SD Public Utilities

SOUTH BAY OCEAN OUTFALL MONTHLY RECEIVING WATERS MONITORING REPORT

SOUTH BAY WATER RECLAMATION PLANT

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

DECEMBER 2023

Environmental Monitoring and Technical Services
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CERTIFIED
Public Utilities Department
Continual Improvement, Prevention of Pollution, Regulatory Compliance
ISO 14001

The City of SAN DIEGO
Public Utilities Department
Environmental Monitoring & Technical Services Division

January 31, 2024

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

Attention: POTW Compliance Unit

Dear Mr. Gibson:

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

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

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

with the bacteriological data.

Offshore Stations

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

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

Bacteriological Reporting and Quality Assurance

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

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

<u>Water-Contact Objectives</u>

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 E*nterococci* 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

<u>Shellfish Harvesting Standards</u>

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

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

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

Quality controls of bacteriological data include laboratory and field duplicate analyses. Laboratory duplicates are performed on approximately 10% of the water quality samples, while field duplicates are performed six times a month (see Appendix A). Laboratory duplicates represent two aliquots of the original sample that are split in the laboratory and analyzed by the same analyst using identical procedures within the same analytical run. The results of these analyses provide a measure of intra-analyst precision. In contrast, field duplicates represent two separate samples collected at the same time from the same site, which are handled under identical circumstances and treated exactly the same throughout field and lab procedures. The results of these analyses provide a measure of precision associated with sample collection, preservation, storage, and lab procedures. The sign test (see Gilbert, 1987[2]) 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.
    - No samples were received from stations S0, S2, and S3 from the week of December 18th.
  - During December**,** six 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, S10, and S11.
    - The single sample maximum (SSM) standard for fecal coliforms was exceeded at stations S4, S5, S6, S10, and S11.
    - The 6-week running geometric mean standard for *Enterococcus* was exceeded at stations S4, S5, S6, S10, and S11.

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, and S11.
        - The 30-day running median standard for total coliforms was exceeded at stations S4, S5, S6, S10, S11, and S12.
        - The STV standard for total coliforms was exceeded at stations S4, S5, S6, S10, S11, and S12.
    - A sewage-like odor was observed at station S5 on one or more days in December.
    - 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 December 5, 11, 18, and 26.
    - During December, each of the seven kelp bed stations was out of compliance with the various 2019 Ocean Plan water contact standards on one or more days as follows:
        - The 30-day running geometric mean standard for fecal coliforms was exceeded at stations I19 and I40.
        - The SSM standard for fecal coliforms was exceeded at stations I19, I24, I32, and I40.
        - The 6-week running geometric mean standard for *Enterococcus* was exceeded at stations I19, I24, and I40.
        - The STV standard for *Enterococcus* was exceeded at stations I19, I24, I32, and I40.
        - The 30-day running median standard for total coliforms was exceeded at stations I19, I24, I32, and I40.
        - The STV standard for total coliforms was exceeded at stations I19, I24, I32, and I40.
    - Water column temperatures ranged from 15.63 to 17.17°C. The difference between surface and bottom waters ranged from 0.05 to 1.04°C.
    - Concentrations of chlorophyll a ranged from 0.49 to 9.44 µg/L at the kelp bed stations.
    - Nothing of sewage origin was observed at SBOO kelp stations in December.

- **Offshore Water Quality Sampling**
    - Quarterly sampling was not conducted during December at the offshore stations. The next quarterly sampling is scheduled for February 2024.

TABLES AND FIGURES

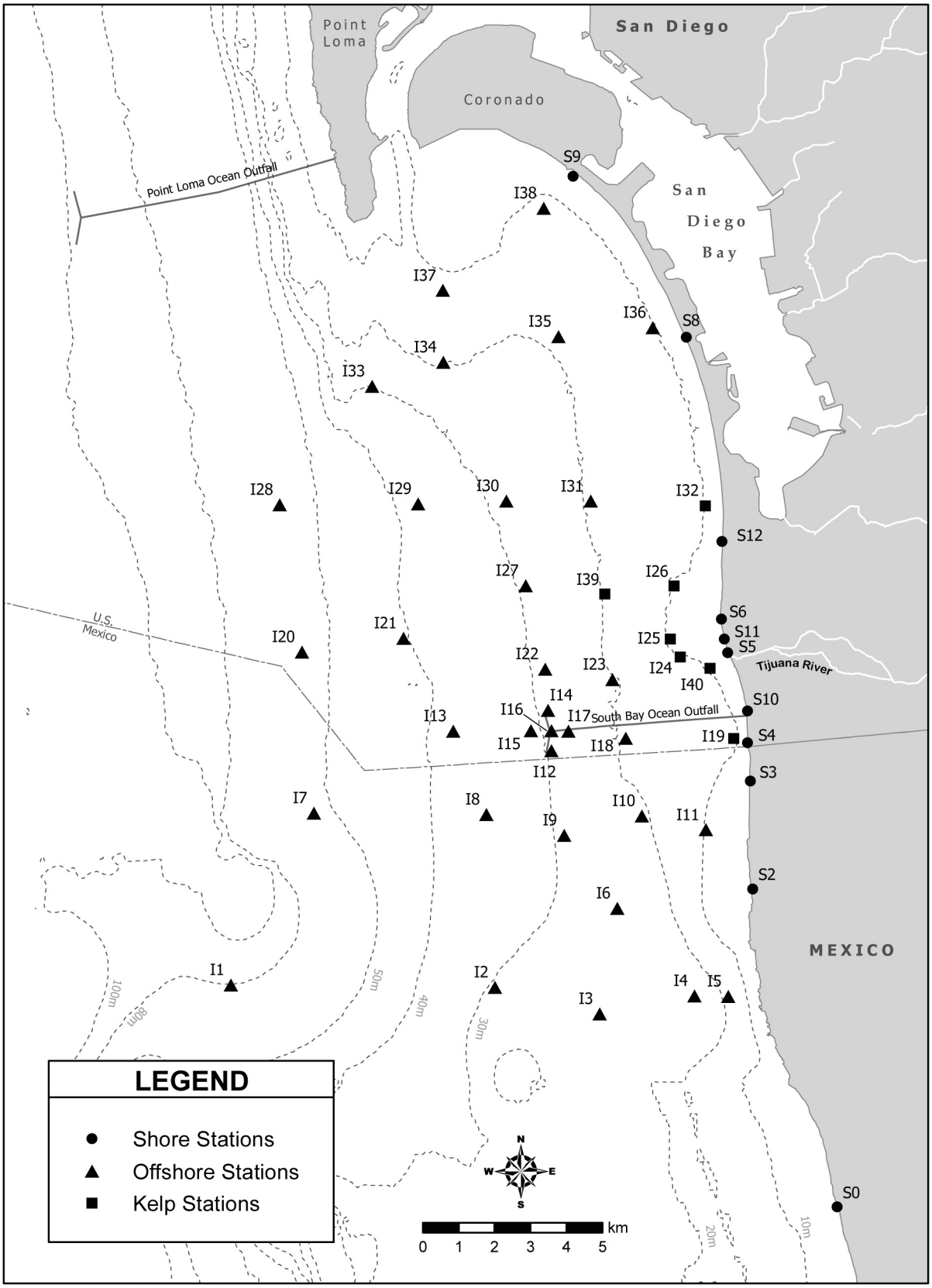

Figure 1.1 Station Map

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Shore Stations

Table 2.1

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

Date	S4	S5	S6	S8	S9	S10	S11	S12
01 Dec 2023	**455**	**4109**	31	3	5	**1207**	103	8
02 Dec 2023	**455**	**4109**	31	3	5	**1207**	103	8
03 Dec 2023	**455**	**4109**	31	3	5	**1207**	103	8
04 Dec 2023	**455**	**4109**	31	3	5	**1207**	103	8
05 Dec 2023	**876**	**1556**	18	3	4	**1910**	47	6
06 Dec 2023	**876**	**1556**	18	3	4	**1910**	47	6
07 Dec 2023	**1127**	**934**	31	3	5	**3209**	73	8
08 Dec 2023	**1127**	**934**	31	3	5	**3209**	73	8
09 Dec 2023	**1127**	**934**	31	3	5	**3209**	73	8
10 Dec 2023	**1127**	**934**	31	3	5	**3209**	73	8
11 Dec 2023	**934**	**1556**	21	3	4	**2636**	122	6
12 Dec 2023	**934**	**1556**	21	3	4	**2636**	122	6
13 Dec 2023	**934**	**1556**	21	3	4	**2636**	122	6
14 Dec 2023	**1026**	**1928**	15	3	3	**2986**	150	8
15 Dec 2023	**1026**	**1928**	15	3	3	**2986**	150	8
16 Dec 2023	**1026**	**1928**	15	3	3	**2986**	150	8
17 Dec 2023	**1026**	**1928**	15	3	3	**2986**	150	8
18 Dec 2023	**1026**	**1928**	15	3	3	**2986**	150	8
19 Dec 2023	**1373**	**2253**	33	2	3	**1260**	**251**	16
20 Dec 2023	**1373**	**2253**	33	2	3	**1260**	**251**	16
21 Dec 2023	**914**	**1483**	56	3	3	**717**	**335**	27
22 Dec 2023	**914**	**1483**	56	3	3	**717**	**335**	27
23 Dec 2023	**914**	**1483**	56	3	3	**717**	**335**	27
24 Dec 2023	**914**	**1483**	56	3	3	**717**	**335**	27
25 Dec 2023	**914**	**1483**	56	3	3	**717**	**335**	27
26 Dec 2023	**1174**	**858**	54	2	4	**517**	**209**	23
27 Dec 2023	**1174**	**858**	54	2	4	**517**	**209**	23
28 Dec 2023	**2936**	**627**	23	2	3	**533**	106	11
29 Dec 2023	**2936**	**627**	23	2	3	**533**	106	11
30 Dec 2023	**2936**	**627**	23	2	3	**533**	106	11
31 Dec 2023	**2936**	**627**	23	2	3	**533**	106	11

* 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
05 Dec 2023	**E**	IC	IC	IC	IC	**E**	IC	IC
11 Dec 2023	**E**	**E**	IC	IC	IC	**E**	**E**	IC
19 Dec 2023	**E**	**E**	**E**	IC	IC	IC	**E**	IC
26 Dec 2023	**E**	IC	IC	IC	IC	IC	IC	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 Dec 2023	**63**	**944**	**53**	6	8	**178**	**111**	10
02 Dec 2023	**63**	**944**	**53**	6	8	**178**	**111**	10
03 Dec 2023	**63**	**944**	**53**	6	8	**178**	**111**	10
04 Dec 2023	**63**	**944**	**53**	6	8	**178**	**111**	10
05 Dec 2023	**188**	**548**	19	6	6	**359**	**40**	8
06 Dec 2023	**188**	**548**	19	6	6	**359**	**40**	8
07 Dec 2023	**188**	**548**	19	6	6	**359**	**40**	8
08 Dec 2023	**188**	**548**	19	6	6	**359**	**40**	8
09 Dec 2023	**188**	**548**	19	6	6	**359**	**40**	8
10 Dec 2023	**188**	**548**	19	6	6	**359**	**40**	8
11 Dec 2023	**207**	**852**	14	5	5	**413**	**57**	7
12 Dec 2023	**305**	**1385**	10	4	5	**797**	**53**	4
13 Dec 2023	**305**	**1385**	10	4	5	**797**	**53**	4
14 Dec 2023	**305**	**1385**	10	4	5	**797**	**53**	4
15 Dec 2023	**305**	**1385**	10	4	5	**797**	**53**	4
16 Dec 2023	**305**	**1385**	10	4	5	**797**	**53**	4
17 Dec 2023	**305**	**1385**	10	4	5	**797**	**53**	4
18 Dec 2023	**305**	**1385**	10	4	5	**797**	**53**	4
19 Dec 2023	**591**	**978**	17	4	4	**737**	**95**	7
20 Dec 2023	**591**	**978**	17	4	4	**737**	**95**	7
21 Dec 2023	**591**	**978**	17	4	4	**737**	**95**	7
22 Dec 2023	**591**	**978**	17	4	4	**737**	**95**	7
23 Dec 2023	**591**	**978**	17	4	4	**737**	**95**	7
24 Dec 2023	**591**	**978**	17	4	4	**737**	**95**	7
25 Dec 2023	**591**	**978**	17	4	4	**737**	**95**	7
26 Dec 2023	**648**	**667**	18	4	3	**589**	**96**	13
27 Dec 2023	**648**	**667**	18	4	3	**589**	**96**	13
28 Dec 2023	**648**	**667**	18	4	3	**589**	**96**	13
29 Dec 2023	**648**	**667**	18	4	3	**589**	**96**	13
30 Dec 2023	**648**	**667**	18	4	3	**589**	**96**	13
31 Dec 2023	**648**	**667**	18	4	3	**589**	**96**	13

* 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
December	**E**	**E**	**E**	IC	IC	**E**	**E**	IC

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 Dec 2023	**1080**	**11600**	**210**	20	30	**4600**	**270**	20
02 Dec 2023	**1080**	**11600**	**210**	20	30	**4600**	**270**	20
03 Dec 2023	**1080**	**11600**	**210**	20	30	**4600**	**270**	20
04 Dec 2023	**1080**	**11600**	**210**	20	30	**4600**	**270**	20
05 Dec 2023	**1200**	**7200**	20	20	20	**6000**	**140**	20
06 Dec 2023	**1200**	**7200**	20	20	20	**6000**	**140**	20
07 Dec 2023	**8600**	**4400**	**210**	20	20	**11000**	**270**	20
08 Dec 2023	**8600**	**4400**	**210**	20	20	**11000**	**270**	20
09 Dec 2023	**8600**	**4400**	**210**	20	20	**11000**	**270**	20
10 Dec 2023	**8600**	**4400**	**210**	20	20	**11000**	**270**	20
11 Dec 2023	**1200**	**7200**	20	20	20	**10000**	**400**	20
12 Dec 2023	**1200**	**7200**	20	20	20	**10000**	**400**	20
13 Dec 2023	**1200**	**7200**	20	20	20	**10000**	**400**	20
14 Dec 2023	**8470**	**11600**	20	20	50	**13000**	**4670**	20
15 Dec 2023	**8470**	**11600**	20	20	50	**13000**	**4670**	20
16 Dec 2023	**8470**	**11600**	20	20	50	**13000**	**4670**	20
17 Dec 2023	**8470**	**11600**	20	20	50	**13000**	**4670**	20
18 Dec 2023	**8470**	**11600**	20	20	50	**13000**	**4670**	20
19 Dec 2023	**9000**	**13000**	20	20	20	**10000**	**9200**	20
20 Dec 2023	**9000**	**13000**	20	20	20	**10000**	**9200**	20
21 Dec 2023	**4970**	**10100**	**2310**	20	50	**6600**	**9600**	**310**
22 Dec 2023	**4970**	**10100**	**2310**	20	50	**6600**	**9600**	**310**
23 Dec 2023	**4970**	**10100**	**2310**	20	50	**6600**	**9600**	**310**
24 Dec 2023	**4970**	**10100**	**2310**	20	50	**6600**	**9600**	**310**
25 Dec 2023	**4970**	**10100**	**2310**	20	50	**6600**	**9600**	**310**
26 Dec 2023	**9000**	**7200**	40	20	40	**3200**	**9200**	20
27 Dec 2023	**9000**	**7200**	40	20	40	**3200**	**9200**	20
28 Dec 2023	**12000**	**6900**	30	11	30	**6100**	**4630**	20
29 Dec 2023	**12000**	**6900**	30	11	30	**6100**	**4630**	20
30 Dec 2023	**12000**	**6900**	30	11	30	**6100**	**4630**	20
31 Dec 2023	**12000**	**6900**	30	11	30	**6100**	**4630**	20

* 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
December	**E**	**E**	**E**	IC	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	05 Dec 2023	900	>16000	9400	>12000
S0	11 Dec 2023	935	>16000	>12000	>12000
S0	26 Dec 2023	810	>16000	6400	7400
S2	05 Dec 2023	955	>16000	2000e	480
S2	11 Dec 2023	1100	280e	62	<20
S2	26 Dec 2023	910	12000	2200e	480
S3	05 Dec 2023	930	>16000	7800	2000e
S3	11 Dec 2023	1030	560	80	58
S3	26 Dec 2023	850	14000	3000e	260e
S4	05 Dec 2023	1107	>16000	>12000	8600
S4	11 Dec 2023	847	940	440	360e
S4	19 Dec 2023	829	9000	4400	3200e
S4	26 Dec 2023	822	15000	3200e	520
S5	05 Dec 2023	921	400	32e	46
S5	11 Dec 2023	938	>16000	>12000	>12000
S5	19 Dec 2023	938	13000	4200	920
S5	26 Dec 2023	912	800e	96	40e
S6	05 Dec 2023	953	<20	2e	2e
S6	11 Dec 2023	1004	<2	4e	2e
S6	19 Dec 2023	1009	4600	700	180e
S6	26 Dec 2023	937	40e	46	58
S8	05 Dec 2023	816	<2	2e	<2
S8	11 Dec 2023	1034	<20	<2	2e
S8	19 Dec 2023	1040	20e	2e	4e
S8	26 Dec 2023	1004	<2	<2	<2
S9	05 Dec 2023	800	<20	<2	4e
S9	11 Dec 2023	1049	80e	2e	2e
S9	19 Dec 2023	1057	<20	<2	<2
S9	26 Dec 2023	1020	40e	10e	6e
S10	05 Dec 2023	1037	>16000	>12000	>12000
S10	11 Dec 2023	822	10000	1200e	960
S10	19 Dec 2023	810	260e	40e	54
S10	26 Dec 2023	809	2200e	140e	120e
S11	05 Dec 2023	941	<2	<2	2e
S11	11 Dec 2023	953	9200	980	520
S11	19 Dec 2023	957	10000	2000e	340e
S11	26 Dec 2023	927	60e	32e	68
S12	05 Dec 2023	834	<20	<2	2e
S12	11 Dec 2023	1018	4e	<2	<2
S12	19 Dec 2023	1021	600e	240e	72
S12	26 Dec 2023	948	20e	14e	80e

ns = not sampled

ND = no data

Comments

Station	Date	Depth	Parameter	Comments
S0	19 Dec 2023			IBWC did not recieve samples from Mexico
S2	19 Dec 2023			IBWC did not recieve samples from Mexico
S3	19 Dec 2023			IBWC did not recieve samples from Mexico

Table 2.8

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

Station	Date	Parameter	Value
S0	05 Dec 2023	Arrive Time	900
S0	05 Dec 2023	Weather	Sunny
S0	05 Dec 2023	Wind Speed (kts)	1
S0	05 Dec 2023	Wind Dir	NE
S0	05 Dec 2023	Animal Life	Dog-2; Seagull-20;
S0	05 Dec 2023	Floatables	None
S0	05 Dec 2023	Water Color	Green
S0	05 Dec 2023	Current Direction	N
S0	05 Dec 2023	Water Temp (C)	15
S0	05 Dec 2023	Wave Height Low (ft)	3
S0	05 Dec 2023	High Tide (ft)	3.99
S0	05 Dec 2023	High Tide Time	423
S0	05 Dec 2023	Low Tide (ft)	2.64
S0	05 Dec 2023	Low Tide Time	1014
S0	05 Dec 2023	Comments	Water clear; Trash-1; Kelp;Algae; Person/Walker/Jogger-2; 0.5 L/s water flowing from storm drain
S0	11 Dec 2023	Arrive Time	935
S0	11 Dec 2023	Weather	Sunny
S0	11 Dec 2023	Wind Speed (kts)	1.2
S0	11 Dec 2023	Wind Dir	NE
S0	11 Dec 2023	Animal Life	Seagull-20;
S0	11 Dec 2023	Floatables	None
S0	11 Dec 2023	Water Color	Green
S0	11 Dec 2023	Current Direction	N
S0	11 Dec 2023	Water Temp (C)	14
S0	11 Dec 2023	Wave Height Low (ft)	3
S0	11 Dec 2023	High Tide (ft)	6.06
S0	11 Dec 2023	High Tide Time	705
S0	11 Dec 2023	Low Tide (ft)	1.91
S0	11 Dec 2023	Low Tide Time	47
S0	11 Dec 2023	Comments	Water clear; Trash-1; Kelp;Algae; Person/Walker/Jogger-4; 0.5 L/s water flowing from storm drain
S0	26 Dec 2023	Arrive Time	810
S0	26 Dec 2023	Weather	Sunny
S0	26 Dec 2023	Wind Speed (kts)	1.3
S0	26 Dec 2023	Wind Dir	NE
S0	26 Dec 2023	Animal Life	Seagull-20;
S0	26 Dec 2023	Floatables	None
S0	26 Dec 2023	Water Color	Green
S0	26 Dec 2023	Current Direction	S
S0	26 Dec 2023	Water Temp (C)	11
S0	26 Dec 2023	Wave Height Low (ft)	4
S0	26 Dec 2023	High Tide (ft)	6.22
S0	26 Dec 2023	High Tide Time	748
S0	26 Dec 2023	Low Tide (ft)	2.11
S0	26 Dec 2023	Low Tide Time	138
S0	26 Dec 2023	Comments	Water turbid; Trash-1; Kelp;Algae; 2 lps water flowing from storm drain
S2	05 Dec 2023	Arrive Time	955
S2	05 Dec 2023	Weather	Sunny
S2	05 Dec 2023	Wind Speed (kts)	1.3
S2	05 Dec 2023	Wind Dir	NE
S2	05 Dec 2023	Animal Life	Dog-4; Seagull-20;

Station	Date	Parameter	Value
S2	05 Dec 2023	Floatables	None
S2	05 Dec 2023	Water Color	Green
S2	05 Dec 2023	Current Direction	N
S2	05 Dec 2023	Water Temp (C)	15
S2	05 Dec 2023	Wave Height Low (ft)	3
S2	05 Dec 2023	High Tide (ft)	3.99
S2	05 Dec 2023	High Tide Time	423
S2	05 Dec 2023	Low Tide (ft)	2.64
S2	05 Dec 2023	Low Tide Time	1014
S2	05 Dec 2023	Comments	Water clear; Trash-1; Kelp;Algae; Person/Walker/Jogger-10; No flow from storm drain
S2	11 Dec 2023	Arrive Time	1100
S2	11 Dec 2023	Weather	Sunny
S2	11 Dec 2023	Wind Speed (kts)	1
S2	11 Dec 2023	Wind Dir	NE
S2	11 Dec 2023	Animal Life	Dog-2; Seagull-2010;
S2	11 Dec 2023	Floatables	None
S2	11 Dec 2023	Water Color	Green
S2	11 Dec 2023	Current Direction	N
S2	11 Dec 2023	Water Temp (C)	14
S2	11 Dec 2023	Wave Height Low (ft)	3
S2	11 Dec 2023	High Tide (ft)	6.06
S2	11 Dec 2023	High Tide Time	705
S2	11 Dec 2023	Low Tide (ft)	1.91
S2	11 Dec 2023	Low Tide Time	47
S2	11 Dec 2023	Comments	Water clear; Trash-1; Kelp;Algae; Person/Walker/Jogger-10; No flow from storm drain
S2	26 Dec 2023	Arrive Time	910
S2	26 Dec 2023	Weather	Sunny
S2	26 Dec 2023	Wind Speed (kts)	1.9
S2	26 Dec 2023	Wind Dir	NE
S2	26 Dec 2023	Animal Life	Seagull-20;
S2	26 Dec 2023	Floatables	None
S2	26 Dec 2023	Water Color	Green
S2	26 Dec 2023	Current Direction	S
S2	26 Dec 2023	Water Temp (C)	13
S2	26 Dec 2023	Wave Height Low (ft)	3
S2	26 Dec 2023	High Tide (ft)	6.22
S2	26 Dec 2023	High Tide Time	748
S2	26 Dec 2023	Low Tide (ft)	2.11
S2	26 Dec 2023	Low Tide Time	138
S2	26 Dec 2023	Comments	Water turbid; Trash-1; Kelp;Algae; No water flowing from storm drain
S3	05 Dec 2023	Arrive Time	930
S3	05 Dec 2023	Weather	Sunny
S3	05 Dec 2023	Wind Speed (kts)	1.1
S3	05 Dec 2023	Wind Dir	NE
S3	05 Dec 2023	Animal Life	Dog-2; Seagull-20;
S3	05 Dec 2023	Floatables	None
S3	05 Dec 2023	Water Color	Green
S3	05 Dec 2023	Current Direction	N
S3	05 Dec 2023	Water Temp (C)	15
S3	05 Dec 2023	Wave Height Low (ft)	3
S3	05 Dec 2023	High Tide (ft)	3.99
S3	05 Dec 2023	High Tide Time	423
S3	05 Dec 2023	Low Tide (ft)	2.64
S3	05 Dec 2023	Low Tide Time	1014

