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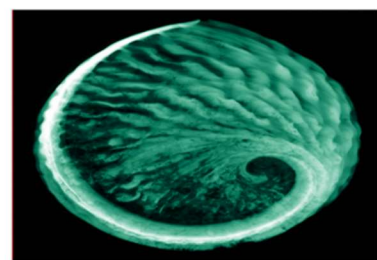
# Hong Kong Offshore LNG Terminal Project

## Water Quality Monitoring Report for First Year of Operation of the LNG Terminal – January to March 2024



DATE  
12 April 2024

PROJECT NO.  
0505354



## DOCUMENT DETAILS

DOCUMENT TITLE	Hong Kong Offshore LNG Terminal Project
DOCUMENT SUBTITLE	Water Quality Monitoring Report for First Year of Operation of the LNG Terminal – January to March 2024
PROJECT NUMBER	0505354
Date	12 April 2024
Version	0
Author	BW
Client name	CAPCO, HK Electric, HKLTL

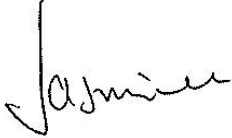
## DOCUMENT HISTORY

				ERM APPROVAL TO ISSUE		
	REVISION	AUTHOR	REVIEWED BY	NAME	DATE	
	0	BW	RC	JN	12/4/2024	

# Hong Kong Offshore LNG Terminal Project

## Water Quality Monitoring Report for First Year of Operation of the LNG Terminal – January to March 2024

0505354



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**Hong Kong Offshore LNG Terminal  
Environmental Certification Sheet**  
**FEP-01/558/2018/A, FEP-02/558/2018/A and FEP-03/558/2018/B**


**Reference Document/Plan**

Document/ <del>Plan</del> to be Certified/ Verified:	Water Quality Monitoring Report for First Year of Operation of the LNG Terminal – January to March 2024
Date of Report:	12 April 2024
Date prepared by ET:	12 April 2024
Date received by IEC:	12 April 2024

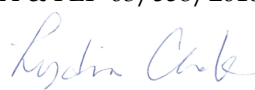
**Reference EP Requirement**

EP Condition:	Condition No. 5.1 of FEP-01/558/2018/A, FEP-02/558/2018/A & FEP-03/558/2018/B
The Permit Holder shall implement the EM&A programme in accordance with the procedures and requirements as set out in the Updated EM&A Manual.	

**ET Certification**

I hereby certify that the above referenced document/ <del>plan</del> complies with the above referenced condition of FEP-01/558/2018/A, FEP-02/558/2018/A & FEP-03/558/2018/B.	
Mr Raymond Chow, Environmental Team Leader:	 Date: 15 April 2024

**IEC Verification**

I hereby verify that the above referenced document/ <del>plan</del> complies with the above referenced condition of FEP-01/558/2018/A, FEP-02/558/2018/A & FEP-03/558/2018/B.	
Ms Lydia Chak, Independent Environmental Checker:	 Date: 15 April 2024

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FIGURE 1.1 INDICATIVE LOCATION OF KEY PROJECT COMPONENTS

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FIGURE 2.1 WATER QUALITY MONITORING LOCATIONS

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## EXECUTIVE SUMMARY

To support the increased use of natural gas in Hong Kong from 2020 onwards, Castle Peak Power Company Limited (CAPCO) and The Hongkong Electric Co., Ltd. (HK Electric) have identified that the development of an offshore liquefied natural gas (LNG) receiving terminal in Hong Kong using Floating Storage and Regasification Unit (FSRU) technology ('the Project') presents a viable additional gas supply option that will provide energy security through access to competitive gas supplies from world markets. The Project involves the construction and operation of an offshore LNG import facility to be located in the southern waters of Hong Kong, a double berth jetty, and subsea pipelines that connect to the gas receiving stations (GRS) at the Black Point Power Station (BPPS) and the Lamma Power Station (LPS). The Project commenced operation on 3 July 2023. In accordance with the *Updated EM&A Manual* of the Project, operation phase water quality monitoring is undertaken during the first year of operation for the Project. This is the water quality monitoring report presenting the operation phase water quality monitoring carried out between January and March 2024.

During the reporting period, operation phase water quality monitoring was conducted at three monitoring locations once per week for 13 sessions between 2 January and 28 March 2024. There were no Project-related Action and Limit Level exceedances for the operation phase water quality monitoring in the reporting period. Overall, deterioration of water quality and indirect impacts at water and ecological sensitive receivers were not detected. The operation of the Project did not result in unacceptable water quality impacts to the nearby water and ecological sensitive receivers, which aligns with the EIA study predictions.

There were no environmental complaints, notification of summons and successful prosecutions recorded for the operation of the Project in the reporting period.

The monitoring activities conducted in the reporting period have been reviewed and are considered effective. As such, no change to the monitoring methodology is recommended. Based on the EM&A findings for the reporting period, the environmental performance for the operation of the Project is generally in line with the EIA predictions and considered acceptable.

# 1. INTRODUCTION

## 1.1 BACKGROUND

To support the increased use of natural gas in Hong Kong from 2020 onwards, Castle Peak Power Company Limited (CAPCO) and The Hongkong Electric Co., Ltd. (HK Electric) have identified that the development of an offshore liquefied natural gas (LNG) receiving terminal in Hong Kong using Floating Storage and Regasification Unit (FSRU) technology ('the Project') presents a viable additional gas supply option that will provide energy security through access to competitive gas supplies from world markets. The Project involves the construction and operation of an offshore LNG import facility to be located in the southern waters of Hong Kong, a double berth jetty, and subsea pipelines that connect to the gas receiving stations (GRS) at the Black Point Power Station (BPPS) and the Lamma Power Station (LPS).

The Environmental Impact Assessment (EIA) Report for the Project was submitted to the Environmental Protection Department (EPD) of the HKSAR Government in May 2018. The EIA Report (EIAO Register No. AEIAR-218/2018) was approved by EPD and the associated Environmental Permit (EP) (EP-558/2018) was issued in October 2018.

An application for Further Environmental Permits (FEPs) were made on 24 December 2019 to demarcate the works between the different parties. The following FEPs were issued on 17 January 2020 and the EP under EP-558/2018 was surrendered on 5 March 2020.

- the double berth jetty at LNG Terminal under the Hong Kong LNG Terminal Limited (HKLTL), joint venture between CAPCO and HK Electric (FEP-01/558/2018/A) <sup>(1)</sup> – construction commenced on 27 November 2020;
- the subsea gas pipeline for the BPPS and the associated GRS in the BPPS under CAPCO (FEP-03/558/2018/B) <sup>(2)</sup> – construction commenced on 23 September 2020; and
- the subsea gas pipeline for the LPS and the associated GRS in the LPS under HK Electric (FEP-02/558/2018/A) <sup>(3)</sup> – construction commenced on 13 December 2020.

The location of these components is shown in **Figure 1.1**.

The Project commenced operation on 3 July 2023. This is the quarterly report for the operation phase water quality monitoring for the LNG Terminal which summarises the key monitoring results for the reporting period of January to March 2024 in accordance with the *Updated EM&A Manual* of the Project.

## 1.2 STRUCTURE OF THE REPORT

The remainder of the report is structured as follows:

- 
- <sup>(1)</sup> Application for variation of an environmental permit for FEP-01/558/2018 was undertaken and the latest FEP (FEP-01/558/2018/A) was issued on 6 November 2020.
  - <sup>(2)</sup> Application for variation of an environmental permit for FEP-03/558/2018/A was undertaken and the latest FEP (FEP-03/558/2018/B) was issued on 25 August 2021.
  - <sup>(3)</sup> Application for variation of an environmental permit for FEP-02/558/2018 was undertaken and the latest FEP (FEP-02/558/2018/A) was issued on 22 December 2020.



WATER QUALITY MONITORING REPORT FOR FIRST YEAR OPERATION OF  
THE LNG TERMINAL PROJECT – JANUARY TO MARCH 2024

- **Section 2** details the monitoring locations, monitoring methodology, QA/QC requirements, and the monitoring results;
- **Section 3** provides the conclusion of this operation phase water quality monitoring.

# Legend

- Boundary of HKSAR
- Proposed GRS Location at BPPS
- Proposed GRS Location at LPS
- Proposed Route of BPPS Pipeline
- Proposed Route of LPS Pipeline
- Proposed Site for LNG Terminal
- Proposed LNG Terminal Safety Zone

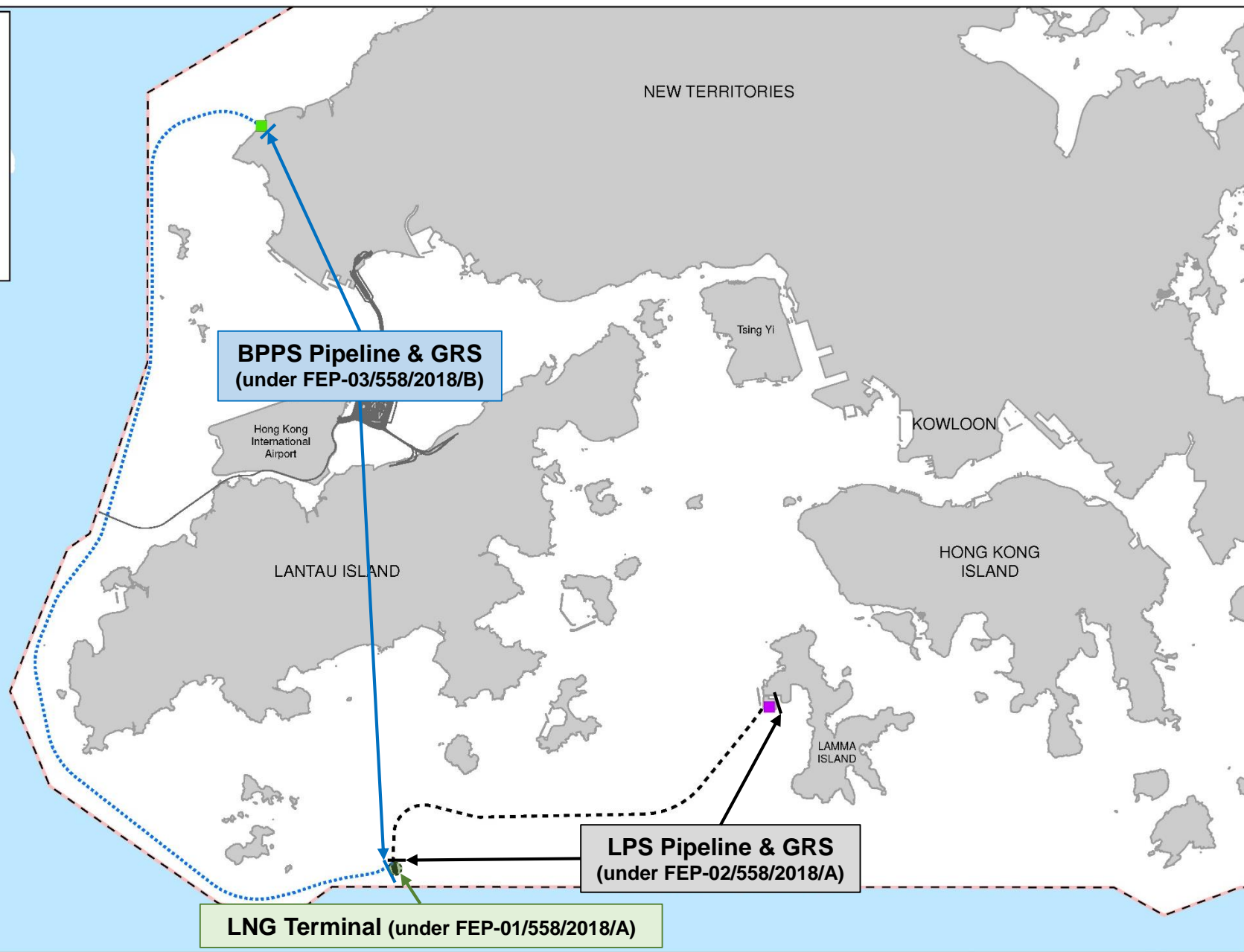


Figure 1.1

Indicative Location of Key Project Components



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Date: August 2021

## 2. OPERATIONAL PHASE WATER QUALITY MONITORING

In accordance with the *Updated EM&A Manual* of the Project, operation phase water quality monitoring would be conducted once a week for one year after operation of the LNG Terminal. Details of the operation phase water quality monitoring under this Project are presented in the following sections.

### 2.1 MONITORING LOCATIONS

Operation phase water quality monitoring was conducted at 3 monitoring stations around the LNG Terminal, comprising 1 sensitive receiver station, 1 ebb-tide control station and 1 flood-tide control station. The locations of the monitoring stations are presented in **Figure 2.1**. The coordinates and description of monitoring stations are summarised in **Table 2.1**.

**TABLE 2.1 LOCATION OF WATER QUALITY MONITORING STATIONS**

Station	Easting	Northing	Description
IM6	814073	802029	Boundary of South Lantau Marine Park
E2	813367	808213	Control Station for Ebb Tide
F3	815032	801161	Control Station for Flood Tide

### 2.2 MONITORING METHODOLOGY

#### 2.2.1 MONITORING PARAMETERS AND FREQUENCY

The parameters that have been selected for measurement *in situ* and in the laboratory are those that were either determined in the EIA to be those with the highest potential to be affected by the Project or are a standard check on water quality conditions. **Table 2.2** summarises the monitoring parameters, monitoring period and frequencies of the water quality monitoring. The measurement of monitoring parameters followed the standard methods and detection limit requirements as stated in *Table 5.2* of the *Updated EM&A Manual*.

TABLE 2.2 WATER QUALITY MONITORING PARAMETERS AND FREQUENCY

Monitoring Station	Parameters	Depth	Frequency and Replication
<u>Sensitive Receiver Station</u> IM6  <u>Control Stations</u> Ebb tide - E2 Flood tide - F3	<ul style="list-style-type: none"> <li>Dissolved Oxygen (DO) (mg/L)</li> <li>Dissolved Oxygen Saturation (DOS) (%)</li> <li>Temperature (°C)</li> <li>pH</li> <li>Turbidity (NTU)</li> <li>Salinity (ppt)</li> <li>Water depth (m)</li> <li>Total Residual Chlorine (TRC) (mg/L)</li> <li>Suspended Solid (SS) (mg/L)</li> <li>Total Inorganic Nitrogen (TIN) (mg/L)</li> <li>5-day Biochemical Oxygen Demand (BOD<sub>5</sub>) (mg/L)</li> </ul>	<ul style="list-style-type: none"> <li>Three water depths: 1 m below sea surface, mid-depth and 1 m above seabed.</li> <li>If the water depth is less than 3 m, mid-depth sampling only.</li> <li>If water depth less than 6 m, mid-depth would be omitted.</li> </ul>	<ul style="list-style-type: none"> <li>First year of operation water quality monitoring: one day per week, at mid-flood and mid-ebb tides, for one year upon the commencement of operation of the LNG Terminal. The interval between two sets of monitoring shall not be less than 36 hours.</li> <li>Two replicates of <i>in-situ</i> measurements and water samples at each depth at each station.</li> </ul>

In addition to the water quality parameters, other relevant data were also measured and recorded in Water Quality Monitoring Logs, including the location of the monitoring stations, water depth, time, weather conditions, sea conditions, tidal state, current direction and velocity, special phenomena and work activities undertaken around the monitoring and works area that may influence the monitoring results.

### 2.2.2 MONITORING EQUIPMENT

**Table 2.3** summarises the equipment used in the monitoring works. All the monitoring equipment complied with the requirements as set out in the *Updated EM&A Manual*.

**TABLE 2.3 WATER QAULTY MONITORING EQUIPMENT**

<b>Equipment</b>	<b>Brand and Model</b>
Water Sampling Equipment	SBE 32 Carousel Water Sampler
Positioning Device	Hemisphere Vector V500
Water Depth Gauge	Knudsen 320M Single Beam Echo Sounder
Equipment for Dissolved Oxygen, Temperature, Turbidity, pH and Salinity measurements	YSI 6820, S/N: MPP16, MPP57, MPP15, MPP46 (Note 1)
Total Residual Chlorine	Hanna Instruments (Model HI761)
Equipment for Current Velocity and Direction measurements	Teledyne RDI Workhorse Sentinel ADCP

**Note 1:**

MPP16 was deployed for the monitoring conducted between 2 January 2024 and 15 February 2024, except 31 January and 8 February 2024;

MPP57 was deployed for the monitoring conducted on 31 January 2024;

MPP15 was deployed for the monitoring conducted on 8 February 2024;

MPP46 was deployed for the monitoring conducted between 23 February 2024 and 28 March 2024.

**2.2.3 OPERATIONAL/ ANALYTICAL PROCEDURES**

At each monitoring station, two consecutive measurements of DO level, DO Saturation, Temperature, Turbidity, Salinity and pH were taken at each sampling depth. Where the difference in the value between the first and second readings of each set was more than 25% of the value of the first reading, the reading was discarded, and further readings were taken. Two water samples were collected for laboratory analysis of SS, TIN and BOD<sub>5</sub>. Following sample collection, water samples were stored in high density polythene bottles (1L) with no preservatives added, packed in ice (cooled to 4°C without being frozen) and kept in dark during both on-site temporary storage and transfer to the testing laboratory. The samples were delivered to the laboratory as soon as possible and the laboratory determination works started within 24 hours after collection of the water samples.

The testing of SS, TIN and BOD<sub>5</sub> for all monitoring stations was conducted by a Hong Kong Laboratory Accreditation Scheme (HOKLAS) accredited laboratory, ALS Technichem (HK) Pty Ltd. (HOKLAS Registration No. 066). Comprehensive quality assurance and control procedures were in place in order to ensure quality and consistency in results.

**2.2.4 ACTION AND LIMIT LEVELS FOR MARINE WATER QUALITY MONITORING**

The Action and Limit Levels for operation phase water quality monitoring have been established with reference to *Table 5.5 of the Updated EM&A Manual*. Action and Limit Levels of key assessment parameters for operation phase marine water quality monitoring are summarised in **Table 2.4** which have been agreed with EPD.

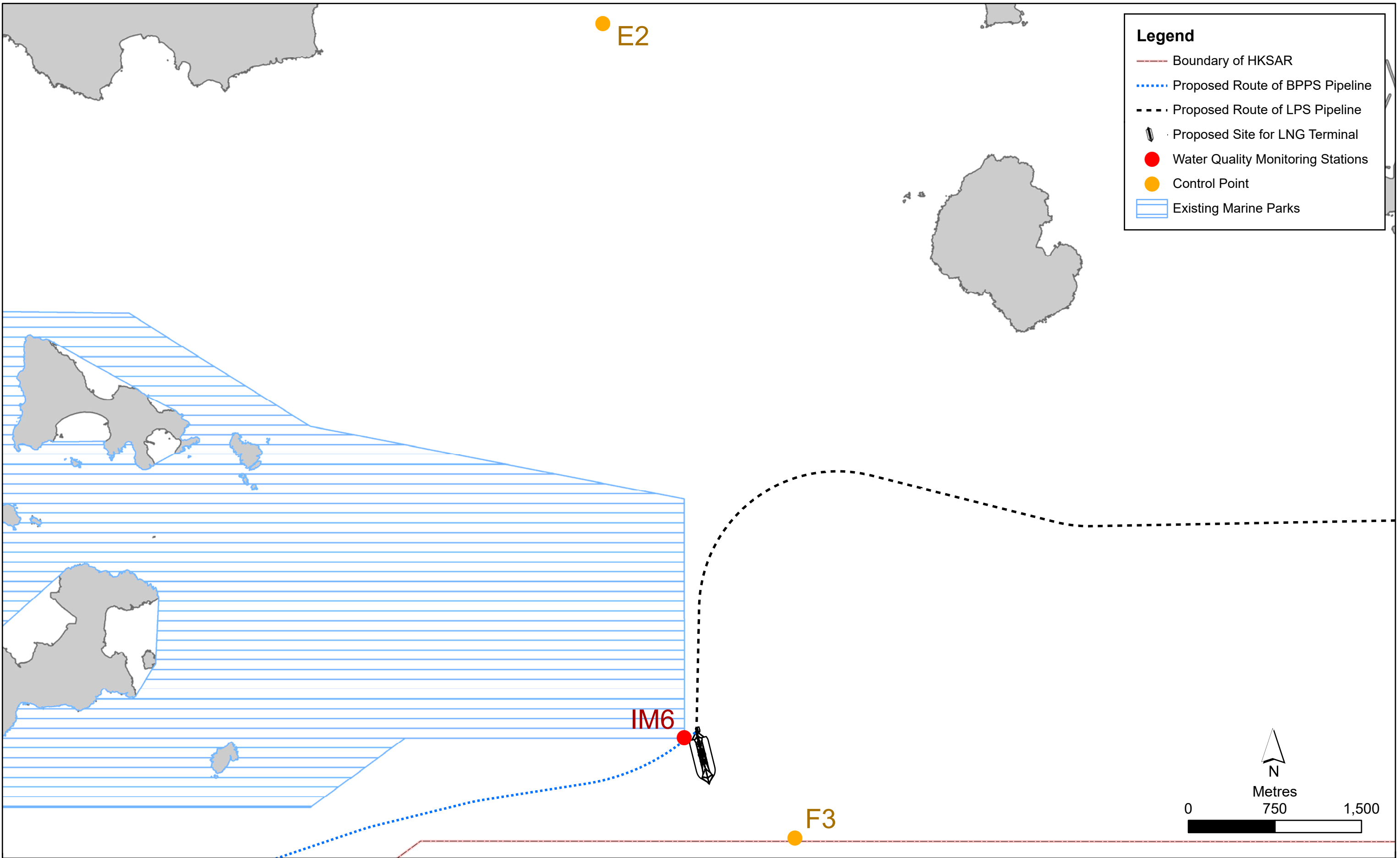


Figure 2.1

Water Quality Monitoring Locations



**TABLE 2.4 ACTION AND LIMIT LEVELS FOR OPERATION PHASE WATER QUALITY  
MONITORING**

Parameters	Action Level	Limit Level
<b><i>First-year Operation Phase Water Quality Monitoring</i></b>		
DO in mg L <sup>-1</sup> <sup>a</sup>	<u>Surface and Middle</u> 4.0 mg L <sup>-1</sup>  <u>Bottom</u> 2.2 mg L <sup>-1</sup>	<u>Surface and Middle</u> 3.0 mg L <sup>-1</sup>  <u>Bottom</u> 1.5 mg L <sup>-1</sup>
Water Temperature in °C (Depth-averaged <sup>b</sup> ) <sup>c</sup>	± 1.5 °C of baseline data, and ± 1.5 °C of the relevant control station's water temperature at the same tide of the same day	± 2.0 °C of baseline data, and ± 2.0 °C of the relevant control station's water temperature at the same tide of the same day
Turbidity in NTU (Depth-averaged <sup>b</sup> ) <sup>c</sup>	18.3 NTU, and 120% of the relevant control station's turbidity at the same tide of the same day	30.8 NTU, and 130% of the relevant control station's turbidity at the same tide of the same day
SS in mg L <sup>-1</sup> (Depth-averaged <sup>b</sup> ) <sup>c</sup>	17.5 mg L <sup>-1</sup> , and 120% of the relevant control station's SS at the same tide of the same day	29.5 mg L <sup>-1</sup> , and 130% of the relevant control station's SS at the same tide of the same day
TIN in mg L <sup>-1</sup> (Depth-averaged <sup>b</sup> ) <sup>c</sup>	0.5 mg L <sup>-1</sup> , and 120% of the relevant control station's TIN at the same tide of the same day	0.8 mg L <sup>-1</sup> , and 130% of the relevant control station's TIN at the same tide of the same day
BOD <sub>5</sub> in mg L <sup>-1</sup> (Depth-averaged <sup>b</sup> ) <sup>c</sup>	1.9 mg L <sup>-1</sup> , and 120% of the relevant control station's BOD <sub>5</sub> at the same tide of the same day	2.8 mg L <sup>-1</sup> , and 130% of the relevant control station's BOD <sub>5</sub> at the same tide of the same day
TRC in mg L <sup>-1</sup> (Depth-averaged <sup>b</sup> ) <sup>c</sup>	0.02 mg L <sup>-1</sup>	0.02 mg L <sup>-1</sup>

## Notes:

- For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
- "Depth-averaged" is calculated by taking the arithmetic means of reading of all three depths.
- For water temperature, salinity, SS, turbidity, BOD<sub>5</sub>, TIN and TRC, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

The Event and Action Plan for operation phase water quality monitoring is provided in **Table 2.5**.

