

SOUTH BAY OCEAN OUTFALL MONTHLY RECEIVING WATERS MONITORING REPORT

SOUTH BAY WATER RECLAMATION PLANT

NPDES Permit No. CA0109045
SDRWQCB Order No. R9-2021-0011

JUNE 2024

Environmental Monitoring and Technical Services
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July 31, 2024

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

Attention: POTW Compliance Unit

Dear Mr. Gibson:

Enclosed is the June 2024 Monthly Receiving Waters Monitoring Report for the South Bay Ocean Outfall, South Bay Water Reclamation Plant as required per Order No. R9-2021-0011, NPDES Permit No. CA0109045.

This report includes raw ocean monitoring data and summaries of water quality parameters and ocean conditions measured during the month for the South Bay outfall region. Also included are summaries of compliance with the bacterial water-contact standards specified in the California Ocean Plan. These data are also presented in the monthly report submitted by the International Boundary and Water Commission, U.S. Section for discharge from the South Bay International Wastewater Treatment Plant (Order No. R9-2021-0001, NPDES Permit No. CA0108928).

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

Sincerely,



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

PV/rk

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

INTRODUCTION

Monthly reports of water quality and ocean conditions from Playa Blanco, Mexico to Coronado, USA are submitted to the San Diego Regional Water Quality Control Board and U.S. EPA Region 9 in accordance with Order No. R9-2021-0011, NPDES Permit No. CA0109045, for the South Bay Water Reclamation Plant (SBWRP), South Bay Ocean Outfall (SBOO). 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 SBWRP are presented in separate reports.

MATERIALS AND METHODS

Shore Stations

Water quality monitoring was conducted at 11 stations located along the shore from Playa Blanca, Mexico to Coronado, USA (see station locations map). Three sites are located south of the international border (stations S0, S2, S3), while eight sites are in the United States (stations S4–S6 and S8–S12).

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

Kelp Bed Stations

Seven kelp bed and other nearshore stations (I19, I24, I25, I26, I32, I39, I40; collectively referred to as “kelp” stations herein) were sampled weekly according to NPDES permit specifications. Six stations (I19, I24, I25, I26, I32, I40) are located along the 9-m depth contour, and one (I39) is located along the 18-m depth contour. Three of these stations, I25, I26, and I39, were selected based on their proximity to suitable substrates for the Imperial Beach kelp bed (see station locations map); however, this kelp bed has been historically transient and variable in terms of size and density. Thus, these three stations are only occasionally located within an area where kelp is actually found.

Routine monitoring at each kelp site consists of collecting seawater samples at three discrete depths for bacteriological analyses (total coliforms, fecal coliforms, and *Enterococcus* bacteria) and generating water column profiles of various physical/chemical parameters, including water temperature, salinity, density, dissolved oxygen, pH, chlorophyll *a*, and transmissivity. Visual observations of weather and water conditions are also recorded at all stations.

Seawater samples at the kelp bed stations are primarily collected using a CTD-integrated rosette sampler with Niskin bottles. Aliquots for bacteriological analyses were drawn from these bottles into sterile sample bottles for processing at the City's Marine Microbiology Laboratory. Water column profiles of the various physical/chemical parameters were taken using a CTD. The CTD collected these physical/chemical data at a rate ≥ 4 scans per second. The data were then internally averaged using the CTD proprietary software, Seasoft, to create water column profiles equivalent to one reading per meter. Additionally, CTD profile data for each water sample depth are presented

with the bacteriological data.

Offshore Stations

Quarterly offshore water quality sampling is typically conducted over three days during February, May, August, and November for a total of 40 stations during each month (see station locations map). These offshore stations (I1–I40) are arranged in a grid surrounding the discharge site, and are generally located along the 9, 19, 28, 38, and 55-m depth contours. The seven offshore sites designated as kelp bed stations (described above) are included as part of the quarterly offshore water quality sampling, however the data from these seven stations are reported within the kelp bed station section of the report with the other days of kelp bed water quality sampling. Monitoring at all sites included measurements of various physical/chemical parameters, including water temperature, salinity, density, dissolved oxygen, pH, chlorophyll *a*, transmissivity, and chromomorphic dissolved organic matter (CDOM). Visual observations of weather and water conditions were also recorded at all stations. Seawater samples for the analysis of indicator bacteria were collected at 28 of the stations.

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

Bacteriological Reporting and Quality Assurance

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

Results of the bacteriological analysis of seawater samples collected from each of the shore, kelp bed, and offshore stations located within State waters are assessed relative to the water-contact standards specified in the 2019 California Ocean Plan (Ocean Plan). The six standards are defined as follows:

Water-Contact Objectives

Fecal coliform:

- (1) The 30-day geometric mean (GM) of fecal coliform density not to exceed 200 CFU/100 mL, calculated based on the five most recent samples from each site
- (2) The single sample maximum (SSM) not to exceed 400 CFU/100 mL

Enterococci:

- (1) The six-week rolling GM of *Enterococci* not to exceed 30 CFU/100 mL, calculated weekly
- (2) The statistical threshold value (STV) of 110 CFU/100 mL not to be exceeded by more than 10 percent of the samples collected in a calendar month, calculated in a static manner

Shellfish Harvesting Standards

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

Total coliform:

- (1) The median total coliform density shall not exceed 70 CFU/100 mL
- (2) The STV of 230 CFU/100 mL not to be exceeded by more than 10 percent of the samples collected in a calendar month, calculated in a static manner

Compliance with the seven Ocean Plan standards are summarized below for the stations located in USA waters. In contrast, no such compliance summaries are presented for the three shore stations located in Mexican waters south of the International Border (i.e., S0, S2, and S3) since this region is not subject to the Ocean Plan standards.

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, 1987²) is used to statistically compare both the results from the laboratory duplicates, as well as the results from the field duplicates. These data will be further analyzed in the City's 2024 Quality Assurance Report, which will be completed in March 2025.

SUMMARY OF RESULTS

➤ Shoreline Water Quality Sampling

- Due to site access restrictions in Mexico, the South Bay shoreline sampling is typically carried out on the same day each week (i.e., Tuesday) to coordinate sampling between the Mexican and USA based stations. Seawater samples at the three shore stations located south of the USA/Mexico border (i.e., stations S0, S2 and S3) are presently collected by the Comisión Internacional de Límites y Aguas (CILA) and transported to the USIBWC for subsequent delivery to the City's Marine Microbiology Lab, while samples from the eight stations located in USA waters are sampled by City staff.
- During June, each of the eight shore stations located north of the border was out of compliance with the 2019 California Ocean Plan (Ocean Plan) water contact standards on one or more days as follows:
 - The 30-day running geometric mean standard for fecal coliforms was exceeded at stations S4, S5, S6, S10, S11, and S12.
 - The single sample maximum (SSM) standard for fecal coliforms was exceeded at stations S4, S5, S6, S10, S11, and S12.
 - The 6-week running geometric mean standard for *Enterococcus* was exceeded at stations S4, S5, S6, S10, S11, and S12.
 - The statistical threshold value (STV) standard for *Enterococcus* was exceeded at stations S4, S5, S6, S10, S11, and S12.

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

- The 30-day running median standard for total coliforms was exceeded at stations S4, S5, S6, S8, S9, S10, S11, and S12.
 - The STV standard for total coliforms was exceeded at stations S4, S5, S6, S8, S10, S11, and S12.
- A sewage-like odor was observed at stations S4, S5, S6, S8, S10, and S11 on one or more days in June.
- Historical analyses of Ocean Plan compliance rates for the South Bay outfall shore and kelp monitoring stations, combined with the results of satellite imagery data, suggest that outflows from the Tijuana River and Los Buenos Creek, as well as surface runoff during or after rain events (storms), are likely to be the cause of impacted water quality along the shore and in near shore recreational waters in the South Bay region. See the City of San Diego’s most recent *Biennial Receiving Waters Monitoring and Assessment Report for the Point Loma and South Bay Ocean Outfalls* for details (<https://www.sandiego.gov/public-utilities/sustainability/ocean-monitoring/reports>).

➤ **Kelp Bed Water Quality Sampling**

- The seven kelp bed water quality stations (I19, I24, I25, I26, I32, I39, I40) were sampled on June 4, 11, 17, and 25.
- During June, each of the seven kelp bed stations was out of compliance with the various 2019 Ocean Plan water contact standards on one or more days as follows:
 - The 30-day running geometric mean standard for fecal coliforms was exceeded at stations I19, I32, and I40.
 - The SSM standard for fecal coliforms was exceeded at stations I19, I32, and I40.
 - The 6-week running geometric mean standard for *Enterococcus* was exceeded at stations I19, I24, I25, I32, and I40.
 - The STV standard for *Enterococcus* was exceeded at stations I19, I32, and I40.
 - The 30-day running median standard for total coliforms was exceeded at stations I19, I24, I25, I26, I32, and I40.
 - The STV standard for total coliforms was exceeded at stations I19, I24, I25, I26, I32, I39, and I40.
- Water column temperatures ranged from 10.96 to 20.29°C. The difference between surface and bottom waters ranged from 0.05 to 6.44°C.
- Concentrations of chlorophyll *a* ranged from 0.64 to 63.87 µg/L at the kelp bed stations.
- Nothing of sewage origin was observed at SBOO kelp stations in June.

➤ **Offshore Water Quality Sampling**

- Quarterly sampling was not conducted during June at the offshore stations. The next quarterly sampling is scheduled for August 2024.



TABLES AND FIGURES

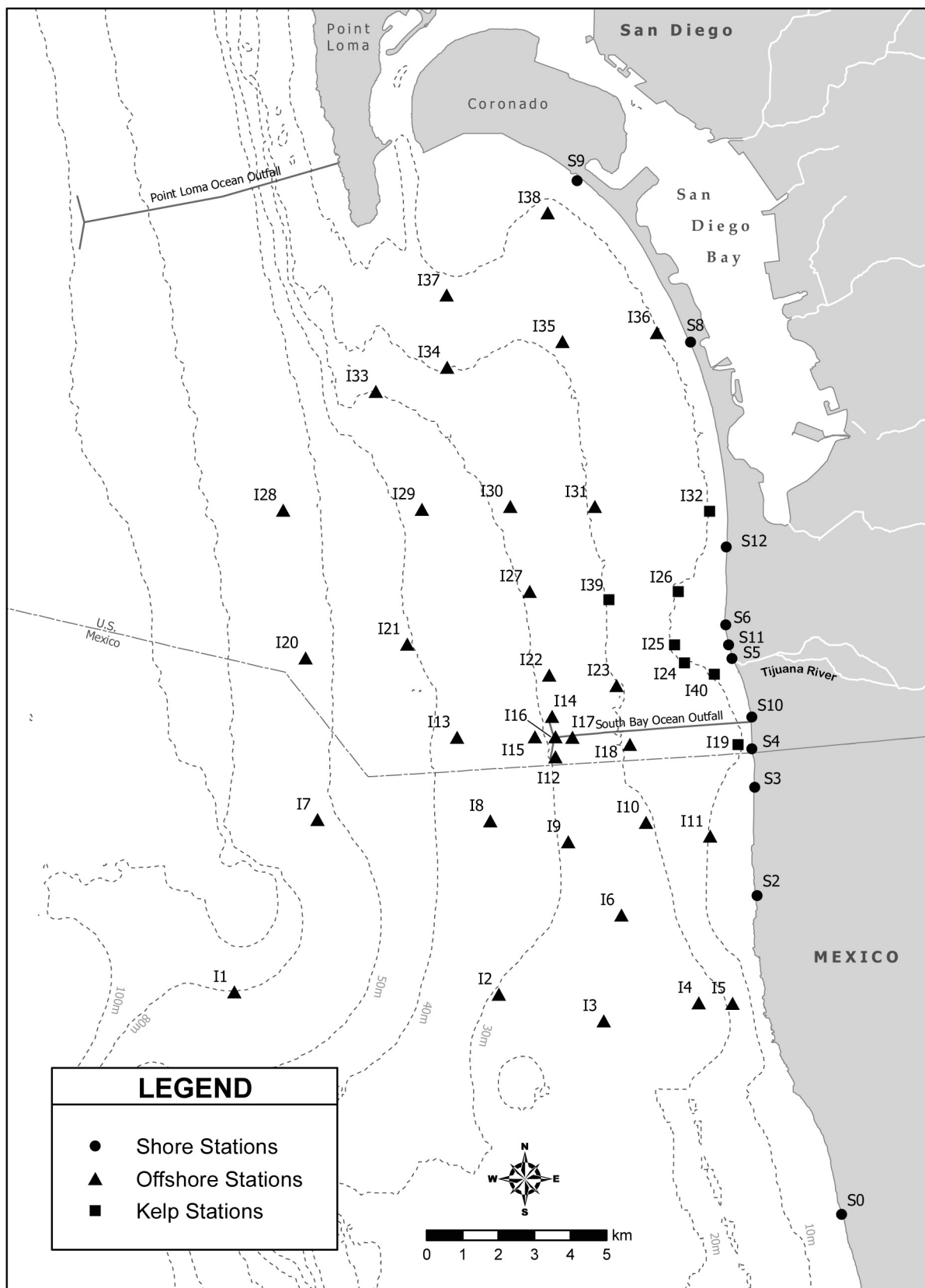


Figure 1.1 Station Map

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Shore Stations

Table 2.1

Summary of compliance with the Ocean Plan's 30-day Geometric Mean standard for fecal coliform bacteria at the SBOO 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	S4	S5	S6	S8	S9	S10	S11	S12
01 Jun 2024	*1470	*6135	*506	*2	*3	*2837	*4772	*30
02 Jun 2024	*1470	*6135	*506	*2	*3	*2837	*4772	*30
03 Jun 2024	*1470	*6135	*506	*2	*3	*2837	*4772	*30
04 Jun 2024	1411	7016	953	4	5	2530	5317	99
05 Jun 2024	1411	7016	953	4	5	2530	5317	99
06 Jun 2024	*1019	*6135	*666	*4	*6	*2093	*4338	*262
07 Jun 2024	*1019	*6135	*666	*4	*6	*2093	*4338	*262
08 Jun 2024	*1019	*6135	*666	*4	*6	*2093	*4338	*262
09 Jun 2024	*1019	*6135	*666	*4	*6	*2093	*4338	*262
10 Jun 2024	*1019	*6135	*666	*4	*6	*2093	*4338	*262
11 Jun 2024	1609	7016	1188	4	6	2917	5317	249
12 Jun 2024	1609	7016	1188	4	6	2917	5317	249
13 Jun 2024	*1488	*6135	*733	*4	*9	*2144	*4338	*397
14 Jun 2024	*1488	*6135	*733	*4	*9	*2144	*4338	*397
15 Jun 2024	*1488	*6135	*733	*4	*9	*2144	*4338	*397
16 Jun 2024	*1488	*6135	*733	*4	*9	*2144	*4338	*397
17 Jun 2024	*1488	*6135	*733	*4	*9	*2144	*4338	*397
18 Jun 2024	*1488	*6135	*733	*4	*9	*2144	*4338	*397
19 Jun 2024	*1488	*6135	*733	*4	*9	*2144	*4338	*397
20 Jun 2024	*6098	*11742	*184	*4	*9	*5757	*7444	*56
21 Jun 2024	*6098	*11742	*184	*4	*9	*5757	*7444	*56
22 Jun 2024	*6098	*11742	*184	*4	*9	*5757	*7444	*56
23 Jun 2024	*6098	*11742	*184	*4	*9	*5757	*7444	*56
24 Jun 2024	*6098	*11742	*184	*4	*9	*5757	*7444	*56
25 Jun 2024	3698	11793	425	4	9	1955	8190	79
26 Jun 2024	3698	11793	425	4	9	1955	8190	79
27 Jun 2024	*2755	*11742	*1621	*4	*9	*1242	*7444	*198
28 Jun 2024	*2755	*11742	*1621	*4	*9	*1242	*7444	*198
29 Jun 2024	*2755	*11742	*1621	*4	*9	*1242	*7444	*198
30 Jun 2024	*2755	*11742	*1621	*4	*9	*1242	*7444	*198

* Geometric mean calculated using n<5

Table 2.2

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

Date	S4	S5	S6	S8	S9	S10	S11	S12
04 Jun 2024	E	E	E	IC	IC	E	E	E
11 Jun 2024	E	E	E	IC	IC	E	E	IC
20 Jun 2024	E	E	IC	IC	IC	E	E	IC
25 Jun 2024	E	E	E	IC	IC	IC	E	IC

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

Table 2.3

Summary of compliance with the Ocean Plan's 6-week Geometric Mean standard for *Enterococcus* at the SBOO shore stations. Data are based on the geometric mean of the five most recent samples from each site over the previous 6 weeks unless otherwise noted (*). Values >30 CFU/100 mL exceed the standard.

Date	S4	S5	S6	S8	S9	S10	S11	S12
01 Jun 2024	414	5459	264	2	3	700	1282	56
02 Jun 2024	414	5459	264	2	3	700	1282	56
03 Jun 2024	414	5459	264	2	3	700	1282	56
04 Jun 2024	807	6127	255	4	5	1495	1108	65
05 Jun 2024	807	6127	255	4	5	1495	1108	65
06 Jun 2024	807	6127	255	4	5	1495	1108	65
07 Jun 2024	807	6127	255	4	5	1495	1108	65
08 Jun 2024	807	6127	255	4	5	1495	1108	65
09 Jun 2024	807	6127	255	4	5	1495	1108	65
10 Jun 2024	807	6127	255	4	5	1495	1108	65
11 Jun 2024	769	6127	1086	4	7	1414	4722	77
12 Jun 2024	769	6127	1086	4	7	1414	4722	77
13 Jun 2024	769	6127	1086	4	7	1414	4722	77
14 Jun 2024	769	6127	1086	4	7	1414	4722	77
15 Jun 2024	769	6127	1086	4	7	1414	4722	77
16 Jun 2024	769	6127	1086	4	7	1414	4722	77
17 Jun 2024	769	6127	1086	4	7	1414	4722	77
18 Jun 2024	788	6037	1405	4	8	1610	4365	160
19 Jun 2024	788	6037	1405	4	8	1610	4365	160
20 Jun 2024	974	6031	529	4	7	1766	3611	77
21 Jun 2024	974	6031	529	4	7	1766	3611	77
22 Jun 2024	974	6031	529	4	7	1766	3611	77
23 Jun 2024	974	6031	529	4	7	1766	3611	77
24 Jun 2024	974	6031	529	4	7	1766	3611	77
25 Jun 2024	881	6031	529	6	7	853	3611	164
26 Jun 2024	881	6031	529	6	7	853	3611	164
27 Jun 2024	881	6031	529	6	7	853	3611	164
28 Jun 2024	881	6031	529	6	7	853	3611	164
29 Jun 2024	881	6031	529	6	7	853	3611	164
30 Jun 2024	881	6031	529	6	7	853	3611	164

* Geometric mean calculated using n<5

Table 2.4

Summary of compliance at the SBOO shore stations with the Ocean Plan's Statistical Threshold Value standard for *Enterococcus* bacteria, which states that *Enterococcus* density shall not exceed 110 CFU/100 mL in more than 10% of samples per month.

Date	S4	S5	S6	S8	S9	S10	S11	S12
June	E	E	E	IC	IC	E	E	E

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

Table 2.5

Summary of compliance with the Ocean Plan's 30-day Median standard for total coliform bacteria at the SBOO shore stations. Data are based on the median of the five most recent samples from each site over the previous 30 days unless otherwise noted (*). Values >70 CFU/100 mL exceed the standard.

Date	S4	S5	S6	S8	S9	S10	S11	S12
01 Jun 2024	*16000	*16000	*10600	*20	*20	*14000	*16000	*220
02 Jun 2024	*16000	*16000	*10600	*20	*20	*14000	*16000	*220
03 Jun 2024	*16000	*16000	*10600	*20	*20	*14000	*16000	*220
04 Jun 2024	16000	16000	16000	20	20	13000	16000	240
05 Jun 2024	16000	16000	16000	20	20	13000	16000	240
06 Jun 2024	*14500	*16000	*10600	*20	*20	*14500	*16000	*8120
07 Jun 2024	*14500	*16000	*10600	*20	*20	*14500	*16000	*8120
08 Jun 2024	*14500	*16000	*10600	*20	*20	*14500	*16000	*8120
09 Jun 2024	*14500	*16000	*10600	*20	*20	*14500	*16000	*8120
10 Jun 2024	*14500	*16000	*10600	*20	*20	*14500	*16000	*8120
11 Jun 2024	16000	16000	16000	20	20	16000	16000	240
12 Jun 2024	16000	16000	16000	20	20	16000	16000	240
13 Jun 2024	*14500	*16000	*10600	*110	*110	*14500	*16000	*8100
14 Jun 2024	*14500	*16000	*10600	*110	*110	*14500	*16000	*8100
15 Jun 2024	*14500	*16000	*10600	*110	*110	*14500	*16000	*8100
16 Jun 2024	*14500	*16000	*10600	*110	*110	*14500	*16000	*8100
17 Jun 2024	*14500	*16000	*10600	*110	*110	*14500	*16000	*8100
18 Jun 2024	*14500	*16000	*10600	*110	*110	*14500	*16000	*8100
19 Jun 2024	*14500	*16000	*10600	*110	*110	*14500	*16000	*8100
20 Jun 2024	*16000	*16000	*8010	*110	*110	*16000	*16000	*110
21 Jun 2024	*16000	*16000	*8010	*110	*110	*16000	*16000	*110
22 Jun 2024	*16000	*16000	*8010	*110	*110	*16000	*16000	*110
23 Jun 2024	*16000	*16000	*8010	*110	*110	*16000	*16000	*110
24 Jun 2024	*16000	*16000	*8010	*110	*110	*16000	*16000	*110
25 Jun 2024	16000	16000	16000	20	40	16000	16000	200
26 Jun 2024	16000	16000	16000	20	40	16000	16000	200
27 Jun 2024	*14500	*16000	*16000	*110	*120	*14500	*16000	*1500
28 Jun 2024	*14500	*16000	*16000	*110	*120	*14500	*16000	*1500
29 Jun 2024	*14500	*16000	*16000	*110	*120	*14500	*16000	*1500
30 Jun 2024	*14500	*16000	*16000	*110	*120	*14500	*16000	*1500

* Median calculated using n<5

Table 2.6

Summary of compliance at the SBOO shore stations with the Ocean Plan's Statistical Threshold Value for total coliform bacteria, which states that total coliform density shall not exceed 230 CFU/100 mL in more than 10% of samples per month.