Station	Date	Parameter	Value
S3	05 Dec 2023	Comments	Water clear; Trash-1; Kelp;Algae; Person/Walker/Jogger-10; No flow from storm drain
S3	11 Dec 2023	Arrive Time	1030
S3	11 Dec 2023	Weather	Sunny
S3	11 Dec 2023	Wind Speed (kts)	1.2
S3	11 Dec 2023	Wind Dir	NE
S3	11 Dec 2023	Animal Life	Dog-4; Seagull-20;
S3	11 Dec 2023	Floatables	None
S3	11 Dec 2023	Water Color	Green
S3	11 Dec 2023	Current Direction	N
S3	11 Dec 2023	Water Temp (C)	14
S3	11 Dec 2023	Wave Height Low (ft)	3
S3	11 Dec 2023	High Tide (ft)	6.06
S3	11 Dec 2023	High Tide Time	705
S3	11 Dec 2023	Low Tide (ft)	1.91
S3	11 Dec 2023	Low Tide Time	47
S3	11 Dec 2023	Comments	Water clear; Trash-1; Kelp;Algae; Person/Walker/Jogger-10; No flow from storm drain
S3	26 Dec 2023	Arrive Time	850
S3	26 Dec 2023	Weather	Sunny
S3	26 Dec 2023	Wind Speed (kts)	1.1
S3	26 Dec 2023	Wind Dir	NE
S3	26 Dec 2023	Animal Life	Dog-2; Seagull-20;
S3	26 Dec 2023	Floatables	None
S3	26 Dec 2023	Water Color	Green
S3	26 Dec 2023	Current Direction	S
S3	26 Dec 2023	Water Temp (C)	12
S3	26 Dec 2023	Wave Height Low (ft)	3
S3	26 Dec 2023	High Tide (ft)	6.22
S3	26 Dec 2023	High Tide Time	748
S3	26 Dec 2023	Low Tide (ft)	2.11
S3	26 Dec 2023	Low Tide Time	138
S3	26 Dec 2023	Comments	Water turbid; Trash-1; Algae;Kelp; No water flowing from storm drain but the drain is wet
S4	05 Dec 2023	Arrive Time	1107
S4	05 Dec 2023	Weather	Sunny
S4	05 Dec 2023	Wind Speed (kts)	4.3
S4	05 Dec 2023	Wind Dir	N
S4	05 Dec 2023	Animal Life	
S4	05 Dec 2023	Floatables	None
S4	05 Dec 2023	Water Color	Green
S4	05 Dec 2023	Current Direction	S
S4	05 Dec 2023	Water Temp (C)	16
S4	05 Dec 2023	Wave Height Low (ft)	5
S4	05 Dec 2023	High Tide (ft)	3.99
S4	05 Dec 2023	High Tide Time	423
S4	05 Dec 2023	Low Tide (ft)	2.64
S4	05 Dec 2023	Low Tide Time	1014
S4	05 Dec 2023	Comments	Water clear; Trash-4; Kelp;Seagrass;Debris
S4	11 Dec 2023	Arrive Time	847
S4	11 Dec 2023	Weather	Partly cloudy
S4	11 Dec 2023	Wind Speed (kts)	1.1
S4	11 Dec 2023	Wind Dir	E
S4	11 Dec 2023	Animal Life	
S4	11 Dec 2023	Floatables	None
S4	11 Dec 2023	Water Color	Green
S4	11 Dec 2023	Current Direction	S

Station	Date	Parameter	Value
S4	11 Dec 2023	Water Temp (C)	12
S4	11 Dec 2023	Wave Height Low (ft)	4
S4	11 Dec 2023	High Tide (ft)	6.06
S4	11 Dec 2023	High Tide Time	705
S4	11 Dec 2023	Low Tide (ft)	1.91
S4	11 Dec 2023	Low Tide Time	47
S4	11 Dec 2023	Comments	Water clear; Trash-1; Kelp;Seagrass;Debris
S4	19 Dec 2023	Arrive Time	829
S4	19 Dec 2023	Weather	Hazy
S4	19 Dec 2023	Wind Speed (kts)	0.6
S4	19 Dec 2023	Wind Dir	W
S4	19 Dec 2023	Animal Life	
S4	19 Dec 2023	Floatables	None
S4	19 Dec 2023	Water Color	Green
S4	19 Dec 2023	Current Direction	S
S4	19 Dec 2023	Water Temp (C)	12
S4	19 Dec 2023	Wave Height Low (ft)	4
S4	19 Dec 2023	High Tide (ft)	4.28
S4	19 Dec 2023	High Tide Time	254
S4	19 Dec 2023	Low Tide (ft)	2.26
S4	19 Dec 2023	Low Tide Time	846
S4	19 Dec 2023	Comments	Water clear; Trash-1; Kelp;Seagrass;Debris
S4	26 Dec 2023	Arrive Time	822
S4	26 Dec 2023	Weather	Hazy
S4	26 Dec 2023	Wind Speed (kts)	2
S4	26 Dec 2023	Wind Dir	NE
S4	26 Dec 2023	Animal Life	Bird-2;
S4	26 Dec 2023	Floatables	None
S4	26 Dec 2023	Water Color	Green
S4	26 Dec 2023	Current Direction	S
S4	26 Dec 2023	Water Temp (C)	14
S4	26 Dec 2023	Wave Height Low (ft)	6
S4	26 Dec 2023	High Tide (ft)	6.22
S4	26 Dec 2023	High Tide Time	748
S4	26 Dec 2023	Low Tide (ft)	2.11
S4	26 Dec 2023	Low Tide Time	138
S4	26 Dec 2023	Comments	Water clear; Trash-4; Kelp;Seagrass;Debris
S5	05 Dec 2023	Arrive Time	921
S5	05 Dec 2023	Weather	Sunny
S5	05 Dec 2023	Wind Speed (kts)	2.6
S5	05 Dec 2023	Wind Dir	N
S5	05 Dec 2023	Animal Life	Bird-1;
S5	05 Dec 2023	Floatables	None
S5	05 Dec 2023	Water Color	Green
S5	05 Dec 2023	Current Direction	S
S5	05 Dec 2023	Water Temp (C)	16
S5	05 Dec 2023	Wave Height Low (ft)	5
S5	05 Dec 2023	High Tide (ft)	3.99
S5	05 Dec 2023	High Tide Time	423
S5	05 Dec 2023	Low Tide (ft)	2.64
S5	05 Dec 2023	Low Tide Time	1014
S5	05 Dec 2023	Comments	Water clear; Trash-4; Kelp;Seagrass;Debris; Sewage-like odor
S5	11 Dec 2023	Arrive Time	938
S5	11 Dec 2023	Weather	Partly cloudy
S5	11 Dec 2023	Wind Speed (kts)	0.7
S5	11 Dec 2023	Wind Dir	SW

Station	Date	Parameter	Value
S5	11 Dec 2023	Animal Life	Dolphin-1;
S5	11 Dec 2023	Floatables	None
S5	11 Dec 2023	Water Color	Green
S5	11 Dec 2023	Current Direction	S
S5	11 Dec 2023	Water Temp (C)	16
S5	11 Dec 2023	Wave Height Low (ft)	4
S5	11 Dec 2023	High Tide (ft)	6.06
S5	11 Dec 2023	High Tide Time	705
S5	11 Dec 2023	Low Tide (ft)	1.91
S5	11 Dec 2023	Low Tide Time	47
S5	11 Dec 2023	Comments	Water clear; Trash-2; Kelp;Seagrass;Debris
S5	19 Dec 2023	Arrive Time	938
S5	19 Dec 2023	Weather	Partly cloudy
S5	19 Dec 2023	Wind Speed (kts)	5.4
S5	19 Dec 2023	Wind Dir	W
S5	19 Dec 2023	Animal Life	
S5	19 Dec 2023	Floatables	None
S5	19 Dec 2023	Water Color	Green
S5	19 Dec 2023	Current Direction	S
S5	19 Dec 2023	Water Temp (C)	15
S5	19 Dec 2023	Wave Height Low (ft)	4
S5	19 Dec 2023	High Tide (ft)	4.28
S5	19 Dec 2023	High Tide Time	254
S5	19 Dec 2023	Low Tide (ft)	2.26
S5	19 Dec 2023	Low Tide Time	846
S5	19 Dec 2023	Comments	Water clear; Trash-2; Kelp;Seagrass;Debris
S5	26 Dec 2023	Arrive Time	912
S5	26 Dec 2023	Weather	Partly cloudy
S5	26 Dec 2023	Wind Speed (kts)	4.5
S5	26 Dec 2023	Wind Dir	NE
S5	26 Dec 2023	Animal Life	
S5	26 Dec 2023	Floatables	None
S5	26 Dec 2023	Water Color	Green
S5	26 Dec 2023	Current Direction	S
S5	26 Dec 2023	Water Temp (C)	14
S5	26 Dec 2023	Wave Height Low (ft)	4
S5	26 Dec 2023	High Tide (ft)	6.22
S5	26 Dec 2023	High Tide Time	748
S5	26 Dec 2023	Low Tide (ft)	2.11
S5	26 Dec 2023	Low Tide Time	138
S5	26 Dec 2023	Comments	Water clear; Trash-3; Kelp;Debris;Seagrass;Algae
S6	05 Dec 2023	Arrive Time	953
S6	05 Dec 2023	Weather	Sunny
S6	05 Dec 2023	Wind Speed (kts)	0.7
S6	05 Dec 2023	Wind Dir	N
S6	05 Dec 2023	Animal Life	
S6	05 Dec 2023	Floatables	None
S6	05 Dec 2023	Water Color	Green
S6	05 Dec 2023	Current Direction	S
S6	05 Dec 2023	Water Temp (C)	16
S6	05 Dec 2023	Wave Height Low (ft)	6
S6	05 Dec 2023	High Tide (ft)	3.99
S6	05 Dec 2023	High Tide Time	423
S6	05 Dec 2023	Low Tide (ft)	2.64
S6	05 Dec 2023	Low Tide Time	1014
S6	05 Dec 2023	Comments	Water clear; Trash-4; Kelp;Seagrass;Algae;Debris
S6	11 Dec 2023	Arrive Time	1004

Station	Date	Parameter	Value
S6	11 Dec 2023	Weather	Partly cloudy
S6	11 Dec 2023	Wind Speed (kts)	2.1
S6	11 Dec 2023	Wind Dir	W
S6	11 Dec 2023	Animal Life	
S6	11 Dec 2023	Floatables	None
S6	11 Dec 2023	Water Color	Green
S6	11 Dec 2023	Current Direction	S
S6	11 Dec 2023	Water Temp (C)	16
S6	11 Dec 2023	Wave Height Low (ft)	4.5
S6	11 Dec 2023	High Tide (ft)	6.06
S6	11 Dec 2023	High Tide Time	705
S6	11 Dec 2023	Low Tide (ft)	1.91
S6	11 Dec 2023	Low Tide Time	47
S6	11 Dec 2023	Comments	Water clear; Trash-1; Kelp;Seagrass;Debris;Algae; Person/Walker/Jogger-1
S6	19 Dec 2023	Arrive Time	1009
S6	19 Dec 2023	Weather	Partly cloudy
S6	19 Dec 2023	Wind Speed (kts)	2.7
S6	19 Dec 2023	Wind Dir	W
S6	19 Dec 2023	Animal Life	
S6	19 Dec 2023	Floatables	None
S6	19 Dec 2023	Water Color	Green
S6	19 Dec 2023	Current Direction	S
S6	19 Dec 2023	Water Temp (C)	17
S6	19 Dec 2023	Wave Height Low (ft)	5
S6	19 Dec 2023	High Tide (ft)	4.28
S6	19 Dec 2023	High Tide Time	254
S6	19 Dec 2023	Low Tide (ft)	2.26
S6	19 Dec 2023	Low Tide Time	846
S6	19 Dec 2023	Comments	Water clear; Surfer/Paddle boarder-8; Trash-1; Kelp;Seagrass;Algae; Person/Walker/Jogger-2
S6	26 Dec 2023	Arrive Time	937
S6	26 Dec 2023	Weather	Partly cloudy
S6	26 Dec 2023	Wind Speed (kts)	1.4
S6	26 Dec 2023	Wind Dir	NE
S6	26 Dec 2023	Animal Life	
S6	26 Dec 2023	Floatables	None
S6	26 Dec 2023	Water Color	Green
S6	26 Dec 2023	Current Direction	S
S6	26 Dec 2023	Water Temp (C)	13
S6	26 Dec 2023	Wave Height Low (ft)	7
S6	26 Dec 2023	High Tide (ft)	6.22
S6	26 Dec 2023	High Tide Time	748
S6	26 Dec 2023	Low Tide (ft)	2.11
S6	26 Dec 2023	Low Tide Time	138
S6	26 Dec 2023	Comments	Water clear; Trash-2; Seagrass;Kelp;Debris
S8	05 Dec 2023	Arrive Time	816
S8	05 Dec 2023	Weather	Sunny
S8	05 Dec 2023	Wind Speed (kts)	0.7
S8	05 Dec 2023	Wind Dir	N
S8	05 Dec 2023	Animal Life	
S8	05 Dec 2023	Floatables	None
S8	05 Dec 2023	Water Color	Green
S8	05 Dec 2023	Current Direction	S
S8	05 Dec 2023	Water Temp (C)	14
S8	05 Dec 2023	Wave Height Low (ft)	4
S8	05 Dec 2023	High Tide (ft)	3.99
S8	05 Dec 2023	High Tide Time	423

Station	Date	Parameter	Value
S8	05 Dec 2023	Low Tide (ft)	2.64
S8	05 Dec 2023	Low Tide Time	1014
S8	05 Dec 2023	Comments	Water clear; Trash-3; Kelp;Seagrass;Debris
S8	11 Dec 2023	Arrive Time	1034
S8	11 Dec 2023	Weather	Partly cloudy
S8	11 Dec 2023	Wind Speed (kts)	1
S8	11 Dec 2023	Wind Dir	W
S8	11 Dec 2023	Animal Life	Bird-30;
S8	11 Dec 2023	Floatables	None
S8	11 Dec 2023	Water Color	Green
S8	11 Dec 2023	Current Direction	S
S8	11 Dec 2023	Water Temp (C)	16
S8	11 Dec 2023	Wave Height Low (ft)	3
S8	11 Dec 2023	High Tide (ft)	6.06
S8	11 Dec 2023	High Tide Time	705
S8	11 Dec 2023	Low Tide (ft)	1.91
S8	11 Dec 2023	Low Tide Time	47
S8	11 Dec 2023	Comments	Water clear; Trash-1
S8	19 Dec 2023	Arrive Time	1040
S8	19 Dec 2023	Weather	Partly cloudy
S8	19 Dec 2023	Wind Speed (kts)	2.8
S8	19 Dec 2023	Wind Dir	W
S8	19 Dec 2023	Animal Life	
S8	19 Dec 2023	Floatables	None
S8	19 Dec 2023	Water Color	Green
S8	19 Dec 2023	Current Direction	S
S8	19 Dec 2023	Water Temp (C)	17
S8	19 Dec 2023	Wave Height Low (ft)	4
S8	19 Dec 2023	High Tide (ft)	4.28
S8	19 Dec 2023	High Tide Time	254
S8	19 Dec 2023	Low Tide (ft)	2.26
S8	19 Dec 2023	Low Tide Time	846
S8	19 Dec 2023	Comments	Water clear; Trash-1; Kelp;Seagrass
S8	26 Dec 2023	Arrive Time	1004
S8	26 Dec 2023	Weather	Partly cloudy
S8	26 Dec 2023	Wind Speed (kts)	1.4
S8	26 Dec 2023	Wind Dir	N
S8	26 Dec 2023	Animal Life	
S8	26 Dec 2023	Floatables	None
S8	26 Dec 2023	Water Color	Green
S8	26 Dec 2023	Current Direction	S
S8	26 Dec 2023	Water Temp (C)	13
S8	26 Dec 2023	Wave Height Low (ft)	3
S8	26 Dec 2023	High Tide (ft)	6.22
S8	26 Dec 2023	High Tide Time	748
S8	26 Dec 2023	Low Tide (ft)	2.11
S8	26 Dec 2023	Low Tide Time	138
S8	26 Dec 2023	Comments	Water clear; Fisherperson-1; Trash-2; Kelp;Seagrass;Debris; Person/Walker/Jogger-2
S9	05 Dec 2023	Arrive Time	800
S9	05 Dec 2023	Weather	Sunny
S9	05 Dec 2023	Wind Speed (kts)	0.7
S9	05 Dec 2023	Wind Dir	N
S9	05 Dec 2023	Animal Life	
S9	05 Dec 2023	Floatables	None
S9	05 Dec 2023	Water Color	Green
S9	05 Dec 2023	Current Direction	S

Station	Date	Parameter	Value
S9	05 Dec 2023	Water Temp (C)	13
S9	05 Dec 2023	Wave Height Low (ft)	5
S9	05 Dec 2023	High Tide (ft)	3.99
S9	05 Dec 2023	High Tide Time	423
S9	05 Dec 2023	Low Tide (ft)	2.64
S9	05 Dec 2023	Low Tide Time	1014
S9	05 Dec 2023	Comments	Water clear; Trash-2; Kelp;Seagrass
S9	11 Dec 2023	Arrive Time	1049
S9	11 Dec 2023	Weather	Partly cloudy
S9	11 Dec 2023	Wind Speed (kts)	0
S9	11 Dec 2023	Wind Dir	
S9	11 Dec 2023	Animal Life	Bird-15;
S9	11 Dec 2023	Floatables	None
S9	11 Dec 2023	Water Color	Green
S9	11 Dec 2023	Current Direction	S
S9	11 Dec 2023	Water Temp (C)	17
S9	11 Dec 2023	Wave Height Low (ft)	3
S9	11 Dec 2023	High Tide (ft)	6.06
S9	11 Dec 2023	High Tide Time	705
S9	11 Dec 2023	Low Tide (ft)	1.91
S9	11 Dec 2023	Low Tide Time	47
S9	11 Dec 2023	Comments	Water clear; Trash-1; Kelp;Seagrass;Algae; Person/Walker/Jogger-1
S9	19 Dec 2023	Arrive Time	1057
S9	19 Dec 2023	Weather	Partly cloudy
S9	19 Dec 2023	Wind Speed (kts)	3.1
S9	19 Dec 2023	Wind Dir	W
S9	19 Dec 2023	Animal Life	
S9	19 Dec 2023	Floatables	None; Foam
S9	19 Dec 2023	Water Color	Green
S9	19 Dec 2023	Current Direction	S
S9	19 Dec 2023	Water Temp (C)	18
S9	19 Dec 2023	Wave Height Low (ft)	4
S9	19 Dec 2023	High Tide (ft)	4.28
S9	19 Dec 2023	High Tide Time	254
S9	19 Dec 2023	Low Tide (ft)	2.26
S9	19 Dec 2023	Low Tide Time	846
S9	19 Dec 2023	Comments	Water clear; Trash-1; Kelp
S9	26 Dec 2023	Arrive Time	1020
S9	26 Dec 2023	Weather	Partly cloudy
S9	26 Dec 2023	Wind Speed (kts)	2.6
S9	26 Dec 2023	Wind Dir	N
S9	26 Dec 2023	Animal Life	
S9	26 Dec 2023	Floatables	None; nan
S9	26 Dec 2023	Water Color	Green
S9	26 Dec 2023	Current Direction	S
S9	26 Dec 2023	Water Temp (C)	11
S9	26 Dec 2023	Wave Height Low (ft)	4
S9	26 Dec 2023	High Tide (ft)	6.22
S9	26 Dec 2023	High Tide Time	748
S9	26 Dec 2023	Low Tide (ft)	2.11
S9	26 Dec 2023	Low Tide Time	138
S9	26 Dec 2023	Comments	Water clear; Trash-1; Kelp
S10	05 Dec 2023	Arrive Time	1037
S10	05 Dec 2023	Weather	Sunny
S10	05 Dec 2023	Wind Speed (kts)	6.5
S10	05 Dec 2023	Wind Dir	N

Station	Date	Parameter	Value
S10	05 Dec 2023	Animal Life	
S10	05 Dec 2023	Floatables	None
S10	05 Dec 2023	Water Color	Green
S10	05 Dec 2023	Current Direction	S
S10	05 Dec 2023	Water Temp (C)	16
S10	05 Dec 2023	Wave Height Low (ft)	5
S10	05 Dec 2023	High Tide (ft)	3.99
S10	05 Dec 2023	High Tide Time	423
S10	05 Dec 2023	Low Tide (ft)	2.64
S10	05 Dec 2023	Low Tide Time	1014
S10	05 Dec 2023	Comments	Water clear; Trash-5; Kelp;Seagrass;Debris
S10	11 Dec 2023	Arrive Time	822
S10	11 Dec 2023	Weather	Partly cloudy
S10	11 Dec 2023	Wind Speed (kts)	1.3
S10	11 Dec 2023	Wind Dir	NE
S10	11 Dec 2023	Animal Life	
S10	11 Dec 2023	Floatables	None
S10	11 Dec 2023	Water Color	Green
S10	11 Dec 2023	Current Direction	S
S10	11 Dec 2023	Water Temp (C)	12
S10	11 Dec 2023	Wave Height Low (ft)	4
S10	11 Dec 2023	High Tide (ft)	6.06
S10	11 Dec 2023	High Tide Time	705
S10	11 Dec 2023	Low Tide (ft)	1.91
S10	11 Dec 2023	Low Tide Time	47
S10	11 Dec 2023	Comments	Water clear; Trash-2; Kelp;Seagrass;Debris
S10	19 Dec 2023	Arrive Time	810
S10	19 Dec 2023	Weather	Hazy
S10	19 Dec 2023	Wind Speed (kts)	0.9
S10	19 Dec 2023	Wind Dir	W
S10	19 Dec 2023	Animal Life	
S10	19 Dec 2023	Floatables	None
S10	19 Dec 2023	Water Color	Green
S10	19 Dec 2023	Current Direction	S
S10	19 Dec 2023	Water Temp (C)	13
S10	19 Dec 2023	Wave Height Low (ft)	5
S10	19 Dec 2023	High Tide (ft)	4.28
S10	19 Dec 2023	High Tide Time	254
S10	19 Dec 2023	Low Tide (ft)	2.26
S10	19 Dec 2023	Low Tide Time	846
S10	19 Dec 2023	Comments	Water clear; Trash-2; Kelp;Seagrass;Debris
S10	26 Dec 2023	Arrive Time	809
S10	26 Dec 2023	Weather	Hazy
S10	26 Dec 2023	Wind Speed (kts)	2.6
S10	26 Dec 2023	Wind Dir	NE
S10	26 Dec 2023	Animal Life	
S10	26 Dec 2023	Floatables	None
S10	26 Dec 2023	Water Color	Green
S10	26 Dec 2023	Current Direction	S
S10	26 Dec 2023	Water Temp (C)	12
S10	26 Dec 2023	Wave Height Low (ft)	6
S10	26 Dec 2023	High Tide (ft)	6.22
S10	26 Dec 2023	High Tide Time	748
S10	26 Dec 2023	Low Tide (ft)	2.11
S10	26 Dec 2023	Low Tide Time	138
S10	26 Dec 2023	Comments	Water clear; Trash-3; Kelp;Seagrass;Debris
S11	05 Dec 2023	Arrive Time	941

