; Water clear
D7	20 Sep 2015	Arrive Time	849
D7	20 Sep 2015	Weather	Sunny
D7	20 Sep 2015	Wind Speed (kts)	1
D7	20 Sep 2015	Wind Dir	W
D7	20 Sep 2015	Animal Life	None
D7	20 Sep 2015	Floatables	None
D7	20 Sep 2015	Water Color	Green
D7	20 Sep 2015	Current Direction	W
D7	20 Sep 2015	Wave Height Low (ft)	3
D7	20 Sep 2015	High Tide (ft)	4.5
D7	20 Sep 2015	High Tide Time	1402
D7	20 Sep 2015	Low Tide (ft)	2.7
D7	20 Sep 2015	Low Tide Time	659
D7	20 Sep 2015	Comments	Kelp; Seagrass; Water turbid
D7	26 Sep 2015	Arrive Time	917
D7	26 Sep 2015	Weather	Partly Cloudy
D7	26 Sep 2015	Wind Speed (kts)	1.2
D7	26 Sep 2015	Wind Dir	SW
D7	26 Sep 2015	Animal Life	None
D7	26 Sep 2015	Floatables	None

Station	Date	Parameter	Value
D7	26 Sep 2015	Water Color	Green
D7	26 Sep 2015	Current Direction	SW
D7	26 Sep 2015	Wave Height Low (ft)	2
D7	26 Sep 2015	High Tide (ft)	5.5
D7	26 Sep 2015	High Tide Time	827
D7	26 Sep 2015	Low Tide (ft)	0.4
D7	26 Sep 2015	Low Tide Time	1431
D7	26 Sep 2015	Comments	Kelp; Seagrass; Algae; Water clear
D8	02 Sep 2015	Arrive Time	929
D8	02 Sep 2015	Weather	Sunny
D8	02 Sep 2015	Wind Speed (kts)	3.3
D8	02 Sep 2015	Wind Dir	S
D8	02 Sep 2015	Animal Life	None
D8	02 Sep 2015	Floatables	None
D8	02 Sep 2015	Water Color	Green
D8	02 Sep 2015	Current Direction	S
D8	02 Sep 2015	Wave Height Low (ft)	2
D8	02 Sep 2015	High Tide (ft)	5.6
D8	02 Sep 2015	High Tide Time	1221
D8	02 Sep 2015	Low Tide (ft)	0.7
D8	02 Sep 2015	Low Tide Time	607
D8	02 Sep 2015	Comments	Kelp; Seagrass; Water clear
D8	08 Sep 2015	Arrive Time	1053
D8	08 Sep 2015	Weather	Sunny
D8	08 Sep 2015	Wind Speed (kts)	3
D8	08 Sep 2015	Wind Dir	W
D8	08 Sep 2015	Animal Life	None
D8	08 Sep 2015	Floatables	None
D8	08 Sep 2015	Water Color	Green
D8	08 Sep 2015	Current Direction	W
D8	08 Sep 2015	Wave Height Low (ft)	1
D8	08 Sep 2015	High Tide (ft)	4.2
D8	08 Sep 2015	High Tide Time	743
D8	08 Sep 2015	Low Tide (ft)	2
D8	08 Sep 2015	Low Tide Time	1302
D8	08 Sep 2015	Comments	Kelp; Seagrass; 4 Persons; Water turbid; Four sun bathers.
D8	14 Sep 2015	Arrive Time	934
D8	14 Sep 2015	Weather	Cloudy
D8	14 Sep 2015	Wind Speed (kts)	2.5
D8	14 Sep 2015	Wind Dir	SW
D8	14 Sep 2015	Animal Life	None
D8	14 Sep 2015	Floatables	None
D8	14 Sep 2015	Water Color	Green
D8	14 Sep 2015	Current Direction	SW
D8	14 Sep 2015	Wave Height Low (ft)	3
D8	14 Sep 2015	High Tide (ft)	5.1
D8	14 Sep 2015	High Tide Time	1016
D8	14 Sep 2015	Low Tide (ft)	0.6
D8	14 Sep 2015	Low Tide Time	412
D8	14 Sep 2015	Comments	Kelp; Seagrass; Algae; Water clear
D8	20 Sep 2015	Arrive Time	835

Station	Date	Parameter	Value
D8	20 Sep 2015	Weather	Sunny
D8	20 Sep 2015	Wind Speed (kts)	1
D8	20 Sep 2015	Wind Dir	W
D8	20 Sep 2015	Animal Life	1 Dog
D8	20 Sep 2015	Floatables	None
D8	20 Sep 2015	Water Color	Grey
D8	20 Sep 2015	Current Direction	W
D8	20 Sep 2015	Wave Height Low (ft)	3
D8	20 Sep 2015	High Tide (ft)	4.5
D8	20 Sep 2015	High Tide Time	1402
D8	20 Sep 2015	Low Tide (ft)	2.7
D8	20 Sep 2015	Low Tide Time	659
D8	20 Sep 2015	Comments	Kelp; Seagrass; 3 Persons; Water turbid
D8	26 Sep 2015	Arrive Time	903
D8	26 Sep 2015	Weather	Sunny
D8	26 Sep 2015	Wind Speed (kts)	0.6
D8	26 Sep 2015	Wind Dir	SW
D8	26 Sep 2015	Animal Life	None
D8	26 Sep 2015	Floatables	None
D8	26 Sep 2015	Water Color	Green
D8	26 Sep 2015	Current Direction	SW
D8	26 Sep 2015	Wave Height Low (ft)	2
D8	26 Sep 2015	High Tide (ft)	5.5
D8	26 Sep 2015	High Tide Time	827
D8	26 Sep 2015	Low Tide (ft)	0.4
D8	26 Sep 2015	Low Tide Time	1431
D8	26 Sep 2015	Comments	Kelp; Seagrass; Algae; 9 Persons; Water clear
D9	02 Sep 2015	Arrive Time	917
D9	02 Sep 2015	Weather	Partly Cloudy
D9	02 Sep 2015	Wind Speed (kts)	6.6
D9	02 Sep 2015	Wind Dir	S
D9	02 Sep 2015	Animal Life	None
D9	02 Sep 2015	Floatables	None
D9	02 Sep 2015	Water Color	Green
D9	02 Sep 2015	Current Direction	S
D9	02 Sep 2015	Wave Height Low (ft)	3
D9	02 Sep 2015	High Tide (ft)	5.6
D9	02 Sep 2015	High Tide Time	1221
D9	02 Sep 2015	Low Tide (ft)	0.7
D9	02 Sep 2015	Low Tide Time	607
D9	02 Sep 2015	Comments	Kelp; Seagrass; Algae; Water clear
D9	08 Sep 2015	Arrive Time	914
D9	08 Sep 2015	Weather	Sunny
D9	08 Sep 2015	Wind Speed (kts)	3
D9	08 Sep 2015	Wind Dir	W
D9	08 Sep 2015	Animal Life	None
D9	08 Sep 2015	Floatables	None
D9	08 Sep 2015	Water Color	Green
D9	08 Sep 2015	Current Direction	W
D9	08 Sep 2015	Wave Height Low (ft)	3
D9	08 Sep 2015	High Tide (ft)	4.2
D9	08 Sep 2015	High Tide Time	743

Station	Date	Parameter	Value
D9	08 Sep 2015	Low Tide (ft)	2
D9	08 Sep 2015	Low Tide Time	1302
D9	08 Sep 2015	Comments	Kelp; Seagrass; Water turbid
D9	14 Sep 2015	Arrive Time	918
D9	14 Sep 2015	Weather	Cloudy
D9	14 Sep 2015	Wind Speed (kts)	2.7
D9	14 Sep 2015	Wind Dir	S
D9	14 Sep 2015	Animal Life	None
D9	14 Sep 2015	Floatables	None
D9	14 Sep 2015	Water Color	Green
D9	14 Sep 2015	Current Direction	S
D9	14 Sep 2015	Wave Height Low (ft)	2
D9	14 Sep 2015	High Tide (ft)	5.1
D9	14 Sep 2015	High Tide Time	1016
D9	14 Sep 2015	Low Tide (ft)	0.6
D9	14 Sep 2015	Low Tide Time	412
D9	14 Sep 2015	Comments	Kelp; Seagrass; Algae; Water clear
D9	20 Sep 2015	Arrive Time	819
D9	20 Sep 2015	Weather	Sunny
D9	20 Sep 2015	Wind Speed (kts)	1
D9	20 Sep 2015	Wind Dir	W
D9	20 Sep 2015	Animal Life	None
D9	20 Sep 2015	Floatables	None
D9	20 Sep 2015	Water Color	Grey
D9	20 Sep 2015	Current Direction	W
D9	20 Sep 2015	Wave Height Low (ft)	3
D9	20 Sep 2015	High Tide (ft)	3.1
D9	20 Sep 2015	High Tide Time	301
D9	20 Sep 2015	Low Tide (ft)	2.7
D9	20 Sep 2015	Low Tide Time	659
D9	20 Sep 2015	Comments	Kelp; Seagrass; 7 Surfers; Water turbid
D9	26 Sep 2015	Arrive Time	849
D9	26 Sep 2015	Weather	Sunny
D9	26 Sep 2015	Wind Speed (kts)	0.1
D9	26 Sep 2015	Wind Dir	W
D9	26 Sep 2015	Animal Life	None
D9	26 Sep 2015	Floatables	None
D9	26 Sep 2015	Water Color	Green
D9	26 Sep 2015	Current Direction	W
D9	26 Sep 2015	Wave Height Low (ft)	2
D9	26 Sep 2015	High Tide (ft)	5.5
D9	26 Sep 2015	High Tide Time	827
D9	26 Sep 2015	Low Tide (ft)	0.4
D9	26 Sep 2015	Low Tide Time	1431
D9	26 Sep 2015	Comments	Kelp; Seagrass; Algae; Water clear
D10	02 Sep 2015	Arrive Time	907
D10	02 Sep 2015	Weather	Overcast
D10	02 Sep 2015	Wind Speed (kts)	6.8
D10	02 Sep 2015	Wind Dir	S
D10	02 Sep 2015	Animal Life	None
D10	02 Sep 2015	Floatables	None

Station	Date	Parameter	Value
D10	02 Sep 2015	Water Color	Green
D10	02 Sep 2015	Current Direction	S
D10	02 Sep 2015	Wave Height Low (ft)	3
D10	02 Sep 2015	High Tide (ft)	5.6
D10	02 Sep 2015	High Tide Time	1221
D10	02 Sep 2015	Low Tide (ft)	0.7
D10	02 Sep 2015	Low Tide Time	607
D10	02 Sep 2015	Comments	Kelp; Seagrass; Water clear
D10	08 Sep 2015	Arrive Time	853
D10	08 Sep 2015	Weather	Sunny
D10	08 Sep 2015	Wind Speed (kts)	5
D10	08 Sep 2015	Wind Dir	W
D10	08 Sep 2015	Animal Life	None
D10	08 Sep 2015	Floatables	None
D10	08 Sep 2015	Water Color	Green
D10	08 Sep 2015	Current Direction	W
D10	08 Sep 2015	Wave Height Low (ft)	3
D10	08 Sep 2015	High Tide (ft)	4.2
D10	08 Sep 2015	High Tide Time	743
D10	08 Sep 2015	Low Tide (ft)	2
D10	08 Sep 2015	Low Tide Time	1302
D10	08 Sep 2015	Comments	Kelp; Seagrass; Water turbid
D10	14 Sep 2015	Arrive Time	905
D10	14 Sep 2015	Weather	Cloudy
D10	14 Sep 2015	Wind Speed (kts)	3.6
D10	14 Sep 2015	Wind Dir	S
D10	14 Sep 2015	Animal Life	None
D10	14 Sep 2015	Floatables	None
D10	14 Sep 2015	Water Color	Green
D10	14 Sep 2015	Current Direction	S
D10	14 Sep 2015	Wave Height Low (ft)	2
D10	14 Sep 2015	High Tide (ft)	5.1
D10	14 Sep 2015	High Tide Time	1016
D10	14 Sep 2015	Low Tide (ft)	0.6
D10	14 Sep 2015	Low Tide Time	412
D10	14 Sep 2015	Comments	Kelp; Seagrass; 2 Persons; Water clear
D10	20 Sep 2015	Arrive Time	800
D10	20 Sep 2015	Weather	Sunny
D10	20 Sep 2015	Wind Speed (kts)	1
D10	20 Sep 2015	Wind Dir	W
D10	20 Sep 2015	Animal Life	None
D10	20 Sep 2015	Floatables	None
D10	20 Sep 2015	Water Color	Grey
D10	20 Sep 2015	Current Direction	W
D10	20 Sep 2015	Wave Height Low (ft)	3
D10	20 Sep 2015	High Tide (ft)	3.1
D10	20 Sep 2015	High Tide Time	301
D10	20 Sep 2015	Low Tide (ft)	2.7
D10	20 Sep 2015	Low Tide Time	659
D10	20 Sep 2015	Comments	Kelp; Seagrass; 17 Swimmers; Water turbid
D10	26 Sep 2015	Arrive Time	839

Station	Date	Parameter	Value
D10	26 Sep 2015	Weather	Sunny
D10	26 Sep 2015	Wind Speed (kts)	1.3
D10	26 Sep 2015	Wind Dir	W
D10	26 Sep 2015	Animal Life	None
D10	26 Sep 2015	Floatables	None
D10	26 Sep 2015	Water Color	Green
D10	26 Sep 2015	Current Direction	W
D10	26 Sep 2015	Wave Height Low (ft)	3
D10	26 Sep 2015	High Tide (ft)	5.5
D10	26 Sep 2015	High Tide Time	827
D10	26 Sep 2015	Low Tide (ft)	0.4
D10	26 Sep 2015	Low Tide Time	1431
D10	26 Sep 2015	Comments	Kelp; Seagrass; 3 Persons; 4 Surfers; Water clear
D11	02 Sep 2015	Arrive Time	854
D11	02 Sep 2015	Weather	Overcast
D11	02 Sep 2015	Wind Speed (kts)	6.2
D11	02 Sep 2015	Wind Dir	S
D11	02 Sep 2015	Animal Life	None
D11	02 Sep 2015	Floatables	None
D11	02 Sep 2015	Water Color	Green
D11	02 Sep 2015	Current Direction	S
D11	02 Sep 2015	Wave Height Low (ft)	3
D11	02 Sep 2015	High Tide (ft)	5.6
D11	02 Sep 2015	High Tide Time	1221
D11	02 Sep 2015	Low Tide (ft)	0.7
D11	02 Sep 2015	Low Tide Time	607
D11	02 Sep 2015	Comments	Kelp; Seagrass; Water clear
D11	08 Sep 2015	Arrive Time	843
D11	08 Sep 2015	Weather	Sunny
D11	08 Sep 2015	Wind Speed (kts)	5
D11	08 Sep 2015	Wind Dir	W
D11	08 Sep 2015	Animal Life	None
D11	08 Sep 2015	Floatables	None
D11	08 Sep 2015	Water Color	Green
D11	08 Sep 2015	Current Direction	W
D11	08 Sep 2015	Wave Height Low (ft)	2
D11	08 Sep 2015	High Tide (ft)	4.2
D11	08 Sep 2015	High Tide Time	743
D11	08 Sep 2015	Low Tide (ft)	2
D11	08 Sep 2015	Low Tide Time	1302
D11	08 Sep 2015	Comments	Kelp; Seagrass; 5 Surfers; Water turbid
D11	14 Sep 2015	Arrive Time	858
D11	14 Sep 2015	Weather	Cloudy
D11	14 Sep 2015	Wind Speed (kts)	2.1
D11	14 Sep 2015	Wind Dir	NW
D11	14 Sep 2015	Animal Life	None
D11	14 Sep 2015	Floatables	None
D11	14 Sep 2015	Water Color	Green
D11	14 Sep 2015	Current Direction	NW
D11	14 Sep 2015	Wave Height Low (ft)	2
D11	14 Sep 2015	High Tide (ft)	5.1
D11	14 Sep 2015	High Tide Time	1016

Station	Date	Parameter	Value
D11	14 Sep 2015	Low Tide (ft)	0.6
D11	14 Sep 2015	Low Tide Time	412
D11	14 Sep 2015	Comments	Kelp; Seagrass; 2 Surfers; Water clear
D11	20 Sep 2015	Arrive Time	748
D11	20 Sep 2015	Weather	Sunny
D11	20 Sep 2015	Wind Speed (kts)	1
D11	20 Sep 2015	Wind Dir	W
D11	20 Sep 2015	Animal Life	7 Dogs
D11	20 Sep 2015	Floatables	None
D11	20 Sep 2015	Water Color	Blue
D11	20 Sep 2015	Current Direction	W
D11	20 Sep 2015	Wave Height Low (ft)	3
D11	20 Sep 2015	High Tide (ft)	3.1
D11	20 Sep 2015	High Tide Time	301
D11	20 Sep 2015	Low Tide (ft)	2.7
D11	20 Sep 2015	Low Tide Time	659
D11	20 Sep 2015	Comments	Kelp; Seagrass; 13 Surfers; Water turbid
D11	26 Sep 2015	Arrive Time	827
D11	26 Sep 2015	Weather	Sunny
D11	26 Sep 2015	Wind Speed (kts)	0.3
D11	26 Sep 2015	Wind Dir	S
D11	26 Sep 2015	Animal Life	None
D11	26 Sep 2015	Floatables	None
D11	26 Sep 2015	Water Color	Green
D11	26 Sep 2015	Current Direction	S
D11	26 Sep 2015	Wave Height Low (ft)	2
D11	26 Sep 2015	High Tide (ft)	5.5
D11	26 Sep 2015	High Tide Time	827
D11	26 Sep 2015	Low Tide (ft)	-0.3
D11	26 Sep 2015	Low Tide Time	220
D11	26 Sep 2015	Comments	Kelp; Seagrass; 2 Persons; 7 Surfers; Water clear
D12	02 Sep 2015	Arrive Time	817
D12	02 Sep 2015	Weather	Overcast
D12	02 Sep 2015	Wind Speed (kts)	4.4
D12	02 Sep 2015	Wind Dir	SW
D12	02 Sep 2015	Animal Life	None
D12	02 Sep 2015	Floatables	None
D12	02 Sep 2015	Water Color	Green
D12	02 Sep 2015	Current Direction	SW
D12	02 Sep 2015	Wave Height Low (ft)	2
D12	02 Sep 2015	High Tide (ft)	5.6
D12	02 Sep 2015	High Tide Time	1221
D12	02 Sep 2015	Low Tide (ft)	0.7
D12	02 Sep 2015	Low Tide Time	607
D12	02 Sep 2015	Comments	Kelp; Seagrass; Water clear
D12	08 Sep 2015	Arrive Time	818
D12	08 Sep 2015	Weather	Sunny
D12	08 Sep 2015	Wind Speed (kts)	5
D12	08 Sep 2015	Wind Dir	W
D12	08 Sep 2015	Animal Life	None
D12	08 Sep 2015	Floatables	None

Station	Date	Parameter	Value
D12	08 Sep 2015	Water Color	Green
D12	08 Sep 2015	Current Direction	W
D12	08 Sep 2015	Wave Height Low (ft)	2
D12	08 Sep 2015	High Tide (ft)	4.2
D12	08 Sep 2015	High Tide Time	743
D12	08 Sep 2015	Low Tide (ft)	2
D12	08 Sep 2015	Low Tide Time	1302
D12	08 Sep 2015	Comments	Kelp; Seagrass; Water turbid
D12	14 Sep 2015	Arrive Time	837
D12	14 Sep 2015	Weather	Cloudy
D12	14 Sep 2015	Wind Speed (kts)	1.4
D12	14 Sep 2015	Wind Dir	NW
D12	14 Sep 2015	Animal Life	None
D12	14 Sep 2015	Floatables	None
D12	14 Sep 2015	Water Color	Green
D12	14 Sep 2015	Current Direction	NW
D12	14 Sep 2015	Wave Height Low (ft)	2
D12	14 Sep 2015	High Tide (ft)	5.1
D12	14 Sep 2015	High Tide Time	1016
D12	14 Sep 2015	Low Tide (ft)	0.6
D12	14 Sep 2015	Low Tide Time	412
D12	14 Sep 2015	Comments	Kelp; Seagrass
D12	20 Sep 2015	Arrive Time	727
D12	20 Sep 2015	Weather	Sunny
D12	20 Sep 2015	Wind Speed (kts)	1
D12	20 Sep 2015	Wind Dir	W
D12	20 Sep 2015	Animal Life	None
D12	20 Sep 2015	Floatables	None
D12	20 Sep 2015	Water Color	Blue
D12	20 Sep 2015	Current Direction	W
D12	20 Sep 2015	Wave Height Low (ft)	2
D12	20 Sep 2015	High Tide (ft)	3.1
D12	20 Sep 2015	High Tide Time	301
D12	20 Sep 2015	Low Tide (ft)	2.7
D12	20 Sep 2015	Low Tide Time	659
D12	20 Sep 2015	Comments	Kelp; Seagrass; Debris; Water clear
D12	26 Sep 2015	Arrive Time	805
D12	26 Sep 2015	Weather	Partly Cloudy
D12	26 Sep 2015	Wind Speed (kts)	0.9
D12	26 Sep 2015	Wind Dir	S
D12	26 Sep 2015	Animal Life	None
D12	26 Sep 2015	Floatables	None
D12	26 Sep 2015	Water Color	Green
D12	26 Sep 2015	Current Direction	S
D12	26 Sep 2015	Wave Height Low (ft)	3
D12	26 Sep 2015	High Tide (ft)	5.5
D12	26 Sep 2015	High Tide Time	827
D12	26 Sep 2015	Low Tide (ft)	-0.3
D12	26 Sep 2015	Low Tide Time	220
D12	26 Sep 2015	Comments	Kelp; Seagrass; 5 Persons; Water clear

# Kelp Stations



**Table 3.1**

Summary of compliance with the 2009 Ocean Plan's 30-day Geometric Mean standard for total coliforms 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 Sep 2015	2	2	2	3	2	2	3	3
02 Sep 2015	2*	2*	2*	3*	2*	2*	2*	2*
03 Sep 2015	2*	2*	2*	3*	2*	2*	2*	2*
04 Sep 2015	3	3	2	3	2	2	3	2
05 Sep 2015	3	3	2	3	2	2	3	2
06 Sep 2015	3	3	2	3	2	2	3	2
07 Sep 2015	3	3	2	3	2	2	3	2
08 Sep 2015	3	3	2	3	2	2	3	2
09 Sep 2015	3	3	2	3	2	2	3	2
10 Sep 2015	3	3	3	4	2	3	3	3
11 Sep 2015	3	3	3	4	2	3	3	3
12 Sep 2015	3	3	3	5	2	3	3	3
13 Sep 2015	3	3	3	5	2	3	3	3
14 Sep 2015	3	3	3	5	2	3	3	3
15 Sep 2015	5	3	5	4	2	3	4	3
16 Sep 2015	5	3	5	4	2	3	4	3
17 Sep 2015	5	3	5	4	2	3	4	3
18 Sep 2015	6	3	6	5	2	3	4	3
19 Sep 2015	6	3	6	5	2	3	4	3
20 Sep 2015	6	3	6	5	2	3	4	3
21 Sep 2015	9	6	11	5	3	4	4	3
22 Sep 2015	9	6	11	5	3	4	4	3
23 Sep 2015	9	6	11	5	3	4	4	3
24 Sep 2015	12	7	15	6	3	4	4	3
25 Sep 2015	12	7	15	6	3	4	4	3
26 Sep 2015	12	7	15	6	3	4	4	3
27 Sep 2015	18	7	19	5	3	5	4	3
28 Sep 2015	18	7	19	5	3	5	4	3
29 Sep 2015	25	9	30	5	3	6	5	3
30 Sep 2015	25	9	30	5	3	6	5	3

\* Geometric mean calculated using an n<5

**Table 3.2**

Summary of compliance with the 2009 Ocean Plan's 30-day Geometric Mean standard for fecal coliform 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 Sep 2015	2	2	2	2	2	2	2	2
02 Sep 2015	2*	2*	2*	2*	2*	2*	2*	2*
03 Sep 2015	2*	2*	2*	2*	2*	2*	2*	2*
04 Sep 2015	2	2	2	2	2	2	2	2
05 Sep 2015	2	2	2	2	2	2	2	2
06 Sep 2015	2	2	2	2	2	2	2	2
07 Sep 2015	2	2	2	2	2	2	2	2
08 Sep 2015	2	2	2	2	2	2	2	2
09 Sep 2015	2	2	2	2	2	2	2	2
10 Sep 2015	2	2	2	2	2	2	2	2
11 Sep 2015	2	2	2	2	2	2	2	2
12 Sep 2015	2	2	2	2	2	2	2	2
13 Sep 2015	2	2	2	2	2	2	2	2
14 Sep 2015	2	2	2	2	2	2	2	2
15 Sep 2015	2	2	2	2	2	2	2	2
16 Sep 2015	2	2	2	2	2	2	2	2
17 Sep 2015	2	2	2	2	2	2	2	2
18 Sep 2015	2	2	2	2	2	2	2	2
19 Sep 2015	2	2	2	2	2	2	2	2
20 Sep 2015	2	2	2	2	2	2	2	2
21 Sep 2015	2	2	3	2	2	2	2	2
22 Sep 2015	2	2	3	2	2	2	2	2
23 Sep 2015	2	2	3	2	2	2	2	2
24 Sep 2015	2	2	3	2	2	2	2	2
25 Sep 2015	2	2	3	2	2	2	2	2
26 Sep 2015	2	2	3	2	2	2	2	2
27 Sep 2015	2	2	3	2	2	2	2	2
28 Sep 2015	2	2	3	2	2	2	2	2
29 Sep 2015	2	2	3	2	2	2	2	2
30 Sep 2015	2	2	3	2	2	2	2	2

\* Geometric mean calculated using an n<5

**Table 3.3**

Summary of compliance with the 2009 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 Sep 2015	2	2	2	2	2	2	2	2
02 Sep 2015	2*	2*	2*	2*	2*	2*	2*	2*
03 Sep 2015	2*	2*	2*	2*	2*	2*	2*	2*
04 Sep 2015	2	2	2	2	2	2	2	2
05 Sep 2015	2	2	2	2	2	2	2	2
06 Sep 2015	2	2	2	2	2	2	2	2
07 Sep 2015	2	2	2	2	2	2	2	2
08 Sep 2015	2	2	2	2	2	2	2	2
09 Sep 2015	2	2	2	2	2	2	2	2
10 Sep 2015	2	2	2	2	2	2	3	3
11 Sep 2015	2	2	2	2	2	2	3	3
12 Sep 2015	2	2	2	2	2	2	3	3
13 Sep 2015	2	2	2	2	2	2	3	3
14 Sep 2015	2	2	2	2	2	2	3	3
15 Sep 2015	2	2	2	2	2	2	3	3
16 Sep 2015	2	2	2	2	2	2	3	3
17 Sep 2015	2	2	2	2	2	2	3	3
18 Sep 2015	2	2	2	2	2	2	3	3
19 Sep 2015	2	2	2	2	2	2	3	3
20 Sep 2015	2	2	2	2	2	2	3	3
21 Sep 2015	2	2	2	2	2	2	3	3
22 Sep 2015	2	2	2	2	2	2	3	3
23 Sep 2015	2	2	2	2	2	2	3	3
24 Sep 2015	2	2	2	2	2	2	3	3
25 Sep 2015	2	2	2	2	2	2	3	3
26 Sep 2015	2	2	2	2	2	2	3	3
27 Sep 2015	2	2	2	2	2	2	3	3
28 Sep 2015	2	2	2	2	2	2	3	3
29 Sep 2015	2	2	2	2	2	2	3	3
30 Sep 2015	2	2	2	2	2	2	3	3

\* Geometric mean calculated using an n<5

**Table 3.4**

Summary of compliance at the PLOO kelp stations with the 2009 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
04 Sep 2015	IC							
10 Sep 2015	IC							
15 Sep 2015	IC							
21 Sep 2015	IC							
27 Sep 2015	IC							

IC = In Compliance

E = Exceedance

ns = not sampled

**Table 3.5**

Summary of compliance at the PLOO kelp stations with the 2009 Ocean Plan's Single Sample Maximum standard for fecal coliform bacteria, which states that fecal coliform density shall not exceed 400 CFU/100 mL.