Date	S4	S5	S6	S8	S9	S10	S11	S12
June	E	E	E	E	IC	E	E	E

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

Table 2.7

Summary of water quality parameters at the SBOO shore stations for each sample date. Densities of fecal coliform (Fecal) and *Enterococcus* (Entero) are reported as CFU/100 mL. Comments follow the data summary.

Station	Date	Time	Total	Fecal	Entero
S0	04 Jun 2024	800	3400e	2400e	860
S0	11 Jun 2024	830	7800	600e	860
S0	20 Jun 2024	925	>16000	11000	4400
S0	25 Jun 2024	930	3400e	900	240e
S10	04 Jun 2024	834	13000	1600e	760
S10	11 Jun 2024	823	>16000	11000	8600
S10	20 Jun 2024	802	>16000	5200	2800e
S10	25 Jun 2024	751	240e	26e	38e
S11	04 Jun 2024	1037	>16000	8200	5000
S11	11 Jun 2024	1004	>16000	>12000	>12000
S11	20 Jun 2024	928	13000	2600e	1400e
S11	25 Jun 2024	917	>16000	>12000	>12000
S12	04 Jun 2024	1118	>16000	>12000	12000
S12	11 Jun 2024	1043	200e	200e	50
S12	20 Jun 2024	953	<20	2e	<2
S12	25 Jun 2024	945	2800e	320e	3400e
S2	04 Jun 2024	900	7000	1100	560
S2	11 Jun 2024	925	40	4e	4e
S2	20 Jun 2024	825	540	48	18e
S2	25 Jun 2024	825	2800e	600	340e
S3	04 Jun 2024	840	>16000	6000	440
S3	11 Jun 2024	911	>16000	12000	>12000
S3	20 Jun 2024	800	11000	2000e	1600e
S3	25 Jun 2024	900	2400e	720	720
S4	04 Jun 2024	851	13000	1200e	440
S4	11 Jun 2024	840	>16000	10000	9000
S4	20 Jun 2024	820	>16000	9600	2800e
S4	25 Jun 2024	808	4600	500	440
S5	04 Jun 2024	1017	>16000	>12000	8000
S5	11 Jun 2024	943	>16000	>12000	>12000
S5	20 Jun 2024	915	>16000	11000	6000
S5	25 Jun 2024	901	>16000	>12000	>12000
S6	04 Jun 2024	1052	>16000	>12000	8800
S6	11 Jun 2024	1020	>16000	>12000	>12000
S6	20 Jun 2024	940	20e	4e	4e
S6	25 Jun 2024	929	>16000	>12000	>12000
S8	04 Jun 2024	1141	600e	20e	94
S8	11 Jun 2024	1112	<200	2e	2e
S8	20 Jun 2024	1014	2e	<2	<2
S8	25 Jun 2024	1003	<20	4e	24e
S9	04 Jun 2024	1206	200e	36e	38e
S9	11 Jun 2024	1140	<200	10e	8e
S9	20 Jun 2024	1030	<20	<2	<2
S9	25 Jun 2024	1023	40e	8e	4e

ns = not sampled

ND = no data

Table 2.8

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

Station	Date	Parameter	Value
S0	04 Jun 2024	Arrive Time	800
S0	04 Jun 2024	Wind Speed (kts)	3.9
S0	04 Jun 2024	Wind Dir	S
S0	04 Jun 2024	Animal Life	Dog-3; Seagull-20;
S0	04 Jun 2024	Floatables	None
S0	04 Jun 2024	Current Direction	N
S0	04 Jun 2024	Water Temp (C)	13
S0	04 Jun 2024	High Tide Time	842
S0	04 Jun 2024	Low Tide Time	239
S0	04 Jun 2024	Comments	Water turbid; Trash-0; Kelp;Algae; No flow from storm drain
S0	11 Jun 2024	Arrive Time	830
S0	11 Jun 2024	Wind Speed (kts)	1.1
S0	11 Jun 2024	Wind Dir	S
S0	11 Jun 2024	Animal Life	Dog-3; Seagull-20;
S0	11 Jun 2024	Floatables	None
S0	11 Jun 2024	Current Direction	S
S0	11 Jun 2024	Water Temp (C)	14
S0	11 Jun 2024	High Tide Time	16
S0	11 Jun 2024	Low Tide Time	755
S0	11 Jun 2024	Comments	Water turbid; Trash-0; Algae;Kelp; Approximately 1.0 L/sec water flowing from storm drain
S0	20 Jun 2024	Arrive Time	925
S0	20 Jun 2024	Wind Speed (kts)	1.1
S0	20 Jun 2024	Wind Dir	S
S0	20 Jun 2024	Animal Life	Dog-5; Seagull-20;
S0	20 Jun 2024	Floatables	None
S0	20 Jun 2024	Current Direction	S
S0	20 Jun 2024	Water Temp (C)	14
S0	20 Jun 2024	High Tide Time	939
S0	20 Jun 2024	Low Tide Time	322
S0	20 Jun 2024	Comments	Water turbid; Trash-0; Algae;Kelp; approximately 1.0 L/sec water flowing from storm drain
S0	25 Jun 2024	Arrive Time	820
S0	25 Jun 2024	Wind Speed (kts)	2.5
S0	25 Jun 2024	Wind Dir	S
S0	25 Jun 2024	Animal Life	Seagull-20;
S0	25 Jun 2024	Floatables	None
S0	25 Jun 2024	Current Direction	S
S0	25 Jun 2024	Water Temp (C)	15
S0	25 Jun 2024	High Tide Time	1320
S0	25 Jun 2024	Low Tide Time	648
S0	25 Jun 2024	Comments	Water turbid; Trash-0; Kelp;Algae; 1.25 L/sec water flow from storm drain
S2	04 Jun 2024	Arrive Time	900
S2	04 Jun 2024	Wind Speed (kts)	1.6
S2	04 Jun 2024	Wind Dir	S
S2	04 Jun 2024	Animal Life	Dog-7; Seagull-20;
S2	04 Jun 2024	Floatables	None
S2	04 Jun 2024	Current Direction	N
S2	04 Jun 2024	Water Temp (C)	14
S2	04 Jun 2024	High Tide Time	842
S2	04 Jun 2024	Low Tide Time	239

Station	Date	Parameter	Value
S2	04 Jun 2024	Comments	Water turbid; Trash-0; Algae;Kelp; Red tide observed. No flow from storm drain
S2	11 Jun 2024	Arrive Time	925
S2	11 Jun 2024	Wind Speed (kts)	1.6
S2	11 Jun 2024	Wind Dir	S
S2	11 Jun 2024	Animal Life	Dog-6; Seagull-20;
S2	11 Jun 2024	Floatables	None
S2	11 Jun 2024	Current Direction	S
S2	11 Jun 2024	Water Temp (C)	14
S2	11 Jun 2024	High Tide Time	16
S2	11 Jun 2024	Low Tide Time	755
S2	11 Jun 2024	Comments	Water turbid; Surfer/Paddle boarder-3; Trash-0; Algae;Kelp; No flow from storm drain
S2	20 Jun 2024	Arrive Time	825
S2	20 Jun 2024	Wind Speed (kts)	0.8
S2	20 Jun 2024	Wind Dir	S
S2	20 Jun 2024	Animal Life	Dog-2; Seagull-20;
S2	20 Jun 2024	Floatables	None
S2	20 Jun 2024	Current Direction	N
S2	20 Jun 2024	Water Temp (C)	14
S2	20 Jun 2024	High Tide Time	939
S2	20 Jun 2024	Low Tide Time	322
S2	20 Jun 2024	Comments	Water turbid; Trash-0; Kelp;Algae; No flow from storm drain
S2	25 Jun 2024	Arrive Time	920
S2	25 Jun 2024	Wind Speed (kts)	0.9
S2	25 Jun 2024	Wind Dir	S
S2	25 Jun 2024	Animal Life	Seagull-20;
S2	25 Jun 2024	Floatables	None
S2	25 Jun 2024	Current Direction	S
S2	25 Jun 2024	Water Temp (C)	15
S2	25 Jun 2024	High Tide Time	1320
S2	25 Jun 2024	Low Tide Time	648
S2	25 Jun 2024	Comments	Water turbid; Trash-0; Kelp;Seagrass; Noflow from storm drain
S3	04 Jun 2024	Arrive Time	840
S3	04 Jun 2024	Wind Speed (kts)	2.3
S3	04 Jun 2024	Wind Dir	S
S3	04 Jun 2024	Animal Life	Dog-4; Seagull-20;
S3	04 Jun 2024	Floatables	None
S3	04 Jun 2024	Current Direction	N
S3	04 Jun 2024	Water Temp (C)	14
S3	04 Jun 2024	High Tide Time	842
S3	04 Jun 2024	Low Tide Time	239
S3	04 Jun 2024	Comments	Water turbid; Trash-0; Algae;Kelp; Red tide observed. No flow from storm drain
S3	11 Jun 2024	Arrive Time	910
S3	11 Jun 2024	Wind Speed (kts)	1.3
S3	11 Jun 2024	Wind Dir	S
S3	11 Jun 2024	Animal Life	Dog-5; Seagull-20;
S3	11 Jun 2024	Floatables	None
S3	11 Jun 2024	Current Direction	S
S3	11 Jun 2024	Water Temp (C)	14
S3	11 Jun 2024	High Tide Time	16
S3	11 Jun 2024	Low Tide Time	755
S3	11 Jun 2024	Comments	Water turbid; Trash-0; Kelp;Algae; No flow from storm drain

Station	Date	Parameter	Value
S3	20 Jun 2024	Arrive Time	800
S3	20 Jun 2024	Wind Speed (kts)	1.3
S3	20 Jun 2024	Wind Dir	S
S3	20 Jun 2024	Animal Life	Dog-3; Seagull-20;
S3	20 Jun 2024	Floatables	None
S3	20 Jun 2024	Current Direction	N
S3	20 Jun 2024	Water Temp (C)	14
S3	20 Jun 2024	High Tide Time	939
S3	20 Jun 2024	Low Tide Time	322
S3	20 Jun 2024	Comments	Water turbid; Trash-0; Algae;Kelp; Approximately 0.5 L/sec water flowing from storm drain; Normal cloudiness was observed
S3	25 Jun 2024	Arrive Time	855
S3	25 Jun 2024	Wind Speed (kts)	1.1
S3	25 Jun 2024	Wind Dir	S
S3	25 Jun 2024	Animal Life	Dog-3; Seagull-20;
S3	25 Jun 2024	Floatables	None
S3	25 Jun 2024	Current Direction	S
S3	25 Jun 2024	Water Temp (C)	15
S3	25 Jun 2024	High Tide Time	1320
S3	25 Jun 2024	Low Tide Time	648
S3	25 Jun 2024	Comments	Water turbid; Trash-0; Kelp;Algae; Person/Walker/Jogger-10; No flow from storm drain
S4	04 Jun 2024	Arrive Time	1352
S4	04 Jun 2024	Wind Speed (kts)	7.1
S4	04 Jun 2024	Wind Dir	SW
S4	04 Jun 2024	Animal Life	
S4	04 Jun 2024	Floatables	Foam
S4	04 Jun 2024	Current Direction	S
S4	04 Jun 2024	Water Temp (C)	15.2
S4	04 Jun 2024	High Tide Time	842
S4	04 Jun 2024	Low Tide Time	239
S4	04 Jun 2024	Comments	Water clear; Trash-3; Kelp;Seagrass;Debris; Original survey done in wrong app; Sewage-like odor
S4	11 Jun 2024	Arrive Time	840
S4	11 Jun 2024	Wind Speed (kts)	1.9
S4	11 Jun 2024	Wind Dir	NE
S4	11 Jun 2024	Animal Life	
S4	11 Jun 2024	Floatables	None
S4	11 Jun 2024	Current Direction	S
S4	11 Jun 2024	Water Temp (C)	17.1
S4	11 Jun 2024	High Tide Time	16
S4	11 Jun 2024	Low Tide Time	755
S4	11 Jun 2024	Comments	Water clear; Trash-1; Kelp;Debris
S4	20 Jun 2024	Arrive Time	820
S4	20 Jun 2024	Wind Speed (kts)	2.3
S4	20 Jun 2024	Wind Dir	W
S4	20 Jun 2024	Animal Life	
S4	20 Jun 2024	Floatables	None
S4	20 Jun 2024	Current Direction	S
S4	20 Jun 2024	Water Temp (C)	15
S4	20 Jun 2024	High Tide Time	939
S4	20 Jun 2024	Low Tide Time	322
S4	20 Jun 2024	Comments	Water clear; Trash-3; Kelp;Seagrass;Debris
S4	25 Jun 2024	Arrive Time	808
S4	25 Jun 2024	Wind Speed (kts)	1.4

Station	Date	Parameter	Value
S4	25 Jun 2024	Wind Dir	W
S4	25 Jun 2024	Animal Life	
S4	25 Jun 2024	Floatables	Foam
S4	25 Jun 2024	Current Direction	S
S4	25 Jun 2024	Water Temp (C)	17.9
S4	25 Jun 2024	High Tide Time	1320
S4	25 Jun 2024	Low Tide Time	648
S4	25 Jun 2024	Comments	Water clear; Trash-3; Kelp;Seagrass;Debris
S10	04 Jun 2024	Arrive Time	1354
S10	04 Jun 2024	Wind Speed (kts)	6.8
S10	04 Jun 2024	Wind Dir	SW
S10	04 Jun 2024	Animal Life	
S10	04 Jun 2024	Floatables	Foam
S10	04 Jun 2024	Current Direction	S
S10	04 Jun 2024	Water Temp (C)	14.5
S10	04 Jun 2024	High Tide Time	842
S10	04 Jun 2024	Low Tide Time	239
S10	04 Jun 2024	Comments	Water clear; Trash-2; Kelp;Seagrass;Debris; Original survey done in wrong app; Sewage-like odor
S10	11 Jun 2024	Arrive Time	823
S10	11 Jun 2024	Wind Speed (kts)	2.5
S10	11 Jun 2024	Wind Dir	NE
S10	11 Jun 2024	Animal Life	
S10	11 Jun 2024	Floatables	None
S10	11 Jun 2024	Current Direction	S
S10	11 Jun 2024	Water Temp (C)	16.8
S10	11 Jun 2024	High Tide Time	16
S10	11 Jun 2024	Low Tide Time	755
S10	11 Jun 2024	Comments	Water clear; Trash-1; Debris;Kelp
S10	20 Jun 2024	Arrive Time	802
S10	20 Jun 2024	Wind Speed (kts)	1.1
S10	20 Jun 2024	Wind Dir	W
S10	20 Jun 2024	Animal Life	
S10	20 Jun 2024	Floatables	None
S10	20 Jun 2024	Current Direction	S
S10	20 Jun 2024	Water Temp (C)	16.3
S10	20 Jun 2024	High Tide Time	939
S10	20 Jun 2024	Low Tide Time	322
S10	20 Jun 2024	Comments	Water clear; Trash-2; Kelp;Seagrass;Debris
S10	25 Jun 2024	Arrive Time	751
S10	25 Jun 2024	Wind Speed (kts)	0
S10	25 Jun 2024	Wind Dir	XX
S10	25 Jun 2024	Animal Life	Bird-20;
S10	25 Jun 2024	Floatables	None
S10	25 Jun 2024	Current Direction	S
S10	25 Jun 2024	Water Temp (C)	18.2
S10	25 Jun 2024	High Tide Time	1320
S10	25 Jun 2024	Low Tide Time	648
S10	25 Jun 2024	Comments	Water clear; Trash-2; Seagrass;Kelp;Debris
S5	04 Jun 2024	Arrive Time	1355
S5	04 Jun 2024	Wind Speed (kts)	6.6
S5	04 Jun 2024	Wind Dir	W
S5	04 Jun 2024	Animal Life	
S5	04 Jun 2024	Floatables	Foam
S5	04 Jun 2024	Current Direction	S
S5	04 Jun 2024	Water Temp (C)	15.8

Station	Date	Parameter	Value
S5	04 Jun 2024	High Tide Time	842
S5	04 Jun 2024	Low Tide Time	239
S5	04 Jun 2024	Comments	Water clear; Trash-1; Kelp;Seagrass;Debris; Original survey done in wrong app; Sewage-like odor
S5	11 Jun 2024	Arrive Time	943
S5	11 Jun 2024	Wind Speed (kts)	3.4
S5	11 Jun 2024	Wind Dir	W
S5	11 Jun 2024	Animal Life	
S5	11 Jun 2024	Floatables	Foam; Film
S5	11 Jun 2024	Current Direction	S
S5	11 Jun 2024	Water Temp (C)	16.5
S5	11 Jun 2024	High Tide Time	16
S5	11 Jun 2024	Low Tide Time	755
S5	11 Jun 2024	Comments	Water turbid; Trash-1; Kelp;Seagrass;Debris; Sewage-like odor
S5	20 Jun 2024	Arrive Time	915
S5	20 Jun 2024	Wind Speed (kts)	2.9
S5	20 Jun 2024	Wind Dir	W
S5	20 Jun 2024	Animal Life	
S5	20 Jun 2024	Floatables	None
S5	20 Jun 2024	Current Direction	S
S5	20 Jun 2024	Water Temp (C)	14.2
S5	20 Jun 2024	High Tide Time	939
S5	20 Jun 2024	Low Tide Time	322
S5	20 Jun 2024	Comments	Water clear; Trash-2; Kelp;Seagrass;Debris
S5	25 Jun 2024	Arrive Time	901
S5	25 Jun 2024	Wind Speed (kts)	3.4
S5	25 Jun 2024	Wind Dir	W
S5	25 Jun 2024	Animal Life	
S5	25 Jun 2024	Floatables	Foam
S5	25 Jun 2024	Current Direction	S
S5	25 Jun 2024	Water Temp (C)	19.1
S5	25 Jun 2024	High Tide Time	1320
S5	25 Jun 2024	Low Tide Time	648
S5	25 Jun 2024	Comments	Water turbid; Trash-3; Kelp;Seagrass;Debris
S11	04 Jun 2024	Arrive Time	1357
S11	04 Jun 2024	Wind Speed (kts)	8.1
S11	04 Jun 2024	Wind Dir	S
S11	04 Jun 2024	Animal Life	
S11	04 Jun 2024	Floatables	Foam
S11	04 Jun 2024	Current Direction	S
S11	04 Jun 2024	Water Temp (C)	16.4
S11	04 Jun 2024	High Tide Time	842
S11	04 Jun 2024	Low Tide Time	239
S11	04 Jun 2024	Comments	Water clear; Trash-1; Kelp;Seagrass;Debris; Original survey done in wrong app; Sewage-like odor
S11	11 Jun 2024	Arrive Time	1004
S11	11 Jun 2024	Wind Speed (kts)	5
S11	11 Jun 2024	Wind Dir	W
S11	11 Jun 2024	Animal Life	
S11	11 Jun 2024	Floatables	Foam; Film
S11	11 Jun 2024	Current Direction	S
S11	11 Jun 2024	Water Temp (C)	17.5
S11	11 Jun 2024	High Tide Time	16
S11	11 Jun 2024	Low Tide Time	755
S11	11 Jun 2024	Comments	Water turbid; Trash-1; Kelp;Debris

Station	Date	Parameter	Value
S11	20 Jun 2024	Arrive Time	928
S11	20 Jun 2024	Wind Speed (kts)	5
S11	20 Jun 2024	Wind Dir	W
S11	20 Jun 2024	Animal Life	
S11	20 Jun 2024	Floatables	None
S11	20 Jun 2024	Current Direction	S
S11	20 Jun 2024	Water Temp (C)	19.7
S11	20 Jun 2024	High Tide Time	939
S11	20 Jun 2024	Low Tide Time	322
S11	20 Jun 2024	Comments	Water clear; Trash-4; Kelp;Seagrass;Debris
S11	25 Jun 2024	Arrive Time	917
S11	25 Jun 2024	Wind Speed (kts)	5
S11	25 Jun 2024	Wind Dir	W
S11	25 Jun 2024	Animal Life	
S11	25 Jun 2024	Floatables	Foam
S11	25 Jun 2024	Current Direction	S
S11	25 Jun 2024	Water Temp (C)	18.1
S11	25 Jun 2024	High Tide Time	1320
S11	25 Jun 2024	Low Tide Time	648
S11	25 Jun 2024	Comments	Water turbid; Trash-2; Kelp;Seagrass;Debris; Sewage-like odor
S6	04 Jun 2024	Arrive Time	1358
S6	04 Jun 2024	Wind Speed (kts)	5.4
S6	04 Jun 2024	Wind Dir	SW
S6	04 Jun 2024	Animal Life	
S6	04 Jun 2024	Floatables	Foam
S6	04 Jun 2024	Current Direction	S
S6	04 Jun 2024	Water Temp (C)	15.2
S6	04 Jun 2024	High Tide Time	842
S6	04 Jun 2024	Low Tide Time	239
S6	04 Jun 2024	Comments	Water clear; Trash-1; Kelp;Seagrass;Algae;Debris; Sewage-like odor
S6	11 Jun 2024	Arrive Time	1020
S6	11 Jun 2024	Wind Speed (kts)	6.6
S6	11 Jun 2024	Wind Dir	W
S6	11 Jun 2024	Animal Life	
S6	11 Jun 2024	Floatables	Foam; Film
S6	11 Jun 2024	Current Direction	S
S6	11 Jun 2024	Water Temp (C)	17.2
S6	11 Jun 2024	High Tide Time	16
S6	11 Jun 2024	Low Tide Time	755
S6	11 Jun 2024	Comments	Water turbid; Trash-1; Debris;Algae; Person/Walker/Jogger-2
S6	20 Jun 2024	Arrive Time	940
S6	20 Jun 2024	Wind Speed (kts)	4.2
S6	20 Jun 2024	Wind Dir	W
S6	20 Jun 2024	Animal Life	
S6	20 Jun 2024	Floatables	None
S6	20 Jun 2024	Current Direction	S
S6	20 Jun 2024	Water Temp (C)	15.8
S6	20 Jun 2024	High Tide Time	939
S6	20 Jun 2024	Low Tide Time	322
S6	20 Jun 2024	Comments	Water clear; Trash-1; Kelp;Algae;Seagrass
S6	25 Jun 2024	Arrive Time	929
S6	25 Jun 2024	Wind Speed (kts)	3.6
S6	25 Jun 2024	Wind Dir	W