Station	Date	Parameter	Value
S11	05 Dec 2023	Weather	Sunny
S11	05 Dec 2023	Wind Speed (kts)	3.4
S11	05 Dec 2023	Wind Dir	N
S11	05 Dec 2023	Animal Life	
S11	05 Dec 2023	Floatables	None
S11	05 Dec 2023	Water Color	Green
S11	05 Dec 2023	Current Direction	S
S11	05 Dec 2023	Water Temp (C)	16
S11	05 Dec 2023	Wave Height Low (ft)	5
S11	05 Dec 2023	High Tide (ft)	3.99
S11	05 Dec 2023	High Tide Time	423
S11	05 Dec 2023	Low Tide (ft)	2.64
S11	05 Dec 2023	Low Tide Time	1014
S11	05 Dec 2023	Comments	Water clear; Trash-4; Kelp;Seagrass;Debris
S11	11 Dec 2023	Arrive Time	953
S11	11 Dec 2023	Weather	Partly cloudy
S11	11 Dec 2023	Wind Speed (kts)	2.5
S11	11 Dec 2023	Wind Dir	W
S11	11 Dec 2023	Animal Life	Dolphin-1;
S11	11 Dec 2023	Floatables	None
S11	11 Dec 2023	Water Color	Green
S11	11 Dec 2023	Current Direction	S
S11	11 Dec 2023	Water Temp (C)	19
S11	11 Dec 2023	Wave Height Low (ft)	4.5
S11	11 Dec 2023	High Tide (ft)	6.06
S11	11 Dec 2023	High Tide Time	705
S11	11 Dec 2023	Low Tide (ft)	1.91
S11	11 Dec 2023	Low Tide Time	47
S11	11 Dec 2023	Comments	Water clear; Trash-2; Kelp;Seagrass;Debris
S11	19 Dec 2023	Arrive Time	957
S11	19 Dec 2023	Weather	Partly cloudy
S11	19 Dec 2023	Wind Speed (kts)	2.2
S11	19 Dec 2023	Wind Dir	W
S11	19 Dec 2023	Animal Life	
S11	19 Dec 2023	Floatables	None
S11	19 Dec 2023	Water Color	Green
S11	19 Dec 2023	Current Direction	S
S11	19 Dec 2023	Water Temp (C)	13
S11	19 Dec 2023	Wave Height Low (ft)	5
S11	19 Dec 2023	High Tide (ft)	4.28
S11	19 Dec 2023	High Tide Time	254
S11	19 Dec 2023	Low Tide (ft)	2.26
S11	19 Dec 2023	Low Tide Time	846
S11	19 Dec 2023	Comments	Water clear; Trash-1; Kelp;Seagrass;Debris
S11	26 Dec 2023	Arrive Time	927
S11	26 Dec 2023	Weather	Partly cloudy
S11	26 Dec 2023	Wind Speed (kts)	2.8
S11	26 Dec 2023	Wind Dir	NE
S11	26 Dec 2023	Animal Life	
S11	26 Dec 2023	Floatables	None
S11	26 Dec 2023	Water Color	Green
S11	26 Dec 2023	Current Direction	S
S11	26 Dec 2023	Water Temp (C)	12
S11	26 Dec 2023	Wave Height Low (ft)	6
S11	26 Dec 2023	High Tide (ft)	6.22
S11	26 Dec 2023	High Tide Time	748
S11	26 Dec 2023	Low Tide (ft)	2.11
S11	26 Dec 2023	Low Tide Time	138

Station	Date	Parameter	Value
S11	26 Dec 2023	Comments	Water clear; Trash-2; Kelp;Seagrass;Debris
S12	05 Dec 2023	Arrive Time	834
S12	05 Dec 2023	Weather	Sunny
S12	05 Dec 2023	Wind Speed (kts)	2.8
S12	05 Dec 2023	Wind Dir	N
S12	05 Dec 2023	Animal Life	Dog-1;
S12	05 Dec 2023	Floatables	Foam
S12	05 Dec 2023	Water Color	Green
S12	05 Dec 2023	Current Direction	S
S12	05 Dec 2023	Water Temp (C)	13
S12	05 Dec 2023	Wave Height Low (ft)	3
S12	05 Dec 2023	High Tide (ft)	3.99
S12	05 Dec 2023	High Tide Time	423
S12	05 Dec 2023	Low Tide (ft)	2.64
S12	05 Dec 2023	Low Tide Time	1014
S12	05 Dec 2023	Comments	Water clear; Trash-4; Kelp;Seagrass;Debris; Person/Walker/Jogger-1
S12	11 Dec 2023	Arrive Time	1018
S12	11 Dec 2023	Weather	Partly cloudy
S12	11 Dec 2023	Wind Speed (kts)	3
S12	11 Dec 2023	Wind Dir	W
S12	11 Dec 2023	Animal Life	
S12	11 Dec 2023	Floatables	None
S12	11 Dec 2023	Water Color	Green
S12	11 Dec 2023	Current Direction	S
S12	11 Dec 2023	Water Temp (C)	16
S12	11 Dec 2023	Wave Height Low (ft)	3
S12	11 Dec 2023	High Tide (ft)	6.06
S12	11 Dec 2023	High Tide Time	705
S12	11 Dec 2023	Low Tide (ft)	1.91
S12	11 Dec 2023	Low Tide Time	47
S12	11 Dec 2023	Comments	Water clear; Trash-1; Kelp;Seagrass; Person/Walker/Jogger-1
S12	19 Dec 2023	Arrive Time	1021
S12	19 Dec 2023	Weather	Partly cloudy
S12	19 Dec 2023	Wind Speed (kts)	2.1
S12	19 Dec 2023	Wind Dir	W
S12	19 Dec 2023	Animal Life	
S12	19 Dec 2023	Floatables	None
S12	19 Dec 2023	Water Color	Green
S12	19 Dec 2023	Current Direction	S
S12	19 Dec 2023	Water Temp (C)	15
S12	19 Dec 2023	Wave Height Low (ft)	4
S12	19 Dec 2023	High Tide (ft)	4.28
S12	19 Dec 2023	High Tide Time	254
S12	19 Dec 2023	Low Tide (ft)	2.26
S12	19 Dec 2023	Low Tide Time	846
S12	19 Dec 2023	Comments	Water clear; Trash-1; Kelp;Seagrass
S12	26 Dec 2023	Arrive Time	948
S12	26 Dec 2023	Weather	Partly cloudy
S12	26 Dec 2023	Wind Speed (kts)	3.5
S12	26 Dec 2023	Wind Dir	N
S12	26 Dec 2023	Animal Life	
S12	26 Dec 2023	Floatables	None
S12	26 Dec 2023	Water Color	Green
S12	26 Dec 2023	Current Direction	S
S12	26 Dec 2023	Water Temp (C)	12

Station	Date	Parameter	Value
S12	26 Dec 2023	Wave Height Low (ft)	5
S12	26 Dec 2023	High Tide (ft)	6.22
S12	26 Dec 2023	High Tide Time	748
S12	26 Dec 2023	Low Tide (ft)	2.11
S12	26 Dec 2023	Low Tide Time	138
S12	26 Dec 2023	Comments	Water clear; Trash-2; Kelp;Seagrass;Debris; Person/Walker/Jogger-7

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 Dec 2023	45	33	15	10	7	2	**597**
02 Dec 2023	45	33	15	10	7	2	**597**
03 Dec 2023	45	33	15	10	7	2	**597**
04 Dec 2023	45	33	15	10	7	2	**597**
05 Dec 2023	111	50	10	8	6	3	**588**
06 Dec 2023	**268**	62	10	11	7	3	**811**
07 Dec 2023	**268**	62	10	11	7	3	**811**
08 Dec 2023	**268**	62	10	11	7	3	**811**
09 Dec 2023	**268**	62	10	11	7	3	**811**
10 Dec 2023	**268**	62	10	11	7	3	**811**
11 Dec 2023	**251**	33	7	8	6	3	**668**
12 Dec 2023	**251**	33	7	8	6	3	**668**
13 Dec 2023	**563**	29	10	11	7	3	**947**
14 Dec 2023	**563**	29	10	11	7	3	**947**
15 Dec 2023	**563**	29	10	11	7	3	**947**
16 Dec 2023	**563**	29	10	11	7	3	**947**
17 Dec 2023	**563**	29	10	11	7	3	**947**
18 Dec 2023	**547**	48	7	13	16	3	**773**
19 Dec 2023	**547**	48	7	13	16	3	**773**
20 Dec 2023	**547**	48	7	13	16	3	**773**
21 Dec 2023	**317**	105	10	21	23	3	**489**
22 Dec 2023	**317**	105	10	21	23	3	**489**
23 Dec 2023	**317**	105	10	21	23	3	**489**
24 Dec 2023	**317**	105	10	21	23	3	**489**
25 Dec 2023	**317**	105	10	21	23	3	**489**
26 Dec 2023	**344**	119	7	13	14	3	172
27 Dec 2023	**344**	119	7	13	14	3	172
28 Dec 2023	**665**	83	2	4	7	3	112
29 Dec 2023	**665**	83	2	4	7	3	112
30 Dec 2023	**665**	83	2	4	7	3	112
31 Dec 2023	**665**	83	2	4	7	3	112

* 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 Dec 2023	**E**	**E**	IC	IC	IC	IC	**E**
11 Dec 2023	**E**	IC	IC	IC	IC	IC	**E**
18 Dec 2023	**E**	**E**	IC	IC	**E**	IC	**E**
26 Dec 2023	**E**	IC	IC	IC	IC	IC	IC

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 Dec 2023	**32**	30	23	9	7	3	**158**
02 Dec 2023	**32**	30	23	9	7	3	**158**
03 Dec 2023	**32**	30	23	9	7	3	**158**
04 Dec 2023	**32**	30	23	9	7	3	**158**
05 Dec 2023	**68**	**33**	14	4	7	3	**167**
06 Dec 2023	**68**	**33**	14	4	7	3	**167**
07 Dec 2023	**68**	**33**	14	4	7	3	**167**
08 Dec 2023	**68**	**33**	14	4	7	3	**167**
09 Dec 2023	**68**	**33**	14	4	7	3	**167**
10 Dec 2023	**68**	**33**	14	4	7	3	**167**
11 Dec 2023	**77**	20	9	4	4	3	**197**
12 Dec 2023	**77**	20	9	4	4	3	**197**
13 Dec 2023	**77**	20	9	4	4	3	**197**
14 Dec 2023	**77**	20	9	4	4	3	**197**
15 Dec 2023	**77**	20	9	4	4	3	**197**
16 Dec 2023	**77**	20	9	4	4	3	**197**
17 Dec 2023	**77**	20	9	4	4	3	**197**
18 Dec 2023	**132**	25	6	6	10	2	**216**
19 Dec 2023	**132**	25	6	6	10	2	**216**
20 Dec 2023	**132**	25	6	6	10	2	**216**
21 Dec 2023	**132**	25	6	6	10	2	**216**
22 Dec 2023	**132**	25	6	6	10	2	**216**
23 Dec 2023	**132**	25	6	6	10	2	**216**
24 Dec 2023	**132**	25	6	6	10	2	**216**
25 Dec 2023	**208**	22	5	8	13	2	**289**
26 Dec 2023	**183**	30	5	6	10	2	**145**
27 Dec 2023	**183**	30	5	6	10	2	**145**
28 Dec 2023	**183**	30	5	6	10	2	**145**
29 Dec 2023	**183**	30	5	6	10	2	**145**
30 Dec 2023	**183**	30	5	6	10	2	**145**
31 Dec 2023	**183**	30	5	6	10	2	**145**

* 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
December	**E**	**E**	IC	IC	**E**	IC	**E**

IC = In Compliance
E = Exceedance
ns = not sampled
ND = no data

Table 3.5

Summary of compliance with the Ocean Plan's 30-day Median standard for total coliform bacteria at the SBOO kelp stations. Data are based on the median of the five most recent samples from each site and depth over the previous 30 days unless otherwise noted (*). Values >70 CFU/100 mL exceed the standard. Median calculated using n<5

	I19			I24			I25			I26			I32			I39			I40		
Date	2m	6m	11m	2m	6m	11m	2m	6m	9m	2m	6m	9m	2m	6m	9m	2m	12m	18m	2m	6m	9m
01 Dec 2023	4	**270**	**90**	**275**	**350**	40	8	50	12	2	3	31	2	20	15	2	2	2	**2750**	**3200**	**4210**
02 Dec 2023	4	**270**	**90**	**275**	**350**	40	8	50	12	2	3	31	2	20	15	2	2	2	**2750**	**3200**	**4210**
03 Dec 2023	4	**270**	**90**	**275**	**350**	40	8	50	12	2	3	31	2	20	15	2	2	2	**2750**	**3200**	**4210**
04 Dec 2023	4	**270**	**90**	**275**	**350**	40	8	50	12	2	3	31	2	20	15	2	2	2	**2750**	**3200**	**4210**
05 Dec 2023	6	**500**	**160**	**520**	**420**	60	2	20	10	2	2	20	2	20	10	2	2	2	**1800**	**5000**	**6200**
06 Dec 2023	**8003**	**2650**	**880**	**1060**	**690**	**810**	8	11	8	2	2	11	2	20	15	2	3	9	**3100**	**6100**	**7100**
07 Dec 2023	**8003**	**2650**	**880**	**1060**	**690**	**810**	8	11	8	2	2	11	2	20	15	2	3	9	**3100**	**6100**	**7100**
08 Dec 2023	**8003**	**2650**	**880**	**1060**	**690**	**810**	8	11	8	2	2	11	2	20	15	2	3	9	**3100**	**6100**	**7100**
09 Dec 2023	**8003**	**2650**	**880**	**1060**	**690**	**810**	8	11	8	2	2	11	2	20	15	2	3	9	**3100**	**6100**	**7100**
10 Dec 2023	**8003**	**2650**	**880**	**1060**	**690**	**810**	8	11	8	2	2	11	2	20	15	2	3	9	**3100**	**6100**	**7100**
11 Dec 2023	44	**680**	**1000**	**520**	**420**	20	2	4	14	2	2	8	2	20	20	2	2	4	**1800**	**5000**	**6200**
12 Dec 2023	44	**680**	**1000**	**520**	**420**	20	2	4	14	2	2	8	2	20	20	2	2	4	**1800**	**5000**	**6200**
13 Dec 2023	**8022**	**2740**	**1300**	**808**	**483**	**806**	2	12	11	3	4	14	2	20	15	2	3	10	**3100**	**6100**	**7100**
14 Dec 2023	**8022**	**2740**	**1300**	**808**	**483**	**806**	2	12	11	3	4	14	2	20	15	2	3	10	**3100**	**6100**	**7100**
15 Dec 2023	**8022**	**2740**	**1300**	**808**	**483**	**806**	2	12	11	3	4	14	2	20	15	2	3	10	**3100**	**6100**	**7100**
16 Dec 2023	**8022**	**2740**	**1300**	**808**	**483**	**806**	2	12	11	3	4	14	2	20	15	2	3	10	**3100**	**6100**	**7100**
17 Dec 2023	**8022**	**2740**	**1300**	**808**	**483**	**806**	2	12	11	3	4	14	2	20	15	2	3	10	**3100**	**6100**	**7100**
18 Dec 2023	**1100**	**1400**	**1500**	**1600**	**150**	56	2	4	6	4	6	20	2	20	20	2	2	16	**2600**	**5000**	**6200**
19 Dec 2023	**1100**	**1400**	**1500**	**1600**	**150**	56	2	4	6	4	6	20	2	20	20	2	2	16	**2600**	**5000**	**6200**
20 Dec 2023	**1100**	**1400**	**1500**	**1600**	**150**	56	2	4	6	4	6	20	2	20	20	2	2	16	**2600**	**5000**	**6200**
21 Dec 2023	**572**	**1040**	**1250**	**2100**	**555**	**828**	4	12	13	23	48	65	**131**	**490**	**660**	2	3	17	**2200**	**2940**	**3650**
22 Dec 2023	**572**	**1040**	**1250**	**2100**	**555**	**828**	4	12	13	23	48	65	**131**	**490**	**660**	2	3	17	**2200**	**2940**	**3650**
23 Dec 2023	**572**	**1040**	**1250**	**2100**	**555**	**828**	4	12	13	23	48	65	**131**	**490**	**660**	2	3	17	**2200**	**2940**	**3650**
24 Dec 2023	**572**	**1040**	**1250**	**2100**	**555**	**828**	4	12	13	23	48	65	**131**	**490**	**660**	2	3	17	**2200**	**2940**	**3650**
25 Dec 2023	**572**	**1040**	**1250**	**2100**	**555**	**828**	4	12	13	23	48	65	**131**	**490**	**660**	2	3	17	**2200**	**2940**	**3650**
26 Dec 2023	**1100**	**1400**	**1500**	**1600**	**960**	**1600**	2	4	6	4	6	20	2	20	20	2	2	16	**1800**	**880**	**1100**
27 Dec 2023	**1100**	**1400**	**1500**	**1600**	**960**	**1600**	2	4	6	4	6	20	2	20	20	2	2	16	**1800**	**880**	**1100**
28 Dec 2023	**3050**	**2900**	**1550**	**830**	**1775**	**828**	2	3	5	3	6	14	2	20	13	2	2	11	**1500**	**495**	**1000**
29 Dec 2023	**3050**	**2900**	**1550**	**830**	**1775**	**828**	2	3	5	3	6	14	2	20	13	2	2	11	**1500**	**495**	**1000**
30 Dec 2023	**3050**	**2900**	**1550**	**830**	**1775**	**828**	2	3	5	3	6	14	2	20	13	2	2	11	**1500**	**495**	**1000**
31 Dec 2023	**3050**	**2900**	**1550**	**830**	**1775**	**828**	2	3	5	3	6	14	2	20	13	2	2	11	**1500**	**495**	**1000**

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
December	**E**	**E**	**E**	**E**	**E**	**E**	IC	IC	IC	IC	IC	IC	**E**	**E**	**E**	IC	IC	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 Dec 2023	1040	2	>16000	>12000	6400	16.9	54.27	8.3	33.14	8.2
I19	05 Dec 2023	1040	6	4800	620	280e	16.9	64.85	7.9	33.26	8.1
I19	05 Dec 2023	1040	11	1600e	180e	50	16.8	61.98	7.6	33.26	8.1
I19	11 Dec 2023	1028	2	44	8e	<2	16.5	75.69	7.9	33.28	8.2
I19	11 Dec 2023	1028	6	680	120e	72	16.3	72.78	7.9	33.27	8.1
I19	11 Dec 2023	1028	11	1000	460	240e	16.1	72.32	7.8	33.27	8.1
I19	18 Dec 2023	1034	2	1100	340e	98	16.4	69.34	8.2	33.19	8.2
I19	18 Dec 2023	1034	6	1400e	480	280e	16.4	73.88	8.1	33.20	8.2
I19	18 Dec 2023	1034	11	1500	640	220e	16.4	73.30	8.2	33.20	8.2
I19	26 Dec 2023	1102	2	5000	480	88	17.0	51.80	8.0	33.23	8.1
I19	26 Dec 2023	1102	6	4400	480	120e	16.9	45.47	8.1	33.22	8.1
I19	26 Dec 2023	1102	11	5600	480	80e	16.9	44.33	8.1	33.22	8.1
I24	05 Dec 2023	1104	2	1600e	50	62	17.1	60.30	9.1	33.26	8.2
I24	05 Dec 2023	1104	6	6600	620	160e	16.9	65.15	8.2	33.26	8.2
I24	05 Dec 2023	1104	11	1600e	120e	70	16.8	66.23	7.8	33.27	8.2
I24	11 Dec 2023	1050	2	<2	<2	<2	16.5	82.28	7.7	33.29	8.2
I24	11 Dec 2023	1050	6	<2	<2	<2	16.4	80.13	7.8	33.29	8.2
I24	11 Dec 2023	1050	11	12e	4e	2e	16.4	79.52	7.7	33.29	8.2
I24	18 Dec 2023	1055	2	6800	1000	660	16.4	80.28	8.3	33.22	8.2
I24	18 Dec 2023	1055	6	150	40	34e	16.5	86.26	8.2	33.27	8.2
I24	18 Dec 2023	1055	11	56	16e	4e	16.5	70.75	8.1	33.28	8.2
I24	26 Dec 2023	1119	2	60e	18e	4e	17.1	77.43	7.8	33.22	8.1
I24	26 Dec 2023	1119	6	3400e	260e	120e	17.0	69.69	7.7	33.21	8.1
I24	26 Dec 2023	1119	11	3400e	300e	320e	17.0	58.29	7.6	33.21	8.1
I25	05 Dec 2023	1110	2	2e	<2	<2	17.0	79.86	8.0	33.26	8.2
I25	05 Dec 2023	1110	6	<20	<2	<2	16.8	74.59	7.9	33.26	8.2
I25	05 Dec 2023	1110	9	2e	<2	2e	16.8	63.38	7.7	33.26	8.2
I25	11 Dec 2023	1059	2	<2	<2	<2	16.6	82.11	7.9	33.28	8.2
I25	11 Dec 2023	1059	6	4e	2e	<2	16.4	80.04	7.8	33.28	8.2
I25	11 Dec 2023	1059	9	<20	2e	<2	16.4	80.05	7.8	33.28	8.2
I25	18 Dec 2023	1102	2	6e	2e	2e	16.5	87.02	8.2	33.27	8.2
I25	18 Dec 2023	1102	6	<2	<2	6e	16.5	82.77	8.1	33.27	8.2
I25	18 Dec 2023	1102	9	6e	2e	4e	16.5	80.67	8.1	33.27	8.2
I25	26 Dec 2023	1126	2	2e	<2	<2	17.2	76.61	7.8	33.22	8.1
I25	26 Dec 2023	1126	6	2e	<2	4e	17.1	73.41	7.8	33.22	8.1
I25	26 Dec 2023	1126	9	4e	<2	<2	17.1	72.30	7.8	33.22	8.1
I26	05 Dec 2023	1117	2	<2	<2	<2	17.0	77.74	8.2	33.27	8.2
I26	05 Dec 2023	1117	6	<2	4e	<2	16.8	78.67	8.1	33.26	8.2
I26	05 Dec 2023	1117	9	20e	<2	<2	16.7	73.94	7.5	33.26	8.1