**TABLE 2.5 EVENT AND ACTION PLAN FOR OPERATION PHASE WATER QUALITY MONITORING**

Event	Action			
	ET	IEC	Contractor(s)	Project Proponents
Action Level being exceeded by one sampling day	<ol style="list-style-type: none"> <li>1. Repeat <i>in-situ</i> measurement to confirm findings;</li> <li>2. Check monitoring data, plant, equipment and Contractor(s)'s working methods;</li> <li>3. Identify source(s) of impact and record in notification of exceedance;</li> <li>4. Inform IEC, Contractor(s) and Project Proponents.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET and Contractor(s)'s working methods.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Check plant and equipment and rectify unacceptable practice.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing.</li> </ol>
Action Level being exceeded by two or more consecutive sampling days	<ol style="list-style-type: none"> <li>1. Repeat <i>in-situ</i> measurement to confirm findings;</li> <li>2. Check monitoring data, plant, equipment and Contractor(s)'s working methods;</li> <li>3. Identify source(s) of impact and record in notification of exceedance;</li> <li>4. Inform IEC, Contractor(s) and Project Proponents;</li> <li>5. Discuss with IEC and Contractor(s) on additional mitigation measures and ensure that they are implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET and Contractor(s)'s working methods;</li> <li>2. Discuss with ET and Contractor(s) on additional mitigation measures and advise Project Proponents accordingly;</li> <li>3. Assess the effectiveness of the implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Check plant and equipment and rectify unacceptable practice;</li> <li>3. Consider changes of working methods;</li> <li>4. Discuss with ET and IEC on additional mitigation measures and propose them to Project Proponents within 3 working days;</li> <li>5. Implement the agreed mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Discuss with the IEC on the proposed additional mitigation measures and agree on the mitigation measures to be implemented;</li> <li>3. Ensure additional mitigation measures are properly implemented.</li> </ol>



Event	Action			
	ET	IEC	Contractor(s)	Project Proponents
Limit Level being exceeded by one sampling day	<ol style="list-style-type: none"> <li>1. Repeat <i>in situ</i> measurement to confirm findings;</li> <li>2. Check monitoring data, plant, equipment and Contractor(s)'s working methods;</li> <li>3. Identify source(s) of impact and record in notification of exceedance;</li> <li>4. Inform IEC, Contractor(s), Project Proponents and EPD;</li> <li>5. Discuss with IEC and Contractor(s) on additional mitigation measures and ensure that they are implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET and Contractor(s)'s working methods;</li> <li>2. Discuss with ET and Contractor(s) on additional mitigation measures and advise Project Proponents accordingly;</li> <li>3. Assess the effectiveness of the implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Check plant and equipment and rectify unacceptable practice;</li> <li>3. Critically review the need to change working methods;</li> <li>4. Discuss with ET and IEC on additional mitigation measures and propose them to Project Proponents within 3 working days;</li> <li>5. Implement the agreed mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Discuss with the IEC on the proposed additional mitigation measures and agree on the mitigation measures to be implemented;</li> <li>3. Ensure additional mitigation measures are properly implemented;</li> <li>4. Request Contractor(s) to critically review the working methods.</li> </ol>
Limit Level being exceeded by two or more consecutive sampling days	<ol style="list-style-type: none"> <li>1. Repeat <i>in situ</i> measurement to confirm findings;</li> <li>2. Check monitoring data, plant, equipment and Contractor(s)'s working methods;</li> <li>3. Identify source(s) of impact and record in notification of exceedance;</li> <li>4. Inform IEC, Contractor(s), Project Proponents and EPD;</li> <li>5. Discuss with IEC and Contractor(s) on additional mitigation measures and ensure that they are implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET and Contractor(s)'s working methods;</li> <li>2. Discuss with ET and Contractor(s) on additional mitigation measures and advise Project Proponents accordingly;</li> <li>3. Assess the effectiveness of the implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Check plant and equipment and rectify unacceptable practice;</li> <li>3. Critically review the need to change working methods;</li> <li>4. Discuss with ET and IEC on additional mitigation measures and propose them to Project Proponents within 3 working days;</li> <li>5. Implement the agreed mitigation measures;</li> <li>6. As directed by Project Proponents, slow down or stop all or part of the marine construction works until no exceedance of Limit Level.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Discuss with the IEC on the proposed additional mitigation measures and agree on the mitigation measures to be implemented;</li> <li>3. Ensure additional mitigation measures are properly implemented;</li> <li>4. Request Contractor(s) to critically review the working methods;</li> <li>5. Consider and instruct, if necessary, the Contractor(s) to slow down or to stop all or part of the marine construction works until no exceedance of Limit Level.</li> </ol>

## 2.3 QA/QC REQUIREMENTS

### 2.3.1 CALIBRATION OF IN-SITU INSTRUMENTS

*In situ* monitoring equipment for the measurement of DO, Temperature, Turbidity, pH and Salinity was checked, calibrated and certified by a laboratory accredited under HOKLAS before use, while the test kit for TRC was checked against the calibration check set provided by the manufacturer before commencement of monitoring. Copies of the calibration certificates for the measuring equipment for DO, Temperature, Turbidity, pH and Salinity are attached in **Annex A**. The *in situ* monitoring equipment for the measurement of DO, Temperature, Turbidity, pH and Salinity was subsequently re-calibrated every three months throughout the water quality monitoring. Responses of sensors and electrodes were checked with certified standard solutions before each use. Wet bulb calibrations for dissolved oxygen meter were carried out before commencement of monitoring and after completion of all measurements each day.

On-site calibration of field equipment followed the "Guide to On-Site Test Methods for the Analysis of Waters", BS 1427: 2009. Sufficient stocks of spare parts were maintained for replacements when necessary. Backup monitoring equipment was also made available to ensure monitoring could proceed uninterrupted even when equipment is under maintenance, calibration etc.

### 2.3.2 DECONTAMINATION PROCEDURES

Water sampling equipment used during the course of the monitoring was decontaminated by manual washing and rinsed with clean seawater/distilled water after each sampling event. All disposable equipment was discarded after sampling.

### 2.3.3 SAMPLING MANAGEMENT AND SUPERVISION

All sampling bottles were labelled with the sample ID (including the indication of sampling station and tidal stage e.g. IM6\_ME\_S\_R1), laboratory number and sampling date. All water samples were handled under chain of custody protocols and relinquished to the laboratory representatives at locations specified by the laboratory.

### 2.3.4 QUALITY CONTROL MEASURES FOR SAMPLE TESTING

The sample testing was performed by ALS Technichem (HK) Pty Ltd. The following quality control programme was performed by the laboratory for every batch of 20 samples:

- One method blank; and
- One set of quality control (QC) samples (including method QC and sample duplicate).

## 2.4 OPERATION PHASE WATER QUALITY MONITORING RESULTS

Operation phase water quality monitoring was conducted at three monitoring locations once per week for 13 sessions between 2 January and 28 March 2024. The detailed monitoring schedule is shown in **Annex B**. The monitoring results with weather and sea conditions at each monitoring day are shown in **Annex C**. Graphical presentation of water quality monitoring results is given in **Annex D**. During the monitoring sessions, the major activity on site was the operation of the LNG Terminal and no observable pollution source was recorded at

the monitoring stations. No other external factors (e.g. surface runoff from nearby landmass, adverse weather) were identified that might affect water quality at the monitoring stations during the monitoring period.

An action Level exceedance was recorded for operation phase water quality monitoring in the reporting period. Investigation on the exceedances was conducted and summarised in **Table 2.6**.

**TABLE 2.6 DETAILS OF EXCEEDANCES FOR OPERATIONAL PHASE WATER QUALITY MONITORING**

Date	Tide	Parameter	Monitoring Station	Level of Exceedance	Investigation
23 February 2024	Mid-ebb	Depth-Average 5-day biochemical oxygen demand (BOD5)	IM6	Action	<p>Discharge of cooled seawater for the operation of the regasification system was undertaken on 23 February 2024. According to the information provided by HKLTL and the operator, the flow rate of the cooled seawater discharge was about 5,000 m<sup>3</sup>/hr. In addition, there was effluent discharge from the sewage treatment plant with a flow rate less than 10 m<sup>3</sup>/day.</p> <p>Discharge of seawater for the maintenance of firewater operation system was undertaken on 23 February 2024. According to the information provided by HKLTL and the operator, the flow rate of the seawater discharge was about 15 m<sup>3</sup>/hr.</p> <p>The exceedance in 5-day biochemical oxygen demand (BOD5) is unlikely due to the operation of the Project, in view of the following:</p> <ul style="list-style-type: none"> <li>▪ The seawater and effluent discharge complied with the requirements as stated in the licence under the Water Pollution Control Ordinance.</li> <li>▪ With reference to the marine water quality data recorded by EPD since 1989 at the station located closest to the Project (i.e. SM17), fluctuations of BOD5 were recorded with ranges between &lt;0.1 mg/L and 7.3mg/L. The current measured level is within the</li> </ul>

Date	Tide	Parameter	Monitoring Station	Level of Exceedance	Investigation
					ranges of the historical dataset and thus considered to be sporadic event and characteristics of water quality in this area of Hong Kong.

Based on the investigation results above, the exceedance was not Project-related. Nevertheless, HKLTL and the operator were reminded to ensure mitigation measures for water quality impacts as set out in the Updated EM&A Manual are fully and properly implemented. In addition, the discharge of effluent shall follow the requirements as stated in the licence under the Water Pollution Control Ordinance.

Overall, deterioration of water quality and indirect impacts at water and ecological sensitive receivers were not detected. The operation of the Project did not result in unacceptable water quality impacts to the nearby water and ecological sensitive receivers, which aligns with the EIA study predictions.

## 2.5 SUMMARY OF EXCEEDANCES OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMIT

There were no Project related Action and Limit Level exceedances for operation phase water quality monitoring in the reporting period.

## 2.6 SUMMARY OF ENVIRONMENTAL COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTION

There were no environmental complaints, notification of summons and successful prosecutions recorded for the operation of the Project in the reporting period.

### 3. CONCLUSION

This is the quarterly report for the operation phase water quality monitoring for the LNG Terminal which summarises the key monitoring results for the reporting period of January to March 2024 in accordance with the *Updated EM&A Manual* of the Project.

Operation phase water quality monitoring was conducted at three monitoring locations once per week for 13 sessions between 2 January and 28 March 2024. There were no Project related Action and Limit Level exceedances for operation phase water quality monitoring in the reporting period. Overall, deterioration of water quality and indirect impacts at water and ecological sensitive receivers were not detected. The operation of the Project did not result in unacceptable water quality impacts to the nearby water and ecological sensitive receivers, which aligns with the EIA study predictions.

There were no environmental complaints, notification of summons and successful prosecutions recorded for the operation of the Project in the reporting period.

The monitoring activities conducted in the reporting period have been reviewed and are considered effective. As such, no change to the monitoring methodology is recommended. Based on the EM&A findings for the reporting period, the environmental performance for the operation of the Project is generally in line with the EIA predictions and considered acceptable.



ANNEX A

CALIBRATION CERTIFICATES



ALS Technichem (HK) Pty Ltd

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1 - 3 Wing Yip Street,

Kwai Chung, N.T., Hong Kong

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## REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

**CONTACT:** LAM MEI SHING  
**CLIENT:** EGS (ASIA) LTD  
**ADDRESS:** 15/F., NORTH POINT INDUSTRIAL BUILDING,  
499 KING'S ROAD, NORTH POINT, HONG KONG

**WORK ORDER:** HK2346633  
**SUB-BATCH:** 0  
**LABORATORY:** HONG KONG  
**DATE RECEIVED:** 21-Nov-2023  
**DATE OF ISSUE:** 22-Nov-2023

### GENERAL COMMENTS

The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.

The "Tolerance Limit" quoted is the acceptance criteria applicable for similar equipment used by the laboratory or quoted from relevant international standards.

The validity of equipment/ meter performance only applies to the result(s) stated in the report.

This report superseded any previous report(s) with same work order number.

### EQUIPMENT INFORMATION

Equipment information (Brand name, Model No., Serial No. and Equipment No.) is provided by client.

Equipment Type: Multifunctional Meter

Service Nature: Performance Check

Scope: Dissolved Oxygen, pH Value, Turbidity, Salinity and Temperature

Brand Name/ Model No.: [YSI]/ [6820-C-M]

Serial No./ Equipment No.: [02J0058-AA]/ [MPP15]

Date of Calibration: 21-November-2023

Ms. Lin Wai Yu, Iris  
Assistant Manager - Inorganics

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# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION



**WORK ORDER:** HK2346633  
**SUB-BATCH:** 0  
**DATE OF ISSUE:** 22-Nov-2023  
**CLIENT:** EGS (ASIA) LTD

Equipment Type: Multifunctional Meter  
Brand Name/ Model No.: [YSI]/ [6820-C-M]  
Serial No./ Equipment No.: [02J0058-AA]/ [MPP15]  
Date of Calibration: 21-November-2023

## PARAMETERS:

**Dissolved Oxygen** Method Ref: APHA (23rd edition), 4500O: G

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
2.86	2.87	+0.01
4.79	4.87	+0.08
6.80	6.88	+0.08
	Tolerance Limit (mg/L)	±0.20

**pH Value** Method Ref: APHA (23rd edition), 4500H: B

Expected Reading (pH unit)	Displayed Reading (pH unit)	Tolerance (pH unit)
4.0	3.89	-0.11
7.0	6.98	-0.02
10.0	10.17	+0.17
	Tolerance Limit (pH unit)	±0.20

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Ms. Lin Wai Yu, Iris  
Assistant Manager - Inorganics



# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION



**WORK ORDER:** HK2346633  
**SUB-BATCH:** 0  
**DATE OF ISSUE:** 22-Nov-2023  
**CLIENT:** EGS (ASIA) LTD

Equipment Type: Multifunctional Meter  
Brand Name/ Model No.: [YSI]/ [6820-C-M]  
Serial No./ Equipment No.: [02J0058-AA]/ [MPP15]  
Date of Calibration: 21-November-2023

## PARAMETERS:

### Turbidity

Method Ref: APHA (23rd edition), 2130B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.0	--
4	4.1	+2.5
40	39.5	-1.3
80	80.1	+0.1
	Tolerance Limit (%)	±10.0

### Salinity

Method Ref: APHA (23rd edition), 2520B

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.00	--
10	9.58	-4.2
20	19.07	-4.7
30	28.53	-4.9
	Tolerance Limit (%)	±10.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Ms. Lin Wai Yu, Iris  
Assistant Manager - Inorganics

# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION



**WORK ORDER:** HK2346633  
**SUB-BATCH:** 0  
**DATE OF ISSUE:** 22-Nov-2023  
**CLIENT:** EGS (ASIA) LTD

Equipment Type: Multifunctional Meter  
Brand Name/ Model No.: [YSI]/ [6820-C-M]  
Serial No./ Equipment No.: [02J0058-AA]/ [MPP15]  
Date of Calibration: 21-November-2023

## PARAMETERS:

### Temperature

**Method Ref: Section 6 of International Accreditation New Zealand Technical Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.**

Expected Reading (°C)	Displayed Reading (°C)	Tolerance (°C)
11.0	10.51	-0.5
20.0	19.61	-0.4
41.0	41.16	+0.2
	Tolerance Limit (°C)	±2.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

A handwritten signature in blue ink, appearing to read 'Lis'.

Ms. Lin Wai Yu, Iris  
Assistant Manager - Inorganics



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## REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

**CONTACT:** LAM MEI SHING  
**CLIENT:** EGS (ASIA) LTD  
**ADDRESS:** 15/F., NORTH POINT INDUSTRIAL BUILDING,  
499 KING'S ROAD, NORTH POINT, HONG KONG

**WORK ORDER:** HK2346638  
**SUB-BATCH:** 0  
**LABORATORY:** HONG KONG  
**DATE RECEIVED:** 21-Nov-2023  
**DATE OF ISSUE:** 22-Nov-2023

### GENERAL COMMENTS

The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.

The "Tolerance Limit" quoted is the acceptance criteria applicable for similar equipment used by the laboratory or quoted from relevant international standards.

The validity of equipment/ meter performance only applies to the result(s) stated in the report.

This report superseded any previous report(s) with same work order number.

### EQUIPMENT INFORMATION

Equipment information (Brand name, Model No., Serial No. and Equipment No.) is provided by client.

Equipment Type: Multifunctional Meter

Service Nature: Performance Check

Scope: Dissolved Oxygen, pH Value, Turbidity, Salinity and Temperature

Brand Name/ Model No.: [YSI]/ [6820-C-M]

Serial No./ Equipment No.: [02J0058-AB]/ [MPP16]

Date of Calibration: 21-November-2023

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Assistant Manager - Inorganics

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# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION



**WORK ORDER:** HK2346638  
**SUB-BATCH:** 0  
**DATE OF ISSUE:** 22-Nov-2023  
**CLIENT:** EGS (ASIA) LTD

Equipment Type: Multifunctional Meter  
Brand Name/ Model No.: [YSI]/ [6820-C-M]  
Serial No./ Equipment No.: [02J0058-AB]/ [MPP16]  
Date of Calibration: 21-November-2023

## PARAMETERS:

**Dissolved Oxygen** Method Ref: APHA (23rd edition), 4500O: G

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
2.94	2.89	-0.05
5.20	5.23	+0.03
7.63	7.68	+0.05
	Tolerance Limit (mg/L)	±0.20

**pH Value** Method Ref: APHA (23rd edition), 4500H: B

Expected Reading (pH unit)	Displayed Reading (pH unit)	Tolerance (pH unit)
4.0	3.92	-0.08
7.0	6.94	-0.06
10.0	10.15	+0.15
	Tolerance Limit (pH unit)	±0.20

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Ms. Lin Wai Yu, Iris  
Assistant Manager - Inorganics

# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION



**WORK ORDER:** HK2346638  
**SUB-BATCH:** 0  
**DATE OF ISSUE:** 22-Nov-2023  
**CLIENT:** EGS (ASIA) LTD

Equipment Type: Multifunctional Meter  
Brand Name/ Model No.: [YSI]/ [6820-C-M]  
Serial No./ Equipment No.: [02J0058-AB]/ [MPP16]  
Date of Calibration: 21-November-2023

## PARAMETERS:

### Turbidity

Method Ref: APHA (23rd edition), 2130B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.0	--
4	3.9	-2.5
40	38.7	-3.2
80	78.6	-1.8
	Tolerance Limit (%)	±10.0

### Salinity

Method Ref: APHA (23rd edition), 2520B

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.00	--
10	9.56	-4.4
20	19.04	-4.8
30	28.46	-5.1
	Tolerance Limit (%)	±10.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Ms. Lin Wai Yu, Iris  
Assistant Manager - Inorganics

# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION



**WORK ORDER:** HK2346638  
**SUB-BATCH:** 0  
**DATE OF ISSUE:** 22-Nov-2023  
**CLIENT:** EGS (ASIA) LTD

Equipment Type: Multifunctional Meter  
Brand Name/ Model No.: [YSI]/ [6820-C-M]  
Serial No./ Equipment No.: [02J0058-AB]/ [MPP16]  
Date of Calibration: 21-November-2023

## PARAMETERS:

### Temperature

**Method Ref: Section 6 of International Accreditation New Zealand Technical Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.**

Expected Reading (°C)	Displayed Reading (°C)	Tolerance (°C)
11.5	11.45	-0.1
20.0	19.76	-0.2
40.0	40.02	+0.0
	Tolerance Limit (°C)	±2.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Ms. Lin Wai Yu, Iris  
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## REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

**CONTACT:** LAM MEI SHING  
**CLIENT:** EGS (ASIA) LTD  
**ADDRESS:** 15/F., NORTH POINT INDUSTRIAL BUILDING,  
499 KING'S ROAD, NORTH POINT, HONG KONG

**WORK ORDER:** HK2346640  
**SUB-BATCH:** 0  
**LABORATORY:** HONG KONG  
**DATE RECEIVED:** 21-Nov-2023  
**DATE OF ISSUE:** 22-Nov-2023

### GENERAL COMMENTS

The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.

The "Tolerance Limit" quoted is the acceptance criteria applicable for similar equipment used by the laboratory or quoted from relevant international standards.

The validity of equipment/ meter performance only applies to the result(s) stated in the report.

This report superseded any previous report(s) with same work order number.

### EQUIPMENT INFORMATION

Equipment information (Brand name, Model No., Serial No. and Equipment No.) is provided by client.

Equipment Type: Multifunctional Meter

Service Nature: Performance Check

Scope: Dissolved Oxygen, pH Value, Turbidity, Salinity and Temperature

Brand Name/ Model No.: [YSI]/ [6920 V2-2]

Serial No./ Equipment No.: [16L100580]/ [MPP57]

Date of Calibration: 21-November-2023

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Assistant Manager - Inorganics

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# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION



**WORK ORDER:** HK2346640  
**SUB-BATCH:** 0  
**DATE OF ISSUE:** 22-Nov-2023  
**CLIENT:** EGS (ASIA) LTD

Equipment Type: Multifunctional Meter  
Brand Name/ Model No.: [YSI]/ [6920 V2-2]  
Serial No./ Equipment No.: [16L100580]/ [MPP57]  
Date of Calibration: 21-November-2023

## PARAMETERS:

**Dissolved Oxygen** Method Ref: APHA (23rd edition), 4500O: G

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
2.95	2.95	+0.00
5.04	4.89	-0.15
7.64	7.63	-0.01
	Tolerance Limit (mg/L)	±0.20

**pH Value** Method Ref: APHA (23rd edition), 4500H: B

Expected Reading (pH unit)	Displayed Reading (pH unit)	Tolerance (pH unit)
4.0	3.91	-0.09
7.0	6.96	-0.04
10.0	10.19	+0.19
	Tolerance Limit (pH unit)	±0.20

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Ms. Lin Wai Yu, Iris  
Assistant Manager - Inorganics



# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION



**WORK ORDER:** HK2346640  
**SUB-BATCH:** 0  
**DATE OF ISSUE:** 22-Nov-2023  
**CLIENT:** EGS (ASIA) LTD

Equipment Type: Multifunctional Meter  
Brand Name/ Model No.: [YSI]/ [6920 V2-2]  
Serial No./ Equipment No.: [16L100580]/ [MPP57]  
Date of Calibration: 21-November-2023

## PARAMETERS:

### Turbidity

Method Ref: APHA (23rd edition), 2130B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.0	--
4	4.2	+5.0
40	41.8	+4.5
80	85.4	+6.8
	Tolerance Limit (%)	±10.0

### Salinity

Method Ref: APHA (23rd edition), 2520B

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.00	--
10	9.60	-4.0
20	19.10	-4.5
30	28.65	-4.5
	Tolerance Limit (%)	±10.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Ms. Lin Wai Yu, Iris  
Assistant Manager - Inorganics

# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION



**WORK ORDER:** HK2346640  
**SUB-BATCH:** 0  
**DATE OF ISSUE:** 22-Nov-2023  
**CLIENT:** EGS (ASIA) LTD

Equipment Type: Multifunctional Meter  
Brand Name/ Model No.: [YSI]/ [6920 V2-2]  
Serial No./ Equipment No.: [16L100580]/ [MPP57]  
Date of Calibration: 21-November-2023

## PARAMETERS:

### Temperature

**Method Ref: Section 6 of International Accreditation New Zealand Technical Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.**

Expected Reading (°C)	Displayed Reading (°C)	Tolerance (°C)
11.0	11.08	+0.1
19.5	19.80	+0.3
40.5	40.54	+0.0
	Tolerance Limit (°C)	±2.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

A handwritten signature in blue ink, appearing to read 'Nis'.