Station	Date	Parameter	Value
S6	25 Jun 2024	Animal Life	
S6	25 Jun 2024	Floating	None
S6	25 Jun 2024	Current Direction	S
S6	25 Jun 2024	Water Temp (C)	19
S6	25 Jun 2024	High Tide Time	1320
S6	25 Jun 2024	Low Tide Time	648
S6	25 Jun 2024	Comments	Water clear; Trash-1; Kelp;Seagrass;Algae;Debris
S12	04 Jun 2024	Arrive Time	1359
S12	04 Jun 2024	Wind Speed (kts)	6.4
S12	04 Jun 2024	Wind Dir	S
S12	04 Jun 2024	Animal Life	Dog-1;
S12	04 Jun 2024	Floating	Foam
S12	04 Jun 2024	Current Direction	S
S12	04 Jun 2024	Water Temp (C)	17
S12	04 Jun 2024	High Tide Time	842
S12	04 Jun 2024	Low Tide Time	239
S12	04 Jun 2024	Comments	Water clear; Trash-1; Kelp;Seagrass;Debris; Person/Walker/Jogger-1; Original survey done in wrong app
S12	11 Jun 2024	Arrive Time	1043
S12	11 Jun 2024	Wind Speed (kts)	5.6
S12	11 Jun 2024	Wind Dir	W
S12	11 Jun 2024	Animal Life	
S12	11 Jun 2024	Floating	None
S12	11 Jun 2024	Current Direction	S
S12	11 Jun 2024	Water Temp (C)	16
S12	11 Jun 2024	High Tide Time	16
S12	11 Jun 2024	Low Tide Time	755
S12	11 Jun 2024	Comments	Water clear; Trash-1; Kelp;Seagrass;Debris; Person/Walker/Jogger-2
S12	20 Jun 2024	Arrive Time	953
S12	20 Jun 2024	Wind Speed (kts)	3.2
S12	20 Jun 2024	Wind Dir	W
S12	20 Jun 2024	Animal Life	
S12	20 Jun 2024	Floating	None
S12	20 Jun 2024	Current Direction	S
S12	20 Jun 2024	Water Temp (C)	16.4
S12	20 Jun 2024	High Tide Time	939
S12	20 Jun 2024	Low Tide Time	322
S12	20 Jun 2024	Comments	Water clear; Trash-1; Kelp;Seagrass;Debris; Person/Walker/Jogger-1
S12	25 Jun 2024	Arrive Time	945
S12	25 Jun 2024	Wind Speed (kts)	3.6
S12	25 Jun 2024	Wind Dir	W
S12	25 Jun 2024	Animal Life	
S12	25 Jun 2024	Floating	Plastic trash
S12	25 Jun 2024	Current Direction	S
S12	25 Jun 2024	Water Temp (C)	19
S12	25 Jun 2024	High Tide Time	1320
S12	25 Jun 2024	Low Tide Time	648
S12	25 Jun 2024	Comments	Water clear; Trash-2; Seagrass;Kelp;Debris
S8	04 Jun 2024	Arrive Time	1400
S8	04 Jun 2024	Wind Speed (kts)	7.3
S8	04 Jun 2024	Wind Dir	S
S8	04 Jun 2024	Animal Life	
S8	04 Jun 2024	Floating	Foam
S8	04 Jun 2024	Current Direction	S

Station	Date	Parameter	Value
S8	04 Jun 2024	Water Temp (C)	14.7
S8	04 Jun 2024	High Tide Time	842
S8	04 Jun 2024	Low Tide Time	239
S8	04 Jun 2024	Comments	Water clear; Trash-1; Kelp;Seagrass;Algae;Debris; Original survey done in wrong app; Sewage-like odor
S8	11 Jun 2024	Arrive Time	1112
S8	11 Jun 2024	Wind Speed (kts)	6.2
S8	11 Jun 2024	Wind Dir	NW
S8	11 Jun 2024	Animal Life	
S8	11 Jun 2024	Floatables	Foam
S8	11 Jun 2024	Current Direction	S
S8	11 Jun 2024	Water Temp (C)	16.4
S8	11 Jun 2024	High Tide Time	16
S8	11 Jun 2024	Low Tide Time	755
S8	11 Jun 2024	Comments	Water clear; Trash-2; Kelp;Seagrass;Debris
S8	20 Jun 2024	Arrive Time	1014
S8	20 Jun 2024	Wind Speed (kts)	3.6
S8	20 Jun 2024	Wind Dir	W
S8	20 Jun 2024	Animal Life	
S8	20 Jun 2024	Floatables	None
S8	20 Jun 2024	Current Direction	S
S8	20 Jun 2024	Water Temp (C)	18.8
S8	20 Jun 2024	High Tide Time	939
S8	20 Jun 2024	Low Tide Time	322
S8	20 Jun 2024	Comments	Water clear; Trash-1; Kelp;Seagrass;Debris
S8	25 Jun 2024	Arrive Time	1003
S8	25 Jun 2024	Wind Speed (kts)	5.4
S8	25 Jun 2024	Wind Dir	W
S8	25 Jun 2024	Animal Life	Bird-1;
S8	25 Jun 2024	Floatables	Foam
S8	25 Jun 2024	Current Direction	S
S8	25 Jun 2024	Water Temp (C)	23
S8	25 Jun 2024	High Tide Time	1320
S8	25 Jun 2024	Low Tide Time	648
S8	25 Jun 2024	Comments	Water clear; Trash-2; Kelp;Seagrass;Debris; Person/Walker/Jogger-2
S9	04 Jun 2024	Arrive Time	1401
S9	04 Jun 2024	Wind Speed (kts)	4
S9	04 Jun 2024	Wind Dir	W
S9	04 Jun 2024	Animal Life	
S9	04 Jun 2024	Floatables	Foam
S9	04 Jun 2024	Current Direction	S
S9	04 Jun 2024	Water Temp (C)	16.8
S9	04 Jun 2024	High Tide Time	842
S9	04 Jun 2024	Low Tide Time	239
S9	04 Jun 2024	Comments	Water clear; Trash-1; Kelp;Seagrass;Debris; Person/Walker/Jogger-1; Original survey done in wrong app
S9	11 Jun 2024	Arrive Time	1141
S9	11 Jun 2024	Wind Speed (kts)	5.6
S9	11 Jun 2024	Wind Dir	W
S9	11 Jun 2024	Animal Life	Bird-1;
S9	11 Jun 2024	Floatables	Foam
S9	11 Jun 2024	Current Direction	S
S9	11 Jun 2024	Water Temp (C)	16.3
S9	11 Jun 2024	High Tide Time	16
S9	11 Jun 2024	Low Tide Time	755

Station	Date	Parameter	Value
S9	11 Jun 2024	Comments	Water clear; Trash-1; Kelp;Seagrass;Debris
S9	20 Jun 2024	Arrive Time	1030
S9	20 Jun 2024	Wind Speed (kts)	4.4
S9	20 Jun 2024	Wind Dir	W
S9	20 Jun 2024	Animal Life	Bird-2;
S9	20 Jun 2024	Floatables	None
S9	20 Jun 2024	Current Direction	S
S9	20 Jun 2024	Water Temp (C)	18.2
S9	20 Jun 2024	High Tide Time	939
S9	20 Jun 2024	Low Tide Time	322
S9	20 Jun 2024	Comments	Water clear; Trash-1; Kelp;Seagrass; Person/Walker/Jogger-1
S9	25 Jun 2024	Arrive Time	1022
S9	25 Jun 2024	Wind Speed (kts)	3.3
S9	25 Jun 2024	Wind Dir	W
S9	25 Jun 2024	Animal Life	
S9	25 Jun 2024	Floatables	None
S9	25 Jun 2024	Current Direction	S
S9	25 Jun 2024	Water Temp (C)	22.3
S9	25 Jun 2024	High Tide Time	1320
S9	25 Jun 2024	Low Tide Time	648
S9	25 Jun 2024	Comments	Water clear; Trash-1; Kelp;Seagrass;Debris; Person/Walker/Jogger-2

Kelp Stations

Table 3.1

Summary of compliance with the Ocean Plan's 30-day Geometric Mean standard for fecal coliform bacteria at the SBOO 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	I19	I24	I25	I26	I32	I39	I40
01 Jun 2024	*785	*39	*15	*12	*33	*2	*373
02 Jun 2024	*785	*39	*15	*12	*33	*2	*373
03 Jun 2024	*785	*39	*15	*12	*33	*2	*373
04 Jun 2024	721	27	16	22	98	4	320
05 Jun 2024	*426	*51	*27	*40	*259	*5	*891
06 Jun 2024	*426	*51	*27	*40	*259	*5	*891
07 Jun 2024	*426	*51	*27	*40	*259	*5	*891
08 Jun 2024	*426	*51	*27	*40	*259	*5	*891
09 Jun 2024	*426	*51	*27	*40	*259	*5	*891
10 Jun 2024	*426	*51	*27	*40	*259	*5	*891
11 Jun 2024	540	41	17	22	138	4	1109
12 Jun 2024	*919	*18	*11	*21	*276	*4	*861
13 Jun 2024	*919	*18	*11	*21	*276	*4	*861
14 Jun 2024	*919	*18	*11	*21	*276	*4	*861
15 Jun 2024	*919	*18	*11	*21	*276	*4	*861
16 Jun 2024	*919	*18	*11	*21	*276	*4	*861
17 Jun 2024	270	11	8	13	184	4	311
18 Jun 2024	270	11	8	13	184	4	311
19 Jun 2024	*195	*6	*5	*6	*88	*5	*229
20 Jun 2024	*195	*6	*5	*6	*88	*5	*229
21 Jun 2024	*195	*6	*5	*6	*88	*5	*229
22 Jun 2024	*195	*6	*5	*6	*88	*5	*229
23 Jun 2024	*195	*6	*5	*6	*88	*5	*229
24 Jun 2024	*195	*6	*5	*6	*88	*5	*229
25 Jun 2024	374	10	7	10	154	6	230
26 Jun 2024	374	10	7	10	154	6	230
27 Jun 2024	*292	*11	*8	*15	*260	*8	*155
28 Jun 2024	*292	*11	*8	*15	*260	*8	*155
29 Jun 2024	*292	*11	*8	*15	*260	*8	*155
30 Jun 2024	*292	*11	*8	*15	*260	*8	*155

* Geometric mean calculated using n<5

Table 3.2

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

Date	I19	I24	I25	I26	I32	I39	I40
04 Jun 2024	E	IC	IC	IC	E	IC	IC
11 Jun 2024	E	IC	IC	IC	IC	IC	E
17 Jun 2024	IC	IC	IC	IC	IC	IC	IC
25 Jun 2024	E	IC	IC	IC	E	IC	E

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

Table 3.3

Summary of compliance with the Ocean Plan's 6-week Geometric Mean standard for *Enterococcus* at the SBOO kelp stations. Data are based on the geometric mean of the five most recent samples from each site over the previous 6 weeks unless otherwise noted (*). Values >30 CFU/100 mL exceed the standard.

Date	I19	I24	I25	I26	I32	I39	I40
01 Jun 2024	232	55	42	21	17	3	198
02 Jun 2024	232	55	42	21	17	3	198
03 Jun 2024	232	55	42	21	17	3	198
04 Jun 2024	387	35	13	16	37	3	151
05 Jun 2024	387	35	13	16	37	3	151
06 Jun 2024	387	35	13	16	37	3	151
07 Jun 2024	387	35	13	16	37	3	151
08 Jun 2024	387	35	13	16	37	3	151
09 Jun 2024	387	35	13	16	37	3	151
10 Jun 2024	387	35	13	16	37	3	151
11 Jun 2024	302	26	9	9	43	3	215
12 Jun 2024	302	26	9	9	43	3	215
13 Jun 2024	302	26	9	9	43	3	215
14 Jun 2024	302	26	9	9	43	3	215
15 Jun 2024	302	26	9	9	43	3	215
16 Jun 2024	302	26	9	9	43	3	215
17 Jun 2024	104	31	11	9	74	3	383
18 Jun 2024	104	31	11	9	74	3	383
19 Jun 2024	104	31	11	9	74	3	383
20 Jun 2024	104	31	11	9	74	3	383
21 Jun 2024	104	31	11	9	74	3	383
22 Jun 2024	104	31	11	9	74	3	383
23 Jun 2024	104	31	11	9	74	3	383
24 Jun 2024	114	14	7	8	143	3	273
25 Jun 2024	179	18	9	13	183	4	238
26 Jun 2024	179	18	9	13	183	4	238
27 Jun 2024	179	18	9	13	183	4	238
28 Jun 2024	179	18	9	13	183	4	238
29 Jun 2024	179	18	9	13	183	4	238
30 Jun 2024	179	18	9	13	183	4	238

* Geometric mean calculated using n<5

Table 3.4

Summary of compliance at the SBOO kelp stations with the Ocean Plan's Statistical Threshold Value standard for *Enterococcus* bacteria, which states that *Enterococcus* density shall not exceed 110 CFU/100 mL in more than 10% of samples per month.

Date	I19	I24	I25	I26	I32	I39	I40
June	E	IC	IC	IC	E	IC	E

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

Table 3.5

Summary of compliance with the Ocean Plan's 30-day Median standard for total coliform bacteria at the SBOO kelp stations. Data are based on the median of the five most recent samples from each site over the previous 30 days unless otherwise noted (*). Values >70 CFU/100 mL exceed the standard.

Date	119		124		125		126		132		139		140				
	2m	6m	2m	6m	2m	6m	2m	6m	2m	6m	2m	12m	18m	2m	6m	9m	
01 Jun 2024	*2700	*3850	*2	*130	*60	*70	*14	*70	*260	*20	*30	*170	*2	*3	*6800	*600	*470
02 Jun 2024	*2700	*3850	*2	*130	*60	*70	*14	*70	*260	*20	*30	*170	*2	*3	*6800	*600	*470
03 Jun 2024	*2700	*3850	*2	*130	*60	*70	*14	*70	*260	*20	*30	*170	*2	*3	*6800	*600	*470
04 Jun 2024	3000	3600	2	120	60	82	20	96	320	20	40	200	2	4	2200	600	400
05 Jun 2024	*3300	*1950	*91	*150	*60	*101	*30	*98	*460	*480	*8020	*5570	*11	*11	*7100	*1300	*500
06 Jun 2024	*3300	*1950	*91	*150	*60	*101	*30	*98	*460	*480	*8020	*5570	*11	*12	*7100	*1300	*500
07 Jun 2024	*3300	*1950	*91	*150	*60	*101	*30	*98	*460	*480	*8020	*5570	*11	*12	*7100	*1300	*500
08 Jun 2024	*3300	*1950	*91	*150	*60	*101	*30	*98	*460	*480	*8020	*5570	*11	*12	*7100	*1300	*500
09 Jun 2024	*3300	*1950	*91	*150	*60	*101	*30	*98	*460	*480	*8020	*5570	*11	*12	*7100	*1300	*500
10 Jun 2024	*3300	*1950	*91	*150	*60	*101	*30	*98	*460	*480	*8020	*5570	*11	*12	*7100	*1300	*500
11 Jun 2024	3000	3600	12	160	60	82	20	96	320	60	200	140	2	16	12000	2000	600
12 Jun 2024	*3300	*5500	*7	*140	*170	*81	*8	*68	*310	*500	*8100	*5530	*2	*10	*7100	*4200	*1700
13 Jun 2024	*3300	*5500	*7	*140	*170	*81	*8	*68	*310	*500	*8100	*5530	*2	*10	*7100	*4200	*1700
14 Jun 2024	*3300	*5500	*7	*140	*170	*81	*8	*68	*310	*500	*8100	*5530	*2	*10	*7100	*4200	*1700
15 Jun 2024	*3300	*5500	*7	*140	*170	*81	*8	*68	*310	*500	*8100	*5530	*2	*10	*7100	*4200	*1700
16 Jun 2024	*3300	*5500	*7	*140	*170	*81	*8	*68	*310	*500	*8100	*5530	*2	*10	*7100	*4200	*1700
17 Jun 2024	3000	3600	2	120	60	80	2	80	12	20	200	320	2	4	2200	2000	400
18 Jun 2024	3000	3600	2	120	60	80	2	80	12	20	200	320	2	4	2200	2000	400
19 Jun 2024	*2800	*1940	*7	*100	*60	*41	*8	*41	*7	*40	*110	*190	*2	*15	*7100	*1300	*370
20 Jun 2024	*2800	*1940	*7	*100	*60	*41	*8	*41	*7	*40	*110	*190	*2	*15	*7100	*1300	*370
21 Jun 2024	*2800	*1940	*7	*100	*60	*41	*8	*41	*7	*40	*110	*190	*2	*15	*7100	*1300	*370
22 Jun 2024	*2800	*1940	*7	*100	*60	*41	*8	*41	*7	*40	*110	*190	*2	*15	*7100	*1300	*370
23 Jun 2024	*2800	*1940	*7	*100	*60	*41	*8	*41	*7	*40	*110	*190	*2	*15	*7100	*1300	*370
24 Jun 2024	*2800	*1940	*7	*100	*60	*41	*8	*41	*7	*40	*110	*190	*2	*15	*7100	*1300	*370
25 Jun 2024	3000	3600	12	120	60	80	14	80	12	20	200	320	2	6	3800	600	400
26 Jun 2024	3000	3600	12	120	60	80	14	80	12	20	200	320	2	6	3800	600	400
27 Jun 2024	*2800	*7300	*96	*140	*170	*40	*81	*78	*121	*8030	*5100	*710	*31	*24	*3000	*1180	*430
28 Jun 2024	*2800	*7300	*96	*140	*170	*40	*81	*78	*121	*8030	*5100	*710	*31	*24	*3000	*1180	*430
29 Jun 2024	*2800	*7300	*96	*140	*170	*40	*81	*78	*121	*8030	*5100	*710	*31	*24	*3000	*1180	*430
30 Jun 2024	*2800	*7300	*96	*140	*170	*40	*81	*78	*121	*8030	*5100	*710	*31	*24	*3000	*1180	*430

* Median calculated using n<5

Table 3.6

Summary of compliance at the SBOO kelp stations with the Ocean Plan's Statistical Threshold Value for total coliform bacteria, which states that total coliform density shall not exceed 230 CFU/100 mL in more than 10% of samples per month.