Station	Date	Time	Depth	Total	Fecal	Entero	Temp	XMS	DO	Sal	pH
I26	11 Dec 2023	1106	2	4e	<2	<2	16.6	79.17	7.9	33.28	8.2
I26	11 Dec 2023	1106	6	6e	<2	<2	16.5	78.41	7.9	33.28	8.2
I26	11 Dec 2023	1106	9	8e	<2	<2	16.5	78.42	7.8	33.28	8.1
I26	18 Dec 2023	1113	2	42	12e	18e	16.5	83.67	8.2	33.28	8.2
I26	18 Dec 2023	1113	6	90	36e	12e	16.4	80.95	8.2	33.28	8.2
I26	18 Dec 2023	1113	9	110	34e	24e	16.4	79.98	8.1	33.28	8.2
I26	26 Dec 2023	1136	2	2e	<2	<2	17.1	78.02	7.9	33.22	8.1
I26	26 Dec 2023	1136	6	6e	<2	<2	17.1	69.73	7.8	33.22	8.1
I26	26 Dec 2023	1136	9	4e	2e	<2	17.1	67.23	7.8	33.22	8.1
I32	05 Dec 2023	1131	2	<2	<2	<2	17.0	75.15	8.5	33.27	8.2
I32	05 Dec 2023	1131	6	<2	<2	<2	16.8	69.14	8.5	33.27	8.2
I32	05 Dec 2023	1131	9	<2	<2	<2	16.7	68.75	8.4	33.27	8.2
I32	11 Dec 2023	1117	2	<2	<2	<2	16.5	76.09	8.0	33.28	8.2
I32	11 Dec 2023	1117	6	<20	<2	<2	16.3	71.62	8.0	33.29	8.2
I32	11 Dec 2023	1117	9	<20	<2	<2	16.2	71.23	8.1	33.30	8.2
I32	18 Dec 2023	1128	2	360e	80	200e	16.5	87.52	8.2	33.26	8.2
I32	18 Dec 2023	1128	6	960	100e	320e	16.4	87.18	8.2	33.26	8.2
I32	18 Dec 2023	1128	9	1400	740	380e	16.4	83.13	8.2	33.26	8.2
I32	26 Dec 2023	1148	2	2e	<2	<2	17.1	67.46	7.8	33.21	8.1
I32	26 Dec 2023	1148	6	<20	<2	<2	17.0	55.46	7.8	33.21	8.1
I32	26 Dec 2023	1148	9	6e	<2	<2	16.9	54.06	7.8	33.20	8.1
I39	05 Dec 2023	1016	2	<2	<2	<2	16.6	89.14	7.9	33.26	8.1
I39	05 Dec 2023	1016	12	60e	4e	<2	15.8	89.58	7.5	33.20	8.1
I39	05 Dec 2023	1016	18	220e	12e	4e	15.6	81.35	7.3	33.21	8.1
I39	11 Dec 2023	1009	2	<2	<2	<2	16.8	87.58	8.1	33.29	8.2
I39	11 Dec 2023	1009	12	2e	<2	<2	16.7	86.90	8.1	33.29	8.2
I39	11 Dec 2023	1009	18	4e	2e	<2	16.5	87.03	7.8	33.27	8.1
I39	18 Dec 2023	1012	2	<2	<2	<2	16.7	90.62	8.2	33.29	8.2
I39	18 Dec 2023	1012	12	<2	<2	<2	16.6	89.85	8.2	33.28	8.2
I39	18 Dec 2023	1012	18	18e	2e	2e	16.5	81.62	8.0	33.27	8.2
I39	26 Dec 2023	1039	2	<2	<2	<2	17.1	85.49	7.9	33.26	8.1
I39	26 Dec 2023	1039	12	2e	2e	<2	17.1	85.11	7.9	33.27	8.1
I39	26 Dec 2023	1039	18	2e	<2	<2	17.1	82.41	7.8	33.27	8.1
I40	05 Dec 2023	1053	2	1800e	420	46	17.1	65.31	8.3	33.26	8.2
I40	05 Dec 2023	1053	6	7200	700	220e	16.9	57.29	8.0	33.26	8.2
I40	05 Dec 2023	1053	9	6200	540	100e	16.8	58.48	8.0	33.26	8.2
I40	11 Dec 2023	1039	2	1200	360e	180e	16.4	73.22	8.2	33.29	8.2
I40	11 Dec 2023	1039	6	880	480	90	16.2	68.77	8.2	33.30	8.2
I40	11 Dec 2023	1039	9	900	82	78	16.2	69.02	8.0	33.30	8.2
I40	18 Dec 2023	1047	2	2600e	600	260e	16.5	75.89	8.3	33.26	8.2
I40	18 Dec 2023	1047	6	110	30e	12e	16.5	82.97	8.2	33.28	8.2
I40	18 Dec 2023	1047	9	1100	400	140e	16.4	77.56	8.1	33.27	8.2
I40	26 Dec 2023	1111	2	<2	<2	2e	17.0	63.75	7.4	33.20	8.1
I40	26 Dec 2023	1111	6	20e	4e	4e	17.0	64.38	7.2	33.23	8.1
I40	26 Dec 2023	1111	9	20e	2e	8e	17.0	53.22	7.2	33.23	8.1

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 Dec 2023	Depth (m)	11
I19	05 Dec 2023	Arrive Time	1040
I19	05 Dec 2023	Depart Time	1044
I19	05 Dec 2023	Air Temp (C)	18.3
I19	05 Dec 2023	Weather	Clear
I19	05 Dec 2023	Visibility (mi)	10
I19	05 Dec 2023	Wind Speed (kts)	5.9
I19	05 Dec 2023	Wind Dir	NW
I19	05 Dec 2023	Water Color	Green
I19	05 Dec 2023	Wave Ht Low (ft)	5
I19	05 Dec 2023	Wave Period (sec)	13
I19	05 Dec 2023	Sea State	Calm
I19	05 Dec 2023	High Tide (ft)	4
I19	05 Dec 2023	High Tide Time	424
I19	05 Dec 2023	Low Tide (ft)	1.07
I19	05 Dec 2023	Low Tide Time	2142
I19	05 Dec 2023	Comments	Lower-ish salinity signal at surface.; Freshwater Lens
I19	11 Dec 2023	Depth (m)	11
I19	11 Dec 2023	Arrive Time	1028
I19	11 Dec 2023	Depart Time	1031
I19	11 Dec 2023	Air Temp (C)	15.8
I19	11 Dec 2023	Weather	Haze
I19	11 Dec 2023	Visibility (mi)	11
I19	11 Dec 2023	Wind Speed (kts)	10.1
I19	11 Dec 2023	Wind Dir	S
I19	11 Dec 2023	Water Color	Green
I19	11 Dec 2023	Wave Ht Low (ft)	2.3
I19	11 Dec 2023	Wave Period (sec)	15
I19	11 Dec 2023	Sea State	Calm
I19	11 Dec 2023	High Tide (ft)	6.13
I19	11 Dec 2023	High Tide Time	700
I19	11 Dec 2023	Low Tide (ft)	-0.79
I19	11 Dec 2023	Low Tide Time	1424
I19	11 Dec 2023	Comments	none
I19	18 Dec 2023	Depth (m)	11
I19	18 Dec 2023	Arrive Time	1034
I19	18 Dec 2023	Depart Time	1038
I19	18 Dec 2023	Air Temp (C)	17.1
I19	18 Dec 2023	Weather	Overcast
I19	18 Dec 2023	Visibility (mi)	11
I19	18 Dec 2023	Wind Speed (kts)	7.1
I19	18 Dec 2023	Wind Dir	SE
I19	18 Dec 2023	Water Color	Brownish-Green
I19	18 Dec 2023	Wave Ht Low (ft)	5
I19	18 Dec 2023	Wave Period (sec)	9
I19	18 Dec 2023	Sea State	Calm
I19	18 Dec 2023	High Tide (ft)	4.67
I19	18 Dec 2023	High Tide Time	1236
I19	18 Dec 2023	Low Tide (ft)	0
I19	18 Dec 2023	Low Tide Time	2000
I19	18 Dec 2023	Comments	flotsam
I19	26 Dec 2023	Depth (m)	11
I19	26 Dec 2023	Arrive Time	1102

Station	Date	Parameter	Value
I19	26 Dec 2023	Depart Time	1106
I19	26 Dec 2023	Air Temp (C)	15.2
I19	26 Dec 2023	Weather	Partly Cloudy
I19	26 Dec 2023	Visibility (mi)	8
I19	26 Dec 2023	Wind Speed (kts)	2.4
I19	26 Dec 2023	Wind Dir	N
I19	26 Dec 2023	Water Color	Blueish-Green
I19	26 Dec 2023	Wave Ht Low (ft)	6
I19	26 Dec 2023	Wave Period (sec)	13
I19	26 Dec 2023	Sea State	Regular Swell
I19	26 Dec 2023	High Tide (ft)	6.32
I19	26 Dec 2023	High Tide Time	754
I19	26 Dec 2023	Low Tide (ft)	-1.18
I19	26 Dec 2023	Low Tide Time	1518
I19	26 Dec 2023	Comments	none
I24	05 Dec 2023	Depth (m)	9
I24	05 Dec 2023	Arrive Time	1103
I24	05 Dec 2023	Depart Time	1105
I24	05 Dec 2023	Air Temp (C)	18.1
I24	05 Dec 2023	Weather	Clear
I24	05 Dec 2023	Visibility (mi)	10
I24	05 Dec 2023	Wind Speed (kts)	9.1
I24	05 Dec 2023	Wind Dir	NW
I24	05 Dec 2023	Water Color	Green
I24	05 Dec 2023	Wave Ht Low (ft)	5
I24	05 Dec 2023	Wave Period (sec)	13
I24	05 Dec 2023	Sea State	Calm
I24	05 Dec 2023	High Tide (ft)	4
I24	05 Dec 2023	High Tide Time	424
I24	05 Dec 2023	Low Tide (ft)	1.07
I24	05 Dec 2023	Low Tide Time	2142
I24	05 Dec 2023	Comments	none
I24	11 Dec 2023	Depth (m)	10
I24	11 Dec 2023	Arrive Time	1050
I24	11 Dec 2023	Depart Time	1059
I24	11 Dec 2023	Air Temp (C)	16.2
I24	11 Dec 2023	Weather	Haze
I24	11 Dec 2023	Visibility (mi)	11
I24	11 Dec 2023	Wind Speed (kts)	4.2
I24	11 Dec 2023	Wind Dir	S
I24	11 Dec 2023	Water Color	Green
I24	11 Dec 2023	Wave Ht Low (ft)	2.3
I24	11 Dec 2023	Wave Period (sec)	15
I24	11 Dec 2023	Sea State	Calm
I24	11 Dec 2023	High Tide (ft)	6.13
I24	11 Dec 2023	High Tide Time	700
I24	11 Dec 2023	Low Tide (ft)	-0.79
I24	11 Dec 2023	Low Tide Time	1424
I24	11 Dec 2023	Comments	none
I24	18 Dec 2023	Depth (m)	10
I24	18 Dec 2023	Arrive Time	1055
I24	18 Dec 2023	Depart Time	1058
I24	18 Dec 2023	Air Temp (C)	16.9
I24	18 Dec 2023	Weather	Haze
I24	18 Dec 2023	Visibility (mi)	11
I24	18 Dec 2023	Wind Speed (kts)	1.9
I24	18 Dec 2023	Wind Dir	N
I24	18 Dec 2023	Water Color	Greenish-Blue

Station	Date	Parameter	Value
I24	18 Dec 2023	Wave Ht Low (ft)	5
I24	18 Dec 2023	Wave Period (sec)	9
I24	18 Dec 2023	Sea State	Calm
I24	18 Dec 2023	High Tide (ft)	4.67
I24	18 Dec 2023	High Tide Time	1236
I24	18 Dec 2023	Low Tide (ft)	0
I24	18 Dec 2023	Low Tide Time	2000
I24	18 Dec 2023	Comments	none
I24	26 Dec 2023	Depth (m)	11
I24	26 Dec 2023	Arrive Time	1119
I24	26 Dec 2023	Depart Time	1124
I24	26 Dec 2023	Air Temp (C)	15.8
I24	26 Dec 2023	Weather	Partly Cloudy
I24	26 Dec 2023	Visibility (mi)	8
I24	26 Dec 2023	Wind Speed (kts)	18.2
I24	26 Dec 2023	Wind Dir	W
I24	26 Dec 2023	Water Color	Blueish-Green
I24	26 Dec 2023	Wave Ht Low (ft)	6
I24	26 Dec 2023	Wave Period (sec)	13
I24	26 Dec 2023	Sea State	Regular Swell
I24	26 Dec 2023	High Tide (ft)	6.32
I24	26 Dec 2023	High Tide Time	754
I24	26 Dec 2023	Low Tide (ft)	-1.18
I24	26 Dec 2023	Low Tide Time	1518
I24	26 Dec 2023	Comments	none
I25	05 Dec 2023	Depth (m)	9
I25	05 Dec 2023	Arrive Time	1110
I25	05 Dec 2023	Depart Time	1112
I25	05 Dec 2023	Air Temp (C)	18.2
I25	05 Dec 2023	Weather	Clear
I25	05 Dec 2023	Visibility (mi)	10
I25	05 Dec 2023	Wind Speed (kts)	7.9
I25	05 Dec 2023	Wind Dir	NW
I25	05 Dec 2023	Water Color	Green
I25	05 Dec 2023	Wave Ht Low (ft)	5
I25	05 Dec 2023	Wave Period (sec)	13
I25	05 Dec 2023	Sea State	Calm
I25	05 Dec 2023	High Tide (ft)	4
I25	05 Dec 2023	High Tide Time	424
I25	05 Dec 2023	Low Tide (ft)	1.07
I25	05 Dec 2023	Low Tide Time	2142
I25	05 Dec 2023	Comments	none
I25	11 Dec 2023	Depth (m)	9
I25	11 Dec 2023	Arrive Time	1059
I25	11 Dec 2023	Depart Time	1106
I25	11 Dec 2023	Air Temp (C)	16.1
I25	11 Dec 2023	Weather	Haze
I25	11 Dec 2023	Visibility (mi)	11
I25	11 Dec 2023	Wind Speed (kts)	3.9
I25	11 Dec 2023	Wind Dir	SW
I25	11 Dec 2023	Water Color	Green
I25	11 Dec 2023	Wave Ht Low (ft)	2.3
I25	11 Dec 2023	Wave Period (sec)	15
I25	11 Dec 2023	Sea State	Calm
I25	11 Dec 2023	High Tide (ft)	6.13
I25	11 Dec 2023	High Tide Time	700
I25	11 Dec 2023	Low Tide (ft)	-0.79
I25	11 Dec 2023	Low Tide Time	1424

Station	Date	Parameter	Value
I25	11 Dec 2023	Comments	none
I25	18 Dec 2023	Depth (m)	9
I25	18 Dec 2023	Arrive Time	1102
I25	18 Dec 2023	Depart Time	1106
I25	18 Dec 2023	Air Temp (C)	17
I25	18 Dec 2023	Weather	Haze
I25	18 Dec 2023	Visibility (mi)	11
I25	18 Dec 2023	Wind Speed (kts)	5.1
I25	18 Dec 2023	Wind Dir	NW
I25	18 Dec 2023	Water Color	Greenish-Blue
I25	18 Dec 2023	Wave Ht Low (ft)	5
I25	18 Dec 2023	Wave Period (sec)	9
I25	18 Dec 2023	Sea State	Calm
I25	18 Dec 2023	High Tide (ft)	4.67
I25	18 Dec 2023	High Tide Time	1236
I25	18 Dec 2023	Low Tide (ft)	0
I25	18 Dec 2023	Low Tide Time	2000
I25	18 Dec 2023	Comments	none
I25	26 Dec 2023	Depth (m)	9
I25	26 Dec 2023	Arrive Time	1126
I25	26 Dec 2023	Depart Time	1130
I25	26 Dec 2023	Air Temp (C)	15.7
I25	26 Dec 2023	Weather	Partly Cloudy
I25	26 Dec 2023	Visibility (mi)	8
I25	26 Dec 2023	Wind Speed (kts)	11
I25	26 Dec 2023	Wind Dir	NW
I25	26 Dec 2023	Water Color	Blueish-Green
I25	26 Dec 2023	Wave Ht Low (ft)	6
I25	26 Dec 2023	Wave Period (sec)	13
I25	26 Dec 2023	Sea State	Regular Swell
I25	26 Dec 2023	High Tide (ft)	6.32
I25	26 Dec 2023	High Tide Time	754
I25	26 Dec 2023	Low Tide (ft)	-1.18
I25	26 Dec 2023	Low Tide Time	1518
I25	26 Dec 2023	Comments	none
I26	05 Dec 2023	Depth (m)	9
I26	05 Dec 2023	Arrive Time	1117
I26	05 Dec 2023	Depart Time	1122
I26	05 Dec 2023	Air Temp (C)	18.5
I26	05 Dec 2023	Weather	Clear
I26	05 Dec 2023	Visibility (mi)	10
I26	05 Dec 2023	Wind Speed (kts)	14.3
I26	05 Dec 2023	Wind Dir	NW
I26	05 Dec 2023	Water Color	Green
I26	05 Dec 2023	Wave Ht Low (ft)	5
I26	05 Dec 2023	Wave Period (sec)	13
I26	05 Dec 2023	Sea State	Calm
I26	05 Dec 2023	High Tide (ft)	4
I26	05 Dec 2023	High Tide Time	424
I26	05 Dec 2023	Low Tide (ft)	1.07
I26	05 Dec 2023	Low Tide Time	2142
I26	05 Dec 2023	Comments	none
I26	11 Dec 2023	Depth (m)	9
I26	11 Dec 2023	Arrive Time	1106
I26	11 Dec 2023	Depart Time	1108
I26	11 Dec 2023	Air Temp (C)	16.1
I26	11 Dec 2023	Weather	Haze

Station	Date	Parameter	Value
I26	11 Dec 2023	Visibility (mi)	11
I26	11 Dec 2023	Wind Speed (kts)	5.5
I26	11 Dec 2023	Wind Dir	W
I26	11 Dec 2023	Water Color	Green
I26	11 Dec 2023	Wave Ht Low (ft)	2.3
I26	11 Dec 2023	Wave Period (sec)	15
I26	11 Dec 2023	Sea State	Calm
I26	11 Dec 2023	High Tide (ft)	6.13
I26	11 Dec 2023	High Tide Time	700
I26	11 Dec 2023	Low Tide (ft)	-0.79
I26	11 Dec 2023	Low Tide Time	1424
I26	11 Dec 2023	Comments	none
I26	18 Dec 2023	Depth (m)	10
I26	18 Dec 2023	Arrive Time	1113
I26	18 Dec 2023	Depart Time	1117
I26	18 Dec 2023	Air Temp (C)	17
I26	18 Dec 2023	Weather	Haze
I26	18 Dec 2023	Visibility (mi)	11
I26	18 Dec 2023	Wind Speed (kts)	12.7
I26	18 Dec 2023	Wind Dir	N
I26	18 Dec 2023	Water Color	Greenish-Blue
I26	18 Dec 2023	Wave Ht Low (ft)	5
I26	18 Dec 2023	Wave Period (sec)	9
I26	18 Dec 2023	Sea State	Calm
I26	18 Dec 2023	High Tide (ft)	4.67
I26	18 Dec 2023	High Tide Time	1236
I26	18 Dec 2023	Low Tide (ft)	0
I26	18 Dec 2023	Low Tide Time	2000
I26	18 Dec 2023	Comments	none
I26	26 Dec 2023	Depth (m)	9
I26	26 Dec 2023	Arrive Time	1136
I26	26 Dec 2023	Depart Time	1140
I26	26 Dec 2023	Air Temp (C)	16
I26	26 Dec 2023	Weather	Partly Cloudy
I26	26 Dec 2023	Visibility (mi)	8
I26	26 Dec 2023	Wind Speed (kts)	9.8
I26	26 Dec 2023	Wind Dir	NW
I26	26 Dec 2023	Water Color	Blueish-Green
I26	26 Dec 2023	Wave Ht Low (ft)	6
I26	26 Dec 2023	Wave Period (sec)	13
I26	26 Dec 2023	Sea State	Regular Swell
I26	26 Dec 2023	High Tide (ft)	6.32
I26	26 Dec 2023	High Tide Time	754
I26	26 Dec 2023	Low Tide (ft)	-1.18
I26	26 Dec 2023	Low Tide Time	1518
I26	26 Dec 2023	Comments	none
I32	05 Dec 2023	Depth (m)	10
I32	05 Dec 2023	Arrive Time	1131
I32	05 Dec 2023	Depart Time	1136
I32	05 Dec 2023	Air Temp (C)	18.4
I32	05 Dec 2023	Weather	Clear
I32	05 Dec 2023	Visibility (mi)	10
I32	05 Dec 2023	Wind Speed (kts)	9.3
I32	05 Dec 2023	Wind Dir	NW
I32	05 Dec 2023	Water Color	Green
I32	05 Dec 2023	Wave Ht Low (ft)	5
I32	05 Dec 2023	Wave Period (sec)	13
I32	05 Dec 2023	Sea State	Calm

Station	Date	Parameter	Value
I32	05 Dec 2023	High Tide (ft)	4
I32	05 Dec 2023	High Tide Time	424
I32	05 Dec 2023	Low Tide (ft)	1.07
I32	05 Dec 2023	Low Tide Time	2142
I32	05 Dec 2023	Comments	none
I32	11 Dec 2023	Depth (m)	10
I32	11 Dec 2023	Arrive Time	1117
I32	11 Dec 2023	Depart Time	1123
I32	11 Dec 2023	Air Temp (C)	16.1
I32	11 Dec 2023	Weather	Haze
I32	11 Dec 2023	Visibility (mi)	11
I32	11 Dec 2023	Wind Speed (kts)	5.5
I32	11 Dec 2023	Wind Dir	W
I32	11 Dec 2023	Water Color	Green
I32	11 Dec 2023	Wave Ht Low (ft)	2.3
I32	11 Dec 2023	Wave Period (sec)	15
I32	11 Dec 2023	Sea State	Calm
I32	11 Dec 2023	High Tide (ft)	6.13
I32	11 Dec 2023	High Tide Time	700
I32	11 Dec 2023	Low Tide (ft)	-0.79
I32	11 Dec 2023	Low Tide Time	1424
I32	11 Dec 2023	Comments	none
I32	18 Dec 2023	Depth (m)	11
I32	18 Dec 2023	Arrive Time	1128
I32	18 Dec 2023	Depart Time	1131
I32	18 Dec 2023	Air Temp (C)	17.5
I32	18 Dec 2023	Weather	Haze
I32	18 Dec 2023	Visibility (mi)	11
I32	18 Dec 2023	Wind Speed (kts)	1.2
I32	18 Dec 2023	Wind Dir	N
I32	18 Dec 2023	Water Color	Greenish-Blue
I32	18 Dec 2023	Wave Ht Low (ft)	5
I32	18 Dec 2023	Wave Period (sec)	9
I32	18 Dec 2023	Sea State	Calm
I32	18 Dec 2023	High Tide (ft)	4.67
I32	18 Dec 2023	High Tide Time	1236
I32	18 Dec 2023	Low Tide (ft)	0
I32	18 Dec 2023	Low Tide Time	2000
I32	18 Dec 2023	Comments	none
I32	26 Dec 2023	Depth (m)	10
I32	26 Dec 2023	Arrive Time	1148
I32	26 Dec 2023	Depart Time	1153
I32	26 Dec 2023	Air Temp (C)	16
I32	26 Dec 2023	Weather	Partly Cloudy
I32	26 Dec 2023	Visibility (mi)	8
I32	26 Dec 2023	Wind Speed (kts)	8
I32	26 Dec 2023	Wind Dir	NW
I32	26 Dec 2023	Water Color	Blueish-Green
I32	26 Dec 2023	Wave Ht Low (ft)	6
I32	26 Dec 2023	Wave Period (sec)	13
I32	26 Dec 2023	Sea State	Regular Swell
I32	26 Dec 2023	High Tide (ft)	6.32
I32	26 Dec 2023	High Tide Time	754
I32	26 Dec 2023	Low Tide (ft)	-1.18
I32	26 Dec 2023	Low Tide Time	1518
I32	26 Dec 2023	Comments	none
I39	05 Dec 2023	Depth (m)	20