Date	A1	A6	A7	C4	C5	C6	C7	C8
04 Sep 2015	IC							
10 Sep 2015	IC							
15 Sep 2015	IC							
21 Sep 2015	IC							
27 Sep 2015	IC							

IC = In Compliance

E = Exceedance

ns = not sampled

**Table 3.6**

Summary of compliance at the PLOO kelp stations with the 2009 Ocean Plan's Single Sample Maximum standard for *Enterococcus* bacteria, which states that *Enterococcus* density shall not exceed 104 CFU/100 mL.

Date	A1	A6	A7	C4	C5	C6	C7	C8
04 Sep 2015	IC							
10 Sep 2015	IC							
15 Sep 2015	IC							
21 Sep 2015	IC							
27 Sep 2015	IC							

IC = In Compliance

E = Exceedance

ns = not sampled

**Table 3.7**

Summary of compliance at the PLOO kelp stations with the 2009 Ocean Plan's Single Sample Maximum standard for total coliforms and the fecal/total coliform ratio (F:T), which states that total coliform density shall not exceed 1,000 CFU/100 mL when F:T > 0.1.

Date	A1	A6	A7	C4	C5	C6	C7	C8
04 Sep 2015	IC							
10 Sep 2015	IC							
15 Sep 2015	IC							
21 Sep 2015	IC							
27 Sep 2015	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	04 Sep 2015	753	1	<2	<2	<2	1.00	ns	21.6	89.46	7.2	33.47	8.1
A1	04 Sep 2015	753	12	<20	<2	<2	0.10	ns	17.3	91.15	7.8	33.26	8.1
A1	04 Sep 2015	753	18	<2	<2	<2	1.00	ns	15.7	90.21	7.7	33.25	8.1
A1	10 Sep 2015	749	1	<2	<2	<2	1.00	ns	22.2	91.12	7.2	33.47	8.2
A1	10 Sep 2015	749	12	<2	<2	<2	1.00	ns	21.8	89.60	7.2	33.45	8.2
A1	10 Sep 2015	749	18	<2	<2	<2	1.00	ns	18.9	87.15	7.1	33.33	8.1
A1	15 Sep 2015	742	1	<200	<2	4e	0.01	ns	23.3	89.46	6.9	33.46	8.2
A1	15 Sep 2015	742	12	<2	<2	<2	1.00	ns	21.5	90.25	7.2	33.37	8.2
A1	15 Sep 2015	742	18	<2	<2	<2	1.00	ns	19.3	90.45	7.3	33.32	8.2
A1	21 Sep 2015	813	1	<20	<2	2e	0.10	ns	22.8	85.53	6.5	33.39	8.1
A1	21 Sep 2015	813	12	<2	<2	<2	1.00	ns	18.1	89.39	7.4	33.29	8.1
A1	21 Sep 2015	813	18	180e	8e	<2	0.04	ns	16.3	88.10	7.0	33.29	8.1
A1	27 Sep 2015	750	1	<200	<2	<2	0.01	ns	22.2	89.96	7.5	33.40	8.2
A1	27 Sep 2015	750	12	4e	<2	<2	0.50	ns	21.8	90.23	7.6	33.38	8.2
A1	27 Sep 2015	750	18	<200	<2	<2	0.01	ns	19.1	90.82	7.2	33.32	8.2
C4	04 Sep 2015	945	1	<2	<2	<2	1.00	ns	22.5	83.91	6.5	33.48	8.1
C4	04 Sep 2015	945	3	<2	<2	<2	1.00	ns	22.4	83.70	6.5	33.48	8.1
C4	04 Sep 2015	945	9	<20	<2	<2	0.10	ns	20.7	79.59	5.2	33.40	8.0
C4	10 Sep 2015	1005	1	<20	<2	<2	0.10	ns	22.6	67.67	6.3	33.43	8.1
C4	10 Sep 2015	1005	3	<2	2e	<2	1.00	ns	21.5	69.73	6.6	33.41	8.1
C4	10 Sep 2015	1005	9	<2	<2	<2	1.00	ns	19.8	84.30	5.1	33.36	8.0
C4	15 Sep 2015	958	1	<2	<2	<2	1.00	ns	23.4	86.05	6.5	33.45	8.1
C4	15 Sep 2015	958	3	<2	<2	<2	1.00	ns	23.3	86.04	6.4	33.45	8.1
C4	15 Sep 2015	958	9	<2	<2	<2	1.00	ns	21.8	83.73	3.7	33.39	8.0
C4	21 Sep 2015	1015	1	<2	<2	<2	1.00	ns	22.5	81.51	6.8	33.40	8.2
C4	21 Sep 2015	1015	3	<2	<2	<2	1.00	ns	22.5	83.26	6.7	33.40	8.1
C4	21 Sep 2015	1015	9	<20	<2	<2	0.10	ns	20.7	70.68	3.0	33.32	7.9
C4	27 Sep 2015	1004	1	<2	<2	<2	1.00	ns	23.0	91.24	7.0	33.39	8.2
C4	27 Sep 2015	1004	3	<2	<2	<2	1.00	ns	22.6	91.13	7.0	33.38	8.2
C4	27 Sep 2015	1004	9	2e	<2	<2	1.00	ns	20.0	83.89	2.7	33.33	7.8
C5	04 Sep 2015	933	1	2e	<2	<2	1.00	ns	22.8	78.93	5.9	33.48	8.1
C5	04 Sep 2015	933	3	<2	<2	<2	1.00	ns	22.7	78.44	5.8	33.48	8.1
C5	04 Sep 2015	933	9	<2	<2	<2	1.00	ns	20.5	86.62	6.0	33.77	8.1
C5	10 Sep 2015	951	1	<2	<2	<2	1.00	ns	23.2	85.39	6.6	33.47	8.1
C5	10 Sep 2015	951	3	<2	<2	<2	1.00	ns	21.6	86.21	6.9	33.42	8.1

Station	Date	Time	Depth	Total	Fecal	Enteroto	F:T	N-NH3	Temp	XMS	DO	Sal	pH
C5	10 Sep 2015	951	9	2e	<2	<2	1.00	ns	19.6	84.35	6.7	33.35	8.1
C5	15 Sep 2015	942	1	<2	<2	<2	1.00	ns	23.6	86.84	6.7	33.46	8.1
C5	15 Sep 2015	942	3	<2	<2	<2	1.00	ns	23.5	88.48	6.7	33.46	8.1
C5	15 Sep 2015	942	9	<2	<2	<2	1.00	ns	21.9	89.15	5.1	33.41	8.0
C5	21 Sep 2015	959	1	<2	<2	<2	1.00	ns	23.1	81.86	6.0	33.39	8.1
C5	21 Sep 2015	959	3	<2	<2	<2	1.00	ns	23.0	82.72	6.0	33.39	8.1
C5	21 Sep 2015	959	9	<20	<2	<2	0.10	ns	20.1	78.06	5.6	33.32	8.0
C5	27 Sep 2015	950	1	<2	<2	<2	1.00	ns	22.8	91.38	7.0	33.40	8.2
C5	27 Sep 2015	950	3	10e	<2	<2	0.20	ns	22.4	91.26	7.2	33.39	8.2
C5	27 Sep 2015	950	9	2e	<2	<2	1.00	ns	20.3	86.93	6.5	33.32	8.1
A6	04 Sep 2015	826	1	<2	<2	<2	1.00	ns	22.3	90.17	6.4	33.44	8.2
A6	04 Sep 2015	826	12	4e	<2	<2	0.50	ns	18.5	90.85	7.2	33.37	8.1
A6	04 Sep 2015	826	18	12e	2e	<2	0.17	ns	15.3	90.15	7.8	33.25	8.1
A6	10 Sep 2015	832	1	<2	<2	<2	1.00	ns	21.1	86.94	7.2	33.41	8.2
A6	10 Sep 2015	832	12	<2	<2	<2	1.00	ns	20.3	86.97	7.3	33.38	8.2
A6	10 Sep 2015	832	18	2e	<2	<2	1.00	ns	19.4	89.08	7.0	33.36	8.1
A6	15 Sep 2015	821	1	<20	<2	<2	0.10	ns	23.8	90.20	6.7	33.50	8.2
A6	15 Sep 2015	821	12	<2	<2	4e	1.00	ns	22.1	91.20	6.7	33.43	8.1
A6	15 Sep 2015	821	18	<2	<2	<2	1.00	ns	20.9	90.38	6.6	33.35	8.1
A6	21 Sep 2015	844	1	<2	<2	2e	1.00	ns	22.9	87.54	6.3	33.38	8.1
A6	21 Sep 2015	844	12	4e	<2	<2	0.50	ns	16.4	89.47	7.5	33.26	8.2
A6	21 Sep 2015	844	18	180e	12e	2e	0.07	ns	15.0	88.74	6.9	33.30	8.1
A6	27 Sep 2015	828	1	<20	<2	<2	0.10	ns	22.4	91.42	7.2	33.40	8.2
A6	27 Sep 2015	828	12	<2	<2	<2	1.00	ns	20.2	91.11	7.3	33.34	8.2
A6	27 Sep 2015	828	18	6e	<2	<2	0.33	ns	18.9	91.03	6.9	33.32	8.1
C6	04 Sep 2015	922	1	4e	<2	<2	0.50	ns	22.7	83.94	6.3	33.47	8.1
C6	04 Sep 2015	922	3	2e	<2	<2	1.00	ns	22.6	83.74	6.2	33.47	8.1
C6	04 Sep 2015	922	9	<2	<2	<2	1.00	ns	20.8	85.09	6.3	33.40	8.1
C6	10 Sep 2015	934	1	<2	<2	<2	1.00	ns	23.0	86.36	6.7	33.46	8.1
C6	10 Sep 2015	934	3	<2	<2	<2	1.00	ns	21.9	86.39	6.4	33.44	8.1
C6	10 Sep 2015	934	9	<20	<2	<2	0.10	ns	19.6	85.03	6.2	33.36	8.1
C6	15 Sep 2015	926	1	<2	<2	<2	1.00	ns	23.8	90.10	6.8	33.48	8.1
C6	15 Sep 2015	926	3	<2	<2	<2	1.00	ns	23.8	90.41	6.8	33.48	8.1
C6	15 Sep 2015	926	9	<2	<2	<2	1.00	ns	22.1	68.91	5.3	33.41	8.0
C6	21 Sep 2015	945	1	<20	<2	<2	0.10	ns	23.7	73.65	5.6	33.41	8.0
C6	21 Sep 2015	945	3	<20	<2	<2	0.10	ns	23.6	75.60	5.6	33.40	8.1
C6	21 Sep 2015	945	9	<20	<2	<2	0.10	ns	19.8	82.56	5.8	33.32	8.0
C6	27 Sep 2015	934	1	<20	<2	<2	0.10	ns	22.7	89.01	7.0	33.39	8.2
C6	27 Sep 2015	934	3	<2	<2	<2	1.00	ns	22.6	89.75	7.1	33.38	8.2
C6	27 Sep 2015	934	9	6e	<2	<2	0.33	ns	20.6	84.27	6.0	33.34	8.1
A7	04 Sep 2015	808	1	6e	<2	<2	0.33	ns	22.3	88.26	6.7	33.49	8.2

Station	Date	Time	Depth	Total	Fecal	Enteric	F:T	N-NH3	Temp	XMS	DO	Sal	pH
A7	04 Sep 2015	808	12	6e	<2	<2	0.33	ns	19.2	91.48	7.2	33.38	8.2
A7	04 Sep 2015	808	18	2e	<2	2e	1.00	ns	16.1	90.24	7.7	33.26	8.2
A7	10 Sep 2015	808	1	<2	<2	<2	1.00	ns	21.2	89.61	6.3	33.42	8.2
A7	10 Sep 2015	808	12	<20	<2	<2	0.10	ns	21.1	89.28	6.4	33.47	8.2
A7	10 Sep 2015	808	18	<2	<2	<2	1.00	ns	20.3	87.25	6.4	33.62	8.2
A7	15 Sep 2015	803	1	<200	<2	<2	0.01	ns	23.5	86.94	6.8	33.48	8.2
A7	15 Sep 2015	803	12	<2	<2	<2	1.00	ns	22.4	90.61	6.9	33.43	8.1
A7	15 Sep 2015	803	18	<2	<2	<2	1.00	ns	19.3	91.01	7.4	33.32	8.2
A7	21 Sep 2015	829	1	<2	2e	<2	1.00	ns	22.6	88.55	6.7	33.40	8.1
A7	21 Sep 2015	829	12	80	16e	2e	0.20	ns	17.1	89.73	7.6	33.26	8.2
A7	21 Sep 2015	829	18	320e	24e	4e	0.07	ns	15.5	89.01	6.9	33.30	8.1
A7	27 Sep 2015	808	1	<200	<2	<2	0.01	ns	22.2	90.71	7.3	33.40	8.2
A7	27 Sep 2015	808	12	4e	<2	<2	0.50	ns	20.5	90.96	7.3	33.34	8.2
A7	27 Sep 2015	808	18	20e	<2	<2	0.10	ns	18.8	91.51	7.0	33.32	8.2
C7	04 Sep 2015	843	1	<2	<2	<2	1.00	ns	22.6	88.90	7.1	33.50	8.2
C7	04 Sep 2015	843	12	6e	<2	<2	0.33	ns	18.5	89.70	6.8	33.30	8.1
C7	04 Sep 2015	843	18	44	<2	2e	0.05	ns	16.5	89.49	7.5	33.27	8.1
C7	10 Sep 2015	849	1	<2	<2	2e	1.00	ns	22.8	88.92	7.1	33.48	8.2
C7	10 Sep 2015	849	12	<2	<2	<2	1.00	ns	20.7	89.30	7.3	33.40	8.2
C7	10 Sep 2015	849	18	4e	<2	<20	0.50	ns	17.3	89.14	6.6	33.28	8.1
C7	15 Sep 2015	840	1	<20	<2	2e	0.10	ns	23.9	88.11	6.8	33.47	8.1
C7	15 Sep 2015	840	12	<2	<2	<2	1.00	ns	21.7	89.63	6.3	33.40	8.1
C7	15 Sep 2015	840	18	<2	<2	<2	1.00	ns	19.2	90.06	6.4	33.33	8.1
C7	21 Sep 2015	907	1	<2	<2	<2	1.00	ns	22.8	88.75	6.9	33.40	8.1
C7	21 Sep 2015	907	12	<2	<2	<2	1.00	ns	17.5	90.04	7.8	33.28	8.1
C7	21 Sep 2015	907	18	<2	<2	<2	1.00	ns	17.3	89.95	7.5	33.29	8.1
C7	27 Sep 2015	853	1	2e	<2	<2	1.00	ns	22.3	92.46	7.3	33.39	8.2
C7	27 Sep 2015	853	12	<2	<2	<2	1.00	ns	20.4	92.28	7.4	33.34	8.2
C7	27 Sep 2015	853	18	4e	<2	<2	0.50	ns	18.0	92.06	7.0	33.29	8.2
C8	04 Sep 2015	901	1	<2	<2	<2	1.00	ns	22.4	89.53	6.9	33.48	8.1
C8	04 Sep 2015	901	12	<2	<2	<2	1.00	ns	19.5	89.50	7.3	33.36	8.2
C8	04 Sep 2015	901	18	2e	<2	<2	1.00	ns	18.4	84.77	7.3	33.33	8.1
C8	10 Sep 2015	915	1	<20	<2	<2	0.10	ns	23.0	91.34	7.1	33.49	8.2
C8	10 Sep 2015	915	12	<2	<2	<20	1.00	ns	20.8	90.18	7.3	33.39	8.2
C8	10 Sep 2015	915	18	<2	<2	<2	1.00	ns	17.1	85.49	6.6	33.27	8.1
C8	15 Sep 2015	858	1	2e	<2	2e	1.00	ns	23.6	90.78	6.8	33.49	8.2
C8	15 Sep 2015	858	12	<2	<2	<2	1.00	ns	22.2	92.00	7.0	33.41	8.2
C8	15 Sep 2015	858	18	2e	<2	<2	1.00	ns	19.4	87.41	6.8	33.34	8.1
C8	21 Sep 2015	921	1	2e	<2	<2	1.00	ns	22.9	82.85	6.7	33.41	8.2
C8	21 Sep 2015	921	12	2e	<2	<2	1.00	ns	18.4	89.86	7.8	33.30	8.2
C8	21 Sep 2015	921	18	<2	<2	<2	1.00	ns	17.4	89.15	7.0	33.29	8.1

Station	Date	Time	Depth	Total	Fecal	Enter	F:T	N-NH3	Temp	XMS	DO	Sal	pH
C8	27 Sep 2015	913	1	<2	<2	<2	1.00	ns	22.3	92.76	7.1	33.40	8.2
C8	27 Sep 2015	913	12	<2	<2	<2	1.00	ns	19.4	91.46	7.5	33.30	8.2
C8	27 Sep 2015	913	18	10e	<2	<2	0.20	ns	18.1	90.93	7.4	33.30	8.2

ns = not sampled

**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	04 Sep 2015	Depth (m)	20
A1	04 Sep 2015	Arrive Time	753
A1	04 Sep 2015	Depart Time	804
A1	04 Sep 2015	Air Temp (C)	21
A1	04 Sep 2015	Weather	Overcast
A1	04 Sep 2015	Visibility (mi)	4
A1	04 Sep 2015	Wind Speed (kts)	3
A1	04 Sep 2015	Wind Dir	NE
A1	04 Sep 2015	Water Color	Green
A1	04 Sep 2015	Wave Ht Low (ft)	3
A1	04 Sep 2015	Wave Period (sec)	9
A1	04 Sep 2015	Sea State	Calm
A1	04 Sep 2015	High Tide (ft)	5.18
A1	04 Sep 2015	High Tide Time	1418
A1	04 Sep 2015	Low Tide (ft)	1.92
A1	04 Sep 2015	Low Tide Time	751
A1	04 Sep 2015	Comments	Kelp
A1	10 Sep 2015	Depth (m)	20
A1	10 Sep 2015	Arrive Time	749
A1	10 Sep 2015	Depart Time	801
A1	10 Sep 2015	Air Temp (C)	24
A1	10 Sep 2015	Weather	Partly Cloudy
A1	10 Sep 2015	Visibility (mi)	11
A1	10 Sep 2015	Wind Speed (kts)	2
A1	10 Sep 2015	Wind Dir	S
A1	10 Sep 2015	Water Color	Blue
A1	10 Sep 2015	Wave Ht Low (ft)	4
A1	10 Sep 2015	Wave Period (sec)	13
A1	10 Sep 2015	Sea State	Calm
A1	10 Sep 2015	High Tide (ft)	4.63
A1	10 Sep 2015	High Tide Time	841
A1	10 Sep 2015	Low Tide (ft)	1.41
A1	10 Sep 2015	Low Tide Time	1421
A1	10 Sep 2015	Comments	Kelp
A1	15 Sep 2015	Depth (m)	19
A1	15 Sep 2015	Arrive Time	742
A1	15 Sep 2015	Depart Time	757
A1	15 Sep 2015	Air Temp (C)	24
A1	15 Sep 2015	Weather	Cloudy
A1	15 Sep 2015	Visibility (mi)	5
A1	15 Sep 2015	Wind Speed (kts)	11
A1	15 Sep 2015	Wind Dir	S
A1	15 Sep 2015	Water Color	Green
A1	15 Sep 2015	Wave Ht Low (ft)	3
A1	15 Sep 2015	Wave Period (sec)	4
A1	15 Sep 2015	Sea State	Light chop
A1	15 Sep 2015	High Tide (ft)	5.05
A1	15 Sep 2015	High Tide Time	1041
A1	15 Sep 2015	Low Tide (ft)	0.9

Station	Date	Parameter	Value
A1	15 Sep 2015	Low Tide Time	436
A1	15 Sep 2015	Comments	Kelp
A1	21 Sep 2015	Depth (m)	18
A1	21 Sep 2015	Arrive Time	813
A1	21 Sep 2015	Depart Time	823
A1	21 Sep 2015	Air Temp (C)	24
A1	21 Sep 2015	Weather	Partly Cloudy
A1	21 Sep 2015	Visibility (mi)	7
A1	21 Sep 2015	Wind Speed (kts)	11
A1	21 Sep 2015	Wind Dir	SW
A1	21 Sep 2015	Water Color	Green
A1	21 Sep 2015	Wave Ht Low (ft)	3
A1	21 Sep 2015	Wave Period (sec)	13
A1	21 Sep 2015	Sea State	Light chop
A1	21 Sep 2015	High Tide (ft)	3.2
A1	21 Sep 2015	High Tide Time	458
A1	21 Sep 2015	Low Tide (ft)	2.91
A1	21 Sep 2015	Low Tide Time	908
A1	21 Sep 2015	Comments	Kelp
A1	27 Sep 2015	Depth (m)	19
A1	27 Sep 2015	Arrive Time	750
A1	27 Sep 2015	Depart Time	805
A1	27 Sep 2015	Air Temp (C)	22
A1	27 Sep 2015	Weather	Fog
A1	27 Sep 2015	Visibility (mi)	3
A1	27 Sep 2015	Wind Speed (kts)	5
A1	27 Sep 2015	Wind Dir	S
A1	27 Sep 2015	Water Color	Bluish-Green
A1	27 Sep 2015	Wave Ht Low (ft)	3
A1	27 Sep 2015	Wave Period (sec)	13
A1	27 Sep 2015	Sea State	Calm
A1	27 Sep 2015	High Tide (ft)	5.89
A1	27 Sep 2015	High Tide Time	902
A1	27 Sep 2015	Low Tide (ft)	-0.04
A1	27 Sep 2015	Low Tide Time	1517
A1	27 Sep 2015	Comments	Kelp
C4	04 Sep 2015	Depth (m)	9
C4	04 Sep 2015	Arrive Time	945
C4	04 Sep 2015	Depart Time	952
C4	04 Sep 2015	Air Temp (C)	21
C4	04 Sep 2015	Weather	Partly Cloudy
C4	04 Sep 2015	Visibility (mi)	7
C4	04 Sep 2015	Wind Speed (kts)	2
C4	04 Sep 2015	Wind Dir	SE
C4	04 Sep 2015	Water Color	Green
C4	04 Sep 2015	Wave Ht Low (ft)	3
C4	04 Sep 2015	Wave Period (sec)	9
C4	04 Sep 2015	Sea State	Calm
C4	04 Sep 2015	High Tide (ft)	5.18
C4	04 Sep 2015	High Tide Time	1418
C4	04 Sep 2015	Low Tide (ft)	1.92
C4	04 Sep 2015	Low Tide Time	751

Station	Date	Parameter	Value
C4	04 Sep 2015	Comments	Kelp
C4	10 Sep 2015	Depth (m)	11
C4	10 Sep 2015	Arrive Time	1005
C4	10 Sep 2015	Depart Time	1012
C4	10 Sep 2015	Air Temp (C)	24
C4	10 Sep 2015	Weather	Overcast
C4	10 Sep 2015	Visibility (mi)	11
C4	10 Sep 2015	Wind Speed (kts)	1
C4	10 Sep 2015	Wind Dir	N
C4	10 Sep 2015	Water Color	Greenish-Blue
C4	10 Sep 2015	Wave Ht Low (ft)	4
C4	10 Sep 2015	Wave Period (sec)	13
C4	10 Sep 2015	Sea State	Wind ripples
C4	10 Sep 2015	High Tide (ft)	4.63
C4	10 Sep 2015	High Tide Time	841
C4	10 Sep 2015	Low Tide (ft)	1.41
C4	10 Sep 2015	Low Tide Time	1421
C4	10 Sep 2015	Comments	Kelp
C4	15 Sep 2015	Depth (m)	10
C4	15 Sep 2015	Arrive Time	958
C4	15 Sep 2015	Depart Time	1006
C4	15 Sep 2015	Air Temp (C)	24
C4	15 Sep 2015	Weather	Rain
C4	15 Sep 2015	Visibility (mi)	5
C4	15 Sep 2015	Wind Speed (kts)	14
C4	15 Sep 2015	Wind Dir	N
C4	15 Sep 2015	Water Color	Green
C4	15 Sep 2015	Wave Ht Low (ft)	3
C4	15 Sep 2015	Wave Period (sec)	4
C4	15 Sep 2015	Sea State	Heavy chop
C4	15 Sep 2015	High Tide (ft)	5.05
C4	15 Sep 2015	High Tide Time	1041
C4	15 Sep 2015	Low Tide (ft)	0.9
C4	15 Sep 2015	Low Tide Time	436
C4	15 Sep 2015	Comments	
C4	21 Sep 2015	Depth (m)	10
C4	21 Sep 2015	Arrive Time	1015
C4	21 Sep 2015	Depart Time	1027
C4	21 Sep 2015	Air Temp (C)	24
C4	21 Sep 2015	Weather	Partly Cloudy
C4	21 Sep 2015	Visibility (mi)	7
C4	21 Sep 2015	Wind Speed (kts)	10
C4	21 Sep 2015	Wind Dir	N
C4	21 Sep 2015	Water Color	Green
C4	21 Sep 2015	Wave Ht Low (ft)	3
C4	21 Sep 2015	Wave Period (sec)	13
C4	21 Sep 2015	Sea State	Heavy chop
C4	21 Sep 2015	High Tide (ft)	3.2
C4	21 Sep 2015	High Tide Time	458
C4	21 Sep 2015	Low Tide (ft)	2.91
C4	21 Sep 2015	Low Tide Time	908
C4	21 Sep 2015	Comments	Kelp debris

Station	Date	Parameter	Value
C4	27 Sep 2015	Depth (m)	9
C4	27 Sep 2015	Arrive Time	1004
C4	27 Sep 2015	Depart Time	1016
C4	27 Sep 2015	Air Temp (C)	22
C4	27 Sep 2015	Weather	Haze
C4	27 Sep 2015	Visibility (mi)	6
C4	27 Sep 2015	Wind Speed (kts)	4
C4	27 Sep 2015	Wind Dir	E
C4	27 Sep 2015	Water Color	Greenish-Brown
C4	27 Sep 2015	Wave Ht Low (ft)	3
C4	27 Sep 2015	Wave Period (sec)	13
C4	27 Sep 2015	Sea State	Calm
C4	27 Sep 2015	High Tide (ft)	5.89
C4	27 Sep 2015	High Tide Time	902
C4	27 Sep 2015	Low Tide (ft)	-0.04
C4	27 Sep 2015	Low Tide Time	1517
C4	27 Sep 2015	Comments	Unusual drop in DO and pH at station; Three casts confirmed the low values near bottom; May be a bay influence
C5	04 Sep 2015	Depth (m)	10
C5	04 Sep 2015	Arrive Time	933
C5	04 Sep 2015	Depart Time	939
C5	04 Sep 2015	Air Temp (C)	21
C5	04 Sep 2015	Weather	Overcast
C5	04 Sep 2015	Visibility (mi)	7
C5	04 Sep 2015	Wind Speed (kts)	5
C5	04 Sep 2015	Wind Dir	W
C5	04 Sep 2015	Water Color	Green
C5	04 Sep 2015	Wave Ht Low (ft)	3
C5	04 Sep 2015	Wave Period (sec)	9
C5	04 Sep 2015	Sea State	Calm
C5	04 Sep 2015	High Tide (ft)	5.18
C5	04 Sep 2015	High Tide Time	1418
C5	04 Sep 2015	Low Tide (ft)	1.92
C5	04 Sep 2015	Low Tide Time	751
C5	04 Sep 2015	Comments	Kelp
C5	10 Sep 2015	Depth (m)	10
C5	10 Sep 2015	Arrive Time	951
C5	10 Sep 2015	Depart Time	959
C5	10 Sep 2015	Air Temp (C)	24
C5	10 Sep 2015	Weather	Partly Cloudy
C5	10 Sep 2015	Visibility (mi)	11
C5	10 Sep 2015	Wind Speed (kts)	2
C5	10 Sep 2015	Wind Dir	N
C5	10 Sep 2015	Water Color	Blue
C5	10 Sep 2015	Wave Ht Low (ft)	4
C5	10 Sep 2015	Wave Period (sec)	13
C5	10 Sep 2015	Sea State	Wind ripples
C5	10 Sep 2015	High Tide (ft)	4.63
C5	10 Sep 2015	High Tide Time	841
C5	10 Sep 2015	Low Tide (ft)	1.41
C5	10 Sep 2015	Low Tide Time	1421
C5	10 Sep 2015	Comments	Kelp debris