Ms. Lin Wai Yu, Iris  
Assistant Manager - Inorganics



## REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

**CONTACT:** DOMINIC LAI  
**CLIENT:** EGS (ASIA) LTD  
**ADDRESS:** 15/F., NORTH POINT INDUSTRIAL BUILDING,  
499 KING'S ROAD,  
NORTH POINT, HONG KONG

**WORK ORDER:** HK2406840  
**SUB-BATCH:** 0  
**LABORATORY:** HONG KONG  
**DATE RECEIVED:** 20-Feb-2024  
**DATE OF ISSUE:** 22-Feb-2024

### GENERAL COMMENTS

The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.

The "Tolerance Limit" quoted is the acceptance criteria applicable for similar equipment used by the laboratory or quoted from relevant international standards.

The "Next Calibration Date" is recommended according to best practice principle as practised by the laboratory or quoted from relevant international standards.

The validity of equipment/ meter performance only applies to the result(s) stated in the report.

This report superseded any previous report(s) with same work order number.

### EQUIPMENT INFORMATION

Equipment information (Brand name, Model No., Serial No. and Equipment No.) is provided by client.

Equipment Type: Multifunctional Meter

Service Nature: Performance Check

Scope: Dissolved Oxygen, pH Value, Turbidity, Salinity and Temperature

Brand Name/ Model No.: [YSI]/ [6820 V2-M]

Serial No./ Equipment No.: [14A101573]/ [MPP46]

Date of Calibration: 20-February-2024

Ms. Lin Wai Yu, Iris  
Assistant Manager - Inorganics

# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION



**WORK ORDER:** HK2406840  
**SUB-BATCH:** 0  
**DATE OF ISSUE:** 22-Feb-2024  
**CLIENT:** EGS (ASIA) LTD

Equipment Type: Multifunctional Meter  
Brand Name/ Model No.: [YSI]/ [6820 V2-M]  
Serial No./ Equipment No.: [14A101573]/ [MPP46]  
Date of Calibration: 20-February-2024

Date of Next Calibration: 20-May-2024

## PARAMETERS:

### Dissolved Oxygen

Method Ref: APHA (23rd edition), 4500O: G

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
2.94	2.88	-0.06
5.34	5.36	+0.02
7.15	7.19	+0.04
	Tolerance Limit (mg/L)	±0.20

### pH Value

Method Ref: APHA (23rd edition), 4500H: B

Expected Reading (pH unit)	Displayed Reading (pH unit)	Tolerance (pH unit)
4.0	4.09	+0.09
7.0	6.99	-0.01
10.0	9.98	-0.02
	Tolerance Limit (pH unit)	±0.20

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Ms. Lin Wai Yu, Iris  
Assistant Manager - Inorganics

# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION



**WORK ORDER:** HK2406840  
**SUB-BATCH:** 0  
**DATE OF ISSUE:** 22-Feb-2024  
**CLIENT:** EGS (ASIA) LTD

Equipment Type: Multifunctional Meter  
Brand Name/ Model No.: [YSI]/ [6820 V2-M]  
Serial No./ Equipment No.: [14A101573]/ [MPP46]  
Date of Calibration: 20-February-2024

Date of Next Calibration: 20-May-2024

## PARAMETERS:

### Turbidity

Method Ref: APHA (23rd edition), 2130B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.00	--
4	3.70	-7.5
40	42.2	+5.5
80	84.8	+6.0
400	-	N/A
800	-	N/A
	Tolerance Limit (%)	±10.0

### Salinity

Method Ref: APHA (23rd edition), 2520B

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.00	--
10	9.91	-0.9
20	19.20	-4.0
30	29.72	-0.9
	Tolerance Limit (%)	±10.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Ms. Lin Wai Yu, Iris  
Assistant Manager - Inorganics

# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION



**WORK ORDER:** HK2406840  
**SUB-BATCH:** 0  
**DATE OF ISSUE:** 22-Feb-2024  
**CLIENT:** EGS (ASIA) LTD

Equipment Type: Multifunctional Meter  
Brand Name/ Model No.: [YSI]/ [6820 V2-M]  
Serial No./ Equipment No.: [14A101573]/ [MPP46]  
Date of Calibration: 20-February-2024 Date of Next Calibration: 20-May-2024

## PARAMETERS:

### Temperature

**Method Ref: Section 6 of International Accreditation New Zealand Technical Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.**

Expected Reading (°C)	Displayed Reading (°C)	Tolerance (°C)
10.5	10.69	+0.2
21.0	20.79	-0.2
39.5	39.10	-0.4
	Tolerance Limit (°C)	±2.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Ms. Lin Wai Yu, Iris  
Assistant Manager - Inorganics



ANNEX B

MONITORING SCHEDULE

**Environmental Team Consultancy Services for the Hong Kong Offshore LNG Terminal Project  
Operation Phase Water Quality Monitoring (January 2024)**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1/Jan	2/Jan	3/Jan	4/Jan	5/Jan	6/Jan
		<b>Operation Phase Water Quality Monitoring</b> ebb tide 15:39 - 17:39 flood tide 10:26 - 12:06				
7/Jan	8/Jan	9/Jan	10/Jan	11/Jan	12/Jan	13/Jan
		<b>Operation Phase Water Quality Monitoring</b> ebb tide 9:51 - 11:51 flood tide 14:32 - 16:32				
14/Jan	15/Jan	16/Jan	17/Jan	18/Jan	19/Jan	20/Jan
		<b>Operation Phase Water Quality Monitoring</b> ebb tide 15:32 - 17:32 flood tide 9:48 - 11:48				
21/Jan	22/Jan	23/Jan	24/Jan	25/Jan	26/Jan	27/Jan
					<b>Operation Phase Water Quality Monitoring</b> ebb tide 12:08 - 14:08 flood tide 7:01 - 9:01	
28/Jan	29/Jan	30/Jan	31/Jan			
			<b>Operation Phase Water Quality Monitoring</b> ebb tide 14:40 - 16:40 flood tide 8:55 - 10:55			



**Environmental Team Consultancy Services for the Hong Kong Offshore LNG Terminal Project  
Operation Phase Water Quality Monitoring (February 2024)**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1/Feb	2/Feb	3/Feb
4/Feb	5/Feb	6/Feb	7/Feb	8/Feb	9/Feb	10/Feb
				<b>Operation Phase Water Quality Monitoring</b> ebb tide 10:35 - 12:35 flood tide 15:14 - 17:14		
11/Feb	12/Feb	13/Feb	14/Feb	15/Feb	16/Feb	17/Feb
				<b>Operation Phase Water Quality Monitoring</b> ebb tide 15:43 - 17:43 flood tide 9:20 - 11:20		
18/Feb	19/Feb	20/Feb	21/Feb	22/Feb	23/Feb	24/Feb
					<b>Operation Phase Water Quality Monitoring</b> ebb tide 11:23 - 13:23 flood tide 6:03 - 8:03	
25/Feb	26/Feb	27/Feb	28/Feb	29/Feb		
			<b>Operation Phase Water Quality Monitoring</b> ebb tide 13:29 - 15:29 flood tide 7:32 - 9:32			

**Environmental Team Consultancy Services for the Hong Kong Offshore LNG Terminal Project  
Operation Phase Water Quality Monitoring (March 2024)**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1/Mar	2/Mar
3/Mar	4/Mar	5/Mar	6/Mar	7/Mar	8/Mar	9/Mar
				<b>Operation Phase Water Quality Monitoring</b> ebb tide 9:04 - 11:04 flood tide 14:06 - 16:06		
10/Mar	11/Mar	12/Mar	13/Mar	14/Mar	15/Mar	16/Mar
				<b>Operation Phase Water Quality Monitoring</b> ebb tide 14:12 - 16:12 flood tide 7:47 - 9:47		
17/Mar	18/Mar	19/Mar	20/Mar	21/Mar	22/Mar	23/Mar
				<b>Operation Phase Water Quality Monitoring</b> ebb tide 10:14 - 12:14 flood tide 15:04 - 17:04		
24/Mar	25/Mar	26/Mar	27/Mar	28/Mar	29/Mar	30/Mar
				<b>Operation Phase Water Quality Monitoring</b> ebb tide 13:00 - 15:00 flood tide 6:43 - 8:43		
31/Mar						



ANNEX C

OPERATION PHASE WATER QUALITY  
MONITORING RESULTS

Water Quality Monitoring Data Log Sheet

Date: 2024/01/02

Tide	Monitoring Station	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Depth Level***	Current		Temperature (°C)		Salinity (ppt)		pH		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Total Residual Chlorine (mg/L)		Suspended Solids (mg/L)		Total Inorganic Nitrogen (mg/L)		5-day Biochemical Oxygen Demand (mg/L)			
							Velocity (m/s)	Direction	Value	Average	DA	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	Value	Average	DA*	Value	Average	Value	Average	DA*
Mid-Ebb	E2	Fine	Moderate	16:18	9.5	S	0.46	130	20.1	20.1	20.0	33.4	33.3	8.2	8.2	103.7	104.0	7.7	7.7	2.8	2.8	<0.001	<0.001	2.6	2.6	0.09	0.09	<1.0	<1.0	
							0.46	130	20.1	20.1		33.3	33.3	8.2	8.2	104.3	104.0	7.7	7.7	2.8	2.8	<0.001	<0.001	2.5	2.6	0.08	0.08	<1.0	<1.0	
							0.30	307	20.1	20.1		33.4	33.4	8.2	8.2	101.6	101.9	7.6	7.6	4.4	4.5	<0.001	<0.001	3.0	3.0	0.08	0.08	<1.0	<1.0	<1.0
						0.59	346	20.1	20.1	33.4		33.4	8.2	8.2	102.2	101.9	7.6	7.6	4.5	4.5	<0.001	<0.001	2.9	3.0	0.08	0.08	<1.0	<1.0	<1.0	
						0.45	185	20.0	20.0	33.4		33.4	8.2	8.2	102.7	102.1	7.7	7.6	9.0	9.9	<0.001	<0.001	7.0	7.3	0.08	0.08	<1.0	<1.0		
						0.13	5	20.0	20.0	33.4		33.4	8.2	8.1	101.5	99.2	7.6	7.4	10.8	4.1	<0.001	<0.001	7.5	5	0.08	0.08	<1.0	<1.0		
	IM6	Fine	Moderate	15:49	17.1	S	0.66	178	19.9	19.9	19.8	33.4	33.4	8.1	8.1	99.2	99.2	7.4	7.4	4.1	4.2	<0.001	<0.001	3.8	4.0	0.08	0.08	<1.0	<1.0	
							0.41	72	19.7	19.7		33.4	33.4	8.1	8.1	98.6	98.6	7.4	7.4	5.2	5.2	0.04	0.003	4.2	4.0	0.07	0.07	<1.0	<1.0	
							1.03	335	19.7	19.7		33.4	33.4	8.1	8.1	98.5	98.5	7.4	7.4	5.1	5.1	<0.001	<0.001	5.1	5.3	0.07	0.07	<1.0	<1.0	<1.0
						0.14	92	19.7	19.7	33.4		33.4	8.1	8.1	99.5	99.3	7.5	7.4	5.5	5.6	<0.001	<0.001	6.1	6.3	0.06	0.06	<1.0	<1.0		
						0.05	336	19.7	19.7	33.4		33.4	8.1	8.1	99.1	99.1	7.4	7.4	5.7	5.6	<0.001	<0.001	6.5	6.3	0.07	0.07	<1.0	<1.0		
						0.73	274	19.7	19.7	33.3		33.3	8.2	8.2	98.6	98.6	7.4	7.4	4.2	4.2	<0.001	<0.001	4.2	4.4	0.07	0.08	<1.0	<1.0		
Mid-Flood	F3	Cloudy	Rough	10:55	18.0	M	0.27	323	19.7	19.7	19.7	33.3	33.3	8.2	8.2	98.5	98.5	7.4	7.4	4.1	4.2	<0.001	<0.001	4.5	4.4	0.08	0.08	<1.0	<1.0	
							0.19	3	19.7	19.7		33.3	33.3	8.2	8.2	98.0	98.1	7.4	7.4	6.2	5.9	<0.001	<0.001	5.4	5.3	0.08	0.08	<1.0	<1.0	<1.0
							0.17	9	19.7	19.7		33.3	33.3	8.2	8.2	98.7	98.4	7.4	7.4	5.6	5.6	<0.001	<0.001	5.1	5.3	0.08	0.08	<1.0	<1.0	
						0.17	9	19.7	19.7	33.3		33.3	8.2	8.2	98.7	98.4	7.4	7.4	19.4	19.7	<0.001	<0.001	21.7	22.1	0.07	0.07	<1.0	<1.0		
						0.39	190	19.7	19.7	33.4		33.4	8.1	8.1	98.7	98.6	7.4	7.4	7.4	7.3	<0.001	0.002	8.1	8.4	0.06	0.06	<1.0	<1.0		
						0.39	190	19.7	19.7	33.4		33.4	8.1	8.1	98.5	98.6	7.4	7.4	7.2	7.3	0.003	0.002	8.1	8.4	0.06	0.06	<1.0	<1.0		
	IM6	Cloudy	Rough	10:33	16.8	M	0.48	353	19.7	19.7	19.7	33.4	33.4	8.1	8.1	98.7	98.7	7.4	7.4	9.3	8.9	<0.001	<0.001	8.4	8.2	0.06	0.06	<1.0	<1.0	<1.0
							0.59	56	19.7	19.7		33.4	33.4	8.1	8.1	98.7	98.7	7.4	7.4	8.4	8.4	<0.001	<0.001	8.0	8.0	0.05	0.05	<1.0	<1.0	
							0.02	357	19.8	19.8		33.4	33.4	8.1	8.1	99.6	99.4	7.5	7.5	10.0	10.1	<0.001	<0.001	11.9	11.7	0.06	0.06	<1.0	<1.0	
						0.02	357	19.8	19.8	33.4		33.4	8.1	8.1	99.1	99.1	7.4	7.4	10.1	10.1	<0.001	<0.001	11.4	11.7	0.06	0.06	<1.0	<1.0		
						0.02	357	19.8	19.8	33.4		33.4	8.1	8.1	99.1	99.1	7.4	7.4	10.1	10.1	<0.001	<0.001	11.4	11.7	0.06	0.06	<1.0	<1.0		
						0.02	357	19.8	19.8	33.4		33.4	8.1	8.1	99.1	99.1	7.4	7.4	10.1	10.1	<0.001	<0.001	11.4	11.7	0.06	0.06	<1.0	<1.0		

Remark: \* DA: Depth-Averaged

\*\* Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher

\*\*\* S: 1 m below the sea surface; M: mid-depth; B: 1 m above the seabed

Water Quality Monitoring Data Log Sheet

Date: 2024/01/09

Tide	Monitoring Station	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Depth Level***	Current		Temperature (°C)		Salinity (ppt)		pH		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Total Residual Chlorine (mg/L)		Suspended Solids (mg/L)		Total Inorganic Nitrogen (mg/L)		5-day Biochemical Oxygen Demand (mg/L)		
							Velocity (m/s)	Direction	Value	Average	DA	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	Value	Average
Mid-Ebb	E2	Cloudy	Calm	10:37	9.2	S	0.81	64	19.3	19.3	19.3	33.6	33.6	8.3	8.3	125.1	125.1	9.4	9.4	0.6	0.6	<0.001	<0.001	2.2	2.3	<0.02	<0.02	1.1	1.2
							0.81	64	19.3	19.3		33.6	33.6	8.3	8.3	125.0	125.0	9.4	9.4	0.5	0.6	<0.001	<0.001	2.4	2.3	<0.02	<0.02	1.3	1.2
							0.21	42	19.2	19.2		33.6	33.6	8.3	8.3	123.5	123.7	9.3	9.4	0.5	0.6	<0.001	<0.001	2.5	2.7	<0.02	<0.02	1.3	1.3
						0.07	137	19.2	19.2	33.6		33.6	8.3	8.3	123.8	123.7	9.4	9.4	0.6	0.6	<0.001	<0.001	2.8	2.7	<0.02	<0.02	1.3	1.3	
						0.24	261	19.2	19.2	33.6		33.6	8.3	8.3	120.7	120.7	9.1	9.1	0.7	0.7	<0.001	<0.001	3.6	3.5	<0.02	<0.02	<1.0	<1.0	
						0.19	221	19.2	19.2	33.6		33.6	8.3	8.3	120.7	120.7	9.1	9.1	0.6	0.6	<0.001	<0.001	3.3	3.5	<0.02	<0.02	<1.0	<1.0	
	IM6	Cloudy	Calm	10:04	17.1	S	0.17	114	18.7	18.7	18.6	33.8	33.7	8.2	8.2	102.3	102.3	7.8	7.8	1.8	1.8	<0.001	<0.001	3.4	3.3	0.04	0.04	<1.0	<1.0
							0.42	241	18.6	18.6		33.7	33.7	8.2	8.2	102.2	102.3	7.8	7.8	1.8	1.8	<0.001	<0.001	3.2	3.3	0.04	0.04	<1.0	<1.0
							0.20	96	18.6	18.6		33.8	33.8	8.2	8.2	100.4	100.5	7.7	7.7	2.3	2.2	<0.001	<0.001	4.0	3.9	0.04	0.04	<1.0	<1.0
						0.35	96	18.6	18.6	33.8		33.8	8.2	8.2	100.6	100.6	7.7	7.7	2.0	2.2	<0.001	<0.001	3.7	3.9	0.04	0.04	<1.0	<1.0	
						0.35	96	18.6	18.6	33.8		33.8	8.2	8.2	98.0	98.1	7.5	7.5	3.6	3.6	<0.001	0.003	4.6	4.5	0.04	0.05	<1.0	<1.0	
						0.43	343	19.8	19.8	33.8		33.8	8.2	8.2	98.1	98.1	7.5	7.5	3.5	3.6	0.005	0.003	4.3	4.5	0.05	0.05	<1.0	<1.0	
Mid-Flood	F3	Fine	Calm	14:47	18.2	S	0.48	286	19.8	19.8	19.5	33.5	33.5	8.2	8.2	106.7	106.9	8.0	8.0	1.5	1.5	<0.001	<0.001	2.2	2.4	0.04	0.05	<1.0	<1.0
							0.43	343	19.8	19.8		33.5	33.5	8.2	8.2	107.0	107.0	8.0	8.0	1.5	1.5	<0.001	<0.001	2.6	2.4	0.05	0.05	<1.0	<1.0
							0.53	28	19.4	19.4		33.4	33.5	8.2	8.2	103.4	104.1	7.8	7.9	1.6	1.7	<0.001	<0.001	3.0	2.8	0.04	0.04	<1.0	<1.0
						0.53	28	19.5	19.4	33.5		33.5	8.2	8.2	104.7	104.1	7.9	7.9	1.7	1.7	<0.001	<0.001	2.6	2.8	0.04	0.04	<1.0	<1.0	
						0.07	129	19.3	19.3	33.5		33.5	8.1	8.2	101.2	101.1	7.7	7.6	2.4	2.6	<0.001	0.003	4.1	3.4	0.04	0.05	<1.0	<1.0	
						0.53	334	19.3	19.3	33.5		33.5	8.2	8.2	101.0	101.0	7.6	7.6	2.8	2.6	0.004	0.003	2.6	2.8	0.05	0.05	<1.0	<1.0	
	IM6	Fine	Calm	14:32	17.2	S	0.14	34	19.6	19.6	19.4	33.4	33.4	8.1	8.1	105.2	105.8	7.9	8.0	1.7	1.8	<0.001	<0.001	2.9	2.8	0.04	0.04	<1.0	<1.0
							0.16	60	19.7	19.6		33.4	33.4	8.1	8.1	106.3	106.3	8.0	8.0	1.8	1.8	<0.001	<0.001	2.6	2.8	0.04	0.04	<1.0	<1.0
							0.68	222	19.3	19.3		33.5	33.5	8.1	8.1	102.1	102.5	7.7	7.8	1.9	1.9	<0.001	<0.001	3.6	3.5	0.05	0.05	<1.0	<1.0
						0.17	264	19.3	19.3	33.5		33.5	8.1	8.1	102.9	102.9	7.8	7.8	1.8	1.8	<0.001	<0.001	3.4	3.5	0.05	0.05	<1.0	<1.0	
						0.25	74	19.3	19.3	33.5		33.5	8.1	8.1	100.7	100.6	7.6	7.6	4.7	4.8	<0.001	<0.001	10.8	9.8	0.05	0.05	<1.0	<1.0	
						0.25	74	19.3	19.3	33.5		33.5	8.1	8.1	100.5	100.5	7.6	7.6	4.9	4.8	<0.001	<0.001	9.0	9.8	0.05	0.05	<1.0	<1.0	