Station	Date	Parameter	Value
I39	05 Dec 2023	Arrive Time	1016
I39	05 Dec 2023	Depart Time	1022
I39	05 Dec 2023	Air Temp (C)	17.6
I39	05 Dec 2023	Weather	Clear
I39	05 Dec 2023	Visibility (mi)	10
I39	05 Dec 2023	Wind Speed (kts)	0.9
I39	05 Dec 2023	Wind Dir	NW
I39	05 Dec 2023	Water Color	Blueish-Green
I39	05 Dec 2023	Wave Ht Low (ft)	5
I39	05 Dec 2023	Wave Period (sec)	13
I39	05 Dec 2023	Sea State	Calm
I39	05 Dec 2023	High Tide (ft)	4
I39	05 Dec 2023	High Tide Time	424
I39	05 Dec 2023	Low Tide (ft)	1.07
I39	05 Dec 2023	Low Tide Time	2142
I39	05 Dec 2023	Comments	none
I39	11 Dec 2023	Depth (m)	19
I39	11 Dec 2023	Arrive Time	1009
I39	11 Dec 2023	Depart Time	1011
I39	11 Dec 2023	Air Temp (C)	15.7
I39	11 Dec 2023	Weather	Clear
I39	11 Dec 2023	Visibility (mi)	11
I39	11 Dec 2023	Wind Speed (kts)	2.7
I39	11 Dec 2023	Wind Dir	SW
I39	11 Dec 2023	Water Color	Greenish-Blue
I39	11 Dec 2023	Wave Ht Low (ft)	2.3
I39	11 Dec 2023	Wave Period (sec)	15
I39	11 Dec 2023	Sea State	Calm
I39	11 Dec 2023	High Tide (ft)	6.13
I39	11 Dec 2023	High Tide Time	700
I39	11 Dec 2023	Low Tide (ft)	-0.79
I39	11 Dec 2023	Low Tide Time	1424
I39	11 Dec 2023	Comments	none
I39	18 Dec 2023	Depth (m)	20
I39	18 Dec 2023	Arrive Time	1012
I39	18 Dec 2023	Depart Time	1015
I39	18 Dec 2023	Air Temp (C)	16.1
I39	18 Dec 2023	Weather	Overcast
I39	18 Dec 2023	Visibility (mi)	10
I39	18 Dec 2023	Wind Speed (kts)	4.1
I39	18 Dec 2023	Wind Dir	E
I39	18 Dec 2023	Water Color	Green
I39	18 Dec 2023	Wave Ht Low (ft)	5
I39	18 Dec 2023	Wave Period (sec)	9
I39	18 Dec 2023	Sea State	Calm
I39	18 Dec 2023	High Tide (ft)	4.67
I39	18 Dec 2023	High Tide Time	1236
I39	18 Dec 2023	Low Tide (ft)	0
I39	18 Dec 2023	Low Tide Time	2000
I39	18 Dec 2023	Comments	none
I39	26 Dec 2023	Depth (m)	20
I39	26 Dec 2023	Arrive Time	1039
I39	26 Dec 2023	Depart Time	1043
I39	26 Dec 2023	Air Temp (C)	15.5
I39	26 Dec 2023	Weather	Partly Cloudy
I39	26 Dec 2023	Visibility (mi)	8
I39	26 Dec 2023	Wind Speed (kts)	4
I39	26 Dec 2023	Wind Dir	N

Station	Date	Parameter	Value
I39	26 Dec 2023	Water Color	Greenish-Blue
I39	26 Dec 2023	Wave Ht Low (ft)	6
I39	26 Dec 2023	Wave Period (sec)	13
I39	26 Dec 2023	Sea State	Regular Swell
I39	26 Dec 2023	High Tide (ft)	6.32
I39	26 Dec 2023	High Tide Time	754
I39	26 Dec 2023	Low Tide (ft)	-1.18
I39	26 Dec 2023	Low Tide Time	1518
I39	26 Dec 2023	Comments	none
I40	05 Dec 2023	Depth (m)	10
I40	05 Dec 2023	Arrive Time	1053
I40	05 Dec 2023	Depart Time	1059
I40	05 Dec 2023	Air Temp (C)	17.9
I40	05 Dec 2023	Weather	Clear
I40	05 Dec 2023	Visibility (mi)	10
I40	05 Dec 2023	Wind Speed (kts)	7.2
I40	05 Dec 2023	Wind Dir	N
I40	05 Dec 2023	Water Color	Green
I40	05 Dec 2023	Wave Ht Low (ft)	5
I40	05 Dec 2023	Wave Period (sec)	13
I40	05 Dec 2023	Sea State	Calm
I40	05 Dec 2023	High Tide (ft)	4
I40	05 Dec 2023	High Tide Time	424
I40	05 Dec 2023	Low Tide (ft)	1.07
I40	05 Dec 2023	Low Tide Time	2142
I40	05 Dec 2023	Comments	none
I40	11 Dec 2023	Depth (m)	10
I40	11 Dec 2023	Arrive Time	1039
I40	11 Dec 2023	Depart Time	1044
I40	11 Dec 2023	Air Temp (C)	15.9
I40	11 Dec 2023	Weather	Haze
I40	11 Dec 2023	Visibility (mi)	11
I40	11 Dec 2023	Wind Speed (kts)	6.6
I40	11 Dec 2023	Wind Dir	SW
I40	11 Dec 2023	Water Color	Green
I40	11 Dec 2023	Wave Ht Low (ft)	2.3
I40	11 Dec 2023	Wave Period (sec)	15
I40	11 Dec 2023	Sea State	Calm
I40	11 Dec 2023	High Tide (ft)	6.13
I40	11 Dec 2023	High Tide Time	700
I40	11 Dec 2023	Low Tide (ft)	-0.79
I40	11 Dec 2023	Low Tide Time	1424
I40	11 Dec 2023	Comments	none
I40	18 Dec 2023	Depth (m)	11
I40	18 Dec 2023	Arrive Time	1047
I40	18 Dec 2023	Depart Time	1050
I40	18 Dec 2023	Air Temp (C)	17.3
I40	18 Dec 2023	Weather	Haze
I40	18 Dec 2023	Visibility (mi)	11
I40	18 Dec 2023	Wind Speed (kts)	4
I40	18 Dec 2023	Wind Dir	SE
I40	18 Dec 2023	Water Color	Brownish-Green
I40	18 Dec 2023	Wave Ht Low (ft)	5
I40	18 Dec 2023	Wave Period (sec)	9
I40	18 Dec 2023	Sea State	Calm
I40	18 Dec 2023	High Tide (ft)	4.67
I40	18 Dec 2023	High Tide Time	1236
I40	18 Dec 2023	Low Tide (ft)	0

Station	Date	Parameter	Value
I40	18 Dec 2023	Low Tide Time	2000
I40	18 Dec 2023	Comments	none
I40	26 Dec 2023	Depth (m)	9
I40	26 Dec 2023	Arrive Time	1111
I40	26 Dec 2023	Depart Time	1115
I40	26 Dec 2023	Air Temp (C)	15.2
I40	26 Dec 2023	Weather	Partly Cloudy
I40	26 Dec 2023	Visibility (mi)	8
I40	26 Dec 2023	Wind Speed (kts)	7.4
I40	26 Dec 2023	Wind Dir	NW
I40	26 Dec 2023	Water Color	Blueish-Green
I40	26 Dec 2023	Wave Ht Low (ft)	6
I40	26 Dec 2023	Wave Period (sec)	13
I40	26 Dec 2023	Sea State	Regular Swell
I40	26 Dec 2023	High Tide (ft)	6.32
I40	26 Dec 2023	High Tide Time	754
I40	26 Dec 2023	Low Tide (ft)	-1.18
I40	26 Dec 2023	Low Tide Time	1518
I40	26 Dec 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 (µg/L)
I19	05 Dec 2023	1	16.87	55.63	8.4	32.93	8.2	24.0	2.08
I19	05 Dec 2023	2	16.90	54.27	8.3	33.14	8.2	24.1	3.45
I19	05 Dec 2023	3	16.95	59.97	8.1	33.24	8.2	24.2	4.07
I19	05 Dec 2023	4	16.91	65.60	8.0	33.26	8.2	24.2	3.43
I19	05 Dec 2023	5	16.89	65.45	7.9	33.26	8.2	24.2	2.86
I19	05 Dec 2023	6	16.89	64.85	7.9	33.26	8.1	24.2	2.58
I19	05 Dec 2023	7	16.89	64.16	7.9	33.26	8.1	24.2	2.42
I19	05 Dec 2023	8	16.88	63.73	7.8	33.26	8.1	24.2	2.17
I19	05 Dec 2023	9	16.87	63.83	7.7	33.26	8.1	24.2	1.72
I19	05 Dec 2023	10	16.84	61.98	7.6	33.26	8.1	24.2	1.47
I19	11 Dec 2023	1	16.55	76.05	8.0	33.28	8.2	24.3	1.20
I19	11 Dec 2023	2	16.49	75.69	7.9	33.28	8.2	24.3	1.12
I19	11 Dec 2023	3	16.40	75.29	7.9	33.28	8.2	24.3	1.32
I19	11 Dec 2023	4	16.38	74.08	7.9	33.27	8.1	24.3	1.89
I19	11 Dec 2023	5	16.35	73.32	7.9	33.27	8.1	24.3	2.31
I19	11 Dec 2023	6	16.32	72.78	7.9	33.27	8.1	24.3	2.55
I19	11 Dec 2023	7	16.27	72.79	7.9	33.27	8.1	24.4	2.82
I19	11 Dec 2023	8	16.26	72.54	7.9	33.27	8.1	24.4	2.96
I19	11 Dec 2023	9	16.26	72.18	7.9	33.27	8.1	24.4	2.98
I19	11 Dec 2023	10	16.10	72.32	7.8	33.27	8.1	24.4	2.75
I19	18 Dec 2023	1	16.38	70.20	8.4	33.16	8.2	24.2	2.99
I19	18 Dec 2023	2	16.44	69.34	8.2	33.19	8.2	24.3	3.30
I19	18 Dec 2023	3	16.44	72.36	8.1	33.20	8.2	24.3	3.10
I19	18 Dec 2023	4	16.43	73.65	8.1	33.20	8.2	24.3	2.97
I19	18 Dec 2023	5	16.42	73.87	8.1	33.20	8.2	24.3	2.82
I19	18 Dec 2023	6	16.42	73.88	8.1	33.20	8.2	24.3	2.83
I19	18 Dec 2023	7	16.42	73.76	8.1	33.20	8.2	24.3	2.81
I19	18 Dec 2023	8	16.42	73.59	8.1	33.20	8.2	24.3	2.81
I19	18 Dec 2023	9	16.41	73.69	8.1	33.20	8.2	24.3	2.80
I19	18 Dec 2023	10	16.40	73.30	8.2	33.20	8.2	24.3	2.98
I19	26 Dec 2023	1	17.01	52.44	8.0	33.23	8.1	24.1	1.16
I19	26 Dec 2023	2	17.00	51.80	8.0	33.23	8.1	24.2	1.28
I19	26 Dec 2023	3	17.00	51.80	8.0	33.23	8.1	24.2	1.36
I19	26 Dec 2023	4	16.99	51.56	8.0	33.23	8.1	24.2	1.53
I19	26 Dec 2023	5	16.95	49.63	8.1	33.22	8.1	24.2	1.65
I19	26 Dec 2023	6	16.93	45.47	8.1	33.22	8.1	24.2	1.63
I19	26 Dec 2023	7	16.94	44.18	8.1	33.22	8.1	24.2	1.60
I19	26 Dec 2023	8	16.94	44.68	8.1	33.22	8.1	24.2	1.59
I19	26 Dec 2023	9	16.94	44.72	8.1	33.22	8.1	24.2	1.57
I19	26 Dec 2023	10	16.93	44.33	8.1	33.22	8.1	24.2	1.60
I24	05 Dec 2023	1	17.11	60.69	9.1	33.26	8.2	24.2	5.44
I24	05 Dec 2023	2	17.09	60.30	9.1	33.26	8.2	24.2	7.04
I24	05 Dec 2023	3	16.96	58.99	8.8	33.26	8.2	24.2	9.44
I24	05 Dec 2023	4	16.93	60.42	8.6	33.26	8.2	24.2	8.72
I24	05 Dec 2023	5	16.90	64.66	8.3	33.26	8.2	24.2	7.88
I24	05 Dec 2023	6	16.86	65.15	8.2	33.26	8.2	24.2	5.91
I24	05 Dec 2023	7	16.84	68.17	8.1	33.27	8.2	24.2	3.46
I24	05 Dec 2023	8	16.82	73.45	7.9	33.27	8.2	24.2	2.37
I24	05 Dec 2023	9	16.82	66.23	7.8	33.27	8.2	24.2	1.62
I24	11 Dec 2023	1	16.50	82.59	7.7	33.29	8.2	24.3	0.63

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
I24	11 Dec 2023	2	16.49	82.28	7.7	33.29	8.2	24.3	0.62
I24	11 Dec 2023	3	16.45	82.27	7.8	33.29	8.2	24.3	0.71
I24	11 Dec 2023	4	16.41	81.75	7.8	33.29	8.2	24.3	0.96
I24	11 Dec 2023	5	16.40	80.74	7.8	33.29	8.2	24.3	1.21
I24	11 Dec 2023	6	16.39	80.13	7.8	33.29	8.2	24.3	1.32
I24	11 Dec 2023	7	16.39	79.95	7.8	33.29	8.2	24.3	1.40
I24	11 Dec 2023	8	16.38	79.90	7.7	33.29	8.2	24.3	1.33
I24	11 Dec 2023	9	16.38	79.84	7.7	33.29	8.2	24.3	1.26
I24	11 Dec 2023	10	16.38	79.52	7.7	33.29	8.2	24.3	1.23
I24	18 Dec 2023	1	16.42	80.33	8.3	33.19	8.2	24.3	1.15
I24	18 Dec 2023	2	16.45	80.28	8.3	33.22	8.2	24.3	1.19
I24	18 Dec 2023	3	16.49	82.24	8.2	33.25	8.2	24.3	1.28
I24	18 Dec 2023	4	16.49	84.49	8.2	33.25	8.2	24.3	1.32
I24	18 Dec 2023	5	16.51	85.44	8.2	33.27	8.2	24.3	1.39
I24	18 Dec 2023	6	16.51	86.26	8.2	33.27	8.2	24.3	1.44
I24	18 Dec 2023	7	16.49	86.90	8.2	33.27	8.2	24.3	1.38
I24	18 Dec 2023	8	16.46	81.56	8.1	33.28	8.2	24.3	1.40
I24	18 Dec 2023	9	16.46	73.29	8.1	33.28	8.2	24.3	1.33
I24	18 Dec 2023	10	16.46	70.75	8.1	33.28	8.2	24.3	1.27
I24	26 Dec 2023	1	17.15	78.16	7.8	33.22	8.1	24.1	0.92
I24	26 Dec 2023	2	17.08	77.43	7.8	33.22	8.1	24.1	0.97
I24	26 Dec 2023	3	17.06	75.20	7.8	33.22	8.1	24.1	1.19
I24	26 Dec 2023	4	17.04	72.51	7.7	33.21	8.1	24.1	1.47
I24	26 Dec 2023	5	17.03	70.66	7.7	33.21	8.1	24.1	1.66
I24	26 Dec 2023	6	17.03	69.69	7.7	33.21	8.1	24.1	1.68
I24	26 Dec 2023	7	17.01	67.15	7.7	33.21	8.1	24.1	1.67
I24	26 Dec 2023	8	17.01	64.87	7.6	33.21	8.1	24.1	1.64
I24	26 Dec 2023	9	17.01	62.90	7.6	33.21	8.1	24.1	1.71
I24	26 Dec 2023	10	17.01	61.05	7.6	33.21	8.1	24.1	1.60
I24	26 Dec 2023	11	17.01	58.29	7.6	33.21	8.1	24.1	1.63
I25	05 Dec 2023	1	17.01	79.92	8.0	33.26	8.2	24.2	0.70
I25	05 Dec 2023	2	17.01	79.86	8.0	33.26	8.2	24.2	0.71
I25	05 Dec 2023	3	17.00	79.99	8.0	33.26	8.2	24.2	0.73
I25	05 Dec 2023	4	16.86	79.81	7.9	33.26	8.2	24.2	0.96
I25	05 Dec 2023	5	16.82	76.34	7.9	33.26	8.2	24.2	1.32
I25	05 Dec 2023	6	16.81	74.59	7.9	33.26	8.2	24.2	1.52
I25	05 Dec 2023	7	16.79	73.92	7.9	33.26	8.2	24.2	1.56
I25	05 Dec 2023	8	16.79	70.63	7.8	33.26	8.2	24.2	1.47
I25	05 Dec 2023	9	16.79	63.38	7.7	33.26	8.2	24.2	1.46
I25	11 Dec 2023	1	16.59	82.13	7.9	33.28	8.2	24.3	0.64
I25	11 Dec 2023	2	16.59	82.11	7.9	33.28	8.2	24.3	0.64
I25	11 Dec 2023	3	16.54	81.89	7.9	33.28	8.2	24.3	0.63
I25	11 Dec 2023	4	16.47	81.84	7.8	33.28	8.2	24.3	0.75
I25	11 Dec 2023	5	16.45	80.85	7.8	33.28	8.2	24.3	0.95
I25	11 Dec 2023	6	16.44	80.04	7.8	33.28	8.2	24.3	1.14
I25	11 Dec 2023	7	16.44	79.94	7.8	33.28	8.2	24.3	1.22
I25	11 Dec 2023	8	16.44	79.90	7.8	33.28	8.2	24.3	1.28
I25	11 Dec 2023	9	16.44	80.05	7.8	33.28	8.2	24.3	1.24
I25	18 Dec 2023	1	16.52	87.37	8.2	33.27	8.2	24.3	0.75
I25	18 Dec 2023	2	16.50	87.02	8.2	33.27	8.2	24.3	0.83
I25	18 Dec 2023	3	16.50	87.20	8.2	33.27	8.2	24.3	0.86
I25	18 Dec 2023	4	16.49	86.02	8.2	33.27	8.2	24.3	0.93
I25	18 Dec 2023	5	16.48	83.53	8.1	33.27	8.2	24.3	1.02
I25	18 Dec 2023	6	16.48	82.77	8.1	33.27	8.2	24.3	1.07
I25	18 Dec 2023	7	16.47	82.00	8.1	33.27	8.2	24.3	1.12
I25	18 Dec 2023	8	16.47	81.71	8.1	33.27	8.2	24.3	1.14

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
I25	18 Dec 2023	9	16.47	80.67	8.1	33.27	8.2	24.3	1.07
I25	26 Dec 2023	1	17.17	76.54	7.8	33.22	8.1	24.1	0.98
I25	26 Dec 2023	2	17.17	76.61	7.8	33.22	8.1	24.1	1.01
I25	26 Dec 2023	3	17.11	76.65	7.8	33.22	8.1	24.1	1.16
I25	26 Dec 2023	4	17.08	75.60	7.8	33.22	8.1	24.1	1.41
I25	26 Dec 2023	5	17.08	74.58	7.8	33.22	8.1	24.1	1.55
I25	26 Dec 2023	6	17.08	73.41	7.8	33.22	8.1	24.1	1.60
I25	26 Dec 2023	7	17.07	72.87	7.8	33.22	8.1	24.1	1.62
I25	26 Dec 2023	8	17.07	72.91	7.8	33.22	8.1	24.1	1.62
I25	26 Dec 2023	9	17.07	72.30	7.8	33.22	8.1	24.1	1.62
I26	05 Dec 2023	1	17.01	77.87	8.2	33.27	8.2	24.2	0.93
I26	05 Dec 2023	2	17.00	77.74	8.2	33.27	8.2	24.2	0.99
I26	05 Dec 2023	3	16.98	77.60	8.3	33.26	8.2	24.2	1.17
I26	05 Dec 2023	4	16.85	76.16	8.2	33.26	8.2	24.2	2.40
I26	05 Dec 2023	5	16.81	75.87	8.1	33.26	8.2	24.2	2.35
I26	05 Dec 2023	6	16.81	78.67	8.1	33.26	8.2	24.2	2.02
I26	05 Dec 2023	7	16.79	79.76	8.0	33.26	8.2	24.2	1.79
I26	05 Dec 2023	8	16.74	80.09	7.8	33.26	8.2	24.2	1.65
I26	05 Dec 2023	9	16.68	73.94	7.5	33.26	8.1	24.3	1.54
I26	11 Dec 2023	1	16.62	79.55	8.0	33.28	8.2	24.3	0.88
I26	11 Dec 2023	2	16.59	79.17	7.9	33.28	8.2	24.3	0.86
I26	11 Dec 2023	3	16.53	78.94	7.9	33.28	8.2	24.3	0.93
I26	11 Dec 2023	4	16.52	78.79	7.9	33.28	8.2	24.3	1.08
I26	11 Dec 2023	5	16.48	78.63	7.9	33.28	8.2	24.3	1.19
I26	11 Dec 2023	6	16.47	78.41	7.9	33.28	8.2	24.3	1.32
I26	11 Dec 2023	7	16.46	78.37	7.9	33.28	8.1	24.3	1.41
I26	11 Dec 2023	8	16.46	78.15	7.9	33.28	8.1	24.3	1.48
I26	11 Dec 2023	9	16.46	78.42	7.8	33.28	8.1	24.3	1.43
I26	18 Dec 2023	1	16.51	84.43	8.2	33.28	8.2	24.3	0.82
I26	18 Dec 2023	2	16.46	83.67	8.2	33.28	8.2	24.3	0.98
I26	18 Dec 2023	3	16.45	82.47	8.2	33.28	8.2	24.3	1.33
I26	18 Dec 2023	4	16.43	81.42	8.2	33.28	8.2	24.3	1.71
I26	18 Dec 2023	5	16.42	80.72	8.2	33.28	8.2	24.3	2.03
I26	18 Dec 2023	6	16.41	80.95	8.2	33.28	8.2	24.3	2.30
I26	18 Dec 2023	7	16.39	80.89	8.2	33.28	8.2	24.3	2.28
I26	18 Dec 2023	8	16.39	80.74	8.2	33.28	8.2	24.3	2.05
I26	18 Dec 2023	9	16.39	79.98	8.1	33.28	8.2	24.3	1.87
I26	26 Dec 2023	1	17.15	78.56	7.9	33.22	8.1	24.1	1.65
I26	26 Dec 2023	2	17.10	78.02	7.9	33.22	8.1	24.1	1.71
I26	26 Dec 2023	3	17.06	76.83	7.8	33.22	8.1	24.1	1.88
I26	26 Dec 2023	4	17.06	73.57	7.8	33.22	8.1	24.1	1.84
I26	26 Dec 2023	5	17.06	70.48	7.8	33.22	8.1	24.1	1.75
I26	26 Dec 2023	6	17.06	69.73	7.8	33.22	8.1	24.1	1.83
I26	26 Dec 2023	7	17.06	69.16	7.8	33.22	8.1	24.1	1.75
I26	26 Dec 2023	8	17.06	68.36	7.8	33.22	8.1	24.1	1.72
I26	26 Dec 2023	9	17.06	67.23	7.8	33.22	8.1	24.1	1.67
I32	05 Dec 2023	1	17.06	75.78	8.4	33.27	8.2	24.2	1.07
I32	05 Dec 2023	2	16.99	75.15	8.5	33.27	8.2	24.2	1.12
I32	05 Dec 2023	3	16.88	74.32	8.6	33.27	8.2	24.2	1.70
I32	05 Dec 2023	4	16.86	70.80	8.6	33.27	8.2	24.2	3.88
I32	05 Dec 2023	5	16.85	69.16	8.6	33.27	8.2	24.2	4.96
I32	05 Dec 2023	6	16.82	69.14	8.5	33.27	8.2	24.2	5.78
I32	05 Dec 2023	7	16.80	69.08	8.5	33.27	8.2	24.2	6.64
I32	05 Dec 2023	8	16.78	68.83	8.5	33.27	8.2	24.2	6.85
I32	05 Dec 2023	9	16.71	68.75	8.4	33.27	8.2	24.3	5.91