	I19			I24			I25			I26			I32			I39			I40		
Date	2m	6m	11m	2m	6m	11m	2m	6m	9m	2m	6m	9m	2m	6m	9m	2m	12m	18m	2m	6m	9m
June	E	E	E	E	E	E	IC	E	E	E	E	E	E	E	E	E	E	IC	E	E	E

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

Table 3.7

Summary of water quality parameters at the SBOO kelp stations for each sample date. Densities of total coliform (Total), fecal coliform (Fecal), and *Enterococcus* (Entero) bacteria are reported as CFU/100 mL; 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
119	04 Jun 2024	1047	2	3000e	420	68
119	04 Jun 2024	1047	6	3600e	600	86
119	04 Jun 2024	1047	11	2800e	520	62
119	11 Jun 2024	1043	2	2600e	460	540
119	11 Jun 2024	1043	6	11000	2800e	800
119	11 Jun 2024	1043	11	5400	920	540
119	17 Jun 2024	1028	2	2e	2e	<2
119	17 Jun 2024	1028	6	2e	<2	<2
119	17 Jun 2024	1028	11	2e	2e	8e
119	25 Jun 2024	1008	2	>16000	6000	3000e
119	25 Jun 2024	1008	6	>16000	8200	1800e
119	25 Jun 2024	1008	11	5200	980	280e
124	04 Jun 2024	1105	2	180e	10e	10e
124	04 Jun 2024	1105	6	120e	4e	10e
124	04 Jun 2024	1105	11	60e	4e	12e
124	11 Jun 2024	1103	2	12e	8e	30e
124	11 Jun 2024	1103	6	160e	14e	74
124	11 Jun 2024	1103	11	280e	30e	92
124	17 Jun 2024	1046	2	<2	<2	<2
124	17 Jun 2024	1046	6	<2	<2	<2
124	17 Jun 2024	1046	11	<20	2e	12e
124	25 Jun 2024	1027	2	600e	100e	76
124	25 Jun 2024	1027	6	300e	44	30e
124	25 Jun 2024	1027	11	420	46	74
125	04 Jun 2024	1112	2	66	26e	2e
125	04 Jun 2024	1112	6	82	18e	<2
125	04 Jun 2024	1112	9	96	12e	8e
125	11 Jun 2024	1110	2	14e	<2	18e
125	11 Jun 2024	1110	6	80e	4e	18e
125	11 Jun 2024	1110	9	22e	2e	6e
125	17 Jun 2024	1052	2	<2	<2	<2
125	17 Jun 2024	1052	6	<2	<2	<2
125	17 Jun 2024	1052	9	60e	4e	14e
125	25 Jun 2024	1034	2	120e	22e	42
125	25 Jun 2024	1034	6	280e	44	36e
125	25 Jun 2024	1034	9	400	46	36e
126	04 Jun 2024	1121	2	1000e	280e	82
126	04 Jun 2024	1121	6	1800e	180e	64
126	04 Jun 2024	1121	9	800e	200e	82

Station	Date	Time	Depth	Total	Fecal	Enterococci
I26	11 Jun 2024	1121	2	<2	<2	<2
I26	11 Jun 2024	1121	6	<2	2e	<2
I26	11 Jun 2024	1121	9	2e	<2	2e
I26	17 Jun 2024	1101	2	<2	<2	<2
I26	17 Jun 2024	1101	6	<2	<2	<2
I26	17 Jun 2024	1101	9	2e	<2	2e
I26	25 Jun 2024	1042	2	260e	60	260e
I26	25 Jun 2024	1042	6	240e	42	54
I26	25 Jun 2024	1042	9	540	82	74
I32	04 Jun 2024	1134	2	>16000	>12000	11000
I32	04 Jun 2024	1134	6	>16000	9200	3200e
I32	04 Jun 2024	1134	9	11000	2600e	800
I32	11 Jun 2024	1133	2	60	6e	14e
I32	11 Jun 2024	1133	6	200e	16e	48
I32	11 Jun 2024	1133	9	40e	12e	24e
I32	17 Jun 2024	1110	2	12e	4e	56
I32	17 Jun 2024	1110	6	18e	6e	38e
I32	17 Jun 2024	1110	9	320e	98	58
I32	25 Jun 2024	1053	2	>16000	2600e	1000e
I32	25 Jun 2024	1053	6	10000	1400e	760
I32	25 Jun 2024	1053	9	1100	240e	120
I39	04 Jun 2024	1024	2	300e	18e	10e
I39	04 Jun 2024	1024	12	400e	68	28e
I39	04 Jun 2024	1024	18	60e	8e	4e
I39	11 Jun 2024	1021	2	<2	<2	<2
I39	11 Jun 2024	1021	12	<2	<2	<2
I39	11 Jun 2024	1021	18	16e	2e	<2
I39	17 Jun 2024	1003	2	<2	<2	<2
I39	17 Jun 2024	1003	12	28e	4e	8e
I39	17 Jun 2024	1003	18	4e	4e	<2
I39	25 Jun 2024	948	2	60e	38e	28e
I39	25 Jun 2024	948	12	20e	22e	10e
I39	25 Jun 2024	948	18	6e	4e	<2
I40	04 Jun 2024	1058	2	2200e	180e	32e
I40	04 Jun 2024	1058	6	2000e	140e	62
I40	04 Jun 2024	1058	9	400e	200e	18e
I40	11 Jun 2024	1054	2	>16000	6400	10000
I40	11 Jun 2024	1054	6	6400	820	800
I40	11 Jun 2024	1054	9	13000	800	1000e
I40	17 Jun 2024	1038	2	2e	2e	28e
I40	17 Jun 2024	1038	6	6e	2e	50
I40	17 Jun 2024	1038	9	80e	12e	240e
I40	25 Jun 2024	1019	2	3800e	580	200e
I40	25 Jun 2024	1019	6	360e	52	64
I40	25 Jun 2024	1019	9	460	60	100

ns = not sampled

ND = no data

Table 3.8

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

Station	Date	Parameter	Value
119	04 Jun 2024	Arrive Time	1047
119	04 Jun 2024	Depart Time	1051
119	04 Jun 2024	Air Temp (C)	15.8
119	04 Jun 2024	Visibility (mi)	9
119	04 Jun 2024	Wind Speed (kts)	9.2
119	04 Jun 2024	Wind Dir	S
119	04 Jun 2024	Sea State	Regular Swell
119	04 Jun 2024	High Tide Time	2000
119	04 Jun 2024	Low Tide Time	236
119	04 Jun 2024	Comments	Possible Red Tide
119	11 Jun 2024	Arrive Time	1043
119	11 Jun 2024	Depart Time	1047
119	11 Jun 2024	Air Temp (C)	16.5
119	11 Jun 2024	Visibility (mi)	5
119	11 Jun 2024	Wind Speed (kts)	8.2
119	11 Jun 2024	Wind Dir	SW
119	11 Jun 2024	Sea State	Calm
119	11 Jun 2024	High Tide Time	6
119	11 Jun 2024	Low Tide Time	748
119	11 Jun 2024	Comments	Possible Red Tide
119	17 Jun 2024	Arrive Time	1028
119	17 Jun 2024	Depart Time	1032
119	17 Jun 2024	Air Temp (C)	16.2
119	17 Jun 2024	Visibility (mi)	8
119	17 Jun 2024	Wind Speed (kts)	12.3
119	17 Jun 2024	Wind Dir	S
119	17 Jun 2024	Sea State	Confused Swell
119	17 Jun 2024	High Tide Time	1842
119	17 Jun 2024	Low Tide Time	124
119	17 Jun 2024	Comments	
119	25 Jun 2024	Arrive Time	1008
119	25 Jun 2024	Depart Time	1013
119	25 Jun 2024	Air Temp (C)	19.9
119	25 Jun 2024	Visibility (mi)	10
119	25 Jun 2024	Wind Speed (kts)	8.7
119	25 Jun 2024	Wind Dir	SE
119	25 Jun 2024	Sea State	Calm
119	25 Jun 2024	High Tide Time	6
119	25 Jun 2024	Low Tide Time	642
119	25 Jun 2024	Comments	
140	04 Jun 2024	Arrive Time	1058
140	04 Jun 2024	Depart Time	1101
140	04 Jun 2024	Air Temp (C)	16
140	04 Jun 2024	Visibility (mi)	9
140	04 Jun 2024	Wind Speed (kts)	6.8
140	04 Jun 2024	Wind Dir	S
140	04 Jun 2024	Sea State	Regular Swell
140	04 Jun 2024	High Tide Time	2000
140	04 Jun 2024	Low Tide Time	236
140	04 Jun 2024	Comments	Possible Red Tide
140	11 Jun 2024	Arrive Time	1054

Station	Date	Parameter	Value
140	11 Jun 2024	Depart Time	1100
140	11 Jun 2024	Air Temp (C)	16.5
140	11 Jun 2024	Visibility (mi)	5
140	11 Jun 2024	Wind Speed (kts)	8.2
140	11 Jun 2024	Wind Dir	W
140	11 Jun 2024	Sea State	Calm
140	11 Jun 2024	High Tide Time	6
140	11 Jun 2024	Low Tide Time	748
140	11 Jun 2024	Comments	
140	17 Jun 2024	Arrive Time	1038
140	17 Jun 2024	Depart Time	1041
140	17 Jun 2024	Air Temp (C)	16.2
140	17 Jun 2024	Visibility (mi)	8
140	17 Jun 2024	Wind Speed (kts)	15.6
140	17 Jun 2024	Wind Dir	SW
140	17 Jun 2024	Sea State	Confused Swell
140	17 Jun 2024	High Tide Time	1842
140	17 Jun 2024	Low Tide Time	124
140	17 Jun 2024	Comments	
140	25 Jun 2024	Arrive Time	1019
140	25 Jun 2024	Depart Time	1024
140	25 Jun 2024	Air Temp (C)	20.2
140	25 Jun 2024	Visibility (mi)	10
140	25 Jun 2024	Wind Speed (kts)	7.9
140	25 Jun 2024	Wind Dir	W
140	25 Jun 2024	Sea State	Calm
140	25 Jun 2024	High Tide Time	6
140	25 Jun 2024	Low Tide Time	642
140	25 Jun 2024	Comments	
124	04 Jun 2024	Arrive Time	1105
124	04 Jun 2024	Depart Time	1110
124	04 Jun 2024	Air Temp (C)	15.9
124	04 Jun 2024	Visibility (mi)	9
124	04 Jun 2024	Wind Speed (kts)	8.8
124	04 Jun 2024	Wind Dir	S
124	04 Jun 2024	Sea State	Regular Swell
124	04 Jun 2024	High Tide Time	2000
124	04 Jun 2024	Low Tide Time	236
124	04 Jun 2024	Comments	Possible Red Tide
124	11 Jun 2024	Arrive Time	1103
124	11 Jun 2024	Depart Time	1110
124	11 Jun 2024	Air Temp (C)	16.5
124	11 Jun 2024	Visibility (mi)	5
124	11 Jun 2024	Wind Speed (kts)	7.1
124	11 Jun 2024	Wind Dir	SW
124	11 Jun 2024	Sea State	Calm
124	11 Jun 2024	High Tide Time	6
124	11 Jun 2024	Low Tide Time	748
124	11 Jun 2024	Comments	
124	17 Jun 2024	Arrive Time	1046
124	17 Jun 2024	Depart Time	1049
124	17 Jun 2024	Air Temp (C)	16.2
124	17 Jun 2024	Visibility (mi)	8
124	17 Jun 2024	Wind Speed (kts)	13.7
124	17 Jun 2024	Wind Dir	S
124	17 Jun 2024	Sea State	Confused Swell

Station	Date	Parameter	Value
I24	17 Jun 2024	High Tide Time	1842
I24	17 Jun 2024	Low Tide Time	124
I24	17 Jun 2024	Comments	
I24	25 Jun 2024	Arrive Time	1027
I24	25 Jun 2024	Depart Time	1032
I24	25 Jun 2024	Air Temp (C)	20.5
I24	25 Jun 2024	Visibility (mi)	10
I24	25 Jun 2024	Wind Speed (kts)	15.1
I24	25 Jun 2024	Wind Dir	SW
I24	25 Jun 2024	Sea State	Calm
I24	25 Jun 2024	High Tide Time	6
I24	25 Jun 2024	Low Tide Time	642
I24	25 Jun 2024	Comments	
I25	04 Jun 2024	Arrive Time	1112
I25	04 Jun 2024	Depart Time	1115
I25	04 Jun 2024	Air Temp (C)	16.1
I25	04 Jun 2024	Visibility (mi)	9
I25	04 Jun 2024	Wind Speed (kts)	8.7
I25	04 Jun 2024	Wind Dir	SW
I25	04 Jun 2024	Sea State	Regular Swell
I25	04 Jun 2024	High Tide Time	2000
I25	04 Jun 2024	Low Tide Time	236
I25	04 Jun 2024	Comments	Possible Red Tide
I25	11 Jun 2024	Arrive Time	1110
I25	11 Jun 2024	Depart Time	1113
I25	11 Jun 2024	Air Temp (C)	16.4
I25	11 Jun 2024	Visibility (mi)	5
I25	11 Jun 2024	Wind Speed (kts)	9.7
I25	11 Jun 2024	Wind Dir	SW
I25	11 Jun 2024	Sea State	Calm
I25	11 Jun 2024	High Tide Time	6
I25	11 Jun 2024	Low Tide Time	748
I25	11 Jun 2024	Comments	
I25	17 Jun 2024	Arrive Time	1052
I25	17 Jun 2024	Depart Time	1054
I25	17 Jun 2024	Air Temp (C)	16.2
I25	17 Jun 2024	Visibility (mi)	8
I25	17 Jun 2024	Wind Speed (kts)	11.8
I25	17 Jun 2024	Wind Dir	S
I25	17 Jun 2024	Sea State	Confused Swell
I25	17 Jun 2024	High Tide Time	1842
I25	17 Jun 2024	Low Tide Time	124
I25	17 Jun 2024	Comments	
I25	25 Jun 2024	Arrive Time	1034
I25	25 Jun 2024	Depart Time	1038
I25	25 Jun 2024	Air Temp (C)	20
I25	25 Jun 2024	Visibility (mi)	10
I25	25 Jun 2024	Wind Speed (kts)	8.7
I25	25 Jun 2024	Wind Dir	SW
I25	25 Jun 2024	Sea State	Calm
I25	25 Jun 2024	High Tide Time	6
I25	25 Jun 2024	Low Tide Time	642
I25	25 Jun 2024	Comments	
I39	04 Jun 2024	Arrive Time	1024
I39	04 Jun 2024	Depart Time	1028

Station	Date	Parameter	Value
139	04 Jun 2024	Air Temp (C)	15.7
139	04 Jun 2024	Visibility (mi)	9
139	04 Jun 2024	Wind Speed (kts)	8.6
139	04 Jun 2024	Wind Dir	S
139	04 Jun 2024	Sea State	Regular Swell
139	04 Jun 2024	High Tide Time	2000
139	04 Jun 2024	Low Tide Time	236
139	04 Jun 2024	Comments	
139	11 Jun 2024	Arrive Time	1021
139	11 Jun 2024	Depart Time	1025
139	11 Jun 2024	Air Temp (C)	16.4
139	11 Jun 2024	Visibility (mi)	5
139	11 Jun 2024	Wind Speed (kts)	7.8
139	11 Jun 2024	Wind Dir	W
139	11 Jun 2024	Sea State	Calm
139	11 Jun 2024	High Tide Time	6
139	11 Jun 2024	Low Tide Time	748
139	11 Jun 2024	Comments	
139	17 Jun 2024	Arrive Time	1003
139	17 Jun 2024	Depart Time	1007
139	17 Jun 2024	Air Temp (C)	16.1
139	17 Jun 2024	Visibility (mi)	8
139	17 Jun 2024	Wind Speed (kts)	14.9
139	17 Jun 2024	Wind Dir	S
139	17 Jun 2024	Sea State	Confused Swell
139	17 Jun 2024	High Tide Time	1842
139	17 Jun 2024	Low Tide Time	124
139	17 Jun 2024	Comments	
139	25 Jun 2024	Arrive Time	948
139	25 Jun 2024	Depart Time	953
139	25 Jun 2024	Air Temp (C)	20
139	25 Jun 2024	Visibility (mi)	10
139	25 Jun 2024	Wind Speed (kts)	5.6
139	25 Jun 2024	Wind Dir	SW
139	25 Jun 2024	Sea State	Calm
139	25 Jun 2024	High Tide Time	6
139	25 Jun 2024	Low Tide Time	642
139	25 Jun 2024	Comments	
126	04 Jun 2024	Arrive Time	1121
126	04 Jun 2024	Depart Time	1125
126	04 Jun 2024	Air Temp (C)	16.1
126	04 Jun 2024	Visibility (mi)	9
126	04 Jun 2024	Wind Speed (kts)	8.1
126	04 Jun 2024	Wind Dir	S
126	04 Jun 2024	Sea State	Regular Swell
126	04 Jun 2024	High Tide Time	2000
126	04 Jun 2024	Low Tide Time	236
126	04 Jun 2024	Comments	
126	11 Jun 2024	Arrive Time	1121
126	11 Jun 2024	Depart Time	1123
126	11 Jun 2024	Air Temp (C)	16.7
126	11 Jun 2024	Visibility (mi)	5
126	11 Jun 2024	Wind Speed (kts)	6.9
126	11 Jun 2024	Wind Dir	W
126	11 Jun 2024	Sea State	Calm
126	11 Jun 2024	High Tide Time	6

Station	Date	Parameter	Value
I26	11 Jun 2024	Low Tide Time	748
I26	11 Jun 2024	Comments	
I26	17 Jun 2024	Arrive Time	1101
I26	17 Jun 2024	Depart Time	1109
I26	17 Jun 2024	Air Temp (C)	16.3
I26	17 Jun 2024	Visibility (mi)	8
I26	17 Jun 2024	Wind Speed (kts)	11.8
I26	17 Jun 2024	Wind Dir	S
I26	17 Jun 2024	Sea State	Confused Swell
I26	17 Jun 2024	High Tide Time	1842
I26	17 Jun 2024	Low Tide Time	124
I26	17 Jun 2024	Comments	
I26	25 Jun 2024	Arrive Time	1042
I26	25 Jun 2024	Depart Time	1046
I26	25 Jun 2024	Air Temp (C)	20.3
I26	25 Jun 2024	Visibility (mi)	10
I26	25 Jun 2024	Wind Speed (kts)	5.3
I26	25 Jun 2024	Wind Dir	S
I26	25 Jun 2024	Sea State	Calm
I26	25 Jun 2024	High Tide Time	6
I26	25 Jun 2024	Low Tide Time	642
I26	25 Jun 2024	Comments	
I32	04 Jun 2024	Arrive Time	1134
I32	04 Jun 2024	Depart Time	1139
I32	04 Jun 2024	Air Temp (C)	16.1
I32	04 Jun 2024	Visibility (mi)	9
I32	04 Jun 2024	Wind Speed (kts)	10.3
I32	04 Jun 2024	Wind Dir	S
I32	04 Jun 2024	Sea State	Regular Swell
I32	04 Jun 2024	High Tide Time	2000
I32	04 Jun 2024	Low Tide Time	236
I32	04 Jun 2024	Comments	Possible Red Tide
I32	11 Jun 2024	Arrive Time	1133
I32	11 Jun 2024	Depart Time	1138
I32	11 Jun 2024	Air Temp (C)	16.6
I32	11 Jun 2024	Visibility (mi)	5
I32	11 Jun 2024	Wind Speed (kts)	7.8
I32	11 Jun 2024	Wind Dir	W
I32	11 Jun 2024	Sea State	Calm
I32	11 Jun 2024	High Tide Time	6
I32	11 Jun 2024	Low Tide Time	748
I32	11 Jun 2024	Comments	
I32	17 Jun 2024	Arrive Time	1110
I32	17 Jun 2024	Depart Time	1112
I32	17 Jun 2024	Air Temp (C)	16.4
I32	17 Jun 2024	Visibility (mi)	8
I32	17 Jun 2024	Wind Speed (kts)	10.7
I32	17 Jun 2024	Wind Dir	SW
I32	17 Jun 2024	Sea State	Confused Swell
I32	17 Jun 2024	High Tide Time	1842
I32	17 Jun 2024	Low Tide Time	124
I32	17 Jun 2024	Comments	
I32	25 Jun 2024	Arrive Time	1053
I32	25 Jun 2024	Depart Time	1056
I32	25 Jun 2024	Air Temp (C)	20.3

Station	Date	Parameter	Value
132	25 Jun 2024	Visibility (mi)	10
132	25 Jun 2024	Wind Speed (kts)	8.6
132	25 Jun 2024	Wind Dir	S
132	25 Jun 2024	Sea State	Calm
132	25 Jun 2024	High Tide Time	6
132	25 Jun 2024	Low Tide Time	642
132	25 Jun 2024	Comments	

Table 3.9

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

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/l)	Sal (ppt)	pH	Dens (s-t)	Chlor (µg/L)
I19	04 Jun 2024	1	17.03	33.39	10.0	33.61	8.3	24.4	50.78
I19	04 Jun 2024	2	17.02	34.30	9.9	33.61	8.3	24.4	47.89
I19	04 Jun 2024	3	17.02	37.77	9.9	33.61	8.3	24.4	45.20
I19	04 Jun 2024	4	17.02	38.57	9.9	33.61	8.3	24.4	46.89
I19	04 Jun 2024	5	17.02	39.01	9.9	33.61	8.3	24.4	46.75
I19	04 Jun 2024	6	17.02	39.28	9.9	33.61	8.3	24.4	47.43
I19	04 Jun 2024	7	17.02	39.65	9.9	33.61	8.3	24.4	47.03
I19	04 Jun 2024	8	17.00	40.68	9.8	33.61	8.3	24.4	45.85
I19	04 Jun 2024	9	16.97	48.19	9.8	33.62	8.3	24.5	36.08
I19	04 Jun 2024	10	16.95	55.75	9.8	33.62	8.3	24.5	26.64
I19	11 Jun 2024	1	18.49	44.88	10.4	33.49	8.4	24.0	35.26
I19	11 Jun 2024	2	18.50	44.50	10.4	33.49	8.4	24.0	35.85
I19	11 Jun 2024	3	18.49	44.50	10.4	33.49	8.4	24.0	36.20
I19	11 Jun 2024	4	18.49	44.61	10.3	33.50	8.4	24.0	36.77
I19	11 Jun 2024	5	18.45	43.92	10.0	33.51	8.4	24.0	36.55
I19	11 Jun 2024	6	18.20	46.05	9.5	33.54	8.3	24.1	29.41
I19	11 Jun 2024	7	18.00	56.54	8.7	33.56	8.3	24.2	20.10
I19	11 Jun 2024	8	17.76	63.40	7.2	33.56	8.3	24.2	16.74
I19	11 Jun 2024	9	16.26	61.76	5.3	33.67	8.1	24.7	13.29
I19	11 Jun 2024	10	14.99	53.72	4.6	33.65	7.9	24.9	8.17
I19	17 Jun 2024	1	17.77	75.73	8.4	33.56	8.3	24.2	1.87
I19	17 Jun 2024	2	17.77	75.47	8.3	33.56	8.3	24.2	1.93
I19	17 Jun 2024	3	17.75	75.73	8.4	33.56	8.3	24.2	2.23
I19	17 Jun 2024	4	17.74	76.73	8.4	33.56	8.3	24.2	2.83
I19	17 Jun 2024	5	17.73	77.23	8.4	33.56	8.3	24.2	3.33
I19	17 Jun 2024	6	17.73	77.26	8.4	33.56	8.3	24.2	4.13
I19	17 Jun 2024	7	17.71	77.42	8.4	33.56	8.3	24.2	4.39
I19	17 Jun 2024	8	17.70	78.08	8.3	33.56	8.3	24.2	4.61
I19	17 Jun 2024	9	17.65	78.34	8.2	33.56	8.3	24.3	4.60
I19	17 Jun 2024	10	17.58	77.81	8.1	33.57	8.3	24.3	4.32
I19	25 Jun 2024	1	18.07	21.62	13.6	33.54	8.6	24.1	61.04
I19	25 Jun 2024	2	17.79	26.47	12.6	33.53	8.5	24.2	58.71
I19	25 Jun 2024	3	17.56	31.88	11.9	33.54	8.5	24.3	52.30
I19	25 Jun 2024	4	17.49	34.67	11.5	33.54	8.4	24.3	48.73
I19	25 Jun 2024	5	17.44	37.29	11.4	33.53	8.4	24.3	44.93
I19	25 Jun 2024	6	17.33	39.02	11.8	33.55	8.4	24.3	37.47
I19	25 Jun 2024	7	16.97	45.03	12.3	33.60	8.5	24.4	27.14
I19	25 Jun 2024	8	16.71	55.78	12.5	33.59	8.4	24.5	21.19
I19	25 Jun 2024	9	16.25	58.02	12.4	33.61	8.4	24.6	16.82
I19	25 Jun 2024	10	15.86	64.91	11.8	33.61	8.4	24.7	9.65
I40	04 Jun 2024	1	16.96	51.73	11.1	33.61	8.4	24.5	31.26
I40	04 Jun 2024	2	16.97	51.61	11.1	33.61	8.4	24.5	30.89
I40	04 Jun 2024	3	16.95	52.09	11.0	33.61	8.4	24.5	28.75
I40	04 Jun 2024	4	16.94	53.12	10.9	33.61	8.4	24.5	26.27
I40	04 Jun 2024	5	16.91	57.91	10.7	33.62	8.4	24.5	20.37
I40	04 Jun 2024	6	16.90	64.02	10.6	33.62	8.4	24.5	16.22
I40	04 Jun 2024	7	16.85	67.49	10.4	33.62	8.4	24.5	12.16
I40	04 Jun 2024	8	16.83	74.06	10.2	33.63	8.3	24.5	8.13
I40	04 Jun 2024	9	16.82	80.78	10.1	33.63	8.3	24.5	5.19
I40	04 Jun 2024	10	16.82	83.68	10.1	33.63	8.3	24.5	3.57

