環境保護署
Environmental Protection Department

Contract No. EP/SP/66/12
Integrated Waste Management Facilities, Phase 1
Monthly EM&A Report No.34

Keppel Seghers

吉寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Monthly EM&A Report No.34
(Period from 1 April to 30 April 2021)

(Clause 3.3, Further Environmental Permit FEP-01/429/2012/A)

Document No.

KSZHJV	/	312	/	Monthly EM&A	/	0034	/	A
Issuer		Project Code		Type of Document		Sequential No.		Revision Index

	Prepared by:	Certified by:	Verified by:
Name	Joe Ho	F.C. Tsang	Mandy To
Position	Environmental Team	Environmental Team Leader	Independent Environmental Checker
Signature			
Date:	13 May 2021	13 May 2021	13 May 2021

Revision History

A	First Submission	14 May 2021
Rev.	**DESCRIPTION OF MODIFICATION**	**DATE**

CONTENTS

EXECUTIVE SUMMARY

Introduction

A1. The Project, Integrated Waste Management Facility (IWMF), is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO) and is currently governed by a Further Environmental Permit (FEP No. FEP-01/429/2012/A) for the construction and operation of the Project.

A2. In accordance with the Updated Environmental Monitoring and Audit (EM&A) Manual for the Project, EM&A works for marine water quality, noise, waste management and ecology should be carried out by Environmental Team (ET), Acuity Sustainability Consulting Limited (ASCL), during the construction phase of the Project.

A3. This is the 34th Monthly EM&A Report, prepared by ASCL, for the Project summarizing the monitoring results and audit findings of the EM&A programme at and around Shek Kwu Chau (SKC) during the reporting period from 1 April to 30 April 2021.

Summary of Main Works Undertaken & Key Mitigation Measures Implemented

A4. Key activities carried out in this reporting period for the Project included the following:

- Reclamation Area:
  - Placing rock filter
  - Reclamation works
  - PVD Remedial Works
  - Installation of Settlement Markers
- Seawall Portion:
  - Installation of caisson
  - Installation of Chinese Pod

A5. The major environmental impacts brought by the above construction activities include:

- Deterioration of water quality of nearby water body by reclamation

A6. The key environmental mitigation measures implemented for the Project in this reporting period associated with the construction activities include:

- Reduction of noise from equipment and machinery on-site;
- Sorting, recycling, storage and disposal of general refuse and construction waste;
- Management of chemicals and avoidance of oil spillage on-site;
- Regulation on rate and means for filling works as stipulated in Table 1 of FEP or the approved Supporting Document for Reviewing Dredging Rate and Filling Rate, whichever is applicable;
- Confirmation of the absence of silt content in the rock filling material and the filling work is properly conducted;

Summary of Exceedance & Investigation & Follow-up

A7. The EM&A works for water quality, construction waste, marine mammal, coral and White-Bellied Sea Eagle (WBSE) were conducted during the reporting period in accordance with the Updated EM&A Manual.

A8. No exceedance of the Action or Limit Levels in relation to noise, construction waste and WBSE monitoring was recorded in the reporting month.

A9. Two (2) of the general water quality monitoring results of suspended solids (SS) obtained had exceeded Action Level. None of general water quality monitoring results of SS obtained during the reporting period had exceeded the Limit Level.

A10. During the water quality monitoring on 19 April 2021, the location for monitoring station M1 was temporarily changed to the north of Cheung Chau (as shown on Figure 2.1) due to strong swell brought by monsoon.

A11. No project-related Action Level & Limit Level exceedance was recorded from 1 April 2021 to 30 April 2021.

A12. Weekly site inspections of the construction work by ET were carried out on 7, 13, 20 and 29 April 2021 to audit the mitigation measures implementation status. Monthly joint site inspection was carried out on 20 April 2021 by ET and IEC. Observations were recorded in the site inspection checklists and provided to the contractors together with the appropriate follow-up actions where necessary.

Complaint Handling and Prosecution

A13. No project-related environmental complaint was received during the reporting period.

A14. Neither notifications of summons nor prosecution was received for the Project.

Reporting Change

A15. There was no change to be reported that may affect the on-going EM&A programme.

Summary of Upcoming Key Issues and Key Mitigation Measures

A16. Key activities anticipated in the next reporting period for the Project will include the following:

- Reclamation Area:
  - Placing rock filter
  - Reclamation works
  - PVD Remedial Works
  - Installation of Settlement Markers
- Seawall Portion:
  - Installation of caisson
  - Installation of Chinese Pod

A17. The major environmental impacts brought by the above construction activities will include:

- Deterioration of water quality of nearby water body by reclamation.

A18. The key environmental mitigation measures for the Project in the coming reporting period associated with the construction activities will include:

- Reduction of noise from equipment and machinery on-site;
- Sorting, recycling, storage and disposal of general refuse and construction waste;
- Management of chemicals and avoidance of oil spillage on-site, especially under heavy rains and adverse weather;
- Regulation on rate and means for filling works as stipulated in Table 1 of FEP or the approved Supporting Document for Reviewing Dredging Rate and Filling Rate, whichever is applicable;
- Confirmation of the absence of silt content in the rock filling material and the filling work is properly conducted; and

1. BASIC PROJECT INFORMATION

1.1 Background

1.1.1 The Government of Hong Kong SAR will develop the Integrated Waste Management Facilities (IWMF) Phase 1 (hereafter "the Project") with incineration to achieve substantial bulk reduction of unavoidable municipal solid waste (MSW) and to recover energy from the incineration process. The IWMF will be on an artificial island to be formed by reclamation at the south-western coast of Shek Kwu Chau. Keppel Seghers – Zhen Hua Joint Venture (KSZHJV) was awarded the contract under Contract No. EP/SP/66/12 Integrated Waste Management Facilities Phase 1 to construct and operate the Project.

1.1.2 An environmental impact assessment (EIA) study for the Project has been conducted and the EIA Report was approved under the Environmental Impact Assessment Ordinance on 17 January 2012. An Environmental Permit (EP) (EP No.: EP-429/2012) was granted to EPD on 19 January 2012 for the construction and operation of the Project. Subsequently, the EP was amended (EP No.: EP-429/2012/A) and a further EP (FEP) (EP No.: FEP-01/429/2012/A) was granted to the Keppel Seghers – Zhen Hua Joint Venture (KSZHJV) on 27 December 2017.

1.1.3 A further EP (FEP) (EP No.: FEP-02/429/2012/A) on Submarine Cable for the Development of the Project was granted to CLP Power Hong Kong Limited (CLP) on 17 Jan 2020.

1.1.4 The key design and construction elements of the Project include the Design and the Works including but not limited to the design, engineering procurement, construction, testing and commissioning of the Facility including:

- Ground Treatment works;
- Seawall and Breakwater construction;
- Non-dredged Reclamation;
- Other Marine works and Harbour and Port Facilities;
- Site formation;
- Municipal Solid Waste (MSW) Treatment Processes;
- Energy Recovery for Power Generation and Surplus Electricity export;
- Wastewater treatment process;
- Desalination and water treatment process;
- Civil works;
- Building and Structural works;
- Electrical and Mechanical works;
- Building Services;
- Architectural and Landscaping works; and
- All other design and works required for the operation and maintenance of the Facility according to the Contract requirements.

1.1.5 The location of the IWMF near Shek Kwu Chau (SKC) and general layout of IWMF are shown in **Figure 1.1** and **Figure 1.2** respectively.

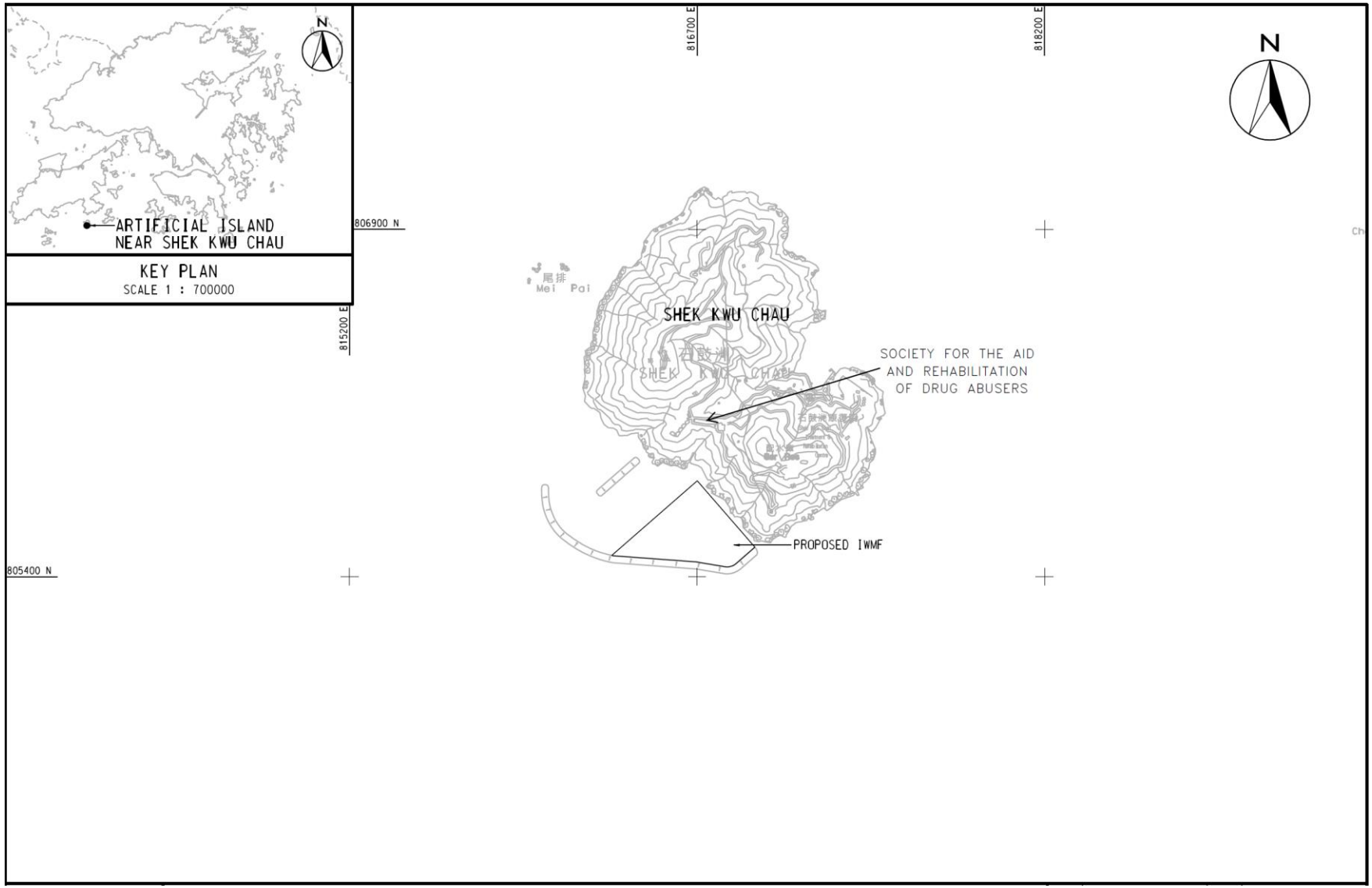


Figure 1.1 Location of the IWMF at the Artificial Island near SKC

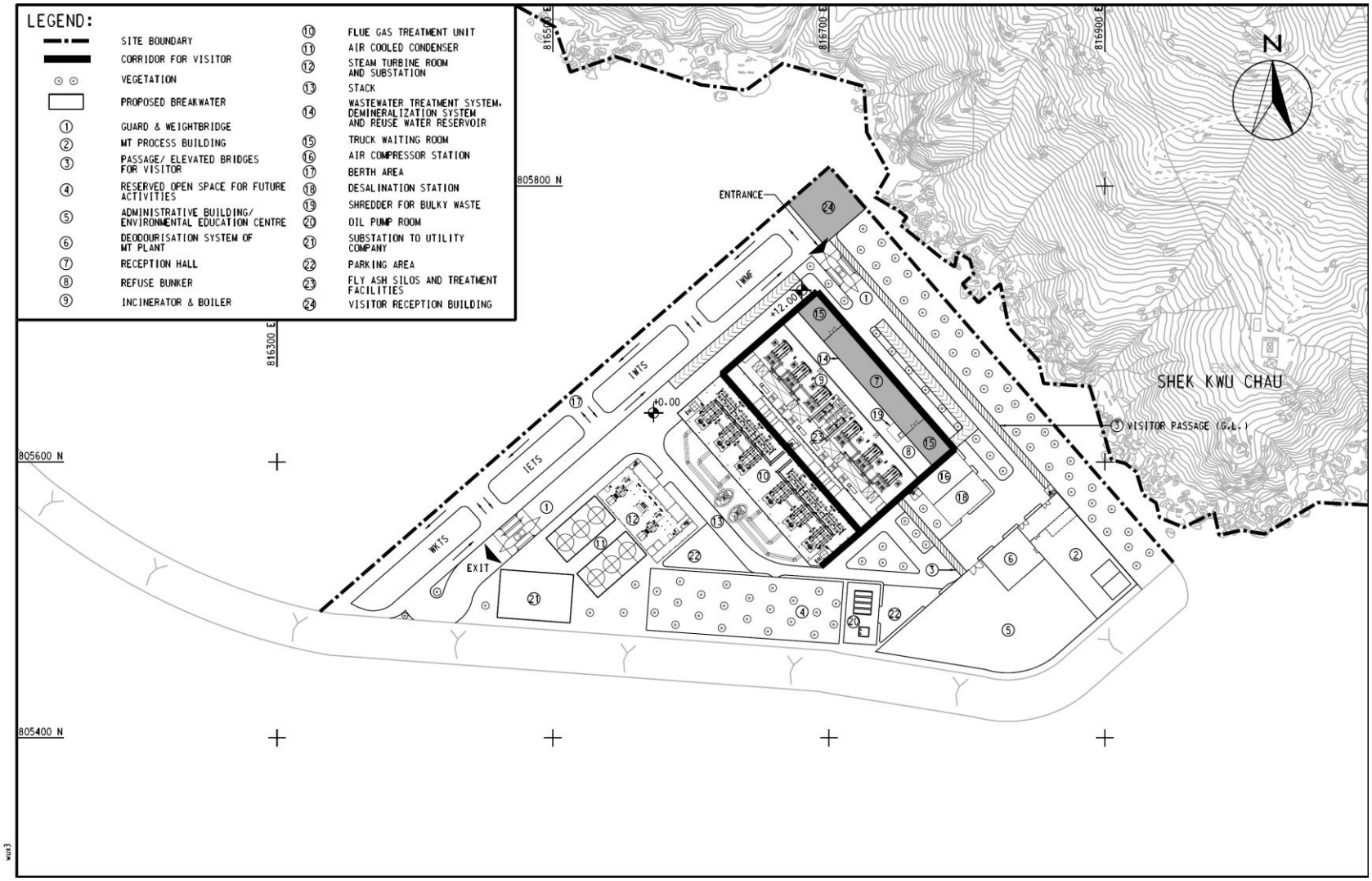


Figure 1.2 General Layout of the IWMF at the Artificial Island near SKC

1.2 The Reporting Scope

1.2.1 This is the 34th Monthly EM&A Report for the Project which summarizes the key findings of the EM&A programme during the reporting period from 1 April 2021 to 30 April 2021.

