

SOUTH BAY OCEAN OUTFALL MONTHLY RECEIVING WATERS MONITORING REPORT

SOUTH BAY WATER RECLAMATION PLANT

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

APRIL 2023

Environmental Monitoring and Technical Services
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May 31, 2023

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 April 2023 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 four times during the month 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.

The seven kelp stations are sampled on a weekly basis during the month. 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 monthly 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 four 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 chromomorphoc 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, suspended solids, and oil and grease concentrations 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

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.

Shellfish Harvesting Standards

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 2023 Quality Assurance Report, which will be completed in March 2024.

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 April, seven of the eight shore stations located north of the border were 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.

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

- The statistical threshold value (STV) standard for *Enterococcus* was exceeded at stations S4, S5, S6, S10, S11, and S12.
 - The 30-day running median standard for total coliforms was exceeded at stations S4, S5, S6, S8, 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 S5, S10, and S12 on one or more days in April.
- 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 April 5, 10, 18, and 26.
- During April, each of the seven kelp bed stations were 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, I24, and I40.
 - The SSM standard for fecal coliforms was exceeded at stations I19, I24, I25, 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, I24, and I40.
 - The 30-day running median standard for total coliforms was exceeded at stations I19, I24, I25, I26, I32, I39, 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 10.61 to 16.81°C. The difference between surface and bottom waters ranged from 0.45 to 2.80°C.
- Concentrations of chlorophyll *a* ranged from 0.29 to 61.17 µg/L at the kelp bed stations.
- A sewage-like odor was observed at station I19 on one or more days in April.

➤ **Offshore Water Quality Sampling**

- Quarterly sampling was not conducted during April at the offshore stations. The next quarterly sampling is scheduled for May 2023.



TABLES AND FIGURES

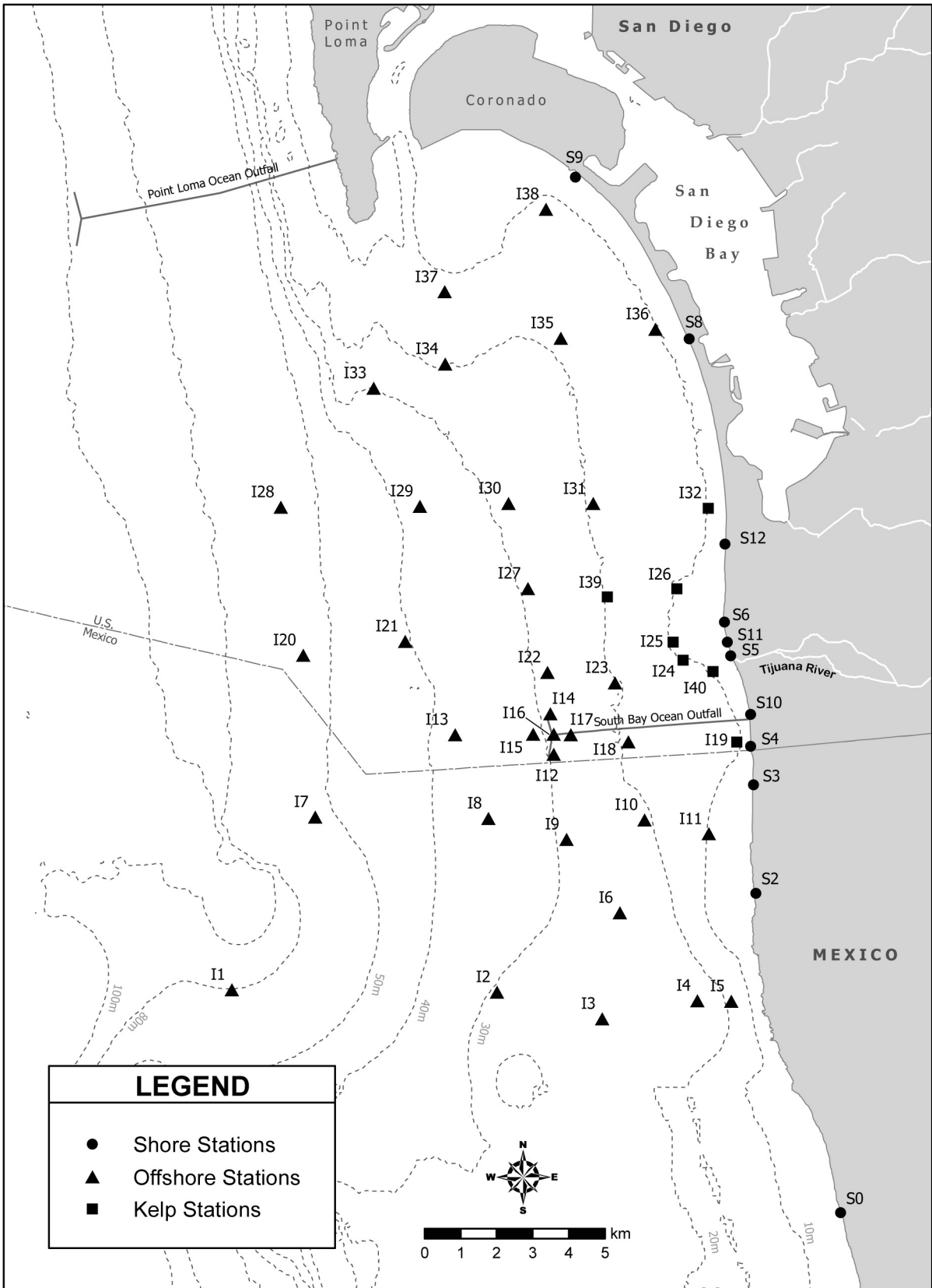


Figure 1.1 Station Map

Shore Stations

Table 2.1

Summary of compliance with the Ocean Plan's 30-day Geometric Mean standard for 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 Apr 2023	4550	4120	110	46	21	2377	584	104
02 Apr 2023	4550	4120	110	46	21	2377	584	104
03 Apr 2023	4550	4120	110	46	21	2377	584	104
04 Apr 2023	2199	2203	91	31	18	3286	342	81
05 Apr 2023	2199	2203	91	31	18	3286	342	81
06 Apr 2023	2199	4012	198	60	27	3286	826	171
07 Apr 2023	1849	4012	198	60	27	7683	826	171
08 Apr 2023	1849	4012	198	60	27	7683	826	171
09 Apr 2023	1849	4012	198	60	27	7683	826	171
10 Apr 2023	1849	4012	198	60	27	7683	826	171
11 Apr 2023	2688	4995	162	31	16	8399	1410	88
12 Apr 2023	2688	4995	162	31	16	8399	1410	88
13 Apr 2023	1849	4012	162	40	19	9295	2195	96
14 Apr 2023	1849	4012	162	40	19	9295	2195	96
15 Apr 2023	1849	4012	162	40	19	9295	2195	96
16 Apr 2023	1849	4012	162	40	19	9295	2195	96
17 Apr 2023	1849	4012	162	40	19	9295	2195	96
18 Apr 2023	2592	4995	383	22	12	9782	3084	227
19 Apr 2023	2592	4995	383	22	12	9782	3084	227
20 Apr 2023	2592	4200	216	5	5	9782	2821	84
21 Apr 2023	2119	4200	216	5	5	10561	2821	84
22 Apr 2023	2119	4200	216	5	5	10561	2821	84
23 Apr 2023	2119	4200	216	5	5	10561	2821	84
24 Apr 2023	2119	4200	216	5	5	10561	2821	84
25 Apr 2023	797	5181	428	7	4	2369	3769	96
26 Apr 2023	797	5181	428	7	4	2369	3769	96
27 Apr 2023	693	4200	700	5	3	1794	2883	119
28 Apr 2023	693	4200	700	5	3	1794	2883	119
29 Apr 2023	693	4200	700	5	3	1794	2883	119
30 Apr 2023	693	4200	700	5	3	1794	2883	119

* 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 Apr 2023	IC	IC	IC	IC	IC	E	IC	IC
11 Apr 2023	E	E	IC	IC	IC	E	E	IC
18 Apr 2023	E	E	E	IC	IC	E	E	E
25 Apr 2023	IC	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 Apr 2023	339	2855	210	16	4	698	389	102
02 Apr 2023	339	2855	210	16	4	698	389	102
03 Apr 2023	339	2855	210	16	4	698	389	102
04 Apr 2023	355	2233	220	27	5	1162	389	160
05 Apr 2023	355	2233	220	27	5	1162	389	160
06 Apr 2023	355	2233	220	27	5	1162	389	160
07 Apr 2023	355	2233	220	27	5	1162	389	160
08 Apr 2023	355	2233	220	27	5	1162	389	160
09 Apr 2023	355	2233	220	27	5	1162	389	160
10 Apr 2023	355	2233	220	27	5	1162	389	160
11 Apr 2023	477	2233	134	18	6	1162	396	82
12 Apr 2023	477	2233	134	18	6	1162	396	82
13 Apr 2023	477	2233	134	18	6	1162	396	82
14 Apr 2023	477	2233	134	18	6	1162	396	82
15 Apr 2023	477	2233	134	18	6	1162	396	82
16 Apr 2023	477	2233	134	18	6	1162	396	82
17 Apr 2023	477	2233	134	18	6	1162	396	82
18 Apr 2023	522	4994	223	18	6	1622	773	165
19 Apr 2023	555	4994	223	18	6	2387	773	165
20 Apr 2023	555	4994	223	18	6	2387	773	165
21 Apr 2023	555	4994	223	18	6	2387	773	165
22 Apr 2023	555	4994	223	18	6	2387	773	165
23 Apr 2023	555	4994	223	18	6	2387	773	165
24 Apr 2023	555	4994	223	18	6	2387	773	165
25 Apr 2023	312	4994	292	17	6	1449	1587	122
26 Apr 2023	312	4994	292	17	6	1449	1587	122
27 Apr 2023	312	4994	292	17	6	1449	1587	122
28 Apr 2023	312	4994	292	17	6	1449	1587	122
29 Apr 2023	312	4994	292	17	6	1449	1587	122
30 Apr 2023	312	4994	292	17	6	1449	1587	122

* 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
April	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 Apr 2023	16000	16000	6400	130	60	16000	16000	1180
02 Apr 2023	16000	16000	6400	130	60	16000	16000	1180
03 Apr 2023	16000	16000	6400	130	60	16000	16000	1180
04 Apr 2023	16000	16000	800	200	40	16000	16000	640
05 Apr 2023	16000	16000	800	200	40	16000	16000	640
06 Apr 2023	16000	16000	6400	240	60	16000	16000	1420
07 Apr 2023	11800	16000	6400	240	60	16000	16000	1420
08 Apr 2023	11800	16000	6400	240	60	16000	16000	1420
09 Apr 2023	11800	16000	6400	240	60	16000	16000	1420
10 Apr 2023	11800	16000	6400	240	60	16000	16000	1420
11 Apr 2023	16000	16000	800	200	40	16000	16000	640
12 Apr 2023	16000	16000	800	200	40	16000	16000	640
13 Apr 2023	11800	16000	700	170	30	16000	16000	400
14 Apr 2023	11800	16000	700	170	30	16000	16000	400
15 Apr 2023	11800	16000	700	170	30	16000	16000	400
16 Apr 2023	11800	16000	700	170	30	16000	16000	400
17 Apr 2023	11800	16000	700	170	30	16000	16000	400
18 Apr 2023	16000	16000	800	60	20	16000	16000	640
19 Apr 2023	16000	16000	800	60	20	16000	16000	640
20 Apr 2023	16000	16000	700	40	20	16000	16000	400
21 Apr 2023	11800	16000	700	40	20	16000	16000	400
22 Apr 2023	11800	16000	700	40	20	16000	16000	400
23 Apr 2023	11800	16000	700	40	20	16000	16000	400
24 Apr 2023	11800	16000	700	40	20	16000	16000	400
25 Apr 2023	7600	16000	800	60	20	16000	16000	640
26 Apr 2023	7600	16000	800	60	20	16000	16000	640
27 Apr 2023	9900	16000	8300	140	20	16000	16000	820
28 Apr 2023	9900	16000	8300	140	20	16000	16000	820
29 Apr 2023	9900	16000	8300	140	20	16000	16000	820
30 Apr 2023	9900	16000	8300	140	20	16000	16000	820

* Median calculated using n<5

Table 2.6

Summary of compliance at the SBOO shore stations with the Ocean Plan's Statistical Threshold Value standard 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
April	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 total coliform (Total), 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 Apr 2023	930	>16000	4000	1800e
S0	11 Apr 2023	1135	9000	3600e	2200e
S0	18 Apr 2023	904	>16000	4400	5400
S0	25 Apr 2023	1000	12000	600e	1800e
S2	04 Apr 2023	1115	3000e	240e	40e
S2	11 Apr 2023	1035	9400	1000	80e
S2	18 Apr 2023	1010	3800e	600	40e
S2	25 Apr 2023	1055	6200	660	1100
S3	04 Apr 2023	1050	4400	280e	120e
S3	11 Apr 2023	1055	>16000	>12000	3000e
S3	18 Apr 2023	940	>16000	5800	220e
S3	25 Apr 2023	1030	400	86	18e
S4	04 Apr 2023	1013	3800e	120	100e
S4	11 Apr 2023	1039	>16000	>12000	7000
S4	18 Apr 2023	1154	>16000	10000	900
S4	25 Apr 2023	1124	16e	16e	2e
S5	04 Apr 2023	914	2600e	180e	110
S5	11 Apr 2023	930	>16000	>12000	>12000
S5	18 Apr 2023	1027	>16000	>12000	>12000
S5	25 Apr 2023	1016	>16000	>12000	>12000
S6	04 Apr 2023	939	600e	42	92
S6	11 Apr 2023	1000	380e	72	30e
S6	18 Apr 2023	1102	>16000	>12000	520
S6	25 Apr 2023	1041	>16000	6600	1200e
S8	04 Apr 2023	826	280e	6e	38e
S8	11 Apr 2023	832	4e	2e	2e
S8	18 Apr 2023	928	<20	<2	<2
S8	25 Apr 2023	920	260e	36e	4e
S9	04 Apr 2023	814	20e	10e	6e
S9	11 Apr 2023	816	4e	2e	12e
S9	18 Apr 2023	911	<20	<2	<2
S9	25 Apr 2023	902	<20	2e	<2
S10	04 Apr 2023	1113	>16000	>12000	6400
S10	11 Apr 2023	1049	>16000	>12000	>12000
S10	18 Apr 2023	1203	>16000	>12000	>12000
S10	25 Apr 2023	1117	20e	6e	2e
S11	04 Apr 2023	930	420	40	180e
S11	11 Apr 2023	948	>16000	>12000	2000e
S11	18 Apr 2023	1045	>16000	>12000	1100
S11	25 Apr 2023	1031	>16000	>12000	>12000
S12	04 Apr 2023	841	640	30e	120e
S12	11 Apr 2023	848	<20	6e	8e
S12	18 Apr 2023	946	>16000	7000	520

Station	Date	Time	Total	Fecal	Entero
S12	25 Apr 2023	930	1000	160e	4e

ns = not sampled

ND = no data

Comments

Station	Date	Depth	Parameter	Comments
	18 Apr 2023			WB#8 temperature was out of the acceptable range in the morning of 4/19. All QCs for 4/18 passed.
	25 Apr 2023			Atypical mENDO negative QC results. No growth observed, QC culture contaminated. Media lot passed QCs; sample result likely unaffected.

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 Apr 2023	Arrive Time	930
S0	04 Apr 2023	Weather	Sunny
S0	04 Apr 2023	Wind Speed (kts)	5.6
S0	04 Apr 2023	Wind Dir	SW
S0	04 Apr 2023	Animal Life	Bird-20; Dog-4;
S0	04 Apr 2023	Floatables	None
S0	04 Apr 2023	Water Color	Green
S0	04 Apr 2023	Current Direction	N
S0	04 Apr 2023	Water Temp (C)	12
S0	04 Apr 2023	Wave Height Low (ft)	4
S0	04 Apr 2023	High Tide (ft)	4.76
S0	04 Apr 2023	High Tide Time	849
S0	04 Apr 2023	Low Tide (ft)	0.67
S0	04 Apr 2023	Low Tide Time	258
S0	04 Apr 2023	Comments	Water turbid; Trash-0; Kelp; 1L/sec water flowing from storm drain
S0	11 Apr 2023	Arrive Time	1135
S0	11 Apr 2023	Weather	Cloudy
S0	11 Apr 2023	Wind Speed (kts)	2
S0	11 Apr 2023	Wind Dir	NW
S0	11 Apr 2023	Animal Life	Bird-20;
S0	11 Apr 2023	Floatables	None
S0	11 Apr 2023	Water Color	Green
S0	11 Apr 2023	Current Direction	N
S0	11 Apr 2023	Water Temp (C)	13
S0	11 Apr 2023	Wave Height Low (ft)	3
S0	11 Apr 2023	High Tide (ft)	5.02
S0	11 Apr 2023	High Tide Time	5
S0	11 Apr 2023	Low Tide (ft)	0.1
S0	11 Apr 2023	Low Tide Time	820
S0	11 Apr 2023	Comments	Water turbid; Trash-0; Kelp; 2L/sec water flowing from storm drain
S0	18 Apr 2023	Arrive Time	904
S0	18 Apr 2023	Weather	Cloudy
S0	18 Apr 2023	Wind Speed (kts)	2.7
S0	18 Apr 2023	Wind Dir	SW
S0	18 Apr 2023	Animal Life	Bird-20; Dog-2;
S0	18 Apr 2023	Floatables	None
S0	18 Apr 2023	Water Color	Green
S0	18 Apr 2023	Current Direction	N
S0	18 Apr 2023	Water Temp (C)	13
S0	18 Apr 2023	Wave Height Low (ft)	2
S0	18 Apr 2023	High Tide (ft)	4.98
S0	18 Apr 2023	High Tide Time	835
S0	18 Apr 2023	Low Tide (ft)	0.03
S0	18 Apr 2023	Low Tide Time	242
S0	18 Apr 2023	Comments	Water turbid; Trash-0; Kelp; 1 L/sec water flowing from storm drain
S0	25 Apr 2023	Arrive Time	1000
S0	25 Apr 2023	Weather	Cloudy
S0	25 Apr 2023	Wind Speed (kts)	1.4
S0	25 Apr 2023	Wind Dir	NE
S0	25 Apr 2023	Animal Life	Bird-10; Dog-2;

Station	Date	Parameter	Value
S0	25 Apr 2023	Floatables	None
S0	25 Apr 2023	Water Color	Green
S0	25 Apr 2023	Current Direction	N
S0	25 Apr 2023	Water Temp (C)	13
S0	25 Apr 2023	Wave Height Low (ft)	3
S0	25 Apr 2023	High Tide (ft)	4.61
S0	25 Apr 2023	High Tide Time	3
S0	25 Apr 2023	Low Tide (ft)	0.35
S0	25 Apr 2023	Low Tide Time	816
S0	25 Apr 2023	Comments	Water clear; Trash-0; Kelp; Person/Walker/Jogger-2; 0.5 L/sec water flowing from storm drain
S2	04 Apr 2023	Arrive Time	1115
S2	04 Apr 2023	Weather	Sunny
S2	04 Apr 2023	Wind Speed (kts)	9.3
S2	04 Apr 2023	Wind Dir	SW
S2	04 Apr 2023	Animal Life	
S2	04 Apr 2023	Floatables	None
S2	04 Apr 2023	Water Color	Green
S2	04 Apr 2023	Current Direction	N
S2	04 Apr 2023	Water Temp (C)	13
S2	04 Apr 2023	Wave Height Low (ft)	4
S2	04 Apr 2023	High Tide (ft)	4.76
S2	04 Apr 2023	High Tide Time	849
S2	04 Apr 2023	Low Tide (ft)	0.67
S2	04 Apr 2023	Low Tide Time	258
S2	04 Apr 2023	Comments	Water turbid; Trash-0; No flow from storm drain
S2	11 Apr 2023	Arrive Time	1035
S2	11 Apr 2023	Weather	Cloudy
S2	11 Apr 2023	Wind Speed (kts)	3.1
S2	11 Apr 2023	Wind Dir	NW
S2	11 Apr 2023	Animal Life	Bird-20; Dog-2;
S2	11 Apr 2023	Floatables	None
S2	11 Apr 2023	Water Color	Green
S2	11 Apr 2023	Current Direction	N
S2	11 Apr 2023	Water Temp (C)	13
S2	11 Apr 2023	Wave Height Low (ft)	3
S2	11 Apr 2023	High Tide (ft)	5.02
S2	11 Apr 2023	High Tide Time	5
S2	11 Apr 2023	Low Tide (ft)	0.1
S2	11 Apr 2023	Low Tide Time	820
S2	11 Apr 2023	Comments	Water turbid; Trash-0; Kelp; No flow from storm drain
S2	18 Apr 2023	Arrive Time	1010
S2	18 Apr 2023	Weather	Sunny
S2	18 Apr 2023	Wind Speed (kts)	2.3
S2	18 Apr 2023	Wind Dir	SW
S2	18 Apr 2023	Animal Life	
S2	18 Apr 2023	Floatables	None
S2	18 Apr 2023	Water Color	Brown
S2	18 Apr 2023	Current Direction	S
S2	18 Apr 2023	Water Temp (C)	13
S2	18 Apr 2023	Wave Height Low (ft)	2
S2	18 Apr 2023	High Tide (ft)	4.98
S2	18 Apr 2023	High Tide Time	835
S2	18 Apr 2023	Low Tide (ft)	0.03
S2	18 Apr 2023	Low Tide Time	242
S2	18 Apr 2023	Comments	Water turbid; Trash-0; No flow from storm drain
S2	25 Apr 2023	Arrive Time	1055

Station	Date	Parameter	Value
S2	25 Apr 2023	Weather	Cloudy
S2	25 Apr 2023	Wind Speed (kts)	1.5
S2	25 Apr 2023	Wind Dir	NE
S2	25 Apr 2023	Animal Life	Bird-20; Dog-3;
S2	25 Apr 2023	Floatables	None
S2	25 Apr 2023	Water Color	Green
S2	25 Apr 2023	Current Direction	N
S2	25 Apr 2023	Water Temp (C)	13
S2	25 Apr 2023	Wave Height Low (ft)	3
S2	25 Apr 2023	High Tide (ft)	4.61
S2	25 Apr 2023	High Tide Time	3
S2	25 Apr 2023	Low Tide (ft)	0.35
S2	25 Apr 2023	Low Tide Time	816
S2	25 Apr 2023	Comments	Water clear; Trash-0; Kelp; Person/Walker/Jogger-6; No flow from storm drain
S3	04 Apr 2023	Arrive Time	1050
S3	04 Apr 2023	Weather	Sunny
S3	04 Apr 2023	Wind Speed (kts)	8.3
S3	04 Apr 2023	Wind Dir	SW
S3	04 Apr 2023	Animal Life	
S3	04 Apr 2023	Floatables	None
S3	04 Apr 2023	Water Color	Green
S3	04 Apr 2023	Current Direction	N
S3	04 Apr 2023	Water Temp (C)	13
S3	04 Apr 2023	Wave Height Low (ft)	4
S3	04 Apr 2023	High Tide (ft)	4.76
S3	04 Apr 2023	High Tide Time	849
S3	04 Apr 2023	Low Tide (ft)	0.67
S3	04 Apr 2023	Low Tide Time	258
S3	04 Apr 2023	Comments	Water turbid; Trash-0; Debris; No flow from storm drain
S3	11 Apr 2023	Arrive Time	1055
S3	11 Apr 2023	Weather	Cloudy
S3	11 Apr 2023	Wind Speed (kts)	2.8
S3	11 Apr 2023	Wind Dir	SW
S3	11 Apr 2023	Animal Life	Bird-15; Dog-1;
S3	11 Apr 2023	Floatables	None
S3	11 Apr 2023	Water Color	Green
S3	11 Apr 2023	Current Direction	N
S3	11 Apr 2023	Water Temp (C)	13
S3	11 Apr 2023	Wave Height Low (ft)	3
S3	11 Apr 2023	High Tide (ft)	5.02
S3	11 Apr 2023	High Tide Time	5
S3	11 Apr 2023	Low Tide (ft)	0.1
S3	11 Apr 2023	Low Tide Time	820
S3	11 Apr 2023	Comments	Water turbid; Trash-0; Kelp; No flow from storm drain
S3	18 Apr 2023	Arrive Time	940
S3	18 Apr 2023	Weather	Sunny
S3	18 Apr 2023	Wind Speed (kts)	2
S3	18 Apr 2023	Wind Dir	SW
S3	18 Apr 2023	Animal Life	
S3	18 Apr 2023	Floatables	None
S3	18 Apr 2023	Water Color	Brown
S3	18 Apr 2023	Current Direction	S
S3	18 Apr 2023	Water Temp (C)	13
S3	18 Apr 2023	Wave Height Low (ft)	2
S3	18 Apr 2023	High Tide (ft)	4.98
S3	18 Apr 2023	High Tide Time	835
S3	18 Apr 2023	Low Tide (ft)	0.03