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/l)	Sal (ppt)	pH	Dens (s-t)	Chlor (µg/L)
I40	11 Jun 2024	1	18.60	49.92	8.0	32.96	8.3	23.6	12.25
I40	11 Jun 2024	2	18.52	50.87	7.8	33.11	8.3	23.7	14.35
I40	11 Jun 2024	3	18.37	47.61	8.1	33.53	8.3	24.1	15.04
I40	11 Jun 2024	4	18.30	70.72	8.3	33.56	8.3	24.1	8.97
I40	11 Jun 2024	5	17.93	74.67	6.9	33.57	8.2	24.2	9.41
I40	11 Jun 2024	6	16.86	70.99	4.8	33.62	8.0	24.5	10.31
I40	11 Jun 2024	7	16.14	70.93	4.2	33.63	7.9	24.7	8.11
I40	11 Jun 2024	8	15.59	76.20	4.2	33.62	7.9	24.8	4.57
I40	11 Jun 2024	9	15.10	73.41	3.7	33.63	7.8	24.9	3.31
I40	17 Jun 2024	1	17.80	75.23	8.7	33.56	8.3	24.2	1.26
I40	17 Jun 2024	2	17.79	76.29	8.7	33.56	8.3	24.2	1.44
I40	17 Jun 2024	3	17.78	75.96	8.7	33.56	8.3	24.2	1.79
I40	17 Jun 2024	4	17.78	74.68	8.6	33.56	8.3	24.2	2.08
I40	17 Jun 2024	5	17.78	73.66	8.6	33.56	8.3	24.2	2.43
I40	17 Jun 2024	6	17.78	72.85	8.6	33.56	8.3	24.2	2.70
I40	17 Jun 2024	7	17.78	73.58	8.6	33.56	8.3	24.2	2.86
I40	17 Jun 2024	8	17.77	72.59	8.6	33.56	8.3	24.2	2.91
I40	17 Jun 2024	9	17.76	67.40	8.6	33.56	8.3	24.2	2.88
I40	17 Jun 2024	10	17.74	64.45	8.5	33.57	8.3	24.2	2.89
I40	25 Jun 2024	1	17.62	33.06	13.9	33.59	8.5	24.3	43.85
I40	25 Jun 2024	2	17.45	37.36	13.4	33.58	8.5	24.3	40.61
I40	25 Jun 2024	3	16.59	39.43	13.3	33.63	8.5	24.6	37.34
I40	25 Jun 2024	4	16.32	41.89	12.9	33.61	8.4	24.6	32.79
I40	25 Jun 2024	5	15.81	47.75	12.2	33.62	8.4	24.7	27.15
I40	25 Jun 2024	6	15.41	56.24	11.2	33.62	8.3	24.8	22.43
I40	25 Jun 2024	7	15.29	62.01	10.7	33.61	8.3	24.8	13.86
I40	25 Jun 2024	8	15.30	65.22	10.5	33.60	8.3	24.8	8.97
I40	25 Jun 2024	9	15.29	63.75	10.5	33.61	8.3	24.8	7.20
I40	25 Jun 2024	10	15.29	63.27	10.5	33.61	8.3	24.8	6.64
I24	04 Jun 2024	1	16.72	74.62	10.6	33.63	8.3	24.5	8.60
I24	04 Jun 2024	2	16.71	74.52	10.6	33.63	8.3	24.5	9.38
I24	04 Jun 2024	3	16.71	74.88	10.6	33.63	8.3	24.5	10.58
I24	04 Jun 2024	4	16.70	75.68	10.6	33.63	8.3	24.5	11.30
I24	04 Jun 2024	5	16.70	76.03	10.5	33.63	8.3	24.5	10.95
I24	04 Jun 2024	6	16.69	76.24	10.4	33.63	8.3	24.5	10.46
I24	04 Jun 2024	7	16.65	76.80	10.3	33.63	8.3	24.5	8.65
I24	04 Jun 2024	8	16.63	80.52	10.2	33.63	8.3	24.6	6.91
I24	04 Jun 2024	9	16.62	83.59	10.0	33.63	8.3	24.6	6.34
I24	04 Jun 2024	10	16.32	84.31	9.6	33.64	8.3	24.6	5.19
I24	04 Jun 2024	11	16.40	79.90	9.5	33.62	8.2	24.6	4.54
I24	11 Jun 2024	1	18.47	47.67	11.8	33.51	8.5	24.0	27.55
I24	11 Jun 2024	2	18.47	47.84	11.8	33.51	8.5	24.0	28.13
I24	11 Jun 2024	3	18.45	47.98	11.6	33.51	8.5	24.0	28.83
I24	11 Jun 2024	4	18.39	49.25	11.3	33.51	8.4	24.0	26.86
I24	11 Jun 2024	5	18.36	53.28	11.0	33.51	8.4	24.0	23.21
I24	11 Jun 2024	6	18.27	57.52	10.4	33.50	8.4	24.1	16.47
I24	11 Jun 2024	7	18.12	63.51	9.2	33.50	8.4	24.1	10.74
I24	11 Jun 2024	8	17.55	67.04	7.8	33.56	8.3	24.3	7.14
I24	11 Jun 2024	9	15.79	73.09	6.5	33.67	8.1	24.8	4.16
I24	11 Jun 2024	10	15.41	82.13	6.4	33.62	8.0	24.8	2.85
I24	17 Jun 2024	1	18.12	85.36	8.7	33.58	8.3	24.2	0.97
I24	17 Jun 2024	2	18.11	85.87	8.7	33.58	8.3	24.2	0.99
I24	17 Jun 2024	3	18.09	85.88	8.7	33.58	8.3	24.2	1.08
I24	17 Jun 2024	4	18.06	85.81	8.7	33.58	8.3	24.2	1.23
I24	17 Jun 2024	5	18.01	85.50	8.7	33.58	8.3	24.2	1.49
I24	17 Jun 2024	6	17.96	85.30	8.7	33.58	8.3	24.2	1.78

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/l)	Sal (ppt)	pH	Dens (s-t)	Chlor (µg/L)
I24	17 Jun 2024	7	17.93	84.80	8.7	33.57	8.3	24.2	2.04
I24	17 Jun 2024	8	17.87	84.62	8.7	33.58	8.3	24.2	2.13
I24	17 Jun 2024	9	17.74	83.71	8.2	33.57	8.3	24.2	2.28
I24	17 Jun 2024	10	16.04	76.57	7.6	33.65	8.2	24.7	2.12
I24	25 Jun 2024	1	17.74	33.52	15.3	33.57	8.6	24.2	38.79
I24	25 Jun 2024	2	17.39	32.08	14.6	33.60	8.6	24.3	35.94
I24	25 Jun 2024	3	15.80	44.18	11.8	33.67	8.4	24.8	29.22
I24	25 Jun 2024	4	14.94	56.73	9.9	33.62	8.2	24.9	17.93
I24	25 Jun 2024	5	14.85	69.08	9.3	33.61	8.2	24.9	13.92
I24	25 Jun 2024	6	14.84	70.16	9.1	33.60	8.2	24.9	11.83
I24	25 Jun 2024	7	14.67	74.28	8.7	33.61	8.2	25.0	7.88
I24	25 Jun 2024	8	14.65	74.79	8.5	33.61	8.1	25.0	4.97
I24	25 Jun 2024	9	14.63	74.25	8.4	33.61	8.1	25.0	4.41
I25	04 Jun 2024	1	16.68	68.89	10.6	33.63	8.3	24.5	17.40
I25	04 Jun 2024	2	16.67	69.08	10.6	33.63	8.3	24.5	17.51
I25	04 Jun 2024	3	16.67	69.51	10.5	33.63	8.3	24.5	17.34
I25	04 Jun 2024	4	16.67	70.60	10.5	33.63	8.3	24.5	17.14
I25	04 Jun 2024	5	16.66	71.17	10.4	33.63	8.3	24.5	16.95
I25	04 Jun 2024	6	16.63	71.56	10.2	33.63	8.3	24.6	14.93
I25	04 Jun 2024	7	16.56	73.95	10.1	33.63	8.3	24.6	11.48
I25	04 Jun 2024	8	16.56	79.14	10.0	33.63	8.3	24.6	8.04
I25	04 Jun 2024	9	16.57	80.93	9.9	33.63	8.3	24.6	7.36
I25	11 Jun 2024	1	18.38	77.04	11.1	33.59	8.4	24.1	5.50
I25	11 Jun 2024	2	18.35	77.13	11.1	33.59	8.4	24.1	6.64
I25	11 Jun 2024	3	18.27	76.67	11.1	33.59	8.4	24.1	7.64
I25	11 Jun 2024	4	18.21	77.13	10.8	33.59	8.4	24.1	7.22
I25	11 Jun 2024	5	17.94	78.70	10.2	33.60	8.4	24.2	6.08
I25	11 Jun 2024	6	17.73	78.93	9.5	33.58	8.3	24.3	5.35
I25	11 Jun 2024	7	17.61	77.61	8.8	33.59	8.3	24.3	4.56
I25	11 Jun 2024	8	16.96	77.79	7.5	33.59	8.2	24.4	4.27
I25	11 Jun 2024	9	15.08	78.85	6.7	33.70	8.1	25.0	3.27
I25	17 Jun 2024	1	18.15	81.77	8.6	33.55	8.3	24.1	0.88
I25	17 Jun 2024	2	18.13	82.92	8.6	33.58	8.3	24.1	0.90
I25	17 Jun 2024	3	18.14	86.06	8.6	33.58	8.3	24.1	1.00
I25	17 Jun 2024	4	18.11	86.03	8.6	33.58	8.3	24.2	1.09
I25	17 Jun 2024	5	18.05	85.72	8.7	33.58	8.3	24.2	1.34
I25	17 Jun 2024	6	18.03	85.32	8.5	33.58	8.3	24.2	1.58
I25	17 Jun 2024	7	17.63	84.75	8.0	33.59	8.3	24.3	1.80
I25	17 Jun 2024	8	16.30	79.41	7.6	33.64	8.2	24.6	1.82
I25	25 Jun 2024	1	18.23	32.64	15.5	33.56	8.6	24.1	35.93
I25	25 Jun 2024	2	17.51	37.69	15.6	33.61	8.6	24.3	33.14
I25	25 Jun 2024	3	16.46	50.88	14.7	33.63	8.5	24.6	28.39
I25	25 Jun 2024	4	15.90	55.15	12.7	33.61	8.4	24.7	22.32
I25	25 Jun 2024	5	15.02	63.71	10.4	33.64	8.3	24.9	16.86
I25	25 Jun 2024	6	14.78	69.77	9.3	33.61	8.2	24.9	11.64
I25	25 Jun 2024	7	14.76	72.52	9.1	33.60	8.2	24.9	8.76
I25	25 Jun 2024	8	14.76	73.51	8.9	33.61	8.2	24.9	7.41
I25	25 Jun 2024	9	14.77	74.04	8.9	33.61	8.2	25.0	6.98
I39	04 Jun 2024	1	16.76	77.81	10.4	33.64	8.3	24.5	9.20
I39	04 Jun 2024	2	16.74	77.61	10.4	33.64	8.3	24.5	9.43
I39	04 Jun 2024	3	16.73	77.99	10.4	33.64	8.3	24.5	9.81
I39	04 Jun 2024	4	16.72	78.07	10.3	33.64	8.3	24.5	9.78
I39	04 Jun 2024	5	16.72	78.16	10.3	33.64	8.3	24.5	10.02
I39	04 Jun 2024	6	16.73	78.26	10.3	33.64	8.3	24.5	10.05
I39	04 Jun 2024	7	16.73	78.14	10.3	33.64	8.3	24.5	9.92

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/l)	Sal (ppt)	pH	Dens (s-t)	Chlor (µg/L)
I39	04 Jun 2024	8	16.71	78.32	10.3	33.64	8.3	24.5	9.96
I39	04 Jun 2024	9	16.70	78.45	10.3	33.64	8.3	24.5	9.93
I39	04 Jun 2024	10	16.69	78.74	10.2	33.64	8.3	24.5	9.92
I39	04 Jun 2024	11	16.63	78.94	10.1	33.64	8.3	24.6	9.76
I39	04 Jun 2024	12	16.52	78.94	10.0	33.64	8.3	24.6	9.54
I39	04 Jun 2024	13	16.37	79.12	9.8	33.65	8.3	24.6	8.22
I39	04 Jun 2024	14	16.27	81.01	9.6	33.64	8.3	24.6	6.78
I39	04 Jun 2024	15	16.19	81.77	9.3	33.65	8.3	24.7	6.90
I39	04 Jun 2024	16	15.77	81.25	8.6	33.66	8.2	24.8	6.80
I39	04 Jun 2024	17	14.52	82.54	7.6	33.70	8.1	25.1	5.77
I39	04 Jun 2024	18	14.04	86.14	6.7	33.66	8.0	25.1	4.86
I39	11 Jun 2024	1	18.35	85.06	10.8	33.59	8.4	24.1	1.43
I39	11 Jun 2024	2	18.23	86.75	10.4	33.59	8.4	24.1	1.47
I39	11 Jun 2024	3	18.08	88.85	9.9	33.58	8.3	24.2	1.38
I39	11 Jun 2024	4	17.93	92.30	9.6	33.58	8.3	24.2	1.36
I39	11 Jun 2024	5	17.73	94.02	9.2	33.57	8.3	24.2	1.31
I39	11 Jun 2024	6	17.50	95.30	9.1	33.57	8.3	24.3	1.34
I39	11 Jun 2024	7	17.06	95.37	9.1	33.59	8.2	24.4	2.05
I39	11 Jun 2024	8	16.84	92.56	9.0	33.59	8.2	24.5	4.58
I39	11 Jun 2024	9	16.81	89.03	8.9	33.59	8.2	24.5	5.06
I39	11 Jun 2024	10	16.80	89.73	8.9	33.59	8.2	24.5	4.87
I39	11 Jun 2024	11	16.79	90.60	8.7	33.60	8.2	24.5	4.32
I39	11 Jun 2024	12	16.77	91.46	8.5	33.60	8.2	24.5	3.60
I39	11 Jun 2024	13	16.75	91.60	8.3	33.60	8.2	24.5	3.01
I39	11 Jun 2024	14	16.57	91.39	7.7	33.61	8.2	24.5	2.77
I39	11 Jun 2024	15	15.26	91.10	6.7	33.65	8.1	24.9	2.29
I39	11 Jun 2024	16	13.87	91.33	5.8	33.70	8.0	25.2	2.17
I39	11 Jun 2024	17	13.59	91.75	5.3	33.64	7.9	25.2	1.85
I39	11 Jun 2024	18	13.50	91.78	5.2	33.63	7.9	25.2	1.52
I39	17 Jun 2024	1	17.40	86.54	8.5	33.56	8.3	24.3	0.68
I39	17 Jun 2024	2	17.39	88.70	8.5	33.57	8.3	24.3	0.68
I39	17 Jun 2024	3	17.37	89.11	8.5	33.57	8.3	24.3	0.74
I39	17 Jun 2024	4	17.26	89.15	8.5	33.57	8.3	24.4	0.85
I39	17 Jun 2024	5	17.18	88.95	8.5	33.57	8.3	24.4	1.05
I39	17 Jun 2024	6	16.93	88.46	8.4	33.58	8.3	24.4	1.43
I39	17 Jun 2024	7	16.72	87.87	8.4	33.58	8.2	24.5	1.90
I39	17 Jun 2024	8	16.35	86.57	8.2	33.59	8.2	24.6	4.46
I39	17 Jun 2024	9	15.26	74.81	8.1	33.61	8.2	24.8	8.95
I39	17 Jun 2024	10	14.39	75.93	7.6	33.61	8.2	25.0	7.89
I39	17 Jun 2024	11	14.17	82.88	6.6	33.59	8.1	25.1	6.04
I39	17 Jun 2024	12	13.07	79.46	5.2	33.63	7.9	25.3	4.53
I39	17 Jun 2024	13	12.89	80.84	4.5	33.61	7.8	25.3	3.45
I39	17 Jun 2024	14	11.55	83.67	4.4	33.65	7.8	25.6	2.90
I39	17 Jun 2024	15	11.39	93.10	4.3	33.63	7.8	25.6	2.16
I39	17 Jun 2024	16	11.02	93.68	4.3	33.66	7.8	25.7	1.52
I39	17 Jun 2024	17	10.96	93.90	4.2	33.65	7.8	25.7	1.13
I39	17 Jun 2024	18	10.96	92.24	4.2	33.66	7.8	25.7	0.98
I39	25 Jun 2024	1	17.67	33.93	12.6	33.54	8.4	24.2	25.91
I39	25 Jun 2024	2	16.60	41.30	12.1	33.63	8.4	24.6	22.62
I39	25 Jun 2024	3	15.71	59.47	10.3	33.63	8.3	24.8	17.21
I39	25 Jun 2024	4	14.51	65.69	8.2	33.66	8.2	25.0	16.98
I39	25 Jun 2024	5	13.38	68.50	6.4	33.67	8.0	25.3	13.47
I39	25 Jun 2024	6	13.23	75.32	5.7	33.64	7.9	25.3	9.81
I39	25 Jun 2024	7	13.17	78.67	5.4	33.63	7.9	25.3	7.14
I39	25 Jun 2024	8	13.08	81.41	5.1	33.64	7.9	25.3	5.59
I39	25 Jun 2024	9	13.02	81.95	4.7	33.64	7.8	25.3	4.95
I39	25 Jun 2024	10	12.93	81.88	4.4	33.64	7.8	25.4	4.12
I39	25 Jun 2024	11	12.80	81.79	4.2	33.65	7.8	25.4	3.34