Remark: \* DA: Depth-Averaged

\*\* Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher

\*\*\* S: 1 m below the sea surface; M: mid-depth; B: 1 m above the seabed

Water Quality Monitoring Data Log Sheet

Date: 2024/01/16

Tide	Monitoring Station	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Depth Level***	Current		Temperature (°C)		Salinity (ppt)		pH		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Total Residual Chlorine (mg/L)		Suspended Solids (mg/L)		Total Inorganic Nitrogen (mg/L)		5-day Biochemical Oxygen Demand (mg/L)				
							Velocity (m/s)	Direction	Value	Average	DA	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	Value	Average	DA*	Value	Average	Value	Average	DA*	Value
Mid-Ebb	E2	Fine	Rough	16:03	9.0	S	0.25	250	20.2	20.2	20.2	32.9	32.9	8.3	8.3	110.2	110.0	8.2	8.2	3.0	3.0	<0.001	<0.001	4.0	3.9	0.08	0.08	<1.0	<1.0		
							0.25	250	20.2	20.2		32.9	32.9	8.3	8.3	109.7	109.3	8.2	8.2	2.9	2.9	<0.001	<0.001	3.7	3.7	0.08	0.08	<1.0	<1.0		
							0.09	352	20.2	20.2		32.9	32.9	8.3	8.3	109.2	109.3	8.2	8.2	3.2	3.1	<0.001	<0.001	4.6	4.8	0.08	0.08	<1.0	<1.0		
						0.21	61	20.2	20.2	32.9		32.9	8.3	8.3	109.3	109.3	8.2	8.2	2.9	3.1	<0.001	<0.001	5.0	4.8	0.08	0.08	<1.0	<1.0			
						0.15	126	20.2	20.2	32.9		32.9	8.3	8.3	107.6	108.0	8.0	8.1	3.2	3.2	<0.001	<0.001	5.9	5.7	0.07	0.08	<1.0	<1.0			
						0.28	65	20.2	20.2	33.0		33.0	8.3	8.2	108.3	108.2	8.1	8.1	3.1	1.9	<0.001	<0.001	5.5	5.7	0.08	0.08	<1.0	<1.0			
	IM6	Fine	Rough	15:32	17.0	S	0.42	338	19.9	19.9	19.9	33.3	33.3	8.2	8.2	108.2	108.2	8.1	8.1	1.9	1.9	<0.001	<0.001	3.7	3.8	0.06	0.05	<1.0	<1.0		
							0.22	336	19.9	19.9		33.5	33.5	8.2	8.2	106.5	106.7	8.0	8.0	3.6	3.3	<0.001	<0.001	4.4	4.3	0.04	0.04	<1.0	<1.0		
							0.11	284	19.9	19.9		33.5	33.5	8.2	8.2	106.8	106.7	8.0	8.0	3.0	3.0	<0.001	<0.001	4.2	4.3	0.04	0.04	<1.0	<1.0		
						0.04	152	19.9	19.9	33.6		33.6	8.2	8.2	105.7	105.8	7.9	7.9	4.1	4.4	<0.001	<0.001	5.8	5.7	0.02	0.02	<1.0	<1.0			
						0.04	152	19.9	19.9	33.6		33.6	8.2	8.2	105.9	105.8	7.9	7.9	4.6	4.4	<0.001	<0.001	5.6	5.7	<0.02	0.02	<1.0	<1.0			
						0.68	271	19.9	19.9	33.5		33.5	8.3	8.3	104.3	104.4	7.8	7.8	3.8	3.9	<0.001	<0.001	4.0	4.2	0.02	0.03	<1.0	<1.0			
Mid-Flood	F3	Cloudy	Rough	10:27	18.0	M	0.81	276	19.9	19.9	19.9	33.6	33.6	8.3	8.3	103.7	103.7	7.8	7.8	4.2	4.5	<0.001	<0.001	6.8	6.6	0.02	0.02	<1.0	<1.0		
							0.41	236	19.9	19.9		33.6	33.6	8.3	8.3	103.7	103.7	7.8	7.8	4.2	4.5	<0.001	<0.001	6.4	6.6	0.02	0.02	<1.0	<1.0		
							0.67	276	19.9	19.9		33.5	33.5	8.3	8.3	103.4	103.6	7.7	7.8	17.0	16.1	<0.001	<0.001	13.5	13.2	<0.02	<0.02	<1.0	<1.0		
						0.53	291	19.9	19.9	33.6		33.6	8.3	8.3	103.8	103.8	7.8	7.8	19.2	16.1	<0.001	<0.001	12.8	13.2	<0.02	<0.02	<1.0	<1.0			
						0.52	247	20.0	20.0	33.4		33.4	8.2	8.2	104.9	104.9	7.8	7.8	5.5	5.4	<0.001	0.001	7.4	7.7	0.03	0.04	<1.0	<1.0			
						0.52	247	20.0	20.0	33.4		33.4	8.2	8.2	104.8	104.9	7.8	7.8	5.2	5.1	0.001	0.001	7.9	7.7	0.05	0.05	<1.0	<1.0			
	IM6	Cloudy	Rough	9:58	16	M	0.41	268	20.0	20.0	20.0	33.4	33.4	8.2	8.2	104.6	104.4	7.8	7.8	5.1	5.1	<0.001	<0.001	8.7	8.5	0.05	0.05	<1.0	<1.0		
							0.32	218	20.0	20.0		33.4	33.4	8.2	8.2	104.2	104.2	7.8	7.8	5.0	5.1	<0.001	<0.001	8.3	8.5	0.05	0.05	<1.0	<1.0		
							0.83	293	20.0	20.0		33.4	33.4	8.2	8.2	104.2	104.1	7.8	7.8	7.6	7.7	<0.001	<0.001	11.1	11.8	0.03	0.04	<1.0	<1.0		
						0.12	339	20.0	20.0	33.4		33.4	8.2	8.2	104.0	104.1	7.8	7.8	7.7	7.7	<0.001	<0.001	12.5	11.8	0.05	0.04	<1.0	<1.0			
						0.12	339	20.0	20.0	33.4		33.4	8.2	8.2	104.0	104.1	7.8	7.8	7.7	7.7	<0.001	<0.001	12.5	11.8	0.05	0.04	<1.0	<1.0			
						0.12	339	20.0	20.0	33.4		33.4	8.2	8.2	104.0	104.1	7.8	7.8	7.7	7.7	<0.001	<0.001	12.5	11.8	0.05	0.04	<1.0	<1.0			

Remark: \* DA: Depth-Averaged  
 \*\* Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher  
 \*\*\* S: 1 m below the sea surface; M: mid-depth; B: 1 m above the seabed

Water Quality Monitoring Data Log Sheet

Date: 2024/01/26

Tide	Monitoring Station	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Depth Level***	Current		Temperature (°C)		Salinity (ppt)		pH		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Total Residual Chlorine (mg/L)		Suspended Solids (mg/L)			Total Inorganic Nitrogen (mg/L)			5-day Biochemical Oxygen Demand (mg/L)		
							Velocity (m/s)	Direction	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
Mid-Ebb	E2	Cloudy	Moderate	12:38	9.2	S	0.35	20	18.4	18.4	18.4	33.7	33.7	8.3	8.3	96.9	97.0	7.4	7.4	2.8	2.8	<0.001	<0.001	2.4	2.3	0.06	0.06	<1.0	<1.0		
							0.80	33	18.4	33.7		33.7	8.3	8.3	97.0	97.0	7.4	7.4	2.7	2.8	<0.001	<0.001	2.2	2.3	0.05	0.06	<1.0	<1.0			
							0.27	308	18.4	33.8		33.8	8.3	8.3	97.7	97.5	7.5	7.5	2.7	2.8	<0.001	<0.001	2.6	2.6	0.08	0.07	<1.0	<1.0			
						0.27	308	18.4	33.8	33.8		8.3	8.3	97.3	97.5	7.5	7.5	2.8	2.8	<0.001	<0.001	2.5	2.6	0.06	0.06	<1.0	<1.0	<1.0			
						0.22	329	18.4	33.8	33.8		8.3	8.3	104.2	101.7	8.0	7.8	3.1	3.0	<0.001	<0.001	2.8	2.9	0.06	0.06	<1.0	<1.0				
						0.09	249	18.4	33.8	33.8		8.3	8.2	99.1	98.6	7.6	7.4	2.8	2.6	<0.001	<0.001	3.0	2.9	0.05	0.06	<1.0	<1.0				
	IM6	Cloudy	Moderate	12:08	17.0	S	0.17	101	19.8	19.8	19.8	34.3	34.3	8.2	8.2	98.8	98.7	7.4	7.4	2.6	2.5	<0.001	<0.001	3.0	2.9	<0.02	<0.02	<1.0	<1.0		
							0.15	326	19.8	34.3		34.3	8.2	8.2	98.7	98.4	7.4	7.3	3.0	3.1	<0.001	<0.001	2.8	2.9	<0.02	<0.02	<1.0	<1.0			
							0.15	326	19.8	34.3		34.3	8.2	8.2	98.1	98.4	7.3	7.3	3.1	3.1	<0.001	<0.001	3.4	3.2	<0.02	0.02	<1.0	<1.0	<1.0		
						0.36	241	19.8	34.3	34.3		8.2	8.2	101.3	100.5	7.6	7.5	2.8	2.7	<0.001	<0.001	3.6	3.7	<0.02	<0.02	<1.0	<1.0				
						0.36	241	19.8	34.3	34.3		8.2	8.2	99.6	99.6	7.4	7.5	2.6	2.7	<0.001	<0.001	3.9	3.7	<0.02	<0.02	<1.0	<1.0				
						0.15	326	19.8	34.2	34.2		8.3	8.3	98.2	98.0	7.3	7.3	2.3	2.4	<0.001	<0.001	4.7	4.6	0.09	0.09	<1.0	<1.0				
Mid-Flood	F3	Cloudy	Moderate	7:21	17.7	S	0.54	298	19.8	19.8	19.8	34.2	34.2	8.3	8.3	97.7	97.0	7.3	7.3	2.5	2.4	<0.001	<0.001	4.4	4.6	0.08	0.09	<1.0	<1.0		
							0.57	267	19.8	34.2		34.2	8.3	8.3	97.9	97.6	7.3	7.3	2.7	2.6	<0.001	<0.001	3.4	3.5	<0.02	<0.02	<1.0	<1.0			
							0.15	272	19.8	34.2		34.2	8.3	8.3	97.3	97.6	7.3	7.3	2.5	2.6	<0.001	<0.001	3.6	3.5	<0.02	<0.02	<1.0	<1.0	<1.0		
						0.53	301	19.8	34.2	34.2		8.3	8.3	100.5	99.8	7.5	7.4	2.9	3.3	<0.001	<0.001	3.1	2.9	<0.02	<0.02	<1.0	<1.0				
						0.53	301	19.8	34.3	34.3		8.3	8.3	99.1	99.1	7.4	7.4	2.7	3.3	<0.001	<0.001	3.1	3.3	<0.02	<0.02	<1.0	<1.0				
						0.09	162	19.3	34.1	34.1		8.2	8.2	96.9	97.1	7.3	7.3	2.7	2.8	<0.001	<0.001	2.9	3.0	<0.02	<0.02	<1.0	<1.0				
	IM6	Cloudy	Moderate	7:06	16.3	S	0.09	162	19.3	19.3	19.3	34.1	34.1	8.2	8.2	97.2	97.1	7.3	7.3	2.7	2.8	<0.001	<0.001	3.1	3.0	<0.02	<0.02	<1.0	<1.0		
							0.15	82	19.3	34.1		34.1	8.2	8.2	97.2	97.1	7.3	7.3	2.7	2.8	<0.001	<0.001	3.4	3.5	<0.02	<0.02	<1.0	<1.0			
							0.35	235	19.3	34.2		34.2	8.2	8.2	97.0	97.0	7.3	7.3	3.4	3.6	<0.001	<0.001	3.6	3.7	<0.02	<0.02	<1.0	<1.0			
						0.1	15	19.3	34.1	34.1		8.2	8.2	99.6	98.8	7.5	7.4	3.5	3.6	<0.001	<0.001	3.7	3.8	<0.02	<0.02	<1.0	<1.0				
						0.22	288	19.3	34.1	34.1		8.2	8.2	97.9	97.9	7.4	7.4	3.6	3.6	<0.001	<0.001	3.9	3.8	<0.02	<0.02	<1.0	<1.0				
						0.15	82	19.3	34.1	34.1		8.2	8.2	97.9	97.9	7.4	7.4	3.6	3.6	<0.001	<0.001	3.9	3.8	<0.02	<0.02	<1.0	<1.0				

Remark: \* DA: Depth-Averaged

\*\* Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher

\*\*\* S: 1 m below the sea surface; M: mid-depth; B: 1 m above the seabed

Water Quality Monitoring Data Log Sheet

Date: 2024/01/31

Tide	Monitoring Station	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Depth Level ***	Current		Temperature (°C)		Salinity (ppt)		pH		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Total Residual Chlorine (mg/L)		Suspended Solids (mg/L)		Total Inorganic Nitrogen (mg/L)		5-day Biochemical Oxygen Demand (mg/L)			
							Velocity (m/s)	Direction	Value	Average	DA	Value	Average	Value	Average	Value	Average	DA*	Value	Average	Value	Average	DA*	Value	Average	Value	Average	DA*	Value	Average
Mid-Ebb	E2	Cloudy	Moderate	15:12	9.0	S	0.68	34	19.6	19.6	34.2	34.2	8.4	8.4	98.1	98.3	7.3	7.4	3.2	3.2	<0.001	<0.001	4.5	4.7	<0.02	<0.02	<1.0	<1.0		
							0.68	34	19.6	19.6	34.2	34.2	8.4	8.4	98.4	98.3	7.4	7.4	3.1	3.2	<0.001	<0.001	4.9	4.7	<0.02	<0.02	<1.0	<1.0		
							0.21	43	19.5	19.4	34.2	34.2	8.4	8.4	97.5	97.2	7.3	7.3	3.5	3.7	<0.001	<0.001	5.2	5.4	<0.02	<0.02	<1.0	<1.0		
						M	0.10	157	19.3	19.4	34.2	34.2	8.4	8.4	96.8	97.2	7.3	7.3	3.9	3.7	<0.001	<0.001	5.2	5.4	<0.02	<0.02	<1.0	<1.0		
							0.39	117	19.1	19.1	34.2	34.2	8.4	8.4	96.4	96.3	7.3	7.3	3.8	3.8	<0.001	<0.001	6.7	6.6	0.03	0.03	<1.0	<1.0		
							0.20	129	19.7	19.7	34.2	34.2	8.4	8.4	96.2	96.2	7.3	7.3	3.8	3.8	<0.001	<0.001	6.4	6.4	0.02	0.02	<1.0	<1.0		
	IM6	Cloudy	Moderate	14:41	17.0	S	0.26	4	19.7	19.7	34.3	34.3	8.4	8.4	99.7	99.6	7.4	7.4	1.8	1.8	<0.001	<0.001	2.8	2.7	<0.02	<0.02	<1.0	<1.0		
							0.52	171	19.3	19.3	34.3	34.3	8.4	8.4	98.2	98.2	7.4	7.4	1.8	1.8	<0.001	<0.001	2.5	2.7	<0.02	<0.02	<1.0	<1.0		
							0.06	318	19.3	19.3	34.3	34.3	8.4	8.4	98.1	98.2	7.4	7.4	2.4	2.6	<0.001	<0.001	3.2	3.4	<0.02	<0.02	<1.0	<1.0		
						M	0.12	39	19.1	19.1	34.2	34.2	8.4	8.4	99.6	99.5	7.5	7.5	2.3	2.2	<0.001	<0.001	4.3	4.2	<0.02	<0.02	<1.0	<1.0		
							0.12	39	19.1	19.1	34.2	34.2	8.4	8.4	99.3	99.5	7.5	7.5	2.0	2.2	<0.001	<0.001	4.0	4.0	<0.02	<0.02	<1.0	<1.0		
							0.57	299	19.5	19.5	34.5	34.5	8.3	8.3	99.1	98.8	7.4	7.4	1.1	1.2	<0.001	<0.001	2.5	2.7	<0.02	<0.02	<1.0	<1.0		
Mid-Flood	F3	Cloudy	Moderate	9:54	18.0	S	0.57	299	19.5	19.5	34.5	34.5	8.3	8.3	98.4	98.8	7.4	7.4	1.3	1.2	<0.001	<0.001	2.8	2.7	<0.02	<0.02	<1.0	<1.0		
							0.7	293	19.5	19.5	34.5	34.5	8.3	8.3	99.1	99.2	7.4	7.4	1.2	1.2	<0.001	<0.001	3.6	3.5	<0.02	<0.02	<1.0	<1.0		
							0.7	293	19.5	19.5	34.5	34.5	8.3	8.3	99.2	99.2	7.4	7.4	1.1	1.2	<0.001	<0.001	3.3	3.5	<0.02	<0.02	<1.0	<1.0		
						M	0.29	310	19.5	19.5	34.5	34.5	8.3	8.3	99.4	99.5	7.4	7.4	1.5	1.5	<0.001	<0.001	3.8	4.0	<0.02	<0.02	<1.0	<1.0		
							0.53	321	19.5	19.5	34.5	34.5	8.3	8.3	99.5	99.5	7.4	7.4	1.5	1.5	<0.001	<0.001	4.1	4.0	<0.02	<0.02	<1.0	<1.0		
							0.25	30	19.8	19.7	34.5	34.5	8.3	8.3	98.4	98.2	7.3	7.3	1.7	1.7	<0.001	<0.001	4.2	4.0	<0.02	<0.02	<1.0	<1.0		
	IM6	Cloudy	Moderate	9:38	17	S	0.25	30	19.7	19.7	34.5	34.5	8.3	8.3	97.9	98.7	7.3	7.3	1.7	1.7	<0.001	<0.001	3.8	3.8	<0.02	<0.02	<1.0	<1.0		
							0.34	16	19.7	19.7	34.5	34.5	8.3	8.3	98.8	98.8	7.4	7.4	2.3	2.4	<0.001	<0.001	4.8	5.0	<0.02	<0.02	<1.0	<1.0		
							0.18	56	19.7	19.7	34.5	34.5	8.3	8.3	98.8	98.8	7.4	7.4	2.4	2.4	<0.001	<0.001	5.1	5.1	<0.02	<0.02	<1.0	<1.0		
						M	0.21	19	19.7	19.7	34.5	34.5	8.3	8.3	99.5	99.3	7.4	7.4	4.3	4.7	<0.001	<0.001	7.1	7.3	<0.02	<0.02	<1.0	<1.0		
							0.39	292	19.7	19.7	34.5	34.5	8.3	8.3	99.1	99.3	7.4	7.4	5.0	4.7	<0.001	<0.001	7.5	7.3	<0.02	<0.02	<1.0	<1.0		

Remark: \* DA: Depth-Averaged

\*\* Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher

\*\*\* S: 1 m below the sea surface; M: mid-depth; B: 1 m above the seabed



Water Quality Monitoring Data Log Sheet

Date: 2024/02/08

Tide	Monitoring Station	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Depth Level***	Current		Temperature (°C)		Salinity (ppt)		pH		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Total Residual Chlorine (mg/L)		Suspended Solids (mg/L)			Total Inorganic Nitrogen (mg/L)			5-day Biochemical Oxygen Demand (mg/L)				
							Velocity (m/s)	Direction	Value	Average	DA	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
Mid-Ebb	E2	Cloudy	Moderate	11:12	9.3	S	0.09	273	19.4	19.3	34.3	34.3	8.2	8.2	94.2	94.2	7.1	7.1	7.1	3.4	3.6	3.3	3.6	<0.001	<0.001	5.2	5.3	5.2	0.12	0.13	<1.0	<1.0	<1.0
							0.09	273	19.3	19.3	34.3	34.3	8.2	8.2	94.1	94.1	7.1	7.1	7.1	3.8	3.6	3.3	3.6	<0.001	<0.001	5.4	5.3	5.2	0.13	0.13	<1.0	<1.0	<1.0
							0.19	104	19.4	19.4	34.3	34.3	8.2	8.2	94.8	94.7	7.1	7.1	7.1	3.1	3.3	3.3	3.3	<0.001	0.002	5.2	4.8	5.1	0.12	0.12	<1.0	<1.0	<1.0
						0.19	104	19.4	19.4	34.3	34.3	8.2	8.2	94.5	94.7	7.1	7.1	7.1	3.4	3.3	3.3	3.3	0.003	<0.001	4.4	4.8	5.1	0.11	0.12	<1.0	<1.0	<1.0	
						0.12	11	19.3	19.3	34.2	34.2	8.2	8.2	98.3	97.3	7.4	7.3	7.3	3.0	3.0	3.0	3.0	<0.001	<0.001	5.1	5.5	5.1	0.11	0.12	<1.0	<1.0	<1.0	
						0.05	332	19.3	19.3	34.3	34.3	8.2	8.2	96.3	97.2	7.2	7.2	7.2	3.0	3.0	3.0	3.0	<0.001	<0.001	5.9	5.9	5.9	0.12	0.12	<1.0	<1.0	<1.0	
	IM6	Cloudy	Moderate	10:40	17.1	S	0.07	287	18.2	18.2	34.2	34.1	8.3	8.3	100.0	100.0	7.7	7.7	7.7	1.3	1.2	1.2	1.2	<0.001	<0.001	2.2	2.5	2.2	<0.02	<0.02	<1.0	<1.0	<1.0
							0.13	232	18.2	18.2	34.1	34.1	8.3	8.3	100.0	100.0	7.7	7.7	7.7	1.1	1.2	1.2	1.2	<0.001	<0.001	2.7	2.5	2.7	<0.02	<0.02	<1.0	<1.0	<1.0
							0.18	133	18.2	18.2	34.2	34.3	8.3	8.3	99.8	99.8	7.7	7.7	7.7	2.8	2.5	2.5	2.5	<0.001	<0.001	4.5	5.5	4.5	<0.02	<0.02	<1.0	<1.0	<1.0
						0.18	133	18.2	18.2	34.2	34.2	8.3	8.3	99.7	99.7	7.7	7.7	7.7	2.2	2.5	2.5	2.2	<0.001	<0.001	6.4	5.5	6.4	<0.02	<0.02	<1.0	<1.0	<1.0	
						0.09	347	18.2	18.2	34.2	34.2	8.3	8.3	99.9	99.9	7.7	7.7	7.7	1.6	1.7	1.7	1.6	<0.001	<0.001	4.2	3.8	4.2	<0.02	<0.02	<1.0	<1.0	<1.0	
						0.01	270	18.2	18.2	34.2	34.2	8.3	8.3	99.8	99.9	7.7	7.7	7.7	1.7	1.7	1.7	1.7	<0.001	<0.001	3.3	3.8	3.3	<0.02	<0.02	<1.0	<1.0	<1.0	
Mid-Flood	F3	Cloudy	Moderate	15:35	18.0	S	0.28	312	18.3	18.3	34.1	34.1	8.4	8.4	107.6	107.6	8.3	8.3	8.3	0.7	0.7	0.7	0.7	<0.001	<0.001	1.6	2.2	1.6	<0.02	<0.02	<1.0	<1.0	<1.0
							0.16	314	18.3	18.3	34.1	34.1	8.4	8.4	107.6	107.6	8.3	8.3	8.3	0.7	0.7	0.7	0.7	<0.001	<0.001	2.7	2.2	2.7	<0.02	<0.02	<1.0	<1.0	<1.0
							0.22	65	18.3	18.3	34.1	34.1	8.4	8.4	107.5	107.5	8.3	8.3	8.3	0.9	0.9	0.9	0.9	<0.001	<0.001	1.6	1.6	1.6	<0.02	<0.02	<1.0	<1.0	<1.0
						0.53	279	18.3	18.3	34.1	34.1	8.4	8.4	107.4	107.5	8.2	8.3	8.3	0.8	0.9	0.9	0.8	<0.001	<0.001	1.6	1.6	1.6	<0.02	<0.02	<1.0	<1.0	<1.0	
						0.65	318	18.3	18.3	34.1	34.1	8.4	8.4	107.8	107.7	8.3	8.3	8.3	1.0	1.2	1.2	1.0	<0.001	<0.001	1.4	1.6	1.4	<0.02	<0.02	<1.0	<1.0	<1.0	
						0.36	327	18.3	18.3	34.1	34.1	8.4	8.4	107.6	107.6	8.3	8.3	8.3	1.3	1.2	1.2	1.3	<0.001	<0.001	1.8	1.6	1.8	<0.02	<0.02	<1.0	<1.0	<1.0	
	IM6	Cloudy	Moderate	15:22	17.3	S	0.26	307	18.1	18.1	34.1	34.1	8.3	8.3	106.5	106.7	8.2	8.2	8.2	1.0	1.0	1.0	1.0	<0.001	0.003	2.8	2.5	2.8	<0.02	<0.02	<1.0	<1.0	<1.0
							0.31	332	18.1	18.1	34.1	34.1	8.4	8.4	106.8	106.7	8.2	8.2	8.2	1.0	1.0	1.0	1.0	0.004	<0.001	2.2	2.5	2.2	<0.02	<0.02	<1.0	<1.0	<1.0
							0.16	313	18.1	18.1	34.1	34.1	8.3	8.3	106.1	106.2	8.2	8.2	8.2	1.2	1.3	1.3	1.2	<0.001	<0.001	2.4	2.5	2.4	<0.02	<0.02	<1.0	<1.0	<1.0
						0.16	313	18.2	18.1	34.1	34.1	8.3	8.3	106.3	106.3	8.2	8.2	8.2	1.4	1.4	1.4	1.4	<0.001	<0.001	2.6	2.5	2.6	<0.02	<0.02	<1.0	<1.0	<1.0	
						0.08	24	18.2	18.2	34.0	34.1	8.2	8.3	105.9	105.8	8.1	8.1	8.1	1.3	1.3	1.3	1.3	<0.001	<0.001	2.5	3.1	2.5	<0.02	<0.02	<1.0	<1.0	<1.0	
						0.08	24	18.2	18.2	34.1	34.1	8.3	8.3	105.7	105.7	8.1	8.1	8.1	1.3	1.3	1.3	1.3	<0.001	<0.001	3.6	3.1	3.6	<0.02	<0.02	<1.0	<1.0	<1.0	