Station	Date	Parameter	Value
C5	15 Sep 2015	Depth (m)	9
C5	15 Sep 2015	Arrive Time	942
C5	15 Sep 2015	Depart Time	948
C5	15 Sep 2015	Air Temp (C)	24
C5	15 Sep 2015	Weather	Cloudy
C5	15 Sep 2015	Visibility (mi)	5
C5	15 Sep 2015	Wind Speed (kts)	16
C5	15 Sep 2015	Wind Dir	N
C5	15 Sep 2015	Water Color	Green
C5	15 Sep 2015	Wave Ht Low (ft)	3
C5	15 Sep 2015	Wave Period (sec)	4
C5	15 Sep 2015	Sea State	Heavy chop
C5	15 Sep 2015	High Tide (ft)	5.05
C5	15 Sep 2015	High Tide Time	1041
C5	15 Sep 2015	Low Tide (ft)	0.9
C5	15 Sep 2015	Low Tide Time	436
C5	15 Sep 2015	Comments	
C5	21 Sep 2015	Depth (m)	10
C5	21 Sep 2015	Arrive Time	959
C5	21 Sep 2015	Depart Time	1008
C5	21 Sep 2015	Air Temp (C)	24
C5	21 Sep 2015	Weather	Partly Cloudy
C5	21 Sep 2015	Visibility (mi)	7
C5	21 Sep 2015	Wind Speed (kts)	10
C5	21 Sep 2015	Wind Dir	NE
C5	21 Sep 2015	Water Color	Green
C5	21 Sep 2015	Wave Ht Low (ft)	3
C5	21 Sep 2015	Wave Period (sec)	13
C5	21 Sep 2015	Sea State	Heavy chop
C5	21 Sep 2015	High Tide (ft)	3.2
C5	21 Sep 2015	High Tide Time	458
C5	21 Sep 2015	Low Tide (ft)	2.91
C5	21 Sep 2015	Low Tide Time	908
C5	21 Sep 2015	Comments	Kelp debris
C5	27 Sep 2015	Depth (m)	9
C5	27 Sep 2015	Arrive Time	950
C5	27 Sep 2015	Depart Time	1000
C5	27 Sep 2015	Air Temp (C)	22
C5	27 Sep 2015	Weather	Haze
C5	27 Sep 2015	Visibility (mi)	6
C5	27 Sep 2015	Wind Speed (kts)	4
C5	27 Sep 2015	Wind Dir	SE
C5	27 Sep 2015	Water Color	Greenish-Brown
C5	27 Sep 2015	Wave Ht Low (ft)	3
C5	27 Sep 2015	Wave Period (sec)	13
C5	27 Sep 2015	Sea State	Calm
C5	27 Sep 2015	High Tide (ft)	5.89
C5	27 Sep 2015	High Tide Time	902
C5	27 Sep 2015	Low Tide (ft)	-0.04
C5	27 Sep 2015	Low Tide Time	1517
C5	27 Sep 2015	Comments	

Station	Date	Parameter	Value
A6	04 Sep 2015	Depth (m)	19
A6	04 Sep 2015	Arrive Time	826
A6	04 Sep 2015	Depart Time	834
A6	04 Sep 2015	Air Temp (C)	21
A6	04 Sep 2015	Weather	Overcast
A6	04 Sep 2015	Visibility (mi)	4
A6	04 Sep 2015	Wind Speed (kts)	2
A6	04 Sep 2015	Wind Dir	W
A6	04 Sep 2015	Water Color	Green
A6	04 Sep 2015	Wave Ht Low (ft)	3
A6	04 Sep 2015	Wave Period (sec)	9
A6	04 Sep 2015	Sea State	Calm
A6	04 Sep 2015	High Tide (ft)	5.18
A6	04 Sep 2015	High Tide Time	1418
A6	04 Sep 2015	Low Tide (ft)	1.92
A6	04 Sep 2015	Low Tide Time	751
A6	04 Sep 2015	Comments	Kelp
A6	10 Sep 2015	Depth (m)	19
A6	10 Sep 2015	Arrive Time	832
A6	10 Sep 2015	Depart Time	841
A6	10 Sep 2015	Air Temp (C)	26
A6	10 Sep 2015	Weather	Partly Cloudy
A6	10 Sep 2015	Visibility (mi)	11
A6	10 Sep 2015	Wind Speed (kts)	4
A6	10 Sep 2015	Wind Dir	E
A6	10 Sep 2015	Water Color	Blue
A6	10 Sep 2015	Wave Ht Low (ft)	4
A6	10 Sep 2015	Wave Period (sec)	13
A6	10 Sep 2015	Sea State	Calm
A6	10 Sep 2015	High Tide (ft)	4.63
A6	10 Sep 2015	High Tide Time	841
A6	10 Sep 2015	Low Tide (ft)	1.41
A6	10 Sep 2015	Low Tide Time	1421
A6	10 Sep 2015	Comments	Kelp
A6	15 Sep 2015	Depth (m)	19
A6	15 Sep 2015	Arrive Time	821
A6	15 Sep 2015	Depart Time	831
A6	15 Sep 2015	Air Temp (C)	24
A6	15 Sep 2015	Weather	Cloudy
A6	15 Sep 2015	Visibility (mi)	5
A6	15 Sep 2015	Wind Speed (kts)	11
A6	15 Sep 2015	Wind Dir	W
A6	15 Sep 2015	Water Color	Green
A6	15 Sep 2015	Wave Ht Low (ft)	3
A6	15 Sep 2015	Wave Period (sec)	4
A6	15 Sep 2015	Sea State	Light chop
A6	15 Sep 2015	High Tide (ft)	5.05
A6	15 Sep 2015	High Tide Time	1041
A6	15 Sep 2015	Low Tide (ft)	0.9
A6	15 Sep 2015	Low Tide Time	436
A6	15 Sep 2015	Comments	Kelp
A6	21 Sep 2015	Depth (m)	19

Station	Date	Parameter	Value
A6	21 Sep 2015	Arrive Time	844
A6	21 Sep 2015	Depart Time	858
A6	21 Sep 2015	Air Temp (C)	24
A6	21 Sep 2015	Weather	Partly Cloudy
A6	21 Sep 2015	Visibility (mi)	7
A6	21 Sep 2015	Wind Speed (kts)	12
A6	21 Sep 2015	Wind Dir	SW
A6	21 Sep 2015	Water Color	Green
A6	21 Sep 2015	Wave Ht Low (ft)	3
A6	21 Sep 2015	Wave Period (sec)	13
A6	21 Sep 2015	Sea State	Heavy chop
A6	21 Sep 2015	High Tide (ft)	3.2
A6	21 Sep 2015	High Tide Time	458
A6	21 Sep 2015	Low Tide (ft)	2.91
A6	21 Sep 2015	Low Tide Time	908
A6	21 Sep 2015	Comments	Kelp; Unable to obtain depth on first cast
A6	27 Sep 2015	Depth (m)	19
A6	27 Sep 2015	Arrive Time	828
A6	27 Sep 2015	Depart Time	845
A6	27 Sep 2015	Air Temp (C)	23
A6	27 Sep 2015	Weather	Fog
A6	27 Sep 2015	Visibility (mi)	3
A6	27 Sep 2015	Wind Speed (kts)	0
A6	27 Sep 2015	Wind Dir	
A6	27 Sep 2015	Water Color	Bluish-Green
A6	27 Sep 2015	Wave Ht Low (ft)	3
A6	27 Sep 2015	Wave Period (sec)	13
A6	27 Sep 2015	Sea State	Calm
A6	27 Sep 2015	High Tide (ft)	5.89
A6	27 Sep 2015	High Tide Time	902
A6	27 Sep 2015	Low Tide (ft)	-0.04
A6	27 Sep 2015	Low Tide Time	1517
A6	27 Sep 2015	Comments	Kelp
C6	04 Sep 2015	Depth (m)	9
C6	04 Sep 2015	Arrive Time	922
C6	04 Sep 2015	Depart Time	928
C6	04 Sep 2015	Air Temp (C)	21
C6	04 Sep 2015	Weather	Overcast
C6	04 Sep 2015	Visibility (mi)	7
C6	04 Sep 2015	Wind Speed (kts)	5
C6	04 Sep 2015	Wind Dir	W
C6	04 Sep 2015	Water Color	Green
C6	04 Sep 2015	Wave Ht Low (ft)	3
C6	04 Sep 2015	Wave Period (sec)	9
C6	04 Sep 2015	Sea State	Calm
C6	04 Sep 2015	High Tide (ft)	5.18
C6	04 Sep 2015	High Tide Time	1418
C6	04 Sep 2015	Low Tide (ft)	1.92
C6	04 Sep 2015	Low Tide Time	751
C6	04 Sep 2015	Comments	Kelp; Kelp debris
C6	10 Sep 2015	Depth (m)	10
C6	10 Sep 2015	Arrive Time	934

Station	Date	Parameter	Value
C6	10 Sep 2015	Depart Time	944
C6	10 Sep 2015	Air Temp (C)	24
C6	10 Sep 2015	Weather	Partly Cloudy
C6	10 Sep 2015	Visibility (mi)	11
C6	10 Sep 2015	Wind Speed (kts)	8
C6	10 Sep 2015	Wind Dir	SE
C6	10 Sep 2015	Water Color	Blue
C6	10 Sep 2015	Wave Ht Low (ft)	4
C6	10 Sep 2015	Wave Period (sec)	13
C6	10 Sep 2015	Sea State	Wind ripples
C6	10 Sep 2015	High Tide (ft)	4.63
C6	10 Sep 2015	High Tide Time	841
C6	10 Sep 2015	Low Tide (ft)	1.41
C6	10 Sep 2015	Low Tide Time	1421
C6	10 Sep 2015	Comments	Kelp
C6	15 Sep 2015	Depth (m)	9
C6	15 Sep 2015	Arrive Time	926
C6	15 Sep 2015	Depart Time	933
C6	15 Sep 2015	Air Temp (C)	24
C6	15 Sep 2015	Weather	Cloudy
C6	15 Sep 2015	Visibility (mi)	5
C6	15 Sep 2015	Wind Speed (kts)	15
C6	15 Sep 2015	Wind Dir	N
C6	15 Sep 2015	Water Color	Green
C6	15 Sep 2015	Wave Ht Low (ft)	3
C6	15 Sep 2015	Wave Period (sec)	4
C6	15 Sep 2015	Sea State	Heavy chop
C6	15 Sep 2015	High Tide (ft)	5.05
C6	15 Sep 2015	High Tide Time	1041
C6	15 Sep 2015	Low Tide (ft)	0.9
C6	15 Sep 2015	Low Tide Time	436
C6	15 Sep 2015	Comments	
C6	21 Sep 2015	Depth (m)	9
C6	21 Sep 2015	Arrive Time	945
C6	21 Sep 2015	Depart Time	951
C6	21 Sep 2015	Air Temp (C)	24
C6	21 Sep 2015	Weather	Partly Cloudy
C6	21 Sep 2015	Visibility (mi)	7
C6	21 Sep 2015	Wind Speed (kts)	9
C6	21 Sep 2015	Wind Dir	N
C6	21 Sep 2015	Water Color	Green
C6	21 Sep 2015	Wave Ht Low (ft)	3
C6	21 Sep 2015	Wave Period (sec)	13
C6	21 Sep 2015	Sea State	Heavy chop
C6	21 Sep 2015	High Tide (ft)	3.2
C6	21 Sep 2015	High Tide Time	458
C6	21 Sep 2015	Low Tide (ft)	2.91
C6	21 Sep 2015	Low Tide Time	908
C6	21 Sep 2015	Comments	
C6	27 Sep 2015	Depth (m)	10
C6	27 Sep 2015	Arrive Time	934
C6	27 Sep 2015	Depart Time	944

Station	Date	Parameter	Value
C6	27 Sep 2015	Air Temp (C)	22
C6	27 Sep 2015	Weather	Haze
C6	27 Sep 2015	Visibility (mi)	6
C6	27 Sep 2015	Wind Speed (kts)	2
C6	27 Sep 2015	Wind Dir	NW
C6	27 Sep 2015	Water Color	Bluish-Green
C6	27 Sep 2015	Wave Ht Low (ft)	3
C6	27 Sep 2015	Wave Period (sec)	13
C6	27 Sep 2015	Sea State	Calm
C6	27 Sep 2015	High Tide (ft)	5.89
C6	27 Sep 2015	High Tide Time	902
C6	27 Sep 2015	Low Tide (ft)	-0.04
C6	27 Sep 2015	Low Tide Time	1517
C6	27 Sep 2015	Comments	
A7	04 Sep 2015	Depth (m)	19
A7	04 Sep 2015	Arrive Time	808
A7	04 Sep 2015	Depart Time	818
A7	04 Sep 2015	Air Temp (C)	21
A7	04 Sep 2015	Weather	Overcast
A7	04 Sep 2015	Visibility (mi)	4
A7	04 Sep 2015	Wind Speed (kts)	2
A7	04 Sep 2015	Wind Dir	NE
A7	04 Sep 2015	Water Color	Green
A7	04 Sep 2015	Wave Ht Low (ft)	3
A7	04 Sep 2015	Wave Period (sec)	9
A7	04 Sep 2015	Sea State	Calm
A7	04 Sep 2015	High Tide (ft)	5.18
A7	04 Sep 2015	High Tide Time	1418
A7	04 Sep 2015	Low Tide (ft)	1.92
A7	04 Sep 2015	Low Tide Time	751
A7	04 Sep 2015	Comments	Kelp
A7	10 Sep 2015	Depth (m)	19
A7	10 Sep 2015	Arrive Time	808
A7	10 Sep 2015	Depart Time	823
A7	10 Sep 2015	Air Temp (C)	24
A7	10 Sep 2015	Weather	Partly Cloudy
A7	10 Sep 2015	Visibility (mi)	11
A7	10 Sep 2015	Wind Speed (kts)	5
A7	10 Sep 2015	Wind Dir	W
A7	10 Sep 2015	Water Color	Blue
A7	10 Sep 2015	Wave Ht Low (ft)	4
A7	10 Sep 2015	Wave Period (sec)	13
A7	10 Sep 2015	Sea State	Calm
A7	10 Sep 2015	High Tide (ft)	4.63
A7	10 Sep 2015	High Tide Time	841
A7	10 Sep 2015	Low Tide (ft)	1.41
A7	10 Sep 2015	Low Tide Time	1421
A7	10 Sep 2015	Comments	Kelp
A7	15 Sep 2015	Depth (m)	17
A7	15 Sep 2015	Arrive Time	803
A7	15 Sep 2015	Depart Time	815
A7	15 Sep 2015	Air Temp (C)	24

Station	Date	Parameter	Value
A7	15 Sep 2015	Weather	Cloudy
A7	15 Sep 2015	Visibility (mi)	5
A7	15 Sep 2015	Wind Speed (kts)	12
A7	15 Sep 2015	Wind Dir	E
A7	15 Sep 2015	Water Color	Green
A7	15 Sep 2015	Wave Ht Low (ft)	3
A7	15 Sep 2015	Wave Period (sec)	4
A7	15 Sep 2015	Sea State	Light chop
A7	15 Sep 2015	High Tide (ft)	5.05
A7	15 Sep 2015	High Tide Time	1041
A7	15 Sep 2015	Low Tide (ft)	0.9
A7	15 Sep 2015	Low Tide Time	436
A7	15 Sep 2015	Comments	Kelp
A7	21 Sep 2015	Depth (m)	18
A7	21 Sep 2015	Arrive Time	829
A7	21 Sep 2015	Depart Time	837
A7	21 Sep 2015	Air Temp (C)	24
A7	21 Sep 2015	Weather	Partly Cloudy
A7	21 Sep 2015	Visibility (mi)	7
A7	21 Sep 2015	Wind Speed (kts)	10
A7	21 Sep 2015	Wind Dir	NW
A7	21 Sep 2015	Water Color	Green
A7	21 Sep 2015	Wave Ht Low (ft)	3
A7	21 Sep 2015	Wave Period (sec)	13
A7	21 Sep 2015	Sea State	Light chop
A7	21 Sep 2015	High Tide (ft)	3.2
A7	21 Sep 2015	High Tide Time	458
A7	21 Sep 2015	Low Tide (ft)	2.91
A7	21 Sep 2015	Low Tide Time	908
A7	21 Sep 2015	Comments	Kelp
A7	27 Sep 2015	Depth (m)	19
A7	27 Sep 2015	Arrive Time	808
A7	27 Sep 2015	Depart Time	823
A7	27 Sep 2015	Air Temp (C)	22
A7	27 Sep 2015	Weather	Fog
A7	27 Sep 2015	Visibility (mi)	3
A7	27 Sep 2015	Wind Speed (kts)	3
A7	27 Sep 2015	Wind Dir	NE
A7	27 Sep 2015	Water Color	Bluish-Green
A7	27 Sep 2015	Wave Ht Low (ft)	3
A7	27 Sep 2015	Wave Period (sec)	13
A7	27 Sep 2015	Sea State	Calm
A7	27 Sep 2015	High Tide (ft)	5.89
A7	27 Sep 2015	High Tide Time	902
A7	27 Sep 2015	Low Tide (ft)	-0.04
A7	27 Sep 2015	Low Tide Time	1517
A7	27 Sep 2015	Comments	Kelp; Kelp debris
C7	04 Sep 2015	Depth (m)	18
C7	04 Sep 2015	Arrive Time	843
C7	04 Sep 2015	Depart Time	851
C7	04 Sep 2015	Air Temp (C)	21
C7	04 Sep 2015	Weather	Overcast

Station	Date	Parameter	Value
C7	04 Sep 2015	Visibility (mi)	4
C7	04 Sep 2015	Wind Speed (kts)	2
C7	04 Sep 2015	Wind Dir	SE
C7	04 Sep 2015	Water Color	Green
C7	04 Sep 2015	Wave Ht Low (ft)	3
C7	04 Sep 2015	Wave Period (sec)	9
C7	04 Sep 2015	Sea State	Calm
C7	04 Sep 2015	High Tide (ft)	5.18
C7	04 Sep 2015	High Tide Time	1418
C7	04 Sep 2015	Low Tide (ft)	1.92
C7	04 Sep 2015	Low Tide Time	751
C7	04 Sep 2015	Comments	Kelp
C7	10 Sep 2015	Depth (m)	19
C7	10 Sep 2015	Arrive Time	849
C7	10 Sep 2015	Depart Time	904
C7	10 Sep 2015	Air Temp (C)	26
C7	10 Sep 2015	Weather	Partly Cloudy
C7	10 Sep 2015	Visibility (mi)	11
C7	10 Sep 2015	Wind Speed (kts)	2
C7	10 Sep 2015	Wind Dir	NE
C7	10 Sep 2015	Water Color	Blue
C7	10 Sep 2015	Wave Ht Low (ft)	4
C7	10 Sep 2015	Wave Period (sec)	13
C7	10 Sep 2015	Sea State	Calm
C7	10 Sep 2015	High Tide (ft)	4.63
C7	10 Sep 2015	High Tide Time	841
C7	10 Sep 2015	Low Tide (ft)	1.41
C7	10 Sep 2015	Low Tide Time	1421
C7	10 Sep 2015	Comments	Kelp
C7	15 Sep 2015	Depth (m)	18
C7	15 Sep 2015	Arrive Time	840
C7	15 Sep 2015	Depart Time	852
C7	15 Sep 2015	Air Temp (C)	24
C7	15 Sep 2015	Weather	Cloudy
C7	15 Sep 2015	Visibility (mi)	5
C7	15 Sep 2015	Wind Speed (kts)	12
C7	15 Sep 2015	Wind Dir	S
C7	15 Sep 2015	Water Color	Green
C7	15 Sep 2015	Wave Ht Low (ft)	3
C7	15 Sep 2015	Wave Period (sec)	4
C7	15 Sep 2015	Sea State	Heavy chop
C7	15 Sep 2015	High Tide (ft)	5.05
C7	15 Sep 2015	High Tide Time	1041
C7	15 Sep 2015	Low Tide (ft)	0.9
C7	15 Sep 2015	Low Tide Time	436
C7	15 Sep 2015	Comments	Kelp
C7	21 Sep 2015	Depth (m)	18
C7	21 Sep 2015	Arrive Time	907
C7	21 Sep 2015	Depart Time	915
C7	21 Sep 2015	Air Temp (C)	23
C7	21 Sep 2015	Weather	Partly Cloudy
C7	21 Sep 2015	Visibility (mi)	7

Station	Date	Parameter	Value
C7	21 Sep 2015	Wind Speed (kts)	9
C7	21 Sep 2015	Wind Dir	SW
C7	21 Sep 2015	Water Color	Green
C7	21 Sep 2015	Wave Ht Low (ft)	3
C7	21 Sep 2015	Wave Period (sec)	13
C7	21 Sep 2015	Sea State	Heavy chop
C7	21 Sep 2015	High Tide (ft)	3.2
C7	21 Sep 2015	High Tide Time	458
C7	21 Sep 2015	Low Tide (ft)	2.91
C7	21 Sep 2015	Low Tide Time	908
C7	21 Sep 2015	Comments	Kelp
C7	27 Sep 2015	Depth (m)	19
C7	27 Sep 2015	Arrive Time	853
C7	27 Sep 2015	Depart Time	903
C7	27 Sep 2015	Air Temp (C)	22
C7	27 Sep 2015	Weather	Haze
C7	27 Sep 2015	Visibility (mi)	6
C7	27 Sep 2015	Wind Speed (kts)	5
C7	27 Sep 2015	Wind Dir	E
C7	27 Sep 2015	Water Color	Bluish-Green
C7	27 Sep 2015	Wave Ht Low (ft)	3
C7	27 Sep 2015	Wave Period (sec)	13
C7	27 Sep 2015	Sea State	Calm
C7	27 Sep 2015	High Tide (ft)	5.89
C7	27 Sep 2015	High Tide Time	902
C7	27 Sep 2015	Low Tide (ft)	-0.04
C7	27 Sep 2015	Low Tide Time	1517
C7	27 Sep 2015	Comments	Kelp
C8	04 Sep 2015	Depth (m)	20
C8	04 Sep 2015	Arrive Time	901
C8	04 Sep 2015	Depart Time	909
C8	04 Sep 2015	Air Temp (C)	21
C8	04 Sep 2015	Weather	Overcast
C8	04 Sep 2015	Visibility (mi)	4
C8	04 Sep 2015	Wind Speed (kts)	3
C8	04 Sep 2015	Wind Dir	E
C8	04 Sep 2015	Water Color	Green
C8	04 Sep 2015	Wave Ht Low (ft)	3
C8	04 Sep 2015	Wave Period (sec)	9
C8	04 Sep 2015	Sea State	Calm
C8	04 Sep 2015	High Tide (ft)	5.18
C8	04 Sep 2015	High Tide Time	1418
C8	04 Sep 2015	Low Tide (ft)	1.92
C8	04 Sep 2015	Low Tide Time	751
C8	04 Sep 2015	Comments	Kelp
C8	10 Sep 2015	Depth (m)	19
C8	10 Sep 2015	Arrive Time	915
C8	10 Sep 2015	Depart Time	920
C8	10 Sep 2015	Air Temp (C)	25
C8	10 Sep 2015	Weather	Partly Cloudy
C8	10 Sep 2015	Visibility (mi)	11
C8	10 Sep 2015	Wind Speed (kts)	4

Station	Date	Parameter	Value
C8	10 Sep 2015	Wind Dir	SW
C8	10 Sep 2015	Water Color	Blue
C8	10 Sep 2015	Wave Ht Low (ft)	4
C8	10 Sep 2015	Wave Period (sec)	13
C8	10 Sep 2015	Sea State	Calm
C8	10 Sep 2015	High Tide (ft)	4.63
C8	10 Sep 2015	High Tide Time	841
C8	10 Sep 2015	Low Tide (ft)	1.41
C8	10 Sep 2015	Low Tide Time	1421
C8	10 Sep 2015	Comments	
C8	15 Sep 2015	Depth (m)	20
C8	15 Sep 2015	Arrive Time	858
C8	15 Sep 2015	Depart Time	907
C8	15 Sep 2015	Air Temp (C)	24
C8	15 Sep 2015	Weather	Cloudy
C8	15 Sep 2015	Visibility (mi)	5
C8	15 Sep 2015	Wind Speed (kts)	15
C8	15 Sep 2015	Wind Dir	N
C8	15 Sep 2015	Water Color	Green
C8	15 Sep 2015	Wave Ht Low (ft)	3
C8	15 Sep 2015	Wave Period (sec)	4
C8	15 Sep 2015	Sea State	Heavy chop
C8	15 Sep 2015	High Tide (ft)	5.05
C8	15 Sep 2015	High Tide Time	1041
C8	15 Sep 2015	Low Tide (ft)	0.9
C8	15 Sep 2015	Low Tide Time	436
C8	15 Sep 2015	Comments	Kelp
C8	21 Sep 2015	Depth (m)	19
C8	21 Sep 2015	Arrive Time	921
C8	21 Sep 2015	Depart Time	929
C8	21 Sep 2015	Air Temp (C)	24
C8	21 Sep 2015	Weather	Partly Cloudy
C8	21 Sep 2015	Visibility (mi)	7
C8	21 Sep 2015	Wind Speed (kts)	11
C8	21 Sep 2015	Wind Dir	SW
C8	21 Sep 2015	Water Color	Green
C8	21 Sep 2015	Wave Ht Low (ft)	3
C8	21 Sep 2015	Wave Period (sec)	13
C8	21 Sep 2015	Sea State	Heavy chop
C8	21 Sep 2015	High Tide (ft)	3.2
C8	21 Sep 2015	High Tide Time	458
C8	21 Sep 2015	Low Tide (ft)	2.91
C8	21 Sep 2015	Low Tide Time	908
C8	21 Sep 2015	Comments	Kelp debris; Bubbles at surface affected transmissivity bins
C8	27 Sep 2015	Depth (m)	20
C8	27 Sep 2015	Arrive Time	913
C8	27 Sep 2015	Depart Time	921
C8	27 Sep 2015	Air Temp (C)	22
C8	27 Sep 2015	Weather	Haze
C8	27 Sep 2015	Visibility (mi)	6
C8	27 Sep 2015	Wind Speed (kts)	4
C8	27 Sep 2015	Wind Dir	E

Station	Date	Parameter	Value
C8	27 Sep 2015	Water Color	Bluish-Green
C8	27 Sep 2015	Wave Ht Low (ft)	3
C8	27 Sep 2015	Wave Period (sec)	13
C8	27 Sep 2015	Sea State	Calm
C8	27 Sep 2015	High Tide (ft)	5.89
C8	27 Sep 2015	High Tide Time	902
C8	27 Sep 2015	Low Tide (ft)	-0.04
C8	27 Sep 2015	Low Tide Time	1517
C8	27 Sep 2015	Comments	