1.3 Project Organization

1.3.1 The Project Organization structure for Construction Phase is presented in **Figure 1.3**.

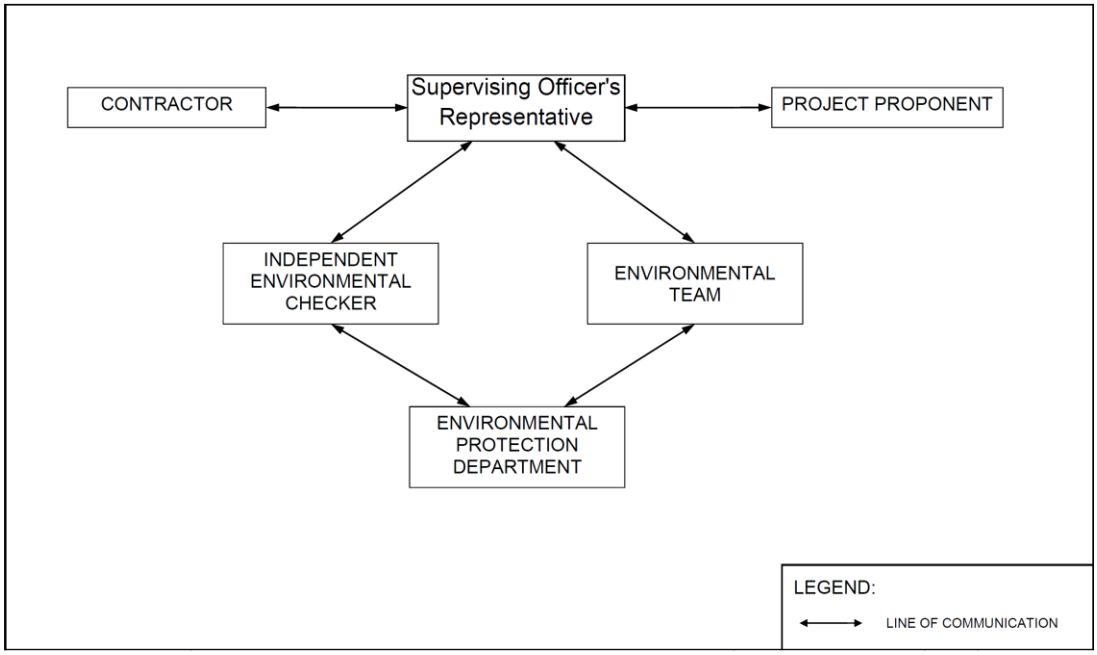


Figure 1.3 Project Organization Chart

1.3.2 Contact details of the key personnel are presented in **Table 1.1** below:

Table 1.1 Contact Details of Key Personnel

Party	Position	Name	Telephone no.
Keppel Seghers – Zhen Hua Joint Venture	Project Manager	Kenny Yu	2192-0606
Acuity Sustainability Consulting Limited	Environmental Team Leader	F.C. Tsang	2698-6833
ERM-Hong Kong, Limited	Independent Environmental Checker	Mandy To	2271-3000

1.4 Summary of Construction Works

1.4.1 Details of the major construction activities undertaken in this reporting period are shown in **Table 1.2** and **Figure 1.4** below. The construction programme is presented in **Appendix A**.

Table 1.2 Summary of the Construction Activities Undertaken during the Reporting Month

Location of works	Construction activities undertaken	Remarks on progress
Reclamation area	• Placing rock filter	• On-going
	• Reclamation works	• On-going
	• PVD Remedial Works	• On-going
	• Installation of Settlement Markers	• On-going
Seawall portion	• Installation of caisson	• On-going
	• Installation of Chinese Pod	• On-going

Figure 1.4 Location of Major Construction Activities Undertaken during the Reporting Month

1.5 Summary of Environmental Status

1.5.1 A summary of the valid permits, licences, and /or notifications on environmental protection for this Project is presented in **Table 1.3**

Table 1.3 Summary of the Status of Valid Environmental Licence, Notification, Permit and Documentations

Permit/ Licences/ Notification	Reference	Validity Period	Remarks
Variation of Environmental Permit	EP-429/2012/A	Throughout the Contract	
Further Environmental Permit	FEP-01/429/2012/A	Throughout the Contract	
Notification of Construction Works under the Air Pollution Control (Construction Dust) Regulation (Form NA)	Ref No.: 428778	15/12/2017 – 22/09/2024	
Wastewater Discharge Licence	WT00033787-2019	22/08/2019 – 31/08/2024	
Chemical Waste Producer Registration	WPN0017-933-K3301-01	Throughout the Contract	
	WPN5213-961-K3301-02	Throughout the Contract	
	WPN5296-839-K3301-03	Throughout the Contract	
Construction Noise Permit (24 hours)	GW-RS0154-21	17/03/2021– 16/09/2021	Portion 1, 1A & 1B (Superseded by GW-RS0217-21)
	GW-RS0217-21	03/04/2021– 01/10/2021	Portion 1, 1A & 1B
	GW-RE0957-20	24/11/2020 – 23/05/2021	Portion 8
Billing Account for Disposal of Construction Waste	A/C No.:7029768	Throughout the Contract	

1.5.2 The status for all environmental aspects is presented in **Table 1.4**.

Table 1.4 Summary of Status for Key Environmental Aspects under the Updated EM&A Manual

Parameters	Status
Water Quality	
Baseline Monitoring under Updated EM&A Manual and Detailed Plan on DCM	The baseline water quality monitoring result has been reported in Baseline Monitoring Report and submitted to EPD under FEP Condition 3.4
Impact Monitoring	On-going
Post DCM Monitoring	All DCM was completed on 14 October 2020, regular DCM monitoring for further 4 weeks (i.e form 16 October 2020 to 14 November 2020) was completed according to the approved Detailed Plan on Deep Cement Mixing
Initial Intensive DCM Monitoring	Conducted from 11 February 2019 to 10 March 2019, had not been resumed since there was no DCM related parameter exceeding the AL/LL.
Baseline Water Quality of wet season	Completed over 13 August 2018 to 7 September 2018
Noise	
Baseline Monitoring	The baseline noise monitoring result has been reported in Baseline Monitoring Report and submitted to EPD under FEP Condition 3.4
Impact Monitoring	On-going
Waste Management	
Mitigation Measures in Waste Monitoring Plan	On-going
Coral	
Pre-translocation Survey and Coral Mapping	The Coral Translocation Plan was submitted and approved by EPD under EP Condition 2.12
Coral Translocation	Completed on 28 March 2018
Post-Translocation Coral Monitoring	Survey affected by missing of translocated and tagged coral colonies after typhoons in September 2018, completed on 28 March 2019.
Pre-construction Coral Survey and Tagging	Completed on 26 June 2018
Tagged Coral Monitoring	Survey obstructed due to missing of tagged coral colonies after typhoons in September 2018
Coral Survey and Re-tagging	Re-tagging at Indirect Impact Site was conducted on 23 November and Re-tagging at Control Site was conducted on 3 December 2018.
Post Re-tagging Coral Monitoring	On-going
Marine Mammal	
Vessel-based Line-transect Survey Baseline Monitoring	The baseline marine mammal monitoring result has been reported in Baseline Monitoring Report and submitted to EPD under FEP Condition 3.4
Vessel-based Line-transect Survey Impact Monitoring	On-going
Land-based Theodolite Tracking	30 days of theodolite surveys were started on 21 Feb 2019 and completed in May 2019.

Parameters	Status
Passive Acoustic Monitoring	30 days of PAM surveys were started on 1 May 2019 and completed until the end of May 2019.
White-bellied Sea Eagle	
Baseline Monitoring	The baseline WBSE monitoring result has been reported in Baseline Monitoring Report and submitted to EPD under FEP Condition 3.4
Impact Monitoring	On-going
Environmental Audit	
Site Inspection covering Measures of Air Quality, Noise Impact, Water Quality, Waste, Ecological Quality, Fisheries, Landscape and Visual	On-going
Mitigation Measures in Marine Mammal Watching Plan (MMWP)	Installation of caisson No.19 was completed on 18 March 2021, which the reclamation area had been totally enclosed by permanent structure. Floating type silt curtain at marine access was removed on 18 March 2021. No enclosed area shall be formed by deployment of silt curtain for the remaining works programme.
Mitigation Measures in Detailed Monitoring Programme on Finless Porpoise (DMPFP)	Installation of caisson No.19 was completed on 18 March 2021, which the reclamation area had been totally enclosed by permanent structure. Floating type silt curtain at marine access was removed on 18 March 2021. No enclosed area shall be formed by deployment of silt curtain for the remaining works programme.
Mitigation Measures in Vessel Travel Details	On-going
Daily Site Audit and Monitoring for Dredging Work	Completed

1.5.3 Other than the EM&A work by ET, environmental briefings, trainings and regular environmental management meetings were conducted, in order to enhance environmental awareness and closely monitor the environmental performance of the contractors.

1.5.4 The EM&A programme has been implemented in accordance with the recommendations presented in the approved EIA Report and the Updated EM&A Manual. A summary of implementation status of the environmental mitigation measures for the construction phase of the Project during the reporting period is provided in **Appendix B**.

2. MARINE WATER QUALITY MONITORING

2.1 Water Quality Requirements

2.1.1 To ensure no adverse water quality impact, water quality monitoring is recommended to be carried out at the nearby water sensitive receivers (WSRs) during construction phase including proposed reclamation, breakwater construction, etc.

2.1.2 In accordance with the Updated EM&A Manual, impact water quality monitoring were conducted 3 days per week at mid-flood and mid-ebb tide to obtain impact water quality levels at the eleven monitoring stations during general water quality monitoring for the reporting period.

2.2 Water Quality Parameters, Time, Frequency

2.2.1 Dissolved Oxygen (DO), Turbidity, Suspended Solids (SS), Salinity and pH have been undertaken at the eleven monitoring stations during general water quality monitoring.

2.2.2 DO, temperature, salinity, turbidity and pH have been measured in-situ and the SS, has been assayed in a HOKLAS laboratory.

2.2.3 In associate with the water quality parameters, other relevant data were also measured, such as monitoring location/position, time, water depth, sampling depth, tidal stages, weather conditions and any special phenomena or work underway nearby were also recorded. The monitoring schedule is provided in **Appendix C**.

2.2.4 Impact water quality monitoring was conducted 3 days per week in the reporting period. All parameters were monitored during mid-flood and mid-ebb tides at three water depths for general water quality monitoring. The interval between two sets of monitoring has not been less than 36 hours.

2.2.5 **Table 2.1** summarizes the monitoring parameters, frequency and duration of the impact water quality monitoring during construction phase.

Table 2.1 Water Quality Monitoring Parameters, Frequency and Duration

Parameter, unit	Frequency	No. of Depths
• Water Depth (m) • Temperature (°C) • Salinity (ppt) • pH (pH unit) • Dissolved Oxygen (DO) (mg/L and % of saturation) • Turbidity (NTU) • Suspended Solids (SS), mg/L	General water quality monitoring : 3 days per week, at mid-flood and mid-ebb tides	3 water depths: 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

2.3 Water Quality Monitoring Locations

2.3.1 Impact water quality monitoring was conducted at eleven monitoring locations (B1-B4, H1, C1, C2, F1, CR1, CR2 & M1) during general water quality monitoring as shown in **Figure 2.1**. As per the relocation proposal verified by IEC and approved by EPD, the monitoring location C1, C2, S2, F1 are relocated at C1A, C2A, S2A, F1A as equivalent points respectively to clear up the concerns from stakeholders.

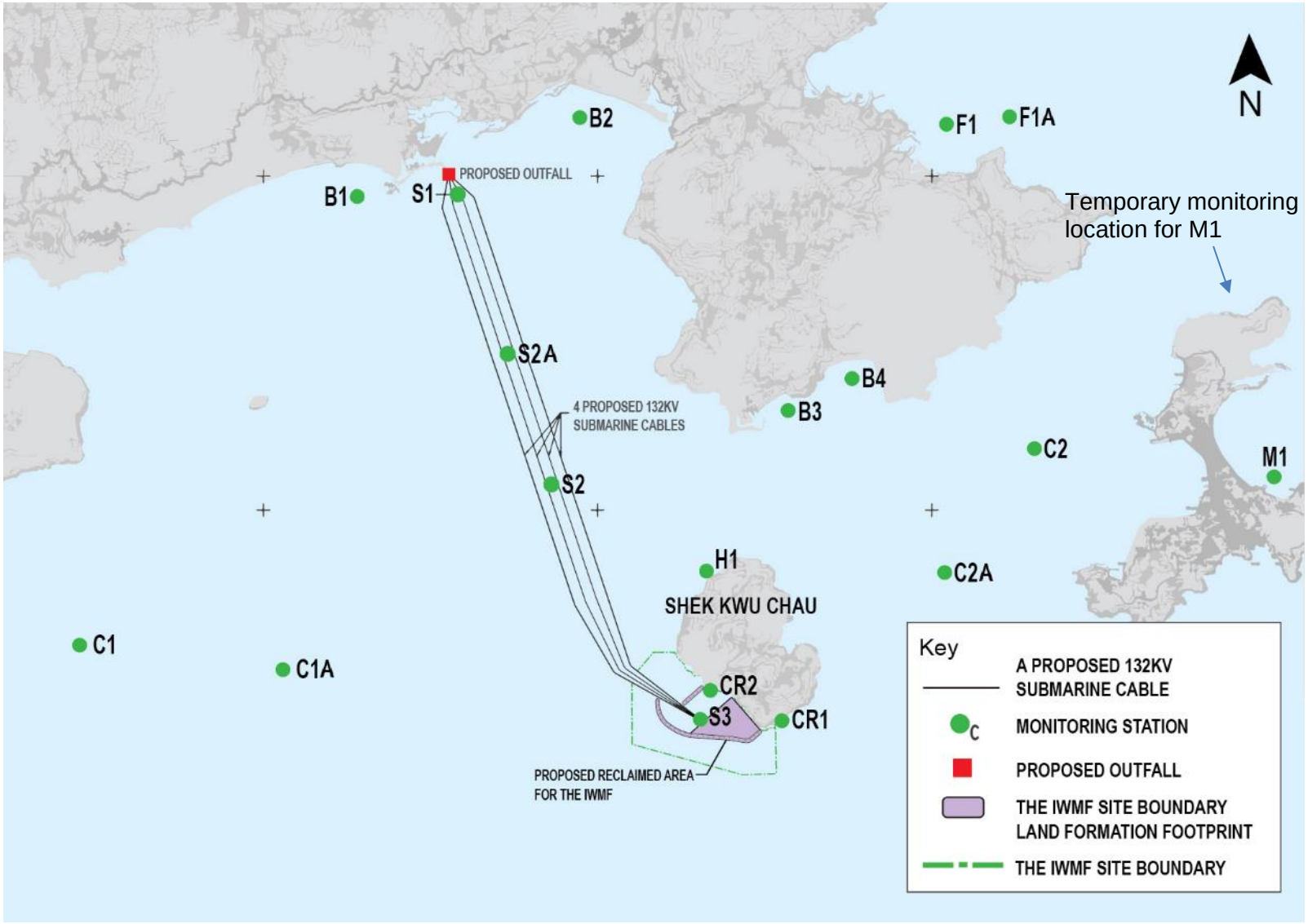


Figure 2.1 Water monitoring locations at Artificial Island near SKC

2.3.2 B1 to B4 are located at 4 beaches respectively at the southern shore of Lantau Island. Monitoring station H1 is located at the horseshoe crab habitat at northern SKC, while CR1 and CR2 are located at the coral communities at southwestern shore of SKC. Monitoring station F1 is located at the Cheung Sha Wan Fish Culture Zone while monitoring station M1 is located at Tung Wan at Cheung Chau. Monitoring station F1A is relocated for F1 at the Cheung Sha Wan Fish Culture Zone. S1, S2 and S3 are located at the northern landing site, midway and southern landing site of the proposed submarine cable, respectively. S2A is the relocated monitoring station of S2 which represents the midway landing site of the proposed submarine cable. S1, S2/S2A and S3 are required for monitoring due to the laying of submarine cable. Control stations C1 and C2 at far field locations are for comparison. Control stations C1A and C2A are relocated for C1 and C2 respectively as equivalent far field locations for comparison.