Remark: \* DA: Depth-Averaged

\*\* Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher

\*\*\* S: 1 m below the sea surface; M: mid-depth; B: 1 m above the seabed

Water Quality Monitoring Data Log Sheet

Date: 2024/02/15

Tide	Monitoring Station	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Depth Level***	Current		Temperature (°C)		Salinity (ppt)		pH		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Total Residual Chlorine (mg/L)		Suspended Solids (mg/L)		Total Inorganic Nitrogen (mg/L)		5-day Biochemical Oxygen Demand (mg/L)			
							Velocity (m/s)	Direction	Value	Average	DA	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
Mid-Ebb	E2	Fine	Calm	16:11	9.0	S	0.12	63	19.5	19.7	34.0	33.9	8.3	8.3	108.8	109.2	8.2	8.2	1.7	1.7	<0.001	<0.001	3.3	3.2	0.11	0.11	<1.0	<1.0	<1.0	<1.0
							0.19	142	20.0	19.3	33.9	33.9	8.3	8.3	109.6	106.7	8.0	8.1	1.7	1.7	<0.001	<0.001	2.8	2.7	0.12	0.11	<1.0	<1.0	<1.0	<1.0
							0.17	351	19.2	19.2	33.9	33.9	8.3	8.3	107.3	106.7	8.1	8.1	1.7	1.7	<0.001	<0.001	2.6	2.7	0.10	0.11	<1.0	<1.0	<1.0	<1.0
						M	0.17	53	19.1	19.1	33.9	33.9	8.2	8.2	102.6	103.4	7.8	7.8	1.9	2.0	<0.001	<0.001	2.4	2.3	0.12	0.13	<1.0	<1.0	<1.0	<1.0
							0.17	53	19.1	19.1	33.9	33.9	8.2	8.2	104.1	113.5	7.9	8.4	2.1	0.8	<0.001	<0.001	2.2	0.8	0.13	0.04	<1.0	<1.0	<1.0	<1.0
							0.12	121	20.2	20.3	33.9	33.9	8.3	8.3	113.8	113.5	8.4	8.4	0.8	0.8	<0.001	<0.001	3.8	3.6	0.04	0.04	<1.0	<1.0	<1.0	<1.0
	IM6	Fine	Calm	15:41	17.0	S	0.18	38	19.5	19.5	34.2	34.2	8.3	8.3	108.0	108.6	8.1	8.1	0.7	0.8	<0.001	<0.001	3.4	3.0	0.04	0.04	<1.0	<1.0	<1.0	<1.0
							0.27	1	19.5	19.4	34.2	34.2	8.3	8.3	109.1	109.1	8.2	8.2	0.8	0.8	0.002	0.002	3.1	3.0	<0.02	<0.02	<1.0	<1.0	<1.0	<1.0
							0.22	359	19.4	19.4	34.2	34.2	8.2	8.2	105.9	105.5	8.0	7.9	1.4	1.4	<0.001	<0.001	2.9	2.6	0.02	0.02	<1.0	<1.0	<1.0	<1.0
						M	0.22	359	19.4	19.4	34.2	34.2	8.2	8.2	105.1	105.1	7.9	7.9	1.3	1.4	<0.001	<0.001	2.7	2.6	0.02	0.02	<1.0	<1.0	<1.0	<1.0
							0.29	193	19.3	19.3	34.0	34.0	8.3	6.3	104.5	105.0	7.9	7.9	1.0	1.3	<0.001	<0.001	1.4	1.3	0.05	0.05	<1.0	<1.0	<1.0	<1.0
							0.17	284	19.3	19.3	34.0	34.0	8.3	6.3	105.4	105.0	7.9	7.9	1.1	1.3	<0.001	<0.001	1.2	1.3	0.05	0.05	<1.0	<1.0	<1.0	<1.0
Mid-Flood	F3	Cloudy	Calm	9:41	18.0	S	0.36	277	19.4	19.4	34.1	34.1	8.3	8.3	102.7	102.9	7.7	7.7	0.9	0.8	<0.001	<0.001	1.9	1.8	0.03	0.03	<1.0	<1.0	<1.0	<1.0
							0.36	277	19.4	19.4	34.1	34.1	8.3	8.3	103.0	102.9	7.8	7.7	0.7	0.8	<0.001	<0.001	1.6	1.8	0.03	0.03	<1.0	<1.0	<1.0	<1.0
							0.18	62	19.3	19.3	34.1	34.1	8.3	8.3	102.1	102.1	7.7	7.7	1.4	1.4	<0.001	<0.001	2.3	2.5	0.04	0.04	<1.0	<1.0	<1.0	<1.0
						M	0.18	62	19.3	19.3	34.1	34.1	8.3	8.3	102.1	102.1	7.7	7.7	1.4	1.4	<0.001	<0.001	2.7	2.5	0.04	0.04	<1.0	<1.0	<1.0	<1.0
							0.23	328	19.3	19.3	34.0	34.0	8.2	8.2	104.4	104.3	7.9	7.9	1.2	1.3	<0.001	0.004	3.1	2.9	0.04	0.05	<1.0	<1.0	<1.0	<1.0
							0.05	355	19.3	19.3	34.0	34.0	8.2	8.2	104.2	104.3	7.9	7.9	1.3	1.3	0.007	0.007	2.7	2.9	0.05	0.05	<1.0	<1.0	<1.0	<1.0
	IM6	Cloudy	Calm	9:22	17.0	S	0.13	313	19.3	19.3	34.0	34.0	8.2	8.2	104.1	104.2	7.8	7.9	1.3	1.4	<0.001	<0.001	2.2	2.4	0.05	0.05	<1.0	<1.0	<1.0	<1.0
							0.3	355	19.3	19.3	34.0	34.0	8.2	8.2	104.3	104.3	7.9	7.9	1.4	1.4	<0.001	<0.001	2.5	2.4	0.04	0.04	<1.0	<1.0	<1.0	<1.0
							0.33	312	19.4	19.4	34.0	34.0	8.2	8.2	104.8	104.8	7.9	7.9	1.8	2.1	<0.001	0.004	1.8	1.7	0.05	0.06	<1.0	<1.0	<1.0	<1.0
						M	0.16	271	19.4	19.4	34.1	34.1	8.2	8.2	104.7	104.7	7.9	7.9	2.3	2.3	0.006	0.006	1.6	1.7	0.06	0.06	<1.0	<1.0	<1.0	<1.0

Remark: \* DA: Depth-Averaged  
 \*\* Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher  
 \*\*\* S: 1 m below the sea surface; M: mid-depth; B: 1 m above the seabed

Water Quality Monitoring Data Log Sheet

Date: 2024/02/23

Tide	Monitoring Station	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Depth Level ***	Current		Temperature (°C)		Salinity (ppt)		pH		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Total Residual Chlorine (mg/L)		Suspended Solids (mg/L)		Total Inorganic Nitrogen (mg/L)		5-day Biochemical Oxygen Demand (mg/L)					
							Velocity (m/s)	Direction	Value	Average	DA	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	Value	Average
Mid-Ebb	E2	Cloudy	Rough	12:02	9.0	S	0.30	335	20.9	20.9	33.2	33.2	8.2	8.2	100.0	100.1	7.4	7.4	1.0	1.0	<0.001	<0.001	1.3	1.4	0.19	0.19	1.1	1.1				
							0.19	4	20.9		33.2		8.2		100.1		7.4		1.0		<0.001		1.4		1.4		0.19		1.1			
							0.22	317	20.9	20.8	33.1	33.1	8.2	8.2	99.6	99.7	7.3	7.3	1.4	1.4	<0.001	<0.001	1.6	1.7	1.8	1.7	0.20	0.20	0.20	0.20	<1.0	<1.0
						M	0.26	288	20.8	20.8	33.1	33.1	8.2	8.2	100.7	100.3	7.4	7.4	1.5	1.5	<0.001	<0.001	2.5	2.4	2.0	2.0	0.20	0.20	<1.0	<1.0		
							0.20	323	20.8		33.1		8.2		99.8		7.4		1.4		<0.001		2.3		2.3		0.19		<1.0			
							0.05	165	20.5	20.5	33.2	33.3	8.2	8.2	99.7	99.6	7.4	7.4	1.2	1.2	<0.001	<0.001	2.9	2.8	2.0	2.0	0.20	0.20	4.4	4.0		
	IM6	Cloudy	Rough	11:25	17.0	S	0.10	19	20.5	20.5	33.3	33.3	8.2	8.2	99.5	99.5	7.4	7.4	1.2	1.2	<0.001	0.002	2.7	2.8	2.5	2.5	0.28	0.27				
							0.06	274	20.5	20.5	33.3	33.3	8.2	8.2	99.4	99.5	7.4	7.4	0.8	0.8	<0.001	0.004	2.6	2.5	2.5	2.5	0.17	0.18	0.21	1.6	2.2	
							0.11	312	20.5	20.5	33.3	33.3	8.2	8.2	99.8	99.7	7.4	7.4	1.3	1.4	<0.001	<0.001	2.4	2.2	2.1	2.2	0.18	0.18	1.4	1.2		
						M	0.11	312	20.5	20.5	33.3	33.3	8.2	8.2	99.6	99.6	7.4	7.4	1.4	1.4	<0.001	<0.001	2.2		2.2		0.17		1.1			
							0.57	289	20.7	20.7	33.5	33.5	8.2	8.2	103.6	103.3	7.6	7.6	0.1	0.1	<0.001	<0.001	<1.0	<1.0	<1.0	<1.0	0.23	0.25	<1.0	<1.0		
							0.34	260	20.7	20.7	33.5	33.5	8.2	8.2	102.9	104.2	7.6	7.7	0.1	0.1	<0.001	<0.001	<1.0		<1.0		0.26		<1.0	<1.0		
F3	Cloudy	Rough	6:20	17.0	M	0.41	235	20.7	20.7	33.7	33.7	8.3	8.2	104.2	104.2	7.7	7.7	0.1	0.1	<0.001	<0.001	1.5	1.4	0.16	0.16	0.14	0.16	<1.0	<1.0	<1.0	<1.0	
						0.41	235	20.7	20.7	33.6	33.7	8.2	8.2	104.1	104.2	7.7	7.7	0.1	0.1	<0.001	<0.001	1.3		1.3		0.16		<1.0		<1.0		
						0.25	310	20.3	20.3	34.1	34.1	8.3	8.3	103.9	104.0	7.7	7.7	1.0	1.0	<0.001	0.002	1.9	1.8	0.02	0.02	0.02	0.02	<1.0	<1.0			
					B	0.32	307	20.7	20.7	33.2	33.2	8.2	8.2	104.3	104.3	7.7	7.7	0.0	0.0	<0.001	0.003	1.3	1.4	1.9	1.8	0.02	0.02	<1.0	<1.0			
						0.37	235	20.7	20.7	33.2	33.2	8.2	8.2	104.3	104.3	7.7	7.7	0.0	0.0	<0.001	<0.001	1.3	1.4	1.9	1.8	0.02	0.02	<1.0	<1.0			
						0.28	229	20.6	20.6	33.6	33.6	8.3	8.3	105.0	105.0	7.7	7.7	1.0	1.0	<0.001	<0.001	2.3	2.5	1.5	1.4	0.19	0.19	<1.0	<1.0			
IM6	Cloudy	Rough	6:02	16.0	M	0.11	270	20.6	20.6	33.6	33.6	8.3	8.3	104.9	104.9	7.7	7.7	0.9	0.9	<0.001	<0.001	2.6	2.6	0.13	0.12	0.13	0.13	<1.0	<1.0	<1.0	<1.0	
						0.17	348	20.5	20.5	33.8	33.8	8.3	8.3	104.9	104.9	7.7	7.7	2.9	2.9	<0.001	<0.001	3.6	3.6	0.08	0.08	0.08	0.08	<1.0	<1.0			
						0.08	6	20.5	20.5	33.8	33.8	8.3	8.3	104.8	104.8	7.7	7.7	2.8	2.8	0.007	0.004	3.9	3.8	0.08	0.08	0.08	0.08	<1.0	<1.0			

Remark: \* DA: Depth-Averaged

\*\* Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher

\*\*\* S: 1 m below the sea surface; M: mid-depth; B: 1 m above the seabed

Water Quality Monitoring Data Log Sheet

Date: 2024/02/28

Tide	Monitoring Station	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Depth Level ***	Current		Temperature (°C)		Salinity (ppt)		pH		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Total Residual Chlorine (mg/L)			Suspended Solids (mg/L)			Total Inorganic Nitrogen (mg/L)			5-day Biochemical Oxygen Demand (mg/L)				
							Velocity (m/s)	Direction	Value	Average	DA	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*		
Mid-Ebb	E2	Cloudy	Rough	14:07	9.0	S	0.10	282	19.9	19.9	33.9	33.9	8.2	8.2	101.8	101.9	7.6	7.6	2.4	2.4	<0.001	<0.001	<0.001	1.8	2.3	0.08	0.08	1.1	1.1					
							0.14	107	19.9	19.9	33.9	33.9	8.2	8.2	102.0	101.9	7.6	7.6	2.4	2.4	<0.001	<0.001	<0.001	2.7	2.3	0.08	0.08	1.0	1.1					
							0.30	95	19.9	19.9	33.9	33.9	8.2	8.2	101.4	101.5	7.6	7.6	2.8	2.8	<0.001	<0.001	<0.001	1.9	2.0	0.08	0.08	<1.0	<1.0					
						M	0.30	95	19.9	19.9	33.9	33.9	8.2	8.2	101.6	101.5	7.6	7.6	2.8	2.8	<0.001	<0.001	<0.001	2.0	2.0	0.08	0.08	<1.0	<1.0					
							0.17	5	19.9	19.9	33.9	33.9	8.2	8.2	101.8	101.7	7.6	7.6	5.0	4.9	<0.001	<0.001	<0.001	2.1	2.5	0.08	0.09	<1.0	<1.0					
							0.18	28	19.9	19.9	33.9	33.9	8.2	8.2	101.5	100.4	7.4	7.4	4.8	4.8	<0.001	<0.001	<0.001	2.8	2.5	0.08	0.09	<1.0	<1.0					
	IM6	Cloudy	Rough	13:34	17.0	S	0.21	84	20.3	20.3	34.2	34.2	8.2	8.2	100.4	100.5	7.4	7.4	1.3	1.3	<0.001	<0.001	<0.001	1.4	1.3	0.03	0.03	<1.0	<1.0					
							0.18	190	20.4	20.4	34.2	34.2	8.2	8.2	100.4	100.4	7.4	7.4	1.3	1.3	<0.001	<0.001	<0.001	1.2	1.9	0.03	0.04	<1.0	<1.0					
							0.07	196	20.4	20.4	34.2	34.2	8.2	8.2	100.4	100.4	7.4	7.4	1.2	1.3	<0.001	<0.001	<0.001	2.0	1.9	0.04	0.04	<1.0	<1.0					
						M	0.28	48	20.4	20.2	34.3	34.3	8.2	8.2	101.1	100.9	7.5	7.4	1.3	1.3	<0.001	0.006	<0.001	<1.0	<1.0	0.04	0.04	<1.0	<1.0					
							0.04	269	20.4	20.2	34.3	34.3	8.2	8.2	100.6	100.6	7.4	7.4	1.3	1.3	0.011	0.006	<0.001	<1.0	<1.0	0.04	0.04	<1.0	<1.0					
							0.12	307	20.7	20.6	34.4	34.4	8.3	8.3	100.5	100.5	7.4	7.4	1.6	1.6	<0.001	0.001	<0.001	<1.0	<1.0	<0.02	<0.02	<1.0	<1.0					
Mid-Flood	F3	Cloudy	Rough	8:04	18.0	S	0.19	251	20.6	20.6	34.4	34.4	8.3	8.3	100.5	100.5	7.4	7.4	1.5	1.5	<0.001	<0.001	<0.001	<1.0	<1.0	<0.02	<0.02	<1.0	<1.0					
							0.49	283	20.6	20.6	34.4	34.4	8.3	8.3	100.3	100.3	7.4	7.4	1.2	1.3	<0.001	<0.001	<0.001	<1.0	<1.0	<0.02	<0.02	<1.0	<1.0					
							0.4	275	20.7	20.6	34.4	34.4	8.3	8.3	100.3	100.3	7.4	7.4	1.2	1.3	<0.001	<0.001	<0.001	<1.0	<1.0	<0.02	<0.02	<1.0	<1.0					
						M	0.54	309	20.6	20.6	34.4	34.4	8.3	8.3	101.5	101.3	7.5	7.4	2.6	2.5	<0.001	<0.001	<0.001	<1.0	<1.0	<0.02	<0.02	<1.0	<1.0					
							0.41	301	20.6	20.6	34.4	34.4	8.3	8.3	101.0	100.4	7.4	7.4	2.4	2.4	<0.001	<0.001	<0.001	<1.0	<1.0	<0.02	<0.02	<1.0	<1.0					
							0.31	254	20.6	20.6	34.4	34.4	8.2	8.2	100.4	100.4	7.4	7.4	2.0	1.9	<0.001	<0.001	<0.001	1.1	1.3	<0.02	<0.02	<1.0	<1.0					
	IM6	Cloudy	Rough	7:36	17.0	S	0.22	19	20.6	20.6	34.4	34.4	8.2	8.2	100.4	100.6	7.4	7.4	1.8	1.7	<0.001	<0.001	<0.001	1.5	1.6	<0.02	<0.02	<1.0	<1.0					
							0.22	19	20.6	20.6	34.4	34.4	8.2	8.2	100.7	100.6	7.4	7.4	1.7	1.7	<0.001	<0.001	<0.001	2.0	1.6	<0.02	0.03	<1.0	<1.0					
							0.2	335	20.6	20.6	34.4	34.4	8.2	8.2	100.5	100.5	7.4	7.4	1.7	1.7	<0.001	<0.001	<0.001	1.1	1.1	0.03	0.03	<1.0	<1.0					
						M	0.11	352	20.6	20.6	34.4	34.4	8.2	8.2	101.5	101.2	7.4	7.4	2.5	2.4	<0.001	<0.001	<0.001	3.6	3.0	<0.02	<0.02	<1.0	<1.0					
							0.11	352	20.6	20.6	34.4	34.4	8.2	8.2	100.9	100.9	7.4	7.4	2.3	2.4	<0.001	<0.001	<0.001	2.4	3.0	<0.02	<0.02	<1.0	<1.0					
							0.11	352	20.6	20.6	34.4	34.4	8.2	8.2	100.9	100.9	7.4	7.4	2.3	2.4	<0.001	<0.001	<0.001	2.4	3.0	<0.02	<0.02	<1.0	<1.0					

Remark: \* DA: Depth-Averaged  
 \*\* Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher  
 \*\*\* S: 1 m below the sea surface; M: mid-depth; B: 1 m above the seabed

Water Quality Monitoring Data Log Sheet

Date: 2024/03/07

Tide	Monitoring Station	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Depth Level ***	Current		Temperature (°C)		Salinity (ppt)		pH		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Total Residual Chlorine (mg/L)		Suspended Solids (mg/L)		Total Inorganic Nitrogen (mg/L)		5-day Biochemical Oxygen Demand (mg/L)					
							Velocity (m/s)	Direction	Value	Average	DA	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value
Mid-Ebb	E2	Cloudy	Moderate	9:48	9.0	S	0.25	288	20.1	20.1	34.2	34.2	8.3	8.3	102.6	102.6	7.6	7.6	1.7	1.7	<0.001	<0.001	1.2	1.3	0.08	0.08	<1.0	<1.0				
							0.05	258	20.1				8.3	8.3	102.6	102.6	7.6	7.6	1.7	1.7	<0.001	<0.001	1.3	1.3	0.08	0.08	<1.0	<1.0				
							0.37	324	20.1				8.3	8.3	102.7	102.7	7.6	7.6	2.4	2.3	<0.001	<0.001	1.8	1.7	0.08	0.08	<1.0	<1.0	<1.0	<1.0		
						M	0.13	160	20.1				8.3	8.3	102.7	102.7	7.6	7.6	2.2	2.3	<0.001	<0.001	1.6	1.7	0.08	0.08	<1.0	<1.0	<1.0	<1.0		
							0.18	205	20.1				8.3	8.3	103.1	103.0	7.7	7.6	3.0	3.0	<0.001	<0.001	2.5	2.6	0.01	0.05	<1.0	<1.0	<1.0	<1.0		
							0.25	245	20.1				8.3	8.3	102.9	101.1	7.6	7.4	2.9	2.9	<0.001	<0.001	2.6	2.6	0.05	0.05	<1.0	<1.0	<1.0	<1.0		
	IM6	Cloudy	Moderate	9:16	17.0	S	0.22	249	20.6	20.6	34.4	34.4	8.3	8.3	101.1	101.1	7.4	7.4	1.4	1.4	<0.001	<0.001	<1.0	<1.0	0.05	0.06	<1.0	<1.0				
							0.25	245	20.6				8.3	8.3	101.0	101.1	7.4	7.4	1.3	1.4	<0.001	<0.001	<1.0	<1.0	0.07	0.06	<1.0	<1.0				
							0.30	269	20.6				8.3	8.3	101.1	101.1	7.4	7.4	1.8	1.8	<0.001	<0.001	1.6	1.7	0.06	0.06	<1.0	<1.0	<1.0	<1.0		
						M	0.30	269	20.6				8.3	8.3	101.1	101.1	7.4	7.4	1.7	1.7	<0.001	<0.001	1.7	1.7	0.06	0.06	<1.0	<1.0	<1.0	<1.0		
							0.21	355	20.6				8.3	8.3	102.1	101.8	7.5	7.5	3.0	2.9	<0.001	<0.001	2.6	2.5	0.06	0.06	<1.0	<1.0	<1.0	<1.0		
							0.26	284	20.6				8.3	8.3	101.4	101.4	7.4	7.4	2.8	2.8	<0.001	<0.001	2.4	2.5	0.06	0.06	<1.0	<1.0	<1.0	<1.0		
Mid-Flood	F3	Cloudy	Moderate	14:24	17.0	S	0.31	237	20.6	20.6	34.4	34.4	8.3	8.3	103.5	103.8	7.6	7.6	1.3	1.3	<0.001	<0.001	<1.0	<1.0	0.07	0.07	<1.0	<1.0				
							0.17	328	20.6				8.3	8.3	104.0	104.0	7.6	7.6	1.2	1.3	<0.001	<0.001	<1.0	<1.0	0.07	0.07	<1.0	<1.0				
							0.28	242	20.6				8.3	8.3	102.4	102.7	7.5	7.5	1.3	1.3	<0.001	<0.001	1.2	1.4	0.06	0.07	<1.0	<1.0	<1.0	<1.0		
						M	0.04	41	20.6				8.3	8.3	102.9	102.7	7.6	7.5	1.2	1.3	<0.001	<0.001	1.5	1.4	0.07	0.07	<1.0	<1.0	<1.0	<1.0		
							0.26	309	20.6				8.3	8.3	102.6	102.3	7.5	7.5	10.0	9.7	<0.001	<0.001	12.8	12.6	0.06	0.07	<1.0	<1.0	<1.0	<1.0		
							0.21	306	20.6				8.3	8.3	102.0	102.3	7.5	7.5	9.4	9.7	<0.001	<0.001	12.3	12.6	0.07	0.07	<1.0	<1.0	<1.0	<1.0		
	IM6	Cloudy	Moderate	14:10	16.0	S	0.27	314	20.7	20.7	34.4	34.4	8.3	8.3	102.6	102.8	7.5	7.5	2.1	2.0	<0.001	<0.001	1.9	1.9	0.06	0.06	<1.0	<1.0				
							0.24	244	20.8				8.3	8.3	103.0	101.7	7.5	7.5	1.9	1.9	<0.001	<0.001	1.8	1.7	0.06	0.06	<1.0	<1.0	<1.0	<1.0		
							0.06	241	20.7				8.3	8.3	101.7	101.7	7.5	7.5	3.1	3.0	<0.001	<0.001	1.8	1.7	0.07	0.07	<1.0	<1.0	<1.0	<1.0		
						M	0.22	318	20.7				8.3	8.3	101.7	101.7	7.5	7.5	2.9	2.9	<0.001	<0.001	1.6	1.6	0.07	0.07	<1.0	<1.0	<1.0	<1.0		
							0.09	228	20.6				8.2	8.2	102.1	101.8	7.5	7.5	2.5	2.5	<0.001	<0.001	1.6	1.6	0.06	0.07	<1.0	<1.0	<1.0	<1.0		
							0.09	228	20.6				8.2	8.2	101.5	101.5	7.5	7.5	2.4	2.4	<0.001	<0.001	1.6	1.6	0.07	0.07	<1.0	<1.0	<1.0	<1.0		