**Table 3.10**

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

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )
A1	04 Sep 2015	1	21.58	89.46	7.2	33.47	8.1	23.2	0.92
A1	04 Sep 2015	2	21.52	89.78	7.1	33.46	8.1	23.2	0.95
A1	04 Sep 2015	3	21.33	89.78	7.1	33.45	8.1	23.2	0.95
A1	04 Sep 2015	4	21.08	89.91	7.2	33.43	8.1	23.3	0.91
A1	04 Sep 2015	5	20.76	90.14	7.2	33.42	8.1	23.4	0.87
A1	04 Sep 2015	6	20.44	90.54	7.2	33.40	8.1	23.4	0.80
A1	04 Sep 2015	7	20.16	90.92	7.4	33.40	8.1	23.5	0.75
A1	04 Sep 2015	8	19.81	91.35	7.4	33.38	8.1	23.6	0.72
A1	04 Sep 2015	9	19.56	91.52	7.4	33.38	8.1	23.6	0.72
A1	04 Sep 2015	10	19.20	91.52	7.4	33.35	8.1	23.7	0.74
A1	04 Sep 2015	11	18.58	91.40	7.4	33.31	8.1	23.8	0.81
A1	04 Sep 2015	12	17.32	91.15	7.8	33.26	8.1	24.1	0.92
A1	04 Sep 2015	13	16.74	91.14	7.9	33.26	8.1	24.2	1.01
A1	04 Sep 2015	14	16.42	91.29	8.0	33.25	8.1	24.3	1.13
A1	04 Sep 2015	15	16.25	91.25	7.9	33.25	8.1	24.3	1.24
A1	04 Sep 2015	16	16.04	91.00	7.9	33.24	8.1	24.4	1.33
A1	04 Sep 2015	17	15.77	90.54	7.8	33.25	8.1	24.5	1.36
A1	04 Sep 2015	18	15.68	90.21	7.7	33.25	8.1	24.5	1.32
A1	04 Sep 2015	19	15.57	90.02	7.7	33.25	8.1	24.5	1.25
A1	10 Sep 2015	1	22.20	91.12	7.2	33.47	8.2	23.0	0.55
A1	10 Sep 2015	2	22.07	91.50	7.2	33.46	8.2	23.0	0.58
A1	10 Sep 2015	3	21.99	90.94	7.2	33.46	8.2	23.1	0.59
A1	10 Sep 2015	4	21.97	90.89	7.2	33.46	8.2	23.1	0.62
A1	10 Sep 2015	5	21.97	90.71	7.3	33.46	8.2	23.1	0.61
A1	10 Sep 2015	6	21.96	90.23	7.2	33.46	8.2	23.1	0.63
A1	10 Sep 2015	7	21.96	89.65	7.2	33.46	8.2	23.1	0.64
A1	10 Sep 2015	8	21.94	89.05	7.2	33.46	8.2	23.1	0.65
A1	10 Sep 2015	9	21.92	89.01	7.2	33.46	8.2	23.1	0.65
A1	10 Sep 2015	10	21.86	89.57	7.2	33.45	8.2	23.1	0.68
A1	10 Sep 2015	11	21.85	89.67	7.2	33.45	8.2	23.1	0.69
A1	10 Sep 2015	12	21.81	89.60	7.2	33.45	8.2	23.1	0.71
A1	10 Sep 2015	13	21.66	89.18	7.2	33.44	8.2	23.1	0.83
A1	10 Sep 2015	14	21.45	87.42	7.1	33.42	8.2	23.2	0.97
A1	10 Sep 2015	15	20.72	86.21	7.1	33.37	8.2	23.3	1.17
A1	10 Sep 2015	16	20.04	85.46	7.1	33.34	8.2	23.5	1.20
A1	10 Sep 2015	17	19.58	86.15	7.1	33.35	8.1	23.6	1.14
A1	10 Sep 2015	18	18.92	87.15	7.1	33.33	8.1	23.8	0.94
A1	10 Sep 2015	19	18.70	87.32	7.0	33.33	8.1	23.8	0.81
A1	15 Sep 2015	1	23.31	89.46	6.9	33.46	8.2	22.7	0.82
A1	15 Sep 2015	2	23.30	89.65	7.0	33.47	8.2	22.7	0.84
A1	15 Sep 2015	3	23.27	90.66	7.0	33.46	8.2	22.7	0.88
A1	15 Sep 2015	4	23.25	91.00	7.0	33.46	8.2	22.7	0.91
A1	15 Sep 2015	5	23.16	90.89	7.1	33.45	8.2	22.7	0.96
A1	15 Sep 2015	6	23.14	90.75	7.1	33.45	8.2	22.7	0.98
A1	15 Sep 2015	7	22.97	90.59	7.2	33.44	8.2	22.8	1.01
A1	15 Sep 2015	8	22.89	90.42	7.2	33.44	8.2	22.8	1.02
A1	15 Sep 2015	9	22.62	90.25	7.2	33.41	8.2	22.8	1.09
A1	15 Sep 2015	10	22.06	90.22	7.2	33.40	8.2	23.0	1.14
A1	15 Sep 2015	11	21.74	90.27	7.2	33.39	8.2	23.1	1.18

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )
A1	15 Sep 2015	12	21.48	90.25	7.2	33.37	8.2	23.1	1.22
A1	15 Sep 2015	13	20.84	90.15	7.3	33.35	8.2	23.3	1.21
A1	15 Sep 2015	14	20.25	90.18	7.4	33.33	8.2	23.4	1.23
A1	15 Sep 2015	15	19.87	90.29	7.4	33.31	8.2	23.5	1.21
A1	15 Sep 2015	16	19.62	90.45	7.3	33.33	8.2	23.6	1.19
A1	15 Sep 2015	17	19.41	90.51	7.4	33.32	8.2	23.6	1.12
A1	15 Sep 2015	18	19.27	90.45	7.3	33.32	8.2	23.7	1.04
A1	21 Sep 2015	1	22.84	85.53	6.5	33.39	8.1	22.8	1.15
A1	21 Sep 2015	2	22.84	85.05	6.5	33.39	8.1	22.8	1.18
A1	21 Sep 2015	3	22.81	86.10	6.5	33.39	8.1	22.8	1.28
A1	21 Sep 2015	4	22.54	85.53	6.6	33.38	8.1	22.8	1.37
A1	21 Sep 2015	5	21.96	85.40	6.8	33.35	8.1	23.0	1.43
A1	21 Sep 2015	6	20.99	86.29	7.1	33.34	8.1	23.2	1.47
A1	21 Sep 2015	7	20.51	87.35	7.1	33.32	8.1	23.3	1.43
A1	21 Sep 2015	8	19.73	88.19	7.2	33.32	8.1	23.6	1.32
A1	21 Sep 2015	9	19.33	88.69	7.2	33.30	8.1	23.6	1.24
A1	21 Sep 2015	10	18.74	89.06	7.3	33.29	8.1	23.8	1.15
A1	21 Sep 2015	11	18.33	89.40	7.4	33.29	8.1	23.9	1.14
A1	21 Sep 2015	12	18.08	89.39	7.4	33.29	8.1	23.9	1.14
A1	21 Sep 2015	13	17.73	89.19	7.4	33.28	8.1	24.0	1.10
A1	21 Sep 2015	14	17.66	88.94	7.3	33.28	8.1	24.0	1.02
A1	21 Sep 2015	15	17.25	88.96	7.3	33.27	8.1	24.1	0.96
A1	21 Sep 2015	16	17.03	88.75	7.2	33.28	8.1	24.2	1.02
A1	21 Sep 2015	17	16.54	88.44	7.2	33.28	8.1	24.3	0.99
A1	21 Sep 2015	18	16.34	88.10	7.0	33.29	8.1	24.4	0.89
A1	27 Sep 2015	1	22.20	89.96	7.5	33.40	8.2	22.9	0.81
A1	27 Sep 2015	2	22.19	89.88	7.5	33.40	8.2	22.9	0.83
A1	27 Sep 2015	3	22.18	90.10	7.5	33.40	8.2	22.9	0.83
A1	27 Sep 2015	4	22.18	90.18	7.5	33.39	8.2	22.9	0.85
A1	27 Sep 2015	5	22.14	90.14	7.5	33.39	8.2	23.0	0.82
A1	27 Sep 2015	6	22.13	90.12	7.6	33.39	8.2	23.0	0.84
A1	27 Sep 2015	7	22.10	90.13	7.6	33.39	8.2	23.0	0.83
A1	27 Sep 2015	8	22.11	90.14	7.5	33.39	8.2	23.0	0.86
A1	27 Sep 2015	9	22.09	90.23	7.5	33.39	8.2	23.0	0.88
A1	27 Sep 2015	10	21.98	90.21	7.6	33.38	8.2	23.0	0.93
A1	27 Sep 2015	11	21.85	90.13	7.5	33.38	8.2	23.0	0.95
A1	27 Sep 2015	12	21.80	90.23	7.6	33.38	8.2	23.0	0.96
A1	27 Sep 2015	13	21.69	90.09	7.5	33.38	8.2	23.1	1.10
A1	27 Sep 2015	14	21.46	89.87	7.4	33.36	8.2	23.1	1.09
A1	27 Sep 2015	15	20.88	89.98	7.4	33.36	8.2	23.3	1.04
A1	27 Sep 2015	16	20.43	90.76	7.4	33.33	8.2	23.4	1.10
A1	27 Sep 2015	17	19.69	90.90	7.3	33.32	8.2	23.6	1.07
A1	27 Sep 2015	18	19.13	90.82	7.2	33.32	8.2	23.7	0.96
A1	27 Sep 2015	19	18.89	90.86	7.2	33.32	8.2	23.8	0.88
C4	04 Sep 2015	1	22.48	83.91	6.5	33.48	8.1	22.9	0.68
C4	04 Sep 2015	2	22.45	83.88	6.5	33.48	8.1	22.9	0.77
C4	04 Sep 2015	3	22.41	83.70	6.5	33.48	8.1	22.9	0.85
C4	04 Sep 2015	4	22.35	83.98	6.6	33.48	8.1	23.0	0.87
C4	04 Sep 2015	5	22.32	84.27	6.6	33.48	8.1	23.0	1.03
C4	04 Sep 2015	6	22.31	78.74	6.5	33.47	8.1	23.0	1.29
C4	04 Sep 2015	7	22.22	84.59	6.4	33.47	8.1	23.0	1.02
C4	04 Sep 2015	8	21.50	85.27	5.7	33.41	8.1	23.1	0.78

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma-t$ )	Chlor ( $\mu\text{g/L}$ )
C4	04 Sep 2015	9	20.70	79.59	5.2	33.40	8.0	23.4	0.50
C4	10 Sep 2015	1	22.65	67.67	6.3	33.43	8.1	22.8	1.12
C4	10 Sep 2015	2	22.07	66.70	6.5	33.43	8.1	23.0	1.12
C4	10 Sep 2015	3	21.46	69.73	6.6	33.41	8.1	23.2	1.07
C4	10 Sep 2015	4	21.24	77.99	6.6	33.41	8.1	23.2	1.08
C4	10 Sep 2015	5	21.14	80.21	6.6	33.41	8.1	23.2	1.11
C4	10 Sep 2015	6	20.99	83.04	6.3	33.40	8.1	23.3	1.19
C4	10 Sep 2015	7	20.65	84.10	6.0	33.39	8.1	23.4	1.18
C4	10 Sep 2015	8	20.27	84.54	5.5	33.37	8.1	23.4	1.02
C4	10 Sep 2015	9	19.79	84.30	5.1	33.36	8.0	23.6	0.80
C4	10 Sep 2015	10	19.32	83.69	4.7	33.35	8.0	23.7	0.64
C4	10 Sep 2015	11	18.93	81.91	4.5	33.34	7.9	23.8	0.54
C4	10 Sep 2015	12	18.89	76.71	4.4	33.35	7.9	23.8	0.52
C4	15 Sep 2015	1	23.43	86.05	6.5	33.45	8.1	22.6	1.28
C4	15 Sep 2015	2	23.36	86.17	6.4	33.45	8.1	22.7	1.32
C4	15 Sep 2015	3	23.30	86.04	6.4	33.45	8.1	22.7	1.35
C4	15 Sep 2015	4	23.32	85.90	6.4	33.45	8.1	22.7	1.36
C4	15 Sep 2015	5	23.32	85.93	6.4	33.45	8.1	22.7	1.39
C4	15 Sep 2015	6	23.28	85.99	6.2	33.45	8.1	22.7	1.40
C4	15 Sep 2015	7	22.96	85.99	5.5	33.41	8.1	22.7	1.30
C4	15 Sep 2015	8	22.15	85.72	4.6	33.42	8.0	23.0	1.09
C4	15 Sep 2015	9	21.80	83.73	3.7	33.39	8.0	23.1	0.91
C4	15 Sep 2015	10	21.39	77.34	3.1	33.39	7.9	23.2	0.71
C4	15 Sep 2015	11	21.30	74.62	2.9	33.40	7.8	23.2	0.62
C4	21 Sep 2015	1	22.50	81.51	6.8	33.40	8.2	22.9	1.21
C4	21 Sep 2015	2	22.47	82.79	6.7	33.40	8.1	22.9	1.34
C4	21 Sep 2015	3	22.46	83.26	6.7	33.40	8.1	22.9	1.41
C4	21 Sep 2015	4	22.46	82.92	6.7	33.40	8.1	22.9	1.44
C4	21 Sep 2015	5	22.43	83.00	6.5	33.40	8.1	22.9	1.46
C4	21 Sep 2015	6	22.33	82.68	6.4	33.40	8.1	22.9	1.48
C4	21 Sep 2015	7	22.21	82.48	5.9	33.39	8.1	22.9	1.44
C4	21 Sep 2015	8	21.73	80.50	4.6	33.36	8.1	23.0	1.27
C4	21 Sep 2015	9	20.70	70.68	3.0	33.32	7.9	23.3	0.92
C4	21 Sep 2015	10	20.15	66.55	2.3	33.34	7.8	23.5	0.70
C4	27 Sep 2015	1	23.02	91.24	7.0	33.39	8.2	22.7	0.44
C4	27 Sep 2015	2	22.75	91.10	7.0	33.39	8.2	22.8	0.43
C4	27 Sep 2015	3	22.55	91.13	7.0	33.38	8.2	22.8	0.48
C4	27 Sep 2015	4	22.19	90.85	6.9	33.37	8.2	22.9	0.63
C4	27 Sep 2015	5	21.88	89.67	6.6	33.37	8.2	23.0	0.87
C4	27 Sep 2015	6	21.48	88.20	5.8	33.34	8.1	23.1	1.17
C4	27 Sep 2015	7	20.79	86.13	4.5	33.34	8.0	23.3	1.43
C4	27 Sep 2015	8	20.36	84.72	3.5	33.33	7.9	23.4	1.28
C4	27 Sep 2015	9	19.99	83.89	2.7	33.33	7.8	23.5	0.93
C4	27 Sep 2015	10	19.71	80.38	2.2	33.33	7.8	23.6	0.69
C5	04 Sep 2015	1	22.76	78.93	5.9	33.48	8.1	22.8	0.80
C5	04 Sep 2015	2	22.75	78.58	5.9	33.48	8.1	22.9	0.81
C5	04 Sep 2015	3	22.72	78.44	5.8	33.48	8.1	22.9	0.82
C5	04 Sep 2015	4	22.44	78.80	5.9	33.54	8.1	23.0	0.89
C5	04 Sep 2015	5	22.05	82.01	5.9	33.57	8.1	23.1	0.84
C5	04 Sep 2015	6	21.84	85.72	5.9	33.60	8.1	23.2	0.85

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma-t$ )	Chlor ( $\mu\text{g/L}$ )
C5	04 Sep 2015	7	21.50	87.38	6.0	33.63	8.1	23.3	0.85
C5	04 Sep 2015	8	21.12	87.74	6.0	33.68	8.1	23.5	0.85
C5	04 Sep 2015	9	20.53	86.62	6.0	33.77	8.1	23.7	0.80
C5	04 Sep 2015	10	20.13	85.38	6.5	33.73	8.1	23.8	0.83
C5	04 Sep 2015	11	20.05	83.96	6.5	33.67	8.1	23.7	0.83
C5	10 Sep 2015	1	23.16	85.39	6.6	33.47	8.1	22.7	0.80
C5	10 Sep 2015	2	22.49	84.00	6.7	33.44	8.1	22.9	0.78
C5	10 Sep 2015	3	21.62	86.21	6.9	33.42	8.1	23.1	0.86
C5	10 Sep 2015	4	21.38	87.14	6.9	33.41	8.1	23.2	1.03
C5	10 Sep 2015	5	20.94	87.59	7.0	33.37	8.1	23.3	1.29
C5	10 Sep 2015	6	20.40	86.52	7.0	33.37	8.1	23.4	1.47
C5	10 Sep 2015	7	20.08	86.10	6.8	33.36	8.1	23.5	1.44
C5	10 Sep 2015	8	19.86	84.94	6.8	33.36	8.1	23.5	1.35
C5	10 Sep 2015	9	19.59	84.35	6.7	33.35	8.1	23.6	1.15
C5	10 Sep 2015	10	19.37	83.65	6.6	33.35	8.1	23.7	0.97
C5	10 Sep 2015	11	19.23	82.10	6.5	33.35	8.1	23.7	0.86
C5	15 Sep 2015	1	23.55	86.84	6.7	33.46	8.1	22.6	1.03
C5	15 Sep 2015	2	23.52	88.56	6.7	33.46	8.1	22.6	1.04
C5	15 Sep 2015	3	23.51	88.48	6.7	33.46	8.1	22.6	1.07
C5	15 Sep 2015	4	23.47	88.41	6.5	33.45	8.1	22.6	1.12
C5	15 Sep 2015	5	23.20	88.38	6.2	33.44	8.1	22.7	1.22
C5	15 Sep 2015	6	22.74	87.75	5.6	33.41	8.1	22.8	1.13
C5	15 Sep 2015	7	22.21	87.85	5.2	33.40	8.0	22.9	0.96
C5	15 Sep 2015	8	21.90	89.14	5.1	33.41	8.0	23.0	0.76
C5	15 Sep 2015	9	21.89	89.15	5.1	33.41	8.0	23.0	0.73
C5	21 Sep 2015	1	23.10	81.86	6.0	33.39	8.1	22.7	1.12
C5	21 Sep 2015	2	23.08	82.47	6.0	33.39	8.1	22.7	1.20
C5	21 Sep 2015	3	22.98	82.72	6.0	33.39	8.1	22.7	1.31
C5	21 Sep 2015	4	22.93	82.35	5.9	33.39	8.1	22.7	1.36
C5	21 Sep 2015	5	22.76	82.00	5.9	33.38	8.1	22.8	1.28
C5	21 Sep 2015	6	22.46	81.68	5.9	33.38	8.1	22.9	1.21
C5	21 Sep 2015	7	22.06	81.72	5.7	33.34	8.1	22.9	1.10
C5	21 Sep 2015	8	20.75	82.18	5.6	33.27	8.1	23.2	0.96
C5	21 Sep 2015	9	20.05	78.06	5.6	33.32	8.0	23.5	0.83
C5	21 Sep 2015	10	19.94	65.65	5.5	33.33	8.0	23.5	0.77
C5	27 Sep 2015	1	22.77	91.38	7.0	33.40	8.2	22.8	0.51
C5	27 Sep 2015	2	22.61	91.35	7.1	33.39	8.2	22.8	0.57
C5	27 Sep 2015	3	22.37	91.26	7.2	33.39	8.2	22.9	0.65
C5	27 Sep 2015	4	22.10	91.00	7.2	33.38	8.2	23.0	0.72
C5	27 Sep 2015	5	21.86	90.94	7.3	33.38	8.2	23.0	0.80
C5	27 Sep 2015	6	21.77	90.85	7.1	33.37	8.2	23.0	0.89
C5	27 Sep 2015	7	21.26	90.62	6.8	33.35	8.2	23.2	0.94
C5	27 Sep 2015	8	20.85	88.97	6.6	33.34	8.1	23.3	0.91
C5	27 Sep 2015	9	20.34	86.93	6.5	33.32	8.1	23.4	0.88
C5	27 Sep 2015	10	19.91	81.60	6.5	33.33	8.1	23.5	0.88
C5	27 Sep 2015	11	19.90	70.40	6.5	33.33	8.1	23.5	0.87
A6	04 Sep 2015	1	22.28	90.17	6.4	33.44	8.2	23.0	0.63
A6	04 Sep 2015	2	22.27	90.23	6.6	33.47	8.2	23.0	0.76
A6	04 Sep 2015	3	22.22	90.44	6.4	33.48	8.2	23.0	0.75
A6	04 Sep 2015	4	22.16	90.53	6.5	33.51	8.2	23.0	0.71

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma-t$ )	Chlor ( $\mu\text{g/L}$ )
A6	04 Sep 2015	5	21.98	90.58	6.6	33.54	8.2	23.1	0.72
A6	04 Sep 2015	6	21.64	90.70	6.9	33.53	8.2	23.2	0.72
A6	04 Sep 2015	7	21.24	90.80	6.8	33.48	8.2	23.3	0.77
A6	04 Sep 2015	8	20.88	90.75	7.0	33.46	8.2	23.4	0.84
A6	04 Sep 2015	9	20.47	90.89	7.1	33.43	8.2	23.4	0.89
A6	04 Sep 2015	10	19.95	90.76	7.0	33.42	8.2	23.6	0.94
A6	04 Sep 2015	11	19.38	90.70	7.1	33.40	8.2	23.7	0.90
A6	04 Sep 2015	12	18.50	90.85	7.2	33.37	8.1	23.9	0.81
A6	04 Sep 2015	13	17.14	90.53	7.3	33.33	8.1	24.2	0.81
A6	04 Sep 2015	14	16.71	90.15	7.5	33.29	8.1	24.3	0.96
A6	04 Sep 2015	15	16.38	90.03	7.5	33.28	8.1	24.3	1.08
A6	04 Sep 2015	16	15.90	90.13	7.7	33.27	8.1	24.4	1.23
A6	04 Sep 2015	17	15.48	90.24	7.7	33.26	8.1	24.5	1.39
A6	04 Sep 2015	18	15.27	90.15	7.8	33.25	8.1	24.6	1.55
A6	10 Sep 2015	1	21.13	86.94	7.2	33.41	8.2	23.2	1.10
A6	10 Sep 2015	2	21.00	86.86	7.3	33.40	8.2	23.3	1.15
A6	10 Sep 2015	3	20.88	87.00	7.3	33.40	8.2	23.3	1.20
A6	10 Sep 2015	4	20.86	87.06	7.3	33.40	8.2	23.3	1.22
A6	10 Sep 2015	5	20.81	87.03	7.3	33.40	8.2	23.3	1.23
A6	10 Sep 2015	6	20.74	86.92	7.3	33.39	8.2	23.3	1.25
A6	10 Sep 2015	7	20.65	86.97	7.3	33.39	8.2	23.4	1.28
A6	10 Sep 2015	8	20.59	86.88	7.3	33.38	8.2	23.4	1.27
A6	10 Sep 2015	9	20.51	86.72	7.3	33.38	8.2	23.4	1.30
A6	10 Sep 2015	10	20.42	86.76	7.4	33.38	8.2	23.4	1.30
A6	10 Sep 2015	11	20.37	86.83	7.3	33.38	8.2	23.4	1.27
A6	10 Sep 2015	12	20.26	86.97	7.3	33.38	8.2	23.5	1.22
A6	10 Sep 2015	13	20.20	87.24	7.3	33.38	8.2	23.5	1.21
A6	10 Sep 2015	14	20.14	87.34	7.3	33.38	8.2	23.5	1.18
A6	10 Sep 2015	15	20.10	87.49	7.2	33.38	8.2	23.5	1.16
A6	10 Sep 2015	16	19.92	87.72	7.2	33.37	8.2	23.5	1.04
A6	10 Sep 2015	17	19.68	88.16	7.0	33.37	8.1	23.6	0.88
A6	10 Sep 2015	18	19.41	89.08	7.0	33.36	8.1	23.7	0.74
A6	10 Sep 2015	19	18.99	89.13	7.1	33.34	8.1	23.8	0.73
A6	15 Sep 2015	1	23.76	90.20	6.7	33.50	8.2	22.6	0.72
A6	15 Sep 2015	2	23.75	91.18	6.7	33.50	8.2	22.6	0.73
A6	15 Sep 2015	3	23.69	91.72	6.7	33.50	8.2	22.6	0.76
A6	15 Sep 2015	4	23.68	91.68	6.6	33.50	8.2	22.6	0.75
A6	15 Sep 2015	5	23.67	90.99	6.7	33.50	8.2	22.6	0.77
A6	15 Sep 2015	6	23.63	92.15	6.7	33.49	8.2	22.6	0.80
A6	15 Sep 2015	7	23.58	92.06	6.7	33.49	8.2	22.6	0.82
A6	15 Sep 2015	8	23.48	92.08	6.7	33.48	8.2	22.6	0.85
A6	15 Sep 2015	9	23.25	91.99	6.8	33.47	8.2	22.7	0.92
A6	15 Sep 2015	10	23.05	91.80	6.8	33.45	8.2	22.7	0.94
A6	15 Sep 2015	11	22.74	91.56	6.7	33.45	8.1	22.8	0.96
A6	15 Sep 2015	12	22.07	91.20	6.7	33.43	8.1	23.0	0.98
A6	15 Sep 2015	13	21.97	89.51	6.7	33.42	8.1	23.0	0.97
A6	15 Sep 2015	14	21.94	86.98	6.7	33.41	8.1	23.0	1.00
A6	15 Sep 2015	15	21.88	88.31	6.6	33.41	8.1	23.0	1.01
A6	15 Sep 2015	16	21.64	89.66	6.7	33.40	8.1	23.1	1.04
A6	15 Sep 2015	17	21.36	89.69	6.7	33.39	8.1	23.2	1.02
A6	15 Sep 2015	18	20.90	90.38	6.6	33.35	8.1	23.3	1.00
A6	15 Sep 2015	19	19.78	90.55	6.8	33.32	8.1	23.5	0.90
A6	15 Sep 2015	20	19.52	90.46	6.9	33.33	8.1	23.6	0.84

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma-t$ )	Chlor ( $\mu\text{g/L}$ )
A6	15 Sep 2015	21	19.41	90.29	7.0	33.33	8.1	23.6	0.82
A6	21 Sep 2015	1	22.94	87.54	6.3	33.38	8.1	22.7	0.72
A6	21 Sep 2015	2	22.69	87.95	6.3	33.38	8.1	22.8	0.80
A6	21 Sep 2015	3	22.27	88.40	6.3	33.33	8.1	22.8	0.99
A6	21 Sep 2015	4	19.35	88.84	7.0	33.28	8.1	23.6	1.31
A6	21 Sep 2015	5	18.25	88.55	7.5	33.27	8.2	23.9	1.52
A6	21 Sep 2015	6	18.04	88.95	7.5	33.27	8.2	23.9	1.56
A6	21 Sep 2015	7	17.72	89.18	7.5	33.24	8.2	24.0	1.67
A6	21 Sep 2015	8	17.17	89.30	7.6	33.24	8.2	24.1	1.69
A6	21 Sep 2015	9	17.06	89.57	7.6	33.25	8.2	24.2	1.72
A6	21 Sep 2015	10	16.79	89.70	7.6	33.23	8.2	24.2	1.75
A6	21 Sep 2015	11	16.53	89.63	7.6	33.25	8.2	24.3	1.77
A6	21 Sep 2015	12	16.38	89.47	7.5	33.26	8.2	24.3	1.81
A6	21 Sep 2015	13	16.18	89.31	7.4	33.26	8.1	24.4	1.77
A6	21 Sep 2015	14	15.99	89.43	7.3	33.26	8.1	24.4	1.60
A6	21 Sep 2015	15	15.70	89.22	7.2	33.27	8.2	24.5	1.46
A6	21 Sep 2015	16	15.47	88.87	7.1	33.28	8.1	24.5	1.33
A6	21 Sep 2015	17	15.29	88.62	7.0	33.29	8.1	24.6	1.23
A6	21 Sep 2015	18	15.03	88.74	6.9	33.30	8.1	24.7	1.05
A6	21 Sep 2015	19	15.01	88.82	6.8	33.30	8.1	24.7	0.96
A6	21 Sep 2015	20	14.98	88.72	6.9	33.31	8.1	24.7	0.95
A6	27 Sep 2015	1	22.40	91.42	7.2	33.40	8.2	22.9	0.63
A6	27 Sep 2015	2	22.39	91.47	7.3	33.40	8.2	22.9	0.64
A6	27 Sep 2015	3	22.38	91.74	7.3	33.40	8.2	22.9	0.68
A6	27 Sep 2015	4	22.34	91.82	7.2	33.39	8.2	22.9	0.66
A6	27 Sep 2015	5	22.31	91.55	7.3	33.39	8.2	22.9	0.69
A6	27 Sep 2015	6	22.21	91.46	7.2	33.38	8.2	22.9	0.69
A6	27 Sep 2015	7	22.01	91.64	7.3	33.38	8.2	23.0	0.76
A6	27 Sep 2015	8	21.73	91.71	7.2	33.37	8.2	23.1	0.85
A6	27 Sep 2015	9	21.13	91.69	7.2	33.35	8.2	23.2	0.97
A6	27 Sep 2015	10	20.67	91.50	7.2	33.35	8.2	23.3	1.10
A6	27 Sep 2015	11	20.40	91.27	7.3	33.35	8.2	23.4	1.06
A6	27 Sep 2015	12	20.25	91.11	7.3	33.34	8.2	23.4	1.10
A6	27 Sep 2015	13	20.10	91.14	7.3	33.35	8.2	23.5	1.08
A6	27 Sep 2015	14	20.00	91.14	7.2	33.34	8.2	23.5	1.10
A6	27 Sep 2015	15	19.81	90.91	7.2	33.33	8.2	23.5	1.08
A6	27 Sep 2015	16	19.52	90.89	7.1	33.34	8.2	23.6	1.04
A6	27 Sep 2015	17	19.33	90.81	7.0	33.32	8.2	23.7	0.94
A6	27 Sep 2015	18	18.92	91.03	6.9	33.32	8.1	23.8	0.77
A6	27 Sep 2015	19	18.70	91.42	6.7	33.32	8.1	23.8	0.67
A6	27 Sep 2015	20	18.30	91.40	6.8	33.32	8.1	23.9	0.60
A6	27 Sep 2015	21	18.20	91.00	6.7	33.31	8.1	23.9	0.57
C6	04 Sep 2015	1	22.67	83.94	6.3	33.47	8.1	22.9	0.81
C6	04 Sep 2015	2	22.70	83.74	6.2	33.48	8.1	22.9	0.82
C6	04 Sep 2015	3	22.63	83.74	6.2	33.47	8.1	22.9	0.85
C6	04 Sep 2015	4	22.43	83.69	6.1	33.46	8.1	22.9	0.89
C6	04 Sep 2015	5	22.08	83.44	6.3	33.43	8.1	23.0	0.97
C6	04 Sep 2015	6	21.35	83.10	6.4	33.41	8.1	23.2	1.07
C6	04 Sep 2015	7	21.02	84.55	6.4	33.41	8.1	23.3	0.94
C6	04 Sep 2015	8	20.90	85.49	6.3	33.40	8.1	23.3	0.80
C6	04 Sep 2015	9	20.80	85.09	6.3	33.40	8.1	23.3	0.67
C6	04 Sep 2015	10	20.79	83.59	6.2	33.41	8.1	23.3	0.63