2.3.3 Fourteen monitoring stations are listed in **Table 2.2**:

Table 2.2 – Locations of Marine Water Quality Stations

Monitoring station	Description	Easting	Northing
B1	Beach – Cheung Sha Lower	813342	810316
B2	Beach – Pui O	815340	811025
B3	Beach – Yi Long Wan	817210	808395
B4	Beach – Tai Long Wan	817784	808682
H1	Horseshoe Crab – Shek Kwu Chau	816477	806953
C1	Control Station (note i)	810850	806288
C1A	Relocated Control Station	812823	806300
C2	Control Station (note ii)	819421	808053
C2A	Relocated Control Station	818869	806808
F1	Cheung Sha Wan Fish Culture Zone (note iii)	818631	810966
F1A	Cheung Sha Wan Fish Culture Zone	819109	810924
S1	Submarine Cable Landing Site	814245	810335
S2	Submarine Cable (note iv)	815076	807747
S2A	Submarine Cable	814808	808515
S3	Submarine Cable Landing Site	816420	805621
CR1	Coral	817144	805597
CR2	Coral	816512	805882
M1	Tung Wan	821572	807799

Note:

i. Relocated to C1A in Mar 2019
ii. Relocated to C2A in Mar 2019
iii. Relocated to S2A in Mar 2019
iv. Relocated to F1A in Mar 2019

2.4 Impact Monitoring Methodology

2.4.1 General water quality monitoring was conducted three days per week, at mid-flood and mid-ebb tides, at the designated water quality monitoring stations during the reporting period.

2.4.2 The interval between 2 sets of monitoring was not less than 36 hours. Sampling was collected at three water depths, namely, 1m below water surface, mid-depth and 1m above seabed, except where the water depth is less than 6m, the mid-depth was omitted. If the water depth was less than 3m, only the mid-depth station was monitored.

2.4.3 All observations and results were recorded in the data record sheets in **Appendix D**. Duplicate in-situ measurements and water sampling were carried out in each sampling event. The monitoring probes were retrieved out of water after the first measurement and then redeployed for the second measurement. When the difference in value between the first and second readings of DO or turbidity is more than 25% of the value of the first reading, the reading would be discarded and further readings would be taken.

In-situ Measurement

2.4.4 Levels of DO, pH, temperature, turbidity and salinity would be measured in-situ by portable and weatherproof measuring instrument, e.g. YSI ProDSS and Horiba U-53 Multiparameter complete with cable and sensor. (Refer to http://www.ysi.com/ProDSS for YSI ProDSS technical specification and http://www.horiba.com/process-environmental/products/water-treatment-environment/details/u-50-multiparameter-water-quality-checker-368/ for Horiba U-53 technical specification). Water current velocity and Water Current direction would be measured by portable and weatherproof current meter, e.g. SonTek Hydrosurveyor (Refer to https://www.sontek.com/media/pdfs/riversurveyor-s5-m9-brochure.pdf for SonTek Hydrosurveyor M9 technical specification). Parameters measured by in-situ measurement is tabulated in **Table 2.3**

Table 2.3 – Parameters Measured by In-situ Measurement

Parameter	Resolution	Range
Temperature	0.1 ºC	-5-70 ºC
Dissolved Oxygen (DO)	0.01 mg/L	0-50.0 mg/L
Turbidity	0.1 NTU	0-1000 NTU
pH	pH 0.01	pH 0-14
Salinity	0.01 ppt	0-40 ppt
Water Current Velocity	0.001m/s	±20m/s
Water Current Direction	±1º	±2º

Laboratory Analysis

2.4.5 Analysis of SS shall be carried out in a HOKLAS accredited laboratory, as shown in **Appendix E**. Sufficient water samples shall be collected at the monitoring stations for carrying out the laboratory determinations. The determination work shall be started within 24 hours after collection of the water samples. Analytical methods and detection limits for SS is presented in **Table 2.4**.

Table 2.4 – Analytical Methods Applied to Water Quality Samples

Parameter	Analytical method	Detection Level
Suspended Solids, SS	APHA 2540 D_i	1 mg/L

Footnote:

i. "APHA 2540 D" stands for American Public Health Association Standard Methods for the Examination of Water and Wastewater, 23rd Edition.

Field Log

2.4.6 Other relevant data was recorded, such as: monitoring location / position, time, water depth, weather conditions and any special phenomena underway near the monitoring station.

2.5 Monitoring Equipment

2.5.1 Equipment used in the impact water quality monitoring programme is summarized in **Table 2.5** below. Calibration certificates for the water quality monitoring equipment are attached in **Appendix F**.

Table 2.5 Impact Water Quality Monitoring Equipment

Monitored Parameter	Equipment	Brand and Model
DO, Temperature, Salinity, pH and Turbidity	Multi-functional Meter	Horiba U-53 & YSI ProDSS Multi Parameters
Coordinates	Positioning Equipment	Garmin GPSMAP 78s
Water depth	Water Depth Detector	Hummingbird 160 Portable
SS	Water Sampler	Wildco 2 L Water Sampler with messenger

2.5.2 Dissolved Oxygen and Temperature Measuring Equipment

The instrument is a portable and weatherproof DO probe mounted on the multi-functional meter complete with cable and sensor and is powered by a DC supply source. The equipment was capable of measuring:

- A DO level in the range of 0 - 50 mg/L; and
- Temperature of -5 - 70 degree Celsius.

2.5.3 Turbidity Measurement Instrument

The instrument is a portable and weatherproof turbidity-measuring probe mounted on the multi-functional meter and is powered by a DC supply source. The instrument is equipped with a photoelectric sensor which is capable of measuring turbidity between 0 – 1000 NTU.

2.5.4 pH Measurement Instrument

The probe consists of a potentiometer, a glass electrode, a reference electrode and a temperature-compensating device mounted on the multi-functional meter. It is readable to 0.1 pH in a range of 0 to 14. Standard buffer solutions of at least pH 7 and pH 10 were used for calibration of the instrument before and after use.

2.5.5 Salinity Measurement Instrument

A portable salinometer mounted on the multi-functional meter capable of measuring salinity in the range of 0-40 parts per thousand (ppt) was provided for measuring salinity of the water at each monitoring location.

2.5.6 Sampler

The water sampler comprises a transparent PVC cylinder, with a capacity of not less than 2 litres, which can be effectively sealed with latex cups at both ends. The sampler has a positive latching system to keep it open and prevent premature closure until released by a messenger when the sampler is at the selected water depth.

2.5.7 Sample Containers and Storage

Water samples for SS were stored in high density polythene bottles with no preservative added, packed in ice (cooled to 4°C without being frozen) and delivered to the laboratory and analysed as soon as possible after collection. Sufficient volume of samples was collected to achieve the detection limit stated in **Table 2.4**.

2.5.8 Water Depth Detector

A portable, battery-operated echo sounder was used for the determination of water depth at each designated monitoring station. This unit could either be hand-held or affixed to the bottom of the work boat, if the same vessel is to be used throughout the monitoring programme.

2.5.9 Monitoring Position Equipment

Hand-held digital Differential Global Positioning System (DGPS) with way point bearing indication and Radio Technical Commission for maritime (RTCM) Type 16 error message 'screen pop-up' facilities (for real-time auto-display of error messages and DGPS corrections from the Hong Kong Hydrographic Office) was provided and used to ensure that the water sampling locations were correct during the water quality monitoring work.

2.6 Maintenance and Calibration

2.6.1 The multi-functional meters were checked and calibrated before use. Multi-functional meters were certified by a laboratory accredited under HOKLAS or any other international accreditation scheme, and subsequently re-calibrated at three monthly intervals throughout all stages of the water quality monitoring. Responses of sensors and electrodes were checked with certified standard solutions before each use. Wet bulb calibration for a DO meter was carried out before commencement of monitoring and after completion of all measurements each day. Calibration was not conducted at each monitoring location as daily calibration is adequate for the type of DO meter employed.

2.6.2 Sufficient stocks of spare parts were provided and maintained for replacements when necessary. Backup monitoring equipment was prepared for uninterrupted monitoring during equipment maintenance or calibration during monitoring.

2.7 Action and Limit Levels

2.7.1 The Action and Limit Levels have been set based on the derivation criteria specified in the Updated EM&A Manual and Detailed DCM Plan, as shown in **Table 2.6** below.

Table 2.6 Criteria of Action and Limit Levels for Water Quality

Parameters	Action	Limit
Construction Phase Impact Monitoring		
DO in mg/L	≤ 5 %-ile of baseline data	≤ 4
SS in mg/L	≥ 95 %-ile of baseline data or 120% of control station's SS at the same tide of the same day of measurement, whichever is higher	≥ 99 %-ile of baseline data or 130% of control station's SS at the same tide of the same day of measurement, whichever is higher
Turbidity in NTU	≥ 95 %-ile of baseline data or 120% of control station's turbidity at the same tide of the same day of measurement, whichever is higher	≥ 99 %-ile of baseline data or 130% of control station's turbidity at the same tide of the same day of measurement, whichever is higher
Temperature in°C	1.8°C above the temperature recorded at representative control station at the same tide of the same day	2°C above the temperature recorded at representative control station at the same tide of the same day

2.7.2 Based on the baseline monitoring data and the derivation criteria specified above, the Action/Limit Levels have been derived and are presented in **Table 2.7** and **Table 2.8** for both dry seasons (October – March) and wet seasons (April – September).

Table 2.7 Derived Action and Limit Levels for Water Quality Monitoring (Dry Season)

Parameters	Action	Limit
Construction Phase Impact Monitoring		
DO in mg/L	≤ 7.13	≤ 4
SS in mg/L	≥ 8 or 120% of control station's SS at the same tide of the same day of measurement, whichever is higher	≥ 10 or 130% of control station's SS at the same tide of the same day of measurement, whichever is higher
Turbidity in NTU	≥ 5.6 or 120% of control station's turbidity at the same tide of the same day of measurement, whichever is higher	≥ 12.8 or 130% of control station's turbidity at the same tide of the same day of measurement, whichever is higher

Parameters	Action	Limit
Temperature in°C	1.8°C above the temperature recorded at representative control station at the same tide of the same day	2°C above the temperature recorded at representative control station at the same tide of the same day

Notes:
i. "Depth-averaged" is calculated by taking the arithmetic means of reading of all three depths.
ii. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
iii. For turbidity, SS and Salinity, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

Table 2.8 Derived Action and Limit Levels for Water Quality (Wet Season)

Parameters	Action	Limit
Construction Phase Impact Monitoring		
DO in mg/L	≤ 5.28	≤ 4
SS in mg/L	≥ 12 or 120% of control station's SS at the same tide of the same day of measurement, whichever is higher	≥ 14 or 130% of control station's SS at the same tide of the same day of measurement, whichever is higher
Turbidity in NTU	≥ 4.0 or 120% of control station's turbidity at the same tide of the same day of measurement, whichever is higher	≥ 4.3 or 130% of control station's turbidity at the same tide of the same day of measurement, whichever is higher
Temperature in°C	1.8°C above the temperature recorded at representative control station at the same tide of the same day	2°C above the temperature recorded at representative control station at the same tide of the same day

Notes:
i. "Depth-averaged" is calculated by taking the arithmetic means of reading of all three depths.
ii. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
iii. For turbidity, SS and Salinity, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

2.7.3 If exceedances were found during water quality monitoring, the actions in accordance with the Event and Action Plan shall be carried out according to **Appendix G**.

2.8 Monitoring Results and Observations

2.8.1 As confirmed by the Contractor on 14 October 2020, all DCM works was completed on 14 October 2020, the post DCM water quality monitoring was completed for further 4 weeks (i.e. from 16 October 2020 to 14 November 2020) according to the approved Detailed Plan on Deep Cement Mixing. As all DCM work and post DCM water quality monitoring were completed, no water quality monitoring was conducted at S1, S2A and S3 during the reporting period. General water quality monitoring at all the eleven monitoring stations were conducted on 2, 5, 7, 9, 12, 14, 16, 19, 21, 23, 26, 28 and 30 April 2021.

2.8.2 Monitoring results of 6 key parameters: Salinity, DO, turbidity, SS, pH and temperature in this reporting, are summarized in **Table 2.9**, and details results are presented in **Appendix D.**

Table 2.9 Summary of Impact Water Quality Monitoring Results

Locations		Parameters						
		Salinity (ppt)	Dissolved Oxygen (mg/L)		pH	Turbidity (NTU)	Suspended Solids (mg/L)	Temp.(°C)
			Surface & Middle	Bottom				
B1	Avg.	30.89	8.88	8.96	8.40	2.9	4.83	25.1
	Min.	29.74	7.64	7.71	8.12	2.1	2.00	20.5
	Max.	32.48	10.42	10.31	8.73	3.8	12.00	28.5
B2	Avg.	30.85	8.91	8.86	8.40	3.0	5.26	25.2
	Min.	29.77	7.57	7.57	8.11	2.0	2.00	20.4
	Max.	32.22	10.18	10.77	8.66	4.1	14.00	28.5
B3	Avg.	30.90	8.92	9.00	8.41	3.0	5.28	25.3
	Min.	29.79	7.75	7.87	8.13	2.0	2.00	20.7
	Max.	32.31	10.69	10.19	8.68	4.0	11.00	28.8
B4	Avg.	30.91	8.84	8.88	8.41	2.9	5.48	25.3
	Min.	29.73	7.79	7.58	8.11	2.1	2.00	20.6
	Max.	32.49	10.36	10.56	8.73	4.2	14.00	28.8
C1A	Avg.	30.89	8.93	8.82	8.40	2.9	5.22	25.1
	Min.	29.77	7.60	7.63	8.08	2.0	2.00	20.4
	Max.	32.55	10.70	10.21	8.69	3.9	16.00	28.7
C2A	Avg.	30.92	8.88	8.96	8.39	2.9	5.17	25.2
	Min.	29.76	7.50	7.56	8.13	2.1	2.00	20.6
	Max.	32.53	10.76	10.21	8.64	4.0	12.00	28.9
CR1	Avg.	30.89	8.84	8.96	8.39	3.0	5.06	25.1
	Min.	29.73	7.47	7.45	8.11	2.0	2.00	20.7
	Max.	32.57	10.36	10.18	8.73	4.1	12.00	29.0
CR2	Avg.	30.87	8.90	8.92	8.40	2.9	5.04	25.1
	Min.	29.74	7.48	7.64	8.08	2.0	2.00	20.6
	Max.	32.15	10.38	10.58	8.71	3.9	15.00	28.8
F1A	Avg.	30.92	8.85	8.91	8.40	3.0	5.08	25.2
	Min.	29.71	7.47	7.73	8.12	1.9	2.00	20.5
	Max.	32.52	10.71	10.35	8.67	4.0	13.00	28.5
H1	Avg.	30.88	8.85	8.89	8.39	3.0	5.02	25.2
	Min.	29.75	7.58	7.59	8.07	2.2	2.00	20.5
	Max.	32.39	10.20	10.74	8.66	4.1	14.00	28.8
M1	Avg.	30.92	8.86	8.93	8.41	2.9	5.03	25.2
	Min.	29.86	7.34	7.92	8.06	1.9	2.00	20.5
	Max.	32.56	10.64	10.20	8.73	3.9	15.00	28.5
S1	Avg.	-	-	-	-	-	-	-
	Min.	-	-	-	-	-	-	-
	Max.	-	-	-	-	-	-	-
S2A	Avg.	-	-	-	-	-	-	-
	Min.	-	-	-	-	-	-	-
	Max.	-	-	-	-	-	-	-
S3	Avg.	-	-	-	-	-	-	-
	Min.	-	-	-	-	-	-	-
	Max.	-	-	-	-	-	-	-

Notes:

i. "Avg", “Min” and “Max” is the average, minimum and maximum respectively of the data from measurements conducted under mid-flood and mid-ebb tides at three water depths, except that of DO where the data for “Surface & Middle” and “Bottom” are calculated separately.

ii. As all DCM works and post DCM water quality monitoring were completed, no water quality monitoring was conducted at S1, S2A and S3 in the report period.

iii. As all DCM works were completed on 14 October 2020, no water quality monitoring for total alkalinity was conducted in the report period.

iv. The contractor had queried the abnormal fluctuation of seawater temperature during the reporting period.

2.8.3 During the water quality monitoring on 19 April 2021, the location for monitoring station M1 was temporarily changed to the north of Cheung Chau (as shown on Figure 2.1) due to strong swell brought by monsoon.