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
I32	05 Dec 2023	10	16.67	68.95	8.3	33.27	8.2	24.3	4.94
I32	11 Dec 2023	1	16.55	77.09	8.0	33.28	8.2	24.3	1.05
I32	11 Dec 2023	2	16.49	76.09	8.0	33.28	8.2	24.3	1.16
I32	11 Dec 2023	3	16.47	73.87	8.0	33.28	8.2	24.3	1.57
I32	11 Dec 2023	4	16.44	73.38	8.0	33.28	8.2	24.3	2.20
I32	11 Dec 2023	5	16.40	72.55	8.0	33.29	8.2	24.3	2.89
I32	11 Dec 2023	6	16.34	71.62	8.0	33.29	8.2	24.4	3.21
I32	11 Dec 2023	7	16.30	71.48	8.0	33.29	8.2	24.4	3.28
I32	11 Dec 2023	8	16.22	71.43	8.0	33.30	8.2	24.4	3.32
I32	11 Dec 2023	9	16.17	71.23	8.1	33.30	8.2	24.4	3.31
I32	11 Dec 2023	10	16.15	71.12	8.0	33.30	8.2	24.4	3.07
I32	18 Dec 2023	1	16.47	87.58	8.2	33.26	8.2	24.3	0.57
I32	18 Dec 2023	2	16.46	87.52	8.2	33.26	8.2	24.3	0.60
I32	18 Dec 2023	3	16.41	87.44	8.2	33.26	8.2	24.3	0.64
I32	18 Dec 2023	4	16.40	87.41	8.2	33.26	8.2	24.3	0.75
I32	18 Dec 2023	5	16.41	87.33	8.2	33.26	8.2	24.3	0.84
I32	18 Dec 2023	6	16.41	87.18	8.2	33.26	8.2	24.3	0.96
I32	18 Dec 2023	7	16.40	86.80	8.2	33.26	8.2	24.3	1.06
I32	18 Dec 2023	8	16.37	86.05	8.2	33.26	8.2	24.3	1.15
I32	18 Dec 2023	9	16.35	83.13	8.2	33.26	8.2	24.3	1.16
I32	18 Dec 2023	10	16.31	82.29	8.2	33.25	8.2	24.3	1.20
I32	26 Dec 2023	1	17.12	67.77	7.8	33.21	8.1	24.1	1.53
I32	26 Dec 2023	2	17.10	67.46	7.8	33.21	8.1	24.1	1.73
I32	26 Dec 2023	3	17.02	66.57	7.8	33.21	8.1	24.1	1.95
I32	26 Dec 2023	4	17.00	62.77	7.8	33.21	8.1	24.1	2.11
I32	26 Dec 2023	5	17.00	58.84	7.8	33.21	8.1	24.1	2.11
I32	26 Dec 2023	6	16.99	55.46	7.8	33.21	8.1	24.1	2.14
I32	26 Dec 2023	7	16.99	53.84	7.8	33.21	8.1	24.1	2.07
I32	26 Dec 2023	8	16.96	54.28	7.8	33.21	8.1	24.1	1.93
I32	26 Dec 2023	9	16.93	54.06	7.8	33.20	8.1	24.2	1.84
I32	26 Dec 2023	10	16.91	53.19	7.8	33.20	8.1	24.2	1.80
I39	05 Dec 2023	1	16.67	89.21	7.9	33.26	8.1	24.3	0.49
I39	05 Dec 2023	2	16.62	89.14	7.9	33.26	8.1	24.3	0.53
I39	05 Dec 2023	3	16.59	88.70	7.9	33.26	8.1	24.3	0.58
I39	05 Dec 2023	4	16.57	87.31	7.9	33.26	8.1	24.3	0.64
I39	05 Dec 2023	5	16.57	88.34	7.9	33.26	8.1	24.3	0.75
I39	05 Dec 2023	6	16.55	88.26	7.9	33.26	8.1	24.3	0.80
I39	05 Dec 2023	7	16.53	88.26	7.8	33.25	8.1	24.3	0.86
I39	05 Dec 2023	8	16.45	88.34	7.8	33.24	8.1	24.3	0.81
I39	05 Dec 2023	9	16.25	88.63	7.7	33.22	8.1	24.3	0.78
I39	05 Dec 2023	10	16.04	89.13	7.6	33.21	8.1	24.4	0.72
I39	05 Dec 2023	11	15.89	89.47	7.6	33.21	8.1	24.4	0.66
I39	05 Dec 2023	12	15.80	89.58	7.5	33.20	8.1	24.4	0.61
I39	05 Dec 2023	13	15.71	89.47	7.5	33.20	8.1	24.4	0.62
I39	05 Dec 2023	14	15.67	88.78	7.4	33.20	8.1	24.4	0.60
I39	05 Dec 2023	15	15.65	87.57	7.4	33.20	8.1	24.4	0.64
I39	05 Dec 2023	16	15.64	85.67	7.4	33.21	8.1	24.4	0.66
I39	05 Dec 2023	17	15.63	83.01	7.3	33.21	8.1	24.5	0.68
I39	05 Dec 2023	18	15.63	81.35	7.3	33.21	8.1	24.5	0.70
I39	11 Dec 2023	1	16.78	87.63	8.1	33.29	8.2	24.3	0.69
I39	11 Dec 2023	2	16.77	87.58	8.1	33.29	8.2	24.3	0.66
I39	11 Dec 2023	3	16.74	87.52	8.1	33.29	8.2	24.3	0.74
I39	11 Dec 2023	4	16.74	87.44	8.1	33.29	8.2	24.3	0.83
I39	11 Dec 2023	5	16.74	87.12	8.1	33.29	8.2	24.3	0.92
I39	11 Dec 2023	6	16.74	87.10	8.1	33.29	8.2	24.3	1.01
I39	11 Dec 2023	7	16.73	87.15	8.1	33.29	8.2	24.3	1.11

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
I39	11 Dec 2023	8	16.73	87.15	8.1	33.29	8.2	24.3	1.13
I39	11 Dec 2023	9	16.73	87.01	8.1	33.29	8.2	24.3	1.28
I39	11 Dec 2023	10	16.72	86.91	8.1	33.29	8.2	24.3	1.37
I39	11 Dec 2023	11	16.72	86.88	8.1	33.29	8.2	24.3	1.44
I39	11 Dec 2023	12	16.72	86.90	8.1	33.29	8.2	24.3	1.43
I39	11 Dec 2023	13	16.72	86.89	8.1	33.29	8.2	24.3	1.40
I39	11 Dec 2023	14	16.71	86.88	8.1	33.29	8.2	24.3	1.45
I39	11 Dec 2023	15	16.71	86.94	8.1	33.29	8.2	24.3	1.48
I39	11 Dec 2023	16	16.71	87.01	8.0	33.29	8.2	24.3	1.53
I39	11 Dec 2023	17	16.69	86.95	8.0	33.28	8.2	24.3	1.37
I39	11 Dec 2023	18	16.52	87.03	7.8	33.27	8.1	24.3	1.28
I39	18 Dec 2023	1	16.72	90.61	8.2	33.29	8.2	24.3	0.66
I39	18 Dec 2023	2	16.71	90.62	8.2	33.29	8.2	24.3	0.70
I39	18 Dec 2023	3	16.71	90.63	8.2	33.29	8.2	24.3	0.72
I39	18 Dec 2023	4	16.71	90.54	8.2	33.29	8.2	24.3	0.74
I39	18 Dec 2023	5	16.71	90.48	8.2	33.29	8.2	24.3	0.78
I39	18 Dec 2023	6	16.71	90.54	8.2	33.29	8.2	24.3	0.83
I39	18 Dec 2023	7	16.71	90.54	8.2	33.29	8.2	24.3	0.89
I39	18 Dec 2023	8	16.70	90.51	8.2	33.29	8.2	24.3	0.94
I39	18 Dec 2023	9	16.70	90.52	8.2	33.29	8.2	24.3	0.93
I39	18 Dec 2023	10	16.68	90.48	8.2	33.29	8.2	24.3	0.94
I39	18 Dec 2023	11	16.65	90.37	8.2	33.28	8.2	24.3	0.96
I39	18 Dec 2023	12	16.60	89.85	8.2	33.28	8.2	24.3	1.05
I39	18 Dec 2023	13	16.58	88.77	8.2	33.28	8.2	24.3	1.08
I39	18 Dec 2023	14	16.56	88.23	8.1	33.27	8.2	24.3	1.05
I39	18 Dec 2023	15	16.54	87.23	8.1	33.27	8.2	24.3	1.06
I39	18 Dec 2023	16	16.53	86.53	8.1	33.27	8.2	24.3	1.02
I39	18 Dec 2023	17	16.52	84.98	8.0	33.27	8.2	24.3	1.02
I39	18 Dec 2023	18	16.50	81.62	8.0	33.27	8.2	24.3	1.03
I39	26 Dec 2023	1	17.14	85.67	7.9	33.26	8.1	24.1	0.56
I39	26 Dec 2023	2	17.11	85.49	7.9	33.26	8.1	24.2	0.57
I39	26 Dec 2023	3	17.10	85.12	8.0	33.26	8.1	24.2	0.68
I39	26 Dec 2023	4	17.09	84.94	8.0	33.26	8.1	24.2	0.78
I39	26 Dec 2023	5	17.09	85.09	7.9	33.26	8.1	24.2	0.86
I39	26 Dec 2023	6	17.08	84.78	7.9	33.26	8.1	24.2	1.02
I39	26 Dec 2023	7	17.08	84.75	8.0	33.26	8.1	24.2	1.21
I39	26 Dec 2023	8	17.08	84.86	7.9	33.26	8.1	24.2	1.26
I39	26 Dec 2023	9	17.08	84.91	7.9	33.26	8.1	24.2	1.27
I39	26 Dec 2023	10	17.08	84.89	7.9	33.26	8.1	24.2	1.41
I39	26 Dec 2023	11	17.07	84.98	7.9	33.27	8.1	24.2	1.36
I39	26 Dec 2023	12	17.07	85.11	7.9	33.27	8.1	24.2	1.42
I39	26 Dec 2023	13	17.08	85.15	7.9	33.27	8.1	24.2	1.30
I39	26 Dec 2023	14	17.08	85.03	7.9	33.27	8.1	24.2	1.25
I39	26 Dec 2023	15	17.08	84.87	7.8	33.27	8.1	24.2	1.10
I39	26 Dec 2023	16	17.08	83.70	7.8	33.27	8.1	24.2	1.11
I39	26 Dec 2023	17	17.08	82.80	7.8	33.27	8.1	24.2	1.07
I39	26 Dec 2023	18	17.08	82.41	7.8	33.27	8.1	24.2	1.06
I40	05 Dec 2023	1	17.15	66.63	8.2	33.26	8.2	24.1	1.38
I40	05 Dec 2023	2	17.07	65.31	8.3	33.26	8.2	24.2	1.92
I40	05 Dec 2023	3	17.01	61.61	8.2	33.26	8.2	24.2	2.92
I40	05 Dec 2023	4	16.93	59.65	8.1	33.26	8.2	24.2	3.23
I40	05 Dec 2023	5	16.90	58.52	8.0	33.26	8.2	24.2	3.74
I40	05 Dec 2023	6	16.88	57.29	8.0	33.26	8.2	24.2	4.52
I40	05 Dec 2023	7	16.86	57.25	7.9	33.26	8.2	24.2	5.08
I40	05 Dec 2023	8	16.84	57.26	8.0	33.26	8.2	24.2	5.31
I40	05 Dec 2023	9	16.82	58.48	8.0	33.26	8.2	24.2	5.19
I40	05 Dec 2023	10	16.76	58.83	8.0	33.27	8.2	24.2	4.17

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
I40	11 Dec 2023	1	16.48	73.64	8.1	33.28	8.2	24.3	1.03
I40	11 Dec 2023	2	16.44	73.22	8.2	33.29	8.2	24.3	1.21
I40	11 Dec 2023	3	16.42	72.96	8.2	33.28	8.2	24.3	1.71
I40	11 Dec 2023	4	16.39	72.89	8.2	33.29	8.2	24.3	2.09
I40	11 Dec 2023	5	16.26	69.55	8.2	33.30	8.2	24.4	3.30
I40	11 Dec 2023	6	16.24	68.77	8.2	33.30	8.2	24.4	4.28
I40	11 Dec 2023	7	16.23	68.62	8.2	33.30	8.2	24.4	4.66
I40	11 Dec 2023	8	16.22	68.82	8.1	33.30	8.2	24.4	4.48
I40	11 Dec 2023	9	16.17	69.02	8.0	33.30	8.2	24.4	3.54
I40	11 Dec 2023	10	16.15	68.28	7.9	33.29	8.2	24.4	2.93
I40	18 Dec 2023	1	16.52	79.23	8.3	33.24	8.2	24.3	1.81
I40	18 Dec 2023	2	16.54	75.89	8.3	33.26	8.2	24.3	1.88
I40	18 Dec 2023	3	16.55	81.81	8.2	33.28	8.2	24.3	1.96
I40	18 Dec 2023	4	16.55	82.75	8.2	33.28	8.2	24.3	2.01
I40	18 Dec 2023	5	16.54	83.02	8.2	33.28	8.2	24.3	2.07
I40	18 Dec 2023	6	16.53	82.97	8.2	33.28	8.2	24.3	2.01
I40	18 Dec 2023	7	16.49	83.11	8.2	33.27	8.2	24.3	1.73
I40	18 Dec 2023	8	16.46	82.74	8.2	33.27	8.2	24.3	1.57
I40	18 Dec 2023	9	16.43	77.56	8.1	33.27	8.2	24.3	1.49
I40	18 Dec 2023	10	16.42	70.15	8.0	33.27	8.2	24.3	1.52
I40	26 Dec 2023	1	17.10	65.04	7.4	33.20	8.1	24.1	0.88
I40	26 Dec 2023	2	17.04	63.75	7.4	33.20	8.1	24.1	1.11
I40	26 Dec 2023	3	16.97	63.00	7.4	33.20	8.1	24.1	1.51
I40	26 Dec 2023	4	16.96	63.55	7.5	33.20	8.1	24.1	1.67
I40	26 Dec 2023	5	16.97	64.00	7.4	33.21	8.1	24.1	1.60
I40	26 Dec 2023	6	17.01	64.38	7.2	33.23	8.1	24.2	1.47
I40	26 Dec 2023	7	17.00	57.08	7.2	33.23	8.1	24.2	1.42
I40	26 Dec 2023	8	16.97	53.36	7.3	33.23	8.1	24.2	1.33
I40	26 Dec 2023	9	16.96	53.22	7.2	33.23	8.1	24.2	1.21
I40	26 Dec 2023	10	16.98	49.54	6.8	33.23	8.1	24.2	1.24