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma-t$ )	Chlor ( $\mu\text{g/L}$ )
C6	10 Sep 2015	1	23.02	86.36	6.7	33.46	8.1	22.8	0.76
C6	10 Sep 2015	2	22.34	86.97	6.6	33.45	8.1	22.9	0.88
C6	10 Sep 2015	3	21.95	86.39	6.4	33.44	8.1	23.0	1.16
C6	10 Sep 2015	4	21.63	82.35	6.6	33.43	8.1	23.1	1.23
C6	10 Sep 2015	5	21.34	79.77	6.7	33.41	8.1	23.2	1.28
C6	10 Sep 2015	6	20.81	81.73	6.8	33.40	8.1	23.3	1.26
C6	10 Sep 2015	7	20.29	83.77	6.7	33.38	8.1	23.5	1.18
C6	10 Sep 2015	8	19.98	85.09	6.5	33.38	8.1	23.5	1.10
C6	10 Sep 2015	9	19.65	85.03	6.2	33.36	8.1	23.6	0.87
C6	10 Sep 2015	10	19.45	83.80	6.0	33.37	8.1	23.7	0.71
C6	10 Sep 2015	11	19.38	79.37	6.0	33.36	8.1	23.7	0.68
C6	15 Sep 2015	1	23.77	90.10	6.8	33.48	8.1	22.6	0.78
C6	15 Sep 2015	2	23.79	90.20	6.8	33.48	8.1	22.6	0.78
C6	15 Sep 2015	3	23.78	90.41	6.8	33.48	8.1	22.6	0.80
C6	15 Sep 2015	4	23.67	90.60	6.8	33.47	8.1	22.6	0.81
C6	15 Sep 2015	5	23.64	90.23	6.7	33.47	8.1	22.6	0.84
C6	15 Sep 2015	6	23.42	90.01	6.3	33.44	8.1	22.6	0.87
C6	15 Sep 2015	7	22.88	84.45	5.9	33.43	8.1	22.8	0.88
C6	15 Sep 2015	8	22.40	69.32	5.6	33.41	8.0	22.9	0.79
C6	15 Sep 2015	9	22.14	68.91	5.3	33.41	8.0	23.0	0.73
C6	15 Sep 2015	10	21.86	71.81	5.1	33.41	8.0	23.0	0.66
C6	21 Sep 2015	1	23.69	73.65	5.6	33.41	8.0	22.5	1.08
C6	21 Sep 2015	2	23.66	74.16	5.6	33.40	8.0	22.5	1.11
C6	21 Sep 2015	3	23.60	75.60	5.6	33.40	8.1	22.6	1.14
C6	21 Sep 2015	4	23.21	77.16	5.4	33.37	8.1	22.6	0.99
C6	21 Sep 2015	5	21.88	79.78	5.4	33.35	8.1	23.0	0.97
C6	21 Sep 2015	6	20.83	82.06	5.5	33.30	8.1	23.2	1.05
C6	21 Sep 2015	7	20.23	80.66	5.6	33.32	8.1	23.4	0.96
C6	21 Sep 2015	8	19.91	83.85	5.7	33.31	8.1	23.5	0.83
C6	21 Sep 2015	9	19.76	82.56	5.8	33.32	8.0	23.5	0.73
C6	27 Sep 2015	1	22.72	89.01	7.0	33.39	8.2	22.8	0.50
C6	27 Sep 2015	2	22.71	89.05	7.0	33.39	8.2	22.8	0.51
C6	27 Sep 2015	3	22.57	89.75	7.1	33.38	8.2	22.8	0.53
C6	27 Sep 2015	4	22.21	90.19	7.0	33.36	8.2	22.9	0.63
C6	27 Sep 2015	5	21.86	90.78	6.9	33.37	8.2	23.0	0.68
C6	27 Sep 2015	6	21.69	89.00	6.8	33.36	8.2	23.1	0.65
C6	27 Sep 2015	7	21.44	86.18	6.6	33.35	8.1	23.1	0.66
C6	27 Sep 2015	8	20.87	86.35	6.1	33.34	8.1	23.3	0.61
C6	27 Sep 2015	9	20.56	84.27	6.0	33.34	8.1	23.4	0.58
C6	27 Sep 2015	10	20.55	81.21	6.0	33.34	8.1	23.4	0.58
A7	04 Sep 2015	1	22.33	88.26	6.7	33.49	8.2	23.0	0.75
A7	04 Sep 2015	2	22.32	88.57	6.6	33.49	8.2	23.0	0.72
A7	04 Sep 2015	3	22.31	89.09	6.7	33.50	8.2	23.0	0.72
A7	04 Sep 2015	4	22.19	89.25	6.8	33.51	8.2	23.0	0.72
A7	04 Sep 2015	5	21.05	89.36	6.9	33.52	8.2	23.4	0.75
A7	04 Sep 2015	6	20.38	89.74	7.1	33.45	8.2	23.5	0.82
A7	04 Sep 2015	7	20.02	90.47	7.0	33.42	8.2	23.5	0.84
A7	04 Sep 2015	8	19.71	91.03	7.2	33.40	8.2	23.6	0.75
A7	04 Sep 2015	9	19.50	91.26	7.2	33.39	8.2	23.7	0.67
A7	04 Sep 2015	10	19.38	91.50	7.1	33.38	8.2	23.7	0.65

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma-t$ )	Chlor ( $\mu\text{g/L}$ )
A7	04 Sep 2015	11	19.26	91.55	7.2	33.38	8.2	23.7	0.64
A7	04 Sep 2015	12	19.22	91.48	7.2	33.38	8.2	23.7	0.64
A7	04 Sep 2015	13	19.09	91.42	7.2	33.37	8.2	23.8	0.65
A7	04 Sep 2015	14	18.37	91.35	7.2	33.34	8.1	23.9	0.68
A7	04 Sep 2015	15	17.19	91.08	7.4	33.30	8.1	24.2	0.82
A7	04 Sep 2015	16	16.60	90.67	7.6	33.28	8.1	24.3	0.97
A7	04 Sep 2015	17	16.29	90.25	7.7	33.27	8.2	24.4	1.11
A7	04 Sep 2015	18	16.11	90.24	7.7	33.26	8.2	24.4	1.15
A7	04 Sep 2015	19	15.89	90.13	7.7	33.26	8.1	24.4	1.16
A7	10 Sep 2015	1	21.25	89.61	6.3	33.42	8.2	23.2	0.87
A7	10 Sep 2015	2	21.24	89.64	6.3	33.43	8.2	23.2	0.86
A7	10 Sep 2015	3	21.23	89.66	6.4	33.44	8.2	23.2	0.89
A7	10 Sep 2015	4	21.23	89.57	6.4	33.43	8.2	23.2	0.88
A7	10 Sep 2015	5	21.23	89.58	6.4	33.43	8.2	23.2	0.84
A7	10 Sep 2015	6	21.21	89.92	6.3	33.45	8.2	23.3	0.89
A7	10 Sep 2015	7	21.19	89.93	6.3	33.45	8.2	23.3	0.90
A7	10 Sep 2015	8	21.15	89.46	6.3	33.47	8.2	23.3	0.87
A7	10 Sep 2015	9	21.14	89.22	6.3	33.46	8.2	23.3	0.90
A7	10 Sep 2015	10	21.12	88.82	6.3	33.47	8.2	23.3	0.90
A7	10 Sep 2015	11	21.10	89.20	6.4	33.47	8.2	23.3	0.91
A7	10 Sep 2015	12	21.08	89.28	6.4	33.47	8.2	23.3	0.90
A7	10 Sep 2015	13	21.06	89.23	6.4	33.46	8.2	23.3	0.89
A7	10 Sep 2015	14	21.03	89.12	6.4	33.48	8.2	23.3	0.89
A7	10 Sep 2015	15	21.00	88.97	6.4	33.48	8.2	23.3	0.92
A7	10 Sep 2015	16	20.77	88.79	6.4	33.59	8.2	23.5	0.91
A7	10 Sep 2015	17	20.50	88.26	6.4	33.61	8.2	23.6	0.91
A7	10 Sep 2015	18	20.27	87.25	6.4	33.62	8.2	23.8	0.95
A7	10 Sep 2015	19	19.89	86.59	6.5	33.62	8.2	23.8	0.97
A7	10 Sep 2015	20	19.32	86.59	6.5	33.62	8.1	24.0	0.98
A7	15 Sep 2015	1	23.48	86.94	6.8	33.48	8.2	22.6	0.82
A7	15 Sep 2015	2	23.44	90.80	6.8	33.48	8.2	22.7	0.84
A7	15 Sep 2015	3	23.42	91.61	6.9	33.48	8.2	22.7	0.87
A7	15 Sep 2015	4	23.41	91.50	6.9	33.48	8.2	22.7	0.88
A7	15 Sep 2015	5	23.40	91.34	6.9	33.48	8.2	22.7	0.89
A7	15 Sep 2015	6	23.40	91.49	6.9	33.48	8.2	22.7	0.89
A7	15 Sep 2015	7	23.35	91.44	6.9	33.47	8.2	22.7	0.92
A7	15 Sep 2015	8	23.27	91.45	6.8	33.48	8.2	22.7	0.95
A7	15 Sep 2015	9	23.16	91.35	6.8	33.45	8.2	22.7	1.01
A7	15 Sep 2015	10	22.94	91.20	6.8	33.46	8.2	22.8	1.10
A7	15 Sep 2015	11	22.75	90.84	6.8	33.44	8.2	22.8	1.17
A7	15 Sep 2015	12	22.42	90.61	6.9	33.43	8.1	22.9	1.24
A7	15 Sep 2015	13	22.04	90.38	6.9	33.35	8.1	22.9	1.23
A7	15 Sep 2015	14	20.97	90.31	7.0	33.36	8.1	23.2	1.23
A7	15 Sep 2015	15	20.06	90.37	7.3	33.33	8.2	23.5	1.27
A7	15 Sep 2015	16	19.63	90.72	7.6	33.33	8.2	23.6	1.26
A7	15 Sep 2015	17	19.47	91.18	7.5	33.30	8.2	23.6	1.15
A7	15 Sep 2015	18	19.29	91.01	7.4	33.32	8.2	23.7	1.04
A7	21 Sep 2015	1	22.63	88.55	6.7	33.40	8.1	22.8	0.80
A7	21 Sep 2015	2	22.61	88.54	6.7	33.40	8.1	22.8	0.84
A7	21 Sep 2015	3	22.59	88.66	6.7	33.39	8.1	22.8	0.91
A7	21 Sep 2015	4	22.20	88.76	6.9	33.37	8.1	22.9	0.97
A7	21 Sep 2015	5	21.64	89.16	7.0	33.37	8.2	23.1	1.04

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma-t$ )	Chlor ( $\mu\text{g/L}$ )
A7	21 Sep 2015	6	21.05	89.44	7.1	33.34	8.2	23.2	1.11
A7	21 Sep 2015	7	20.20	89.42	7.1	33.33	8.2	23.4	1.16
A7	21 Sep 2015	8	19.45	89.54	7.2	33.31	8.2	23.6	1.22
A7	21 Sep 2015	9	18.61	89.48	7.5	33.28	8.2	23.8	1.30
A7	21 Sep 2015	10	17.86	89.46	7.7	33.28	8.2	24.0	1.43
A7	21 Sep 2015	11	17.39	89.56	7.7	33.27	8.2	24.1	1.54
A7	21 Sep 2015	12	17.11	89.73	7.6	33.26	8.2	24.2	1.57
A7	21 Sep 2015	13	16.69	89.54	7.5	33.27	8.2	24.3	1.60
A7	21 Sep 2015	14	16.26	89.34	7.3	33.25	8.1	24.3	1.45
A7	21 Sep 2015	15	15.84	89.40	7.2	33.27	8.1	24.5	1.29
A7	21 Sep 2015	16	15.65	89.25	7.0	33.29	8.1	24.5	1.16
A7	21 Sep 2015	17	15.56	89.08	7.0	33.30	8.1	24.5	1.09
A7	21 Sep 2015	18	15.53	89.01	6.9	33.30	8.1	24.5	1.09
A7	21 Sep 2015	19	15.51	88.88	6.9	33.30	8.1	24.6	1.07
A7	27 Sep 2015	1	22.20	90.71	7.3	33.40	8.2	22.9	0.72
A7	27 Sep 2015	2	22.20	90.71	7.4	33.40	8.2	22.9	0.76
A7	27 Sep 2015	3	22.21	90.95	7.4	33.40	8.2	22.9	0.77
A7	27 Sep 2015	4	22.19	90.92	7.4	33.39	8.2	22.9	0.77
A7	27 Sep 2015	5	22.18	90.90	7.4	33.39	8.2	22.9	0.77
A7	27 Sep 2015	6	22.18	90.99	7.4	33.39	8.2	22.9	0.79
A7	27 Sep 2015	7	22.15	90.80	7.4	33.39	8.2	23.0	0.79
A7	27 Sep 2015	8	22.04	90.85	7.3	33.38	8.2	23.0	0.85
A7	27 Sep 2015	9	21.58	90.95	7.3	33.38	8.2	23.1	0.89
A7	27 Sep 2015	10	21.28	90.94	7.3	33.36	8.2	23.2	0.96
A7	27 Sep 2015	11	20.88	90.90	7.4	33.35	8.2	23.3	1.00
A7	27 Sep 2015	12	20.53	90.96	7.3	33.34	8.2	23.4	1.05
A7	27 Sep 2015	13	19.79	91.09	7.4	33.32	8.2	23.5	1.08
A7	27 Sep 2015	14	19.37	91.07	7.3	33.33	8.2	23.6	1.08
A7	27 Sep 2015	15	19.20	90.99	7.3	33.32	8.2	23.7	0.99
A7	27 Sep 2015	16	19.15	91.21	7.2	33.32	8.2	23.7	0.91
A7	27 Sep 2015	17	18.95	91.31	7.1	33.33	8.2	23.8	0.81
A7	27 Sep 2015	18	18.84	91.51	7.0	33.32	8.2	23.8	0.76
A7	27 Sep 2015	19	18.63	91.49	6.9	33.32	8.1	23.8	0.72
C7	04 Sep 2015	1	22.65	88.90	7.1	33.50	8.2	22.9	0.73
C7	04 Sep 2015	2	22.60	89.00	7.0	33.50	8.2	22.9	0.73
C7	04 Sep 2015	3	22.58	89.31	7.0	33.50	8.2	22.9	0.75
C7	04 Sep 2015	4	22.41	90.22	7.0	33.48	8.2	22.9	0.79
C7	04 Sep 2015	5	22.01	90.35	6.9	33.45	8.2	23.0	0.88
C7	04 Sep 2015	6	21.25	90.37	7.0	33.41	8.2	23.2	0.99
C7	04 Sep 2015	7	20.82	90.31	7.1	33.41	8.1	23.3	1.23
C7	04 Sep 2015	8	20.59	90.28	7.0	33.38	8.1	23.4	1.31
C7	04 Sep 2015	9	20.12	90.16	7.0	33.37	8.1	23.5	1.20
C7	04 Sep 2015	10	19.83	89.90	7.0	33.36	8.1	23.6	1.15
C7	04 Sep 2015	11	19.32	89.74	6.9	33.32	8.1	23.7	1.02
C7	04 Sep 2015	12	18.52	89.70	6.8	33.30	8.1	23.8	0.84
C7	04 Sep 2015	13	17.78	89.64	7.0	33.28	8.1	24.0	0.74
C7	04 Sep 2015	14	17.05	89.26	7.4	33.26	8.1	24.2	0.81
C7	04 Sep 2015	15	16.74	88.09	7.5	33.27	8.1	24.2	0.88
C7	04 Sep 2015	16	16.62	88.47	7.6	33.26	8.1	24.3	0.94
C7	04 Sep 2015	17	16.55	89.15	7.6	33.26	8.1	24.3	0.95
C7	04 Sep 2015	18	16.51	89.49	7.5	33.27	8.1	24.3	0.96
C7	10 Sep 2015	1	22.77	88.92	7.1	33.48	8.2	22.8	0.76

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma-t$ )	Chlor ( $\mu\text{g/L}$ )
C7	10 Sep 2015	2	22.65	89.16	7.1	33.47	8.2	22.9	0.78
C7	10 Sep 2015	3	22.45	89.54	7.2	33.46	8.2	22.9	0.84
C7	10 Sep 2015	4	22.09	89.78	7.3	33.44	8.2	23.0	0.90
C7	10 Sep 2015	5	21.91	89.75	7.3	33.44	8.2	23.1	0.95
C7	10 Sep 2015	6	21.86	89.56	7.3	33.44	8.2	23.1	0.97
C7	10 Sep 2015	7	21.77	89.42	7.3	33.43	8.2	23.1	0.96
C7	10 Sep 2015	8	21.68	89.53	7.3	33.43	8.2	23.1	0.97
C7	10 Sep 2015	9	21.51	89.50	7.3	33.42	8.2	23.2	0.97
C7	10 Sep 2015	10	21.31	89.46	7.4	33.41	8.2	23.2	0.99
C7	10 Sep 2015	11	20.93	89.40	7.4	33.40	8.2	23.3	1.00
C7	10 Sep 2015	12	20.73	89.30	7.3	33.40	8.2	23.4	1.04
C7	10 Sep 2015	13	20.50	88.79	7.3	33.39	8.2	23.4	1.09
C7	10 Sep 2015	14	20.14	89.32	7.2	33.36	8.2	23.5	1.16
C7	10 Sep 2015	15	19.51	89.07	7.0	33.34	8.2	23.6	1.20
C7	10 Sep 2015	16	18.89	88.69	6.7	33.33	8.1	23.8	1.09
C7	10 Sep 2015	17	18.23	88.87	6.5	33.29	8.1	23.9	0.83
C7	10 Sep 2015	18	17.34	89.14	6.6	33.28	8.1	24.1	0.61
C7	10 Sep 2015	19	17.19	89.17	6.7	33.29	8.1	24.2	0.57
C7	15 Sep 2015	1	23.94	88.11	6.8	33.47	8.1	22.5	0.62
C7	15 Sep 2015	2	23.91	87.33	6.8	33.47	8.1	22.5	0.59
C7	15 Sep 2015	3	23.90	88.94	6.8	33.47	8.1	22.5	0.59
C7	15 Sep 2015	4	23.88	91.03	6.7	33.47	8.1	22.5	0.59
C7	15 Sep 2015	5	23.85	91.22	6.8	33.47	8.1	22.5	0.61
C7	15 Sep 2015	6	23.75	91.31	6.8	33.46	8.1	22.6	0.65
C7	15 Sep 2015	7	23.62	90.95	6.7	33.46	8.1	22.6	0.72
C7	15 Sep 2015	8	23.26	90.75	6.6	33.42	8.1	22.7	0.88
C7	15 Sep 2015	9	22.81	90.24	6.5	33.44	8.1	22.8	1.01
C7	15 Sep 2015	10	22.46	89.83	6.4	33.41	8.1	22.9	1.07
C7	15 Sep 2015	11	21.99	89.46	6.4	33.41	8.1	23.0	1.07
C7	15 Sep 2015	12	21.67	89.63	6.3	33.40	8.1	23.1	0.99
C7	15 Sep 2015	13	21.30	89.98	6.1	33.39	8.1	23.2	0.87
C7	15 Sep 2015	14	20.76	90.27	5.9	33.37	8.1	23.3	0.78
C7	15 Sep 2015	15	20.35	90.53	6.0	33.34	8.1	23.4	0.73
C7	15 Sep 2015	16	19.63	90.45	6.2	33.32	8.1	23.6	0.72
C7	15 Sep 2015	17	19.24	90.15	6.4	33.33	8.1	23.7	0.65
C7	15 Sep 2015	18	19.17	90.06	6.4	33.33	8.1	23.7	0.64
C7	21 Sep 2015	1	22.81	88.75	6.9	33.40	8.1	22.8	0.70
C7	21 Sep 2015	2	22.64	89.86	6.9	33.39	8.1	22.8	0.74
C7	21 Sep 2015	3	22.25	90.58	6.9	33.36	8.1	22.9	0.85
C7	21 Sep 2015	4	20.92	91.16	7.2	33.34	8.1	23.2	0.97
C7	21 Sep 2015	5	20.31	91.00	7.3	33.33	8.1	23.4	1.06
C7	21 Sep 2015	6	19.82	91.09	7.4	33.31	8.1	23.5	1.20
C7	21 Sep 2015	7	19.20	91.11	7.4	33.30	8.1	23.7	1.38
C7	21 Sep 2015	8	18.49	90.60	7.6	33.28	8.1	23.8	1.46
C7	21 Sep 2015	9	18.07	90.28	7.7	33.28	8.1	23.9	1.53
C7	21 Sep 2015	10	17.71	90.11	7.8	33.27	8.1	24.0	1.59
C7	21 Sep 2015	11	17.53	90.12	7.8	33.28	8.1	24.1	1.64
C7	21 Sep 2015	12	17.48	90.04	7.8	33.28	8.1	24.1	1.66
C7	21 Sep 2015	13	17.42	89.95	7.8	33.28	8.1	24.1	1.66
C7	21 Sep 2015	14	17.37	90.00	7.8	33.28	8.1	24.1	1.66
C7	21 Sep 2015	15	17.34	89.85	7.7	33.29	8.1	24.1	1.60
C7	21 Sep 2015	16	17.33	89.91	7.7	33.29	8.1	24.1	1.51
C7	21 Sep 2015	17	17.33	90.02	7.6	33.29	8.1	24.1	1.36

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma-t$ )	Chlor ( $\mu\text{g/L}$ )
C7	21 Sep 2015	18	17.33	89.95	7.5	33.29	8.1	24.1	1.33
C7	27 Sep 2015	1	22.26	92.46	7.3	33.39	8.2	22.9	0.58
C7	27 Sep 2015	2	22.19	92.33	7.3	33.39	8.2	22.9	0.60
C7	27 Sep 2015	3	22.14	92.39	7.3	33.39	8.2	23.0	0.65
C7	27 Sep 2015	4	22.01	92.38	7.3	33.39	8.2	23.0	0.65
C7	27 Sep 2015	5	21.93	92.23	7.3	33.39	8.2	23.0	0.68
C7	27 Sep 2015	6	21.88	92.40	7.4	33.38	8.2	23.0	0.66
C7	27 Sep 2015	7	21.78	92.44	7.3	33.38	8.2	23.0	0.65
C7	27 Sep 2015	8	21.70	92.50	7.3	33.38	8.2	23.1	0.71
C7	27 Sep 2015	9	21.53	92.61	7.3	33.37	8.2	23.1	0.75
C7	27 Sep 2015	10	21.29	92.55	7.3	33.36	8.2	23.2	0.75
C7	27 Sep 2015	11	20.89	92.44	7.4	33.35	8.2	23.3	0.82
C7	27 Sep 2015	12	20.38	92.28	7.4	33.34	8.2	23.4	0.90
C7	27 Sep 2015	13	19.91	92.27	7.4	33.33	8.2	23.5	0.95
C7	27 Sep 2015	14	19.41	92.04	7.3	33.31	8.2	23.6	0.92
C7	27 Sep 2015	15	19.03	92.24	7.3	33.30	8.2	23.7	0.88
C7	27 Sep 2015	16	18.72	92.30	7.3	33.31	8.2	23.8	0.92
C7	27 Sep 2015	17	18.53	92.39	7.2	33.30	8.2	23.8	0.88
C7	27 Sep 2015	18	18.01	92.06	7.0	33.29	8.2	24.0	0.80
C7	27 Sep 2015	19	17.82	91.62	7.0	33.30	8.1	24.0	0.71
C8	04 Sep 2015	1	22.39	89.53	6.9	33.48	8.1	23.0	0.82
C8	04 Sep 2015	2	22.19	89.36	6.9	33.46	8.1	23.0	0.92
C8	04 Sep 2015	3	21.87	89.10	7.0	33.45	8.2	23.1	0.88
C8	04 Sep 2015	4	21.46	90.03	7.1	33.44	8.2	23.2	0.79
C8	04 Sep 2015	5	21.32	90.83	7.2	33.44	8.2	23.2	0.75
C8	04 Sep 2015	6	21.26	91.02	7.2	33.43	8.2	23.2	0.73
C8	04 Sep 2015	7	21.11	91.01	7.3	33.42	8.2	23.3	0.80
C8	04 Sep 2015	8	20.93	91.04	7.2	33.41	8.2	23.3	0.88
C8	04 Sep 2015	9	20.64	90.33	7.3	33.40	8.2	23.4	0.88
C8	04 Sep 2015	10	20.39	89.83	7.3	33.38	8.2	23.4	0.85
C8	04 Sep 2015	11	19.77	89.93	7.3	33.36	8.2	23.6	0.92
C8	04 Sep 2015	12	19.46	89.50	7.3	33.36	8.2	23.6	1.05
C8	04 Sep 2015	13	19.08	88.84	7.3	33.32	8.2	23.7	1.08
C8	04 Sep 2015	14	18.56	87.35	7.3	33.33	8.1	23.9	0.95
C8	04 Sep 2015	15	18.50	86.79	7.3	33.33	8.1	23.9	0.99
C8	04 Sep 2015	16	18.45	86.08	7.3	33.33	8.1	23.9	1.00
C8	04 Sep 2015	17	18.43	85.45	7.3	33.33	8.1	23.9	1.01
C8	04 Sep 2015	18	18.36	84.77	7.3	33.33	8.1	23.9	1.04
C8	04 Sep 2015	19	18.34	84.73	7.4	33.33	8.1	23.9	1.05
C8	10 Sep 2015	1	23.01	91.34	7.1	33.49	8.2	22.8	0.54
C8	10 Sep 2015	2	23.03	91.33	7.1	33.48	8.2	22.8	0.56
C8	10 Sep 2015	3	22.87	91.36	7.1	33.48	8.2	22.8	0.62
C8	10 Sep 2015	4	22.70	91.38	7.2	33.46	8.2	22.9	0.67
C8	10 Sep 2015	5	22.47	91.19	7.3	33.47	8.2	22.9	0.72
C8	10 Sep 2015	6	22.45	90.77	7.3	33.47	8.2	22.9	0.73
C8	10 Sep 2015	7	22.41	90.60	7.3	33.46	8.2	22.9	0.72
C8	10 Sep 2015	8	22.40	90.58	7.2	33.46	8.2	22.9	0.73
C8	10 Sep 2015	9	22.27	90.58	7.3	33.45	8.2	23.0	0.76
C8	10 Sep 2015	10	21.89	90.62	7.3	33.43	8.2	23.1	0.81
C8	10 Sep 2015	11	21.25	90.46	7.3	33.40	8.2	23.2	0.90
C8	10 Sep 2015	12	20.80	90.18	7.3	33.39	8.2	23.3	0.99
C8	10 Sep 2015	13	20.30	89.76	7.2	33.35	8.2	23.4	1.10