Station	Date	Parameter	Value
S3	18 Apr 2023	Low Tide Time	242
S3	18 Apr 2023	Comments	Water turbid; Trash-0; No flow from storm drain
S3	25 Apr 2023	Arrive Time	1030
S3	25 Apr 2023	Weather	Cloudy
S3	25 Apr 2023	Wind Speed (kts)	1.6
S3	25 Apr 2023	Wind Dir	NE
S3	25 Apr 2023	Animal Life	Bird-10; Dog-4;
S3	25 Apr 2023	Floatables	None
S3	25 Apr 2023	Water Color	Green
S3	25 Apr 2023	Current Direction	N
S3	25 Apr 2023	Water Temp (C)	13
S3	25 Apr 2023	Wave Height Low (ft)	3
S3	25 Apr 2023	High Tide (ft)	4.61
S3	25 Apr 2023	High Tide Time	3
S3	25 Apr 2023	Low Tide (ft)	0.35
S3	25 Apr 2023	Low Tide Time	816
S3	25 Apr 2023	Comments	Water clear; Trash-0; Kelp; Person/Walker/Jogger-8; No flow from storm drain
S4	04 Apr 2023	Arrive Time	1013
S4	04 Apr 2023	Weather	Sunny
S4	04 Apr 2023	Wind Speed (kts)	5.3
S4	04 Apr 2023	Wind Dir	N
S4	04 Apr 2023	Animal Life	
S4	04 Apr 2023	Floatables	None
S4	04 Apr 2023	Water Color	Green
S4	04 Apr 2023	Current Direction	S
S4	04 Apr 2023	Water Temp (C)	10
S4	04 Apr 2023	Wave Height Low (ft)	5
S4	04 Apr 2023	High Tide (ft)	4.76
S4	04 Apr 2023	High Tide Time	849
S4	04 Apr 2023	Low Tide (ft)	0.67
S4	04 Apr 2023	Low Tide Time	258
S4	04 Apr 2023	Comments	Water clear; Trash-2; Kelp;Seagrass;Debris
S4	11 Apr 2023	Arrive Time	1039
S4	11 Apr 2023	Weather	Foggy
S4	11 Apr 2023	Wind Speed (kts)	4.3
S4	11 Apr 2023	Wind Dir	W
S4	11 Apr 2023	Animal Life	
S4	11 Apr 2023	Floatables	None
S4	11 Apr 2023	Water Color	Green
S4	11 Apr 2023	Current Direction	S
S4	11 Apr 2023	Water Temp (C)	10
S4	11 Apr 2023	Wave Height Low (ft)	4
S4	11 Apr 2023	High Tide (ft)	5.02
S4	11 Apr 2023	High Tide Time	5
S4	11 Apr 2023	Low Tide (ft)	0.1
S4	11 Apr 2023	Low Tide Time	820
S4	11 Apr 2023	Comments	Water clear; Trash-1; Seagrass;Kelp
S4	18 Apr 2023	Arrive Time	1154
S4	18 Apr 2023	Weather	Sunny
S4	18 Apr 2023	Wind Speed (kts)	9.7
S4	18 Apr 2023	Wind Dir	W
S4	18 Apr 2023	Animal Life	
S4	18 Apr 2023	Floatables	None
S4	18 Apr 2023	Water Color	Brown
S4	18 Apr 2023	Current Direction	S
S4	18 Apr 2023	Water Temp (C)	10

Station	Date	Parameter	Value
S4	18 Apr 2023	Wave Height Low (ft)	4
S4	18 Apr 2023	High Tide (ft)	4.98
S4	18 Apr 2023	High Tide Time	835
S4	18 Apr 2023	Low Tide (ft)	0.03
S4	18 Apr 2023	Low Tide Time	242
S4	18 Apr 2023	Comments	Water clear; Trash-3; Kelp;Seagrass;Debris
S4	25 Apr 2023	Arrive Time	1124
S4	25 Apr 2023	Weather	Partly cloudy
S4	25 Apr 2023	Wind Speed (kts)	8.6
S4	25 Apr 2023	Wind Dir	W
S4	25 Apr 2023	Animal Life	
S4	25 Apr 2023	Floatables	None
S4	25 Apr 2023	Water Color	Green
S4	25 Apr 2023	Current Direction	S
S4	25 Apr 2023	Water Temp (C)	11
S4	25 Apr 2023	Wave Height Low (ft)	6
S4	25 Apr 2023	High Tide (ft)	4.61
S4	25 Apr 2023	High Tide Time	3
S4	25 Apr 2023	Low Tide (ft)	0.35
S4	25 Apr 2023	Low Tide Time	816
S4	25 Apr 2023	Comments	Water clear; Trash-2; Kelp;Debris
S5	04 Apr 2023	Arrive Time	913
S5	04 Apr 2023	Weather	Sunny
S5	04 Apr 2023	Wind Speed (kts)	5.3
S5	04 Apr 2023	Wind Dir	N
S5	04 Apr 2023	Animal Life	Bird-1;
S5	04 Apr 2023	Floatables	None
S5	04 Apr 2023	Water Color	Green
S5	04 Apr 2023	Current Direction	S
S5	04 Apr 2023	Water Temp (C)	6
S5	04 Apr 2023	Wave Height Low (ft)	6
S5	04 Apr 2023	High Tide (ft)	4.76
S5	04 Apr 2023	High Tide Time	849
S5	04 Apr 2023	Low Tide (ft)	0.67
S5	04 Apr 2023	Low Tide Time	258
S5	04 Apr 2023	Comments	Water clear; Trash-3; Kelp;Seagrass;Debris
S5	11 Apr 2023	Arrive Time	930
S5	11 Apr 2023	Weather	Foggy
S5	11 Apr 2023	Wind Speed (kts)	2.3
S5	11 Apr 2023	Wind Dir	NW
S5	11 Apr 2023	Animal Life	
S5	11 Apr 2023	Floatables	None
S5	11 Apr 2023	Water Color	Green
S5	11 Apr 2023	Current Direction	S
S5	11 Apr 2023	Water Temp (C)	9
S5	11 Apr 2023	Wave Height Low (ft)	3
S5	11 Apr 2023	High Tide (ft)	5.02
S5	11 Apr 2023	High Tide Time	5
S5	11 Apr 2023	Low Tide (ft)	0.1
S5	11 Apr 2023	Low Tide Time	820
S5	11 Apr 2023	Comments	Water clear; Trash-1; Seagrass;Kelp;Debris
S5	18 Apr 2023	Arrive Time	1027
S5	18 Apr 2023	Weather	Sunny
S5	18 Apr 2023	Wind Speed (kts)	6.6
S5	18 Apr 2023	Wind Dir	W
S5	18 Apr 2023	Animal Life	
S5	18 Apr 2023	Floatables	None

Station	Date	Parameter	Value
S5	18 Apr 2023	Water Color	Brown
S5	18 Apr 2023	Current Direction	S
S5	18 Apr 2023	Water Temp (C)	13
S5	18 Apr 2023	Wave Height Low (ft)	3
S5	18 Apr 2023	High Tide (ft)	4.98
S5	18 Apr 2023	High Tide Time	835
S5	18 Apr 2023	Low Tide (ft)	0.03
S5	18 Apr 2023	Low Tide Time	242
S5	18 Apr 2023	Comments	Water clear; Trash-4; Kelp;Seagrass;Debris; Sewage-like odor
S5	25 Apr 2023	Arrive Time	1016
S5	25 Apr 2023	Weather	Cloudy
S5	25 Apr 2023	Wind Speed (kts)	3.2
S5	25 Apr 2023	Wind Dir	W
S5	25 Apr 2023	Animal Life	
S5	25 Apr 2023	Floatables	None
S5	25 Apr 2023	Water Color	Green
S5	25 Apr 2023	Current Direction	S
S5	25 Apr 2023	Water Temp (C)	14
S5	25 Apr 2023	Wave Height Low (ft)	4
S5	25 Apr 2023	High Tide (ft)	4.61
S5	25 Apr 2023	High Tide Time	3
S5	25 Apr 2023	Low Tide (ft)	0.35
S5	25 Apr 2023	Low Tide Time	816
S5	25 Apr 2023	Comments	Water turbid; Trash-1; Kelp;Seagrass;Debris; Sewage-like odor
S6	04 Apr 2023	Arrive Time	939
S6	04 Apr 2023	Weather	Sunny
S6	04 Apr 2023	Wind Speed (kts)	4.7
S6	04 Apr 2023	Wind Dir	NW
S6	04 Apr 2023	Animal Life	Dog-2;
S6	04 Apr 2023	Floatables	None
S6	04 Apr 2023	Water Color	Green
S6	04 Apr 2023	Current Direction	S
S6	04 Apr 2023	Water Temp (C)	8
S6	04 Apr 2023	Wave Height Low (ft)	6
S6	04 Apr 2023	High Tide (ft)	4.76
S6	04 Apr 2023	High Tide Time	849
S6	04 Apr 2023	Low Tide (ft)	0.67
S6	04 Apr 2023	Low Tide Time	258
S6	04 Apr 2023	Comments	Water clear; Trash-2; Kelp;Seagrass;Debris; Person/Walker/Jogger-2
S6	11 Apr 2023	Arrive Time	1000
S6	11 Apr 2023	Weather	Foggy
S6	11 Apr 2023	Wind Speed (kts)	1.2
S6	11 Apr 2023	Wind Dir	W
S6	11 Apr 2023	Animal Life	
S6	11 Apr 2023	Floatables	None
S6	11 Apr 2023	Water Color	Green
S6	11 Apr 2023	Current Direction	S
S6	11 Apr 2023	Water Temp (C)	9
S6	11 Apr 2023	Wave Height Low (ft)	5
S6	11 Apr 2023	High Tide (ft)	5.02
S6	11 Apr 2023	High Tide Time	5
S6	11 Apr 2023	Low Tide (ft)	0.1
S6	11 Apr 2023	Low Tide Time	820
S6	11 Apr 2023	Comments	Water clear; Trash-1; Algae;Debris

Station	Date	Parameter	Value
S6	18 Apr 2023	Arrive Time	1102
S6	18 Apr 2023	Weather	Sunny
S6	18 Apr 2023	Wind Speed (kts)	9
S6	18 Apr 2023	Wind Dir	S
S6	18 Apr 2023	Animal Life	Bird-1;
S6	18 Apr 2023	Floatables	None
S6	18 Apr 2023	Water Color	Brown
S6	18 Apr 2023	Current Direction	S
S6	18 Apr 2023	Water Temp (C)	12
S6	18 Apr 2023	Wave Height Low (ft)	4
S6	18 Apr 2023	High Tide (ft)	4.98
S6	18 Apr 2023	High Tide Time	835
S6	18 Apr 2023	Low Tide (ft)	0.03
S6	18 Apr 2023	Low Tide Time	242
S6	18 Apr 2023	Comments	Water clear; Trash-4; Kelp;Seagrass;Debris; Person/Walker/Jogger-3
S6	25 Apr 2023	Arrive Time	1041
S6	25 Apr 2023	Weather	Partly cloudy
S6	25 Apr 2023	Wind Speed (kts)	4
S6	25 Apr 2023	Wind Dir	W
S6	25 Apr 2023	Animal Life	
S6	25 Apr 2023	Floatables	None
S6	25 Apr 2023	Water Color	Green
S6	25 Apr 2023	Current Direction	S
S6	25 Apr 2023	Water Temp (C)	13
S6	25 Apr 2023	Wave Height Low (ft)	5
S6	25 Apr 2023	High Tide (ft)	4.61
S6	25 Apr 2023	High Tide Time	3
S6	25 Apr 2023	Low Tide (ft)	0.35
S6	25 Apr 2023	Low Tide Time	816
S6	25 Apr 2023	Comments	Water clear; Trash-1; Algae
S8	04 Apr 2023	Arrive Time	826
S8	04 Apr 2023	Weather	Sunny
S8	04 Apr 2023	Wind Speed (kts)	4.6
S8	04 Apr 2023	Wind Dir	E
S8	04 Apr 2023	Animal Life	
S8	04 Apr 2023	Floatables	None
S8	04 Apr 2023	Water Color	Green
S8	04 Apr 2023	Current Direction	S
S8	04 Apr 2023	Water Temp (C)	9
S8	04 Apr 2023	Wave Height Low (ft)	4
S8	04 Apr 2023	High Tide (ft)	4.76
S8	04 Apr 2023	High Tide Time	849
S8	04 Apr 2023	Low Tide (ft)	0.67
S8	04 Apr 2023	Low Tide Time	258
S8	04 Apr 2023	Comments	Water clear; Trash-2; Kelp;Seagrass;Debris
S8	11 Apr 2023	Arrive Time	832
S8	11 Apr 2023	Weather	Foggy
S8	11 Apr 2023	Wind Speed (kts)	4.5
S8	11 Apr 2023	Wind Dir	W
S8	11 Apr 2023	Animal Life	Bird-7;
S8	11 Apr 2023	Floatables	Foam
S8	11 Apr 2023	Water Color	Green
S8	11 Apr 2023	Current Direction	S
S8	11 Apr 2023	Water Temp (C)	8
S8	11 Apr 2023	Wave Height Low (ft)	3
S8	11 Apr 2023	High Tide (ft)	5.02
S8	11 Apr 2023	High Tide Time	5

Station	Date	Parameter	Value
S8	11 Apr 2023	Low Tide (ft)	0.1
S8	11 Apr 2023	Low Tide Time	820
S8	11 Apr 2023	Comments	Water clear; Trash-1; Kelp;Seagrass;Debris
S8	18 Apr 2023	Arrive Time	928
S8	18 Apr 2023	Weather	Partly cloudy
S8	18 Apr 2023	Wind Speed (kts)	5.8
S8	18 Apr 2023	Wind Dir	W
S8	18 Apr 2023	Animal Life	
S8	18 Apr 2023	Floatables	None
S8	18 Apr 2023	Water Color	Green
S8	18 Apr 2023	Current Direction	S
S8	18 Apr 2023	Water Temp (C)	11
S8	18 Apr 2023	Wave Height Low (ft)	3
S8	18 Apr 2023	High Tide (ft)	4.98
S8	18 Apr 2023	High Tide Time	835
S8	18 Apr 2023	Low Tide (ft)	0.03
S8	18 Apr 2023	Low Tide Time	242
S8	18 Apr 2023	Comments	Water clear; Trash-2; Kelp;Seagrass;Debris; Person/Walker/Jogger-2
S8	25 Apr 2023	Arrive Time	920
S8	25 Apr 2023	Weather	Cloudy
S8	25 Apr 2023	Wind Speed (kts)	3.3
S8	25 Apr 2023	Wind Dir	SW
S8	25 Apr 2023	Animal Life	
S8	25 Apr 2023	Floatables	Foam
S8	25 Apr 2023	Water Color	Brown
S8	25 Apr 2023	Current Direction	S
S8	25 Apr 2023	Water Temp (C)	13
S8	25 Apr 2023	Wave Height Low (ft)	4
S8	25 Apr 2023	High Tide (ft)	4.61
S8	25 Apr 2023	High Tide Time	3
S8	25 Apr 2023	Low Tide (ft)	0.35
S8	25 Apr 2023	Low Tide Time	816
S8	25 Apr 2023	Comments	Water turbid; Fisherpersion-1; Trash-2; Kelp;Seagrass;Debris; Person/Walker/Jogger-1
S9	04 Apr 2023	Arrive Time	814
S9	04 Apr 2023	Weather	Sunny
S9	04 Apr 2023	Wind Speed (kts)	3.3
S9	04 Apr 2023	Wind Dir	W
S9	04 Apr 2023	Animal Life	
S9	04 Apr 2023	Floatables	None
S9	04 Apr 2023	Water Color	Green
S9	04 Apr 2023	Current Direction	S
S9	04 Apr 2023	Water Temp (C)	7
S9	04 Apr 2023	Wave Height Low (ft)	4
S9	04 Apr 2023	High Tide (ft)	4.76
S9	04 Apr 2023	High Tide Time	849
S9	04 Apr 2023	Low Tide (ft)	0.67
S9	04 Apr 2023	Low Tide Time	258
S9	04 Apr 2023	Comments	Water clear; Trash-1; Kelp;Seagrass
S9	11 Apr 2023	Arrive Time	816
S9	11 Apr 2023	Weather	Foggy
S9	11 Apr 2023	Wind Speed (kts)	2.3
S9	11 Apr 2023	Wind Dir	SW
S9	11 Apr 2023	Animal Life	Bird-5;
S9	11 Apr 2023	Floatables	None
S9	11 Apr 2023	Water Color	Green

Station	Date	Parameter	Value
S9	11 Apr 2023	Current Direction	S
S9	11 Apr 2023	Water Temp (C)	8
S9	11 Apr 2023	Wave Height Low (ft)	4
S9	11 Apr 2023	High Tide (ft)	5.02
S9	11 Apr 2023	High Tide Time	5
S9	11 Apr 2023	Low Tide (ft)	0.1
S9	11 Apr 2023	Low Tide Time	820
S9	11 Apr 2023	Comments	Water clear; Trash-1; Seagrass; Person/Walker/Jogger-1
S9	18 Apr 2023	Arrive Time	911
S9	18 Apr 2023	Weather	Partly cloudy
S9	18 Apr 2023	Wind Speed (kts)	5.3
S9	18 Apr 2023	Wind Dir	W
S9	18 Apr 2023	Animal Life	
S9	18 Apr 2023	Floatables	None
S9	18 Apr 2023	Water Color	Green
S9	18 Apr 2023	Current Direction	S
S9	18 Apr 2023	Water Temp (C)	9
S9	18 Apr 2023	Wave Height Low (ft)	2
S9	18 Apr 2023	High Tide (ft)	4.98
S9	18 Apr 2023	High Tide Time	835
S9	18 Apr 2023	Low Tide (ft)	0.03
S9	18 Apr 2023	Low Tide Time	242
S9	18 Apr 2023	Comments	Water clear; Trash-2; Kelp;Seagrass;Debris
S9	25 Apr 2023	Arrive Time	902
S9	25 Apr 2023	Weather	Cloudy
S9	25 Apr 2023	Wind Speed (kts)	7.3
S9	25 Apr 2023	Wind Dir	W
S9	25 Apr 2023	Animal Life	
S9	25 Apr 2023	Floatables	Foam
S9	25 Apr 2023	Water Color	Green
S9	25 Apr 2023	Current Direction	S
S9	25 Apr 2023	Water Temp (C)	12
S9	25 Apr 2023	Wave Height Low (ft)	4
S9	25 Apr 2023	High Tide (ft)	4.61
S9	25 Apr 2023	High Tide Time	3
S9	25 Apr 2023	Low Tide (ft)	0.35
S9	25 Apr 2023	Low Tide Time	816
S9	25 Apr 2023	Comments	Water turbid; Trash-1; Kelp;Seagrass; Person/Walker/Jogger-3
S10	04 Apr 2023	Arrive Time	1113
S10	04 Apr 2023	Weather	Sunny
S10	04 Apr 2023	Wind Speed (kts)	7.4
S10	04 Apr 2023	Wind Dir	NW
S10	04 Apr 2023	Animal Life	
S10	04 Apr 2023	Floatables	None
S10	04 Apr 2023	Water Color	Green
S10	04 Apr 2023	Current Direction	S
S10	04 Apr 2023	Water Temp (C)	10
S10	04 Apr 2023	Wave Height Low (ft)	5
S10	04 Apr 2023	High Tide (ft)	4.76
S10	04 Apr 2023	High Tide Time	849
S10	04 Apr 2023	Low Tide (ft)	0.67
S10	04 Apr 2023	Low Tide Time	258
S10	04 Apr 2023	Comments	Water clear; Trash-2; Kelp;Seagrass;Debris
S10	11 Apr 2023	Arrive Time	1049
S10	11 Apr 2023	Weather	Cloudy
S10	11 Apr 2023	Wind Speed (kts)	3.2

Station	Date	Parameter	Value
S10	11 Apr 2023	Wind Dir	W
S10	11 Apr 2023	Animal Life	
S10	11 Apr 2023	Floatables	None
S10	11 Apr 2023	Water Color	Green
S10	11 Apr 2023	Current Direction	S
S10	11 Apr 2023	Water Temp (C)	10
S10	11 Apr 2023	Wave Height Low (ft)	4
S10	11 Apr 2023	High Tide (ft)	5.02
S10	11 Apr 2023	High Tide Time	5
S10	11 Apr 2023	Low Tide (ft)	0.1
S10	11 Apr 2023	Low Tide Time	820
S10	11 Apr 2023	Comments	Water clear; Trash-1; Kelp
S10	18 Apr 2023	Arrive Time	1203
S10	18 Apr 2023	Weather	Sunny
S10	18 Apr 2023	Wind Speed (kts)	9.5
S10	18 Apr 2023	Wind Dir	W
S10	18 Apr 2023	Animal Life	
S10	18 Apr 2023	Floatables	None
S10	18 Apr 2023	Water Color	Brown
S10	18 Apr 2023	Current Direction	S
S10	18 Apr 2023	Water Temp (C)	10
S10	18 Apr 2023	Wave Height Low (ft)	4
S10	18 Apr 2023	High Tide (ft)	4.98
S10	18 Apr 2023	High Tide Time	835
S10	18 Apr 2023	Low Tide (ft)	0.03
S10	18 Apr 2023	Low Tide Time	242
S10	18 Apr 2023	Comments	Water clear; Trash-3; Kelp;Seagrass;Debris; Sewage-like odor
S10	25 Apr 2023	Arrive Time	1117
S10	25 Apr 2023	Weather	Partly cloudy
S10	25 Apr 2023	Wind Speed (kts)	8.7
S10	25 Apr 2023	Wind Dir	W
S10	25 Apr 2023	Animal Life	
S10	25 Apr 2023	Floatables	None
S10	25 Apr 2023	Water Color	Green
S10	25 Apr 2023	Current Direction	S
S10	25 Apr 2023	Water Temp (C)	13
S10	25 Apr 2023	Wave Height Low (ft)	5
S10	25 Apr 2023	High Tide (ft)	4.61
S10	25 Apr 2023	High Tide Time	3
S10	25 Apr 2023	Low Tide (ft)	0.35
S10	25 Apr 2023	Low Tide Time	816
S10	25 Apr 2023	Comments	Water clear; Trash-2; Kelp;Debris
S11	04 Apr 2023	Arrive Time	930
S11	04 Apr 2023	Weather	Sunny
S11	04 Apr 2023	Wind Speed (kts)	6.2
S11	04 Apr 2023	Wind Dir	N
S11	04 Apr 2023	Animal Life	
S11	04 Apr 2023	Floatables	None
S11	04 Apr 2023	Water Color	Green
S11	04 Apr 2023	Current Direction	S
S11	04 Apr 2023	Water Temp (C)	9
S11	04 Apr 2023	Wave Height Low (ft)	6
S11	04 Apr 2023	High Tide (ft)	4.76
S11	04 Apr 2023	High Tide Time	849
S11	04 Apr 2023	Low Tide (ft)	0.67
S11	04 Apr 2023	Low Tide Time	258
S11	04 Apr 2023	Comments	Water clear; Trash-2; Kelp;Seagrass;Debris