2.8.4 During the impact monitoring period for April 2021, two (2) of general water quality monitoring results of suspended solids (SS) obtained had exceeded Action Level. None of general water quality monitoring results of SS obtained during the reporting period had exceeded the Limit Level.

2.8.5 Details of the exceedance are presented in **Section 8**.

2.8.6 Mitigation measures minimizing the adverse impacts on water implemented are listed in the implementation schedule given in **Appendix B.**

3. NOISE MONITORING

3.1 Monitoring Requirements

3.1.1 To ensure no adverse noise impact, noise monitoring is recommended to be carried out at the nearby noise sensitive receivers (NSRs) during construction phase.

3.1.2 In accordance with the Updated EM&A Manual, baseline noise level at the noise monitoring stations was established as presented in the Baseline Monitoring Report. Impact noise monitoring was conducted once per week in the form of 30-minutes measurements Leq, L10 and L90 levels recorded at each monitoring station between 0700 and 1900 hours on normal weekdays.

3.1.3 In accordance with the Updated EM&A Manual, additional weekly impact monitoring should be carried out during respective restricted hours period (1900 – 0700 hours) if the construction works were conducted at evening and night time. Additional weekly noise monitoring was conducted once per week in the form of 5-minutes measurements Leq, L10 and L90 levels recorded at each monitoring station between 1900 and 0700 hours as well as public holidays and Sundays.

3.2 Noise Monitoring Parameters, Time, Frequency

3.2.1 Impact noise monitoring was conducted weekly in the reporting period between 0700-1900 hours on normal weekdays. Additional impact noise monitoring was conducted weekly in the reporting period between 1900-0700 hours on all days as well as public holidays and Sundays.

3.2.2 Construction noise level measured in terms of the A-weighted equivalent continuous sound pressure level (LAeq). Leq_{30min} was used as the monitoring parameter for the time period between 0700 and 1900 hours on normal weekdays. Leq_{5mins} was used as the monitoring parameter for the time period between 1900 and 0700 hours as well as public holidays and Sundays. **Table 3.1** summarizes the monitoring parameters, frequency and duration of the impact noise monitoring and additional impact noise monitoring. The monitoring schedule is provided in **Appendix C**.

Table 3.1 Noise Monitoring Parameters, Time, Frequency and Duration

Monitoring Station	Time	Duration	Parameters
M1/ N_S1, M2/ N_S2, M3/ N_S3	Day time: 0700-1900 hrs (during normal weekdays)	Once per week $L_{eq\ 5min}$/$L_{eq\ 30min}$ (average of 6 consecutive $L_{eq\ 5min}$)	L_{eq}, L_{10} & L_{90}
	Evening time: 1900-2300 hrs (including normal weekdays, also public holidays and Sundays)	Once per week $L_{eq\ 5min}$ (3 sets of $L_{eq\ 5min}$)	L_{eq}, L_{10} & L_{90}
	Night time: 2300-0700 hrs (including normal weekdays, also public holidays and Sundays)	Once per week $L_{eq\ 5min}$ (3 sets of $L_{eq\ 5min}$)	L_{eq}, L_{10} & L_{90}

3.3 Noise Monitoring Locations

3.3.1 Three noise monitoring locations for impact monitoring and additional impact monitoring at the nearby sensitive receivers are shown in **Figure 3.1.**

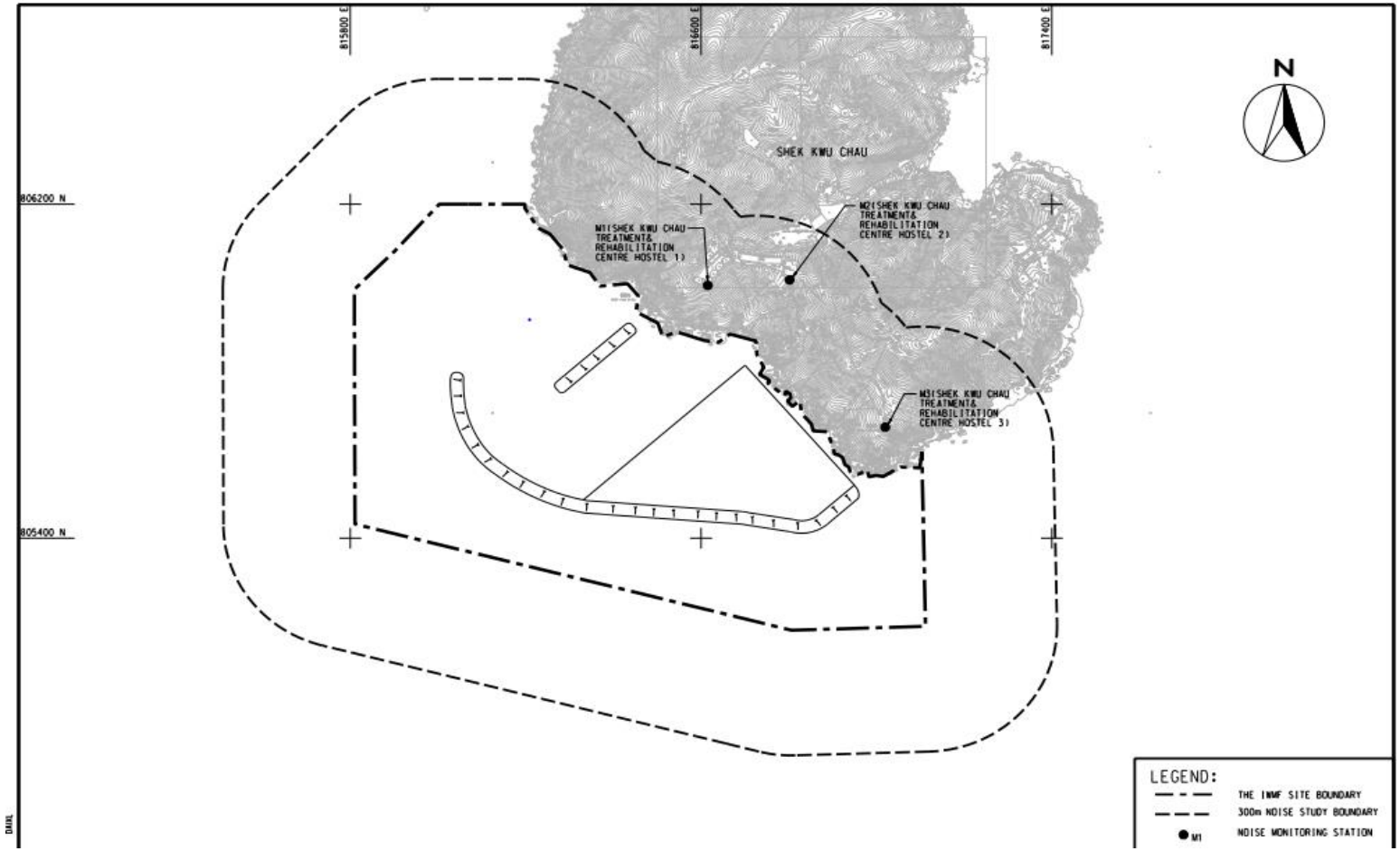


Figure 3.1 Noise monitoring locations at SKC

3.3.2 M1, M2 and M3 are Shek Kwu Chau Treatment and Rehabilitation Centre Hostel 1, 2 and 3 respectively of The Society for the Aid and Rehabilitation of Drug Abusers (SARDA) located at southern part of Shek Kwu Chau.

3.3.3 Measurements at M1 & M3 were conducted at a point 1m from the exterior of the sensitive receivers building façade and at a position 1.2m above the ground. Measurement setup at M3 has been varying with minor adjustment to minimize the disturbance to the users of Treatment Centre. Measurement at M2 was conducted at a point 1m from building façade of the ceiling of 1st floor level for avoidance of mutual disturbance with users of Treatment Centre. The minor adjustment of monitoring locations, which were in favour to mutual convenience with the users of Treatment Centre, were found with no effect on monitoring result based on on-site observation and experience from the Baseline monitoring of the Project. The noise monitoring stations are summarized in **Table 3.2** below.

Table 3.2 Noise Monitoring Location

Station	NSR ID in EIA Report	Noise Monitoring Location	Type of sensitive receiver(s)	Measurement Type
M1	N_S1	Shek Kwu Chau Treatment & Rehabilitation Centre Hostel 1	Residential	Façade
M2	N_S2	Shek Kwu Chau Treatment & Rehabilitation Centre Hostel 2	Residential	Façade
M3	N_S3	Shek Kwu Chau Treatment & Rehabilitation Centre Hostel 3	Residential	Façade

3.4 Impact Monitoring Methodology

3.4.1 At each designated monitoring location, measurements of six 5-minutes A-weighted equivalent sound pressure level ["$L_{eq\ 5min}$"] was carried out between 0700 and 1900 hours for daytime measurements on a normal weekdays (exclude Sunday or general holiday). The measured six impact noise levels at each monitoring location shall then be averaged in logarithmic scale and expressed in terms of the 30 minutes A-weighted equivalent continuous sound pressure level ($L_{eq\ 30min}$) for the time period between 0700 and 1900 hours on normal weekdays.

3.4.2 At each designated monitoring location, measurements of three 5-minutes A-weighted equivalent sound pressure level ["$L_{eq\ 5min}$"] was carried out between 1900 and 0700 hours for evening time and night time measurements.

3.4.3 The monitoring procedures are as follows:

- The microphone head of the lead level meter was normally positioned 1m exterior of the noise sensitive façade and lowered sufficiently so that the building's external wall acts as a reflecting surface.
- If there is a problem with the access to the normal monitoring position, an alternative may be chosen and appropriate correction would be applied according to acoustic principle when necessary. For reference, +3 dB(A) correction would be made for free-filed measurements.
- The battery condition was checked to ensure good functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
  - Frequency weight: A
  - Time weighting: Fast
  - Measurement time: 5 minutes

- Prior to and after noise measurement, the meter was calibrated using the calibrator for 94.0 dB at 1000Hz. If the difference in the calibration level before and after measurement is more than 1.0 dB, the measurement was considered invalid and repeat of noise measurement was required after re-calibration or repair of the equipment.
- For Noise monitoring was carried out for 30 mins by sound level meter. At the end of the monitoring period, noise levels in terms of L_{eq}, L_{10} and L_{90} were recorded. In addition, site conditions and noise sources were recorded when the equipment were checked and inspected.
- All the monitoring data within the sound level meter system was downloaded through the computer software.

3.5 Monitoring Equipment

3.5.1 Integrated sound level meter was used for the noise monitoring. The meter shall comply with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications.

3.5.2 Equipment used in the impact noise monitoring programme is summarized in **Table 3.3** below. Calibration certificates for the noise monitoring equipment are attached in **Appendix H**.

Table 3.3 Impact Noise Monitoring Equipment

Equipment	**Brand and Model**
Sound Level Meter	NTi XL2 SVANTEK 971
Sound Level Meter Calibrator	Pulsar 105

3.6 Maintenance and Calibration

3.6.1 The maintenance and calibration procedures were as follows:

- The microphone head of the sound level meter and calibrator were cleaned with a soft cloth at quarterly intervals.
- The sound level meter and calibrator were checked and calibrated at yearly intervals
- Immediately prior to and following each noise measurement the accuracy of the sound level meter shall be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements may be accepted as valid only if the calibration levels from before and after the noise measurement agree to within 1.0dB.

3.7 Action and Limit Levels

3.7.1 The Action/Limit Levels in line with the criteria of Practice Note for Professional Persons (ProPECC PN 2/93) "Noise from Construction Activities – Non-statutory Controls" and Technical Memorandum on Environmental Impact Assessment Process issued by HKSAR Environmental Protection Department ["EPD"] under the Environmental Impact Assessment Ordinance, Cap 499, S.16 is presented in **Table 3.4**.

Table 3.4 Action and Limit Levels for Noise per Updated EM&A Manual

Time Period	Action	Limit (dB(A))
0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A)

Notes: If works are to be carried out during restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed.

3.7.2 If exceedances were found during noise monitoring. The actions in accordance with the Event and Action Plan shall be carried out according to **Appendix I**.

3.8 Monitoring Results and Observations

3.8.1 Impact monitoring for noise impact for daytime was carried out on 9, 12, 19 and 26 April 2021. Impact monitoring for noise impact for evening time and night time was carried out on 9&10, 12&13, 19&20, 26&27 April 2021. The impact noise levels at Noise Monitoring Stations at SKC (i.e. M1/N_S1 to M3/N_S3) are summarized in **Table 3.6**, **Table 3.7** and **Table 3.8** respectively. Details of noise monitoring results are presented in **Appendix J**.

3.8.2 Major construction activity, major noise source and extreme weather which might affect the results were recorded during the impact monitoring.

3.8.3 According to our field observations, the major noise source identified at the noise monitoring station in the reporting month are summarised in **Table 3.5**. No noticeable noise source was found near the monitoring station M1, M2 and M3.

Table 3.5 Summary of Field Observation

Monitoring Station	Major Noise Source
M1	Nil
M2	Nil
M3	Nil

No data from impact monitoring during daytime has exceeded the stipulated limit level at 75 dB(A).

Table 3.6 Summary of Impact Noise Monitoring Results during Day Time (0700 – 1900 hours)

Location	Measured Noise Level in dB(A)		
	Range of $L_{eq\ 30min}$	Range of $L_{10\ 30min}$	Range of $L_{90\ 30min}$
M1	60.0 – 63.5	63.7 – 66.2	58.1 – 60.1
M2	57.8 – 62.3	59.6 – 64.1	55.3 – 60.8
M3	58.1 – 64.7	62.8 – 67.2	54.9 – 61.8

Applicable mitigation measures for construction works are fully implemented as shown in **Appendix B**, where double-glazed windows and air conditioning system were also installed and confirmed operable for the NSRs (N_S1, N_S2 & N_S3).

During the noise monitoring event, frontline staff of ET had inquired the treatment centre users on any noise disturbance from the construction activities at evening and night time, where no complaint and adverse opinions was received.

Data from impact monitoring during evening time and night time were compared with the NCO criteria. Where site inspection and auditing on Contractor's record have shown that the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority for construction works during restricted hours were followed. No inappropriate practice was spotted during evening time and night time construction works, thus the stipulated requirement on noise impact control during night time and evening time was achieved.

Table 3.7 Summary of Additional Impact Noise Monitoring Results during Evening Time (1900 – 2300 hours)

Location	Measured Noise Level in dB(A)		
	Range of $L_{eq\ 5min}$	Range of $L_{10\ 5min}$	Range of $L_{90\ 5min}$
M1	55.1 – 62.7	58.9 – 65.8	52.6 – 60.2
M2	51.1 – 64.3	54.6 – 66.4	48.5 – 61.8
M3	54.3 – 64.5	55.9 – 68.1	52.7 – 61.4

Table 3.8 Summary of Additional Impact Noise Monitoring Results during Night Time (2300 – 0700 hours)

Location	Measured Noise Level in dB(A)		
	Range of $L_{eq\ 5min}$	Range of $L_{10\ 5min}$	Range of $L_{90\ 5min}$
M1	50.2 – 60.1	54.6 – 62.3	48.6 – 57.3
M2	48.6 – 60.5	50.6 – 61.4	46.2 – 58.6
M3	49.6 – 58.5	50.9 – 60.2	48.3 – 56.7

4. WASTE

4.1 The waste generated from this Project includes inert construction and demolition (C&D) materials, and non-inert C&D materials. Non-inert C&D materials are made up of general refuse, vegetative wastes and recyclable wastes such as plastics and paper/cardboard packaging waste. Steel materials generated from the project are also grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials.

4.2 As advised by the Contractor, 0.0 m^3 of C&D material was generated on site in the reporting month. For C&D waste, no metals were generated and collected by registered recycling collector. 0 kg of paper was generated on site and collected by the registered recycling collector. No plastic waste was collected by registered recycling collector. 0.0 L of chemical waste was collected by the licensed chemical waste collector. 13.0 m^3 of other types of wastes (e.g. general refuse) was generated on site and disposed of at designated landfill. 0.0 m^3 of sand fill, 161,295.6 m^3 of public fill and 27,281.0 m^3 of fill rock were imported during the reporting period.