NA = not available

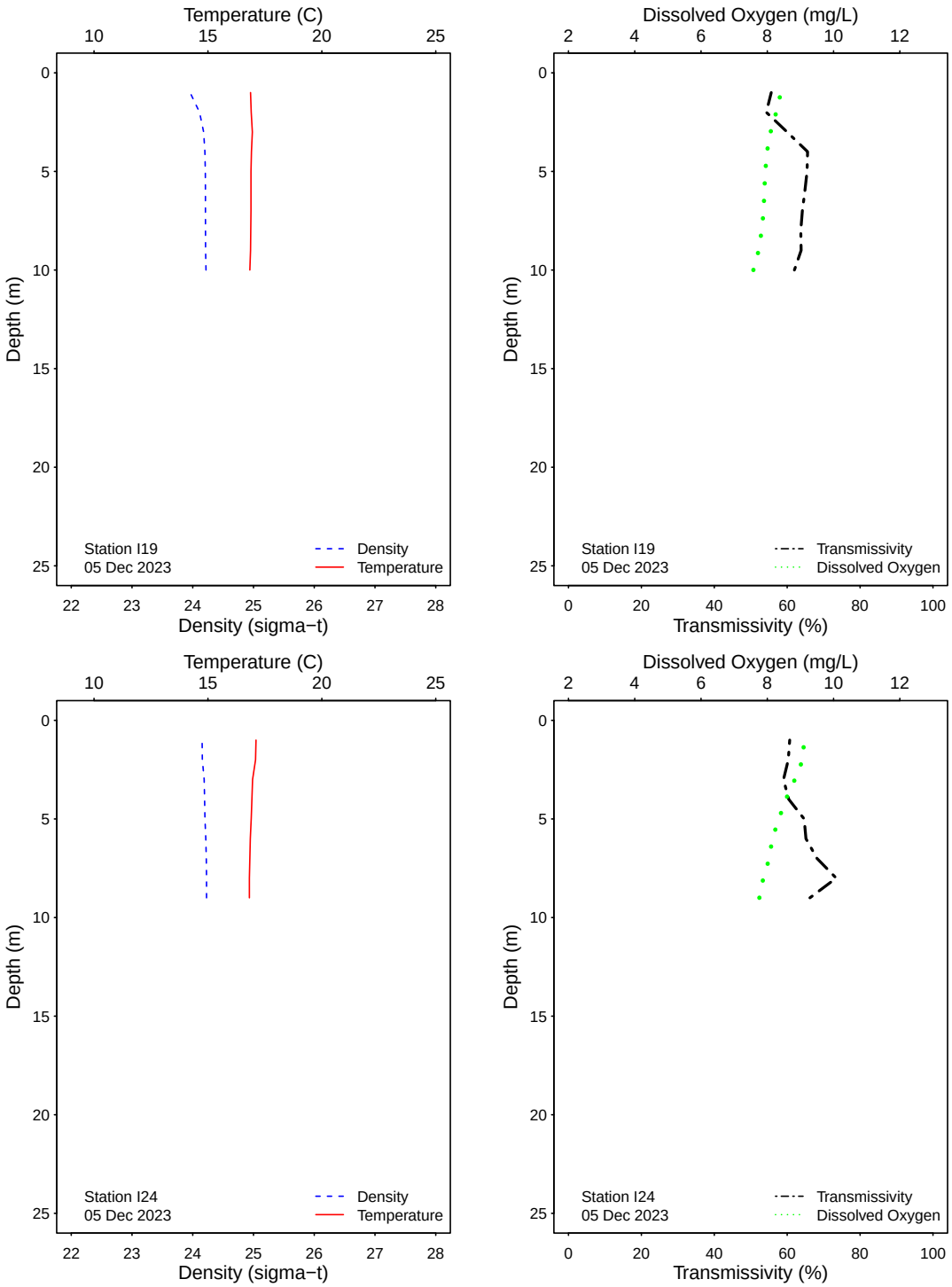


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

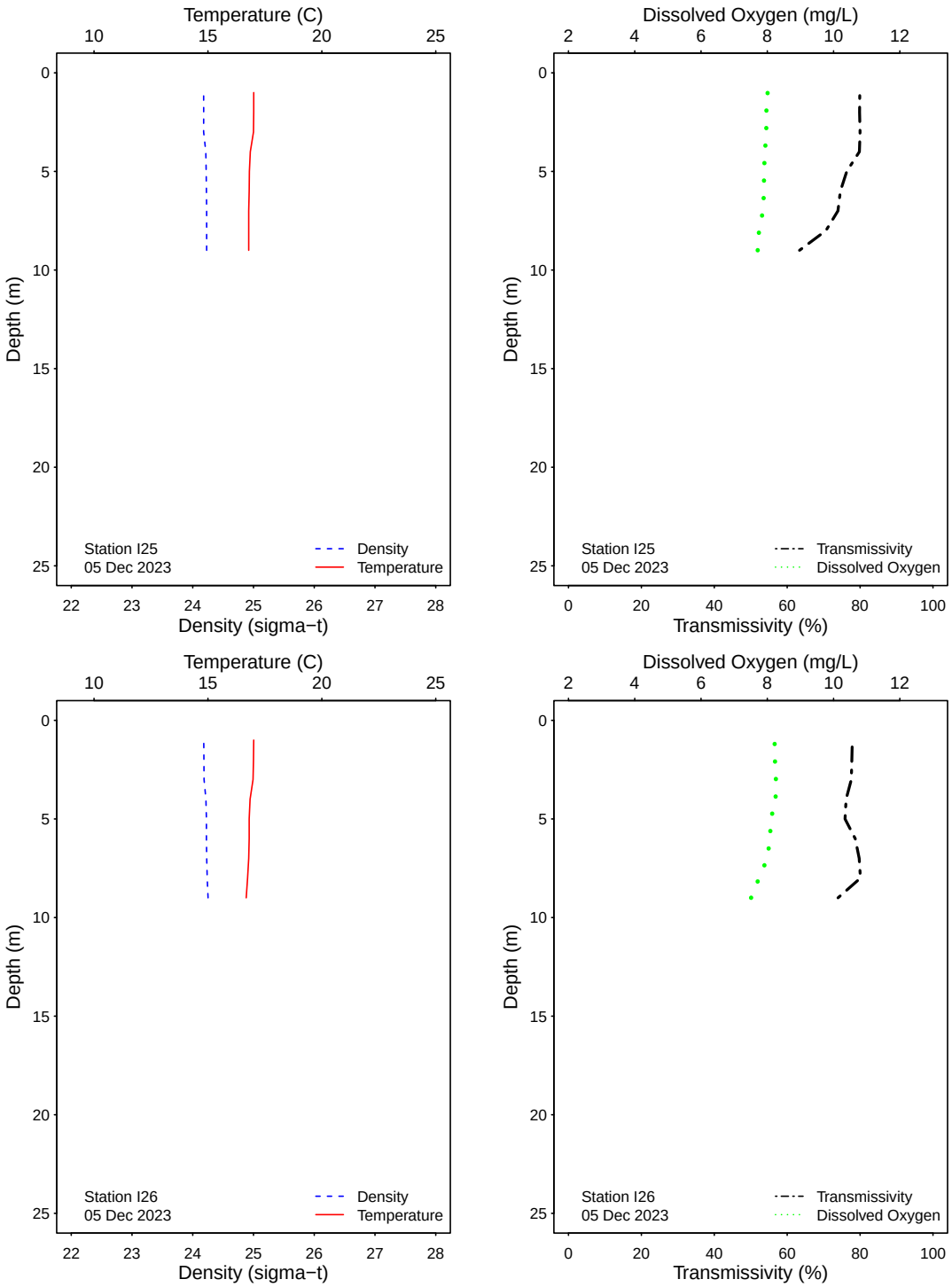


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

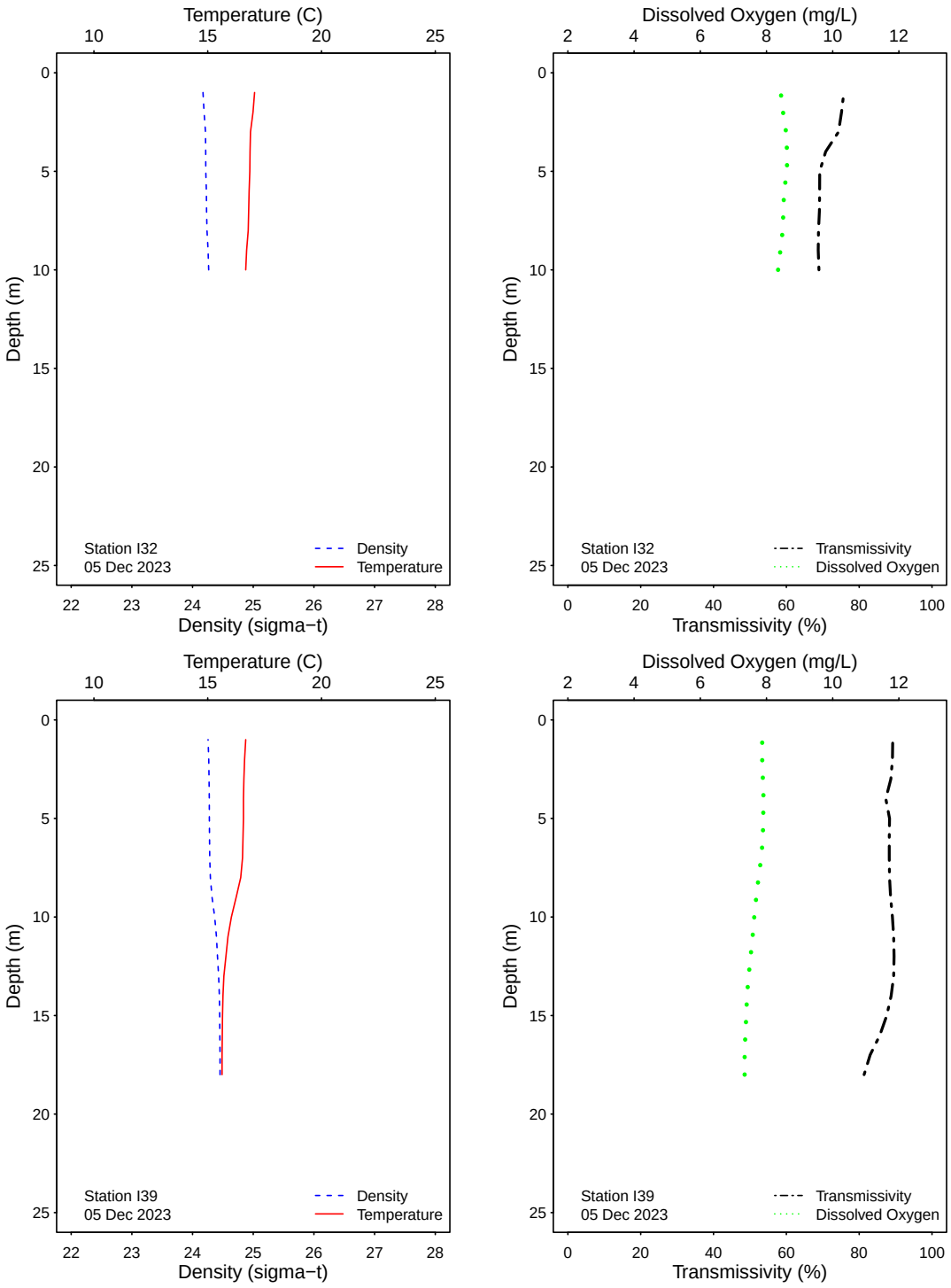


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

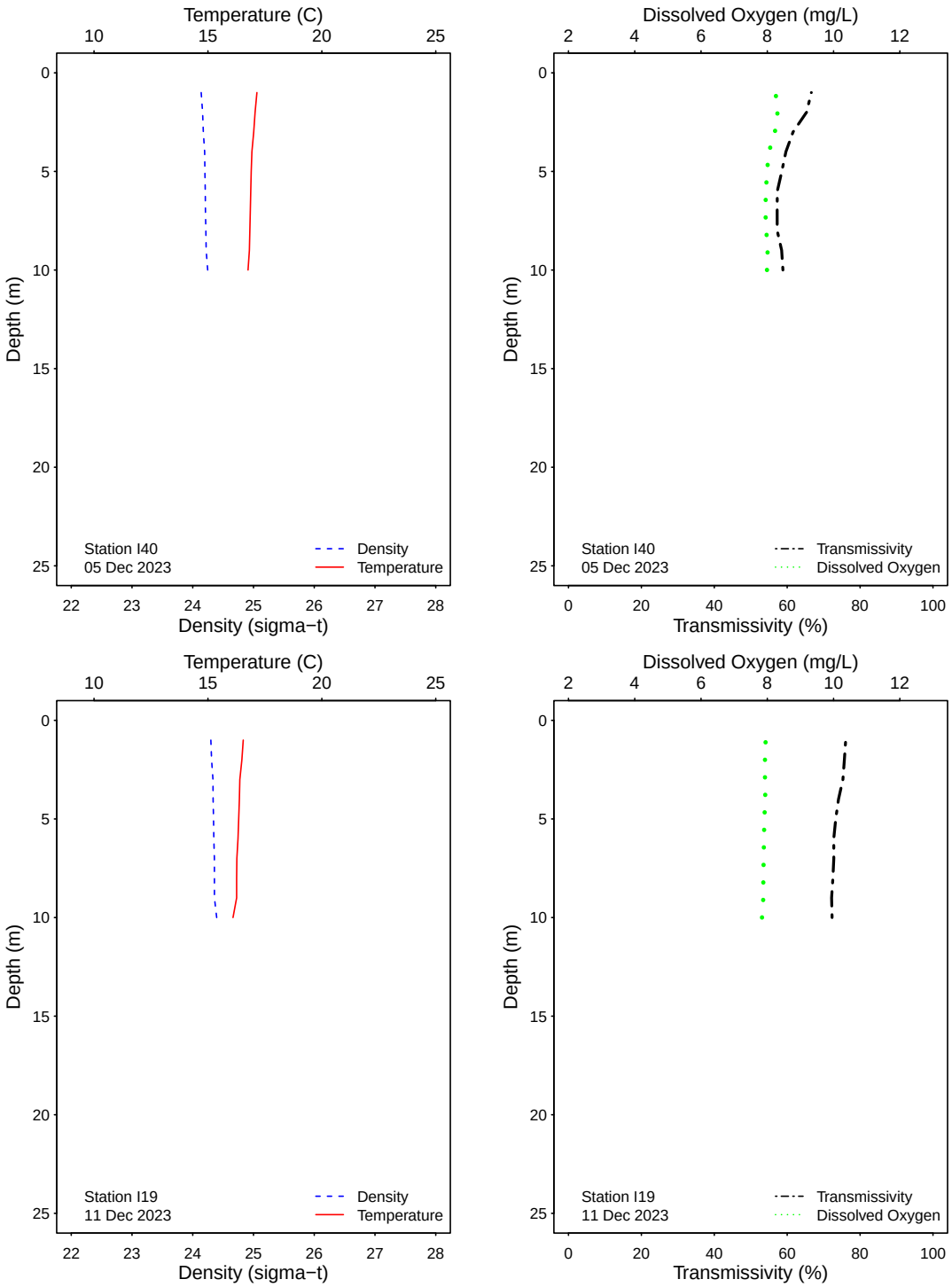


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

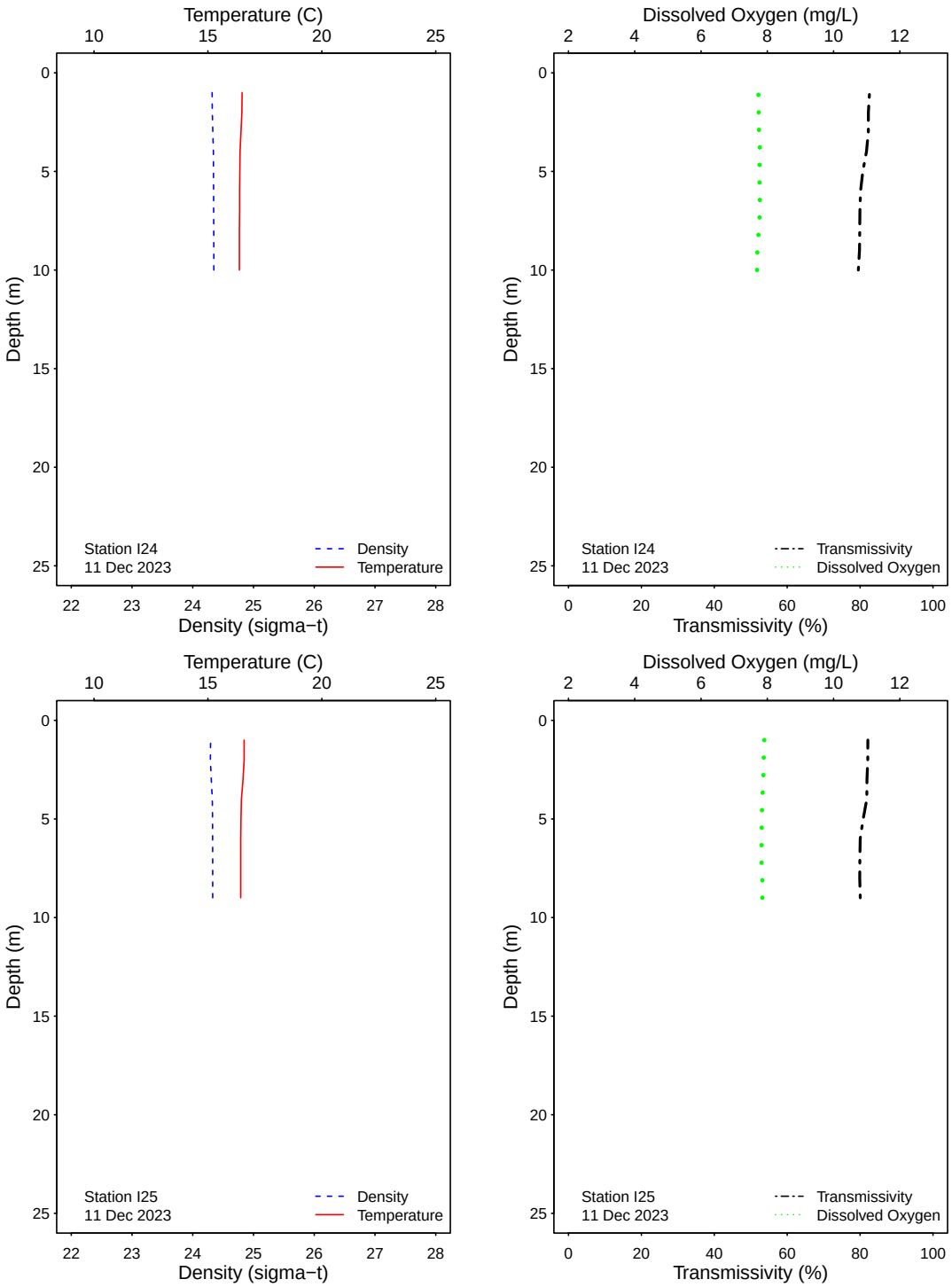


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

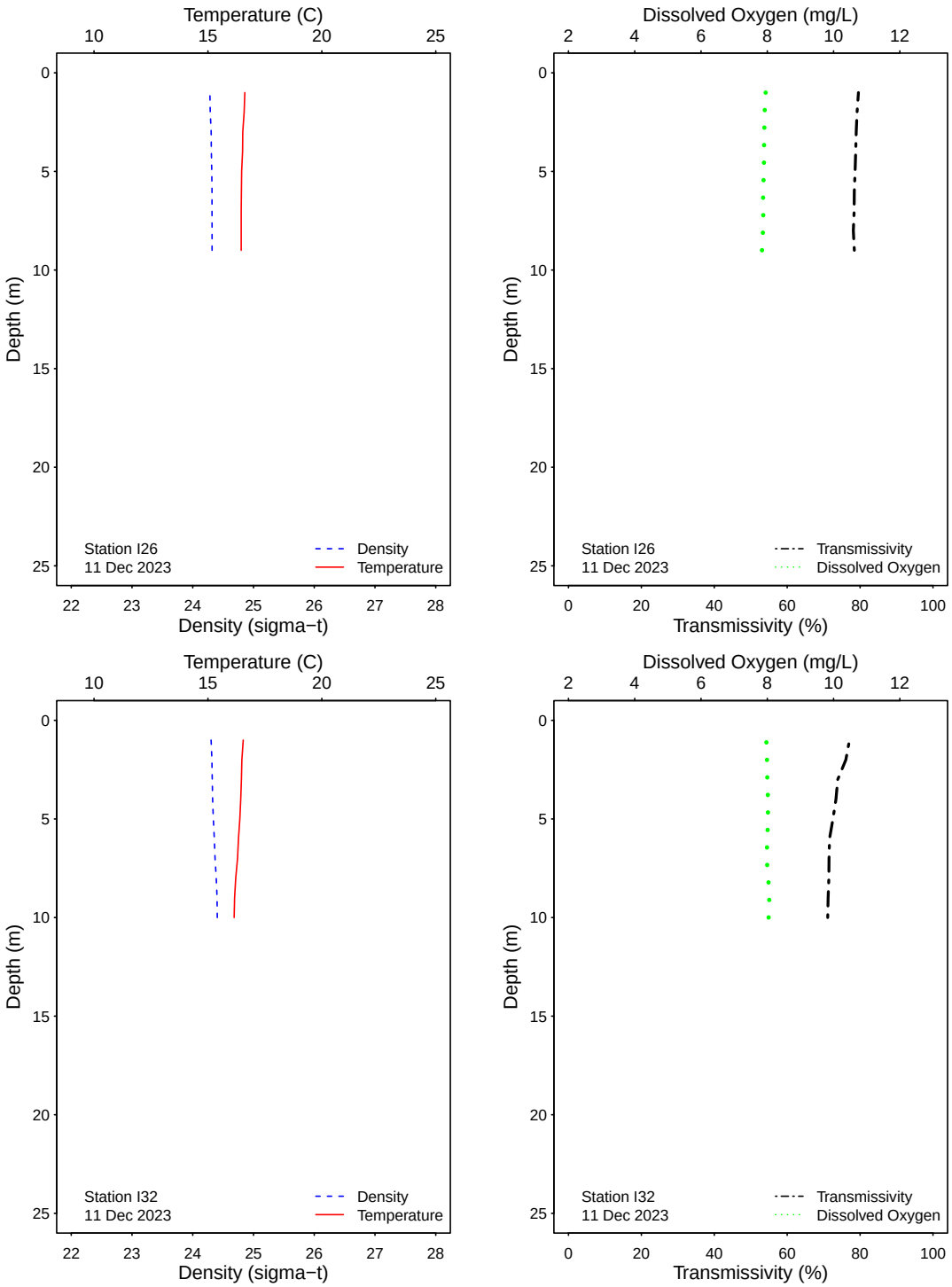
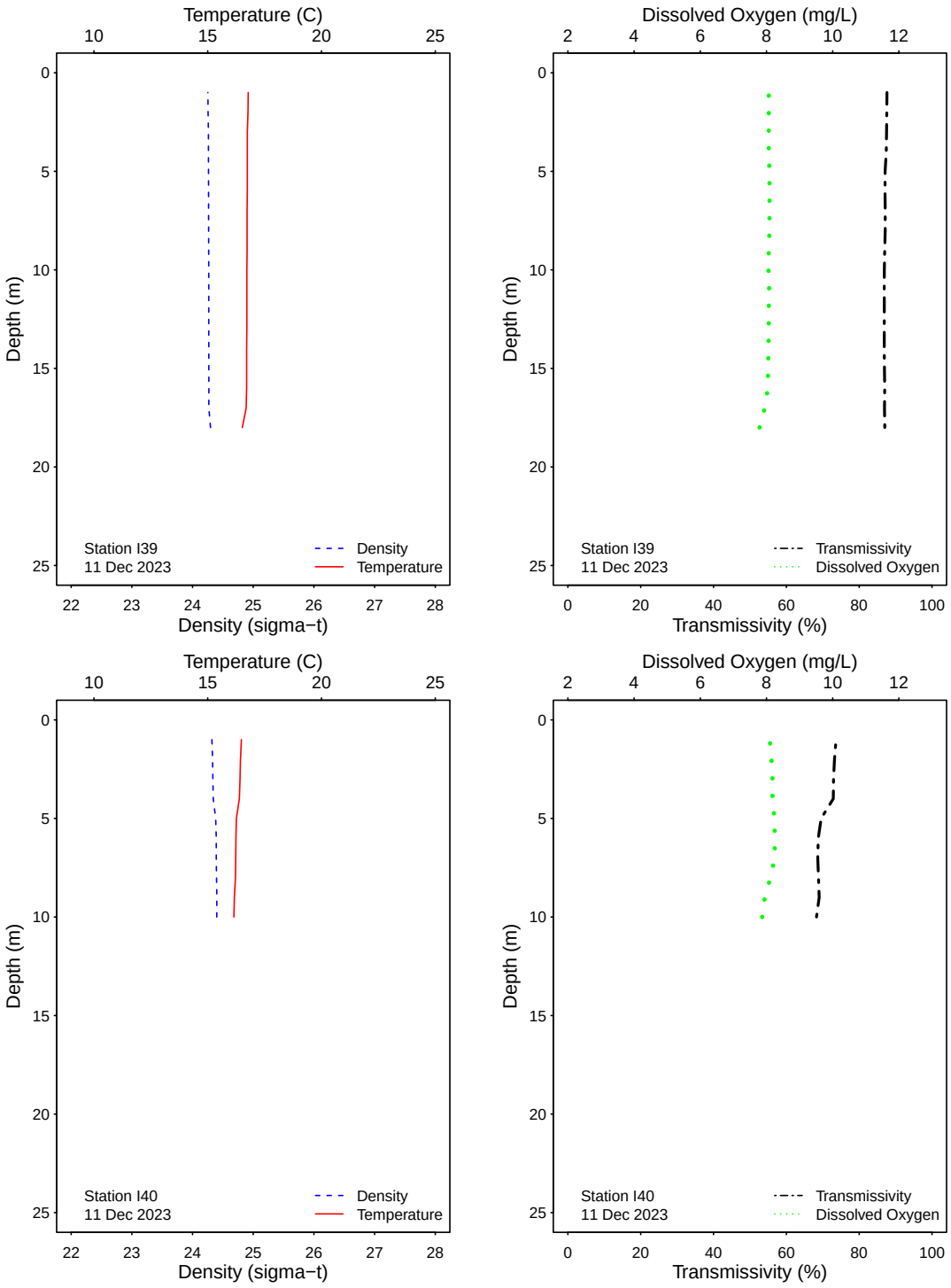


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.



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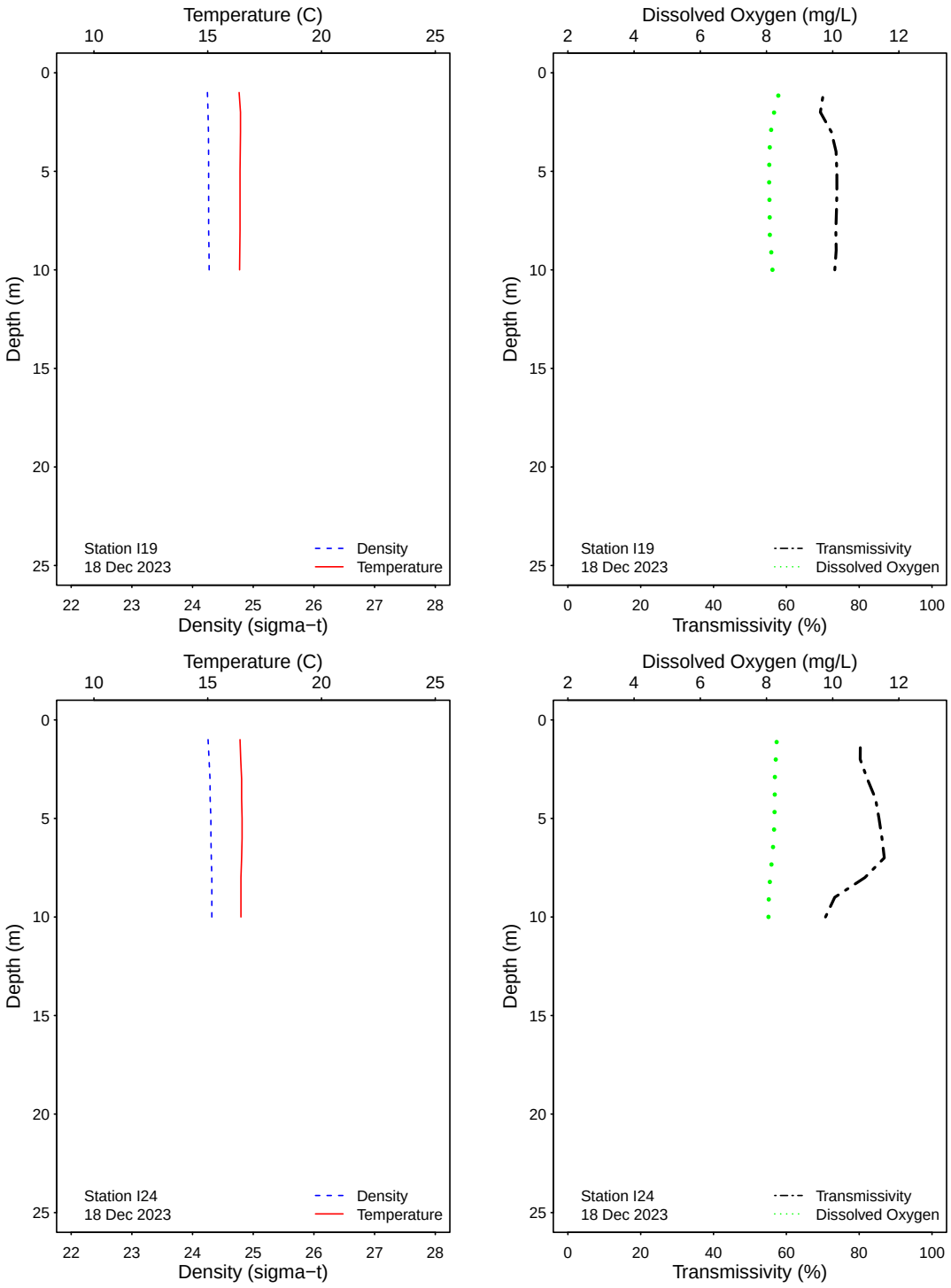