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma-t$ )	Chlor ( $\mu\text{g/L}$ )
C8	10 Sep 2015	14	19.80	89.50	7.1	33.37	8.2	23.6	1.20
C8	10 Sep 2015	15	19.26	89.20	6.6	33.31	8.1	23.7	1.19
C8	10 Sep 2015	16	18.47	88.85	6.2	33.30	8.1	23.9	1.04
C8	10 Sep 2015	17	17.47	87.83	6.3	33.27	8.1	24.1	0.78
C8	10 Sep 2015	18	17.13	85.49	6.6	33.27	8.1	24.2	0.67
C8	10 Sep 2015	19	16.55	83.33	7.3	33.25	8.1	24.3	0.78
C8	10 Sep 2015	20	16.38	82.53	7.5	33.26	8.1	24.3	0.83
C8	15 Sep 2015	1	23.65	90.78	6.8	33.49	8.2	22.6	0.59
C8	15 Sep 2015	2	23.65	91.61	6.8	33.48	8.2	22.6	0.61
C8	15 Sep 2015	3	23.56	91.76	6.9	33.48	8.2	22.6	0.63
C8	15 Sep 2015	4	23.30	92.11	7.0	33.46	8.2	22.7	0.62
C8	15 Sep 2015	5	22.85	91.97	7.2	33.45	8.2	22.8	0.59
C8	15 Sep 2015	6	22.54	92.53	7.2	33.43	8.2	22.9	0.55
C8	15 Sep 2015	7	22.44	92.21	7.3	33.42	8.2	22.9	0.55
C8	15 Sep 2015	8	22.34	92.99	7.3	33.43	8.2	22.9	0.57
C8	15 Sep 2015	9	22.30	93.11	7.3	33.43	8.2	22.9	0.61
C8	15 Sep 2015	10	22.26	92.77	7.3	33.43	8.2	23.0	0.64
C8	15 Sep 2015	11	22.26	92.60	7.2	33.43	8.2	23.0	0.65
C8	15 Sep 2015	12	22.17	92.00	7.0	33.41	8.2	23.0	0.82
C8	15 Sep 2015	13	20.99	92.15	6.8	33.37	8.2	23.3	1.07
C8	15 Sep 2015	14	20.15	90.09	6.6	33.34	8.1	23.5	1.00
C8	15 Sep 2015	15	19.66	87.47	6.7	33.34	8.1	23.6	0.87
C8	15 Sep 2015	16	19.45	87.99	6.8	33.33	8.1	23.6	0.84
C8	15 Sep 2015	17	19.42	87.43	6.8	33.34	8.1	23.6	0.86
C8	15 Sep 2015	18	19.40	87.41	6.8	33.34	8.1	23.6	0.81
C8	15 Sep 2015	19	19.39	87.27	6.8	33.34	8.1	23.7	0.81
C8	15 Sep 2015	20	19.39	87.40	6.8	33.34	8.1	23.7	0.85
C8	21 Sep 2015	1	22.95	82.85	6.7	33.41	8.2	22.7	0.35
C8	21 Sep 2015	2	22.79	90.23	6.7	33.40	8.2	22.8	0.38
C8	21 Sep 2015	3	21.65	92.73	6.9	33.38	8.2	23.1	0.42
C8	21 Sep 2015	4	20.86	92.61	7.2	33.33	8.2	23.3	0.56
C8	21 Sep 2015	5	20.05	92.53	7.5	33.34	8.2	23.5	0.75
C8	21 Sep 2015	6	19.75	91.83	7.5	33.34	8.2	23.6	0.84
C8	21 Sep 2015	7	19.50	91.79	7.5	33.30	8.2	23.6	0.84
C8	21 Sep 2015	8	19.12	91.83	7.6	33.29	8.2	23.7	0.94
C8	21 Sep 2015	9	18.88	91.34	7.7	33.31	8.2	23.8	1.00
C8	21 Sep 2015	10	18.75	90.79	7.8	33.29	8.2	23.8	1.00
C8	21 Sep 2015	11	18.57	90.53	7.8	33.29	8.2	23.8	1.08
C8	21 Sep 2015	12	18.44	89.86	7.8	33.30	8.2	23.9	1.15
C8	21 Sep 2015	13	18.30	89.55	7.7	33.30	8.2	23.9	1.17
C8	21 Sep 2015	14	18.15	88.29	7.6	33.29	8.2	23.9	1.15
C8	21 Sep 2015	15	18.02	88.66	7.4	33.30	8.2	24.0	1.15
C8	21 Sep 2015	16	17.85	89.22	7.2	33.28	8.1	24.0	1.08
C8	21 Sep 2015	17	17.49	89.74	7.1	33.29	8.1	24.1	0.98
C8	21 Sep 2015	18	17.36	89.15	7.0	33.29	8.1	24.1	0.93
C8	21 Sep 2015	19	17.34	87.95	7.0	33.30	8.1	24.1	0.91
C8	27 Sep 2015	1	22.33	92.76	7.1	33.40	8.2	22.9	0.43
C8	27 Sep 2015	2	22.26	92.71	7.2	33.39	8.2	22.9	0.44
C8	27 Sep 2015	3	22.08	92.60	7.2	33.38	8.2	23.0	0.50
C8	27 Sep 2015	4	21.91	92.59	7.3	33.38	8.2	23.0	0.54
C8	27 Sep 2015	5	21.87	92.49	7.2	33.38	8.2	23.0	0.58
C8	27 Sep 2015	6	21.78	92.45	7.3	33.37	8.2	23.0	0.61

<b>Station</b>	<b>Date</b>	<b>Depth (m)</b>	<b>Temp (°C)</b>	<b>XMS (%)</b>	<b>DO (mg/L)</b>	<b>Sal (ppt)</b>	<b>pH</b>	<b>Dens (<math>\sigma-t</math>)</b>	<b>Chlor (<math>\mu\text{g/L}</math>)</b>
C8	27 Sep 2015	7	21.50	92.39	7.2	33.37	8.2	23.1	0.69
C8	27 Sep 2015	8	21.18	92.12	7.3	33.35	8.2	23.2	0.80
C8	27 Sep 2015	9	20.79	91.83	7.3	33.35	8.2	23.3	0.88
C8	27 Sep 2015	10	20.65	91.62	7.3	33.35	8.2	23.3	0.92
C8	27 Sep 2015	11	20.04	91.44	7.4	33.31	8.2	23.5	0.90
C8	27 Sep 2015	12	19.44	91.46	7.5	33.30	8.2	23.6	0.92
C8	27 Sep 2015	13	18.96	91.11	7.5	33.29	8.2	23.7	0.91
C8	27 Sep 2015	14	18.74	90.74	7.4	33.30	8.2	23.8	0.88
C8	27 Sep 2015	15	18.58	90.32	7.4	33.29	8.2	23.8	0.86
C8	27 Sep 2015	16	18.37	90.08	7.4	33.30	8.2	23.9	0.85
C8	27 Sep 2015	17	18.16	90.18	7.5	33.31	8.2	23.9	0.85
C8	27 Sep 2015	18	18.05	90.93	7.4	33.30	8.2	24.0	0.81
C8	27 Sep 2015	19	17.75	90.76	7.3	33.30	8.2	24.0	0.76
C8	27 Sep 2015	20	17.57	90.46	7.2	33.31	8.2	24.1	0.75