4.3 Chemical waste generated from the cleaning of oil stain and leakage on deck of barges was stored in the chemical waste storage area on the barges.

4.4 With reference to relevant handling records and trip tickets of this Project, the quantities of different types of waste generated in the reporting month are summarised in **Table 4.1**. Details of cumulative waste management data are presented as a waste flow table in **Appendix K**.

Table 4.1 Quantities of Waste Generated from the Project during Apr 2021

Reporting Month	**Actual Quantities of Inert C&D Materials Generated Monthly**								**Actual Quantities of C&D Wastes Generated Monthly**					
	Total Quantity Generated	Hard Rock and Large Broken Concrete (see Note 1)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill			Metals	Paper / cardboard packaging	Plastics (see Note 2)	Chemical Waste		Others, e.g. general refuse (see Note 3)
						Sand	Public Fill	Rock						
	(in ,000 m^3)	(in ,000 m^3)	(in ,000 m^3)	(in ,000 m^3)	(in ,000 m^3)	(in ,000m^3)			(in ,000 kg)	(in ,000kg)	(in ,000 kg)	(in ,000 kg)	(in ,000 L)	(in ,000m^3)
Apr 2021	0	0	0	0	0	0	161.2956	27.2810	0	0	0	0	0	0.0130

Notes: (1) Broken concrete for recycling into aggregates.
(2) Plastics refer to plastic bottles/ containers, plastic sheets/ foam from packaging materials.
(3) Use the conversion factor: 1 full load of dumping truck being equivalent to 6.5m^3 by volume.

4.5 Although there is not much waste generation anticipated in the coming month from the Project, the Contractor is advised to sort and store any solid and liquid waste on-site properly prior to disposal.

5. CORAL

5.1 Coral Monitoring Requirements

5.1.1 To monitor the health condition of corals during different phases, corals located within areas likely to be affected by the Project, corals located at control sites (areas unlikely to be affected by the Project), the trans-located coral colonies as well as the tagged natural coral colonies at the recipient site were chosen, in order to identify any adverse indirect impact from the marine works. The size, percentage cover and health condition of corals (i.e. any sign of abnormal appearance, such as layer of mucus, bleaching, partial mortality etc.) at representative transects should be recorded during each monitoring.

5.2 Coral Monitoring Parameters, Time, Frequency

5.2.1 Rapid Ecological Assessment (REA) survey was conducted on 26 June 2018 at the suggested control site and indirect impact site within two weeks before commencement of the construction work which was 29 June 2018. 10 selected hard coral colonies with the similar species were tagged at both control and indirect impact sites. Following coral translocation in the recipient site R3, 16 coral colonies attached to rocks less than 50 cm in diameter were translocated and tagged, as well as 10 selected natural coral colonies, at the recipient site. One additional REA survey was conducted in December 2018 to further assess the seabed condition at Indirect Impact Site after Typhoon Mangkhut.

5.2.2 Tagged coral colonies at the suggested control site and indirect impact site are being monitored weekly for the first month and followed by monthly monitoring for two months. Quarterly monitoring will be carried out after the first three-months monthly monitoring for until the end of the construction phase. The selected Control Site is located at Yuen Kong Chau of Soko Islands about 7 km away from the project area. Tagged coral colonies at the proposed recipient site are being monitored quarterly for one year. The selected recipient site R3 is located at the opposite side of the Project area at about 2 km away. The detailed survey of the Control Site and Impact Site were conducted before the commencement of the Construction Phase.

5.2.3 Monitoring recorded the following parameters (using the same methodology adopted during the pre-translocation survey); the size, presence, health conditions (percentage of mortality/bleaching) and percentage of sediment of each tagged coral colony. The general environmental conditions including weather, sea, and tidal conditions of impact site, control site and recipient site were monitored.

5.2.4 **Table 5.1** summarizes the monitoring locations, time and frequency of the tagged coral colonies monitoring. The monitoring schedule is provided in **Appendix C**.

Table 5.1 Tagged Coral Monitoring Locations, Time and Frequency

Monitoring Location	Monitoring Month/Year	Frequency	No. of Monitoring Survey
10 selected hard coral colonies at control site / indirect impact site	1st Month	Weekly Survey	4
	2nd to 3th Months	Monthly Survey	2
	4th Month (postponed to 5th month due to diver accident in Shek Kwu Chau in October 2018)	Re-tagging of Coral Colonies in Indirect Impact Site after Typhoon Mangkhut	

Monitoring Location	Monitoring Month/Year	Frequency	No. of Monitoring Survey
	4th Month (postponed to 5th month due to diver accident in Shek Kwu Chau in October 2018 and further postpone to 6th month due to adverse weather)	Re-tagging of Coral Colonies in Control Site after Typhoon Mangkhut	
	5th Month (postponed to 6th month due to diver accident in Shek Kwu Chau and further postponed to 7th month due to delay of re-tagging activities at both Indirect Impact Site and Control Site)	Post Re-tagging Monthly Survey	1
	7th to 76th Months (postponed to 8th to 76th month due to diver accident in Shek Kwu Chau in October 2018)	Quarterly Survey	23
16 translocated hard coral colonies and 10 selected natural hard coral colonies at recipient site R3	1st Year	Quarterly Survey	4

5.3 Coral Monitoring Locations

5.3.1 Location of the ten tagged coral colonies at each of the proposed indirect impact site (re-tagging after typhoon Mangkhut), control site (baseline) and recipient site R3 (translocation) are shown in **Figure 5.1**, **Figure 5.2** and **Figure 5.3** respectively:

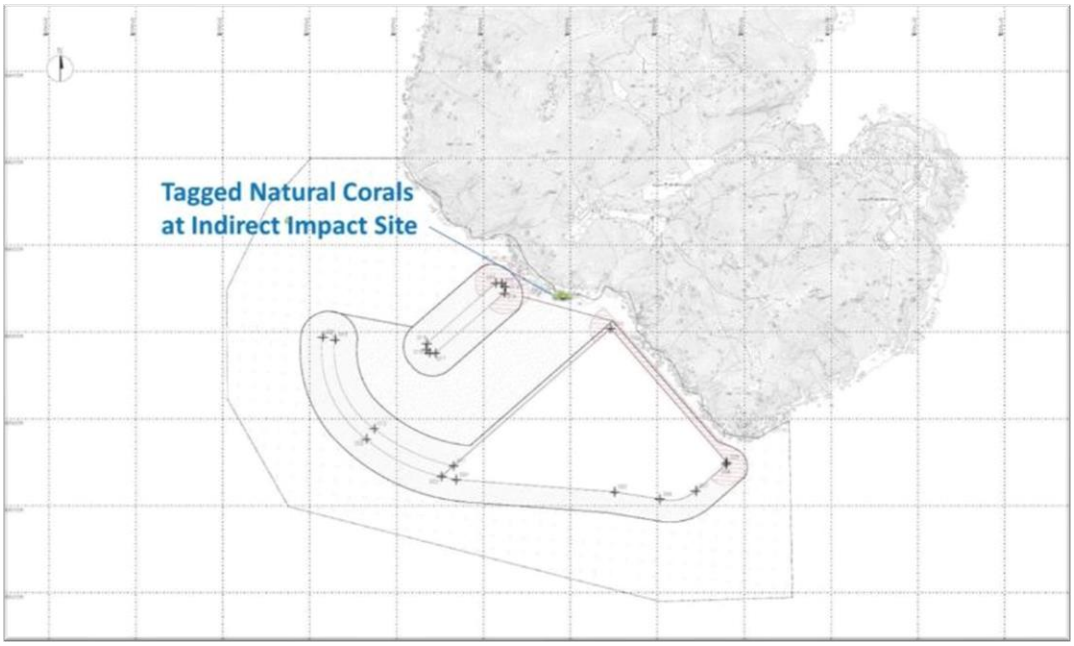


Figure 5.1 Tagged Natural Corals at Indirect Impact Site Near SKC for re-tagging after typhoon Mangkhut

Figure 5.2 Tagged Natural Corals at Control Site Near Yuen Kong Chau for re-tagging after typhoon Mangkhut

Figure 5.3 Tagged Translocation Corals at Recipient Site R3 near SKC

5.3.2 The GPS coordinates of the tagged coral colonies, retagged coral colonies and recipient site were shown in **Table 5.2**, **Table 5.3** and **Table 5.4** respectively.

Table 5.2 Tagged Natural Corals during Baseline and Re-tagged Natural Corals after Typhoon Manghkut at Control Site near Yuen Long Chau

Coral #	GPS Coordinates	
1	N22°09’45.96”	E113°54’57.81”
2R	N22°11’29.12”	E113°59’09.01”
3	N22°09’45.81”	E113°54’57.78”
4	N22°09’45.70”	E113°54’57.95”
5R	N22°11’29.10”	E113°59’09.18”
6	N22°09’45.75”	E113°54’58.02”
7R	N22°11’29.17”	E113°59’08.86”
7	N22°09’45.65”	E113°54’57.94”
8	N22°09’45.53”	E113°54’57.90”
9	N22°09’46.23”	E113°54’54.70”
10R	N22°11’29.18”	E113°59’08.91”

Notes:

i. The re-tagged corals were marked as ##**R**.

Table 5.3 Re-tagged Natural Corals after Typhoon Manghkut at Indirect Impact Site near SKC

Coral # [note i]	GPS Coordinates	
11R	N22°11’29.14”	E113°59’08.92”
12R	N22°11’29.12”	E113°59’09.01”
13R	N22°11’29.11”	E113°59’09.07”
14R	N22°11’29.13”	E113°59’09.12”
15R	N22°11’29.10”	E113°59’09.18”
16R	N22°11’29.07”	E113°59’09.23”

Coral # [note i]	GPS Coordinates	
17R	N22°11’29.17”	E113°59’08.86”
18R	N22°11’29.14”	E113°59’08.94”
19R	N22°11’29.20”	E113°59’08.81”
20R	N22°11’29.18”	E113°59’08.91”

Notes:

i. The re-tagged corals were marked as ##**R**.

Table 5.4 GPS Coordinates of Recipient Site R3

Site	GPS Coordinates	
R3	N22°11’43.69”	E113°28.99”

5.4 Impact Monitoring Methodology

5.4.1 Health status of coral was assessed by the following criteria:

- Hard coral: Percentage of surface area exhibiting partial mortality and blanched/bleached area of each coral colony and degree of sedimentation.

5.5 Action and Limit Levels

5.5.1 Monitoring result was reviewed and compared against the below Action Level and Limit Level (AL/LL) as set with the below **Table 5.5** and **Table 5.6**.

Table 5.5 Action and Limit Levels for Construction Phase Coral Monitoring

Parameter	Action Level	Limit Level
Mortality	If during Impact Monitoring a 15% increase in the percentage of partial mortality on the corals occurs at more than 20% of the tagged indirect impact site coral colonies that is not recorded on the tagged corals at the control site, then the Action Level is exceeded.	If during Impact Monitoring a 25% increase in the percentage of partial mortality on the corals occurs at more than 20% of the tagged indirect impact site coral colonies that is not recorded on the tagged corals at the control site, then the Limit Level is exceeded.

Table 5.6 Action and Limit Levels for Post-Translocation Coral Monitoring

Parameter	Action Level	Limit Level
Mortality	If during Post-Translocation Monitoring a 15% increase in the percentage of partial mortality on the corals occurs at more than 20% of the translocated coral colonies that is not recorded on the original corals in the recipient site, then the Action Level is exceeded.	If during Post-Translocation Monitoring a 25% increase in the percentage of partial mortality on the corals occurs at more than 20% of the translocated coral colonies that is not recorded on the original corals in the recipient site, then the Limit Level is exceeded.

5.5.2 If exceedance was found during coral monitoring. The actions in accordance with the Event and Action Plan should be carried out according to **Appendix L.**

5.6 Monitoring Results and Observations

5.6.1 No coral monitoring survey had been done during the reporting period and the 10th quarterly coral monitoring during construction phase at both Indirect Impact Site and Control Site would be scheduled in June 2021.

6. MARINE MAMMAL

6.1 Monitoring Requirements

6.1.1 The marine mammal monitoring programme would focus on Finless Porpoise, as the study area near Shek Kwu Chau has been identified as a hotspot for this species, while the Chinese White Dolphins rarely occurred there in the past.

6.1.2 The monitoring will verify the predicted impacts on marine mammals and examine whether the mitigation measures recommended in the EIA report have been effectively implemented to protect marine mammals from negative impacts from construction activities.

6.1.3 The Vessel-based Line-transect Survey, the Passive Acoustic Monitoring and the Land-based Theodolite Tracking will be conducted to provide systematic, quantitative measurements of occurrence, encounter rate, habitat use, movement and behavioural patterns of marine mammals within or near the Project Area during construction and operational phases.

6.1.4 The mammal monitoring works during construction consist of the following three survey methods:

- Vessel-based Line-transect Survey – to monitor the occurrence of Finless Porpoises (and Chinese White Dolphins) in the study area during construction works, by comparing with the findings of the pre-construction marine mammal monitoring;
- Passive Acoustic Monitoring – to study the usage of the Project Area and two control sites in South Lantau Waters by Finless Porpoise during construction works, in reference with the baseline findings of the pre-construction marine mammal monitoring; and
- Land-based Theodolite Tracking – to study the movement and behavioral pattern of Finless Porpoise within and around the Project Area during construction works.

6.1.5 The marine mammal observation works of Marine Mammal Exclusion Zone (MMEZ) and Marine Mammal Watching as two of the specific mitigation measures recommended in the approved EIA report shall be fully and properly implemented for the Project to minimize disturbance on Finless Porpoise during construction and operational phases.

6.2 Survey Methods

6.2.1 Vessel-based Line-transect Survey

6.2.1.1 For the vessel-based marine mammal surveys, the monitoring team adopted the standard line-transect method (Buckland et al. 2001) as same as that adopted during the EIA study and pre-construction phase monitoring to allow fair comparison of marine mammal monitoring results.