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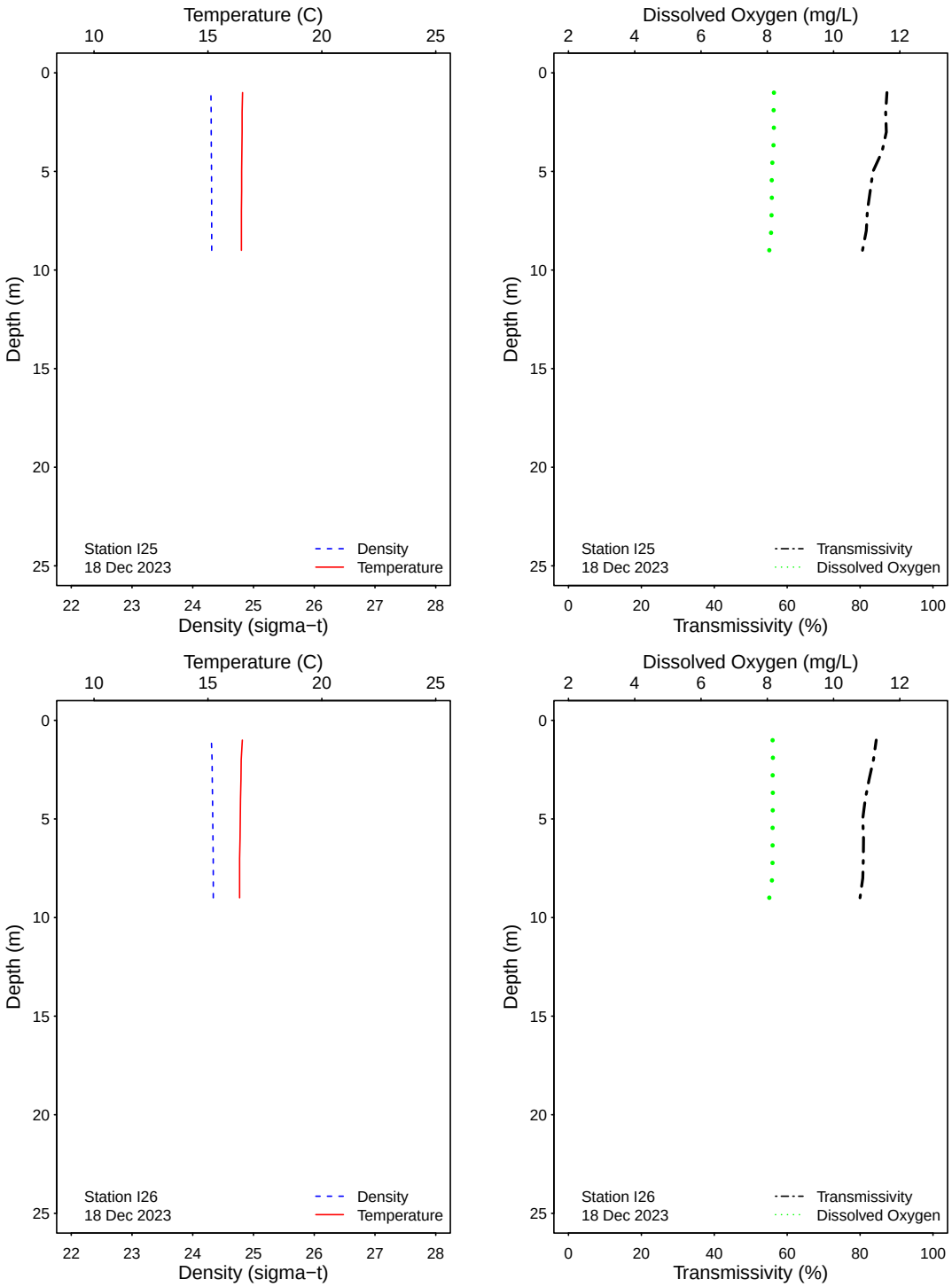

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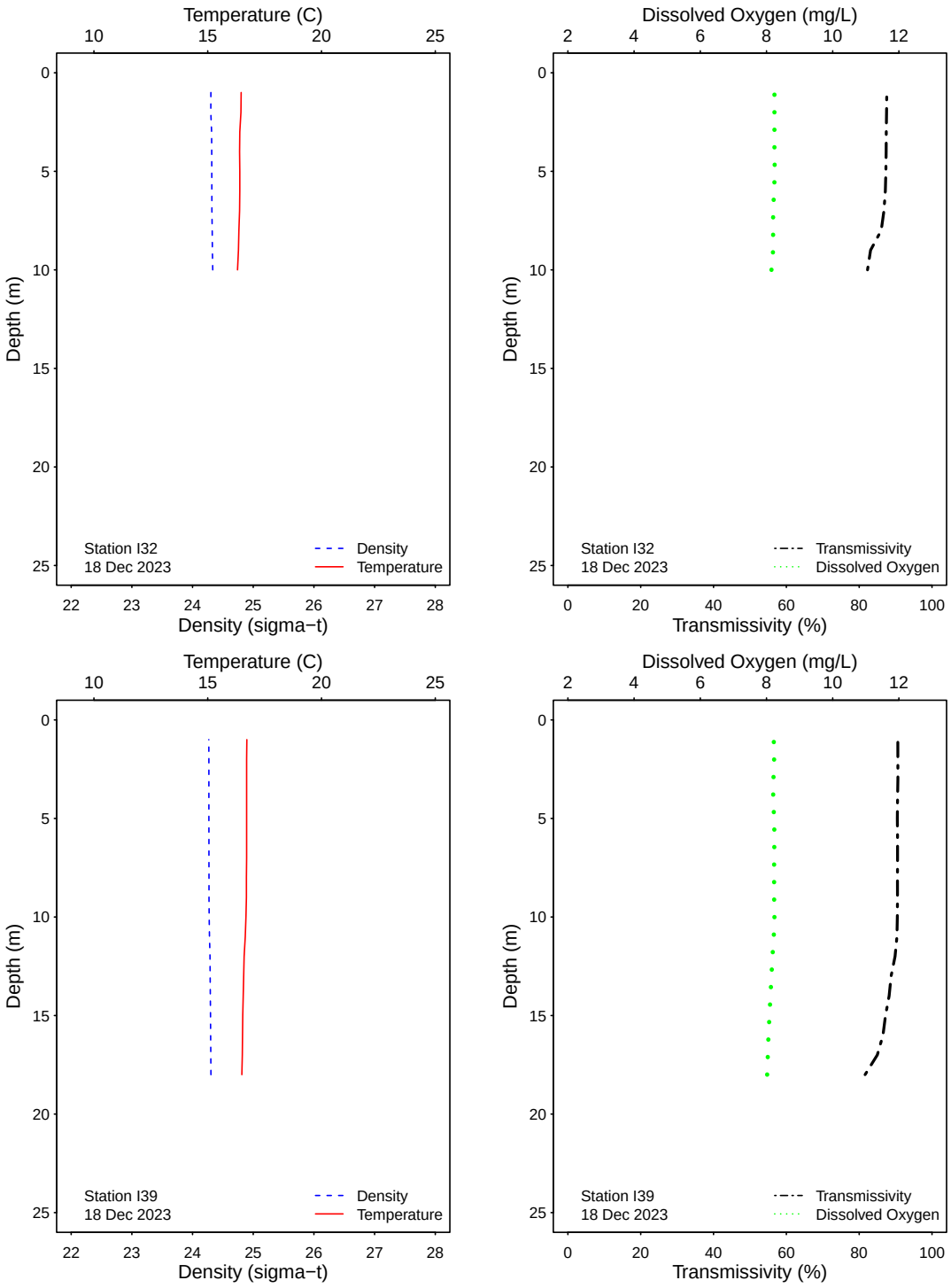


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

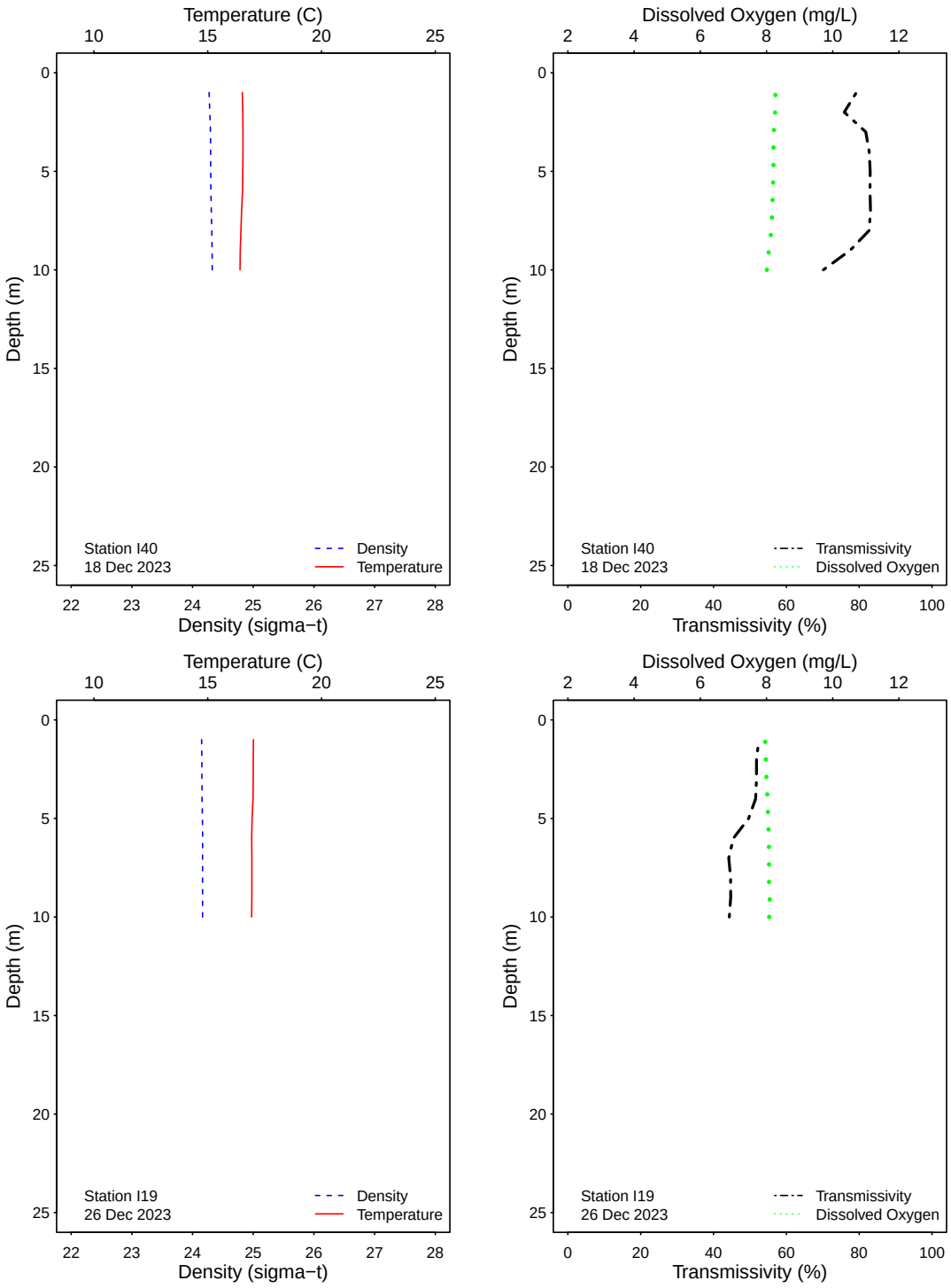
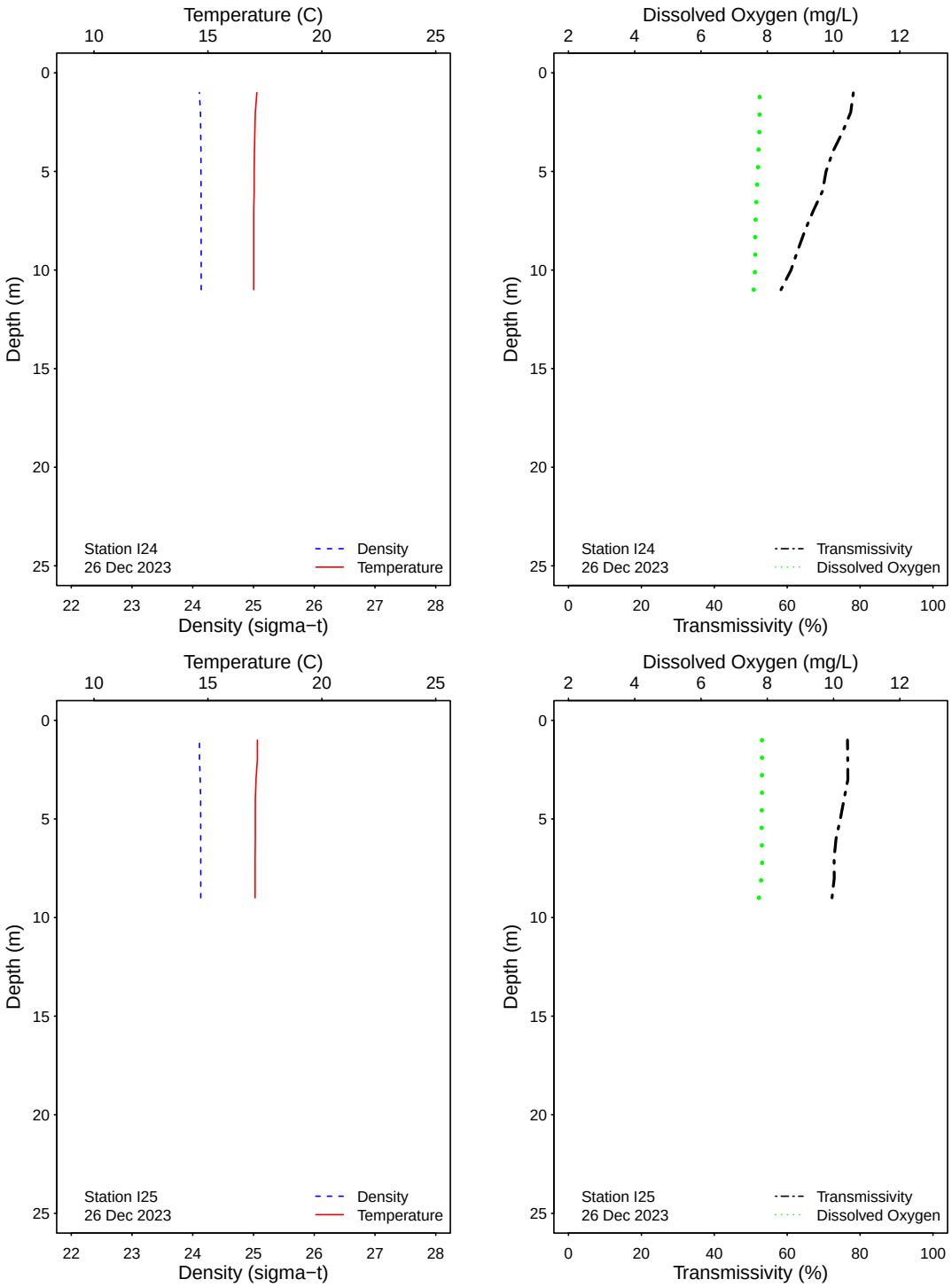


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.



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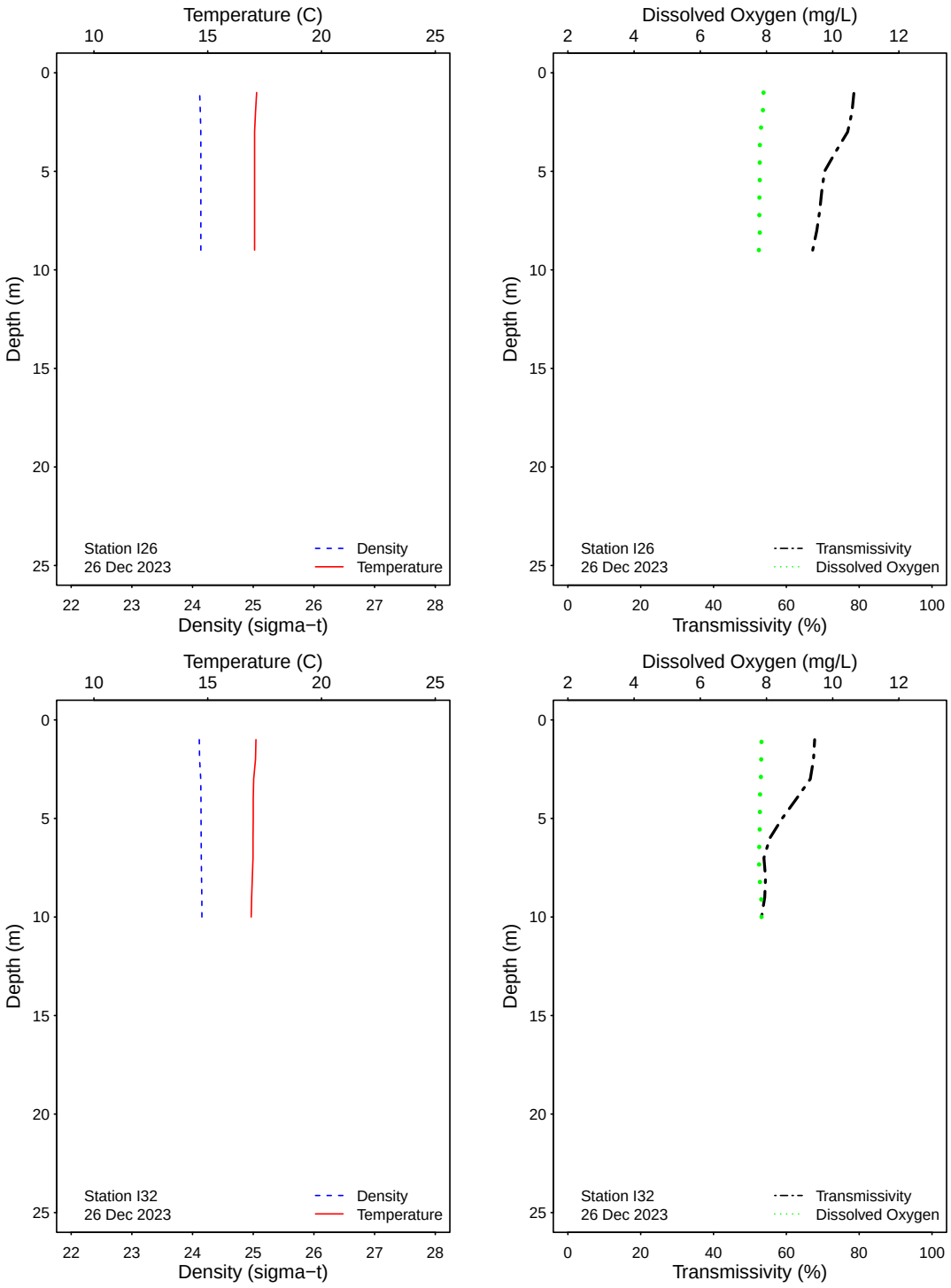

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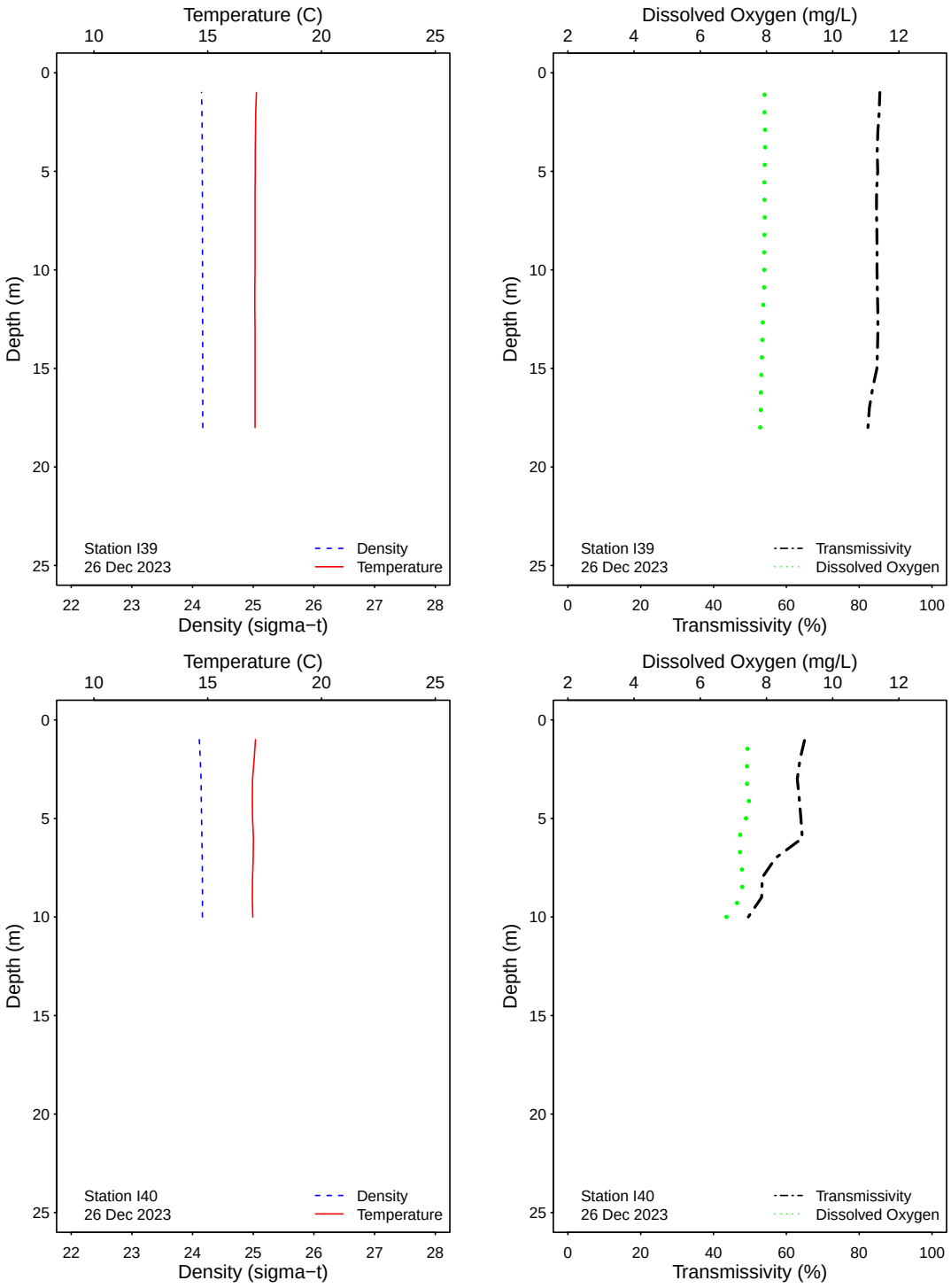

Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

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APPENDIX A

Quality Assurance

Table A.1

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

Station	Date	Depth	Analyst	Procedure	Total	Fecal	Entero
I19	05 Dec 2023	6		LAB DUPLICATE	3400e	560	76
I19	11 Dec 2023	6		LAB DUPLICATE	760	460	70
I19	18 Dec 2023	6		LAB DUPLICATE	3000e	620	220e
I19	26 Dec 2023	6		LAB DUPLICATE	3400e	540	110
I40	05 Dec 2023	6		LAB DUPLICATE	5600	880	300e
I40	11 Dec 2023	6		LAB DUPLICATE	840	540	86
I40	18 Dec 2023	6		LAB DUPLICATE	94	32e	12e
I40	26 Dec 2023	6		LAB DUPLICATE	<20	<2	2e
S12	05 Dec 2023			FIELD DUPLICATE	<20	<2	<2
S12	05 Dec 2023			LAB DUPLICATE	<20	2e	2e
S12	11 Dec 2023			FIELD DUPLICATE	<2	<2	<2
S12	11 Dec 2023			LAB DUPLICATE	<2	2e	2e
S12	19 Dec 2023			FIELD DUPLICATE	580	140e	80
S12	19 Dec 2023			LAB DUPLICATE	2000e	240e	110
S12	26 Dec 2023			FIELD DUPLICATE	<20	10e	100
S12	26 Dec 2023			LAB DUPLICATE	20e	6e	110

ns = not sampled
ND = no data

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