Station	Date	Parameter	Value
S11	11 Apr 2023	Arrive Time	948
S11	11 Apr 2023	Weather	Foggy
S11	11 Apr 2023	Wind Speed (kts)	1.5
S11	11 Apr 2023	Wind Dir	W
S11	11 Apr 2023	Animal Life	
S11	11 Apr 2023	Floatables	None
S11	11 Apr 2023	Water Color	Green
S11	11 Apr 2023	Current Direction	S
S11	11 Apr 2023	Water Temp (C)	10
S11	11 Apr 2023	Wave Height Low (ft)	5
S11	11 Apr 2023	High Tide (ft)	5.02
S11	11 Apr 2023	High Tide Time	5
S11	11 Apr 2023	Low Tide (ft)	0.1
S11	11 Apr 2023	Low Tide Time	820
S11	11 Apr 2023	Comments	Water clear; Trash-2; Kelp;Seagrass;Debris
S11	18 Apr 2023	Arrive Time	1045
S11	18 Apr 2023	Weather	Sunny
S11	18 Apr 2023	Wind Speed (kts)	9.6
S11	18 Apr 2023	Wind Dir	W
S11	18 Apr 2023	Animal Life	
S11	18 Apr 2023	Floatables	None
S11	18 Apr 2023	Water Color	Brown
S11	18 Apr 2023	Current Direction	S
S11	18 Apr 2023	Water Temp (C)	14
S11	18 Apr 2023	Wave Height Low (ft)	4
S11	18 Apr 2023	High Tide (ft)	4.98
S11	18 Apr 2023	High Tide Time	835
S11	18 Apr 2023	Low Tide (ft)	0.03
S11	18 Apr 2023	Low Tide Time	242
S11	18 Apr 2023	Comments	Water clear; Trash-4; Kelp;Seagrass;Debris
S11	25 Apr 2023	Arrive Time	1031
S11	25 Apr 2023	Weather	Partly cloudy
S11	25 Apr 2023	Wind Speed (kts)	4.8
S11	25 Apr 2023	Wind Dir	W
S11	25 Apr 2023	Animal Life	
S11	25 Apr 2023	Floatables	None
S11	25 Apr 2023	Water Color	Green
S11	25 Apr 2023	Current Direction	S
S11	25 Apr 2023	Water Temp (C)	13
S11	25 Apr 2023	Wave Height Low (ft)	5
S11	25 Apr 2023	High Tide (ft)	4.61
S11	25 Apr 2023	High Tide Time	3
S11	25 Apr 2023	Low Tide (ft)	0.35
S11	25 Apr 2023	Low Tide Time	816
S11	25 Apr 2023	Comments	Water clear; Trash-1; Kelp;Seagrass;Debris
S12	04 Apr 2023	Arrive Time	841
S12	04 Apr 2023	Weather	Sunny
S12	04 Apr 2023	Wind Speed (kts)	0.7
S12	04 Apr 2023	Wind Dir	N
S12	04 Apr 2023	Animal Life	Dog-2;
S12	04 Apr 2023	Floatables	None
S12	04 Apr 2023	Water Color	Green
S12	04 Apr 2023	Current Direction	S
S12	04 Apr 2023	Water Temp (C)	11
S12	04 Apr 2023	Wave Height Low (ft)	5
S12	04 Apr 2023	High Tide (ft)	4.76
S12	04 Apr 2023	High Tide Time	849

Station	Date	Parameter	Value
S12	04 Apr 2023	Low Tide (ft)	0.67
S12	04 Apr 2023	Low Tide Time	258
S12	04 Apr 2023	Comments	Water clear; Trash-2; Kelp;Seagrass;Debris; Person/Walker/Jogger-2
S12	11 Apr 2023	Arrive Time	848
S12	11 Apr 2023	Weather	Foggy
S12	11 Apr 2023	Wind Speed (kts)	3.1
S12	11 Apr 2023	Wind Dir	W
S12	11 Apr 2023	Animal Life	Bird-4;
S12	11 Apr 2023	Floatables	None
S12	11 Apr 2023	Water Color	Green
S12	11 Apr 2023	Current Direction	S
S12	11 Apr 2023	Water Temp (C)	9
S12	11 Apr 2023	Wave Height Low (ft)	3
S12	11 Apr 2023	High Tide (ft)	5.02
S12	11 Apr 2023	High Tide Time	5
S12	11 Apr 2023	Low Tide (ft)	0.1
S12	11 Apr 2023	Low Tide Time	820
S12	11 Apr 2023	Comments	Water clear; Trash-1
S12	18 Apr 2023	Arrive Time	946
S12	18 Apr 2023	Weather	Sunny
S12	18 Apr 2023	Wind Speed (kts)	6.6
S12	18 Apr 2023	Wind Dir	W
S12	18 Apr 2023	Animal Life	Bird-5;
S12	18 Apr 2023	Floatables	None
S12	18 Apr 2023	Water Color	Green
S12	18 Apr 2023	Current Direction	S
S12	18 Apr 2023	Water Temp (C)	11
S12	18 Apr 2023	Wave Height Low (ft)	4
S12	18 Apr 2023	High Tide (ft)	4.98
S12	18 Apr 2023	High Tide Time	835
S12	18 Apr 2023	Low Tide (ft)	0.03
S12	18 Apr 2023	Low Tide Time	242
S12	18 Apr 2023	Comments	Water clear; Trash-2; Kelp;Seagrass;Debris; Person/Walker/Jogger-3
S12	25 Apr 2023	Arrive Time	938
S12	25 Apr 2023	Weather	Cloudy
S12	25 Apr 2023	Wind Speed (kts)	3.5
S12	25 Apr 2023	Wind Dir	SW
S12	25 Apr 2023	Animal Life	Bird-3; Dog-1;
S12	25 Apr 2023	Floatables	Foam
S12	25 Apr 2023	Water Color	Brown
S12	25 Apr 2023	Current Direction	S
S12	25 Apr 2023	Water Temp (C)	13
S12	25 Apr 2023	Wave Height Low (ft)	4
S12	25 Apr 2023	High Tide (ft)	4.61
S12	25 Apr 2023	High Tide Time	3
S12	25 Apr 2023	Low Tide (ft)	0.35
S12	25 Apr 2023	Low Tide Time	816
S12	25 Apr 2023	Comments	Water turbid; Trash-1; Seagrass;Kelp;Debris; Person/Walker/Jogger-1; Sewage-like odor

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 Apr 2023	857	420	122	10	31	18	585
02 Apr 2023	857	420	122	10	31	18	585
03 Apr 2023	857	420	122	10	31	18	585
04 Apr 2023	857	420	122	10	31	18	585
05 Apr 2023	897	232	62	8	21	12	285
06 Apr 2023	1326	639	122	10	31	14	585
07 Apr 2023	1326	639	122	10	31	14	585
08 Apr 2023	1326	639	122	10	31	14	585
09 Apr 2023	1326	639	122	10	31	14	585
10 Apr 2023	1724	319	67	7	18	9	751
11 Apr 2023	1724	319	67	7	18	9	751
12 Apr 2023	1724	319	67	7	18	9	751
13 Apr 2023	1647	129	52	6	18	10	486
14 Apr 2023	1647	129	52	6	18	10	486
15 Apr 2023	1647	129	52	6	18	10	486
16 Apr 2023	1647	129	40	6	18	10	486
17 Apr 2023	1647	129	40	6	18	10	486
18 Apr 2023	1748	156	66	5	13	7	843
19 Apr 2023	1748	156	66	5	13	7	843
20 Apr 2023	1748	156	66	5	13	7	843
21 Apr 2023	1748	156	66	5	13	7	843
22 Apr 2023	1748	156	66	5	13	7	843
23 Apr 2023	1826	88	32	2	6	2	726
24 Apr 2023	1826	88	32	2	6	2	726
25 Apr 2023	1826	88	32	2	6	2	726
26 Apr 2023	1191	162	48	5	9	5	875
27 Apr 2023	1262	126	31	6	6	6	825
28 Apr 2023	1262	126	31	6	6	6	825
29 Apr 2023	1262	126	31	6	6	6	825
30 Apr 2023	1262	126	31	6	6	6	825

* 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
05 Apr 2023	E	IC	IC	IC	IC	IC	IC
10 Apr 2023	E	IC	IC	IC	IC	IC	E
18 Apr 2023	E	E	E	IC	IC	IC	E
26 Apr 2023	E	E	IC	IC	IC	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 Apr 2023	163	109	31	18	77	7	210
02 Apr 2023	163	109	31	18	77	7	210
03 Apr 2023	163	109	31	18	77	7	210
04 Apr 2023	277	175	38	19	98	7	364
05 Apr 2023	272	112	25	13	83	6	252
06 Apr 2023	272	112	25	13	83	6	252
07 Apr 2023	272	112	25	13	83	6	252
08 Apr 2023	272	112	25	13	83	6	252
09 Apr 2023	272	112	25	13	83	6	252
10 Apr 2023	293	58	13	8	42	4	223
11 Apr 2023	293	58	13	8	42	4	223
12 Apr 2023	293	58	13	8	42	4	223
13 Apr 2023	293	58	13	8	42	4	223
14 Apr 2023	293	58	13	8	42	4	223
15 Apr 2023	293	58	13	8	42	4	223
16 Apr 2023	293	58	13	8	42	4	223
17 Apr 2023	293	58	13	8	42	4	223
18 Apr 2023	367	63	19	8	35	4	436
19 Apr 2023	367	63	19	8	35	4	436
20 Apr 2023	367	63	19	8	35	4	436
21 Apr 2023	367	63	19	8	35	4	436
22 Apr 2023	367	63	19	8	35	4	436
23 Apr 2023	367	63	19	8	35	4	436
24 Apr 2023	367	63	19	8	35	4	436
25 Apr 2023	481	31	18	8	40	5	301
26 Apr 2023	370	49	21	10	33	7	313
27 Apr 2023	370	49	21	10	33	7	313
28 Apr 2023	370	49	21	10	33	7	313
29 Apr 2023	370	49	21	10	33	7	313
30 Apr 2023	370	49	21	10	33	7	313

* 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
April	E	E	IC	IC	IC	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 and depth over the previous 30 days unless otherwise noted (*). Values >70 CFU/100 mL exceed the standard. Median calculated using n<5

Date	I19		I24		I25		I26		I32		I39		I40			
	2m	11m	2m	11m	2m	6m	9m	2m	6m	9m	2m	12m	18m	2m	6m	9m
01 Apr 2023	10400	12900	9400	4800	1340	3165	350	510	360	950	1090	31	110	14500	7000	11900
02 Apr 2023	10400	12900	9400	4800	1340	3165	350	510	360	950	1090	31	110	14500	7000	11900
03 Apr 2023	10400	12900	9400	4800	1340	3165	350	510	360	950	1090	31	110	14500	7000	11900
04 Apr 2023	10400	12900	9400	4800	1340	3165	350	510	360	950	1090	31	110	14500	7000	11900
05 Apr 2023	16000	9800	7400	2800	1000	80	40	40	140	500	380	2	2	100	13000	6000
06 Apr 2023	16000	12900	9400	4800	1050	3165	350	520	360	950	1090	31	21	14500	7000	11900
07 Apr 2023	16000	12900	9400	4800	1050	3165	350	520	360	950	1090	31	21	14500	7000	11900
08 Apr 2023	16000	12900	9400	4800	1050	3165	350	520	360	950	1090	31	21	14500	7000	11900
09 Apr 2023	16000	12900	9400	4800	1050	3165	350	520	360	950	1090	31	21	14500	7000	11900
10 Apr 2023	16000	9800	7400	2800	1000	80	40	40	140	500	380	2	2	16000	6000	7800
11 Apr 2023	16000	9800	7400	2800	1000	80	40	40	140	500	380	2	2	16000	6000	7800
12 Apr 2023	16000	9800	7400	2800	1000	80	40	40	140	500	380	2	2	16000	6000	7800
13 Apr 2023	16000	9300	4300	1420	1000	53	77	2	24	300	299	340	370	2	2	14500
14 Apr 2023	16000	9300	4300	1420	1000	53	77	2	24	300	299	340	370	2	2	14500
15 Apr 2023	16000	9300	4300	1420	1000	53	77	2	24	300	299	340	370	2	2	14500
16 Apr 2023	16000	9300	4300	1420	1000	53	77	2	24	300	299	340	370	2	2	14500
17 Apr 2023	16000	9300	4300	1420	1000	53	77	2	24	300	299	340	370	2	2	14500
18 Apr 2023	16000	8800	5000	2200	680	80	130	2	24	300	299	340	370	2	2	16000
19 Apr 2023	16000	8800	5000	2200	680	80	130	2	8	20	20	180	360	2	2	16000
20 Apr 2023	16000	8800	5000	2200	680	80	130	2	8	20	20	180	360	2	2	16000
21 Apr 2023	16000	8800	5000	2200	680	80	130	2	8	20	20	180	360	2	2	16000
22 Apr 2023	16000	8800	5000	2200	680	80	130	2	8	20	20	180	360	2	2	16000
23 Apr 2023	16000	7800	3100	1120	341	53	77	2	5	17	19	100	210	2	2	16000
24 Apr 2023	16000	7800	3100	1120	341	53	77	2	5	17	19	100	210	2	2	16000
25 Apr 2023	16000	6800	1200	2200	680	80	130	2	8	20	20	180	360	2	2	16000
26 Apr 2023	16000	6800	1200	2200	680	80	130	2	8	20	20	180	360	2	2	16000
27 Apr 2023	16000	5800	1200	1120	341	513	302	3	5	27	19	100	80	2	3	15
28 Apr 2023	16000	5800	1200	1120	341	513	302	3	5	27	19	100	80	2	3	15
29 Apr 2023	16000	5800	1200	1120	341	513	302	3	5	27	19	100	80	2	3	15
30 Apr 2023	16000	5800	1200	1120	341	513	302	3	5	27	19	100	80	2	3	15

Table 3.6

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

Date	I19			I24			I25			I26			I32			I39			I40		
	2m	6m	11m	2m	6m	11m	2m	6m	9m	2m	6m	9m	2m	6m	9m	2m	12m	18m	2m	6m	9m
April	E	E	E	E	E	E	E	E	E	E	E	E	E	IC	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	Temp	XMS	DO	Sal	pH
I19	05 Apr 2023	1034	2	>16000	3000e	600	11.6	44.41	5.5	33.57	7.8
I19	05 Apr 2023	1034	6	4800	180e	100e	11.1	49.78	3.4	33.78	7.7
I19	05 Apr 2023	1034	11	1200	50	46	10.8	70.62	3.1	33.84	7.7
I19	10 Apr 2023	1106	2	>16000	>12000	7200	11.8	54.25	6.2	33.29	7.8
I19	10 Apr 2023	1106	6	8800	2200e	340e	11.2	67.91	3.6	33.88	7.7
I19	10 Apr 2023	1106	11	1200e	580	100	10.9	49.96	3.0	33.90	7.7
I19	18 Apr 2023	1118	2	>16000	4400	800	14.0	19.07	11.8	33.37	8.3
I19	18 Apr 2023	1118	6	6800	1400e	100e	13.7	48.38	9.3	33.63	8.2
I19	18 Apr 2023	1118	11	5000	840	160e	13.6	36.31	9.6	33.61	8.2
I19	26 Apr 2023	1041	2	3800e	520	180e	15.8	42.00	10.6	33.65	8.4
I19	26 Apr 2023	1041	6	320e	76	50	15.1	59.82	9.8	33.67	8.3
I19	26 Apr 2023	1041	11	560	52	66	14.6	59.15	9.6	33.69	8.2
I24	05 Apr 2023	1053	2	40e	2e	<2	12.3	48.04	6.2	33.68	7.8
I24	05 Apr 2023	1053	6	220e	2e	<2	11.4	57.29	4.3	33.77	7.8
I24	05 Apr 2023	1053	11	1200e	60e	32e	11.0	23.83	3.0	33.81	7.7
I24	10 Apr 2023	1130	2	20e	<2	<2	13.2	76.27	8.2	33.73	8.0
I24	10 Apr 2023	1130	6	280e	42	4e	11.2	75.54	3.3	33.87	7.7
I24	10 Apr 2023	1130	11	240e	16e	14e	10.8	38.13	2.6	33.90	7.6
I24	18 Apr 2023	1140	2	2200e	420	16e	14.5	43.98	10.9	33.42	8.3
I24	18 Apr 2023	1140	6	2400e	400	18e	12.9	75.86	6.4	33.71	8.0
I24	18 Apr 2023	1140	11	800	180e	12e	12.2	75.05	4.5	33.77	7.8
I24	26 Apr 2023	1103	2	>16000	4400	1200	16.3	33.53	10.5	33.57	8.4
I24	26 Apr 2023	1103	6	3600e	820	180e	15.5	75.78	10.9	33.65	8.3
I24	26 Apr 2023	1103	11	1200	180e	86	15.2	78.01	10.6	33.66	8.3
I25	05 Apr 2023	1059	2	2e	<2	<2	12.2	57.28	5.8	33.68	7.8
I25	05 Apr 2023	1059	6	20e	<2	2e	11.4	66.16	4.6	33.78	7.8
I25	05 Apr 2023	1059	9	<20	<2	2e	11.0	79.33	3.6	33.84	7.7
I25	10 Apr 2023	1137	2	<2	<2	<2	13.3	76.35	8.2	33.73	8.0
I25	10 Apr 2023	1137	6	26e	6e	<2	11.8	74.62	4.8	33.83	7.9
I25	10 Apr 2023	1137	9	24e	<2	<2	11.1	84.38	3.1	33.85	7.7
I25	18 Apr 2023	1147	2	680	98	4e	14.5	55.36	12.3	33.62	8.4
I25	18 Apr 2023	1147	6	6400	900	60	12.6	75.11	4.9	33.72	8.0
I25	18 Apr 2023	1147	9	3000e	560	26e	12.1	77.24	3.8	33.77	7.8
I25	26 Apr 2023	1110	2	2200e	340e	32e	16.5	42.34	11.7	33.62	8.5
I25	26 Apr 2023	1110	6	1000	340e	68	15.6	68.80	10.9	33.65	8.3
I25	26 Apr 2023	1110	9	580e	94	68	15.3	77.44	10.2	33.66	8.3
I26	05 Apr 2023	1110	2	<2	<2	<2	12.0	64.73	5.4	33.71	7.8
I26	05 Apr 2023	1110	6	8e	<2	<2	11.4	67.55	4.6	33.77	7.8
I26	05 Apr 2023	1110	9	40e	<2	<2	10.8	81.11	3.2	33.87	7.7

Station	Date	Time	Depth	Total	Fecal	Entero	Temp	XMS	DO	Sal	pH
I26	10 Apr 2023	1147	2	2e	<2	<2	13.2	74.31	8.2	33.72	8.0
I26	10 Apr 2023	1147	6	<2	<2	<2	12.4	71.67	6.3	33.77	8.0
I26	10 Apr 2023	1147	9	14e	<2	<2	11.0	84.43	3.1	33.87	7.7
I26	18 Apr 2023	1157	2	4e	<2	2e	14.3	63.12	12.0	33.62	8.4
I26	18 Apr 2023	1157	6	<2	<2	<2	12.4	79.78	6.5	33.72	8.0
I26	18 Apr 2023	1157	9	<2	<2	<2	11.9	77.50	4.8	33.73	7.8
I26	26 Apr 2023	1121	2	1000	220e	46	16.5	30.62	10.9	33.55	8.5
I26	26 Apr 2023	1121	6	280e	62	34e	15.3	76.42	9.4	33.65	8.2
I26	26 Apr 2023	1121	9	320e	70	30e	15.0	71.94	8.9	33.67	8.2
I32	05 Apr 2023	1121	2	18e	<2	4e	11.8	45.64	5.6	33.77	7.8
I32	05 Apr 2023	1121	6	180e	2e	28e	10.8	51.89	3.0	33.87	7.7
I32	05 Apr 2023	1121	9	360e	8e	80e	10.8	39.88	3.0	33.87	7.7
I32	10 Apr 2023	1200	2	14e	<2	<2	13.2	81.30	8.1	33.75	8.0
I32	10 Apr 2023	1200	6	<2	<2	<2	12.0	52.11	5.2	33.83	7.9
I32	10 Apr 2023	1200	9	60e	<2	18e	10.9	58.89	2.9	33.88	7.7
I32	18 Apr 2023	1209	2	<20	2e	<2	14.4	58.61	11.9	33.63	8.4
I32	18 Apr 2023	1209	6	<20	<2	8e	14.2	30.50	9.5	33.65	8.3
I32	18 Apr 2023	1209	9	<20	6e	10e	12.1	27.24	4.0	33.78	7.9
I32	26 Apr 2023	1130	2	500	86	12e	16.4	34.67	9.6	33.48	8.4
I32	26 Apr 2023	1130	6	200e	38e	10e	15.7	80.56	9.7	33.61	8.3
I32	26 Apr 2023	1130	9	100e	32e	18e	14.5	51.93	7.0	33.68	8.1
I39	05 Apr 2023	1013	2	<2	<2	<2	12.0	77.91	5.8	33.66	7.8
I39	05 Apr 2023	1013	12	2e	<2	<2	11.0	88.03	3.7	33.84	7.7
I39	05 Apr 2023	1013	18	24e	2e	<2	10.6	90.12	3.1	33.91	7.7
I39	10 Apr 2023	1039	2	<2	<2	<2	13.1	78.67	7.5	33.70	7.9
I39	10 Apr 2023	1039	12	<2	<2	<2	11.9	84.82	5.0	33.78	7.8
I39	10 Apr 2023	1039	18	6e	<2	<2	10.6	89.49	3.1	33.90	7.7
I39	18 Apr 2023	1055	2	<2	<2	<2	14.4	74.05	11.5	33.60	8.4
I39	18 Apr 2023	1055	12	4e	<2	<2	12.3	79.10	6.6	33.69	8.0
I39	18 Apr 2023	1055	18	<2	<2	<2	11.6	80.91	3.8	33.83	7.7
I39	26 Apr 2023	1018	2	1600e	260e	40	16.2	33.96	11.5	33.63	8.4
I39	26 Apr 2023	1018	12	480	82	36e	15.7	49.91	10.5	33.61	8.3
I39	26 Apr 2023	1018	18	120e	10e	8e	14.2	81.14	8.6	33.70	8.2
I40	05 Apr 2023	1046	2	1000	20e	20e	11.4	22.07	5.9	33.77	7.8
I40	05 Apr 2023	1046	6	940	<20	80e	11.2	19.42	5.5	33.78	7.7
I40	05 Apr 2023	1046	9	700	8e	20e	10.9	44.65	3.0	33.83	7.7
I40	10 Apr 2023	1120	2	>16000	5400	500	12.8	55.14	7.3	33.67	7.9
I40	10 Apr 2023	1120	6	4200	560	180e	10.9	64.85	3.0	33.91	7.7
I40	10 Apr 2023	1120	9	3200e	180e	28e	10.9	59.20	2.9	33.91	7.7
I40	18 Apr 2023	1130	2	>16000	>12000	1000	14.4	17.43	12.3	33.16	8.4
I40	18 Apr 2023	1130	6	>16000	8200	2800e	12.9	61.60	7.7	33.51	8.0
I40	18 Apr 2023	1130	9	9000	2800e	220e	12.9	76.72	7.1	33.63	8.0
I40	26 Apr 2023	1055	2	>16000	5200	960	16.3	50.49	9.9	33.57	8.4
I40	26 Apr 2023	1055	6	2800e	240e	120	15.2	71.67	10.1	33.67	8.3
I40	26 Apr 2023	1055	9	680	90	54	14.9	67.55	9.7	33.67	8.3