Remark: \* DA: Depth-Averaged

\*\* Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher

\*\*\* S: 1 m below the sea surface; M: mid-depth; B: 1 m above the seabed

Water Quality Monitoring Data Log Sheet

Date: 2024/03/14

Tide	Monitoring Station	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Depth Level ***	Current		Temperature (°C)		Salinity (ppt)		pH		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Total Residual Chlorine (mg/L)		Suspended Solids (mg/L)		Total Inorganic Nitrogen (mg/L)		5-day Biochemical Oxygen Demand (mg/L)			
							Velocity (m/s)	Direction	Value	Average	DA	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	Value
Mid-Ebb	E2	Cloudy	Rough	14:47	9.0	S	0.27	45	19.8	19.8	34.0	34.0	8.2	8.2	104.2	104.4	7.8	7.8	2.1	2.1	<0.001	<0.001	1.7	1.8	0.13	0.14	<1.0	<1.0		
							0.30	66	19.8	19.7	34.0	34.1	8.2	8.2	104.5	102.5	7.7	7.7	2.1	2.1	<0.001	<0.001	1.9	1.8	0.14	0.13	<1.0	<1.0		
							0.19	319	19.7	19.7	34.1	34.1	8.2	8.2	102.3	102.5	7.7	7.7	2.3	2.3	<0.001	<0.001	2.6	2.4	0.13	0.13	<1.0	<1.0		
						M	0.14	65	19.7	19.5	34.1	34.1	8.2	8.2	102.6	101.0	7.6	7.6	2.2	2.3	<0.001	<0.001	2.2	2.4	0.13	0.13	<1.0	<1.0		
							0.39	82	19.5	19.5	34.1	34.1	8.2	8.2	101.1	101.0	7.6	7.6	3.6	3.7	<0.001	<0.001	3.3	3.2	0.11	0.12	<1.0	<1.0		
							0.26	60	19.5	19.5	34.1	34.1	8.2	8.2	100.9	99.9	7.6	7.6	3.7	3.7	<0.001	<0.001	3.0	3.0	0.12	0.12	<1.0	<1.0		
	IM6	Cloudy	Rough	14:12	17.0	S	0.18	101	19.5	19.5	34.1	34.1	8.2	8.2	99.8	99.9	7.5	7.5	2.2	2.2	<0.001	<0.001	2.4	2.5	0.07	0.07	2.2	2.2		
							0.27	343	19.6	19.5	34.1	34.1	8.2	8.2	100.0	99.5	7.5	7.5	2.2	2.2	<0.001	<0.001	2.5	2.5	0.07	0.07	2.8	2.5		
							0.29	114	19.5	19.5	34.2	34.2	8.2	8.2	99.5	99.5	7.5	7.5	2.7	2.9	<0.001	<0.001	2.2	2.2	0.04	0.04	<1.0	<1.0		
						M	0.31	109	19.5	19.7	34.2	34.2	8.2	8.2	99.4	99.4	7.5	7.5	3.0	3.0	<0.001	<0.001	2.1	2.2	0.04	0.04	<1.0	<1.0		
							0.17	157	19.7	19.7	34.3	34.3	8.2	8.2	100.1	100.0	7.5	7.5	2.3	2.5	<0.001	<0.001	1.9	1.9	0.04	0.04	<1.0	<1.0		
							0.11	270	19.6	19.7	34.3	34.3	8.2	8.2	99.9	99.9	7.5	7.5	2.6	2.6	<0.001	<0.001	1.8	1.8	0.04	0.04	<1.0	<1.0		
Mid-Flood	F3	Cloudy	Rough	8:10	18.0	S	0.81	268	19.4	19.4	34.2	34.2	8.3	8.3	99.5	99.6	7.5	7.5	2.3	2.4	<0.001	<0.001	1.9	1.8	0.11	0.11	1.7	1.9		
							0.81	268	19.4	19.4	34.2	34.2	8.3	8.3	99.7	99.7	7.5	7.5	2.4	2.4	<0.001	<0.001	1.7	1.8	0.11	0.11	2.1	1.9		
							0.47	311	19.4	19.4	34.2	34.2	8.3	8.3	99.9	99.7	7.5	7.5	3.0	3.1	<0.001	<0.001	2.1	2.2	0.11	0.12	<1.0	<1.0		
						M	0.48	272	19.4	19.4	34.2	34.2	8.3	8.3	99.4	99.7	7.5	7.5	3.1	3.1	<0.001	<0.001	2.3	2.2	0.12	0.12	<1.0	<1.0		
							0.40	286	19.4	19.4	34.2	34.2	8.3	8.3	100.7	100.4	7.6	7.5	4.0	4.6	<0.001	<0.001	2.6	2.8	0.11	0.11	1.6	1.4		
							0.36	290	19.4	19.4	34.2	34.2	8.3	8.3	100.0	99.7	7.5	7.5	5.2	5.2	<0.001	<0.001	2.9	2.8	0.11	0.11	1.1	1.1		
	IM6	Cloudy	Rough	7:50	16.8	S	0.27	283	19.4	19.4	34.3	34.3	8.3	8.3	99.7	99.7	7.5	7.5	3.4	3.4	<0.001	<0.001	3.1	3.2	0.08	0.09	1.1	1.2		
							0.27	283	19.4	19.4	34.3	34.3	8.3	8.3	99.7	99.7	7.5	7.5	3.3	3.4	<0.001	<0.001	3.3	3.2	0.09	0.09	1.3	1.3		
							0.03	288	19.4	19.4	34.3	34.3	8.3	8.3	100.1	100.0	7.5	7.5	3.8	3.9	<0.001	<0.001	3.6	3.5	0.08	0.08	<1.0	<1.0		
						M	0.33	108	19.4	19.4	34.3	34.3	8.3	8.3	99.8	99.8	7.5	7.5	3.9	3.9	<0.001	<0.001	3.4	3.4	0.09	0.09	<1.0	<1.0		
							0.28	10	19.4	19.4	34.3	34.3	8.3	8.3	101.4	101.0	7.6	7.6	4.5	4.7	<0.001	<0.001	4.4	4.4	0.08	0.08	2.8	2.9		
							0.27	298	19.4	19.4	34.3	34.3	8.3	8.3	100.6	100.6	7.6	7.6	4.8	4.8	0.007	0.004	4.0	4.2	0.08	0.08	2.9	2.9		

Remark: \* DA: Depth-Averaged

\*\* Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher

\*\*\* S: 1 m below the sea surface; M: mid-depth; B: 1 m above the seabed

Water Quality Monitoring Data Log Sheet

Date: 2024/03/21

Tide	Monitoring Station	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Depth Level***	Current		Temperature (°C)		Salinity (ppt)		pH		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Total Residual Chlorine (mg/L)		Suspended Solids (mg/L)			Total Inorganic Nitrogen (mg/L)			5-day Biochemical Oxygen Demand (mg/L)							
							Velocity (m/s)	Direction	Value	Average	DA	Value	Average	Value	Average	Value	Average	DA*	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*				
Mid-Ebb	E2	Fine	Calm	10:47	9.0	S	0.07	305	20.4	20.4	20.4	33.7	33.7	8.2	8.2	115.1	115.1	8.5	8.5	1.0	1.1	<0.001	<0.001	2.4	2.3	0.16	0.16	<1.0	<1.0	<1.0	<1.0	<1.0				
							0.18	176	20.4	20.4		33.7	33.7	8.2	8.2	115.0	115.0	8.4	8.5	1.1	1.1	<0.001	<0.001	2.1	2.3	0.16	0.16	<1.0	<1.0	<1.0	<1.0	<1.0				
							0.31	16	20.4	20.4		33.8	33.8	8.2	8.2	114.0	114.3	8.4	8.5	1.0	1.0	<0.001	<0.001	2.8	2.7	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	
						0.31	16	20.4	20.4	33.8		33.8	8.2	8.2	114.6	114.3	8.5	8.5	1.0	1.0	<0.001	<0.001	2.6	2.7	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
						0.16	100	20.4	20.4	33.8		33.8	8.3	8.2	109.8	111.0	8.1	8.2	1.3	1.2	<0.001	<0.001	3.0	3.2	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
						0.07	352	20.4	20.4	33.8		33.8	8.2	8.2	112.2	111.0	8.3	8.2	1.1	1.1	<0.001	<0.001	3.3	3.2	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
	IM6	Fine	Calm	10:13	17.0	S	0.30	271	20.7	20.7	20.7	34.2	34.3	8.2	8.2	102.9	102.8	7.6	7.5	3.7	3.5	<0.001	<0.001	3.6	3.4	0.08	0.08	<1.0	<1.0	<1.0	<1.0	<1.0				
							0.13	293	20.7	20.7		34.3	34.4	8.2	8.2	102.6	102.7	7.5	7.5	3.2	3.5	<0.001	<0.001	3.2	3.4	0.07	0.08	<1.0	<1.0	<1.0	<1.0	<1.0				
							0.21	221	20.7	20.7		34.3	34.4	8.2	8.2	102.7	102.7	7.5	7.5	3.4	3.5	<0.001	<0.001	4.2	4.0	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08		
						0.05	330	20.7	20.7	34.3		34.4	8.2	8.2	102.7	102.7	7.5	7.5	3.6	3.5	<0.001	<0.001	3.6	3.4	0.07	0.08	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			
						0.08	268	20.7	20.7	34.2		34.2	8.2	8.2	103.6	103.6	7.6	7.6	4.0	3.9	<0.001	<0.001	4.7	4.6	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09			
						0.16	233	20.7	20.7	34.2		34.2	8.2	8.2	103.5	103.6	7.6	7.6	3.8	3.9	<0.001	<0.001	4.4	4.6	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08		
Mid-Flood	F3	Fine	Calm	15:19	18.2	S	0.02	254	21.0	21.0	20.9	34.4	34.4	8.2	8.2	103.0	103.1	7.5	7.5	2.1	2.3	<0.001	<0.001	3.9	3.7	0.06	0.06	<1.0	<1.0	<1.0	<1.0	<1.0				
							0.36	275	21.0	21.0		34.4	34.4	8.2	8.2	103.1	103.1	7.5	7.5	2.4	2.3	<0.001	<0.001	3.4	3.7	0.06	0.06	<1.0	<1.0	<1.0	<1.0	<1.0				
							0.21	259	21.0	21.0		34.4	34.4	8.2	8.2	102.2	102.4	7.5	7.5	1.9	1.9	<0.001	<0.001	3.0	3.2	0.06	0.07	<1.0	<1.0	<1.0	<1.0	<1.0				
						0.28	254	21.0	21.0	34.4		34.4	8.2	8.2	102.5	102.4	7.5	7.5	1.9	1.9	<0.001	<0.001	3.3	3.2	0.07	0.07	<1.0	<1.0	<1.0	<1.0	<1.0					
						0.08	293	20.8	20.8	34.4		34.4	8.2	8.2	101.6	101.5	7.4	7.4	3.0	3.1	<0.001	<0.001	2.8	2.8	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06				
						0.24	287	20.8	20.8	34.4		34.4	8.2	8.2	101.4	101.5	7.4	7.4	3.1	3.1	<0.001	<0.001	2.6	2.8	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06				
	IM6	Fine	Calm	15:04	17.0	S	0.51	266	20.8	20.8	20.8	34.1	34.1	8.2	8.2	105.6	106.0	7.7	7.8	1.6	1.6	<0.001	0.003	2.3	2.5	0.10	0.10	<1.0	<1.0	<1.0	<1.0	<1.0				
							0.51	266	20.8	20.8		34.1	34.1	8.2	8.2	106.4	106.0	7.8	7.8	1.6	1.6	<0.001	0.003	2.3	2.5	0.10	0.10	<1.0	<1.0	<1.0	<1.0	<1.0				
							0.34	240	20.8	20.8		34.2	34.2	8.2	8.2	102.9	103.2	7.5	7.6	2.2	2.3	<0.001	0.001	3.0	2.9	0.09	0.09	0.09	0.09	0.09	0.09	0.09				
						0.27	288	20.8	20.8	34.2		34.2	8.2	8.2	103.4	103.4	7.6	7.6	2.3	2.3	0.001	0.001	2.8	2.9	0.09	0.09	0.09	0.09	0.09	0.09	0.09					
						0.29	29	20.7	20.7	34.3		34.3	8.2	8.2	103.6	103.4	7.6	7.6	2.6	2.7	<0.001	<0.001	3.2	3.4	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08				
						0.29	29	20.7	20.7	34.3		34.3	8.2	8.2	103.1	103.4	7.6	7.6	2.7	2.7	<0.001	<0.001	3.6	3.4	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08			

Remark: \* DA: Depth-Averaged

\*\* Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher

\*\*\* S: 1 m below the sea surface; M: mid-depth; B: 1 m above the seabed

Water Quality Monitoring Data Log Sheet

Date: 2024/03/28

Tide	Monitoring Station	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Depth Level***	Current		Temperature (°C)		Salinity (ppt)		pH		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Total Residual Chlorine (mg/L)		Suspended Solids (mg/L)		Total Inorganic Nitrogen (mg/L)		5-day Biochemical Oxygen Demand (mg/L)		
							Velocity (m/s)	Direction	Value	Average	DA	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	Value	Average
Mid-Ebb	E2	Cloudy	Calm	13:37	9.1	S	0.16	136	23.1	23.1	22.8	33.2	33.2	8.4	8.4	135.8	135.5	9.6	9.6	0.1	0.1	<0.001	<0.001	1.8	1.7	0.12	0.12	1.0	1.1
							0.24	129	23.1	33.2		33.3	8.4	9.4	135.0	135.2	9.6	9.6	0.3	0.3	<0.001	<0.001	2.2	2.3	0.11	0.10	<1.0	<1.0	
							0.25	32	22.8	33.3		33.3	8.4	8.4	135.3	135.3	9.6	9.6	0.3	0.3	<0.001	<0.001	2.4	2.3	0.12	0.10	<1.0	<1.0	
						0.11	130	22.5	22.5	33.3		33.3	8.4	8.4	120.7	124.8	8.6	89.0	1.4	1.3	<0.001	<0.001	2.6	2.7	0.11	0.10	<1.0	<1.0	
						0.22	86	22.4	22.4	33.4		33.3	8.4	8.4	128.9	114.3	9.2	7.9	1.2	0.2	<0.001	<0.001	2.7	2.7	0.12	0.10	<1.0	<1.0	
						0.13	153	22.3	22.4	33.7		33.5	8.3	8.3	110.7	114.3	7.9	8.2	0.2	0.2	<0.001	<0.001	2.9	2.8	0.09	0.10	1.4	1.4	
	IM6	Cloudy	Calm	13:04	17.0	S	0.30	63	21.9	21.9	22.1	34.3	34.3	8.2	8.2	105.7	105.8	7.6	7.6	0.7	0.8	<0.001	<0.001	2.6	2.5	0.07	0.10	<1.0	<1.0
							0.10	130	21.9	21.9		34.3	34.3	8.2	8.2	105.8	105.8	7.6	7.6	0.8	0.8	<0.001	<0.001	2.5	2.5	0.08	0.10	<1.0	<1.0
							0.77	2	21.9	21.9		34.3	34.3	8.2	8.2	105.5	105.6	7.6	7.6	1.0	1.0	<0.001	0.005	2.2	2.2	0.07	0.10	<1.0	<1.0
						0.76	85	21.9	21.9	34.3		34.3	8.2	8.2	105.6	105.6	7.6	7.6	0.9	0.9	0.009	0.005	2.2	2.2	0.08	0.10	<1.0	<1.0	
						0.42	274	22.0	22.0	33.7		33.6	8.4	8.4	112.0	114.7	8.1	8.3	0.2	0.2	<0.001	0.027	1.8	1.7	0.09	0.10	<1.0	<1.0	
						0.47	292	22.0	22.0	33.6		33.6	8.4	8.4	117.4	114.7	8.5	8.3	0.2	0.2	0.052	0.027	1.6	1.7	0.11	0.10	<1.0	<1.0	
Mid-Flood	F3	Cloudy	Calm	7:05	18.0	M	0.17	321	21.9	21.9	21.9	34.4	34.4	8.3	8.3	106.0	106.1	7.6	7.6	0.5	0.6	<0.001	0.008	2.5	2.4	0.08	0.08	<1.0	<1.0
							0.17	321	21.9	21.9		34.4	34.4	8.3	8.3	106.1	106.1	7.6	7.6	0.6	0.6	0.014	0.008	2.2	2.4	0.08	0.08	<1.0	<1.0
							0.47	296	21.9	21.9		34.4	34.4	8.3	8.3	106.4	106.2	7.6	7.6	1.0	1.1	<0.001	<0.001	2.8	3.0	0.08	0.08	<1.0	<1.0
						0.2	319	21.9	21.9	34.4		34.4	8.3	8.3	106.0	106.0	7.6	7.6	1.1	1.1	<0.001	<0.001	3.1	3.0	0.08	0.08	<1.0	<1.0	
						0.32	278	22.0	22.0	33.4		33.4	8.4	8.4	122.7	123.7	8.8	8.9	0.2	0.2	<0.001	<0.001	1.5	1.4	0.13	0.13	<1.0	<1.0	
						0.32	278	22.0	22.0	33.4		33.4	8.4	8.4	124.6	123.7	9.0	8.9	0.2	0.2	<0.001	<0.001	1.3	1.4	0.13	0.13	<1.0	<1.0	
	IM6	Cloudy	Calm	6:52	16.0	M	0.15	325	22.0	22.0	22.0	33.8	33.8	8.4	8.4	117.4	118.5	8.4	8.5	0.3	0.3	<0.001	<0.001	1.8	1.7	0.13	0.13	<1.0	<1.0
							0.15	325	22.0	22.0		33.8	33.8	8.4	8.4	119.6	118.5	8.6	8.5	0.3	0.3	<0.001	<0.001	1.6	1.7	0.13	0.13	<1.0	<1.0
							0.19	313	22.0	22.0		34.0	34.1	8.3	8.3	115.7	115.1	8.3	8.3	0.4	0.5	<0.001	0.044	2.0	2.2	0.09	0.10	1.3	1.3
						0.23	335	22.0	22.0	34.1		34.1	8.3	8.3	114.4	114.4	8.2	8.3	0.5	0.5	0.087	0.044	2.3	2.2	0.10	0.10	1.3	1.3	
						0.15	325	22.0	22.0	33.8		33.8	8.4	8.4	117.4	118.5	8.4	8.5	0.3	0.3	<0.001	<0.001	1.8	1.7	0.13	0.13	<1.0	<1.0	
						0.19	313	22.0	22.0	34.0		34.1	8.3	8.3	115.7	115.1	8.3	8.3	0.4	0.5	<0.001	0.044	2.0	2.2	0.09	0.10	1.3	1.3	

Remark: \* DA: Depth-Averaged

\*\* Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher

\*\*\* S: 1 m below the sea surface; M: mid-depth; B: 1 m above the seabed





ANNEX D

GRAPHICAL PRESENTATION OF  
OPERATION PHASE WATER QUALITY  
MONITORING RESULTS

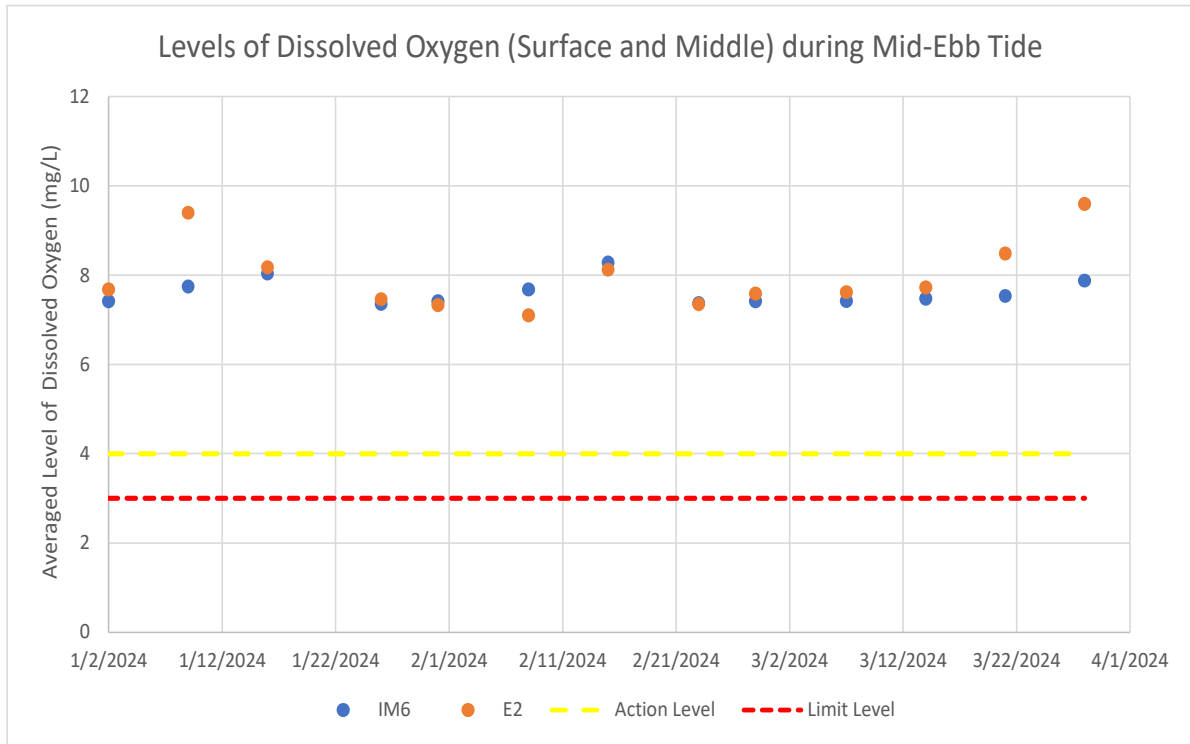


Figure 1: Levels of Dissolved Oxygen (Surface and Middle) during mid-ebb tide between January and March 2024