6.2.1.2 Eight transect lines are set at Southeast Lantau survey area, including Shek Kwu Chau, waters between Shek Kwu Chau and the Soko Islands, inshore waters of Lantau Island (e.g. Pui O Wan) as well as southwest corner of Cheung Chau as shown in **Figure 6.1** below:

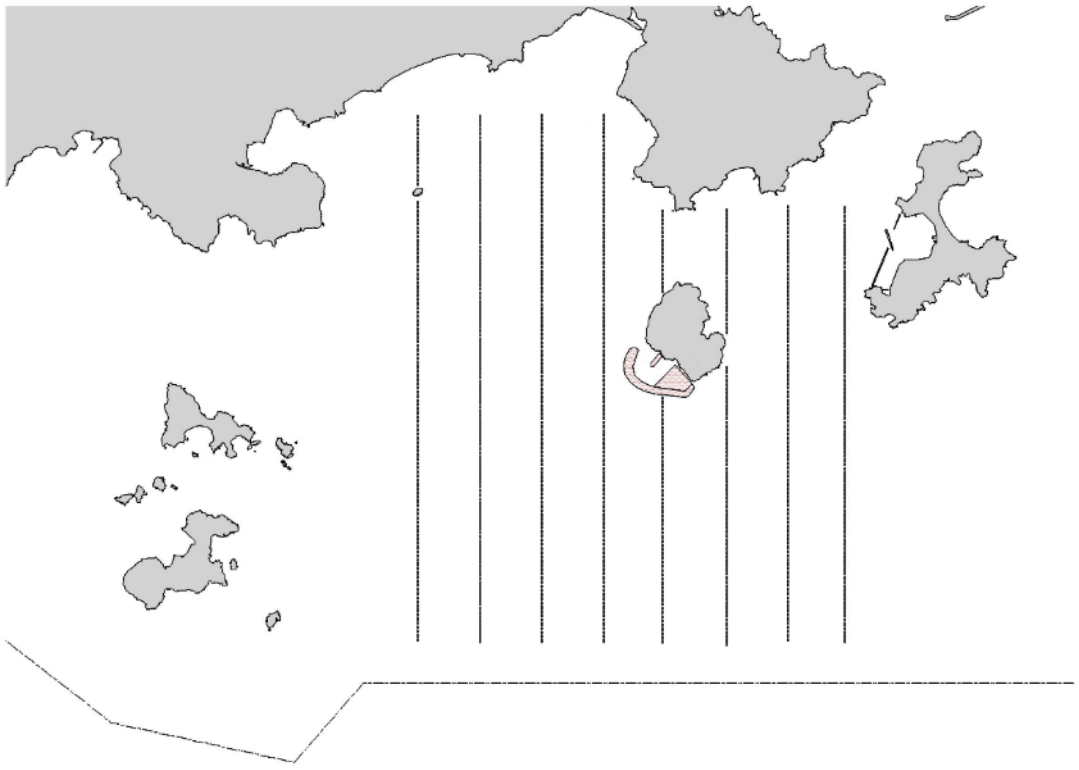


Figure 6.1 Line Transects for Marine Mammal Surveys

6.2.1.3 The surveys should cover all 4 seasons in order to take natural fluctuation and seasonal variations into account for data analysis of distribution, encounter rate, density and habitat use of both porpoises and dolphins (if any). In comparison to the baseline monitoring results, results from the analysed construction phase monitoring data would allow the detection of any changes of their usage of habitat, in response to the scheduled construction works. The monitoring surveys shall be conducted throughout the construction phase involving marine construction work with the frequency shown in **Table 6.1** below:

Table 6.1 Vessel-based Line-transect Survey Frequency

Season	Months	Frequency
Peak Season	December, January, February, March, April & May	Twice per month
Non-peak Season	June, July, August, September, October & November	Once per month

6.2.1.4 For each vessel survey, a 15-m inboard vessel with an open upper deck (about 4.5 m above water surface) would be used to make observations from the flying bridge area. Two experienced marine mammal observers (a data recorder and a primary observer) would make up the on-effort survey team, and the survey vessel would transit different transect lines at a constant speed of 13-15 km per hour. The data recorder shall search with unaided eyes and fill out the datasheets, while the primary observer shall search for dolphins and porpoises continuously through 7 x 50 marine binoculars. Both observers shall search the sea ahead of the vessel, between 270^{o} and 90^{o} (in relation to the bow, which is defined as 0°). Two additional experienced observers shall be available on the boat to work in shift (i.e. rotate every 30 minutes) in order to minimize fatigue of the survey team members. All observers shall be experienced

in small cetacean survey techniques and identifying local cetacean species with extensive training by marine mammal specialist of the ET.

6.2.1.5 During on-effort survey periods, the survey team shall record effort data including time, position (latitude and longitude), weather conditions (Beaufort sea state and visibility), and distance travelled in each series (a continuous period of search effort) with the assistance of a handheld GPS (Garmin eTrex Legend). Data including time, position and vessel speed would also be automatically and continuously logged by handheld GPS throughout the entire survey for subsequent review.

6.2.1.6 When porpoises or dolphins are sighted, the survey team shall end the survey effort, and immediately record the initial sighting distance and angle of the porpoise or dolphin group from the survey vessel, as well as the sighting time and position. Then the research vessel shall be diverted from its course to approach the animals for species identification, group size estimation, assessment of group composition, behavioural observations, and collection of identification photos (feasible only for Chinese White Dolphin). The perpendicular distance (PSD) of the porpoise or dolphin group to the transect line would then be calculated from the initial sighting distance and angle, which shall be used in the line-transect analysis for density and abundance estimation.

6.2.1.7 The line-transect survey data shall be integrated with a Geographic Information System (GIS) to visualize and interpret different spatial and temporal patterns of porpoise and dolphin distribution using their sighting positions collected from vessel surveys. Location data of porpoise and dolphin groups would be plotted on map layers of Hong Kong using a desktop GIS (e.g. ArcView© 3.1) to examine their distribution patterns in details. The encounter rate could be used as an indicator to determine areas or time periods of importance to porpoises within the study area. For encounter rate analysis of finless porpoises, only survey data collected under Beaufort 2 or below condition would be used for encounter rate analysis.

6.2.1.8 To take into account of the variations of survey effort across different sections within survey area, the quantitative grid analysis of habitat use would be conducted to examine finless porpoise usage among 1-km^2 grids within the Southeast Lantau survey area. For the grid analysis, SPSE (sighting density) and DPSE (porpoise density) values would be deduced for evaluation on level of porpoise usage. First, positions of on-effort porpoise sightings from the study period are plotted onto 68 grids (1 km x 1 km each) within the survey area. Sighting density grids and porpoise density grids shall then be normalized with the amount of survey effort conducted within each grid. The total amount of survey effort spent on each grid shall be calculated by examining the survey coverage on each line-transect survey to determine how many times the grid had been surveyed during study period. With the amount of survey effort calculated for each grid, the sighting density and porpoise density of each grid shall be further normalized (i.e. divided by the unit of survey effort).

6.2.1.9 The newly-derived unit for sighting density was termed SPSE, representing the number of on-effort sightings per 100 units of survey effort. In addition, the derived unit for actual porpoise density was termed DPSE, representing the number of dolphins/porpoise per 100 units of survey effort. Among the 1-km^2 grids that were partially covered by land, the percentage of sea area was calculated using GIS tools, and their SPSE and DPSE values were adjusted accordingly. The following formulae shall be used to estimate SPSE and DPSE in each 1-km^2 grid within the study area:

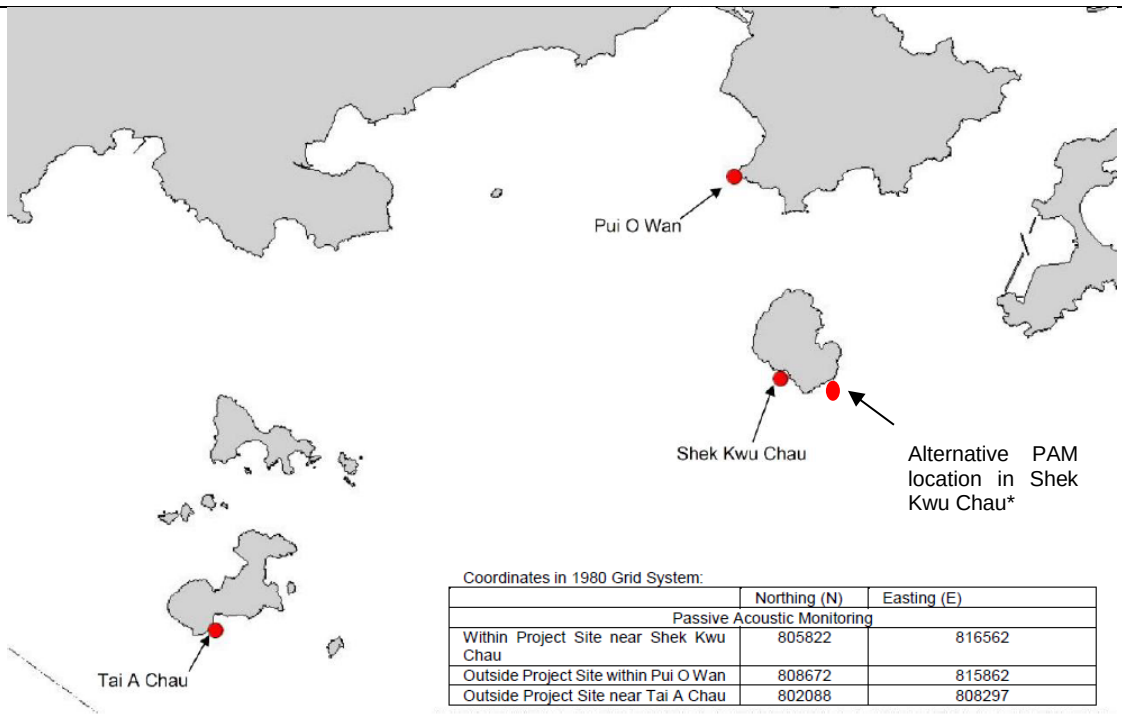
$$SPSE = ((S / E) \times 100) / SA\%$$

$$DPSE = ((D / E) \times 100) / SA\%$$

where S = total number of on-effort sightings
D = total number of dolphins/porpoises from on-effort sightings
E = total number of units of survey effort
SA% = percentage of sea area

6.2.2 Passive Acoustic Monitoring (PAM)

The PAM aims to study the usage of an area by Finless Porpoise by using an array of automated static porpoise detectors (e.g. C-POD) which would be deployed at different locations to detect the unique ultra-high frequency sounds produced by Finless Porpoise. During the construction period, the PAM survey will be conducted including placement of two passive porpoise detectors outside the Project Area as control site (i.e. within Pui O Wan and to the south of Tai A Chau) and one porpoise detector within the Project Area (i.e. near Shek Kwu Chau) as shown in **Figure 6.2** below.



Coordinates in 1980 Grid System:

	Northing (N)	Easting (E)
Passive Acoustic Monitoring		
Within Project Site near Shek Kwu Chau	805822	816562
Outside Project Site within Pui O Wan	808672	815862
Outside Project Site near Tai A Chau	802088	808297

Note*: The alternative PAM device adjacent to the Project site was deployed from 5 Mar to 11 Apr 2019, which contained a full 37 days acoustic monitoring data set. After the confirmation of loss of the original PAM within the Project site, this data set was proposed to replace that of the original one, as consulted with AFCD accordingly.

Figure 6.2 Locations of Passive Acoustic Monitoring

6.2.3 These three detectors will be deployed on-site to carry out 24-hours monitoring for a period listed as **Table 6.2** below during the construction phase.

Table 6.2 PAM Deployment Period

Season	Months	Deployment Period
Peak Season	December, January, February, March, April or May	At least 30 days during the peak months of porpoise occurrence in South Lantau waters

6.2.3.1 The automated static porpoise detectors shall detect the presence and number of finless porpoise and Chinese White Dolphins respectively over the deployment period,

with the false signal such as boat sonar and sediment transport noise distinguished and filtered out. The detectors shall be deployed and retrieved by professional dive team on the seabed of the three selected location shown in **Figure 6.2**. During each deployment, the C-POD unit serial numbers as well as the time and date of deployments shall be recorded. Information including the GPS positions and water depth at each of the deployment locations shall also be obtained.

6.2.3.2 The diel patterns (i.e. 24-hour activity pattern) of finless porpoise occurrence among the three sites at Shek Kwu Chau, Tai A Chau and Pui O Wan shall be analyzed. Peaks and troughs of finless porpoise occurrence per hour of day would be identified and compared with the results obtained from pre-construction monitoring.

6.2.4 Land-based Theodolite Tracking

6.2.4.1 The Land-based Theodolite Tracking study would use the same station as in the AFCD monitoring study (same as the baseline monitoring location), which is situated at the southwest side of Shek Kwu Chau (GPS position: 22º11.47' N and 113º59.33' E) as shown in below **Figure 6.3**. The station was selected based on its height above sea level (at least 20 metres), close proximity to shore, and relatively unobstructed views of the entire Project Area to the southwest of Shek Kwu Chau. The height of the Shek Kwu Chau Station established by the HKCRP team is 74.6 m high at mean low water, and only a few hundred metres to the IWMF reclamation site, which is ideal for the purpose for the present behavioural and movement monitoring of finless porpoises as well during construction phase considering there as an un-obstructed vantage point at a height above the Project Site.

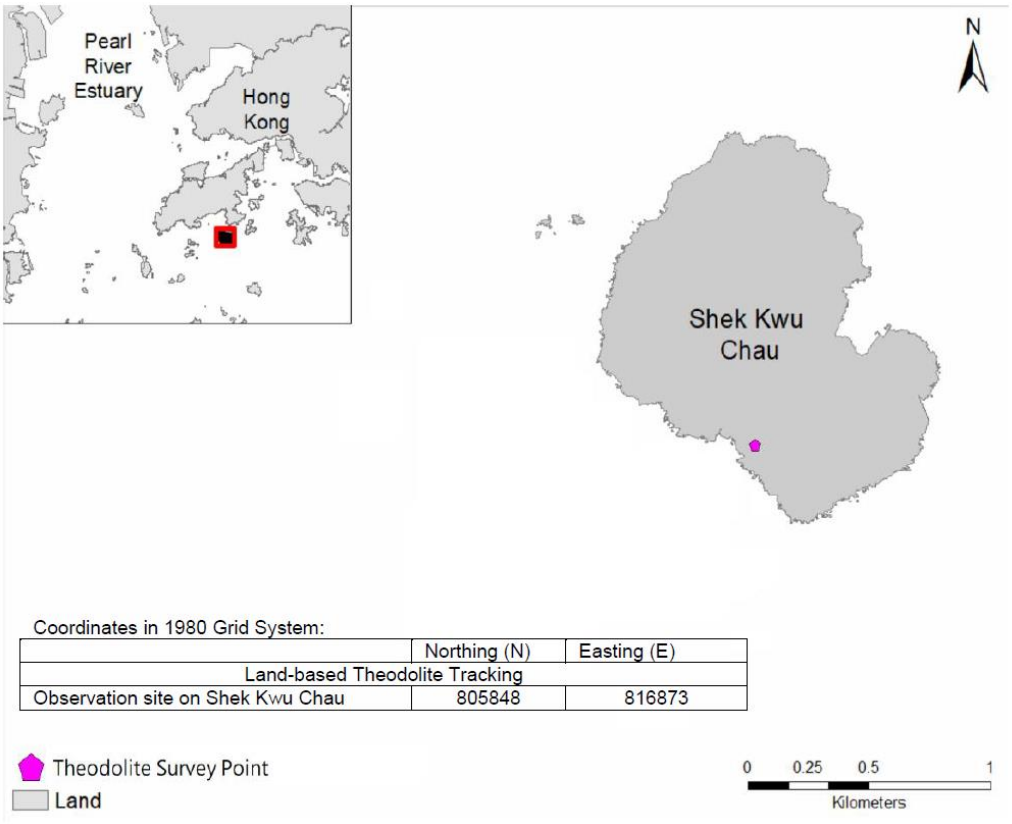


Figure 6.3 Locations of Land-based Theodolite Tracking

During the construction phase, Land-based Theodolite Tracking will be carried out for approximately six hours of tracking for each day of field work for a period listed as **Table 6.3** below, preferably at the initial stage of the construction period (i.e. December 2018 to May 2019).

Table 6.3 Land-based Theodolite Tracking Survey Period

Season	Months	Survey Period
Peak Season	December, January, February, March, April or May	30 days during the peak months of porpoise occurrence in South Lantau waters

6.2.4.2 The monitoring period for land-based theodolite tracking will be proposed to be overlapped with the PAM. The monitoring team consists of one experienced theodolite operator and at least two field observers for assistance. To conduct theodolite tracking, the observers will search systematically for Finless Porpoise using the unaided eye and 7 x 50 handheld binoculars on each survey day throughout the study area. When an individual or group of porpoises is located, a theodolite tracking session will be initiated and focal follow methods will be used to track the porpoise(s). Behavioural state data (i.e. resting, milling, travelling, feeding and socializing) shall also be recorded every 5 minutes for the focal individual or group. Positions of porpoises and boats shall be measured using a digital theodolite connected to a laptop computer. This tracking survey was conducted during the peak season between December 2018 and May 2019 for 30 surveys spanning across 15-16 weeks during the peak season to provide good temporal coverage during the initial stage of the construction period.