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
I19	05 Apr 2023	Depth (m)	11
I19	05 Apr 2023	Arrive Time	1034
I19	05 Apr 2023	Depart Time	1037
I19	05 Apr 2023	Air Temp (C)	11.5
I19	05 Apr 2023	Weather	Clear
I19	05 Apr 2023	Visibility (mi)	11
I19	05 Apr 2023	Wind Speed (kts)	3.9
I19	05 Apr 2023	Wind Dir	NW
I19	05 Apr 2023	Water Color	Green
I19	05 Apr 2023	Wave Ht Low (ft)	6
I19	05 Apr 2023	Wave Period (sec)	8
I19	05 Apr 2023	Sea State	Confused Swell
I19	05 Apr 2023	High Tide (ft)	4.96
I19	05 Apr 2023	High Tide Time	2136
I19	05 Apr 2023	Low Tide (ft)	0.23
I19	05 Apr 2023	Low Tide Time	1530
I19	05 Apr 2023	Comments	none
I19	10 Apr 2023	Depth (m)	10
I19	10 Apr 2023	Arrive Time	1106
I19	10 Apr 2023	Depart Time	1112
I19	10 Apr 2023	Air Temp (C)	11.7
I19	10 Apr 2023	Weather	Fog
I19	10 Apr 2023	Visibility (mi)	2
I19	10 Apr 2023	Wind Speed (kts)	5.8
I19	10 Apr 2023	Wind Dir	NW
I19	10 Apr 2023	Water Color	Green
I19	10 Apr 2023	Wave Ht Low (ft)	3
I19	10 Apr 2023	Wave Period (sec)	17
I19	10 Apr 2023	Sea State	Calm
I19	10 Apr 2023	High Tide (ft)	5.19
I19	10 Apr 2023	High Tide Time	6
I19	10 Apr 2023	Low Tide (ft)	-0.17
I19	10 Apr 2023	Low Tide Time	700
I19	10 Apr 2023	Comments	Issue with btl 1 again. Sample taken from btl 4 manual fire. Sewage-like odor.
I19	18 Apr 2023	Depth (m)	10
I19	18 Apr 2023	Arrive Time	1118
I19	18 Apr 2023	Depart Time	1121
I19	18 Apr 2023	Air Temp (C)	13.5
I19	18 Apr 2023	Weather	Partly Cloudy
I19	18 Apr 2023	Visibility (mi)	10
I19	18 Apr 2023	Wind Speed (kts)	8.4
I19	18 Apr 2023	Wind Dir	SW
I19	18 Apr 2023	Water Color	Reddish-Brown
I19	18 Apr 2023	Wave Ht Low (ft)	3
I19	18 Apr 2023	Wave Period (sec)	9
I19	18 Apr 2023	Sea State	Confused Swell
I19	18 Apr 2023	High Tide (ft)	5.55
I19	18 Apr 2023	High Tide Time	2054
I19	18 Apr 2023	Low Tide (ft)	-0.18
I19	18 Apr 2023	Low Tide Time	1442
I19	18 Apr 2023	Comments	Strong red tide present
I19	26 Apr 2023	Depth (m)	11

Station	Date	Parameter	Value
I19	26 Apr 2023	Arrive Time	1041
I19	26 Apr 2023	Depart Time	1044
I19	26 Apr 2023	Air Temp (C)	15.9
I19	26 Apr 2023	Weather	Overcast
I19	26 Apr 2023	Visibility (mi)	10
I19	26 Apr 2023	Wind Speed (kts)	5.3
I19	26 Apr 2023	Wind Dir	N
I19	26 Apr 2023	Water Color	Reddish-Brown
I19	26 Apr 2023	Wave Ht Low (ft)	3.9
I19	26 Apr 2023	Wave Period (sec)	8
I19	26 Apr 2023	Sea State	Light Chop
I19	26 Apr 2023	High Tide (ft)	4.17
I19	26 Apr 2023	High Tide Time	42
I19	26 Apr 2023	Low Tide (ft)	0.38
I19	26 Apr 2023	Low Tide Time	942
I19	26 Apr 2023	Comments	none
I24	05 Apr 2023	Depth (m)	10
I24	05 Apr 2023	Arrive Time	1053
I24	05 Apr 2023	Depart Time	1055
I24	05 Apr 2023	Air Temp (C)	11.6
I24	05 Apr 2023	Weather	Clear
I24	05 Apr 2023	Visibility (mi)	11
I24	05 Apr 2023	Wind Speed (kts)	5
I24	05 Apr 2023	Wind Dir	NW
I24	05 Apr 2023	Water Color	Green
I24	05 Apr 2023	Wave Ht Low (ft)	6
I24	05 Apr 2023	Wave Period (sec)	8
I24	05 Apr 2023	Sea State	Confused Swell
I24	05 Apr 2023	High Tide (ft)	4.96
I24	05 Apr 2023	High Tide Time	2136
I24	05 Apr 2023	Low Tide (ft)	0.23
I24	05 Apr 2023	Low Tide Time	1530
I24	05 Apr 2023	Comments	none
I24	10 Apr 2023	Depth (m)	10
I24	10 Apr 2023	Arrive Time	1130
I24	10 Apr 2023	Depart Time	1134
I24	10 Apr 2023	Air Temp (C)	11.5
I24	10 Apr 2023	Weather	Fog
I24	10 Apr 2023	Visibility (mi)	2
I24	10 Apr 2023	Wind Speed (kts)	6.2
I24	10 Apr 2023	Wind Dir	W
I24	10 Apr 2023	Water Color	Brownish-Green
I24	10 Apr 2023	Wave Ht Low (ft)	3
I24	10 Apr 2023	Wave Period (sec)	17
I24	10 Apr 2023	Sea State	Calm
I24	10 Apr 2023	High Tide (ft)	5.19
I24	10 Apr 2023	High Tide Time	6
I24	10 Apr 2023	Low Tide (ft)	-0.17
I24	10 Apr 2023	Low Tide Time	700
I24	10 Apr 2023	Comments	none
I24	18 Apr 2023	Depth (m)	11
I24	18 Apr 2023	Arrive Time	1140
I24	18 Apr 2023	Depart Time	1141
I24	18 Apr 2023	Air Temp (C)	13.6
I24	18 Apr 2023	Weather	Partly Cloudy
I24	18 Apr 2023	Visibility (mi)	10
I24	18 Apr 2023	Wind Speed (kts)	8.3
I24	18 Apr 2023	Wind Dir	SW

Station	Date	Parameter	Value
I24	18 Apr 2023	Water Color	Reddish-Brown
I24	18 Apr 2023	Wave Ht Low (ft)	3
I24	18 Apr 2023	Wave Period (sec)	9
I24	18 Apr 2023	Sea State	Confused Swell
I24	18 Apr 2023	High Tide (ft)	5.55
I24	18 Apr 2023	High Tide Time	2054
I24	18 Apr 2023	Low Tide (ft)	-0.18
I24	18 Apr 2023	Low Tide Time	1442
I24	18 Apr 2023	Comments	Strong red tide present
I24	26 Apr 2023	Depth (m)	9
I24	26 Apr 2023	Arrive Time	1103
I24	26 Apr 2023	Depart Time	1107
I24	26 Apr 2023	Air Temp (C)	15.7
I24	26 Apr 2023	Weather	Overcast
I24	26 Apr 2023	Visibility (mi)	10
I24	26 Apr 2023	Wind Speed (kts)	10.9
I24	26 Apr 2023	Wind Dir	NW
I24	26 Apr 2023	Water Color	Reddish-Brown
I24	26 Apr 2023	Wave Ht Low (ft)	3.9
I24	26 Apr 2023	Wave Period (sec)	8
I24	26 Apr 2023	Sea State	Light Chop
I24	26 Apr 2023	High Tide (ft)	4.17
I24	26 Apr 2023	High Tide Time	42
I24	26 Apr 2023	Low Tide (ft)	0.38
I24	26 Apr 2023	Low Tide Time	942
I24	26 Apr 2023	Comments	none
I25	05 Apr 2023	Depth (m)	9
I25	05 Apr 2023	Arrive Time	1059
I25	05 Apr 2023	Depart Time	1103
I25	05 Apr 2023	Air Temp (C)	11.6
I25	05 Apr 2023	Weather	Clear
I25	05 Apr 2023	Visibility (mi)	11
I25	05 Apr 2023	Wind Speed (kts)	6.4
I25	05 Apr 2023	Wind Dir	NW
I25	05 Apr 2023	Water Color	Green
I25	05 Apr 2023	Wave Ht Low (ft)	6
I25	05 Apr 2023	Wave Period (sec)	8
I25	05 Apr 2023	Sea State	Confused Swell
I25	05 Apr 2023	High Tide (ft)	4.96
I25	05 Apr 2023	High Tide Time	2136
I25	05 Apr 2023	Low Tide (ft)	0.23
I25	05 Apr 2023	Low Tide Time	1530
I25	05 Apr 2023	Comments	none
I25	10 Apr 2023	Depth (m)	9
I25	10 Apr 2023	Arrive Time	1137
I25	10 Apr 2023	Depart Time	1140
I25	10 Apr 2023	Air Temp (C)	11.7
I25	10 Apr 2023	Weather	Fog
I25	10 Apr 2023	Visibility (mi)	2
I25	10 Apr 2023	Wind Speed (kts)	5.3
I25	10 Apr 2023	Wind Dir	W
I25	10 Apr 2023	Water Color	Green
I25	10 Apr 2023	Wave Ht Low (ft)	3
I25	10 Apr 2023	Wave Period (sec)	17
I25	10 Apr 2023	Sea State	Calm
I25	10 Apr 2023	High Tide (ft)	5.19
I25	10 Apr 2023	High Tide Time	6
I25	10 Apr 2023	Low Tide (ft)	-0.17

Station	Date	Parameter	Value
I25	10 Apr 2023	Low Tide Time	700
I25	10 Apr 2023	Comments	none
I25	18 Apr 2023	Depth (m)	9
I25	18 Apr 2023	Arrive Time	1147
I25	18 Apr 2023	Depart Time	1150
I25	18 Apr 2023	Air Temp (C)	13.5
I25	18 Apr 2023	Weather	Partly Cloudy
I25	18 Apr 2023	Visibility (mi)	10
I25	18 Apr 2023	Wind Speed (kts)	8
I25	18 Apr 2023	Wind Dir	SW
I25	18 Apr 2023	Water Color	Reddish-Brown
I25	18 Apr 2023	Wave Ht Low (ft)	3
I25	18 Apr 2023	Wave Period (sec)	9
I25	18 Apr 2023	Sea State	Confused Swell
I25	18 Apr 2023	High Tide (ft)	5.55
I25	18 Apr 2023	High Tide Time	2054
I25	18 Apr 2023	Low Tide (ft)	-0.18
I25	18 Apr 2023	Low Tide Time	1442
I25	18 Apr 2023	Comments	Strong red tide present
I25	26 Apr 2023	Depth (m)	8
I25	26 Apr 2023	Arrive Time	1110
I25	26 Apr 2023	Depart Time	1113
I25	26 Apr 2023	Air Temp (C)	15.7
I25	26 Apr 2023	Weather	Overcast
I25	26 Apr 2023	Visibility (mi)	10
I25	26 Apr 2023	Wind Speed (kts)	15.7
I25	26 Apr 2023	Wind Dir	NW
I25	26 Apr 2023	Water Color	Reddish-Brown
I25	26 Apr 2023	Wave Ht Low (ft)	3.9
I25	26 Apr 2023	Wave Period (sec)	8
I25	26 Apr 2023	Sea State	Light Chop
I25	26 Apr 2023	High Tide (ft)	4.17
I25	26 Apr 2023	High Tide Time	42
I25	26 Apr 2023	Low Tide (ft)	0.38
I25	26 Apr 2023	Low Tide Time	942
I25	26 Apr 2023	Comments	8.6m depth captured in files to round up
I26	05 Apr 2023	Depth (m)	10
I26	05 Apr 2023	Arrive Time	1110
I26	05 Apr 2023	Depart Time	1112
I26	05 Apr 2023	Air Temp (C)	11.7
I26	05 Apr 2023	Weather	Clear
I26	05 Apr 2023	Visibility (mi)	11
I26	05 Apr 2023	Wind Speed (kts)	7.1
I26	05 Apr 2023	Wind Dir	NW
I26	05 Apr 2023	Water Color	Green
I26	05 Apr 2023	Wave Ht Low (ft)	6
I26	05 Apr 2023	Wave Period (sec)	8
I26	05 Apr 2023	Sea State	Confused Swell
I26	05 Apr 2023	High Tide (ft)	4.96
I26	05 Apr 2023	High Tide Time	2136
I26	05 Apr 2023	Low Tide (ft)	0.23
I26	05 Apr 2023	Low Tide Time	1530
I26	05 Apr 2023	Comments	none
I26	10 Apr 2023	Depth (m)	9
I26	10 Apr 2023	Arrive Time	1147
I26	10 Apr 2023	Depart Time	1151
I26	10 Apr 2023	Air Temp (C)	11.7

Station	Date	Parameter	Value
I26	10 Apr 2023	Weather	Fog
I26	10 Apr 2023	Visibility (mi)	2
I26	10 Apr 2023	Wind Speed (kts)	6.7
I26	10 Apr 2023	Wind Dir	NW
I26	10 Apr 2023	Water Color	Green
I26	10 Apr 2023	Wave Ht Low (ft)	3
I26	10 Apr 2023	Wave Period (sec)	17
I26	10 Apr 2023	Sea State	Calm
I26	10 Apr 2023	High Tide (ft)	5.19
I26	10 Apr 2023	High Tide Time	6
I26	10 Apr 2023	Low Tide (ft)	-0.17
I26	10 Apr 2023	Low Tide Time	700
I26	10 Apr 2023	Comments	none
I26	18 Apr 2023	Depth (m)	9
I26	18 Apr 2023	Arrive Time	1157
I26	18 Apr 2023	Depart Time	1159
I26	18 Apr 2023	Air Temp (C)	13.5
I26	18 Apr 2023	Weather	Partly Cloudy
I26	18 Apr 2023	Visibility (mi)	10
I26	18 Apr 2023	Wind Speed (kts)	8.6
I26	18 Apr 2023	Wind Dir	SW
I26	18 Apr 2023	Water Color	Reddish-Brown
I26	18 Apr 2023	Wave Ht Low (ft)	3
I26	18 Apr 2023	Wave Period (sec)	9
I26	18 Apr 2023	Sea State	Confused Swell
I26	18 Apr 2023	High Tide (ft)	5.55
I26	18 Apr 2023	High Tide Time	2054
I26	18 Apr 2023	Low Tide (ft)	-0.18
I26	18 Apr 2023	Low Tide Time	1442
I26	18 Apr 2023	Comments	Strong red tide present
I26	26 Apr 2023	Depth (m)	1
I26	26 Apr 2023	Arrive Time	1121
I26	26 Apr 2023	Depart Time	1124
I26	26 Apr 2023	Air Temp (C)	15.9
I26	26 Apr 2023	Weather	Overcast
I26	26 Apr 2023	Visibility (mi)	10
I26	26 Apr 2023	Wind Speed (kts)	10
I26	26 Apr 2023	Wind Dir	NW
I26	26 Apr 2023	Water Color	Reddish-Brown
I26	26 Apr 2023	Wave Ht Low (ft)	3.9
I26	26 Apr 2023	Wave Period (sec)	8
I26	26 Apr 2023	Sea State	Light Chop
I26	26 Apr 2023	High Tide (ft)	4.17
I26	26 Apr 2023	High Tide Time	42
I26	26 Apr 2023	Low Tide (ft)	0.38
I26	26 Apr 2023	Low Tide Time	942
I26	26 Apr 2023	Comments	none
I32	05 Apr 2023	Depth (m)	11
I32	05 Apr 2023	Arrive Time	1121
I32	05 Apr 2023	Depart Time	1126
I32	05 Apr 2023	Air Temp (C)	11.9
I32	05 Apr 2023	Weather	Clear
I32	05 Apr 2023	Visibility (mi)	11
I32	05 Apr 2023	Wind Speed (kts)	10
I32	05 Apr 2023	Wind Dir	W
I32	05 Apr 2023	Water Color	Green
I32	05 Apr 2023	Wave Ht Low (ft)	6
I32	05 Apr 2023	Wave Period (sec)	8

Station	Date	Parameter	Value
I32	05 Apr 2023	Sea State	Confused Swell
I32	05 Apr 2023	High Tide (ft)	4.96
I32	05 Apr 2023	High Tide Time	2136
I32	05 Apr 2023	Low Tide (ft)	0.23
I32	05 Apr 2023	Low Tide Time	1530
I32	05 Apr 2023	Comments	none
I32	10 Apr 2023	Depth (m)	10
I32	10 Apr 2023	Arrive Time	1200
I32	10 Apr 2023	Depart Time	1205
I32	10 Apr 2023	Air Temp (C)	11.8
I32	10 Apr 2023	Weather	Fog
I32	10 Apr 2023	Visibility (mi)	2
I32	10 Apr 2023	Wind Speed (kts)	7.3
I32	10 Apr 2023	Wind Dir	W
I32	10 Apr 2023	Water Color	Green
I32	10 Apr 2023	Wave Ht Low (ft)	3
I32	10 Apr 2023	Wave Period (sec)	17
I32	10 Apr 2023	Sea State	Calm
I32	10 Apr 2023	High Tide (ft)	5.19
I32	10 Apr 2023	High Tide Time	6
I32	10 Apr 2023	Low Tide (ft)	-0.17
I32	10 Apr 2023	Low Tide Time	700
I32	10 Apr 2023	Comments	Bacti taken from 2m-btl5; 6m-btl2; 9m-btl3
I32	18 Apr 2023	Depth (m)	10
I32	18 Apr 2023	Arrive Time	1209
I32	18 Apr 2023	Depart Time	1212
I32	18 Apr 2023	Air Temp (C)	13.7
I32	18 Apr 2023	Weather	Partly Cloudy
I32	18 Apr 2023	Visibility (mi)	10
I32	18 Apr 2023	Wind Speed (kts)	8.7
I32	18 Apr 2023	Wind Dir	W
I32	18 Apr 2023	Water Color	Reddish-Brown
I32	18 Apr 2023	Wave Ht Low (ft)	3
I32	18 Apr 2023	Wave Period (sec)	9
I32	18 Apr 2023	Sea State	Confused Swell
I32	18 Apr 2023	High Tide (ft)	5.55
I32	18 Apr 2023	High Tide Time	2054
I32	18 Apr 2023	Low Tide (ft)	-0.18
I32	18 Apr 2023	Low Tide Time	1442
I32	18 Apr 2023	Comments	Strong red tide present
I32	26 Apr 2023	Depth (m)	10
I32	26 Apr 2023	Arrive Time	1134
I32	26 Apr 2023	Depart Time	1138
I32	26 Apr 2023	Air Temp (C)	16
I32	26 Apr 2023	Weather	Overcast
I32	26 Apr 2023	Visibility (mi)	10
I32	26 Apr 2023	Wind Speed (kts)	12.1
I32	26 Apr 2023	Wind Dir	NW
I32	26 Apr 2023	Water Color	Reddish-Brown
I32	26 Apr 2023	Wave Ht Low (ft)	3.9
I32	26 Apr 2023	Wave Period (sec)	8
I32	26 Apr 2023	Sea State	Light Chop
I32	26 Apr 2023	High Tide (ft)	4.17
I32	26 Apr 2023	High Tide Time	42
I32	26 Apr 2023	Low Tide (ft)	0.38
I32	26 Apr 2023	Low Tide Time	942
I32	26 Apr 2023	Comments	none

Station	Date	Parameter	Value
I39	05 Apr 2023	Depth (m)	20
I39	05 Apr 2023	Arrive Time	1013
I39	05 Apr 2023	Depart Time	1015
I39	05 Apr 2023	Air Temp (C)	11
I39	05 Apr 2023	Weather	Clear
I39	05 Apr 2023	Visibility (mi)	11
I39	05 Apr 2023	Wind Speed (kts)	2.8
I39	05 Apr 2023	Wind Dir	NW
I39	05 Apr 2023	Water Color	Blueish-Green
I39	05 Apr 2023	Wave Ht Low (ft)	6
I39	05 Apr 2023	Wave Period (sec)	8
I39	05 Apr 2023	Sea State	Confused Swell
I39	05 Apr 2023	High Tide (ft)	4.96
I39	05 Apr 2023	High Tide Time	2136
I39	05 Apr 2023	Low Tide (ft)	0.23
I39	05 Apr 2023	Low Tide Time	1530
I39	05 Apr 2023	Comments	none
I39	10 Apr 2023	Depth (m)	18
I39	10 Apr 2023	Arrive Time	1039
I39	10 Apr 2023	Depart Time	1047
I39	10 Apr 2023	Air Temp (C)	11.4
I39	10 Apr 2023	Weather	Fog
I39	10 Apr 2023	Visibility (mi)	2
I39	10 Apr 2023	Wind Speed (kts)	3.8
I39	10 Apr 2023	Wind Dir	SW
I39	10 Apr 2023	Water Color	Green
I39	10 Apr 2023	Wave Ht Low (ft)	3
I39	10 Apr 2023	Wave Period (sec)	17
I39	10 Apr 2023	Sea State	Calm
I39	10 Apr 2023	High Tide (ft)	5.19
I39	10 Apr 2023	High Tide Time	6
I39	10 Apr 2023	Low Tide (ft)	-0.17
I39	10 Apr 2023	Low Tide Time	700
I39	10 Apr 2023	Comments	btl 1 misfire. 2m sample collected using btl 4 on separate cast. Data from cast 1.
I39	18 Apr 2023	Depth (m)	18
I39	18 Apr 2023	Arrive Time	1055
I39	18 Apr 2023	Depart Time	1058
I39	18 Apr 2023	Air Temp (C)	13.5
I39	18 Apr 2023	Weather	Partly Cloudy
I39	18 Apr 2023	Visibility (mi)	10
I39	18 Apr 2023	Wind Speed (kts)	7.9
I39	18 Apr 2023	Wind Dir	SW
I39	18 Apr 2023	Water Color	Green
I39	18 Apr 2023	Wave Ht Low (ft)	4
I39	18 Apr 2023	Wave Period (sec)	9
I39	18 Apr 2023	Sea State	Confused Swell
I39	18 Apr 2023	High Tide (ft)	5.55
I39	18 Apr 2023	High Tide Time	2054
I39	18 Apr 2023	Low Tide (ft)	-0.18
I39	18 Apr 2023	Low Tide Time	1442
I39	18 Apr 2023	Comments	none
I39	26 Apr 2023	Depth (m)	19
I39	26 Apr 2023	Arrive Time	1018
I39	26 Apr 2023	Depart Time	1021
I39	26 Apr 2023	Air Temp (C)	15.7
I39	26 Apr 2023	Weather	Overcast
I39	26 Apr 2023	Visibility (mi)	10