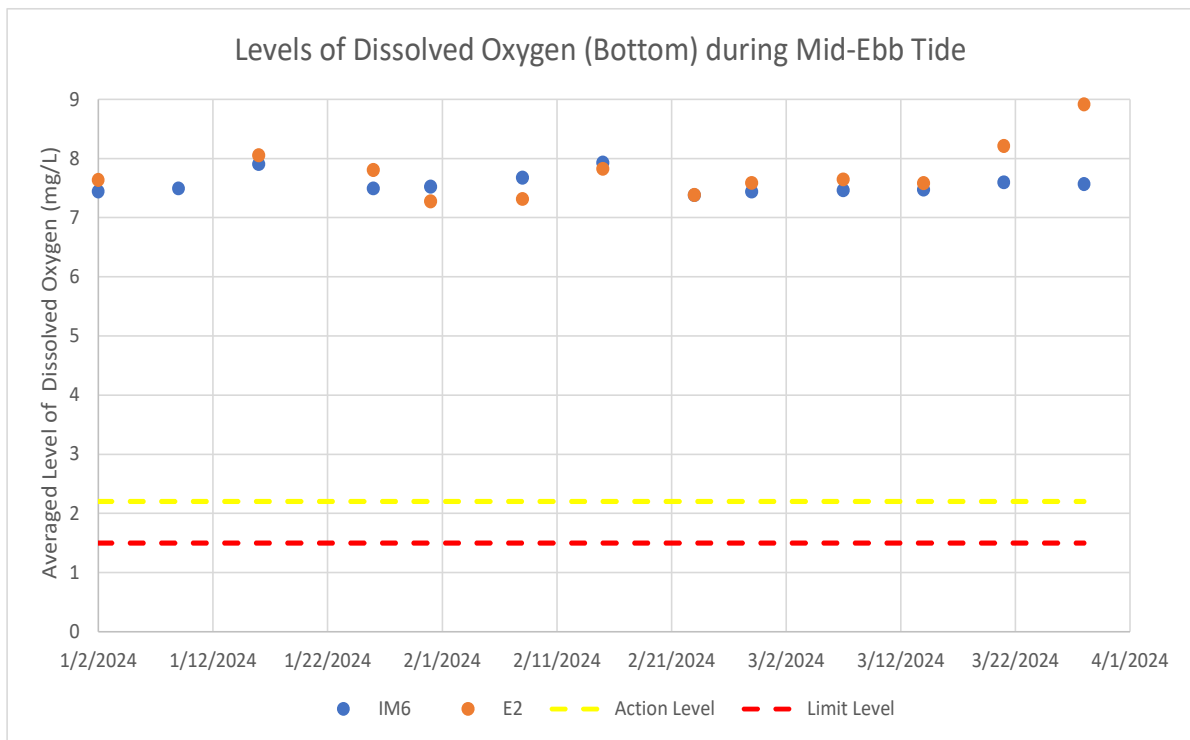


Figure 2: Levels of Dissolved Oxygen (Bottom) during mid-ebb tide between January and March 2024

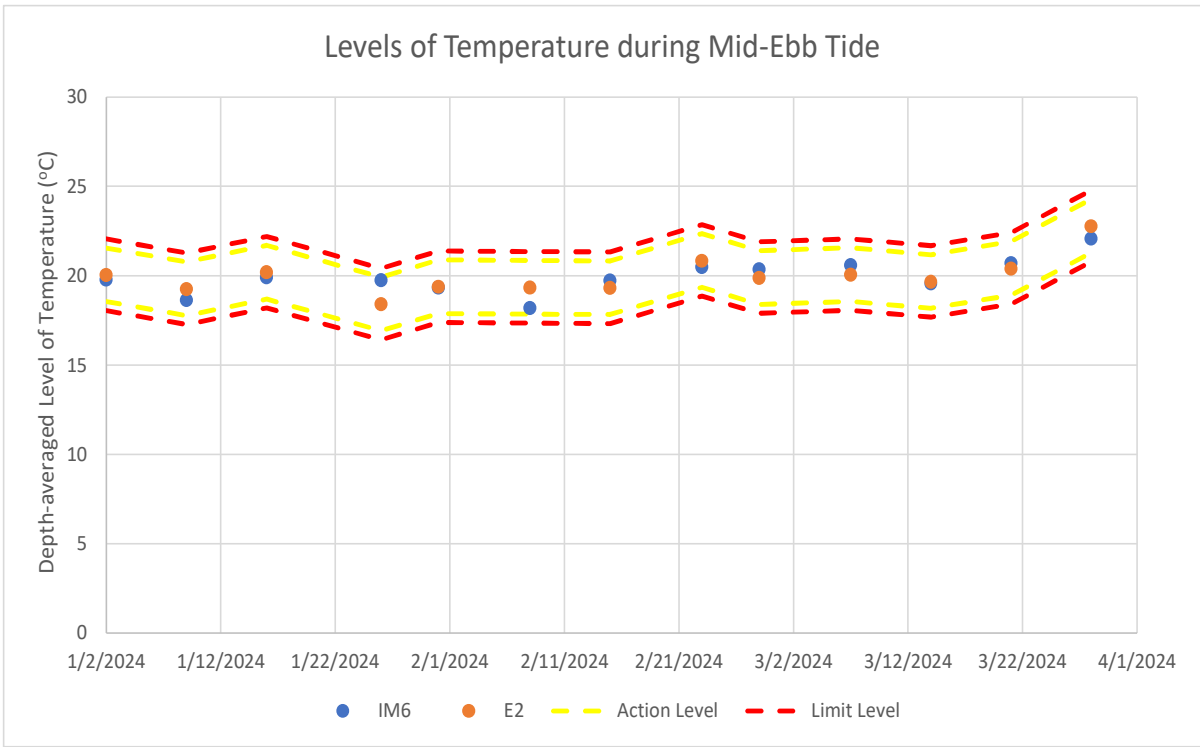


Figure 3: Levels of Temperature during mid-ebb tide between January and March 2024

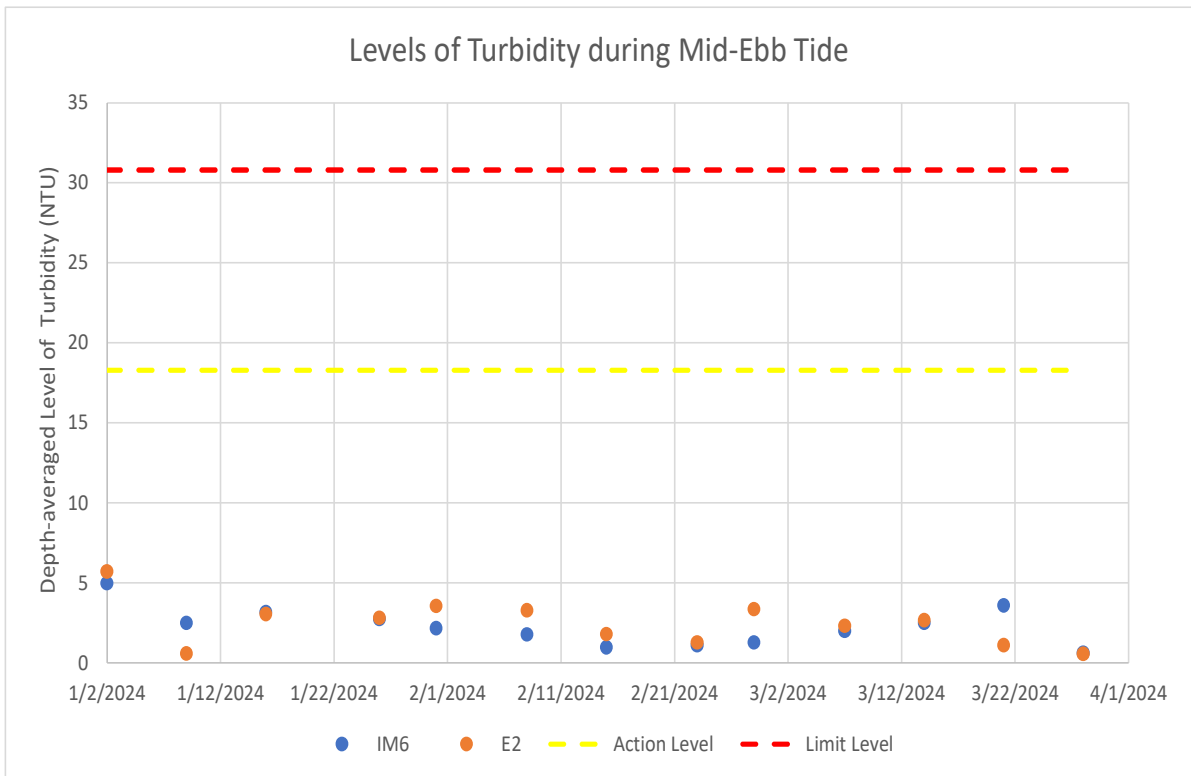


Figure 4: Levels of Turbidity during mid-ebb tide between January and March 2024

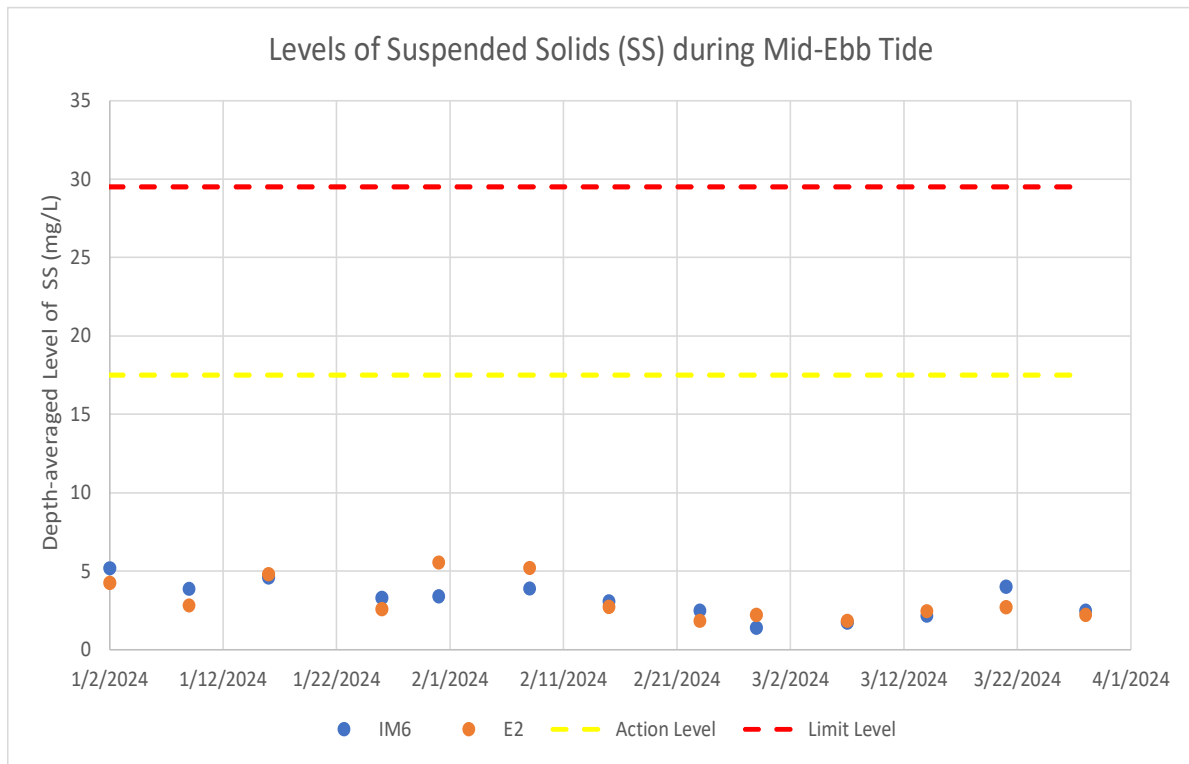


Figure 5: Levels of Suspended Solids during mid-ebb tide between January and March 2024

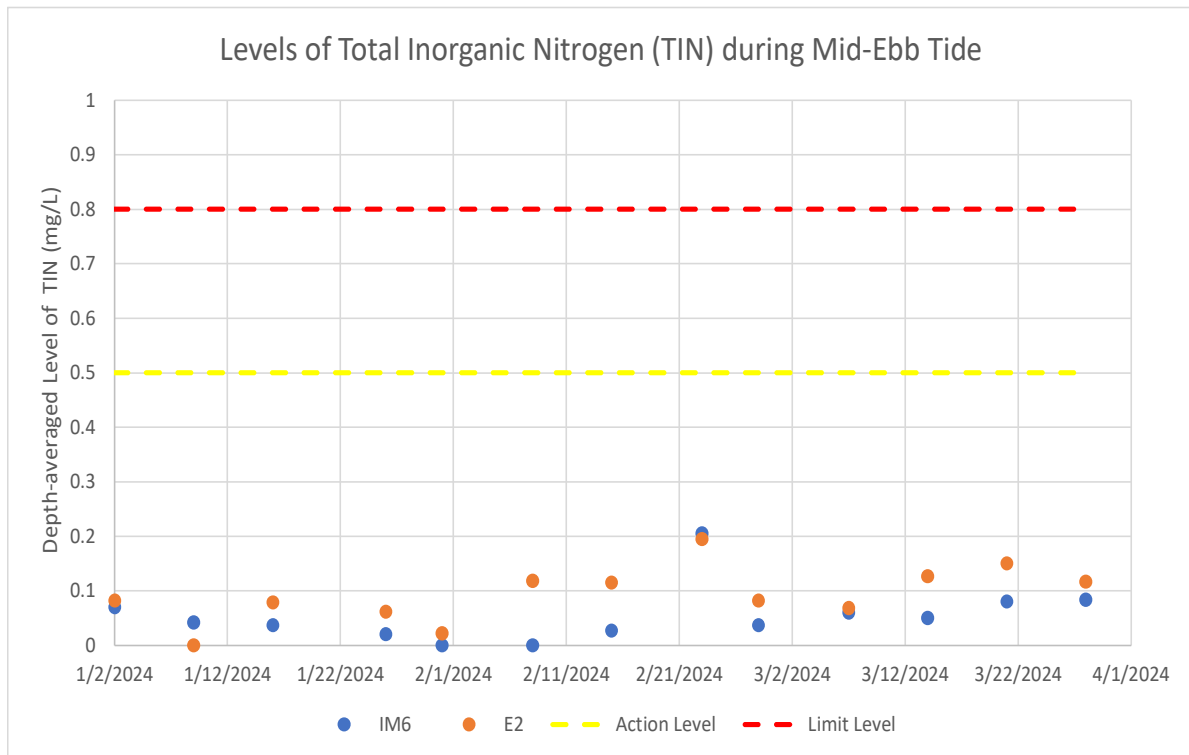


Figure 6: Levels of Total Inorganic Nitrogen during mid-ebb tide between January and March 2024

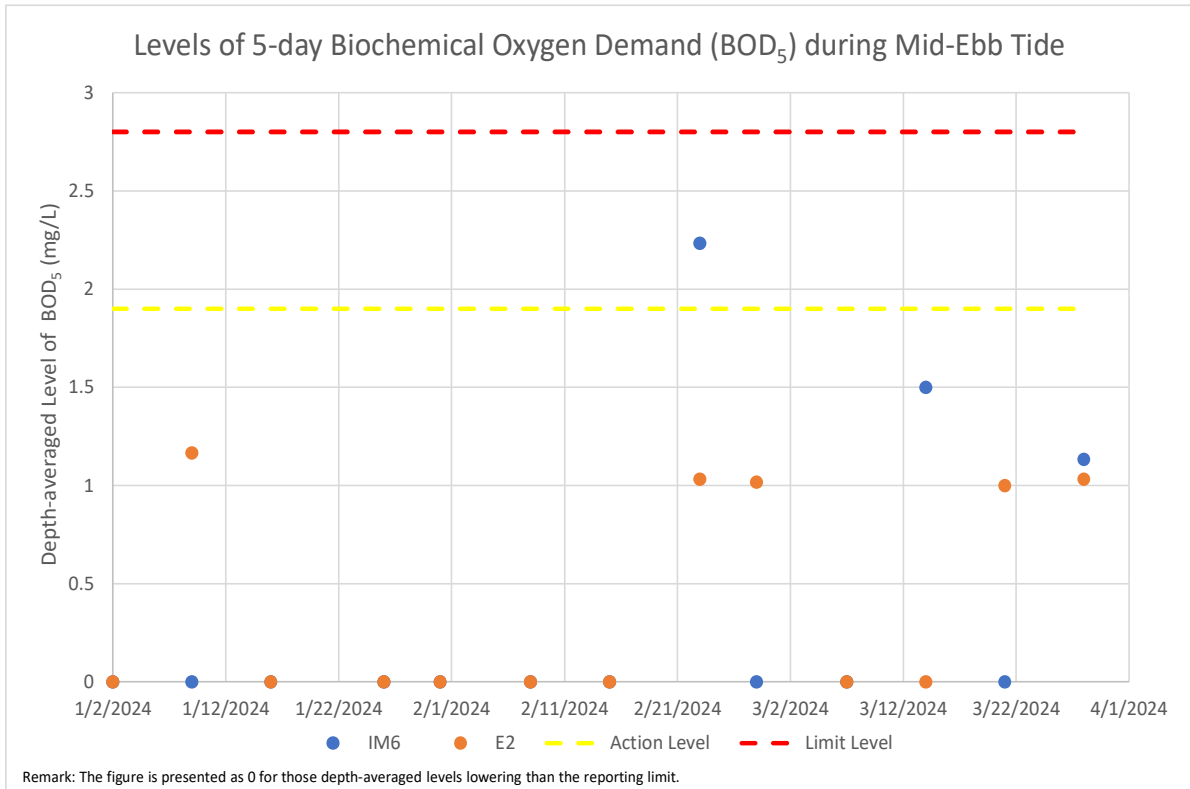


Figure 7: Levels of 5-day Biochemical Oxygen Demand during mid-ebb tide between January and March 2024

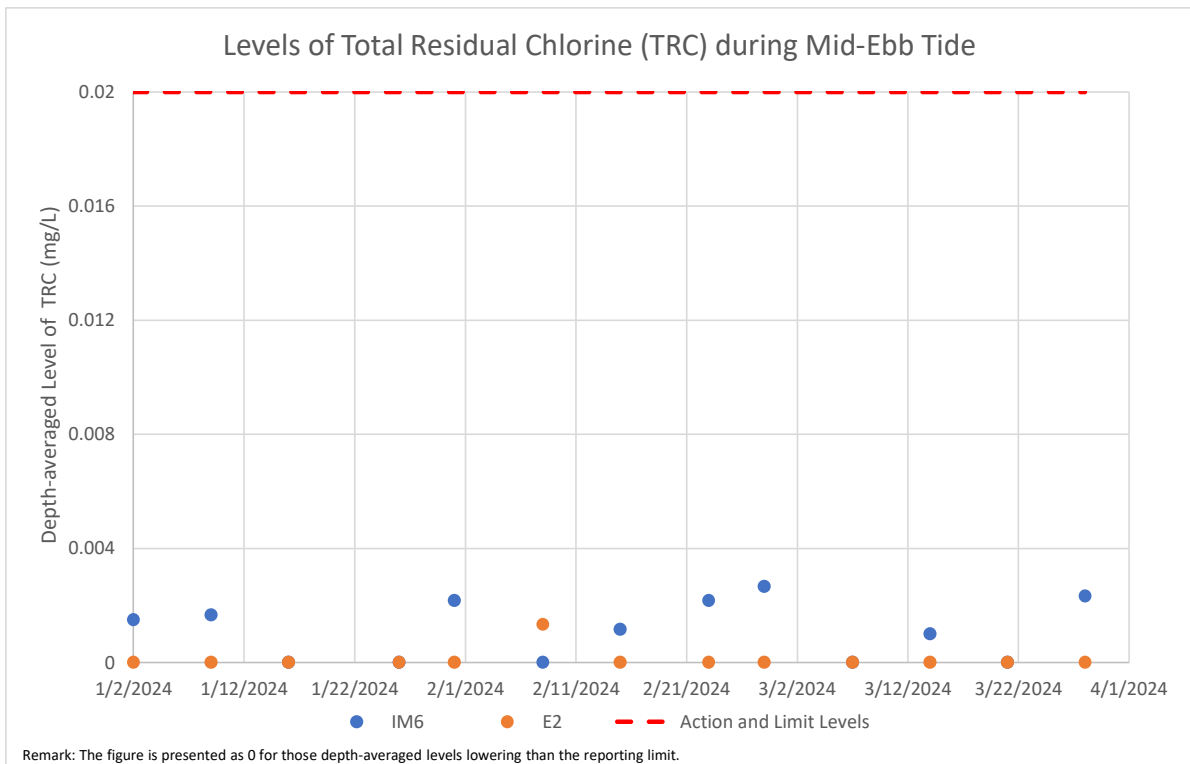


Figure 8: Levels of Total Residual Chlorine during mid-ebb tide between January and March 2024