6.3 Specific Mitigation Measures

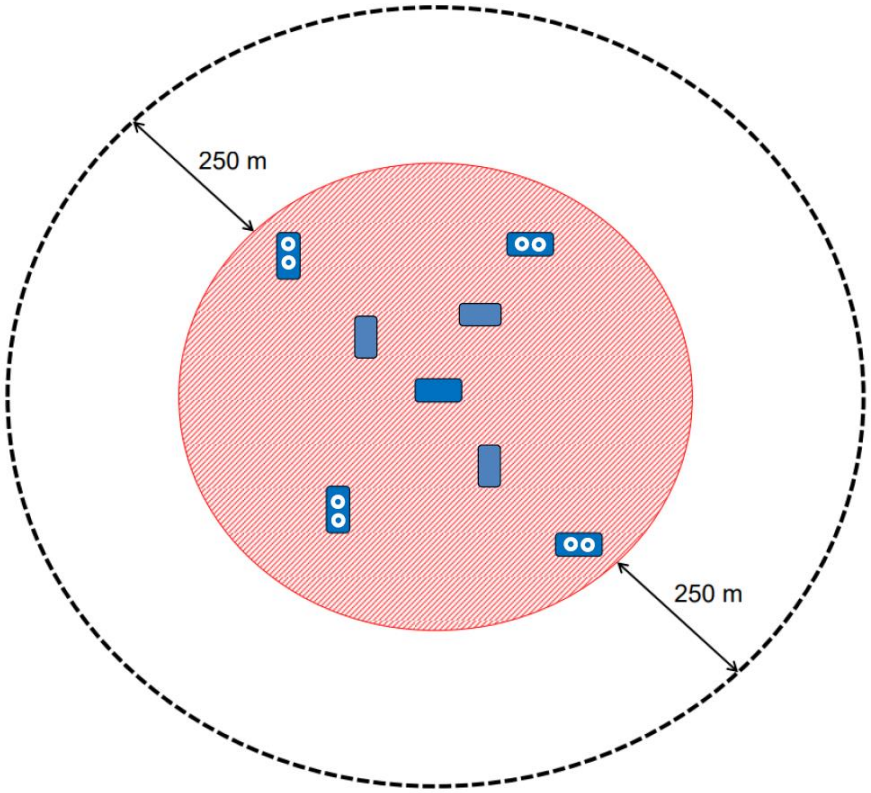
6.3.1 Monitored exclusion zones

6.3.1.1 A MMEZ with 250 m distance from silt curtain shall be established during the above situation. If 3 or more construction vessels are required with MMO's duty and operating in close proximity, for the purpose of avoiding accidental entrance to the works area by Marine Mammal, a cluster MMEZ plan will be implemented to form a MMEZ with 250 m distance from the boundary of a work area as indicated in Figure 1 for reference. A team of MMO (i.e. at least two MMOs per day/night shift teams) would be arranged at the out-lying construction vessels to form the cluster MMEZ. The MMEZ serves as a monitoring approach to provide appropriate and immediate actions once finless porpoise or Chinese White Dolphin is sighted within the MMEZ. All MMEZ will be monitored by competent Marine Mammal Observers (MMOs) to be provided by the Environmental Team for the IWMF and trained by the Marine Mammal Monitoring Specialist of the ET who is independent from KSZHJV. The marine mammal observer(s) shall be independent of the construction contractor and shall form part of the Environmental Team and have the power to call-off construction activities.

6.3.1.2 According to the Condition 2.25 of the FEP, MMEZ should be implemented during the installation/re-installation/relocation process of floating type silt curtains in order to avoid the accidental entrance and entrapment of marine mammals within the silt curtains. Also, marine construction works expected to produce underwater acoustic disturbance as per Condition 2.27 of the FEP, especially within December and May, would require the implementation of MMEZ, which currently all those specific construction activities have been replaced by less acoustically disturbing construction methods such as Deep Cement Mixing (DCM) and Precast Concrete Blocks

Installation as discussed in Section 5.3 of the Detailed Monitoring Programme on Finless Porpoise, however, MMEZ would also be implemented for precautionary purpose for DCM works.

6.3.1.3 A MMEZ with 250 m distance from the boundary of a work area shall be established during the above situation. A typical MMEZ is indicated in **Figure 6.4** for reference. The MMEZ serves as a monitoring approach to provide appropriate and immediate actions once finless porpoise or Chinese White Dolphin is sighted within the MMEZ. All MMEZ will be monitored by competent Marine Mammal Observers (MMOs) to be provided by the Environmental Team (ET) for the IWMF and trained by the Marine Mammal Monitoring Specialist of the ET who is independent from KSZHJV.



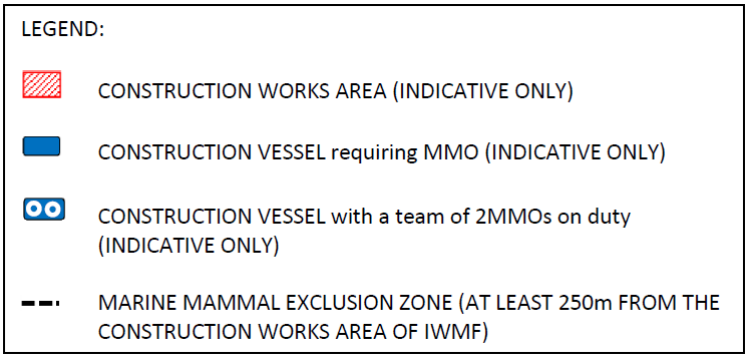


Figure 6.4 Illustration of Typical MMEZ

6.3.1.4 Prior to the commencement of construction activity, our MMOs shall ensure the boundary of a marine work area and setting up of the MMEZ for the work area and get access to the monitoring location on a barge or a lookout point where there is no obstructed views for monitoring the MMEZ during the construction activity. The

MMEZ shall be scanned thoroughly by a MMO for any presence of marine mammal e.g. finless porpoise for an initial period of 30 minutes. Construction activity shall only be commenced after the MMO has confirmed that the MMEZ is clear of the marine mammal for the initial period of 30 minutes. The MMO shall then inform the construction superintendent through mobile phone or handheld transceivers to certify the commencement of construction activity. The MMEZ monitoring shall be carried on throughout the period for all active construction activities requiring implementation of MMEZ.

6.3.1.5 When any mammal marine, e.g. Finless Porpoise, is detected by the MMO within the MMEZ during construction, the MMO shall inform the construction superintendent immediately through mobile phone or handheld transceivers to cease construction activity within the MMEZ. Construction activity shall not be re-commenced until the MMO confirms that the MMEZ is continuously clear of marine mammal for a period of 30 minutes. The MMO shall then inform the construction superintendent through mobile phone or handheld transceivers to certify the re-commencement of construction activity.

6.3.1.6 As there could be a number of Contractors working at the same time within a work area for the IWMF project, a full contact list of MMEZ monitoring team members of the ET and the relevant responsible construction superintendents of the Contractor at the site shall be prepared, updated regularly and circulated to all parties involved in the MMEZ monitoring. With a full contact list, our MMOs shall be able to find out the contacts of corresponding persons in case of marine mammal sighting within and near the MMEZ or emergent occurrence of any unpredictable impact on marine mammal.

6.3.1.7 If a marine mammal is still observed in close vicinity but outside the MMEZ, the MMO shall inform the construction superintendent about the presence of marine mammal. The MMO shall remain in position and closely observe the movement of the marine mammal as well as searching for the appearance of any other marine mammal within the MMEZ. No matter the marine mammal is observed within or in close vicinity but outside the MMEZ, the construction superintendent or relevant persons shall inform all vessel captains involved in construction activities around the MMEZ to pay special attention of the presence of the marine mammal in order to reduce chance of collision with them. In case of injury or live-stranded marine mammal being found within the MMEZ, the marine mammal observer shall immediately inform the construction superintendent to suspend construction activities within the works area and contact AFCD through “1823” marine mammal stranding hotline.

6.3.2 Marine mammal watching plan

6.3.2.1 Upon the completion of silt curtain installation/re-installation/relocation, the marine works would be conducted within an enclosed environment within the silt curtain. Subsequently, Visual Inspection of the Waters Surrounded by Silt Curtains (Section 2.1, MMWP) and Regular Inspection of Deployed Silt Curtain (Section 2.2, MMWP) inspection under Marine Mammal Watching Plan would be implemented (where applicable, Marine Mammal Exclusion Zone shall be conducted at the meantime).

6.3.2.2 Before commencement of dredging/sand blanket laying work at each designated area, a trained MMO shall check whether position frame silt curtains are ready, well prepared and operated without any obvious damage. Also, the MMO shall confirm the presence of the relevant frontline staff of the main contractor or its sub-contractors and engineers on board to ensure the effective communication, coordination and

implementation of the response plan in relation to any incidents involving marine mammals within the waters surrounded by the position frame type silt curtains and the work areas. Also, there are lookout points at an elevated level on each barge, clear and safe access at the edges of the derrick lighter/ flag-top barge for inspection during dredging/sand blanket laying works, provision of sufficient lighting is required if working at night.

6.3.2.3 During the operation, the inspection will be conducted daily. The MMO will walk along the edge of derrick lighter (DL) and flag-top barge (FB) along the position frame silt curtain or proper location without obstacles where appropriate to inspect the position frame silt curtain with naked eyes, the MMO will check that the position frame silt curtains are maintained in the correct positions with no obvious defects / entanglement and there is no observable muddy water passing through the position frame silt curtain system. Any floating refuse trapped by the silt curtain shall be removed as part of the regular inspection. For night inspection, spotlight will be used to provide sufficient brightness to assist the inspection in dark condition.

6.3.2.4 For the re-deployment of the localized silt curtains (frame-type, cage-type or enclosed floating-type silt curtains), MMO will conduct visual inspection to confirm that there is no presence of marine mammal within the localized silt curtains (frame-type, cage-type or enclosed floating-type silt curtains). Visual inspection will be conducted every an hour by MMO for confirming that there is no any marine mammal observed in the surrounding area of the deployed silt curtain during re-deployment of localized silt curtains (frame-type, cage-type or enclosed floating-type silt curtains). The duration will be subject to various conditions, e.g. weather or angle of observation. The works can only commence after confirming that the surrounding waters of the localized silt curtains has not contain any marine mammal. Thereafter, frontline staff, i.e. foremen, site agent, superintendents and engineers will assist our MMO in implementing the plan from the active work fronts within the waters surrounded by the silt curtains throughout the work period. The MMO will conduct regular check to observe the presence of any marine mammal around the localized silt curtain or being trapped by the localized silt curtain daily. The MMOs will also check if the localized silt curtains are in correct positions.

6.3.2.5 The MMO shall fill up our Marine Mammal Sighting Record Sheet. After inspection, those records should be kept properly and submitted to the project team. In case there is any marine mammal being found, the MMO should carry out the response actions and communicate with relevant parties to stop and then resume work after the discovered marine mammal leaves. After lifting up and mobilization of silt curtain, the MMO will repeat the procedures of regular and visual inspection until the end of the construction works.

6.3.2.6 Each lookout point will have an unobstructed view to waters around the DL and FB. The MMO will move around the DL and FB to establish a clear and unobstructed view as much as they can without compromising the safety concern. When appropriate, the lookout point can be replaced by a proper location if unobstructed view can be assured.

6.3.2.7 Installation of caisson No.19 was completed on 18 March 2021, which the reclamation area had been totally enclosed by permanent structure. Floating type silt curtain at marine access was removed on 18 March 2021. No enclosed area shall be formed by deployment of silt curtain for the remaining works programme.

6.4 Results and Observations

6.4.1 Vessel-based Line-transect Survey

6.4.1.1 The monthly survey was conducted on 7 & 20 April 2021. As this is the designated peak season (December – May), two surveys were completed. A total of 81.1 km on effort (transects only) survey length was completed, 56.1% of which was conducted at Beaufort Sea State 2 or better (**Table 6.4**). No finless porpoise was recorded.

Table 6.4 Summary of Vessel-based Line-transect Survey Effort

Date	Area*	Beaufort	Effort (km)	Season	Vessel	Effort Type**
7 Apr 2021	SEL	1	3.8	SPRING	SEAMAR HK	P
		2	26.4			
		3	10.0			
20 Apr 2021	SEL	2	15.3	SPRING	SEAMAR HK	P
		3	17.1			
		4	8.5			

* As shown in **Figure. 6.1**
** P (from AFCD) denotes the ON EFFORT survey on the transect line, not the adjoining passages

6.4.1.2 A review of the long term AFCD marine mammal monitoring programme, the EIA and the pre-construction baseline monitoring report for this project was conducted. Pre-construction baseline monitoring was conducted in Feb - Apr 2018 and the EIA was conducted during the peak porpoise months (Dec 2008 to May 2009). The AFCD long term monitoring data and April 2019 & 2020 impact survey results could be compared directly to April 2021 Impact Survey results. It was noted that the 10th & 22nd month of impact monitoring is April 2019 & 2020 respectively and these data were included.

6.4.1.3 A review of the Beaufort Sea State in April survey conditions between 2009 and 2018 (only data available from AFCD at time of writing; AFCD 20181; 20172; 20163; 20154; 20145; 20136; 20127; 20118; 20109), EIA 2009 and Baseline 2018 & Impact 2019 show that between 27.5 % and 100 % of survey effort had been conducted at Beaufort Sea State 2 or better in the past. During April 2019 Impact monitoring, 73.6 % of the survey effort was conducted at Beaufort 2 or better. For this project in April 2020, 56.2 % of the survey was conducted at Beaufort Sea State 2 or better and, as such, survey conditions in April 2021 were below the average % of pervious AFCD, the baseline survey and the surveys conducted during the EIA (Average: 78.6) but were within the limits of previous surveys.

6.4.1.4 A review of the porpoise sightings in the survey area for April between 2009-2018 indicated that there were fluctuations between the number of sightings usually recorded. For all weather conditions, and for the ten years data available, one year recorded two (2) sighting (2009 conducted by AFCD), one year recorded three (3) sighting (2015 conducted by AFCD), one year recorded four (4) sighting (2010 conducted by AFCD), three year recorded seven (7) sighting (2011, 2012 conducted by AFCD and 2009 included in EIA), two years recorded nine (9) sightings (2013, 2014 conducted by AFCD), one years recorded ten (10) sightings (2016 conducted by AFCD), one years recorded thirteen (13) sightings (2018 included in baseline monitoring) and one years recorded fourteen (14) sightings (2017 conducted by AFCD). For impact monitoring in April 2019 & 2020, two (2) sighting and thirteen (13) on effort sighting were recorded respectively. For impact monitoring in April 2021 conducted by ET, no finless porpoise sighting was recorded. Effort varied

considerably between years and the average number of sightings (per km) was 0.00 sighting km^{-1}. For April 2019 & 2020, the calculated encounter rates were 0.02 & 0.16 sightings km^{-1} respectively. There is no trend in encounter rates recorded by the AFCD long term monitoring programme, the inherent variability for surveys that focus on relatively small populations of highly mobile individuals is highlighted.

6.4.1.5 The impacts of the Project on marine mammals as predicted in the EIA were that construction activities would cause individuals to move away from the area. With only a small area being surveyed by vessels, with no control area, and as porpoise density is obviously low in such a small area, it is difficult to discern significant changes in sightings occurrence from vessel surveys alone. The sightings data presented in AFCD long term monitoring reports ranged 2.4 and 11.4 sightings per 40 km for the month of April, however, there is no significant trend within these years. Since construction commenced, there is a marked decrease (1.0 sighting per 40km in 2019) and then a considerable increase (6.4 sightings per 40 km in 2020) to again, a decrease in 2021, when compared to the baseline survey in 2018 (4.1 sightings per 40km). This observation is only for daylight hours, and visual detection. The number of sightings in April 2021 is comparable to the numbers recorded during AFCD long term monitoring studies, prior to the commencement of IWMF and the first two year's impact monitoring records.

6.4.1.6 This observation was only for daylight hours, and visual detection. The analyses of the static PAM dataset provided detailed information on diurnal occurrence patterns. Each static PAM station recorded porpoise at each site every day of the PAM study and therefore, showed that the area immediately adjacent to the Project site has not been abandoned during parts of the designated peak season for porpoise. It was noted that the encounter rate for April 2021 was equal to impact monitoring result of April 2019 & 2020, prior to early construction stage at SKC.