Station	Date	Parameter	Value
I39	26 Apr 2023	Wind Speed (kts)	3.8
I39	26 Apr 2023	Wind Dir	NW
I39	26 Apr 2023	Water Color	Reddish-Brown
I39	26 Apr 2023	Wave Ht Low (ft)	3.9
I39	26 Apr 2023	Wave Period (sec)	8
I39	26 Apr 2023	Sea State	Light Chop
I39	26 Apr 2023	High Tide (ft)	4.17
I39	26 Apr 2023	High Tide Time	42
I39	26 Apr 2023	Low Tide (ft)	0.38
I39	26 Apr 2023	Low Tide Time	942
I39	26 Apr 2023	Comments	Extremely high Oxygen
I40	05 Apr 2023	Depth (m)	10
I40	05 Apr 2023	Arrive Time	1046
I40	05 Apr 2023	Depart Time	1048
I40	05 Apr 2023	Air Temp (C)	11.4
I40	05 Apr 2023	Weather	Clear
I40	05 Apr 2023	Visibility (mi)	11
I40	05 Apr 2023	Wind Speed (kts)	4.2
I40	05 Apr 2023	Wind Dir	W
I40	05 Apr 2023	Water Color	Green
I40	05 Apr 2023	Wave Ht Low (ft)	6
I40	05 Apr 2023	Wave Period (sec)	8
I40	05 Apr 2023	Sea State	Confused Swell
I40	05 Apr 2023	High Tide (ft)	4.96
I40	05 Apr 2023	High Tide Time	2136
I40	05 Apr 2023	Low Tide (ft)	0.23
I40	05 Apr 2023	Low Tide Time	1530
I40	05 Apr 2023	Comments	none
I40	10 Apr 2023	Depth (m)	10
I40	10 Apr 2023	Arrive Time	1120
I40	10 Apr 2023	Depart Time	1125
I40	10 Apr 2023	Air Temp (C)	11.5
I40	10 Apr 2023	Weather	Fog
I40	10 Apr 2023	Visibility (mi)	2
I40	10 Apr 2023	Wind Speed (kts)	7.2
I40	10 Apr 2023	Wind Dir	NW
I40	10 Apr 2023	Water Color	Green
I40	10 Apr 2023	Wave Ht Low (ft)	3
I40	10 Apr 2023	Wave Period (sec)	17
I40	10 Apr 2023	Sea State	Calm
I40	10 Apr 2023	High Tide (ft)	5.19
I40	10 Apr 2023	High Tide Time	6
I40	10 Apr 2023	Low Tide (ft)	-0.17
I40	10 Apr 2023	Low Tide Time	700
I40	10 Apr 2023	Comments	none
I40	18 Apr 2023	Depth (m)	10
I40	18 Apr 2023	Arrive Time	1130
I40	18 Apr 2023	Depart Time	1132
I40	18 Apr 2023	Air Temp (C)	13.4
I40	18 Apr 2023	Weather	Partly Cloudy
I40	18 Apr 2023	Visibility (mi)	10
I40	18 Apr 2023	Wind Speed (kts)	8.7
I40	18 Apr 2023	Wind Dir	SW
I40	18 Apr 2023	Water Color	Reddish-Brown
I40	18 Apr 2023	Wave Ht Low (ft)	3
I40	18 Apr 2023	Wave Period (sec)	9
I40	18 Apr 2023	Sea State	Confused Swell
I40	18 Apr 2023	High Tide (ft)	5.55

Station	Date	Parameter	Value
I40	18 Apr 2023	High Tide Time	2054
I40	18 Apr 2023	Low Tide (ft)	-0.18
I40	18 Apr 2023	Low Tide Time	1442
I40	18 Apr 2023	Comments	Strong red tide present
I40	26 Apr 2023	Depth (m)	9
I40	26 Apr 2023	Arrive Time	1055
I40	26 Apr 2023	Depart Time	1057
I40	26 Apr 2023	Air Temp (C)	15.8
I40	26 Apr 2023	Weather	Overcast
I40	26 Apr 2023	Visibility (mi)	10
I40	26 Apr 2023	Wind Speed (kts)	7.7
I40	26 Apr 2023	Wind Dir	NW
I40	26 Apr 2023	Water Color	Reddish-Brown
I40	26 Apr 2023	Wave Ht Low (ft)	3.9
I40	26 Apr 2023	Wave Period (sec)	8
I40	26 Apr 2023	Sea State	Light Chop
I40	26 Apr 2023	High Tide (ft)	4.17
I40	26 Apr 2023	High Tide Time	42
I40	26 Apr 2023	Low Tide (ft)	0.38
I40	26 Apr 2023	Low Tide Time	942
I40	26 Apr 2023	Comments	none

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 (σ -t)	Chlor (μ g/L)
I19	05 Apr 2023	1	12.14	46.19	5.8	33.54	7.8	25.4	0.65
I19	05 Apr 2023	2	11.65	44.41	5.5	33.57	7.8	25.5	1.15
I19	05 Apr 2023	3	11.63	44.63	4.5	33.66	7.8	25.6	1.89
I19	05 Apr 2023	4	11.17	48.29	3.6	33.77	7.7	25.8	1.75
I19	05 Apr 2023	5	11.00	47.48	3.2	33.81	7.7	25.8	1.39
I19	05 Apr 2023	6	11.08	49.78	3.4	33.78	7.7	25.8	1.24
I19	05 Apr 2023	7	10.92	60.59	3.4	33.82	7.7	25.9	1.04
I19	05 Apr 2023	8	10.89	69.00	3.3	33.82	7.7	25.9	0.83
I19	05 Apr 2023	9	10.86	73.74	3.3	33.83	7.7	25.9	0.79
I19	05 Apr 2023	10	10.83	70.62	3.1	33.84	7.7	25.9	0.94
I19	10 Apr 2023	1	12.27	53.35	6.5	32.60	7.8	24.7	1.93
I19	10 Apr 2023	2	11.85	54.25	6.2	33.29	7.8	25.3	2.13
I19	10 Apr 2023	3	11.55	56.11	5.5	33.63	7.8	25.6	2.64
I19	10 Apr 2023	4	11.57	60.63	5.2	33.67	7.8	25.6	3.29
I19	10 Apr 2023	5	11.40	63.39	4.5	33.80	7.8	25.8	3.63
I19	10 Apr 2023	6	11.15	67.91	3.6	33.88	7.7	25.9	2.96
I19	10 Apr 2023	7	11.02	73.39	3.2	33.89	7.7	25.9	2.40
I19	10 Apr 2023	8	10.88	67.73	3.0	33.90	7.7	25.9	2.15
I19	10 Apr 2023	9	10.88	59.62	3.0	33.90	7.7	25.9	2.39
I19	10 Apr 2023	10	10.88	49.96	3.0	33.90	7.7	25.9	2.52
I19	18 Apr 2023	1	14.02	20.63	11.9	33.45	8.3	25.0	59.20
I19	18 Apr 2023	2	14.04	19.07	11.8	33.37	8.3	24.9	58.67
I19	18 Apr 2023	3	13.89	22.91	11.0	33.46	8.3	25.0	58.66
I19	18 Apr 2023	4	13.84	32.95	9.9	33.58	8.2	25.1	50.35
I19	18 Apr 2023	5	13.80	45.62	9.5	33.62	8.2	25.2	40.21
I19	18 Apr 2023	6	13.71	48.38	9.3	33.63	8.2	25.2	38.68
I19	18 Apr 2023	7	13.70	46.17	9.3	33.63	8.2	25.2	40.76
I19	18 Apr 2023	8	13.66	43.33	9.4	33.62	8.2	25.2	45.88
I19	18 Apr 2023	9	13.65	39.69	9.5	33.62	8.2	25.2	50.43
I19	18 Apr 2023	10	13.59	36.31	9.6	33.61	8.2	25.2	50.81
I19	26 Apr 2023	1	15.94	42.89	11.1	33.65	8.4	24.7	24.26
I19	26 Apr 2023	2	15.75	42.00	10.6	33.65	8.4	24.8	27.21
I19	26 Apr 2023	3	15.44	45.37	9.8	33.66	8.3	24.8	20.05
I19	26 Apr 2023	4	15.35	52.14	9.7	33.66	8.3	24.9	15.70
I19	26 Apr 2023	5	15.10	52.34	9.7	33.67	8.3	24.9	8.83
I19	26 Apr 2023	6	15.05	59.82	9.8	33.67	8.3	24.9	5.12
I19	26 Apr 2023	7	14.88	61.75	9.8	33.68	8.3	25.0	3.58
I19	26 Apr 2023	8	14.76	64.90	9.7	33.68	8.3	25.0	3.02
I19	26 Apr 2023	9	14.68	62.78	9.6	33.69	8.3	25.0	2.46
I19	26 Apr 2023	10	14.65	59.15	9.6	33.69	8.2	25.0	2.25
I24	05 Apr 2023	1	12.52	49.32	6.3	33.66	7.8	25.5	0.44
I24	05 Apr 2023	2	12.27	48.04	6.2	33.68	7.8	25.5	0.63
I24	05 Apr 2023	3	12.08	46.33	6.2	33.68	7.8	25.5	1.27
I24	05 Apr 2023	4	11.93	45.95	5.8	33.68	7.8	25.6	2.20
I24	05 Apr 2023	5	11.64	46.82	5.0	33.74	7.8	25.7	2.55
I24	05 Apr 2023	6	11.42	57.29	4.3	33.77	7.8	25.7	2.16
I24	05 Apr 2023	7	11.20	66.18	3.7	33.78	7.7	25.8	1.74
I24	05 Apr 2023	8	11.07	55.00	3.3	33.79	7.7	25.8	1.46
I24	05 Apr 2023	9	10.97	44.20	3.1	33.81	7.7	25.9	1.51
I24	05 Apr 2023	10	10.98	23.83	3.0	33.81	7.7	25.9	1.77

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ -t)	Chlor (μ g/L)
I24	10 Apr 2023	1	13.35	76.87	8.4	33.71	8.0	25.3	1.95
I24	10 Apr 2023	2	13.23	76.27	8.2	33.73	8.0	25.4	2.73
I24	10 Apr 2023	3	13.01	72.29	8.0	33.74	8.0	25.4	5.77
I24	10 Apr 2023	4	12.76	67.03	7.0	33.75	8.0	25.5	10.72
I24	10 Apr 2023	5	11.86	65.81	4.9	33.83	7.9	25.7	8.65
I24	10 Apr 2023	6	11.24	75.54	3.3	33.87	7.7	25.9	4.09
I24	10 Apr 2023	7	10.85	71.19	2.6	33.90	7.7	25.9	2.56
I24	10 Apr 2023	8	10.82	62.36	2.6	33.90	7.6	25.9	2.49
I24	10 Apr 2023	9	10.80	54.19	2.6	33.90	7.6	26.0	2.41
I24	10 Apr 2023	10	10.79	38.13	2.6	33.90	7.6	26.0	2.33
I24	18 Apr 2023	1	14.47	46.51	11.2	33.42	8.3	24.9	12.80
I24	18 Apr 2023	2	14.47	43.98	10.9	33.42	8.3	24.9	14.01
I24	18 Apr 2023	3	14.10	49.89	9.8	33.61	8.3	25.1	11.45
I24	18 Apr 2023	4	13.93	65.70	8.5	33.63	8.2	25.1	5.90
I24	18 Apr 2023	5	13.65	74.98	7.1	33.63	8.2	25.2	3.74
I24	18 Apr 2023	6	12.92	75.86	6.4	33.71	8.0	25.4	3.21
I24	18 Apr 2023	7	12.76	80.39	6.1	33.71	7.9	25.4	2.66
I24	18 Apr 2023	8	12.59	82.28	5.3	33.72	7.9	25.5	3.04
I24	18 Apr 2023	9	12.34	78.38	4.5	33.74	7.8	25.5	2.56
I24	18 Apr 2023	10	12.17	75.05	4.5	33.77	7.8	25.6	2.13
I24	26 Apr 2023	1	16.49	32.35	10.9	33.44	8.5	24.4	40.68
I24	26 Apr 2023	2	16.34	33.53	10.5	33.57	8.4	24.6	38.10
I24	26 Apr 2023	3	16.22	43.81	10.4	33.63	8.4	24.6	26.02
I24	26 Apr 2023	4	16.07	57.69	10.6	33.65	8.4	24.7	15.81
I24	26 Apr 2023	5	15.60	68.57	10.9	33.67	8.4	24.8	10.38
I24	26 Apr 2023	6	15.54	75.78	10.9	33.65	8.3	24.8	7.50
I24	26 Apr 2023	7	15.53	77.51	10.9	33.65	8.3	24.8	7.10
I24	26 Apr 2023	8	15.35	78.04	10.7	33.67	8.3	24.9	6.06
I24	26 Apr 2023	9	15.19	77.91	10.6	33.67	8.3	24.9	5.18
I24	26 Apr 2023	10	15.20	78.01	10.6	33.66	8.3	24.9	5.06
I25	05 Apr 2023	1	12.37	44.34	5.8	33.68	7.8	25.5	0.36
I25	05 Apr 2023	2	12.23	57.28	5.8	33.68	7.8	25.5	0.46
I25	05 Apr 2023	3	11.90	58.13	5.6	33.70	7.8	25.6	0.89
I25	05 Apr 2023	4	11.82	57.01	5.4	33.70	7.8	25.6	1.44
I25	05 Apr 2023	5	11.67	57.74	5.1	33.73	7.8	25.7	1.62
I25	05 Apr 2023	6	11.42	66.16	4.6	33.78	7.8	25.7	1.38
I25	05 Apr 2023	7	11.15	77.47	4.0	33.83	7.8	25.8	1.07
I25	05 Apr 2023	8	10.98	82.35	3.6	33.85	7.7	25.9	0.81
I25	05 Apr 2023	9	11.02	79.33	3.6	33.84	7.7	25.9	0.70
I25	10 Apr 2023	1	13.35	77.44	8.3	33.72	8.0	25.3	2.09
I25	10 Apr 2023	2	13.28	76.35	8.2	33.73	8.0	25.4	2.51
I25	10 Apr 2023	3	13.10	75.53	7.7	33.73	8.0	25.4	3.45
I25	10 Apr 2023	4	12.66	73.49	6.9	33.75	8.0	25.5	5.33
I25	10 Apr 2023	5	12.53	75.33	6.2	33.75	7.9	25.5	7.14
I25	10 Apr 2023	6	11.83	74.62	4.8	33.83	7.9	25.7	6.26
I25	10 Apr 2023	7	11.09	78.67	3.3	33.87	7.7	25.9	3.12
I25	10 Apr 2023	8	11.09	83.44	3.0	33.85	7.7	25.9	1.70
I25	10 Apr 2023	9	11.09	84.38	3.1	33.85	7.7	25.9	1.50
I25	18 Apr 2023	1	14.51	55.23	12.6	33.62	8.4	25.0	13.34
I25	18 Apr 2023	2	14.51	55.36	12.3	33.62	8.4	25.0	14.66
I25	18 Apr 2023	3	14.24	53.21	10.5	33.62	8.4	25.1	19.09
I25	18 Apr 2023	4	13.88	57.02	8.1	33.65	8.2	25.2	11.56
I25	18 Apr 2023	5	13.53	71.57	6.6	33.65	8.1	25.2	5.43
I25	18 Apr 2023	6	12.64	75.11	4.9	33.72	8.0	25.5	3.66
I25	18 Apr 2023	7	12.37	77.16	4.1	33.73	7.8	25.5	2.47
I25	18 Apr 2023	8	12.06	77.24	3.8	33.77	7.8	25.6	2.07

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ -t)	Chlor (μ g/L)
I25	26 Apr 2023	1	16.54	42.59	11.8	33.61	8.5	24.6	31.03
I25	26 Apr 2023	2	16.49	42.34	11.7	33.62	8.5	24.6	34.80
I25	26 Apr 2023	3	16.46	39.68	11.7	33.62	8.5	24.6	38.17
I25	26 Apr 2023	4	16.44	39.24	11.6	33.62	8.5	24.6	38.88
I25	26 Apr 2023	5	16.14	43.14	11.1	33.64	8.4	24.7	31.28
I25	26 Apr 2023	6	15.62	68.80	10.9	33.65	8.3	24.8	12.01
I25	26 Apr 2023	7	15.68	77.53	10.8	33.64	8.3	24.8	9.51
I25	26 Apr 2023	8	15.26	77.44	10.2	33.66	8.3	24.9	6.41
I26	05 Apr 2023	1	12.31	63.61	5.5	33.70	7.8	25.5	0.32
I26	05 Apr 2023	2	12.03	64.73	5.4	33.71	7.8	25.6	0.39
I26	05 Apr 2023	3	11.76	65.03	5.4	33.72	7.8	25.6	0.82
I26	05 Apr 2023	4	11.72	62.70	5.3	33.72	7.8	25.6	1.08
I26	05 Apr 2023	5	11.65	65.86	5.0	33.73	7.8	25.7	1.55
I26	05 Apr 2023	6	11.45	67.55	4.6	33.77	7.8	25.7	2.17
I26	05 Apr 2023	7	11.08	73.17	4.0	33.84	7.8	25.9	1.76
I26	05 Apr 2023	8	10.91	82.97	3.5	33.85	7.7	25.9	1.09
I26	05 Apr 2023	9	10.82	81.11	3.2	33.87	7.7	25.9	0.78
I26	10 Apr 2023	1	13.14	74.32	8.3	33.72	8.0	25.4	4.19
I26	10 Apr 2023	2	13.16	74.31	8.2	33.72	8.0	25.4	4.64
I26	10 Apr 2023	3	13.02	72.93	8.0	33.73	8.0	25.4	5.40
I26	10 Apr 2023	4	12.88	72.02	7.7	33.73	8.0	25.4	7.48
I26	10 Apr 2023	5	12.81	72.42	7.3	33.74	8.0	25.5	9.16
I26	10 Apr 2023	6	12.36	71.67	6.3	33.77	8.0	25.6	8.82
I26	10 Apr 2023	7	11.81	74.18	4.8	33.78	7.9	25.7	5.67
I26	10 Apr 2023	8	11.06	81.83	3.5	33.88	7.8	25.9	2.80
I26	10 Apr 2023	9	10.96	84.43	3.1	33.87	7.7	25.9	1.69
I26	18 Apr 2023	1	14.32	63.66	12.0	33.62	8.4	25.1	8.27
I26	18 Apr 2023	2	14.30	63.12	12.0	33.62	8.4	25.1	9.94
I26	18 Apr 2023	3	14.09	59.86	11.5	33.63	8.4	25.1	18.70
I26	18 Apr 2023	4	13.72	58.77	10.3	33.65	8.3	25.2	13.97
I26	18 Apr 2023	5	13.58	74.91	9.0	33.64	8.2	25.2	8.54
I26	18 Apr 2023	6	12.41	79.78	6.5	33.72	8.0	25.5	6.08
I26	18 Apr 2023	7	12.09	81.51	5.6	33.70	7.9	25.6	5.81
I26	18 Apr 2023	8	11.96	81.07	5.0	33.72	7.9	25.6	5.01
I26	18 Apr 2023	9	11.94	77.50	4.8	33.73	7.8	25.6	4.43
I26	26 Apr 2023	1	16.48	29.92	11.4	33.55	8.5	24.5	46.92
I26	26 Apr 2023	2	16.47	30.62	10.9	33.55	8.5	24.5	45.22
I26	26 Apr 2023	3	16.23	33.33	10.2	33.58	8.4	24.6	29.22
I26	26 Apr 2023	4	16.14	62.04	9.9	33.58	8.3	24.6	14.45
I26	26 Apr 2023	5	15.34	72.41	9.5	33.66	8.3	24.9	7.30
I26	26 Apr 2023	6	15.27	76.42	9.4	33.65	8.2	24.9	3.82
I26	26 Apr 2023	7	15.04	77.57	9.2	33.67	8.2	24.9	2.82
I26	26 Apr 2023	8	14.91	75.56	8.9	33.67	8.2	25.0	2.35
I26	26 Apr 2023	9	14.96	71.94	8.9	33.67	8.2	25.0	2.46
I32	05 Apr 2023	1	11.78	45.86	5.7	33.77	7.8	25.7	0.54
I32	05 Apr 2023	2	11.78	45.64	5.6	33.77	7.8	25.7	0.58
I32	05 Apr 2023	3	11.30	44.01	5.5	33.83	7.8	25.8	0.84
I32	05 Apr 2023	4	10.99	34.53	4.8	33.83	7.7	25.9	1.55
I32	05 Apr 2023	5	10.81	33.03	3.5	33.86	7.7	25.9	1.61
I32	05 Apr 2023	6	10.77	51.89	3.0	33.87	7.7	25.9	1.29
I32	05 Apr 2023	7	10.76	46.20	2.9	33.87	7.7	25.9	1.30
I32	05 Apr 2023	8	10.75	38.56	3.0	33.87	7.7	25.9	1.31
I32	05 Apr 2023	9	10.76	39.88	3.0	33.87	7.7	25.9	1.31
I32	05 Apr 2023	10	10.78	26.45	2.9	33.88	7.7	25.9	1.58