NA = not available

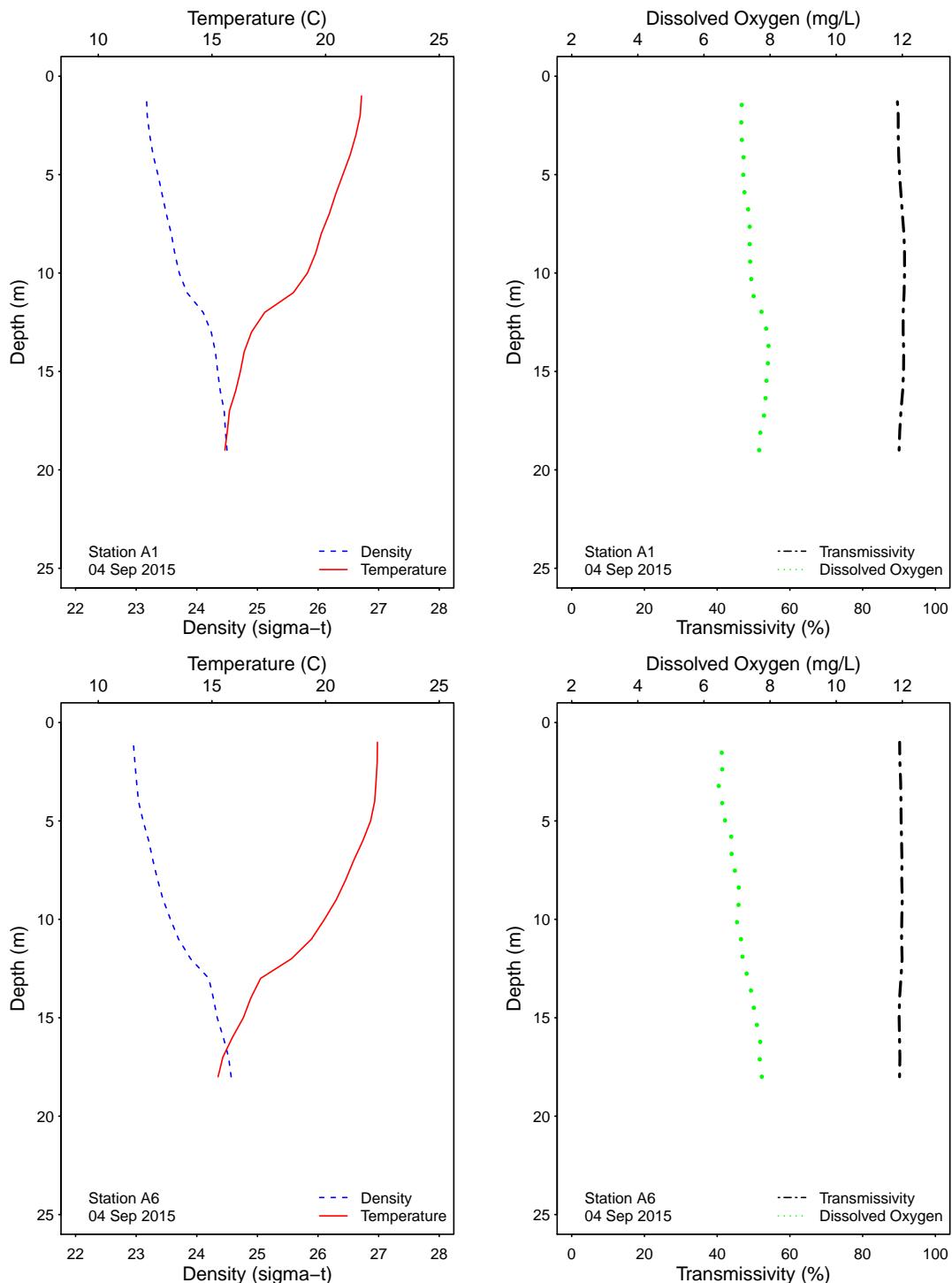


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

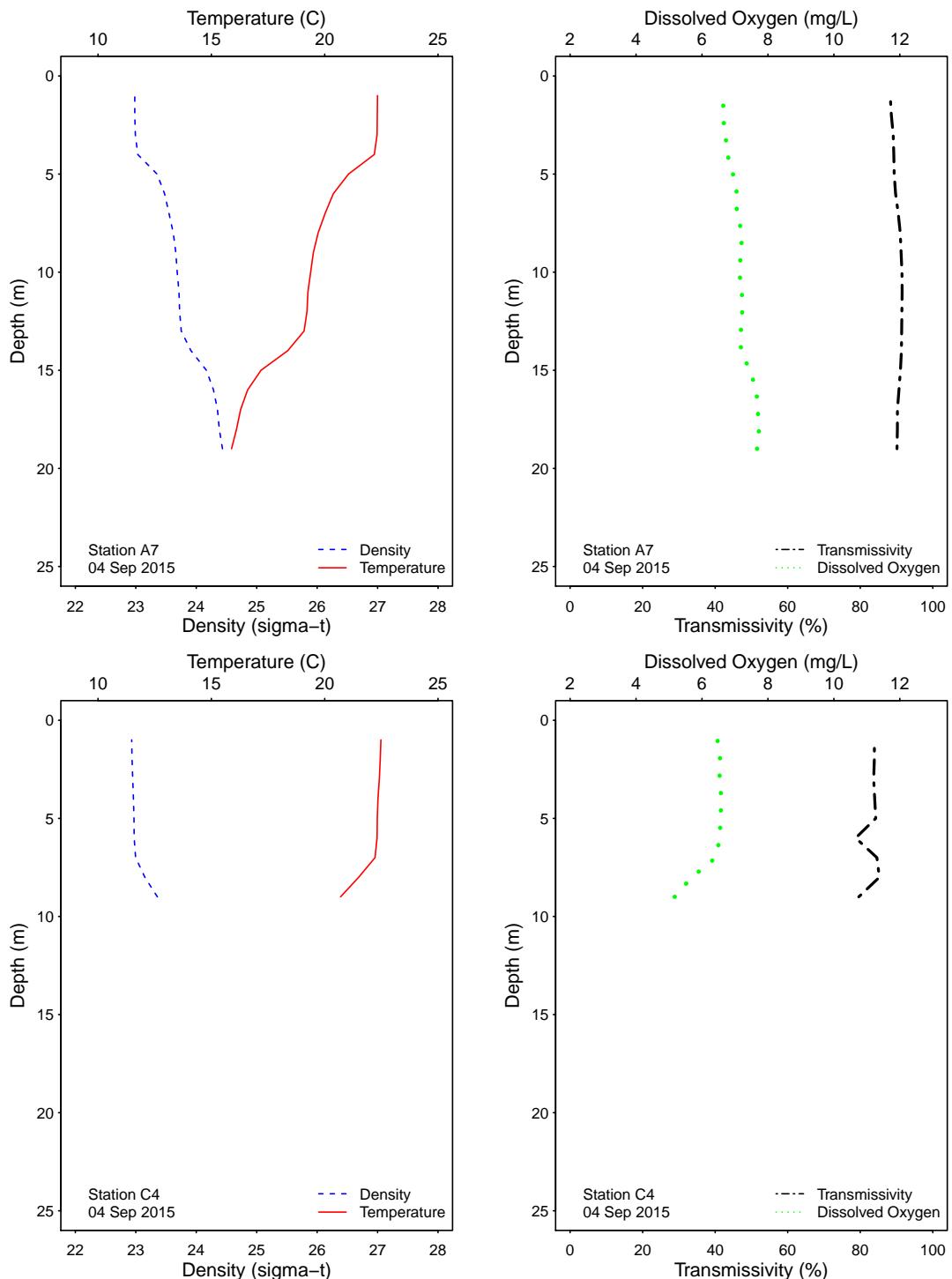


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

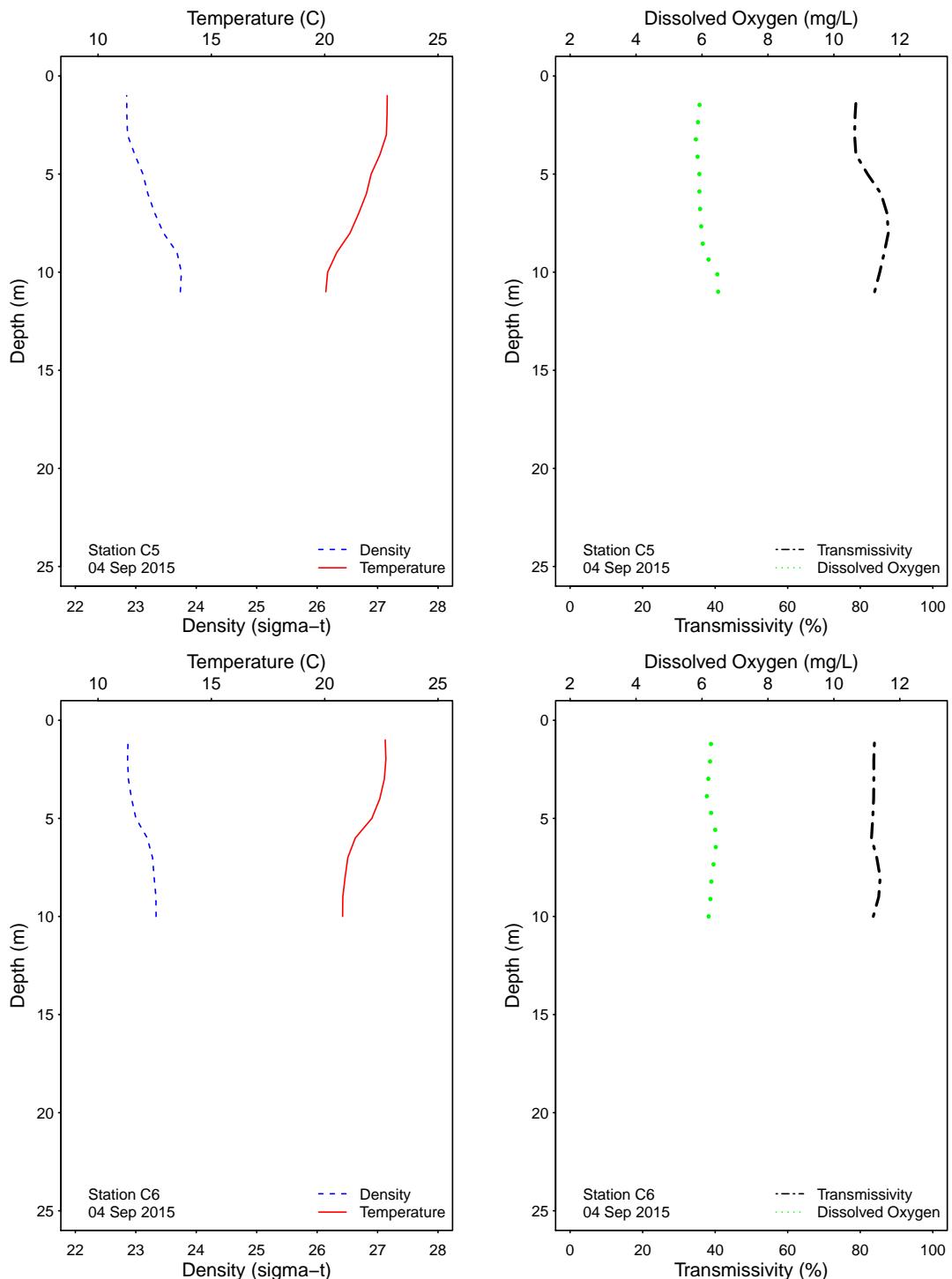


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

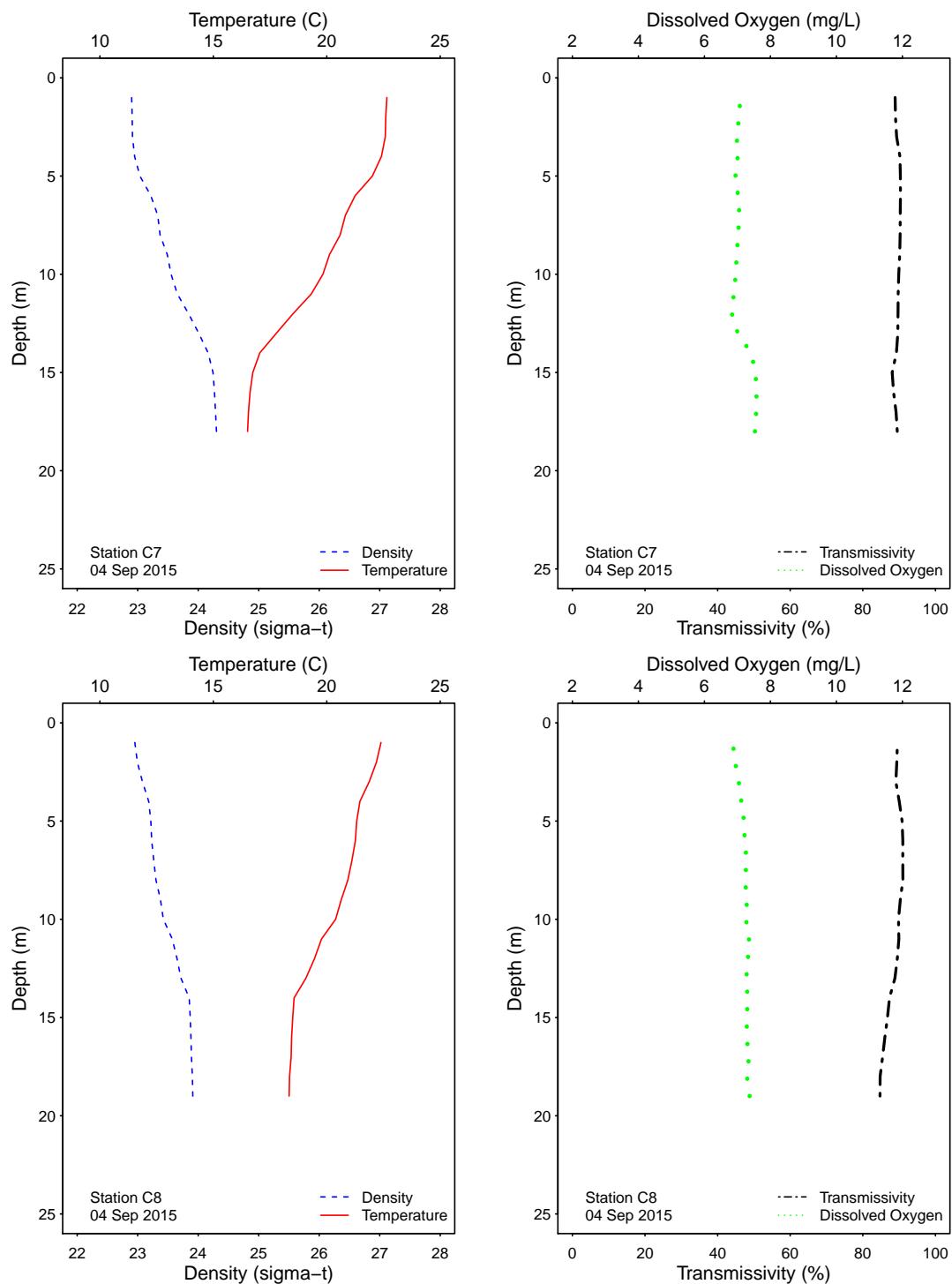


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

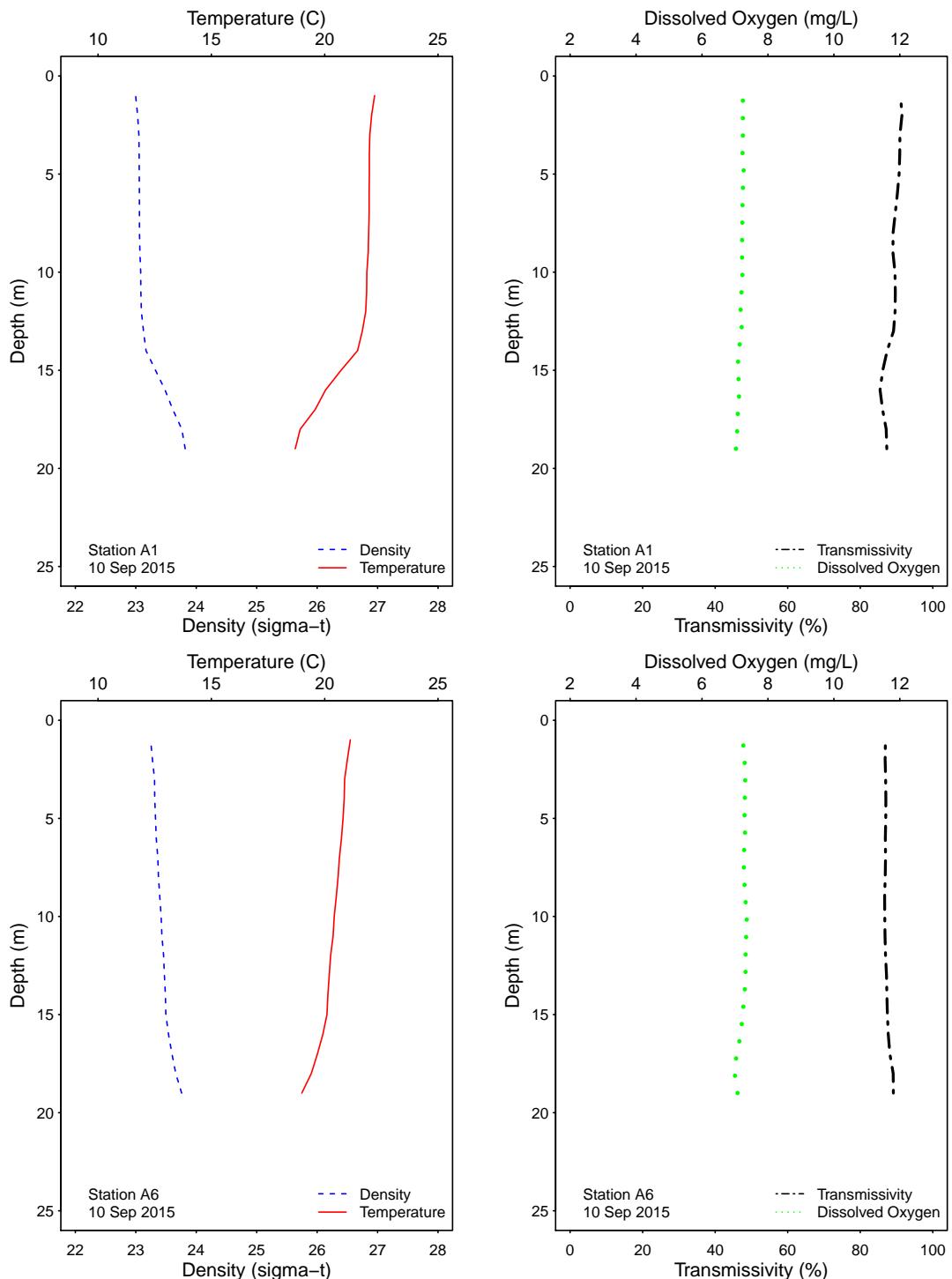


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

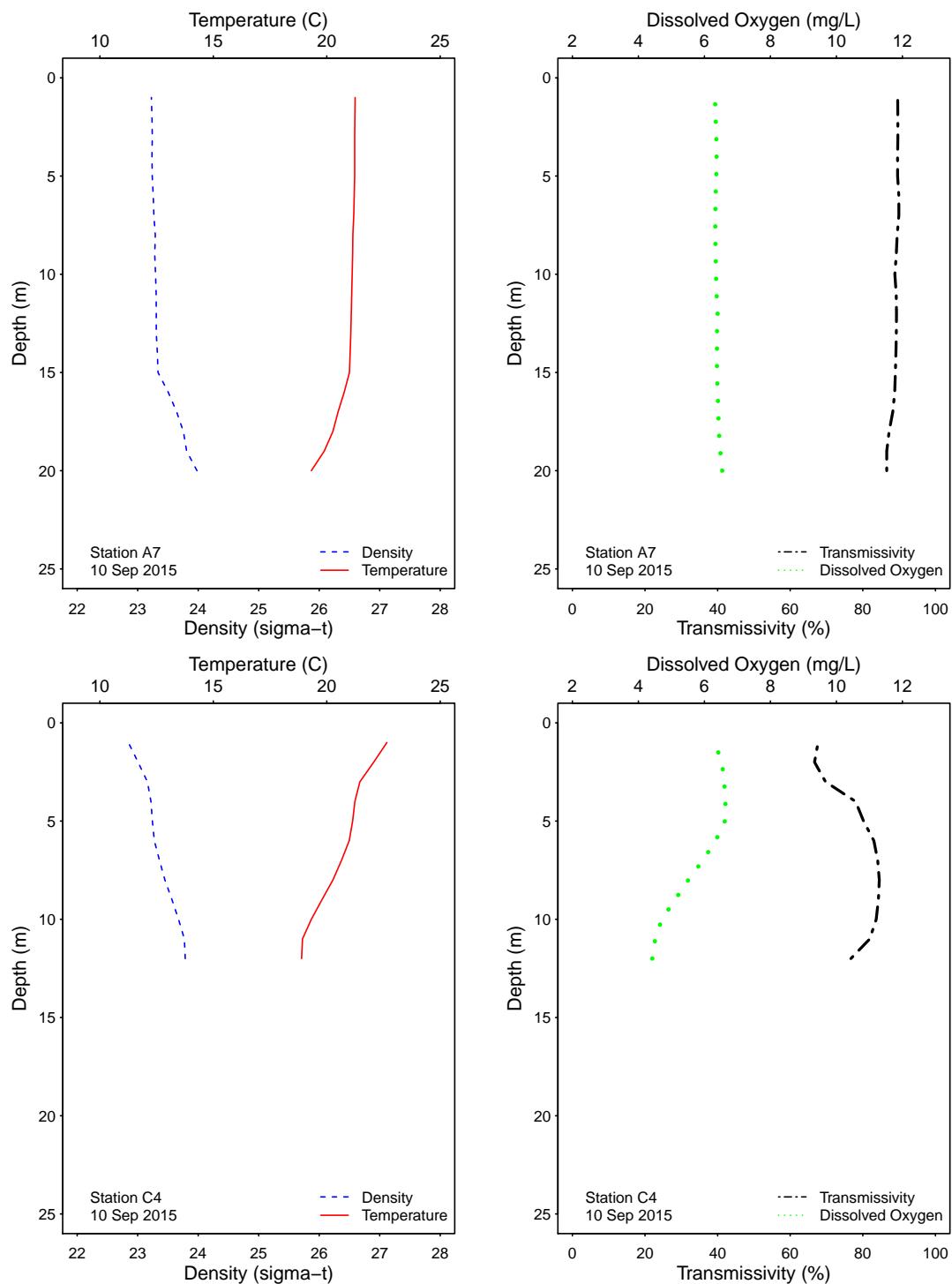


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

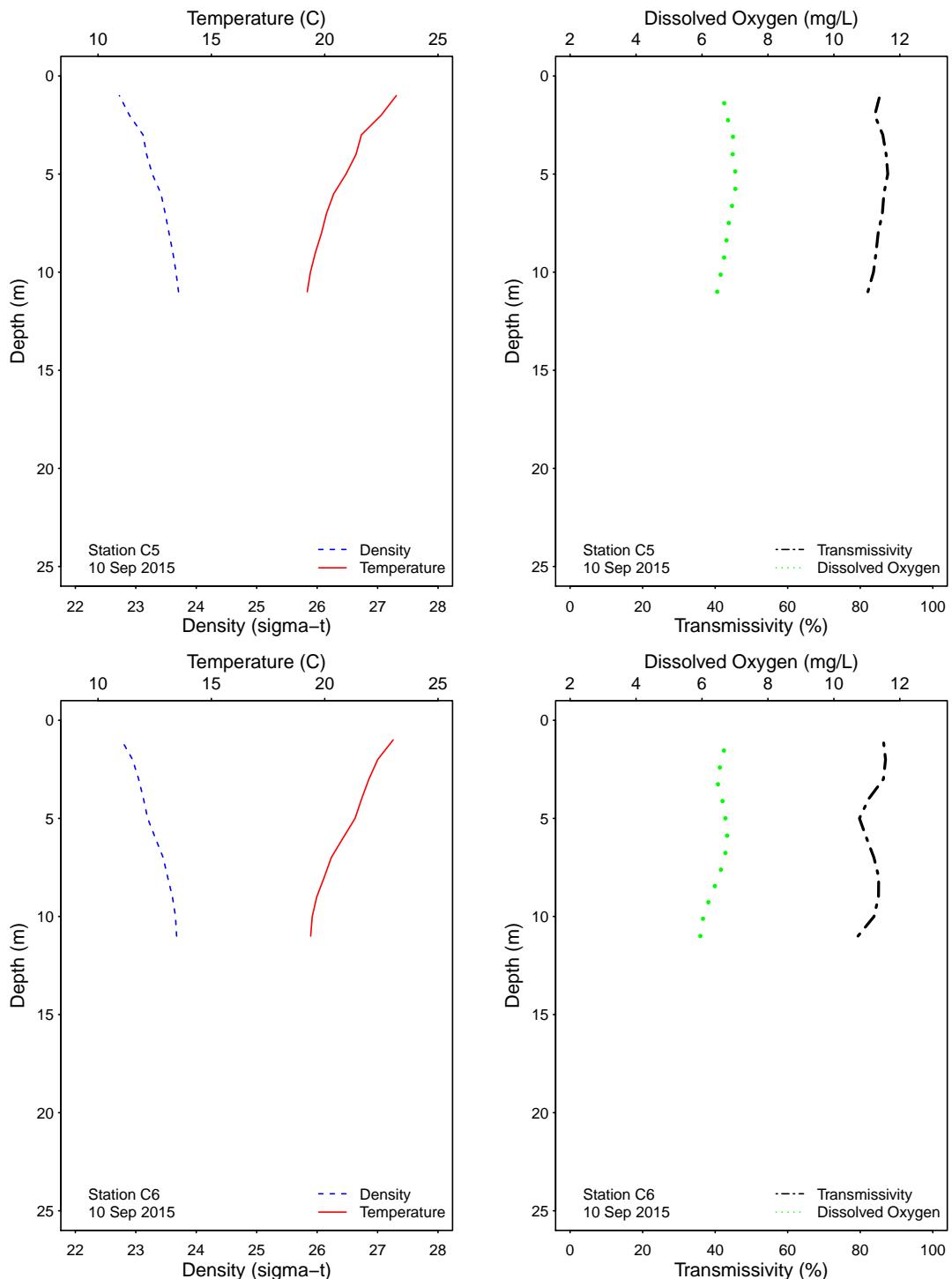


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

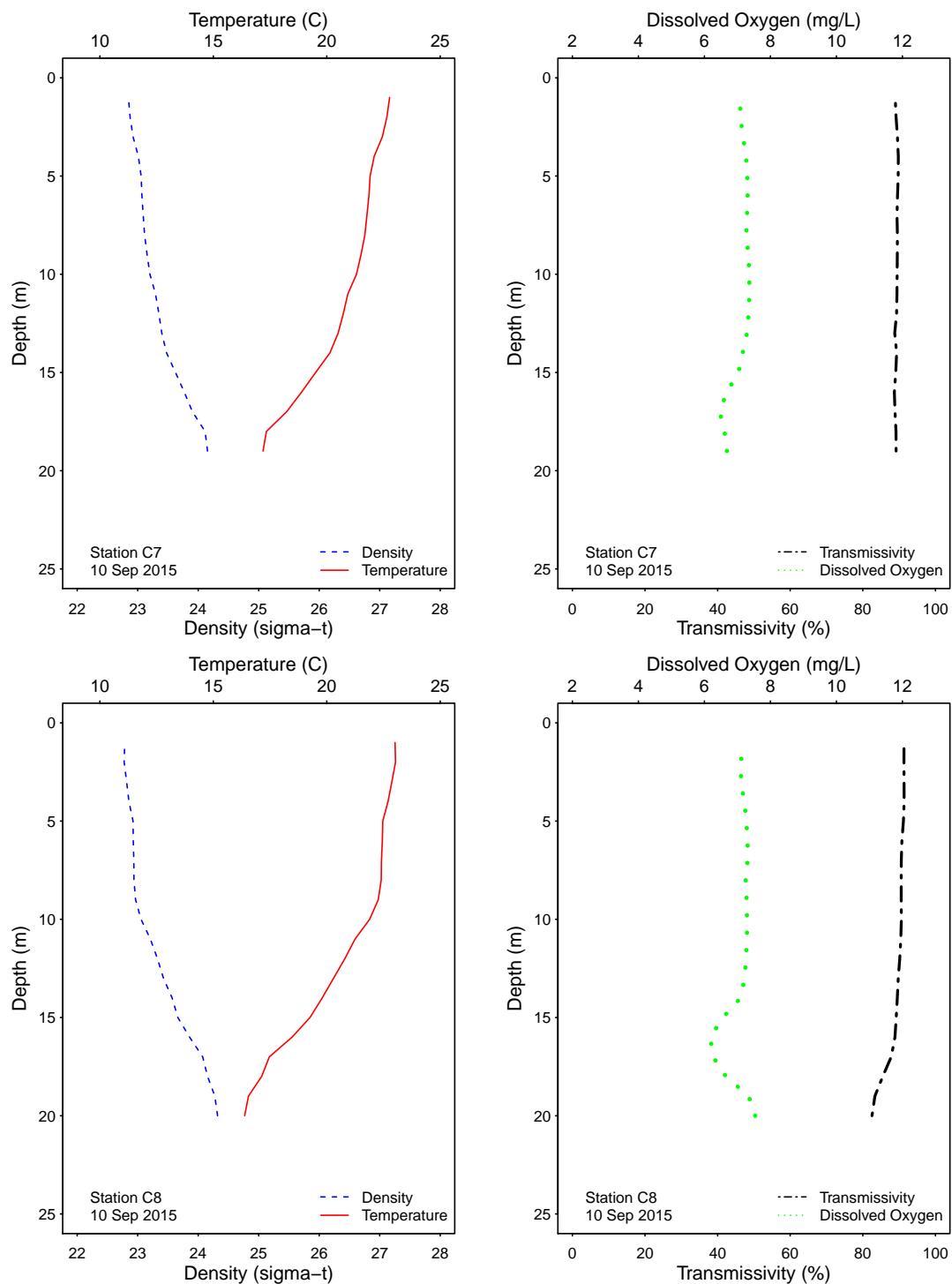


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

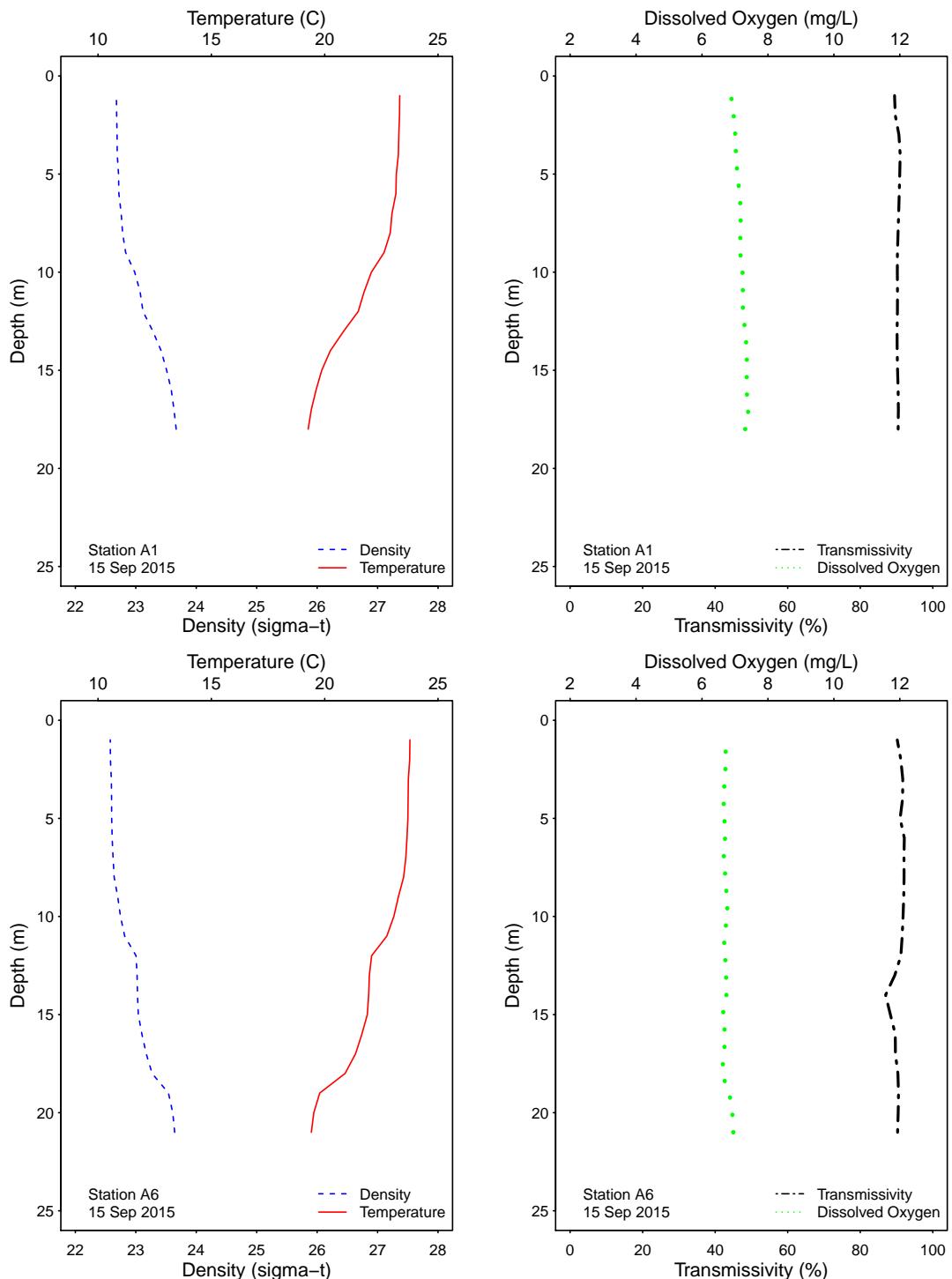


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

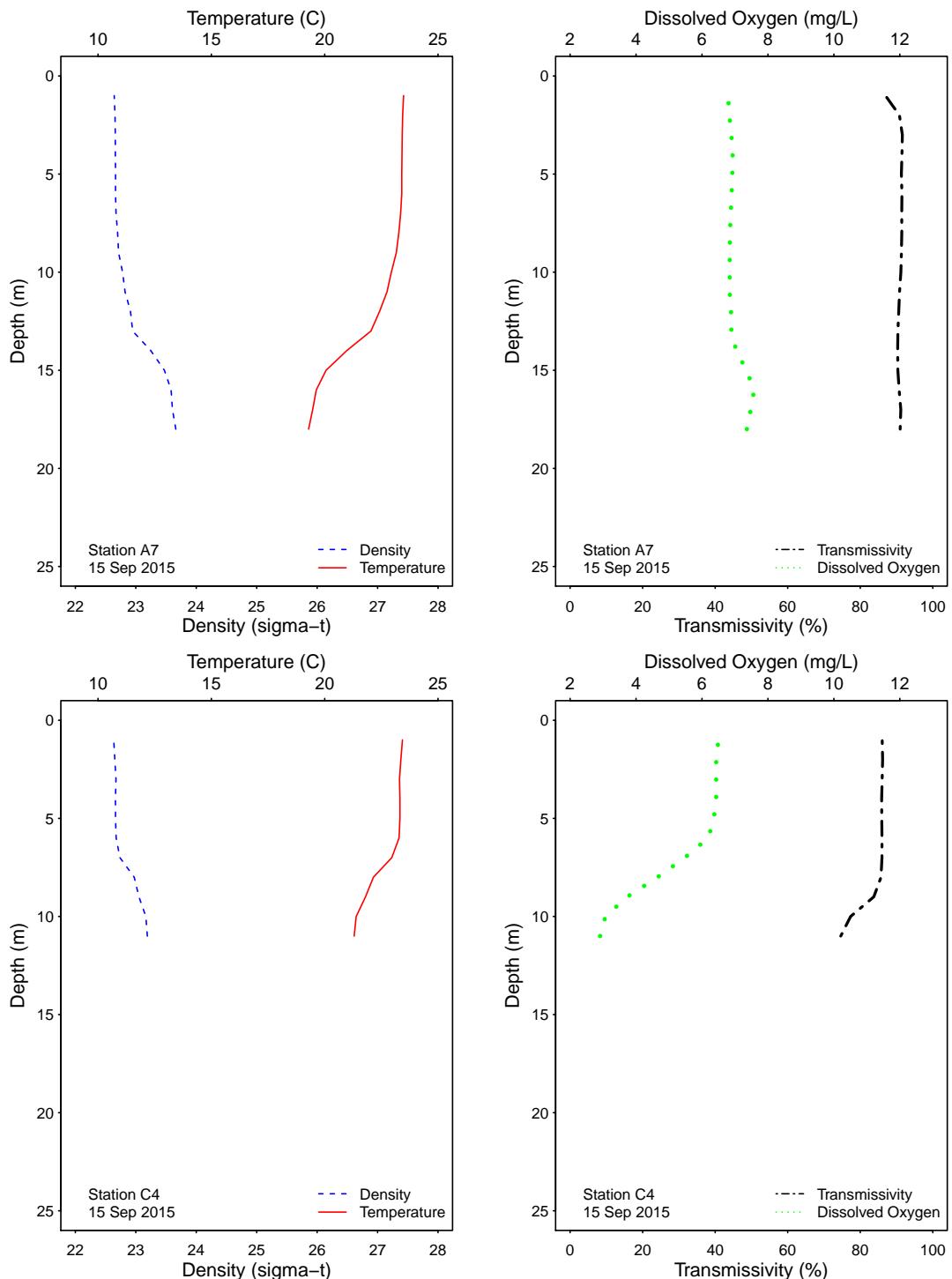


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

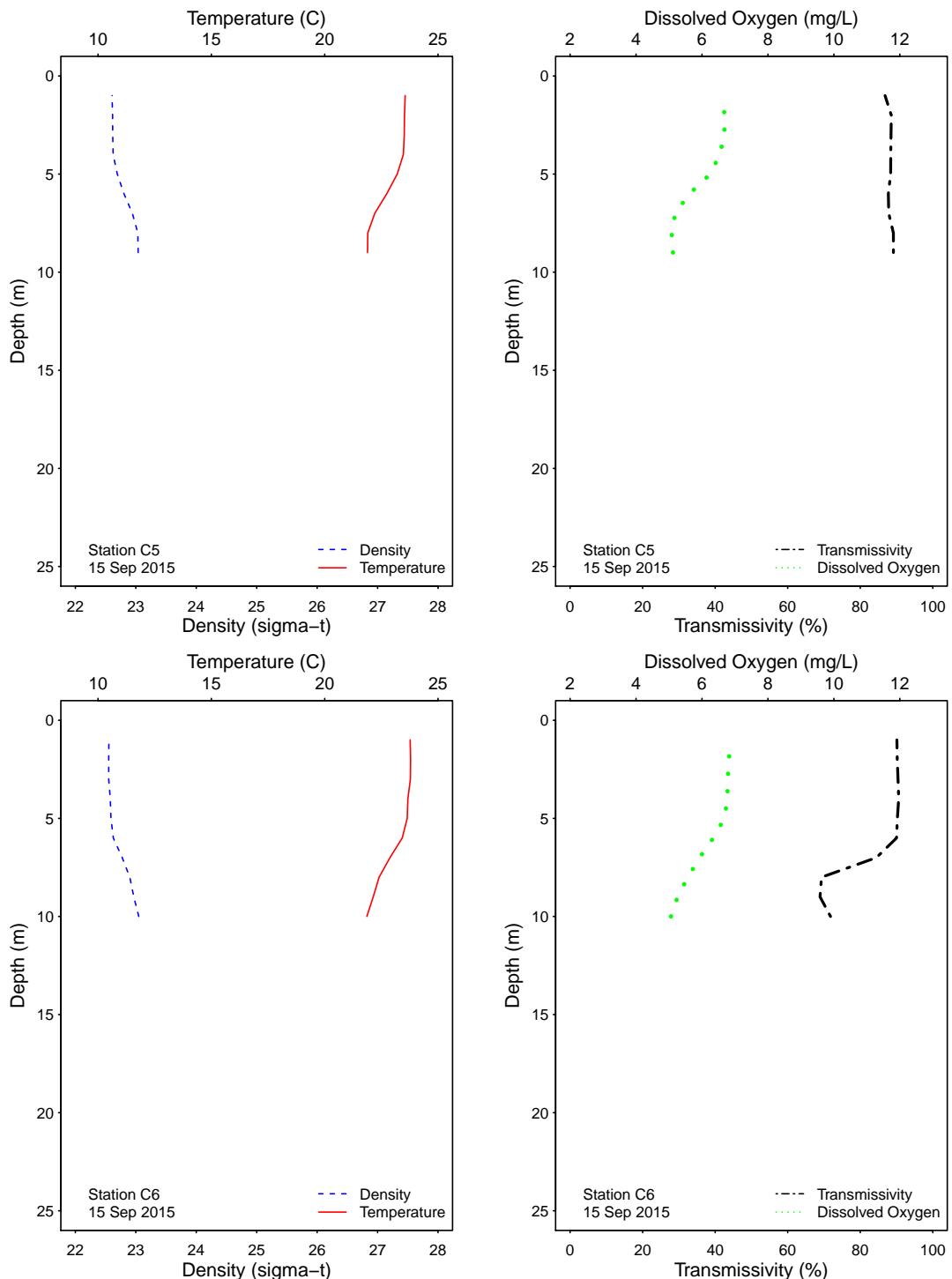


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

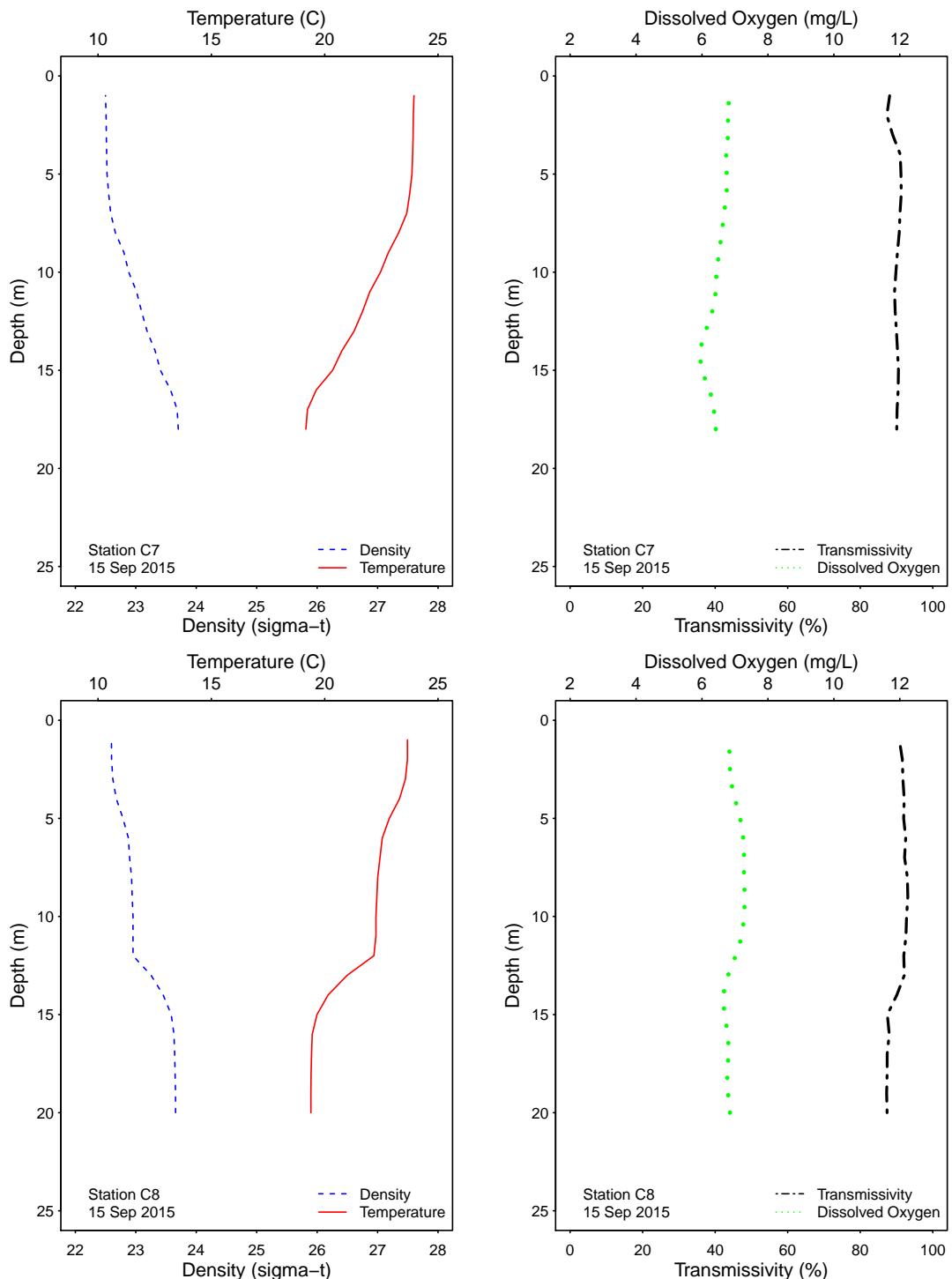


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

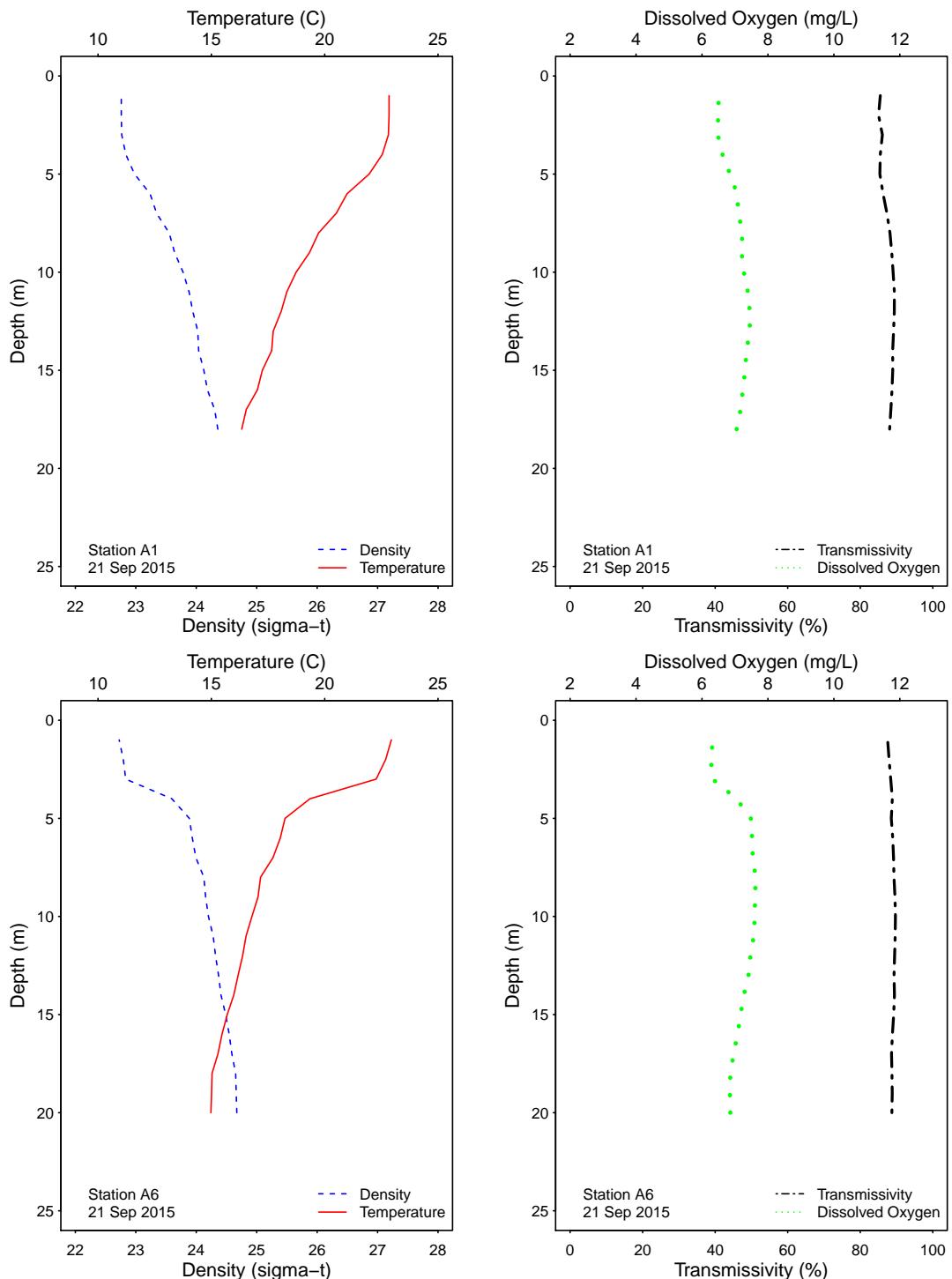


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

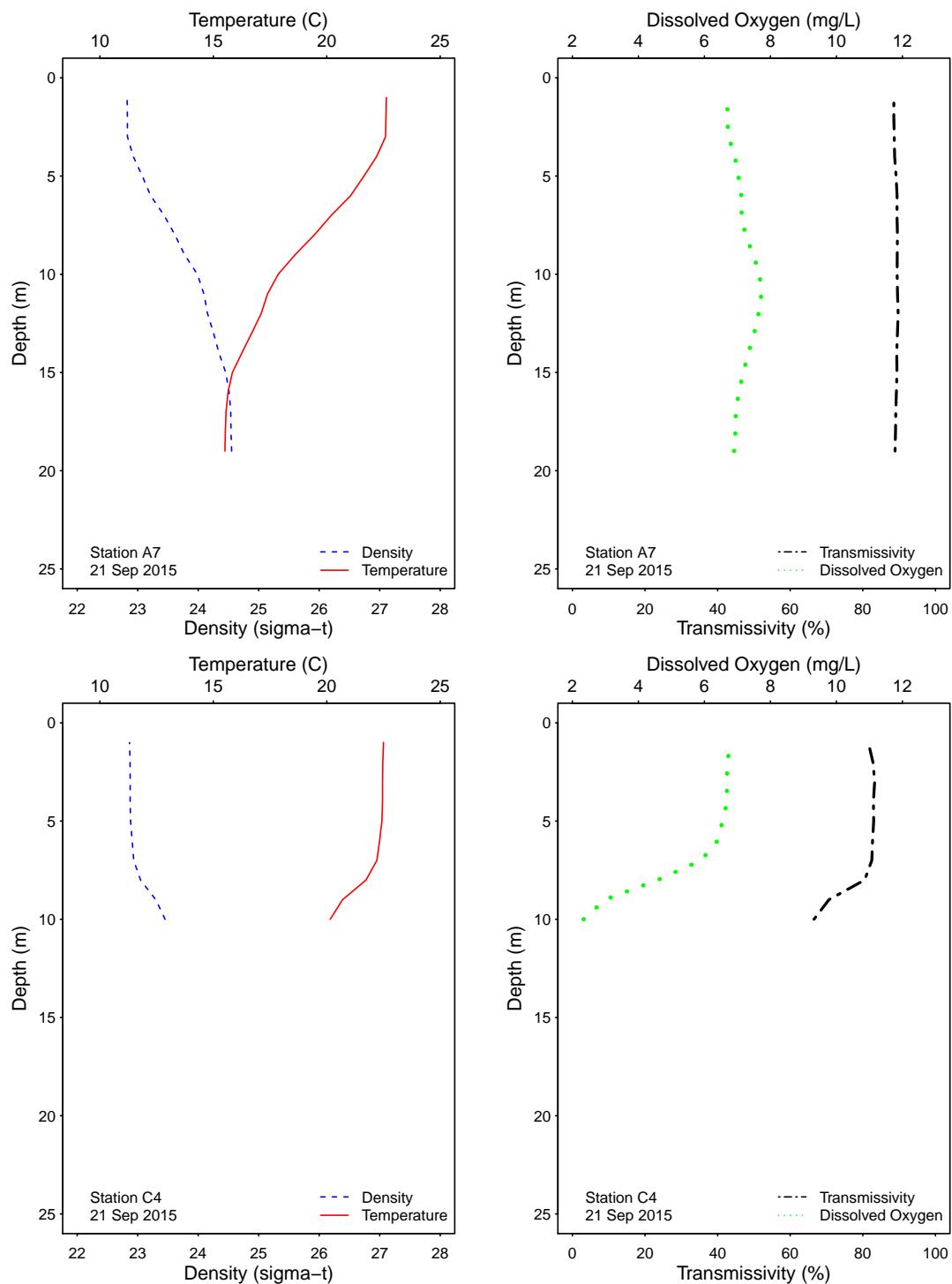


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

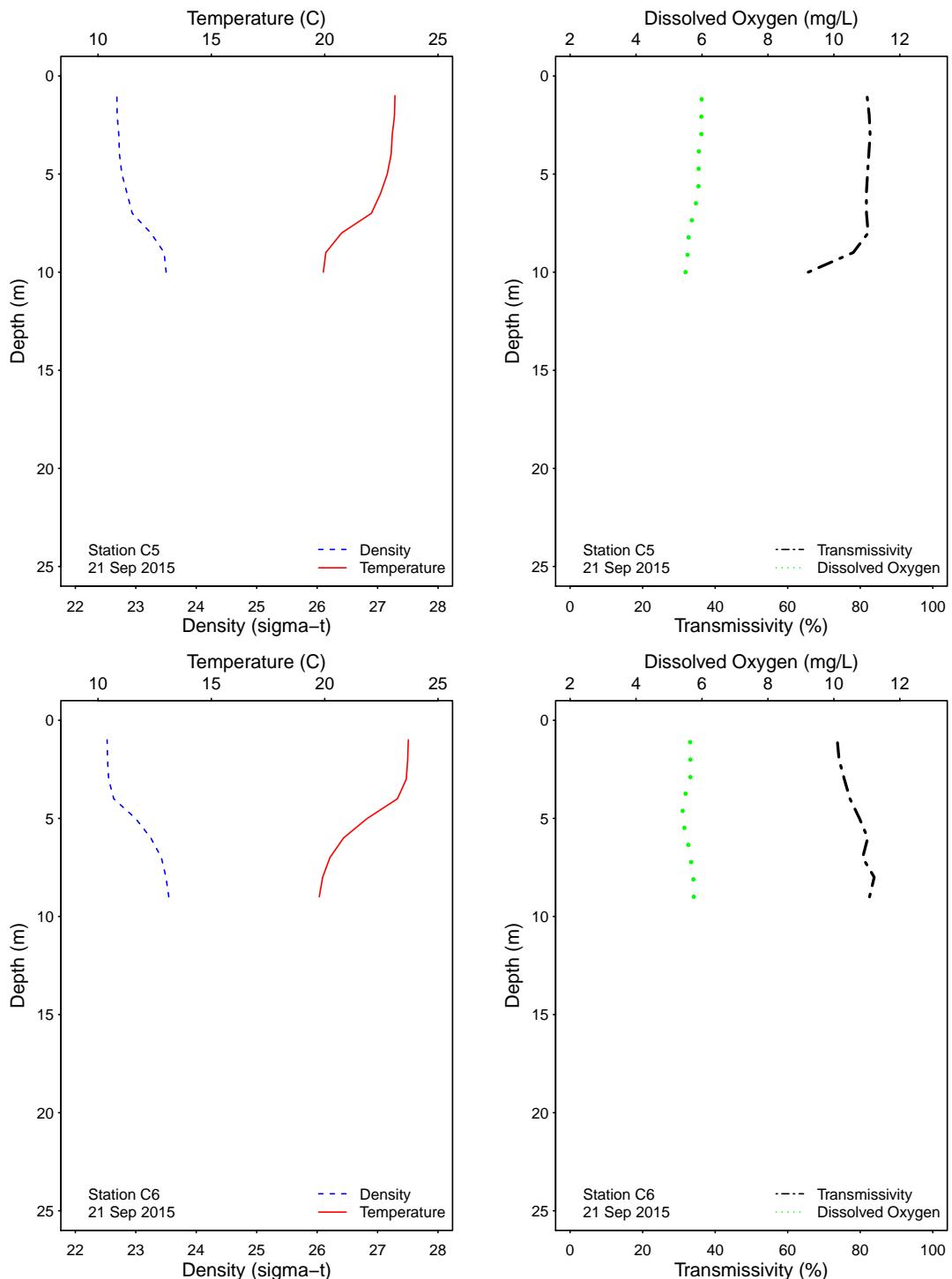


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

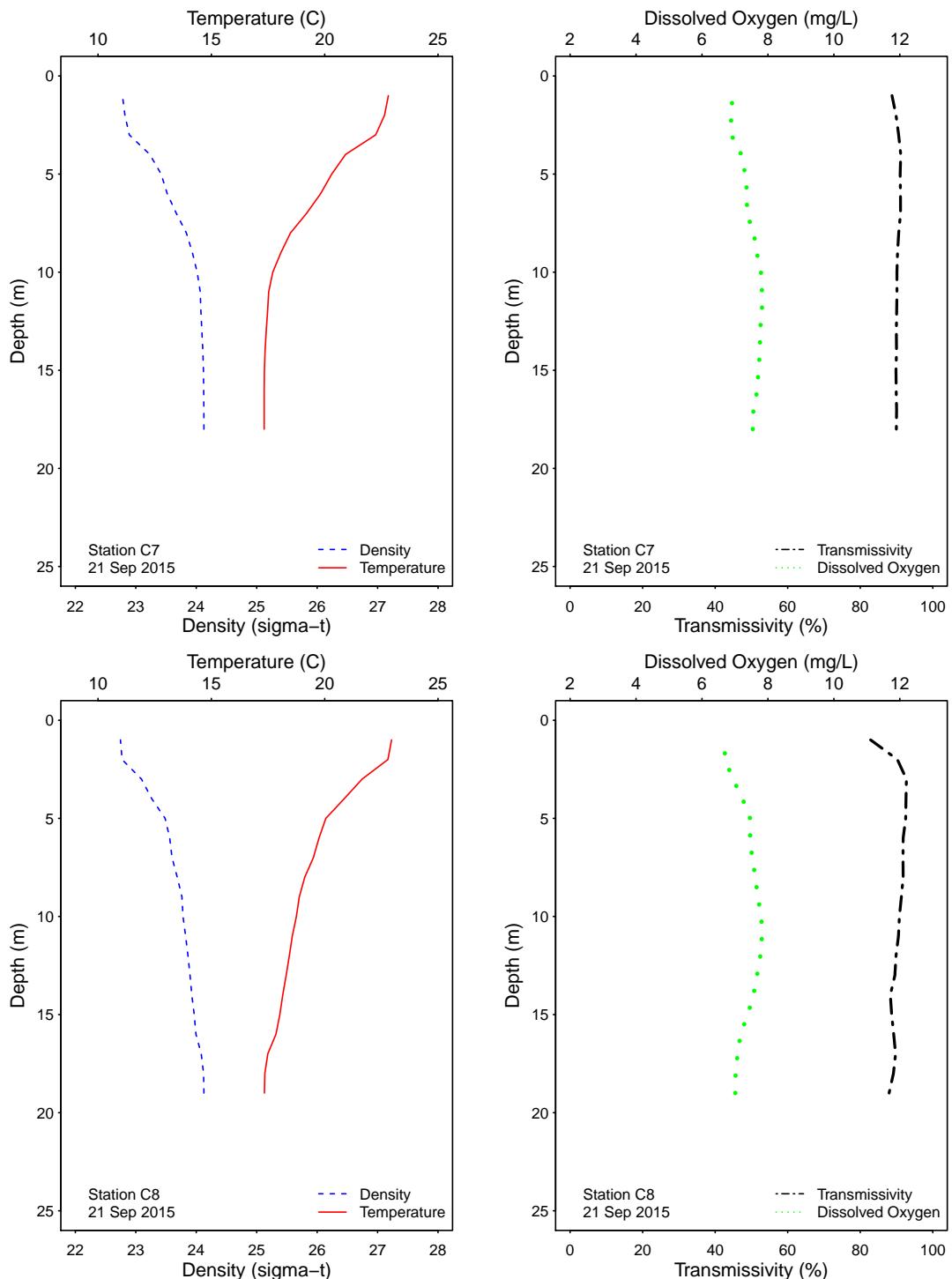


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

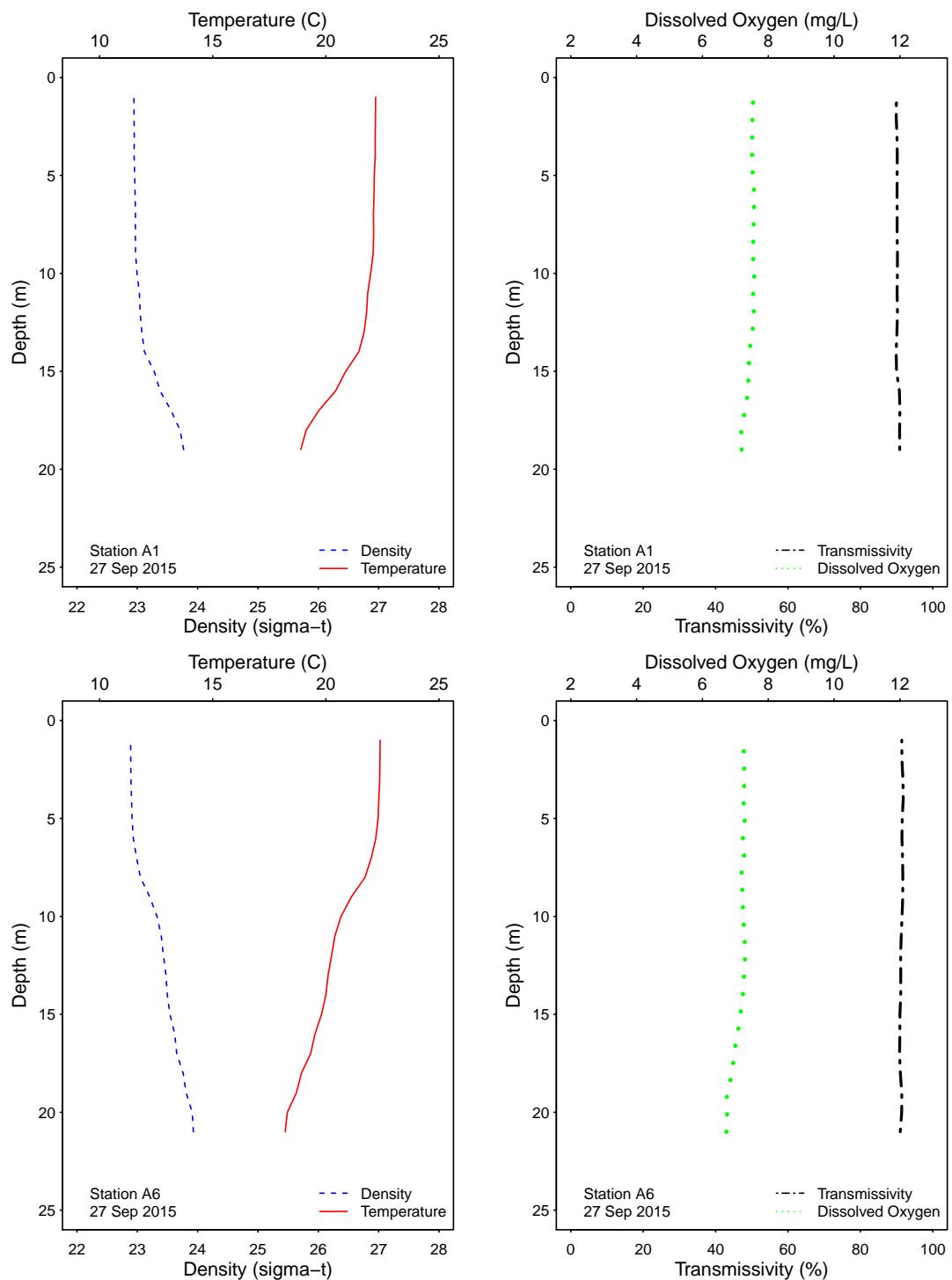


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