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/l)	Sal (ppt)	pH	Dens (s-t)	Chlor (µg/L)
I39	25 Jun 2024	12	12.65	81.59	4.0	33.65	7.8	25.4	2.72
I39	25 Jun 2024	13	12.61	83.54	4.0	33.65	7.8	25.4	2.41
I39	25 Jun 2024	14	12.59	84.23	3.9	33.66	7.8	25.4	2.13
I39	25 Jun 2024	15	12.54	85.10	3.9	33.66	7.8	25.4	1.60
I39	25 Jun 2024	16	12.40	87.12	3.9	33.66	7.8	25.5	1.02
I39	25 Jun 2024	17	12.30	90.91	3.9	33.66	7.8	25.5	0.77
I39	25 Jun 2024	18	12.17	92.29	3.7	33.65	7.7	25.5	0.64
I26	04 Jun 2024	1	16.96	64.29	10.5	33.63	8.3	24.5	15.00
I26	04 Jun 2024	2	16.96	64.16	10.5	33.63	8.3	24.5	16.14
I26	04 Jun 2024	3	16.95	64.32	10.5	33.63	8.3	24.5	16.84
I26	04 Jun 2024	4	16.94	64.72	10.4	33.63	8.3	24.5	15.93
I26	04 Jun 2024	5	16.93	65.64	10.4	33.63	8.3	24.5	15.82
I26	04 Jun 2024	6	16.93	67.61	10.4	33.63	8.3	24.5	15.01
I26	04 Jun 2024	7	16.92	68.02	10.4	33.63	8.3	24.5	13.97
I26	04 Jun 2024	8	16.92	69.19	10.4	33.63	8.3	24.5	12.54
I26	04 Jun 2024	9	16.91	70.92	10.3	33.63	8.3	24.5	10.59
I26	11 Jun 2024	1	18.42	82.02	11.0	33.58	8.4	24.1	2.62
I26	11 Jun 2024	2	18.42	81.58	11.0	33.58	8.4	24.1	2.74
I26	11 Jun 2024	3	18.38	81.35	11.1	33.58	8.4	24.1	3.97
I26	11 Jun 2024	4	18.36	80.52	11.0	33.58	8.4	24.1	5.98
I26	11 Jun 2024	5	18.11	77.12	10.6	33.60	8.4	24.2	7.75
I26	11 Jun 2024	6	17.80	77.54	9.7	33.61	8.4	24.3	7.76
I26	11 Jun 2024	7	16.72	81.41	7.7	33.66	8.3	24.5	5.38
I26	11 Jun 2024	8	14.57	84.08	6.2	33.69	8.0	25.1	3.13
I26	11 Jun 2024	9	14.47	85.27	6.0	33.64	8.0	25.0	2.12
I26	17 Jun 2024	1	18.11	67.66	7.6	33.50	8.3	24.1	1.06
I26	17 Jun 2024	2	18.10	84.41	7.8	33.55	8.3	24.1	1.06
I26	17 Jun 2024	3	18.10	85.54	7.9	33.55	8.3	24.1	1.04
I26	17 Jun 2024	4	18.04	85.50	7.8	33.58	8.3	24.2	0.95
I26	17 Jun 2024	5	18.01	84.97	8.1	33.58	8.3	24.2	1.01
I26	17 Jun 2024	6	17.92	84.26	8.3	33.59	8.3	24.2	1.30
I26	17 Jun 2024	7	17.54	83.33	8.0	33.59	8.3	24.3	1.60
I26	17 Jun 2024	8	16.69	82.93	7.4	33.59	8.2	24.5	1.64
I26	17 Jun 2024	9	14.89	80.97	7.0	33.60	8.1	24.9	1.39
I26	25 Jun 2024	1	20.29	51.01	13.5	33.29	8.5	23.4	8.16
I26	25 Jun 2024	2	19.64	39.52	13.3	33.47	8.5	23.7	31.92
I26	25 Jun 2024	3	18.79	31.91	13.5	33.57	8.5	24.0	31.86
I26	25 Jun 2024	4	17.88	59.99	14.1	33.61	8.5	24.2	20.80
I26	25 Jun 2024	5	16.52	63.68	13.3	33.63	8.5	24.6	14.84
I26	25 Jun 2024	6	15.74	70.72	11.8	33.60	8.4	24.7	8.73
I26	25 Jun 2024	7	15.42	74.16	10.4	33.59	8.3	24.8	5.74
I26	25 Jun 2024	8	14.96	76.05	8.9	33.60	8.2	24.9	4.00
I26	25 Jun 2024	9	14.54	77.37	7.9	33.61	8.1	25.0	2.97
I32	04 Jun 2024	1	17.21	14.51	9.9	33.42	8.4	24.3	63.87
I32	04 Jun 2024	2	17.19	14.71	9.8	33.45	8.4	24.3	63.67
I32	04 Jun 2024	3	17.17	16.18	9.5	33.48	8.4	24.3	63.29
I32	04 Jun 2024	4	17.16	16.78	9.3	33.51	8.4	24.3	63.00
I32	04 Jun 2024	5	17.16	19.32	9.3	33.52	8.4	24.3	62.64
I32	04 Jun 2024	6	17.17	20.48	9.3	33.52	8.4	24.3	62.29
I32	04 Jun 2024	7	17.17	20.38	9.4	33.56	8.4	24.4	62.51
I32	04 Jun 2024	8	17.17	21.00	9.5	33.60	8.4	24.4	61.84
I32	04 Jun 2024	9	17.16	25.37	9.7	33.61	8.4	24.4	59.23
I32	04 Jun 2024	10	17.14	33.87	9.8	33.62	8.4	24.4	48.53
I32	11 Jun 2024	1	18.63	38.59	11.8	33.48	8.5	24.0	38.49
I32	11 Jun 2024	2	18.65	35.92	12.0	33.48	8.5	24.0	41.06

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/l)	Sal (ppt)	pH	Dens (s-t)	Chlor (µg/L)
I32	11 Jun 2024	3	18.60	35.43	11.5	33.49	8.5	24.0	42.14
I32	11 Jun 2024	4	18.39	36.97	10.4	33.48	8.5	24.0	37.47
I32	11 Jun 2024	5	18.12	41.39	9.1	33.47	8.4	24.1	28.78
I32	11 Jun 2024	6	17.42	47.76	7.6	33.55	8.3	24.3	17.45
I32	11 Jun 2024	7	16.62	58.12	6.3	33.62	8.1	24.5	8.11
I32	11 Jun 2024	8	16.14	61.94	5.4	33.62	8.1	24.7	4.39
I32	11 Jun 2024	9	14.94	57.92	4.8	33.67	8.0	25.0	2.85
I32	11 Jun 2024	10	14.38	51.43	4.7	33.65	7.9	25.1	2.18
I32	17 Jun 2024	1	17.73	74.37	6.7	33.45	8.2	24.2	1.13
I32	17 Jun 2024	2	17.72	74.26	7.1	33.48	8.2	24.2	1.03
I32	17 Jun 2024	3	17.69	73.74	7.5	33.50	8.3	24.2	1.03
I32	17 Jun 2024	4	17.67	74.32	7.9	33.51	8.3	24.2	1.24
I32	17 Jun 2024	5	17.64	74.80	8.1	33.52	8.3	24.2	1.55
I32	17 Jun 2024	6	17.54	76.32	8.2	33.56	8.3	24.3	1.82
I32	17 Jun 2024	7	17.48	80.23	8.3	33.56	8.3	24.3	2.07
I32	17 Jun 2024	8	17.41	81.20	8.3	33.57	8.3	24.3	2.17
I32	17 Jun 2024	9	17.40	80.59	8.1	33.57	8.3	24.3	2.26
I32	17 Jun 2024	10	16.30	79.07	7.7	33.64	8.2	24.6	2.36
I32	25 Jun 2024	1	18.50	59.95	13.7	33.48	8.5	24.0	8.87
I32	25 Jun 2024	2	18.49	60.35	13.8	33.49	8.5	24.0	9.52
I32	25 Jun 2024	3	18.44	60.89	13.9	33.50	8.5	24.0	9.91
I32	25 Jun 2024	4	18.31	62.53	14.1	33.55	8.5	24.1	8.84
I32	25 Jun 2024	5	17.84	65.82	12.3	33.56	8.5	24.2	7.66
I32	25 Jun 2024	6	17.21	69.75	10.3	33.57	8.4	24.4	6.44
I32	25 Jun 2024	7	16.36	71.25	9.5	33.60	8.3	24.6	5.78
I32	25 Jun 2024	8	15.95	73.38	8.9	33.57	8.2	24.7	4.80
I32	25 Jun 2024	9	15.07	76.36	8.2	33.64	8.2	24.9	3.73
I32	25 Jun 2024	10	14.39	73.05	7.7	33.60	8.1	25.0	3.34