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ -t)	Chlor (μ g/L)
I32	10 Apr 2023	1	13.22	81.43	8.1	33.74	8.0	25.4	1.19
I32	10 Apr 2023	2	13.16	81.30	8.1	33.75	8.0	25.4	1.26
I32	10 Apr 2023	3	13.05	80.76	8.2	33.76	8.0	25.4	1.80
I32	10 Apr 2023	4	12.90	76.80	8.6	33.78	8.0	25.5	9.25
I32	10 Apr 2023	5	12.66	47.41	7.7	33.78	8.0	25.5	46.81
I32	10 Apr 2023	6	11.97	52.11	5.2	33.83	7.9	25.7	35.30
I32	10 Apr 2023	7	11.12	62.80	3.2	33.87	7.7	25.9	8.78
I32	10 Apr 2023	8	10.88	60.79	2.9	33.88	7.7	25.9	3.38
I32	10 Apr 2023	9	10.87	58.89	2.9	33.88	7.7	25.9	2.24
I32	10 Apr 2023	10	10.87	52.88	2.9	33.88	7.7	25.9	2.07
I32	18 Apr 2023	1	14.44	57.81	12.0	33.63	8.4	25.0	10.16
I32	18 Apr 2023	2	14.43	58.61	11.9	33.63	8.4	25.0	11.87
I32	18 Apr 2023	3	14.36	56.56	11.5	33.64	8.4	25.1	27.65
I32	18 Apr 2023	4	14.34	39.36	11.1	33.64	8.3	25.1	46.18
I32	18 Apr 2023	5	14.31	32.91	10.3	33.65	8.3	25.1	51.76
I32	18 Apr 2023	6	14.20	30.50	9.5	33.65	8.3	25.1	52.55
I32	18 Apr 2023	7	14.17	33.74	9.2	33.65	8.2	25.1	46.99
I32	18 Apr 2023	8	13.69	40.51	7.2	33.68	8.2	25.2	37.00
I32	18 Apr 2023	9	12.07	27.24	4.0	33.78	7.9	25.6	18.36
I32	18 Apr 2023	10	11.86	9.84	3.5	33.76	7.7	25.6	11.49
I32	26 Apr 2023	1	16.81	32.90	10.6	33.41	8.4	24.3	30.27
I32	26 Apr 2023	2	16.45	34.67	9.6	33.48	8.4	24.5	25.58
I32	26 Apr 2023	3	16.03	55.80	9.7	33.56	8.3	24.6	10.14
I32	26 Apr 2023	4	15.84	76.05	10.3	33.61	8.3	24.7	4.21
I32	26 Apr 2023	5	15.83	82.43	10.2	33.60	8.3	24.7	2.87
I32	26 Apr 2023	6	15.72	80.56	9.7	33.61	8.3	24.7	2.50
I32	26 Apr 2023	7	15.20	72.10	8.5	33.65	8.2	24.9	2.80
I32	26 Apr 2023	8	14.78	61.87	7.4	33.67	8.1	25.0	2.79
I32	26 Apr 2023	9	14.48	51.93	7.0	33.68	8.1	25.1	2.70
I39	05 Apr 2023	1	12.09	78.07	5.8	33.66	7.8	25.5	0.29
I39	05 Apr 2023	2	12.00	77.91	5.8	33.66	7.8	25.6	0.34
I39	05 Apr 2023	3	11.94	78.83	5.7	33.66	7.8	25.6	0.40
I39	05 Apr 2023	4	11.84	80.54	5.5	33.67	7.8	25.6	0.47
I39	05 Apr 2023	5	11.73	82.03	5.4	33.69	7.8	25.6	0.53
I39	05 Apr 2023	6	11.60	83.77	5.1	33.71	7.8	25.7	0.69
I39	05 Apr 2023	7	11.49	84.81	4.7	33.73	7.8	25.7	0.93
I39	05 Apr 2023	8	11.37	85.37	4.4	33.76	7.8	25.7	1.14
I39	05 Apr 2023	9	11.35	86.46	4.3	33.76	7.8	25.8	1.14
I39	05 Apr 2023	10	11.30	87.04	4.2	33.78	7.8	25.8	1.17
I39	05 Apr 2023	11	11.20	87.43	4.0	33.80	7.8	25.8	1.09
I39	05 Apr 2023	12	10.97	88.03	3.7	33.84	7.7	25.9	1.00
I39	05 Apr 2023	13	10.79	88.88	3.4	33.88	7.7	25.9	0.71
I39	05 Apr 2023	14	10.67	89.78	3.2	33.90	7.7	26.0	0.56
I39	05 Apr 2023	15	10.66	90.42	3.1	33.90	7.7	26.0	0.45
I39	05 Apr 2023	16	10.64	90.59	3.2	33.91	7.7	26.0	0.43
I39	05 Apr 2023	17	10.62	90.38	3.2	33.91	7.7	26.0	0.49
I39	05 Apr 2023	18	10.61	90.12	3.1	33.91	7.7	26.0	0.45
I39	10 Apr 2023	1	13.08	78.86	7.5	33.70	7.9	25.4	3.16
I39	10 Apr 2023	2	13.08	78.67	7.5	33.70	7.9	25.4	3.40
I39	10 Apr 2023	3	13.05	78.52	7.3	33.70	7.9	25.4	3.88
I39	10 Apr 2023	4	12.95	78.16	7.1	33.71	7.9	25.4	4.11
I39	10 Apr 2023	5	12.89	78.43	6.9	33.71	7.9	25.4	4.59
I39	10 Apr 2023	6	12.80	79.24	6.7	33.71	7.9	25.4	4.90
I39	10 Apr 2023	7	12.69	79.99	6.5	33.72	7.9	25.5	5.24
I39	10 Apr 2023	8	12.63	81.41	6.4	33.72	7.9	25.5	4.71
I39	10 Apr 2023	9	12.61	81.95	6.3	33.72	7.9	25.5	4.49
I39	10 Apr 2023	10	12.52	82.50	6.1	33.73	7.9	25.5	3.64

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ -t)	Chlor (μ g/L)
I39	10 Apr 2023	11	12.41	83.89	5.8	33.74	7.9	25.5	3.69
I39	10 Apr 2023	12	11.93	84.82	5.0	33.78	7.8	25.7	4.93
I39	10 Apr 2023	13	11.23	87.73	4.0	33.82	7.8	25.8	3.08
I39	10 Apr 2023	14	11.10	89.80	3.7	33.82	7.7	25.8	1.81
I39	10 Apr 2023	15	10.90	90.18	3.5	33.84	7.7	25.9	1.88
I39	10 Apr 2023	16	10.73	90.15	3.2	33.88	7.7	26.0	1.49
I39	10 Apr 2023	17	10.80	89.75	3.2	33.87	7.7	25.9	1.30
I39	10 Apr 2023	18	10.64	89.49	3.1	33.90	7.7	26.0	1.08
I39	18 Apr 2023	1	14.40	72.45	11.6	33.60	8.4	25.0	2.30
I39	18 Apr 2023	2	14.38	74.05	11.5	33.60	8.4	25.0	2.44
I39	18 Apr 2023	3	14.19	73.62	11.4	33.61	8.4	25.1	3.72
I39	18 Apr 2023	4	14.11	71.93	11.2	33.61	8.3	25.1	5.97
I39	18 Apr 2023	5	14.03	71.30	10.9	33.61	8.3	25.1	7.10
I39	18 Apr 2023	6	13.71	73.04	10.1	33.62	8.3	25.2	6.51
I39	18 Apr 2023	7	13.58	76.46	9.6	33.62	8.2	25.2	5.76
I39	18 Apr 2023	8	13.39	77.57	9.1	33.62	8.2	25.2	5.41
I39	18 Apr 2023	9	13.19	79.18	8.6	33.63	8.2	25.3	5.25
I39	18 Apr 2023	10	13.11	78.67	8.1	33.64	8.1	25.3	5.69
I39	18 Apr 2023	11	12.84	78.16	7.3	33.67	8.1	25.4	5.82
I39	18 Apr 2023	12	12.35	79.10	6.6	33.69	8.0	25.5	6.62
I39	18 Apr 2023	13	12.29	80.18	5.9	33.71	7.9	25.5	5.96
I39	18 Apr 2023	14	12.18	83.12	5.3	33.76	7.9	25.6	4.19
I39	18 Apr 2023	15	12.10	85.16	5.1	33.78	7.8	25.6	3.04
I39	18 Apr 2023	16	11.77	85.32	4.4	33.82	7.8	25.7	2.11
I39	18 Apr 2023	17	11.67	82.61	3.8	33.82	7.7	25.7	1.84
I39	18 Apr 2023	18	11.60	80.91	3.8	33.83	7.7	25.8	1.53
I39	26 Apr 2023	1	16.27	34.04	12.1	33.63	8.4	24.6	45.53
I39	26 Apr 2023	2	16.20	33.96	11.5	33.63	8.4	24.6	44.60
I39	26 Apr 2023	3	16.06	34.54	10.9	33.62	8.4	24.7	43.17
I39	26 Apr 2023	4	15.96	39.32	10.7	33.62	8.3	24.7	41.23
I39	26 Apr 2023	5	15.92	41.54	10.6	33.61	8.3	24.7	40.61
I39	26 Apr 2023	6	15.91	42.70	10.6	33.61	8.3	24.7	41.70
I39	26 Apr 2023	7	15.91	42.91	10.6	33.61	8.3	24.7	42.09
I39	26 Apr 2023	8	15.89	42.56	10.5	33.61	8.3	24.7	42.54
I39	26 Apr 2023	9	15.85	42.18	10.2	33.61	8.3	24.7	41.95
I39	26 Apr 2023	10	15.80	42.13	10.0	33.61	8.3	24.7	37.89
I39	26 Apr 2023	11	15.76	44.54	10.1	33.60	8.3	24.7	27.97
I39	26 Apr 2023	12	15.70	49.91	10.5	33.61	8.3	24.7	12.83
I39	26 Apr 2023	13	15.47	62.24	10.6	33.63	8.3	24.8	6.78
I39	26 Apr 2023	14	15.35	76.53	10.4	33.63	8.3	24.8	5.07
I39	26 Apr 2023	15	15.23	82.18	10.3	33.65	8.3	24.9	4.82
I39	26 Apr 2023	16	15.03	82.66	10.1	33.66	8.3	24.9	5.12
I39	26 Apr 2023	17	14.84	82.27	9.5	33.66	8.3	25.0	4.82
I39	26 Apr 2023	18	14.21	81.14	8.6	33.70	8.2	25.1	3.31
I40	05 Apr 2023	1	11.40	21.72	6.0	33.77	7.8	25.7	1.58
I40	05 Apr 2023	2	11.40	22.07	5.9	33.77	7.8	25.8	1.64
I40	05 Apr 2023	3	11.15	22.65	6.0	33.80	7.7	25.8	1.99
I40	05 Apr 2023	4	11.21	21.09	6.0	33.79	7.7	25.8	1.98
I40	05 Apr 2023	5	11.23	17.75	5.9	33.78	7.7	25.8	1.93
I40	05 Apr 2023	6	11.22	19.42	5.5	33.78	7.7	25.8	1.84
I40	05 Apr 2023	7	11.01	21.29	4.3	33.82	7.7	25.9	1.63
I40	05 Apr 2023	8	10.90	29.15	3.3	33.83	7.7	25.9	1.29
I40	05 Apr 2023	9	10.90	44.65	3.0	33.83	7.7	25.9	1.22
I40	05 Apr 2023	10	10.91	39.40	2.8	33.83	7.7	25.9	1.55
I40	10 Apr 2023	1	12.46	55.31	6.7	33.43	7.9	25.3	2.01
I40	10 Apr 2023	2	12.83	55.14	7.3	33.67	7.9	25.4	3.24
I40	10 Apr 2023	3	12.72	57.49	7.3	33.77	8.0	25.5	7.85

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ -t)	Chlor (μ g/L)
I40	10 Apr 2023	4	12.16	61.93	5.6	33.78	7.9	25.6	8.38
I40	10 Apr 2023	5	11.35	63.01	3.6	33.88	7.8	25.8	4.28
I40	10 Apr 2023	6	10.95	64.85	3.0	33.91	7.7	25.9	2.97
I40	10 Apr 2023	7	10.87	68.12	2.9	33.91	7.7	25.9	2.74
I40	10 Apr 2023	8	10.86	61.16	2.9	33.91	7.7	25.9	2.62
I40	10 Apr 2023	9	10.86	59.20	2.9	33.91	7.7	25.9	2.72
I40	10 Apr 2023	10	10.87	42.88	2.8	33.91	7.6	25.9	3.47
I40	18 Apr 2023	1	14.41	16.49	12.9	33.17	8.4	24.7	61.17
I40	18 Apr 2023	2	14.38	17.43	12.3	33.16	8.4	24.7	60.31
I40	18 Apr 2023	3	14.02	18.32	11.0	33.24	8.3	24.8	52.93
I40	18 Apr 2023	4	14.05	27.77	10.8	33.33	8.3	24.9	41.83
I40	18 Apr 2023	5	13.76	42.36	9.4	33.42	8.2	25.0	27.58
I40	18 Apr 2023	6	12.91	61.60	7.7	33.51	8.0	25.3	12.47
I40	18 Apr 2023	7	13.03	69.41	7.3	33.60	8.0	25.3	6.70
I40	18 Apr 2023	8	12.97	76.59	7.2	33.62	8.0	25.3	4.64
I40	18 Apr 2023	9	12.90	76.72	7.1	33.63	8.0	25.4	4.67
I40	18 Apr 2023	10	12.88	76.83	7.1	33.64	8.0	25.4	3.93
I40	26 Apr 2023	1	16.33	51.61	10.2	33.46	8.4	24.5	14.18
I40	26 Apr 2023	2	16.29	50.49	9.9	33.57	8.4	24.6	13.29
I40	26 Apr 2023	3	16.25	56.32	10.3	33.63	8.4	24.6	9.03
I40	26 Apr 2023	4	15.96	63.24	10.5	33.66	8.4	24.7	6.10
I40	26 Apr 2023	5	15.45	71.04	10.1	33.67	8.3	24.9	5.43
I40	26 Apr 2023	6	15.15	71.67	10.1	33.67	8.3	24.9	4.58
I40	26 Apr 2023	7	14.99	74.93	10.0	33.68	8.3	25.0	4.17
I40	26 Apr 2023	8	14.92	74.67	9.7	33.67	8.3	25.0	2.99
I40	26 Apr 2023	9	14.91	67.55	9.7	33.67	8.3	25.0	2.16