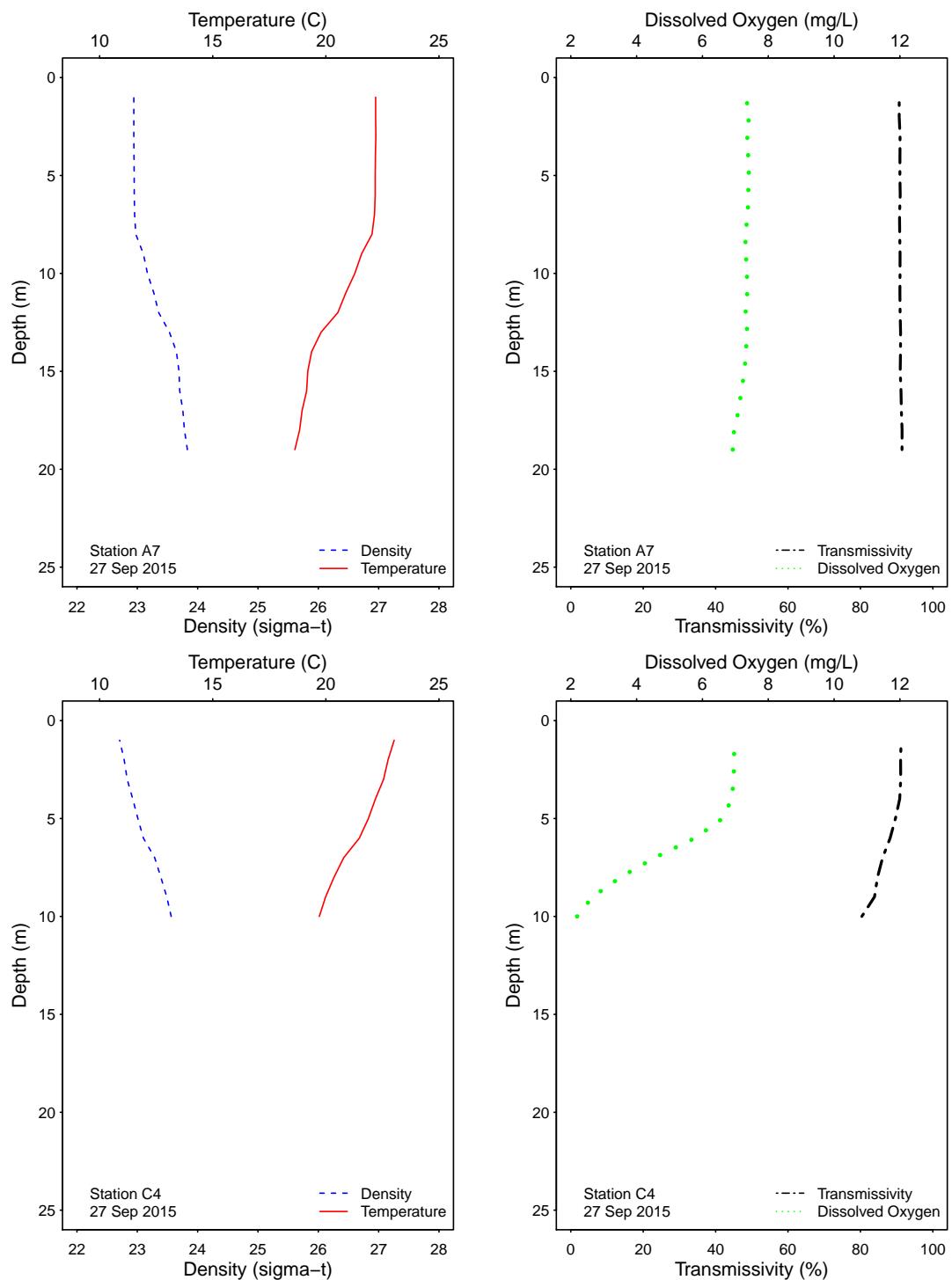


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

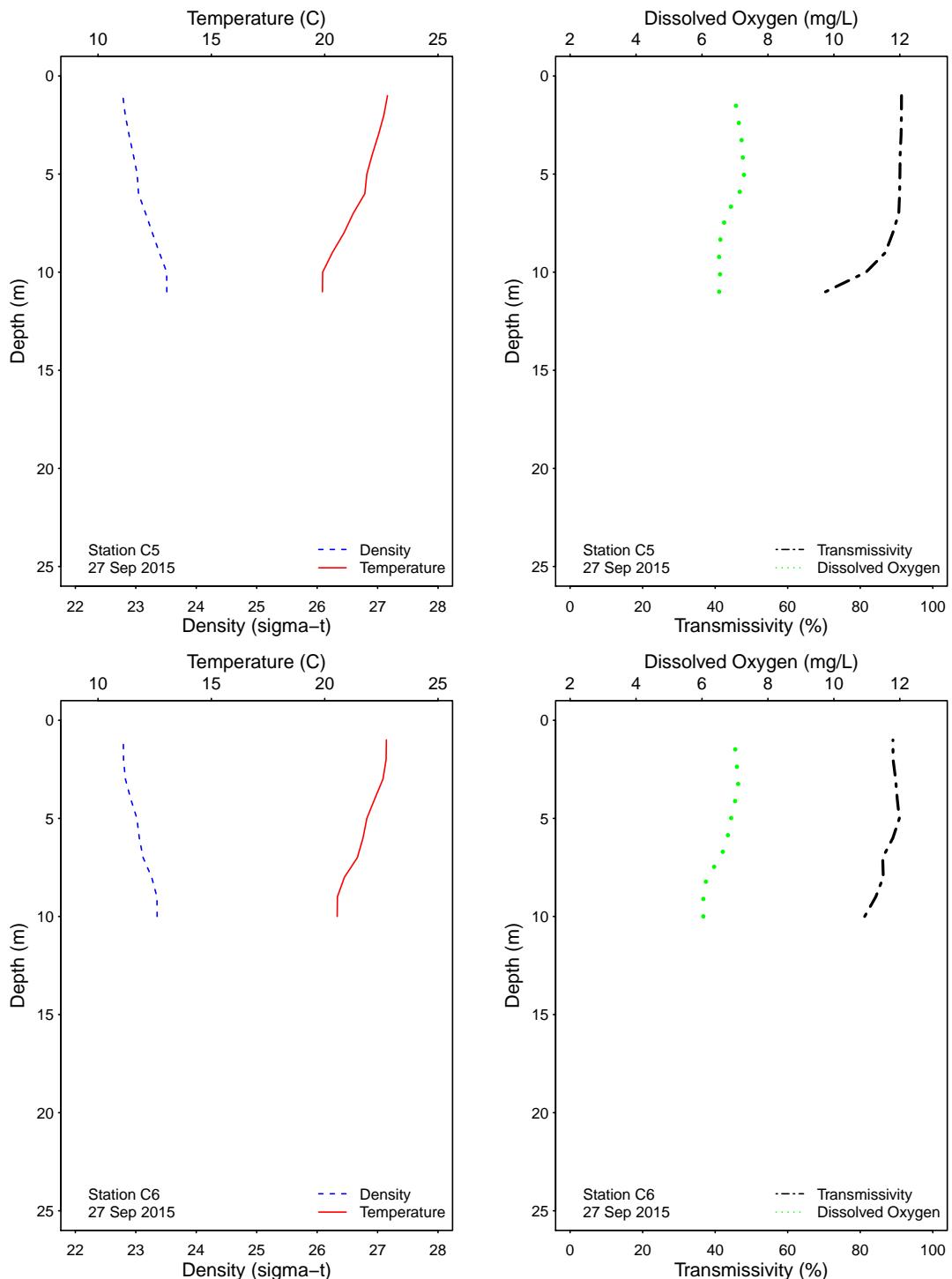


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

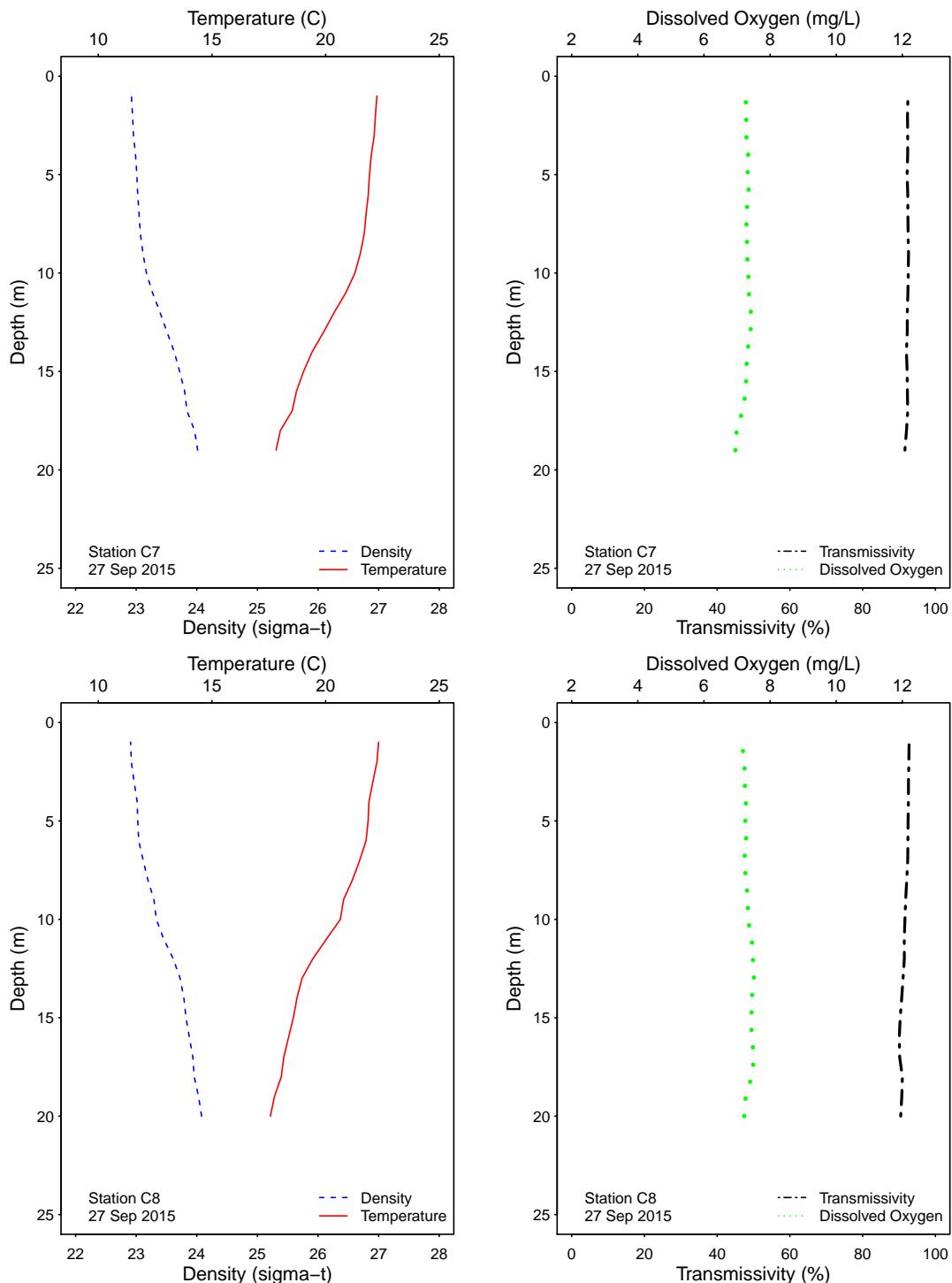


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

# **APPENDIX A**

## Quality Assurance



**Table A.1**

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

Station	Date	Depth	Analyst	Procedure	Total	Fecal	Enter
A7	04 Sep 2015	18	ZV	LAB DUPLICATE	10e	<2	<2
A7	10 Sep 2015	18	JT	LAB DUPLICATE	<2	<2	<2
A7	15 Sep 2015	18	AR	LAB DUPLICATE	ns	<2	<2
A7	15 Sep 2015	18	JT	LAB DUPLICATE	<2	ns	ns
A7	21 Sep 2015	18	JT	LAB DUPLICATE	380e	48	6e
A7	27 Sep 2015	18	ZV	LAB DUPLICATE	<20	2e	<2
C7	04 Sep 2015	18	ZV	LAB DUPLICATE	46	2e	2e
C7	10 Sep 2015	18	ZV	LAB DUPLICATE	<2	<2	<20
C7	15 Sep 2015	18	AR	LAB DUPLICATE	ns	<2	<2
C7	15 Sep 2015	18	LMA	LAB DUPLICATE	<2	ns	ns
C7	21 Sep 2015	18	JT	LAB DUPLICATE	<2	<2	<2
C7	27 Sep 2015	18	ZV	LAB DUPLICATE	<2	<2	<2
C8	04 Sep 2015	12	SR	LAB DUPLICATE	<2	<2	<2
C8	10 Sep 2015	12	ZV	LAB DUPLICATE	<2	<2	<20
C8	15 Sep 2015	12	AR	LAB DUPLICATE	ns	<2	<2
C8	15 Sep 2015	12	LMA	LAB DUPLICATE	<2	ns	ns
C8	21 Sep 2015	12	JT	LAB DUPLICATE	<2	<2	<2
C8	27 Sep 2015	12	ZV	LAB DUPLICATE	2e	<2	<2
D8	02 Sep 2015		SR	FIELD DUPLICATE	400e	10e	<2
D8	02 Sep 2015		SR	LAB DUPLICATE	600e	12e	2e
D8	08 Sep 2015		JT	FIELD DUPLICATE	200e	<2	<2
D8	08 Sep 2015		JT	LAB DUPLICATE	400e	<2	4e
D8	14 Sep 2015		ZV	FIELD DUPLICATE	<20	12e	4e
D8	14 Sep 2015		ZV	LAB DUPLICATE	40e	14e	<2
D8	20 Sep 2015		ZV	FIELD DUPLICATE	200e	4e	42
D8	20 Sep 2015		ZV	LAB DUPLICATE	40e	<2	10e
D8	26 Sep 2015		ZV	FIELD DUPLICATE	<20	2e	2e
D8	26 Sep 2015		ZV	LAB DUPLICATE	100e	8e	4e