NA = not available

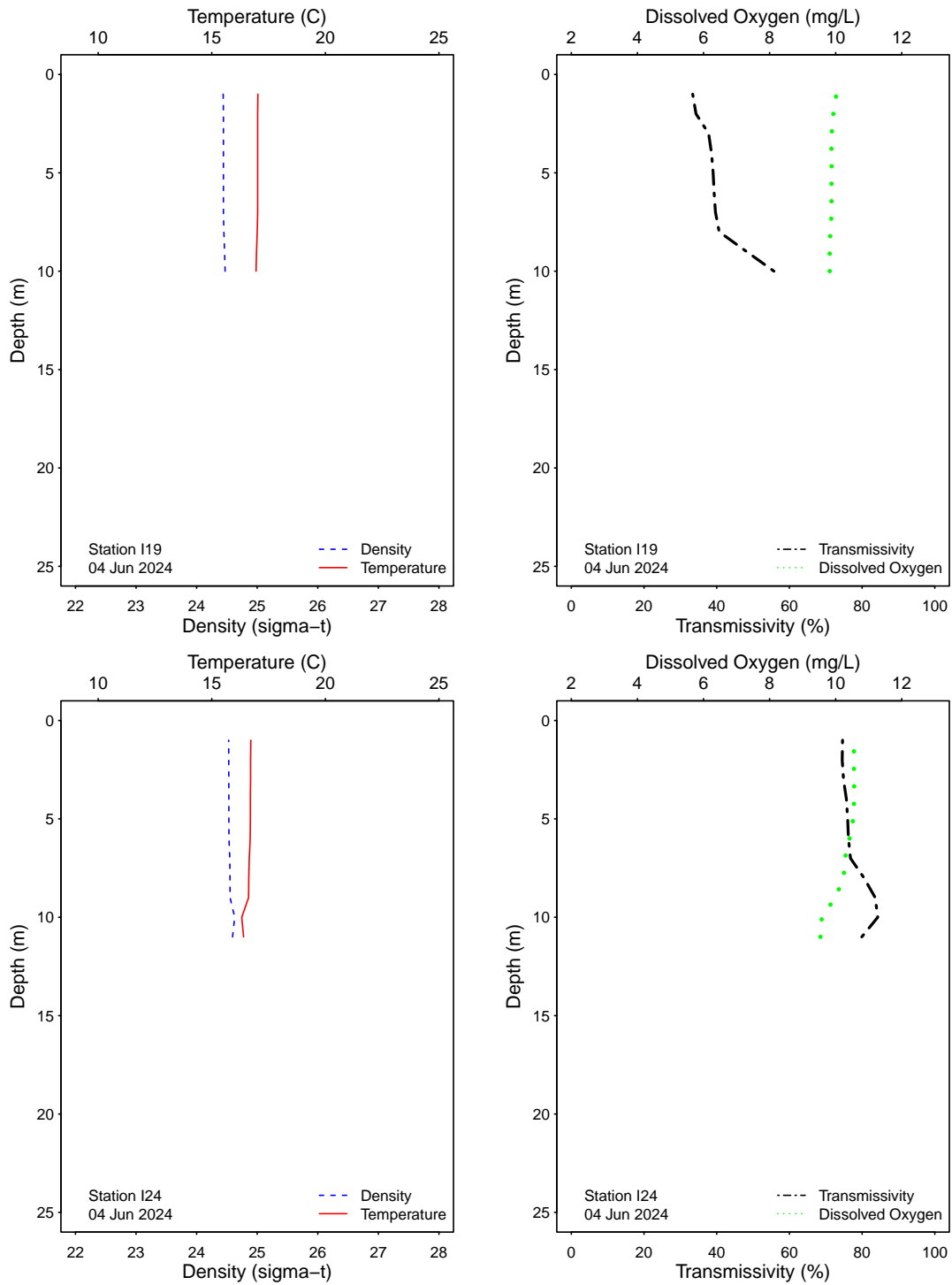


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

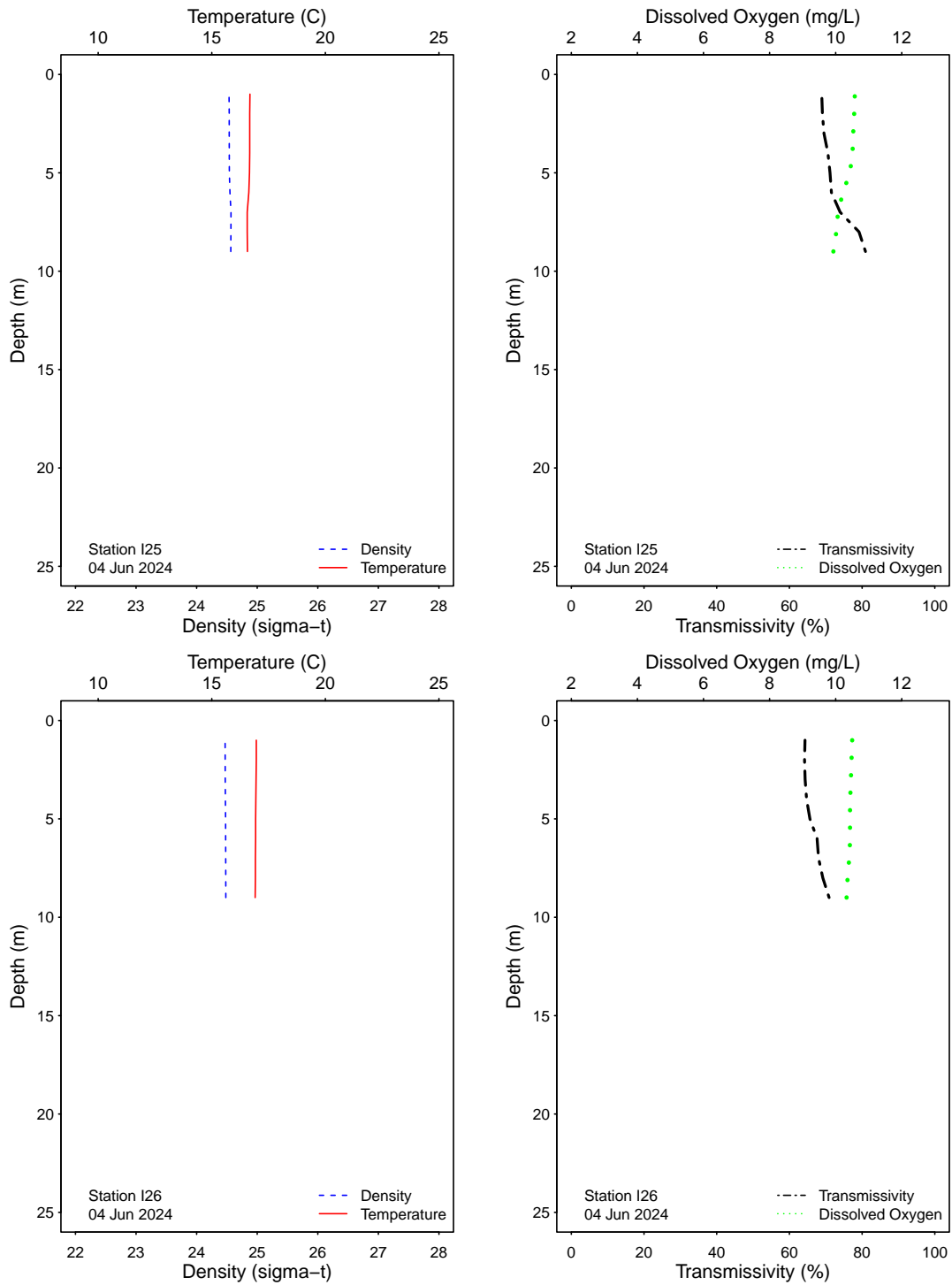


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

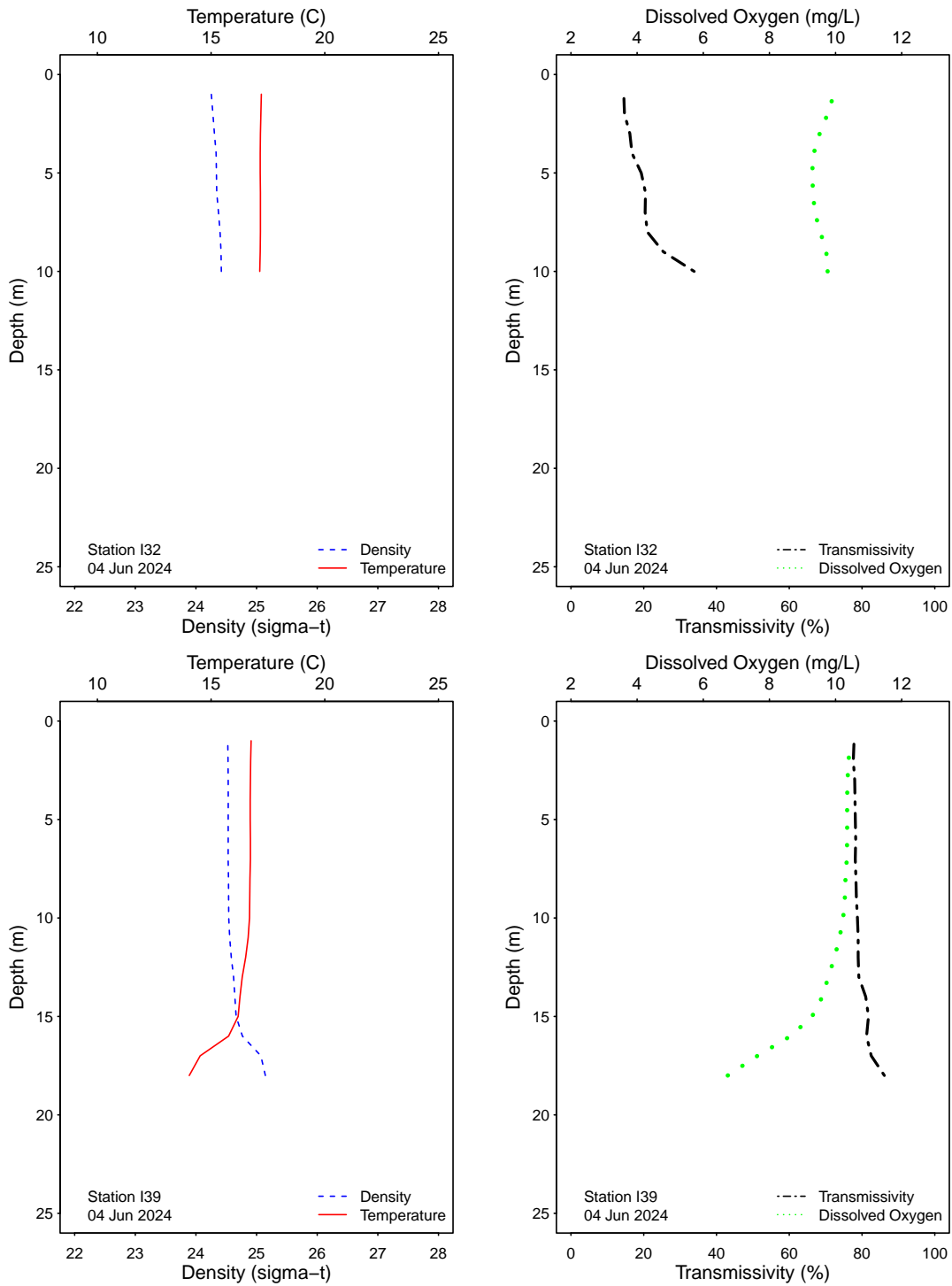


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

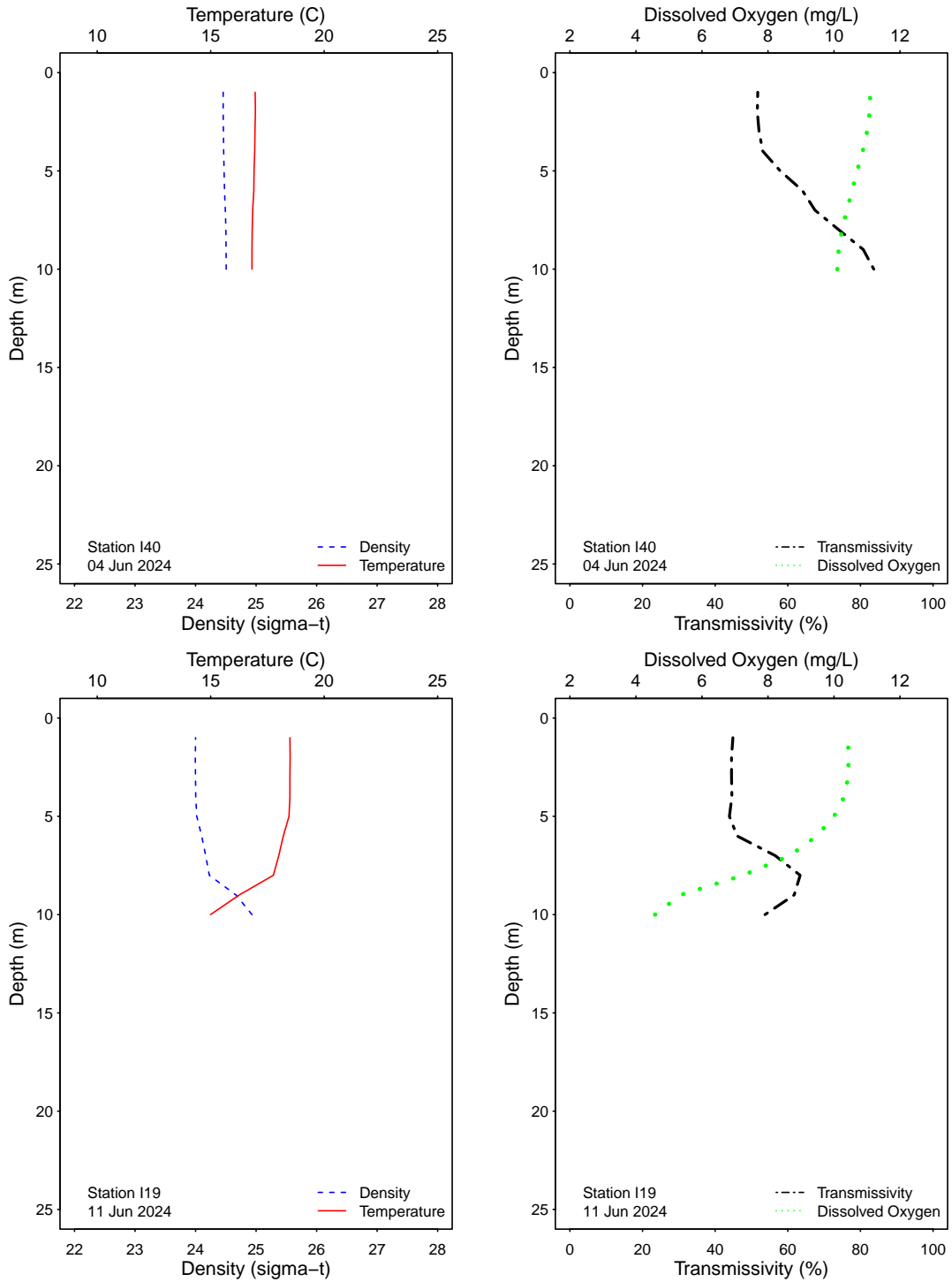


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

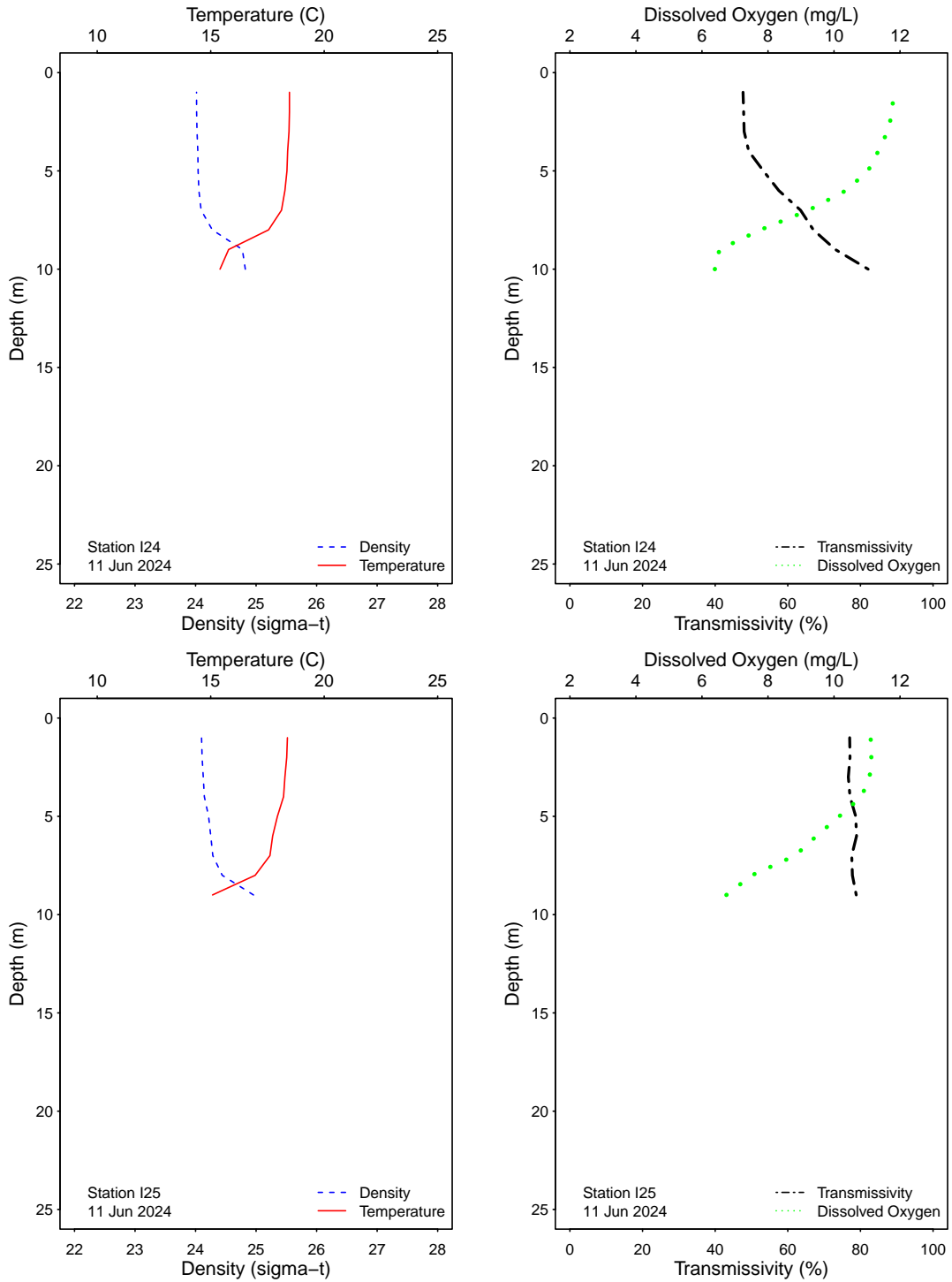


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

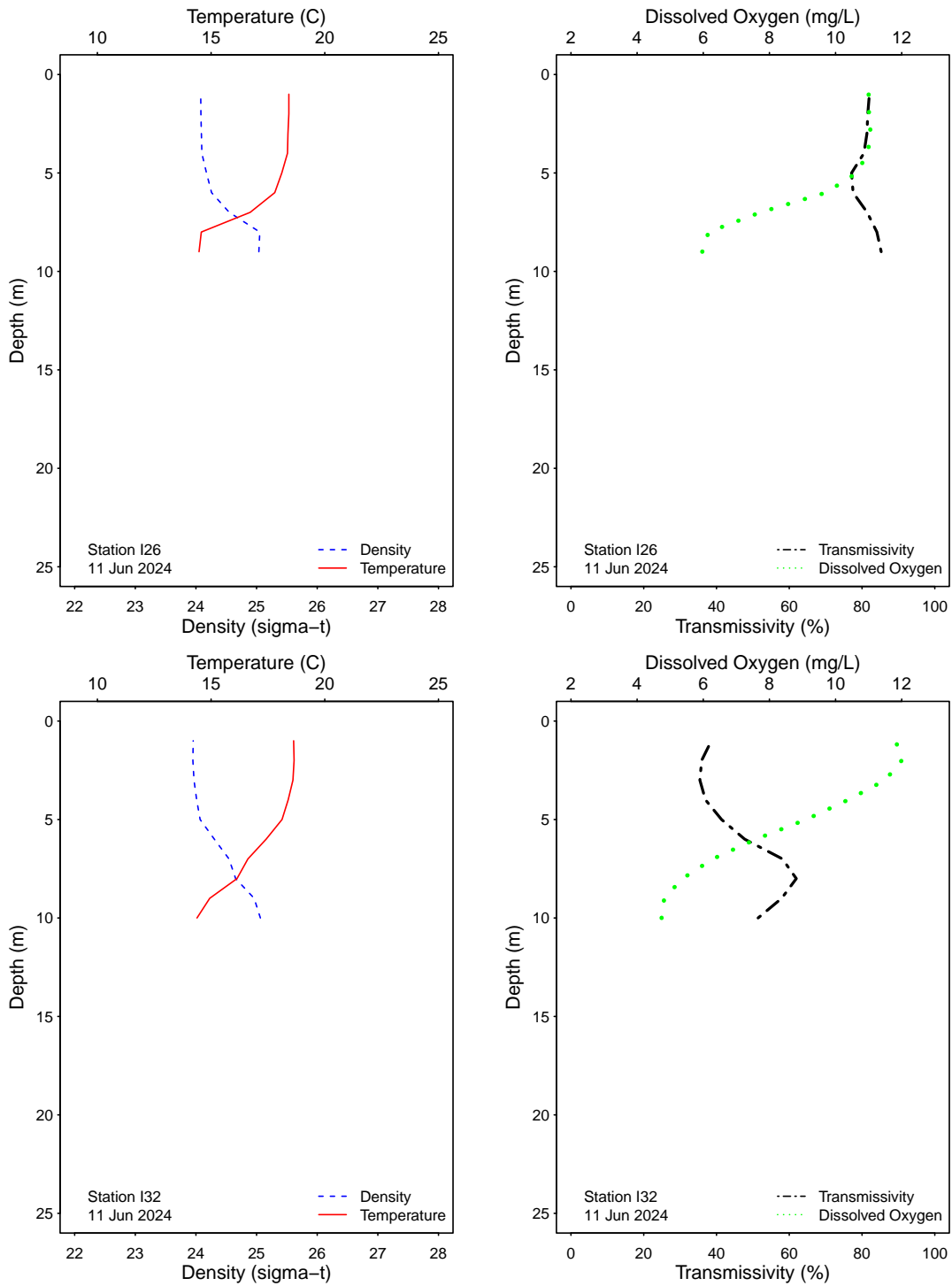


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

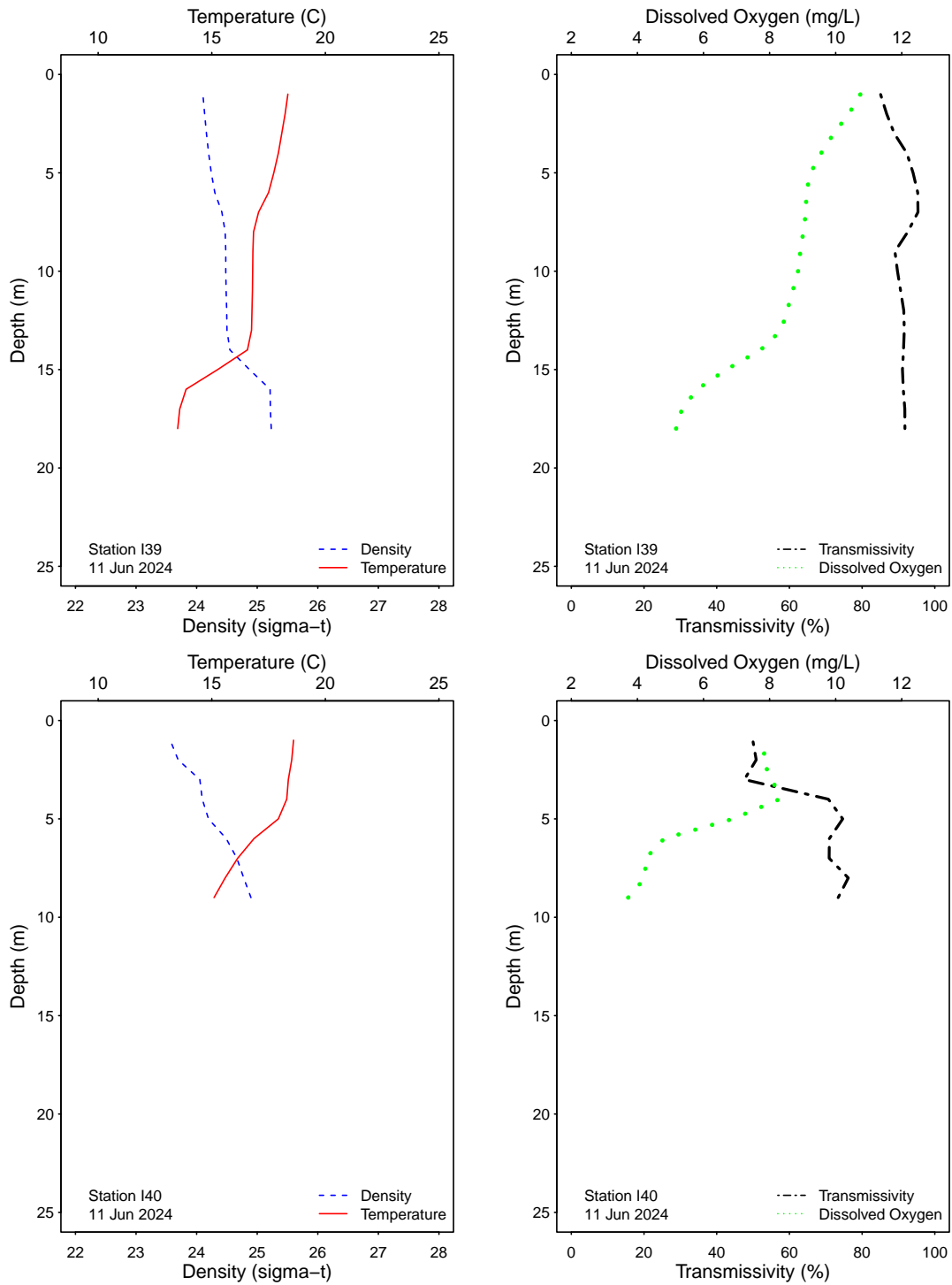


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

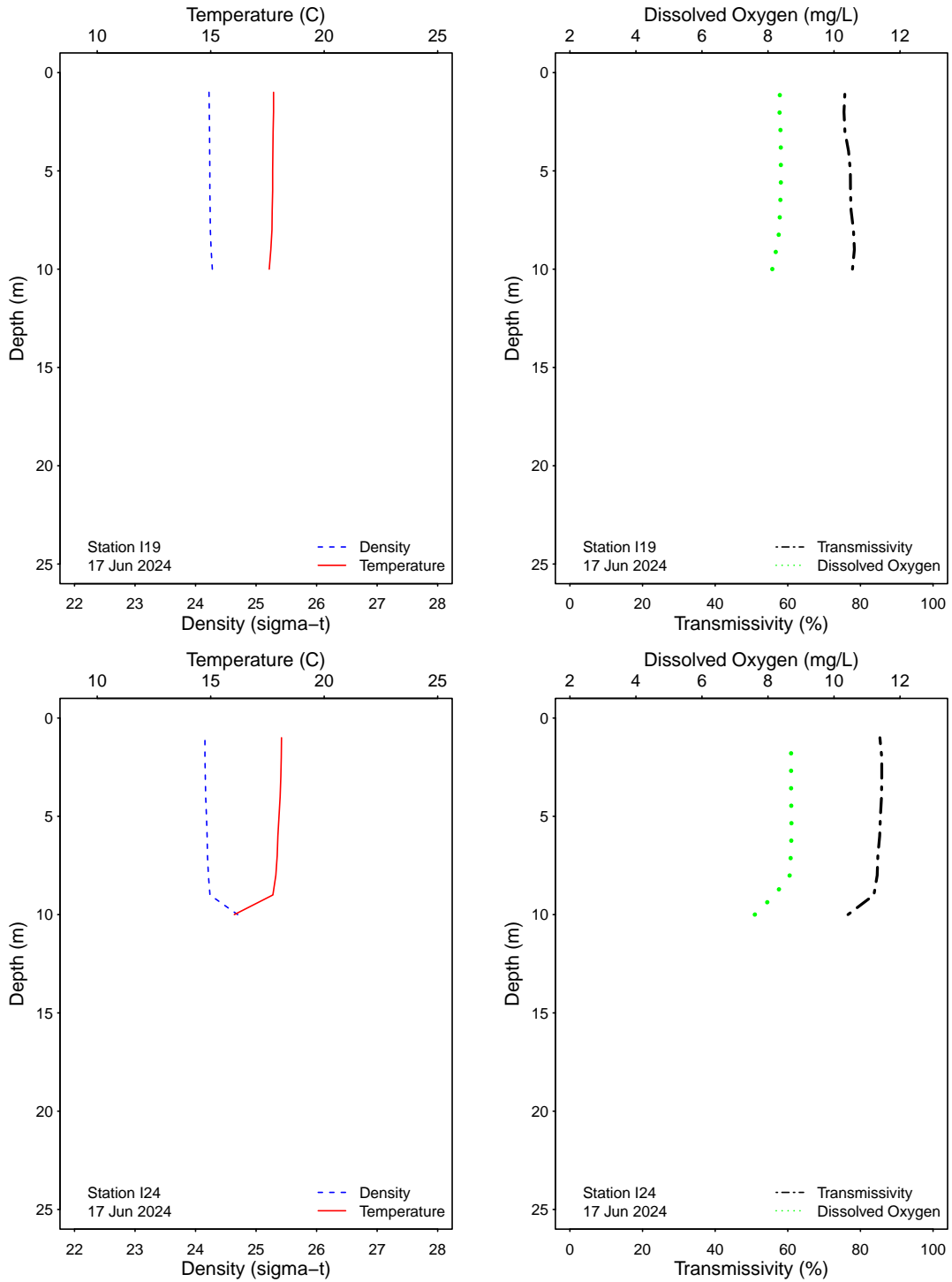


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

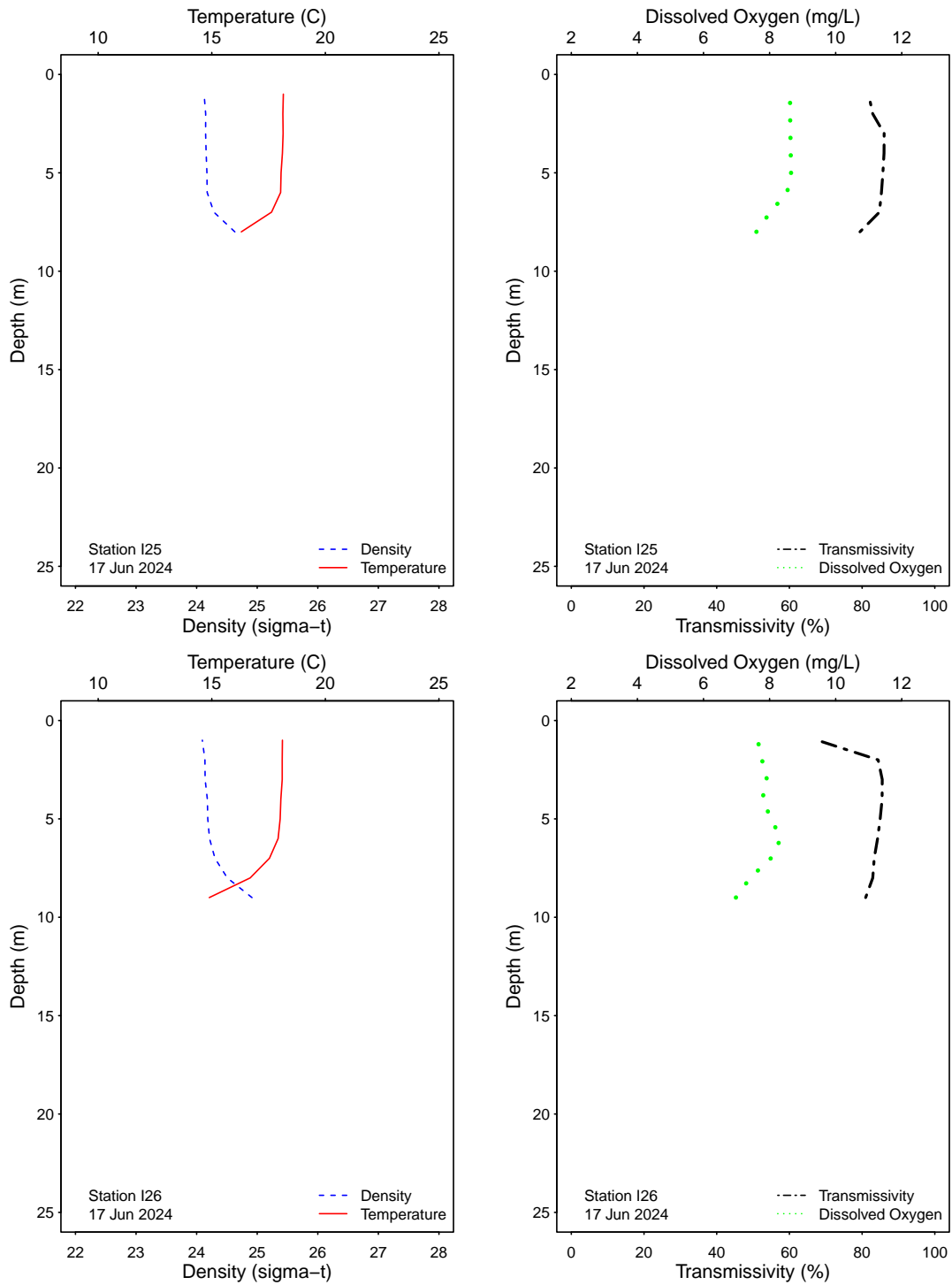


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

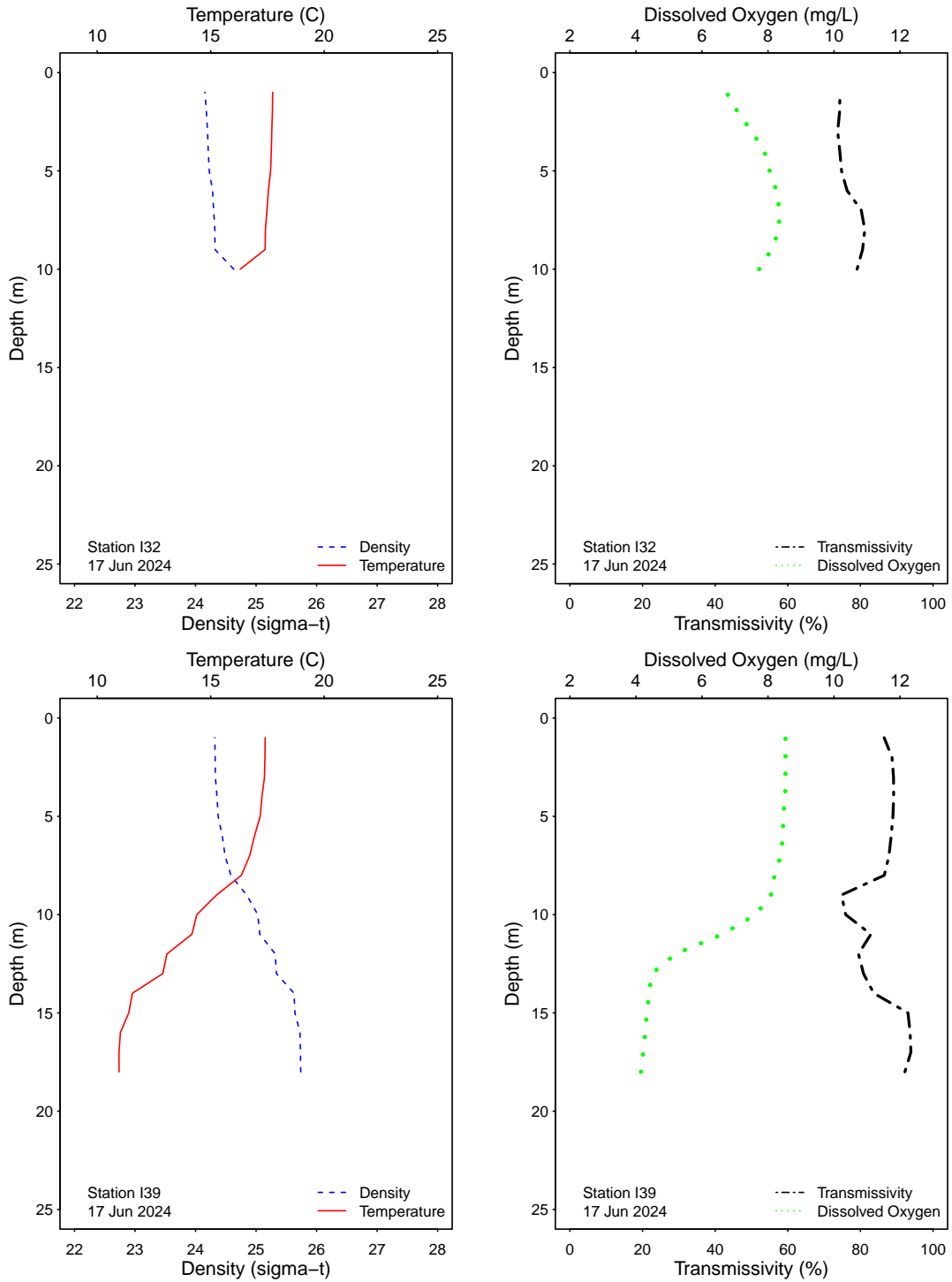


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

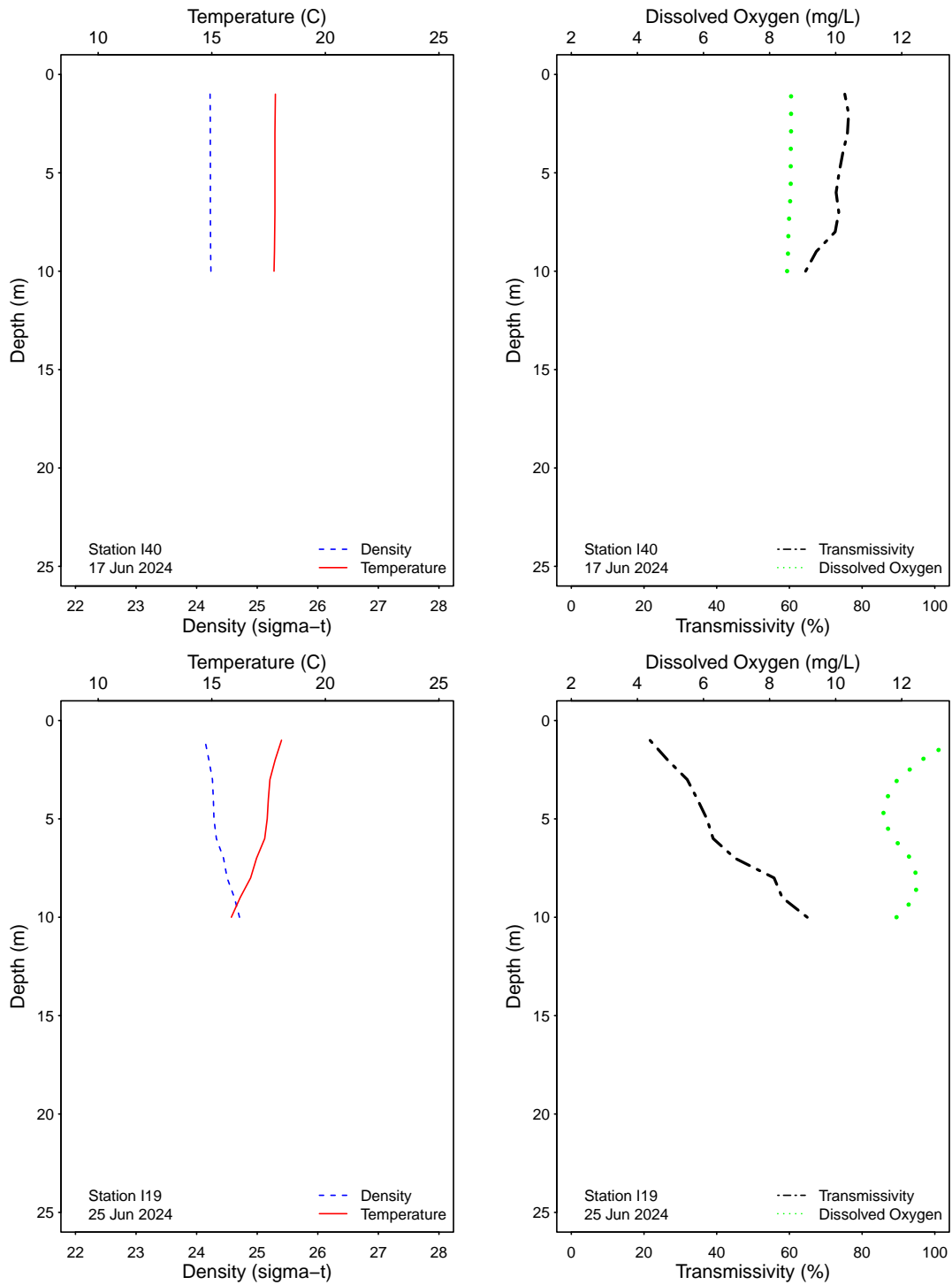


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

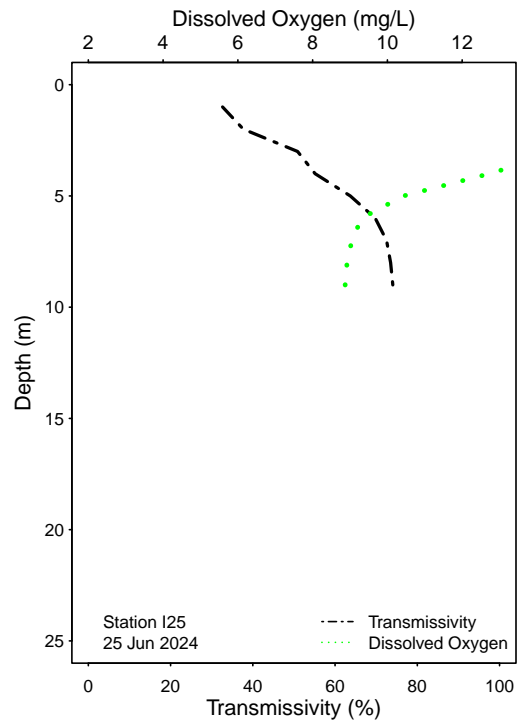
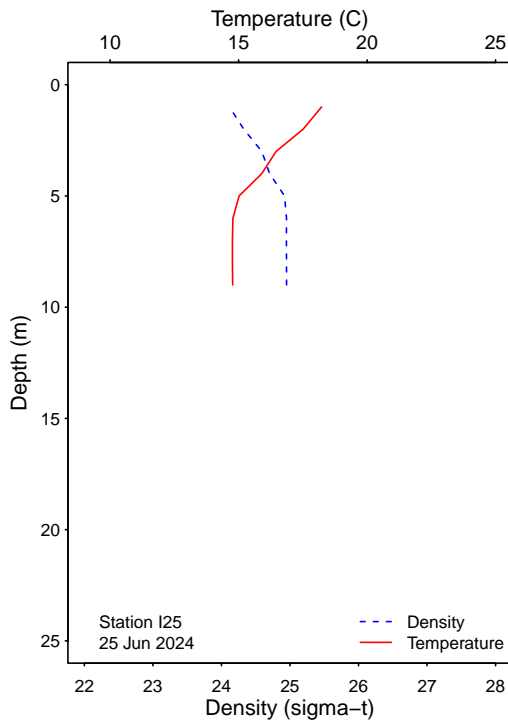
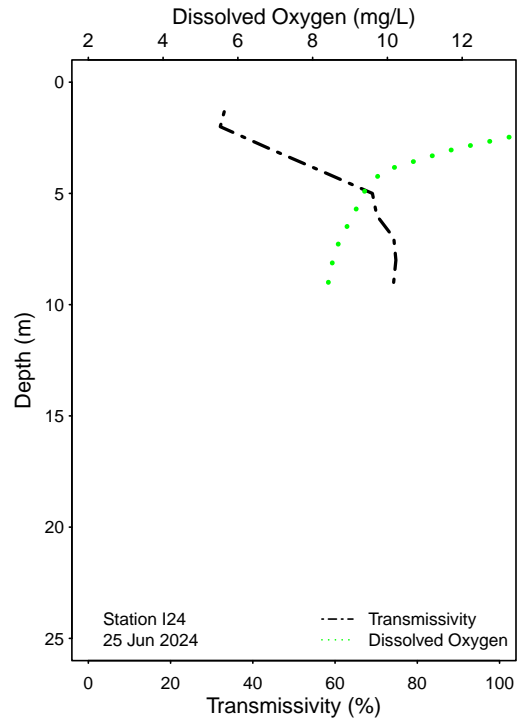
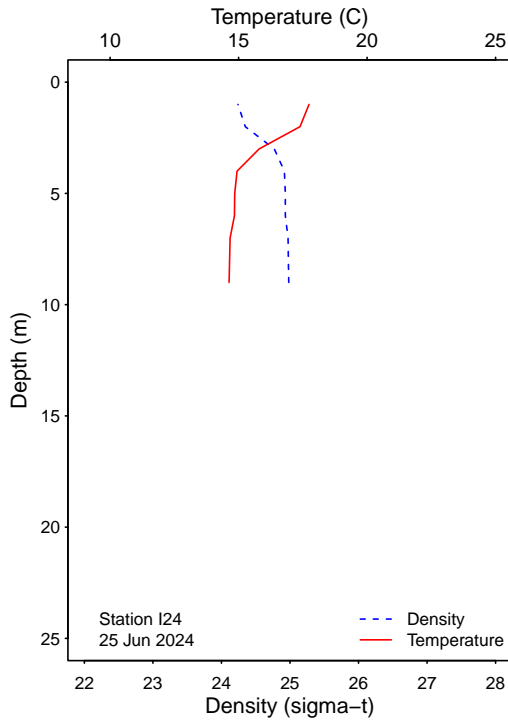


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

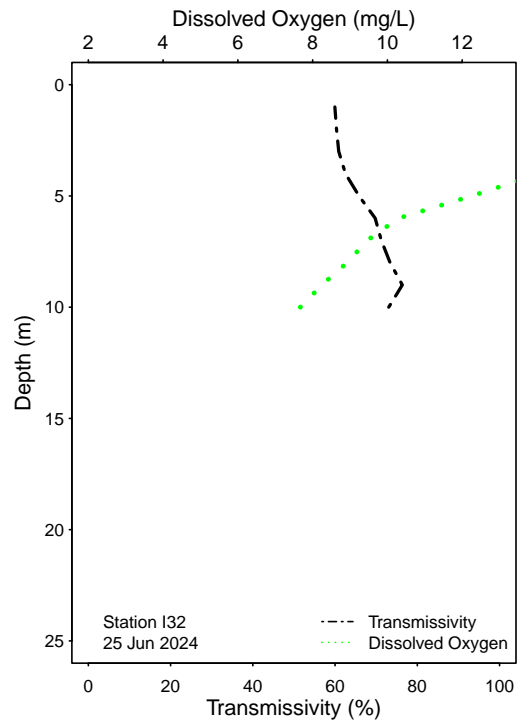