NA = not available

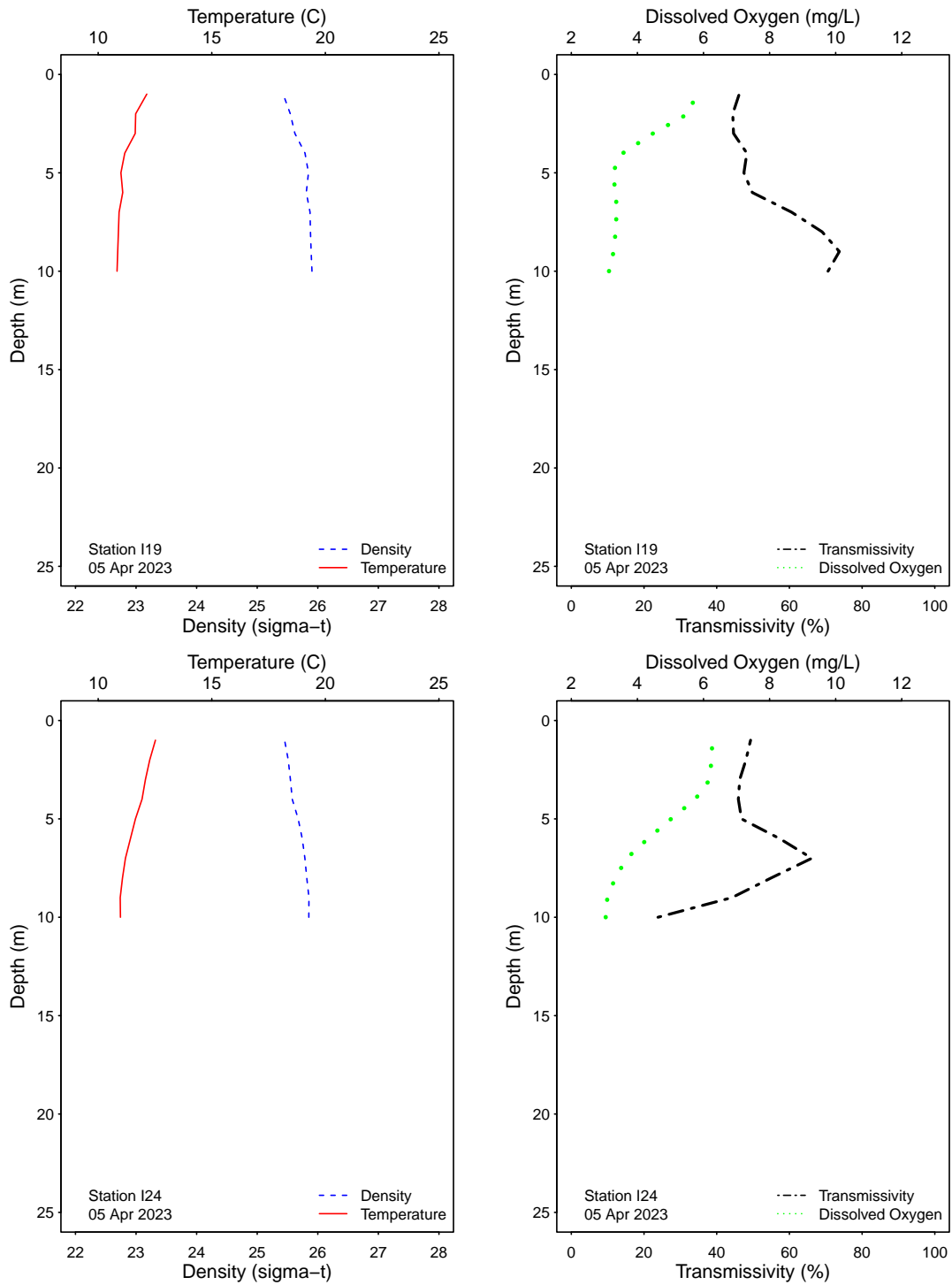


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

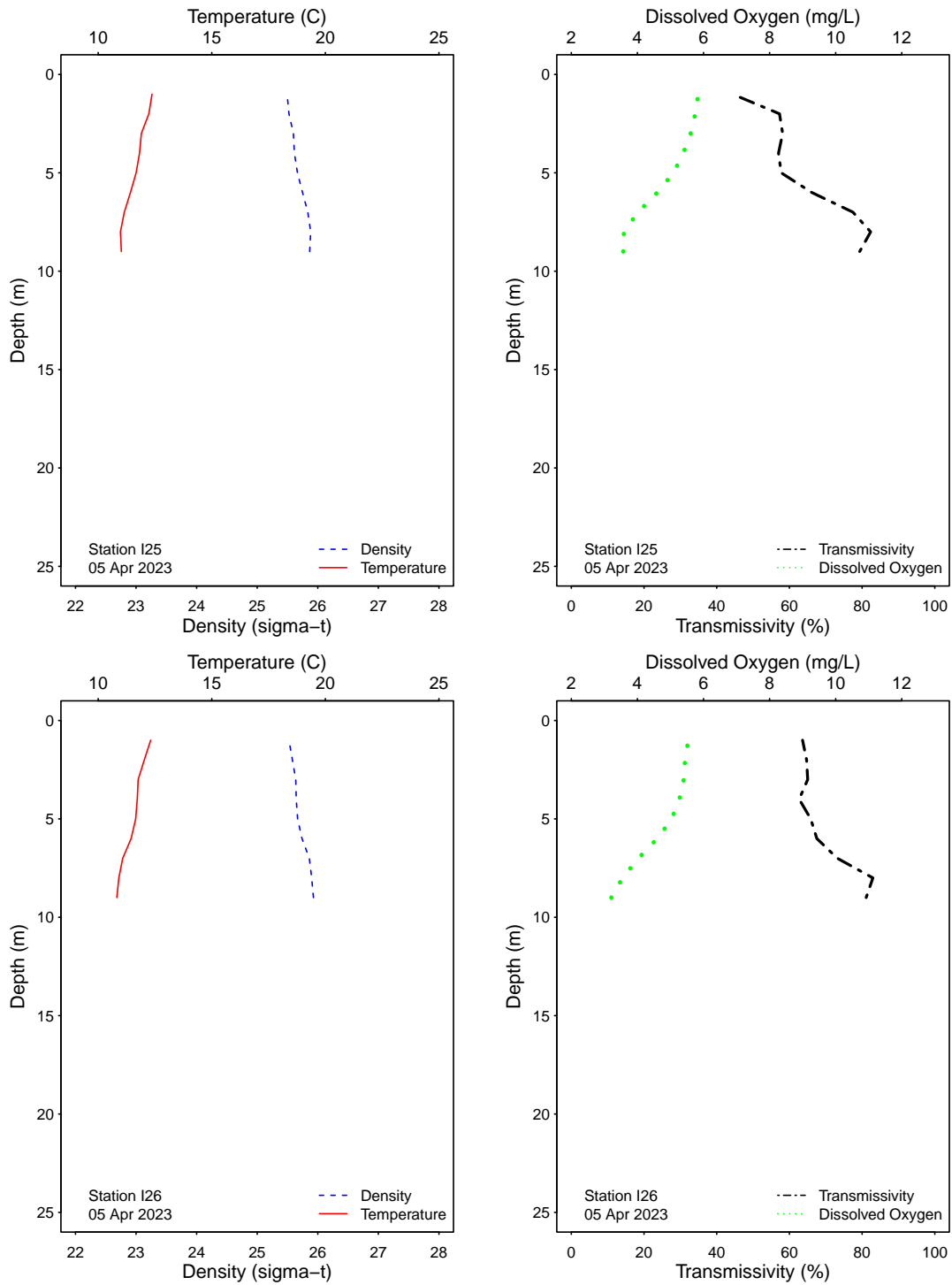


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

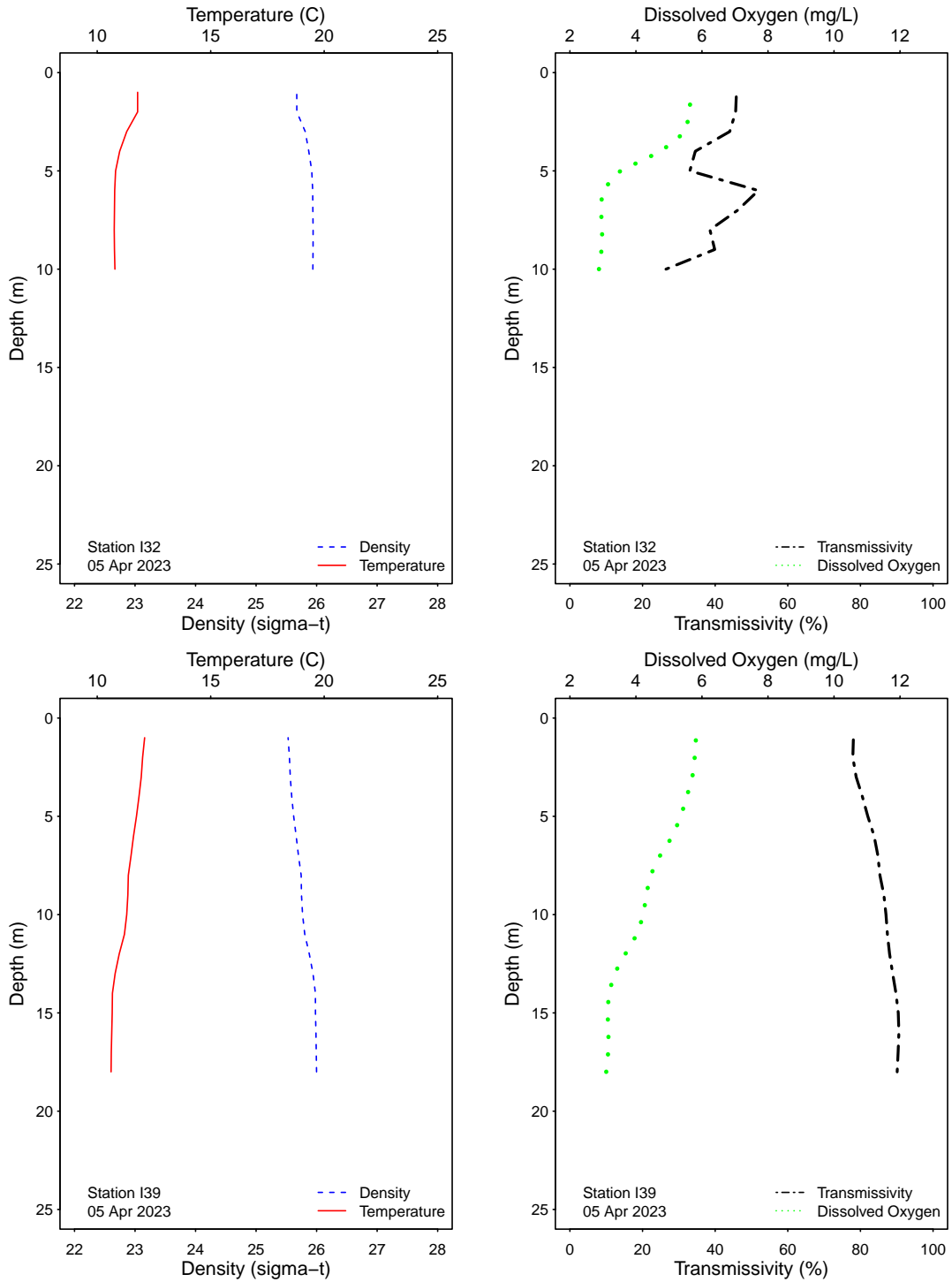


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

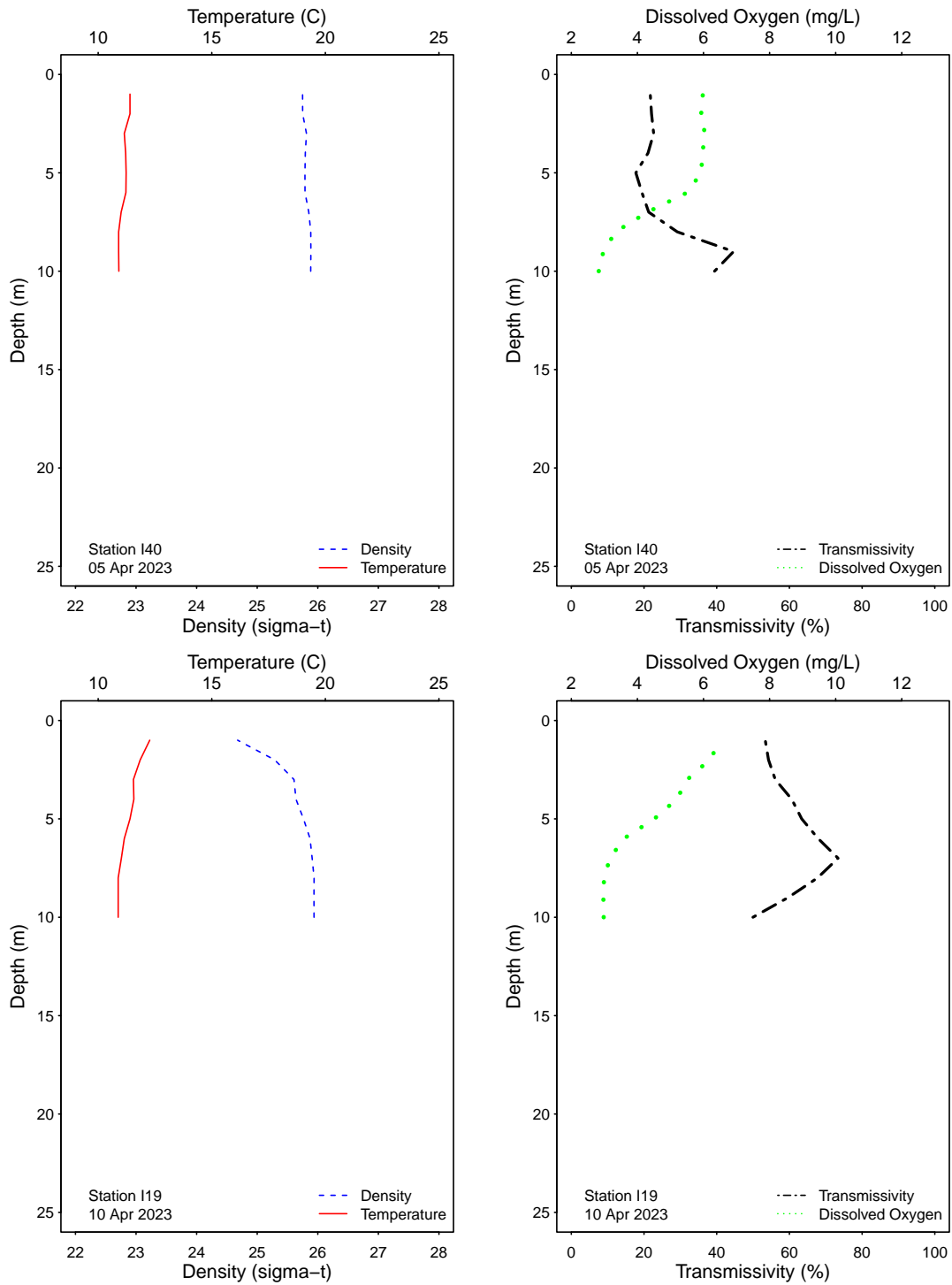


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

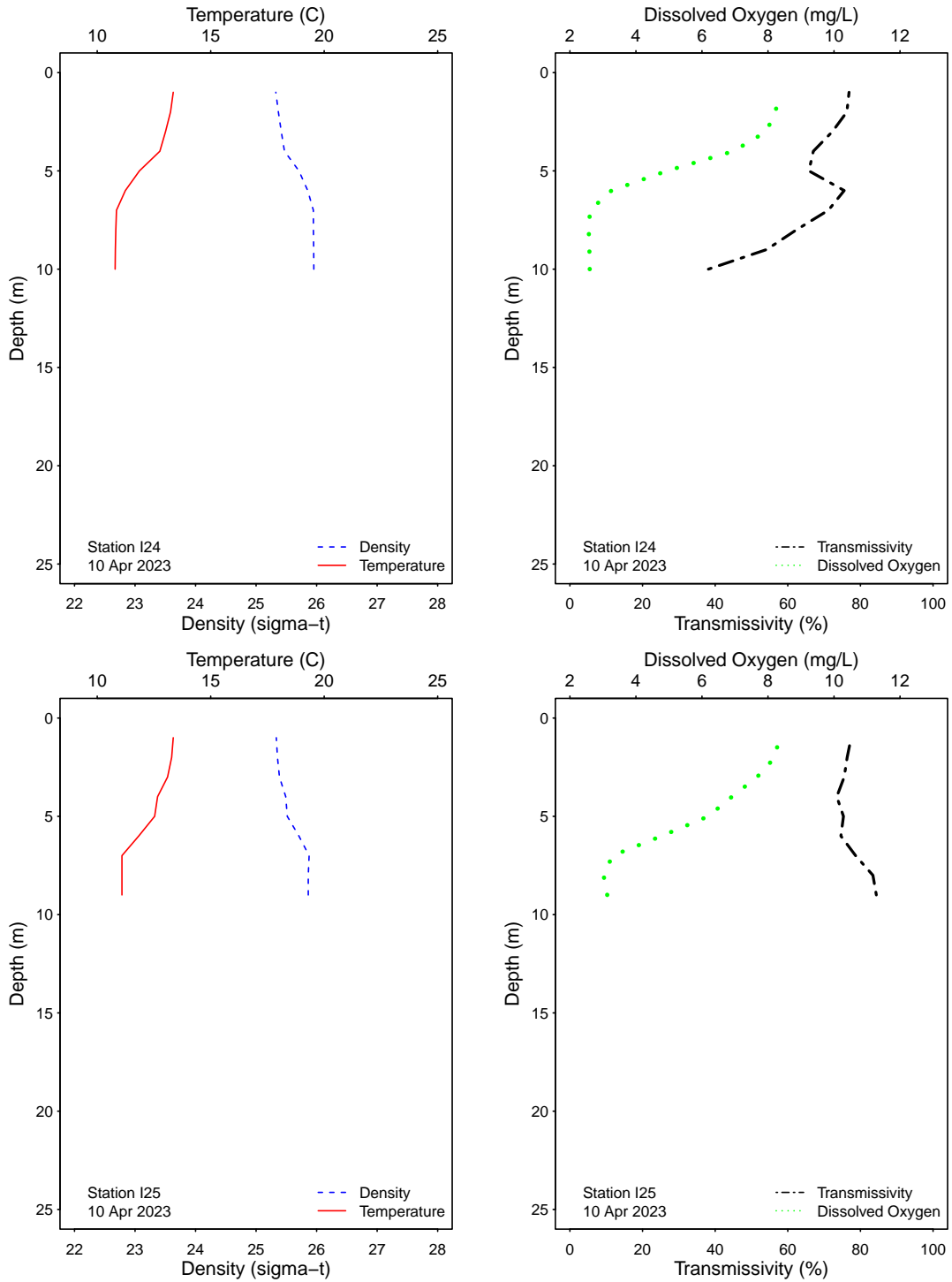


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

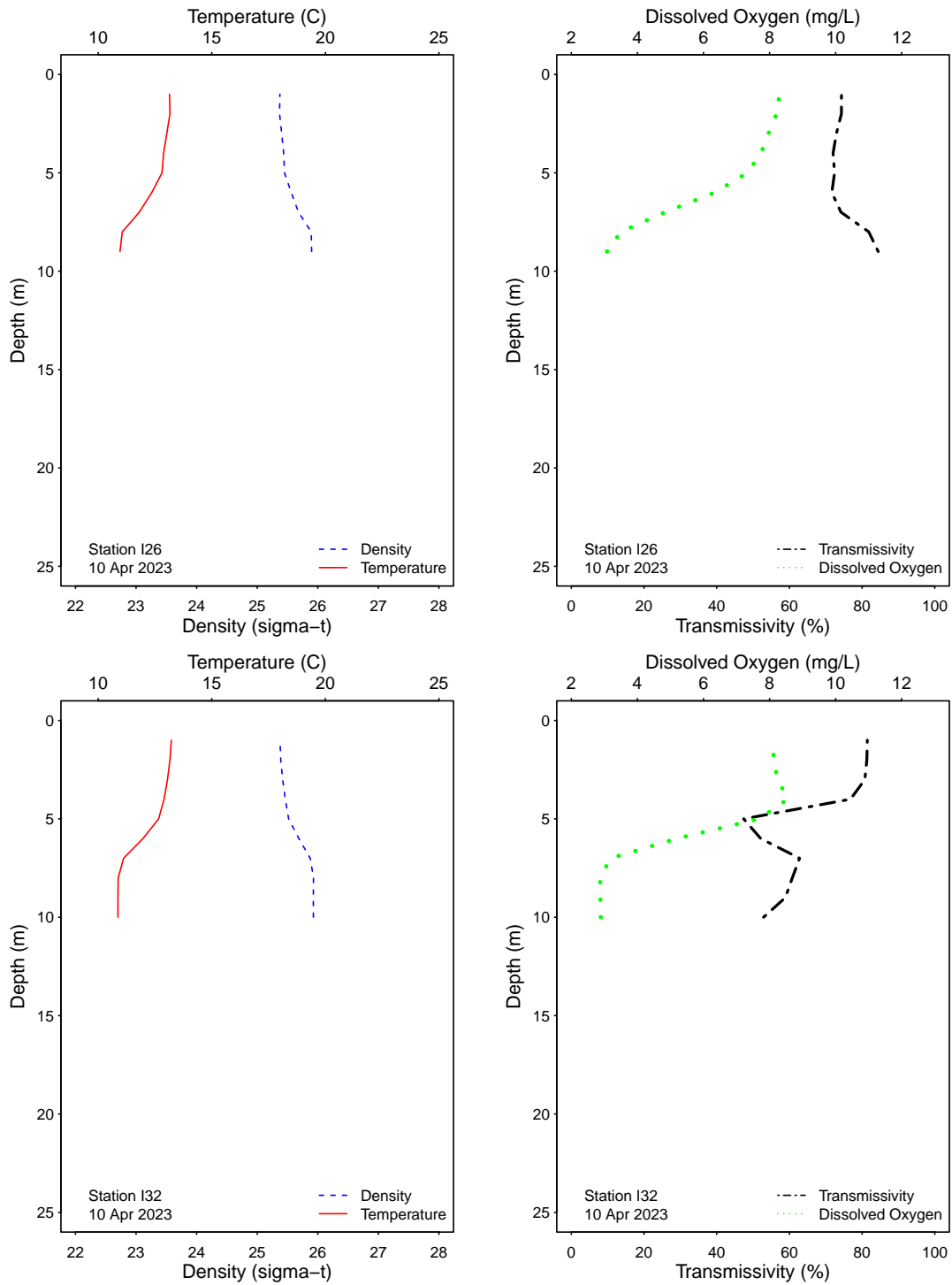


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

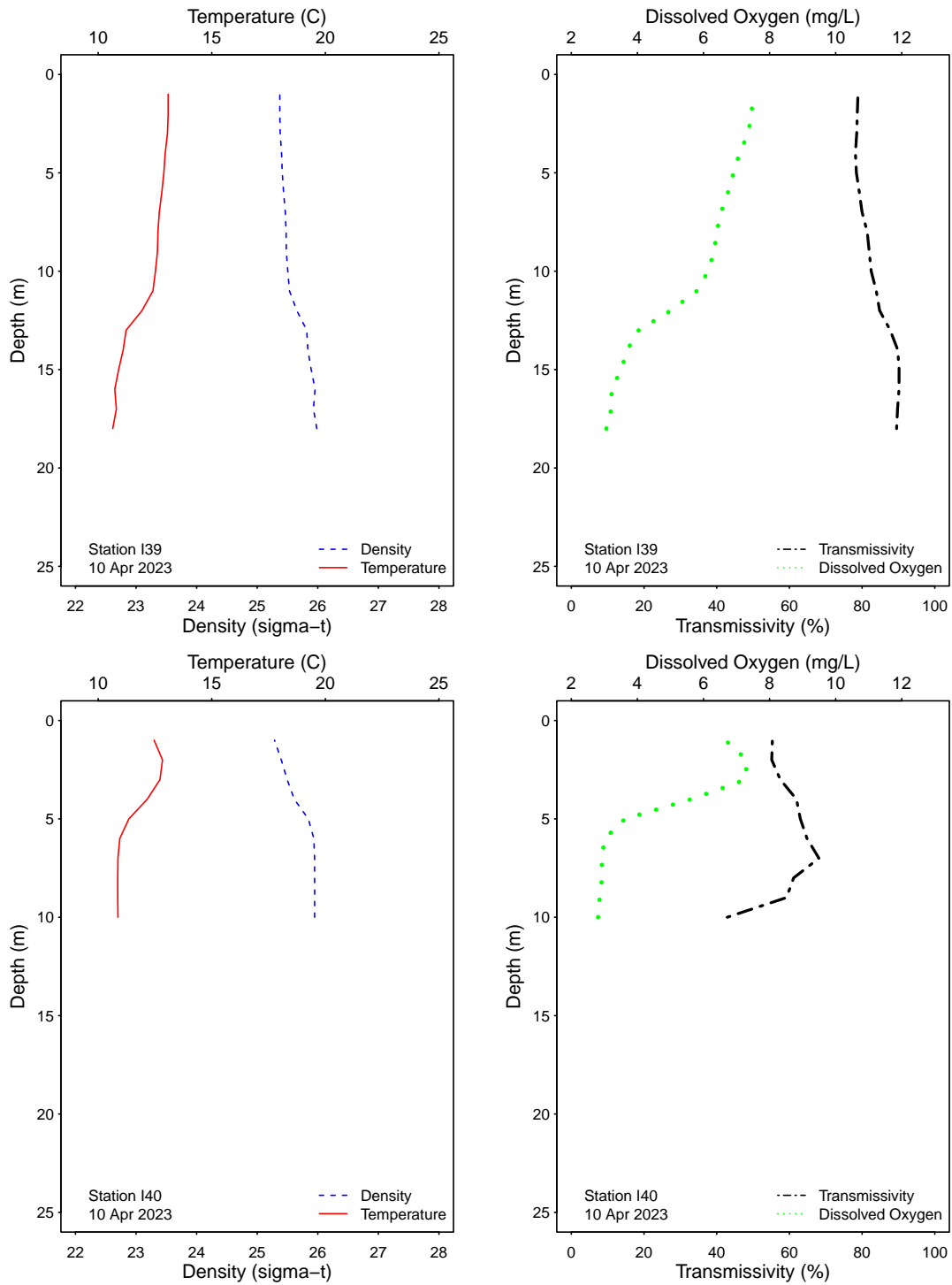


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

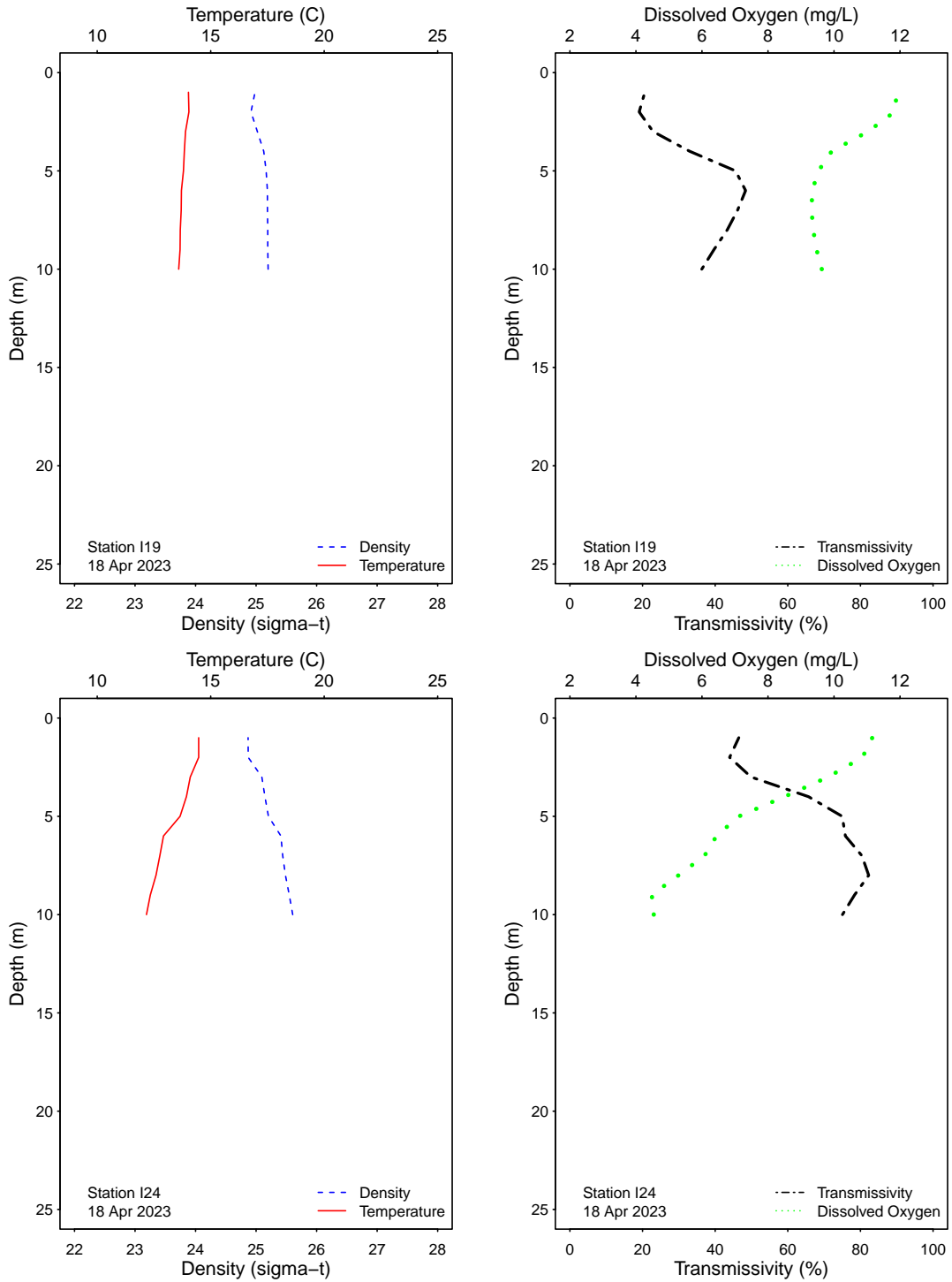


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

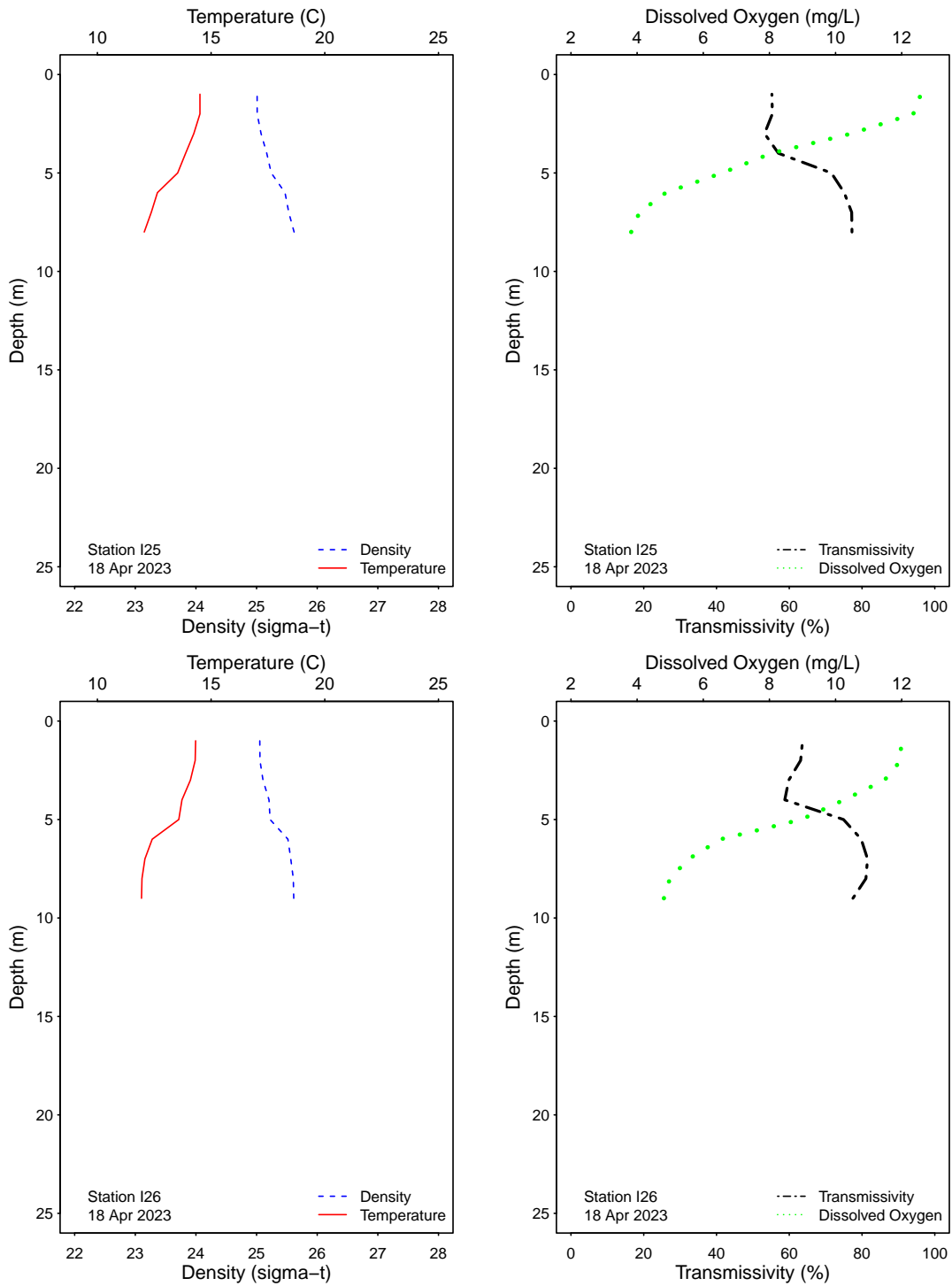


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

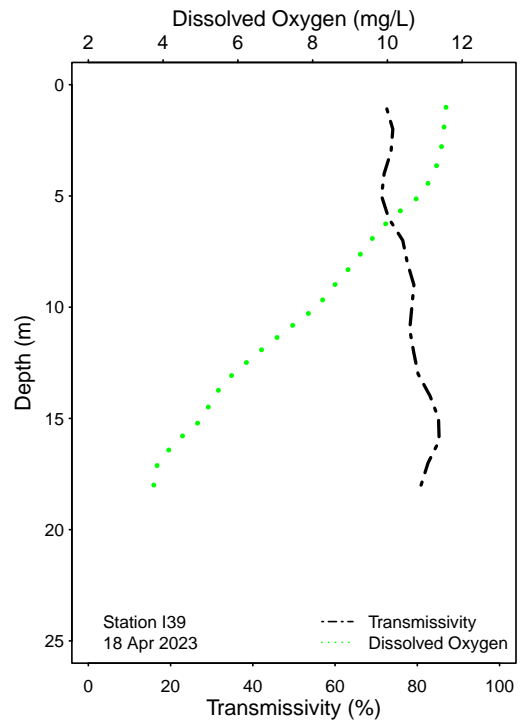
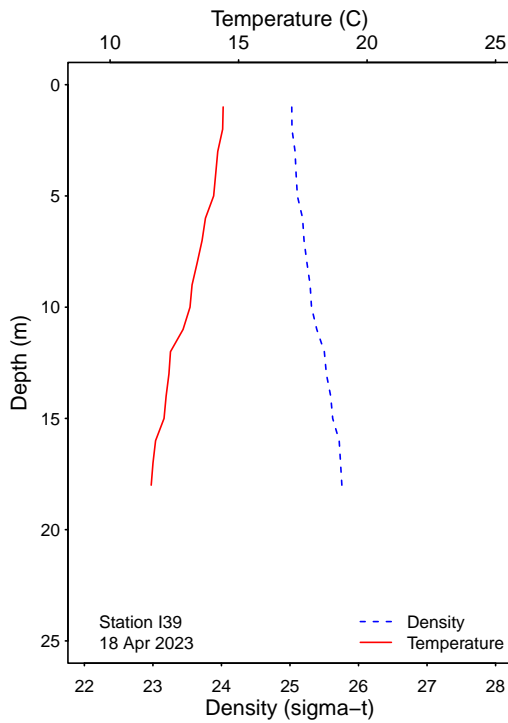
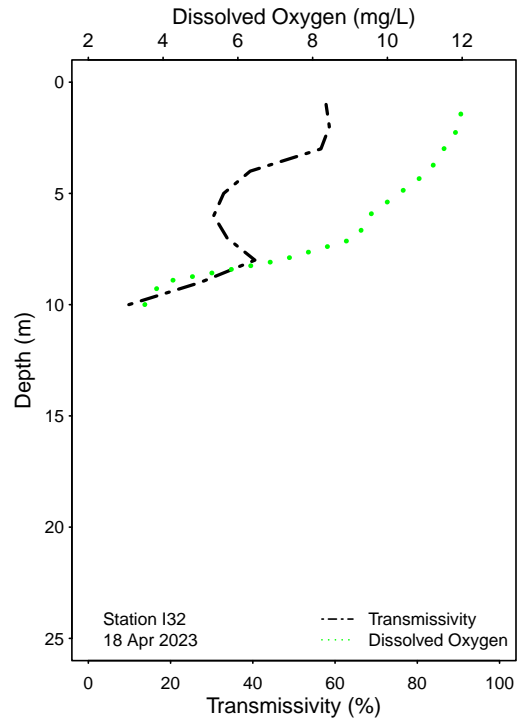
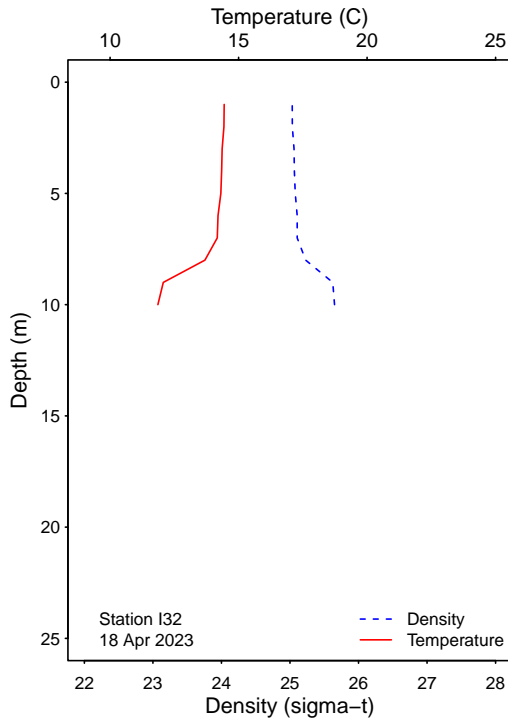


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

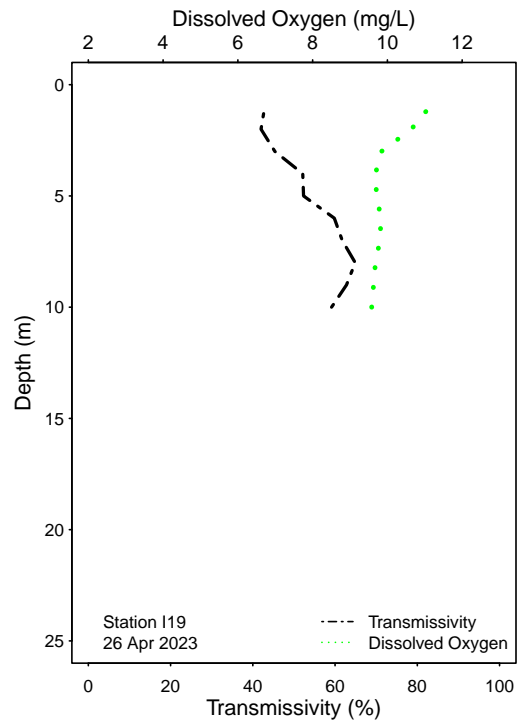
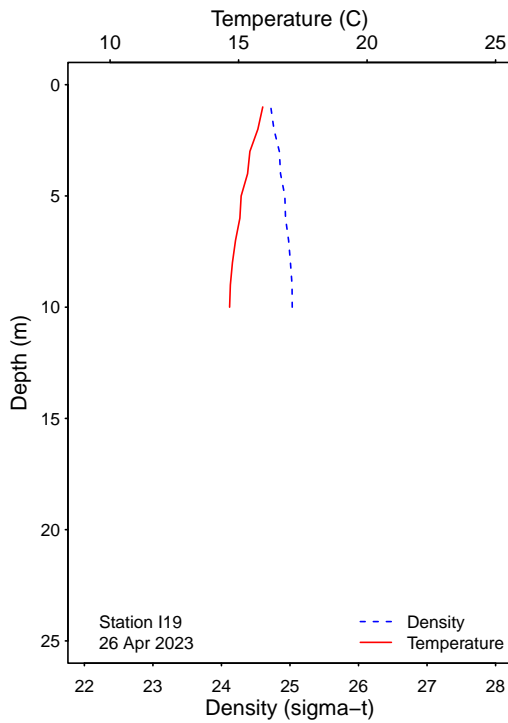
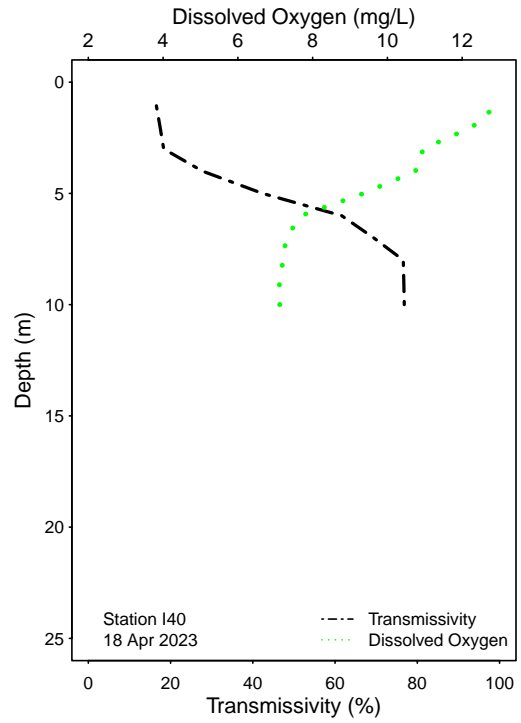
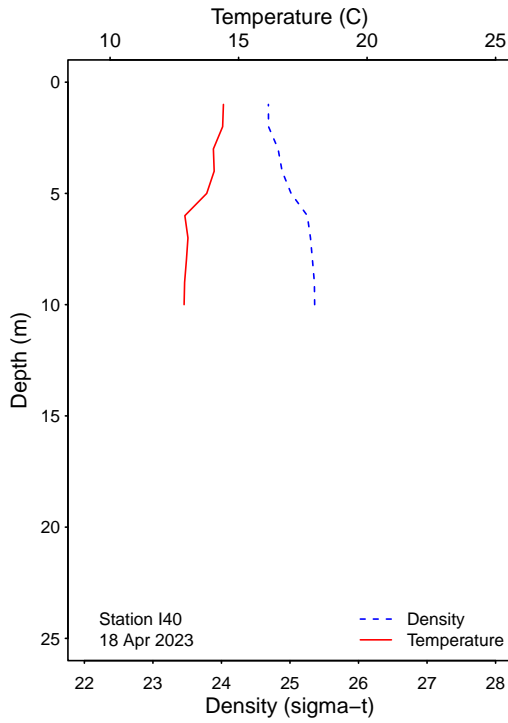