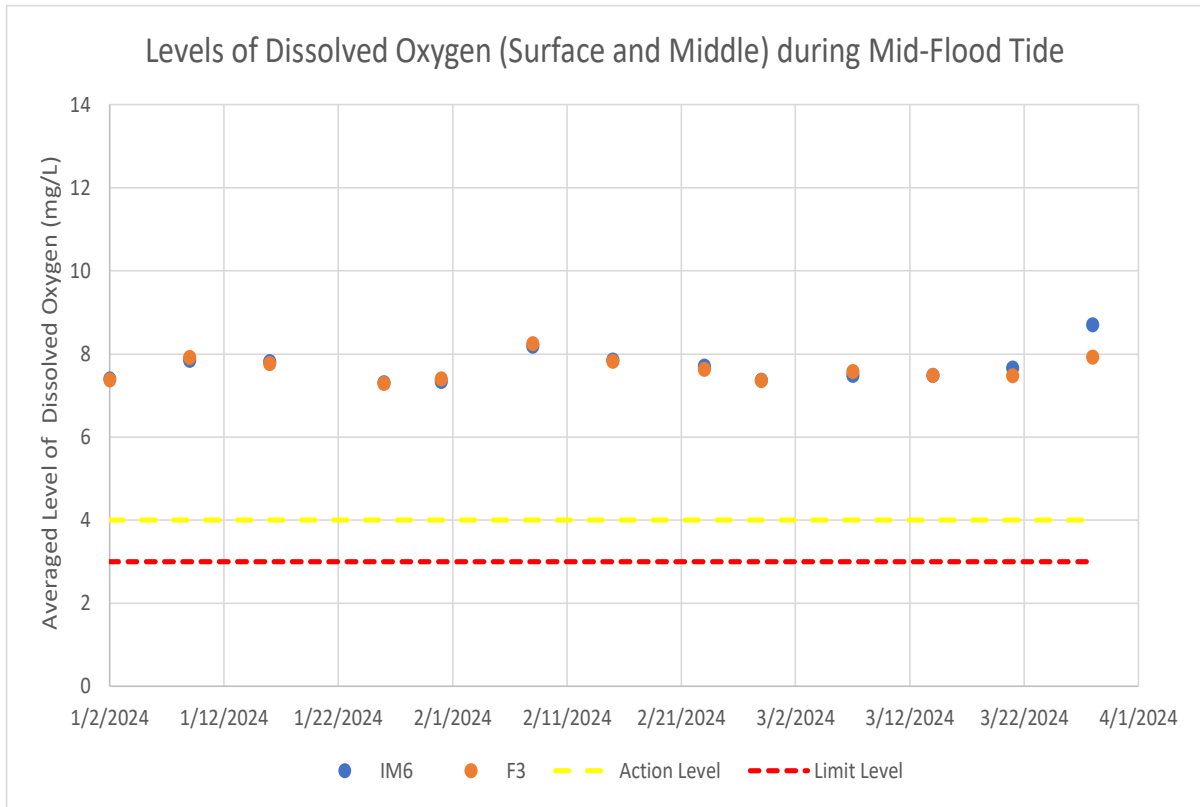


Figure 9: Levels of Dissolved Oxygen (Surface and Middle) during mid-flood tide between January and March 2024

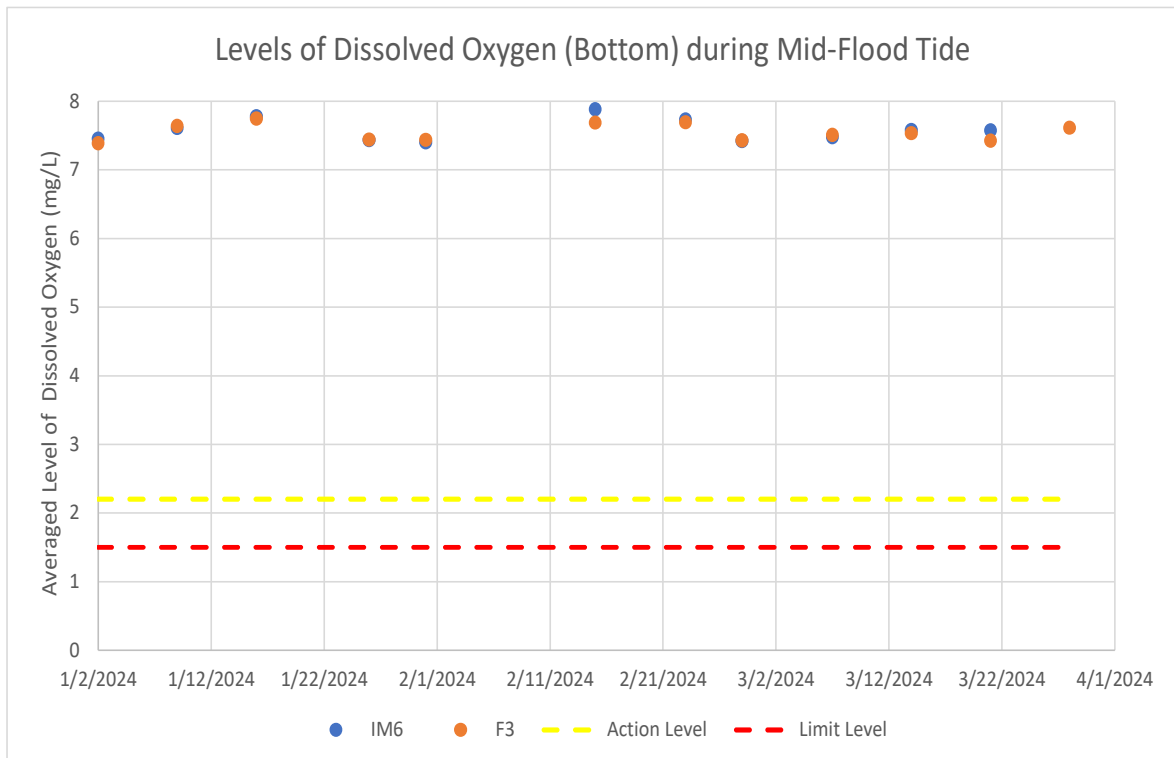


Figure 10: Levels of Dissolved Oxygen (Bottom) during mid-flood tide between January and March 2024

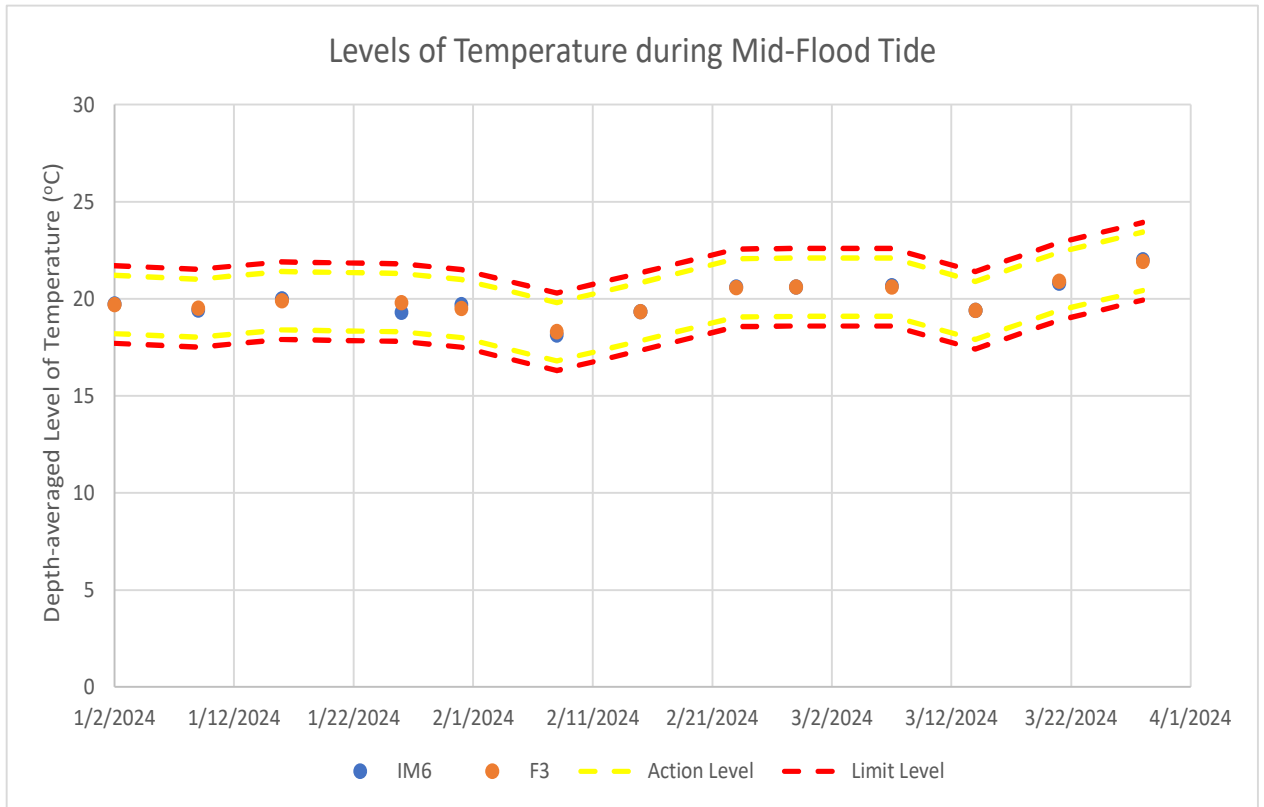


Figure 11: Levels of Temperature during mid-flood tide between January and March 2024

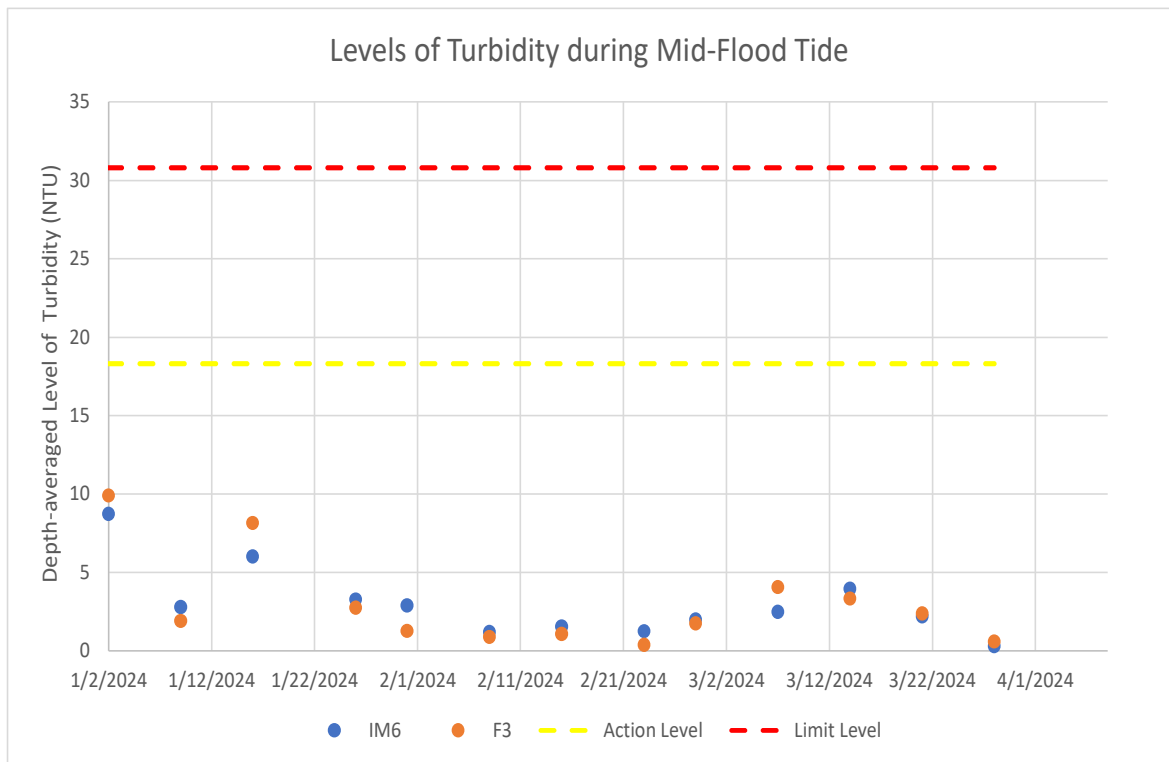


Figure 12: Levels of Turbidity during mid-flood tide between January and March 2024

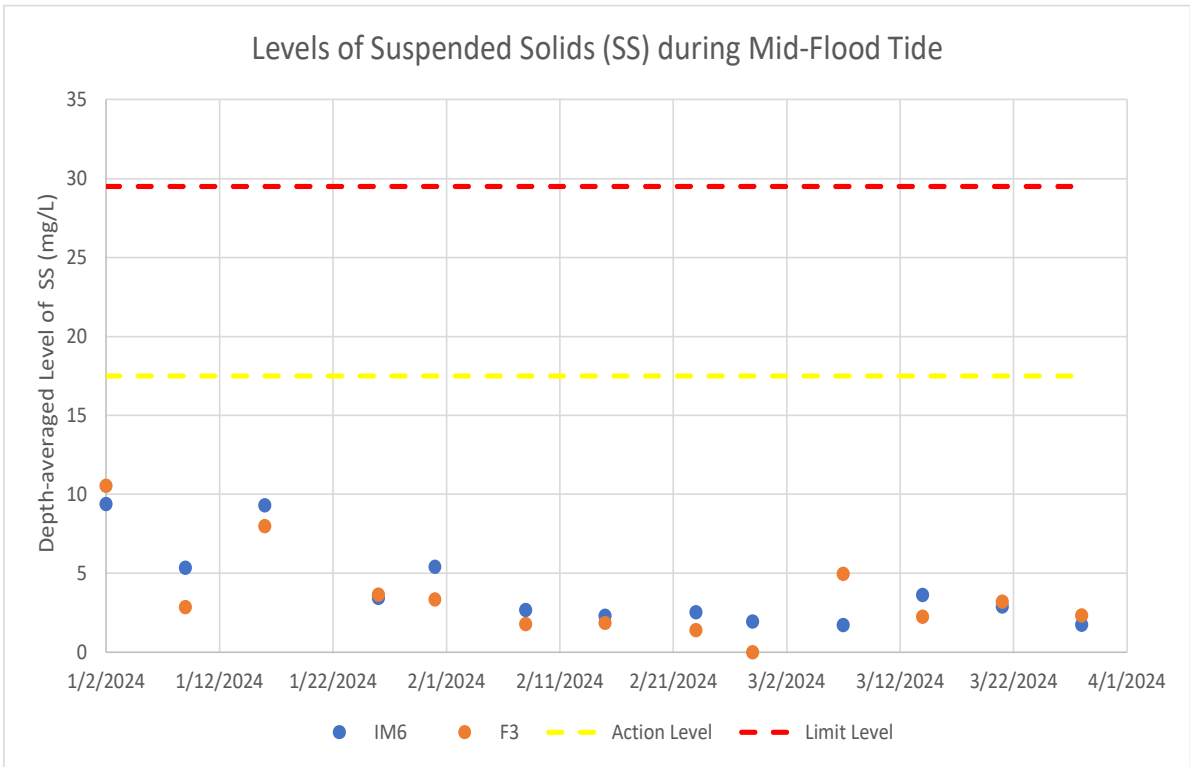


Figure 13: Levels of Suspended Solids during mid-flood tide between January and March 2024

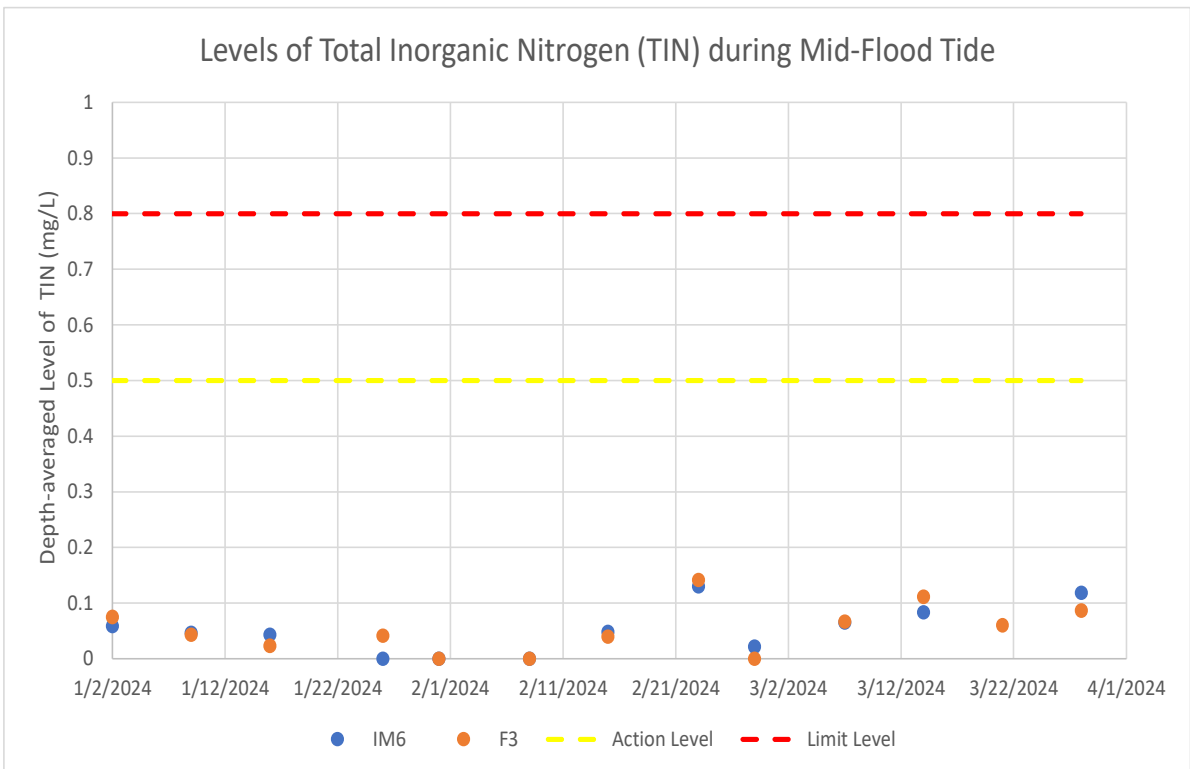


Figure 14: Levels of Total Inorganic Nitrogen during mid-flood tide between January and March 2024



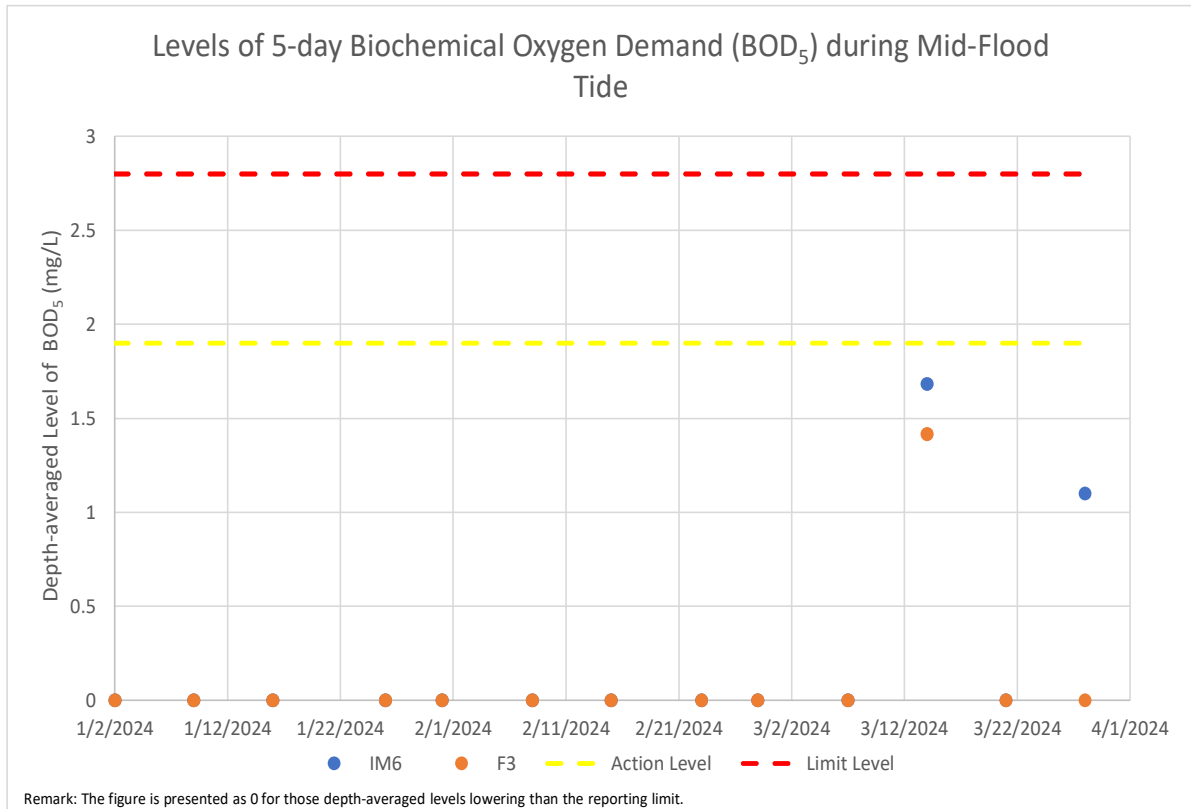


Figure 15: Levels of 5-day Biochemical Oxygen Demand during mid-flood tide between January and March 2024

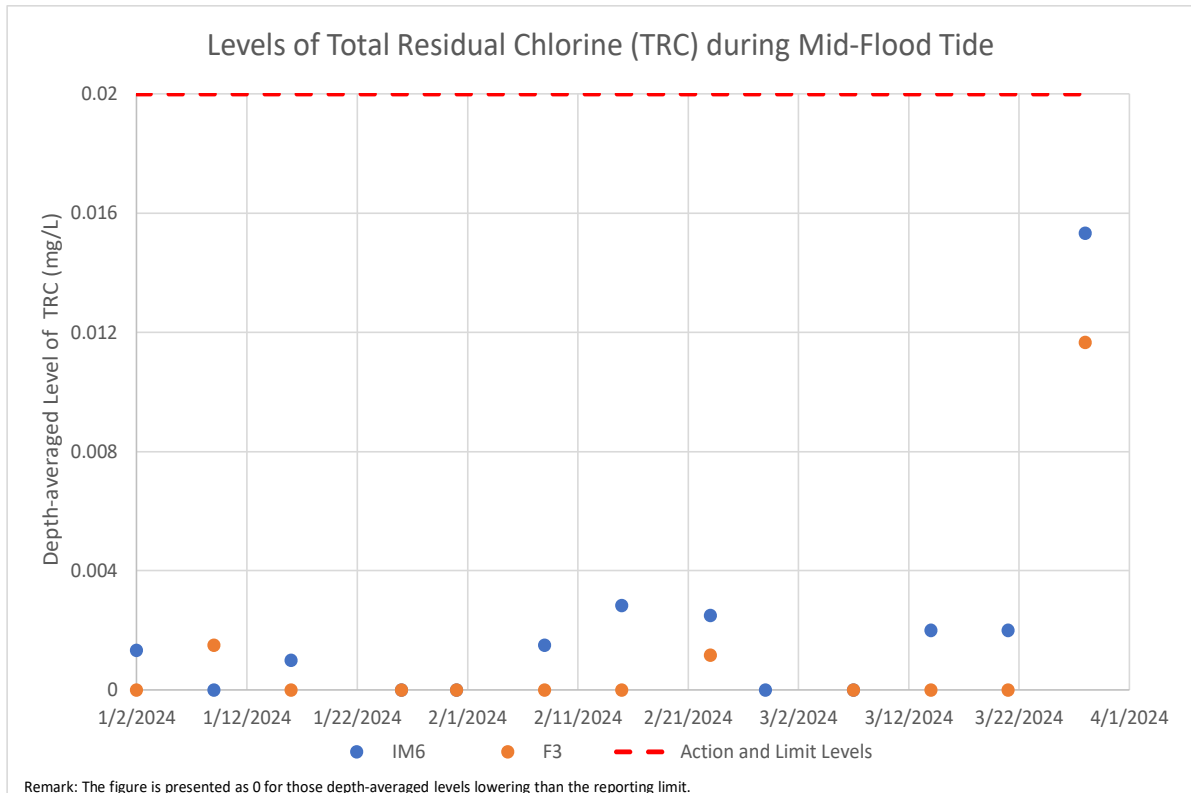


Figure 16: Levels of Total Residual Chlorine during mid-flood tide between January and March 2024