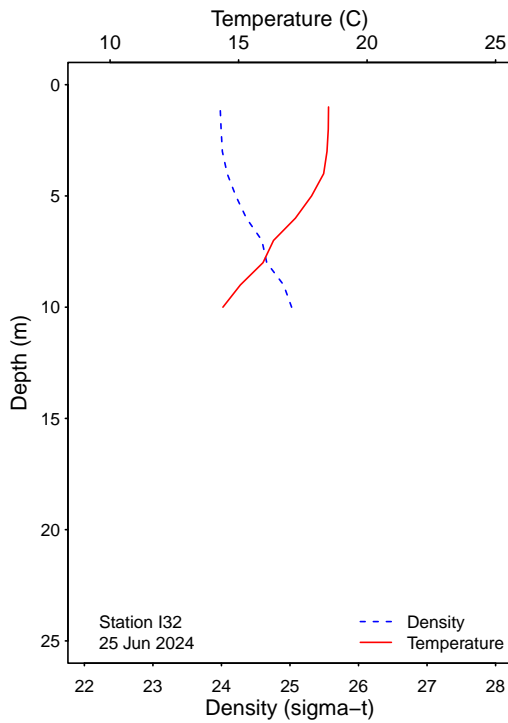
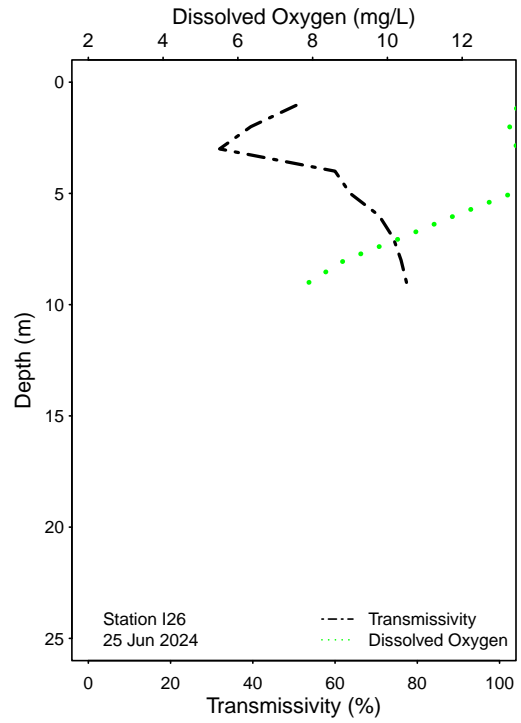
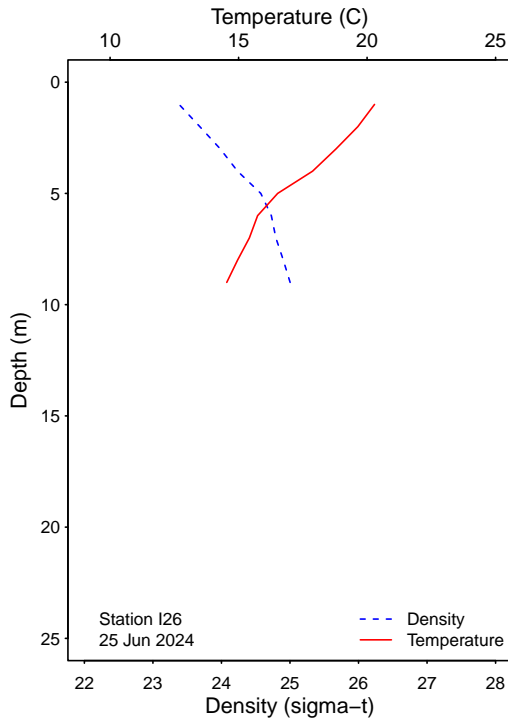


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

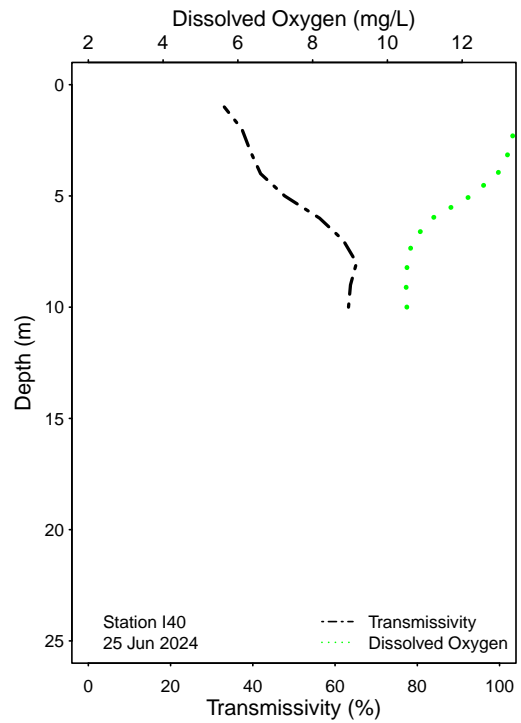
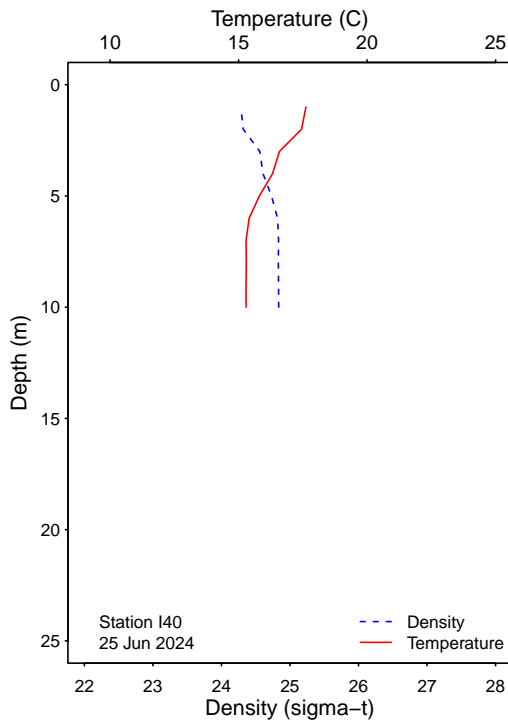
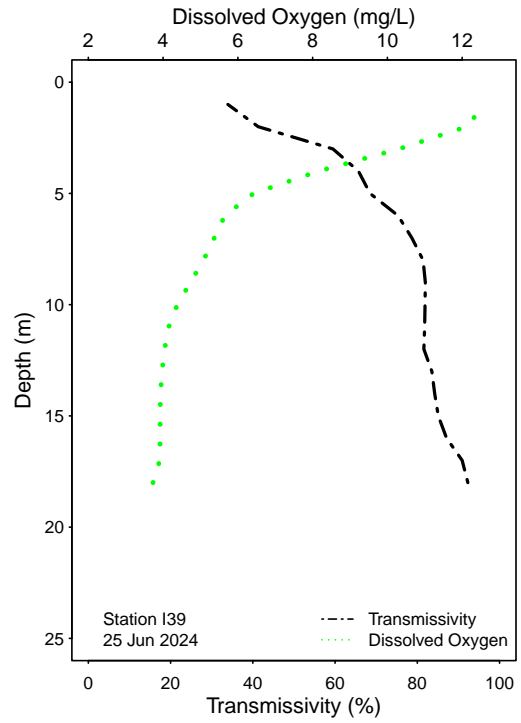
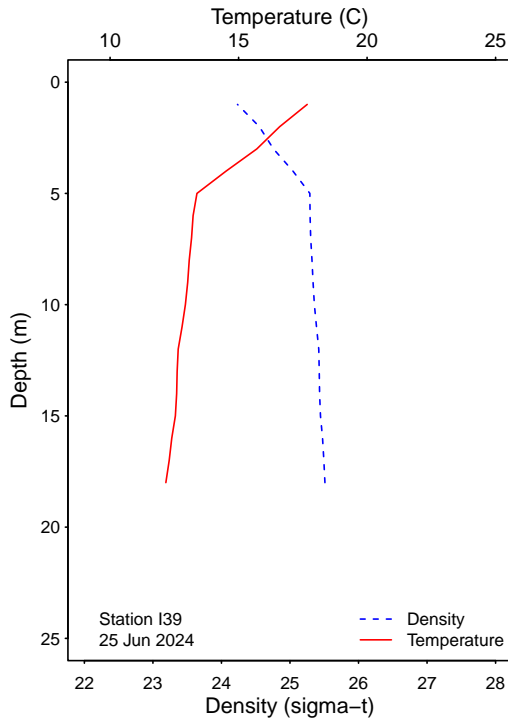


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

APPENDIX A

Quality Assurance

Table A.1

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

Station	Date	Depth	Analyst	Procedure	Total	Fecal	Entero
I19	04 Jun 2024	6	JF	LAB DUPLICATE	4800	500	90
I19	11 Jun 2024	6	JF	LAB DUPLICATE	8800	2200	1000
I19	17 Jun 2024	6	JF	LAB DUPLICATE	4	2	2
I19	25 Jun 2024	6	JF	LAB DUPLICATE	16000	5600	2200
I40	04 Jun 2024	6	JF	LAB DUPLICATE	1600	200	56
I40	11 Jun 2024	6	JF	LAB DUPLICATE	4200	820	620
I40	17 Jun 2024	6	JF	LAB DUPLICATE	20	2	28
I40	25 Jun 2024	6	JF	LAB DUPLICATE	320	62	52
S12	04 Jun 2024		KT	LAB DUPLICATE	16000	12000	12000
S12	04 Jun 2024		KT	FIELD DUPLICATE	16000	12000	12000
S12	11 Jun 2024		KT	FIELD DUPLICATE	200	320	40
S12	11 Jun 2024		KT	LAB DUPLICATE	400	240	62
S12	20 Jun 2024		JF	LAB DUPLICATE	20	2	2
S12	20 Jun 2024		JF	FIELD DUPLICATE	20	8	2
S12	25 Jun 2024		ADG	LAB DUPLICATE	2200	320	3000
S12	25 Jun 2024		ADG	FIELD DUPLICATE	2000	500	2800

ns = not sampled

ND = no data

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