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

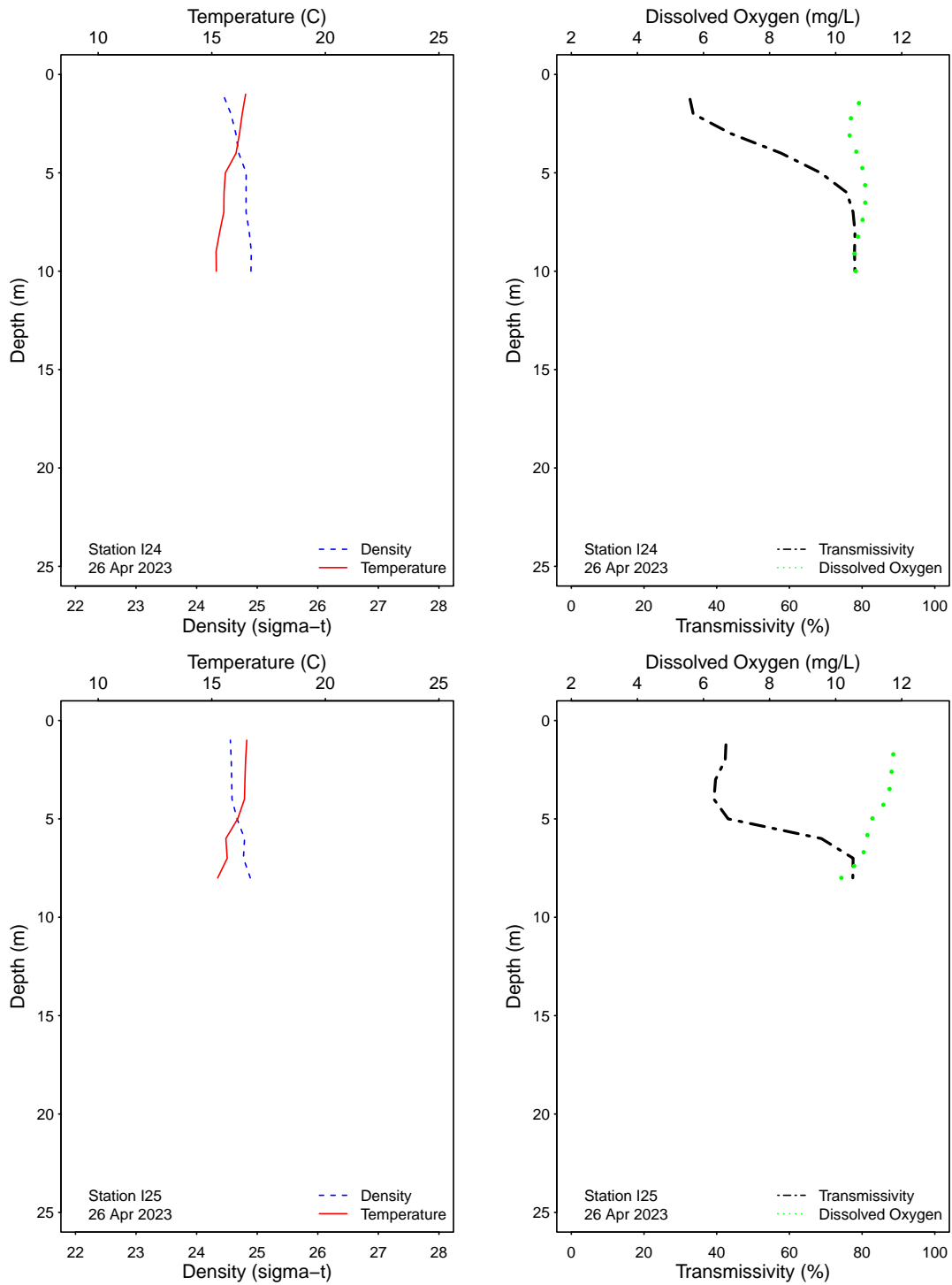


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

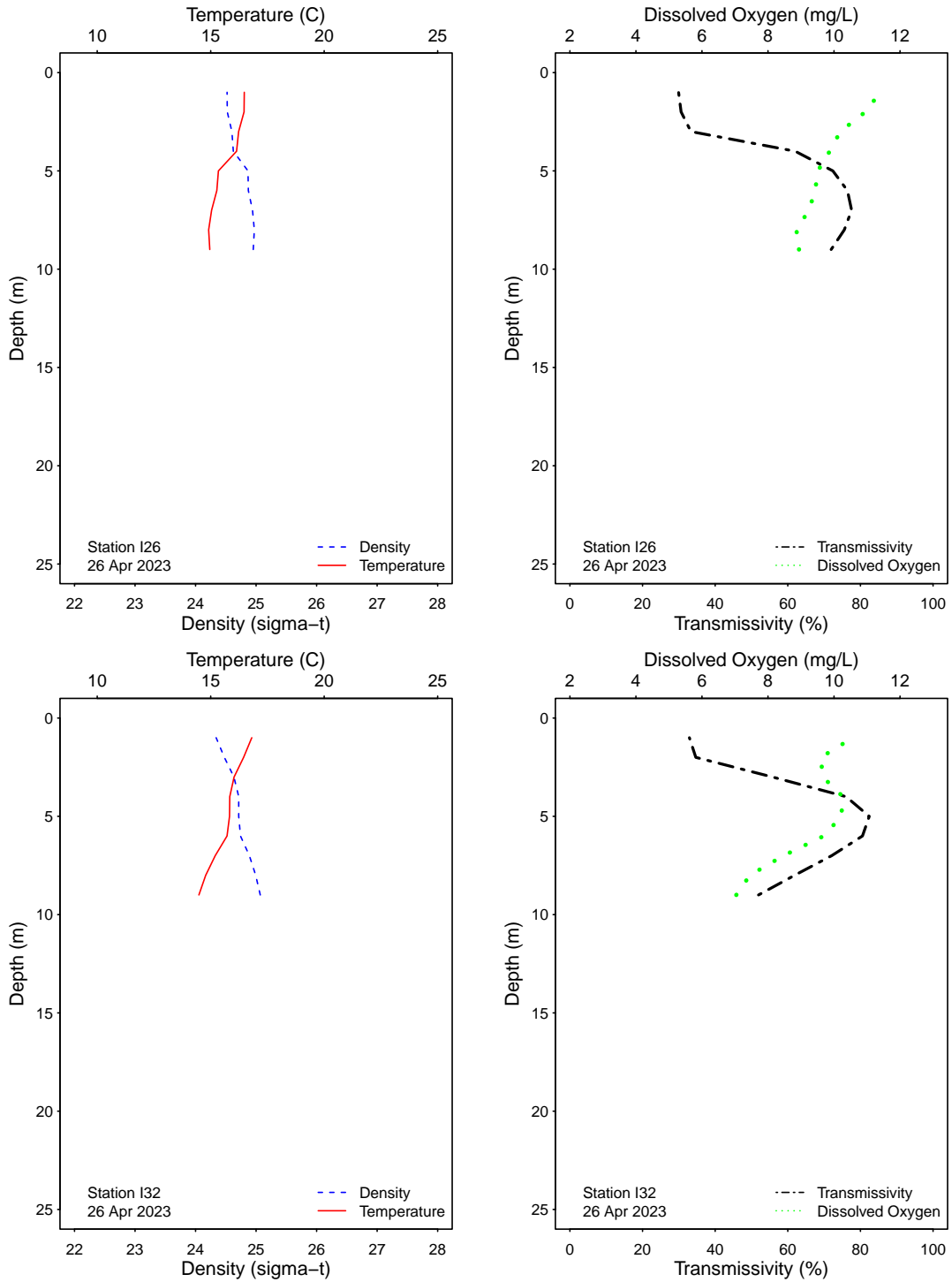


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

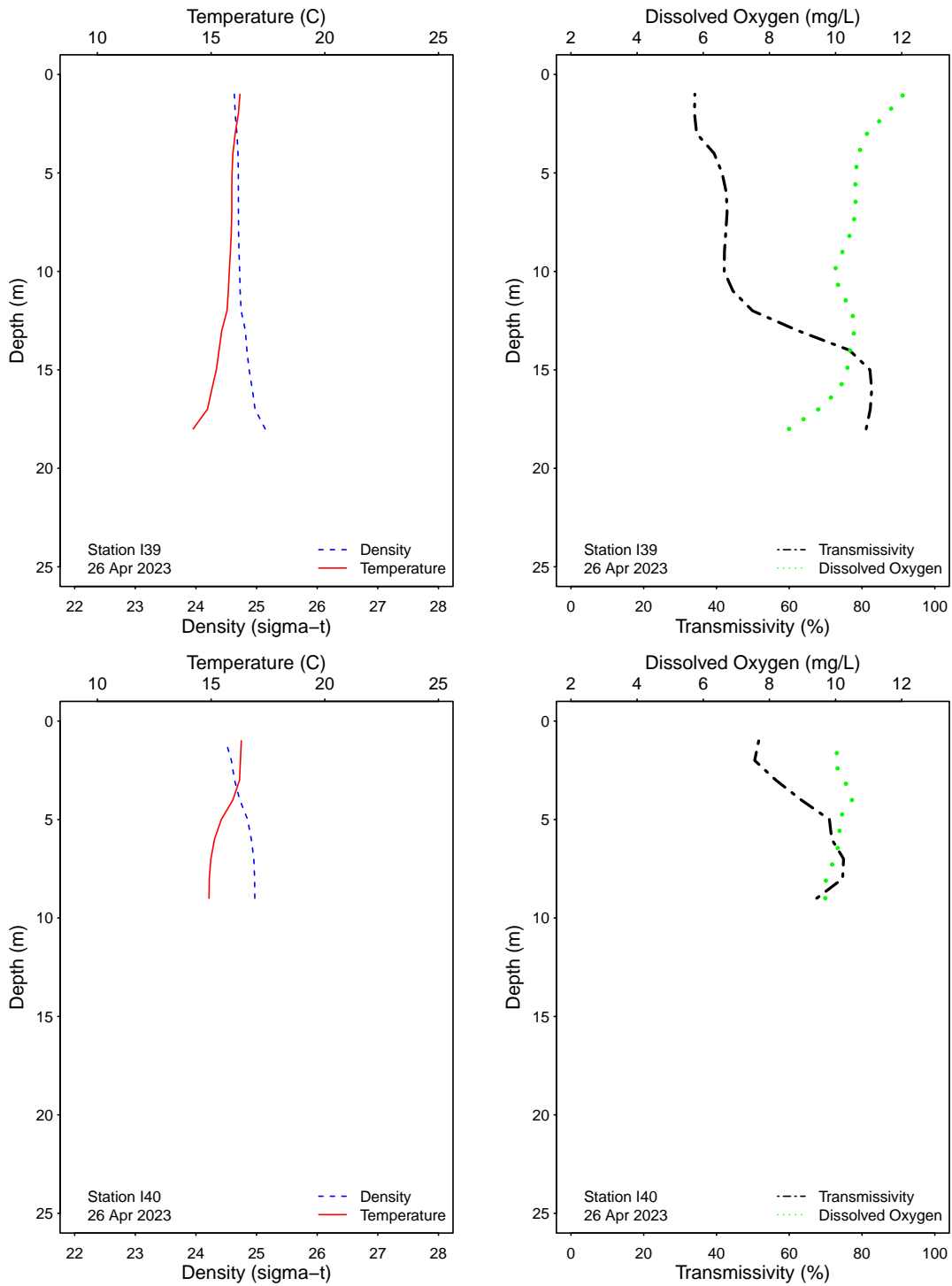


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

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* (Enteroc) are reported as CFU/100 mL.

Station	Date	Depth	Analyst	Procedure	Total	Fecal	Enteroc
I19	05 Apr 2023	6	BS	LAB DUPLICATE	3800e	160e	86
I19	10 Apr 2023	6	KT	LAB DUPLICATE	9800	800e	260e
I19	18 Apr 2023	6	KT	LAB DUPLICATE	5600	860	100e
I19	26 Apr 2023	6	CRE	LAB DUPLICATE	360e	36e	36e
I40	05 Apr 2023	6	BS	LAB DUPLICATE	1200	20e	40
I40	10 Apr 2023	6	KT	LAB DUPLICATE	3200e	680	100
I40	18 Apr 2023	6	KT	LAB DUPLICATE	>16000	4400	800e
I40	26 Apr 2023	6	CRE	LAB DUPLICATE	1400	400	110
S12	04 Apr 2023		KT	FIELD DUPLICATE	1000	34e	60e
S12	04 Apr 2023		KT	LAB DUPLICATE	940	38e	120e
S12	11 Apr 2023		CRE	FIELD DUPLICATE	<20	2e	8e
S12	11 Apr 2023		CRE	LAB DUPLICATE	20e	4e	22e
S12	18 Apr 2023		KA	FIELD DUPLICATE	>16000	8400	320e
S12	18 Apr 2023		KA	LAB DUPLICATE	>16000	10000	460
S12	25 Apr 2023		JF	FIELD DUPLICATE	2400e	280e	16e
S12	25 Apr 2023		JF	LAB DUPLICATE	1000	280e	10e

ns = not sampled

ND = no data