6.4.2 PAM and Land-based Theodolite Tracking

6.4.2.1 30 days of PAM surveys were started at 1 May 2019 and completed until the end of May 2019. Multiple PAM systems were deployed at three sites. The PAM system located at the IWMF was lost, however, an alternative data set had been identified. The PAM systems at the two control sites Tai A Chau and Pui O were recovered on 3 August 2019. A summary of marine mammal detections showed that porpoise were recorded every day of deployment at each site, but at varying frequencies. The detailed theodolite result was presented in 17th Monthly EM&A report (November 2019) while detailed PAM result was presented in 18th Monthly EM&A report (December 2019).

6.4.2.2 For the baseline study, the DPM for each site was 11,160 (Shek Kwu Chau), 16,089 (Tai A Chau) and 3645 (Pui O Wan), totalling 30,894 DPM across all three sites, compared to DPMs of 4740 (Shek Kwu Chau), 7725 (Tai A Chau) and 23,986 (Pui O Wan), totalling 36,451 DPM, for the impact phase study. As the impact phase study was longer than the baseline study, it is not appropriate to directly compare total counts of DPM, however, the DPM rate (the average number of detections per day) for each site can be more directly compared. During the baseline study, Shek Kwu Chau averaged 338.2 DPM per day compared to 124.8 DPM per day, during the impact phase study. This showed a decrease in the daily average of porpoise detection at Shek Kwu Chau. During the baseline study, Tai A Chau averaged 487.6 DPM per day compared to 179.7 DPM per day, during the impact phase study. This showed a decrease in the daily average of porpoise detection at Tai A Chau. During the baseline study, Pui O Wan averaged 98.5 DPM per day compared to 557.8 DPM per day,

during the impact phase study. This showed a significant increase in the daily average of porpoise detections at Pui O Wan.

6.4.2.3 Overall, the PAM study showed that porpoise continue to consistently utilise the Shek Kwu Chau habitat immediately adjacent to the IWMF construction activities, although to a lesser degree than that prior to construction activities. In addition, the Pui O Wan site, which is 2.5 km away from the IWMF construction area, was also consistently utilised during the impact phase PAM study. A continued assessment of fine scale habitat use, particularly through PAM which yielded large quantities of data, would allow a more comprehensive assessment of the EIA predictions.

6.4.2.4 Theodolite surveys were completed in May 2019. In total, thirty four days of theodolite tracking were completed between February - May 2019, comprising 167 hours and 49 minutes of observation. No Chinese white dolphin was observed and only one finless was recorded. The finless porpoise encounter rate was calculated as 0.006 finless porpoise per hour, in all weather conditions.

6.4.2.5 A total of 2620 vessels of ten different types were observed and tracked within or in the proximity of the IWMF construction site. These comprised fishing boats (236), speed boats (29), container boats (155), government boats (22), high speed ferries (53), others (13) and IWMF-Related construction platforms (974), tug boats (240), transportation boats (363), construction boats (531) and approximately 8 buoys were present marking the site boundary.

6.4.2.6 The baseline theodolite tracking was conducted immediately prior to and during the site preparation activities of the site. The baseline data records a decrease in porpoise sightings as site preparation activities commenced and notes that the decrease was most likely due to the onset of site preparation activities. The impact theodolite tracking conducted for this study records a marked increase in the number of Project related vessels and platforms and, in agreement with baseline conclusions, shows a concomitant decrease in finless porpoise sightings.

6.4.3 Specific Mitigation Measures

6.4.3.1 Trainings for the MMO were provided by the ET prior to the monitoring of the Marine Mammal Exclusion Zone (MMEZ) for installation/re-installation/relocation process of silt curtains, with a cumulative total of 98 individuals being trained and the training records kept by the ET. From the Marine Mammal Watching observation records and MMEZ monitoring log records, no Finless Porpoise or other marine mammals were observed within or around the MMEZ and silt curtains in the reporting month.

6.4.5 References

1. Agriculture, Fisheries and Conservation Department (AFCD) 2018. *Annual Marine Mammal Monitoring Programme April 2017-March 2018)* The Agriculture, Fisheries and Conservation Department, Government of the Hong Kong SAR. http://www.afcd.gov.hk/english/conservation/con_mar/con_mar_chi/con_mar_chi_chi/con_mar_chi_chi.html

2. Agriculture, Fisheries and Conservation Department (AFCD) 2017. *Annual Marine Mammal Monitoring Programme April 2016-March 2017)* The Agriculture, Fisheries and Conservation Department, Government of the Hong Kong SAR. http://www.afcd.gov.hk/english/conservation/con_mar/con_mar_chi/con_mar_chi_chi/con_mar_chi_chi.html

3. Agriculture, Fisheries and Conservation Department (AFCD) 2016. *Annual Marine Mammal Monitoring Programme April 2015-March 2016*) The Agriculture, Fisheries and Conservation Department, Government of the Hong Kong SAR. http://www.afcd.gov.hk/english/conservation/con_mar/con_mar_chi/con_mar_chi_chi/con_mar_chi_chi.html

4. Agriculture, Fisheries and Conservation Department (AFCD) 2015. *Annual Marine Mammal Monitoring Programme April 2014-March 2015*) The Agriculture, Fisheries and Conservation Department, Government of the Hong Kong SAR. http://www.afcd.gov.hk/english/conservation/con_mar/con_mar_chi/con_mar_chi_chi/con_mar_chi_chi.html

5. Agriculture, Fisheries and Conservation Department (AFCD) 2014. *Annual Marine Mammal Monitoring Programme April 2013-March 2014*) The Agriculture, Fisheries and Conservation Department, Government of the Hong Kong SAR. http://www.afcd.gov.hk/english/conservation/con_mar/con_mar_chi/con_mar_chi_chi/con_mar_chi_chi.html

6. Agriculture, Fisheries and Conservation Department (AFCD) 2013. *Annual Marine Mammal Monitoring Programme April 2012-March 2013*) The Agriculture, Fisheries and Conservation Department, Government of the Hong Kong SAR. http://www.afcd.gov.hk/english/conservation/con_mar/con_mar_chi/con_mar_chi_chi/con_mar_chi_chi.html

7. Agriculture, Fisheries and Conservation Department (AFCD) 2012. *Annual Marine Mammal Monitoring Programme April 2011-March 2012*) The Agriculture, Fisheries and Conservation Department, Government of the Hong Kong SAR. http://www.afcd.gov.hk/english/conservation/con_mar/con_mar_chi/con_mar_chi_chi/con_mar_chi_chi.html

8. Agriculture, Fisheries and Conservation Department (AFCD) 2011. *Annual Marine Mammal Monitoring Programme April 2010-March 2011*) The Agriculture, Fisheries and Conservation Department, Government of the Hong Kong SAR. http://www.afcd.gov.hk/english/conservation/con_mar/con_mar_chi/con_mar_chi_chi/con_mar_chi_chi.html

9. Agriculture, Fisheries and Conservation Department (AFCD) 2010. *Annual Marine Mammal Monitoring Programme April 2009-March 2010*) The Agriculture, Fisheries and Conservation Department, Government of the Hong Kong SAR. http://www.afcd.gov.hk/english/conservation/con_mar/con_mar_chi/con_mar_chi_chi/con_mar_chi_chi.html

7. WHITE-BELLIED SEA EAGLE

7.1 Monitoring Requirement

7.1.1 On Shek Kwu Chau Island, a nest of WBSE is located about 60 m above ground within a hillside shrubland habitat, 130 m in-land from shore, about 550 m away from the proposed reclaimed land, with no human access. 3 phases monitoring programme will be comprised of pre-construction phase, construction phase and operation phase.

7.1.2 The Pre-Construction WBSE monitoring was started on 30 January 2018 and the location of WBSE nest was confirmed on 21 February 2018 and it is located at the western part of SKC Island (Figure 7.1). Two adults and two chicks were also recorded on 5th March 2018 survey till the end of the Pre-construction monitoring on 15th May 2018. Construction Phase monitoring were carried out followed by the commencement of the Construction Phase on 28th June 2018.

7.2 WBSE Monitoring Parameters, Time, Frequency

7.2.1 The objective of the construction phase monitoring should be to verify the utilisation of the area by WBSE, their responses to construction disturbance, as well as the effectiveness of the proposed mitigation measures. Throughout the construction phase, field surveys should be conducted twice per month during their core breeding season (from December to May), and once per month outside their core breeding season (from June to November). The monitoring frequency should be increased to weekly during the incubation period of each year. In order to confirm their foraging ground near the construction site, it is necessary to conduct daily monitoring during the first week of nestling period in each year.

7.2.2 Since the location of the WBSE nest was located at the southwest of SKC within the hillside shrubland, it is impossible to observe the eggs during incubation period. Therefore, monitoring with increased frequency during incubation period will be continued until chick was seen in the nest. Daily monitoring will be carried out once any chick is recorded during the monitoring day. The monitoring schedule during the reporting period is provided in **Appendix C**.

7.3 Monitoring Location

7.3.1 Since there are no suitable land footings along the coast of SKC, only boat surveys were conducted. On Shek Kwu Chau Island, a nest of WBSE is located about 60 m above ground within a hillside shrubland habitat, 130 m in-land from shore, about 550 m away from the proposed reclaimed land, with no human access.

7.4 Monitoring Methodology

7.4.1 Information to be collected included feeding, perching/roosting, preening, soaring, flying, nesting and territorial guarding and the time spent on each activity. The responses and reactions to any disturbance to the WBSEs were also recorded and examined in conjunction with the construction noise and/or other events in the vicinity. Other disturbances such as weather condition, or invasion by other fauna species were also recorded.

7.4.2 Binocular, scope, camera, lens and GPS device used are summarized as **Table 7.1** below:

Table 7.1 List of Equipment Used during Construction Phase Monitoring

Equipment	Quantity
Swarovski EL 8.5 x 42 Binocular	1
Swarovski EL Range 8 x 42 Binocular	1
Swarovski ATX 25-60 x 85 Spotting Scope	1
Canon 1Dx Mark II Camera	1
Canon EF300mm F2.8 Lens with Canon 2x Teleconverter	1
Canon PowerShot G7X Camera	1
Garmin GPSMAP 64S	1

7.4.3 If event such as absence of White-bellied Sea Eagle during a whole day of monitoring was found during WBSE monitoring, the actions in accordance with the Event and Action Plan should be carried out according to **Appendix M.**

7.5 Results and Observations

7.5.1 To verify the utilization of the area by WBSE, their responses to construction disturbance, as well as the effectiveness of the proposed mitigation measures. Since there is no landing point along the western part of SKC, boat survey was used for the monitoring survey. In order to increase the chance of finding the WBSEs, monitoring survey was carried out early in the morning. The weather condition of monitoring survey was shown in **Table 7.2**.

Table 7.2 Weather Conditions during the WBSE Monitoring

Date	Condition	Temperature (℃)
15th April 2021	- North-east wind force 4 - Sunny	27
29th April 2021	- Southwest wind force 4 to 5 - Sunny	31

7.5.2 No abnormal behavior of the recorded adults during the construction phase in April 2021. Two adults of WBSE were recorded during the monitoring survey (Figure 7.2). All marine works during the monitoring period did not show any affects to the WBSE.

7.5.3 No disturbances from anthropogenic activities on the island were recorded during the monitoring survey. No invasion of other fauna species was recorded as well.

7.5.4 Construction phase monitoring will be continued at twice per month frequency during the breeding season (between December to May) in order to monitor the utilization of the area by WBSE and their responses to construction disturbance.

Figure 7.1 Location of WBSE Nest on SKC

7.5.5 Photo record of WBSE from the survey this month is shown below:

Adult WBSE Recorded in Shek Kwu Chau on 15 April 2021

Adult WBSE Recorded in Shek Kwu Chau on 29 April 2021

Figure 7.2 Photo Records of WBSE on SKC During the Reporting Period

8. SUMMARY OF MONITORING EXCEEDANCE, COMPLAINTS, NOTIFICATION OF SUMMONS AND PROSECUTIONS

8.1 The Environmental Complaint Handling Procedure is shown in below **Figure 8.1**:

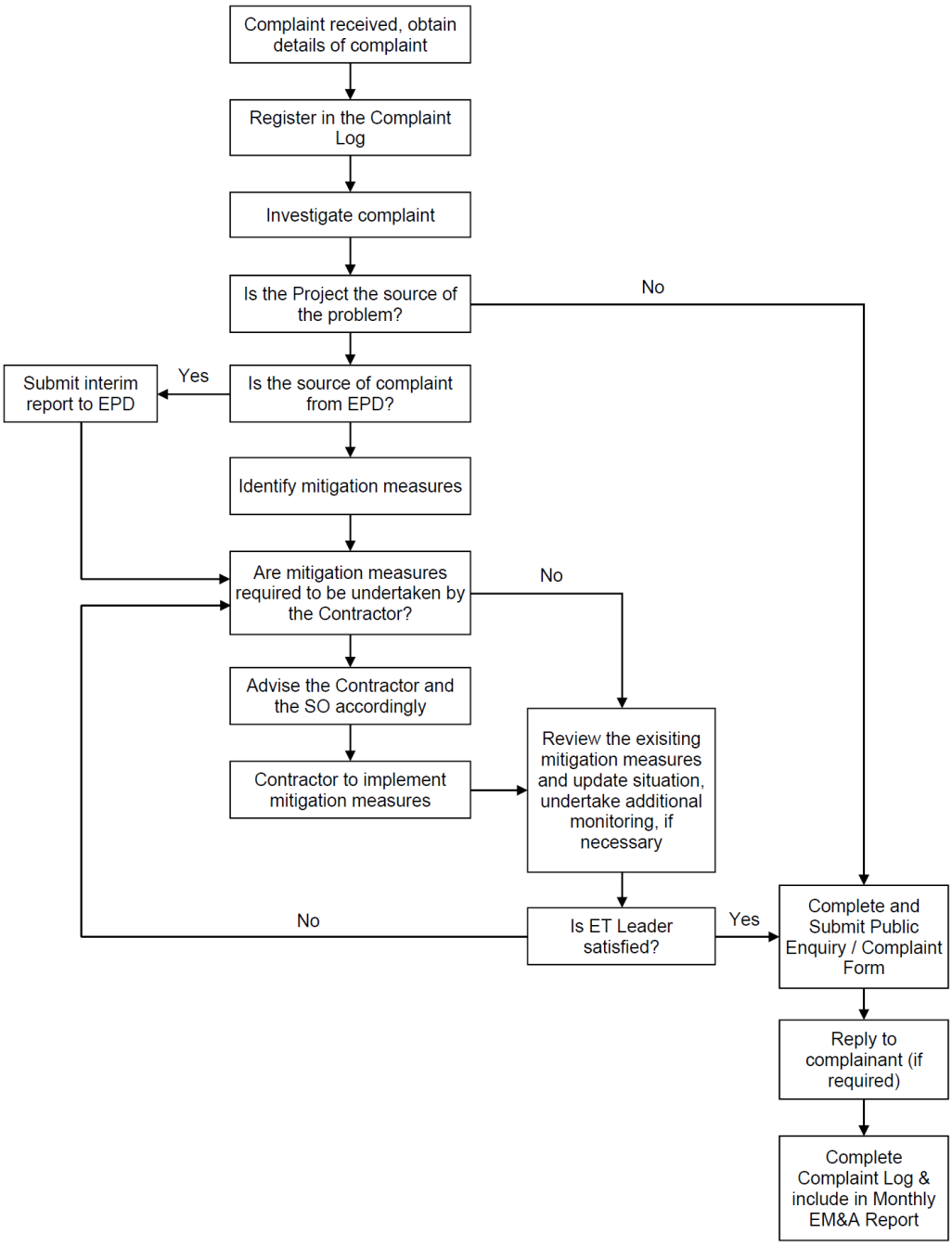


Figure 8.1 Environmental Complaint Handling Procedures

8.2 No exceedance of the Action and Limit Levels of the regular WBSE monitoring was recorded during the reporting period.

Table 8.1 Summary of SS Compliance Status at Impact Stations (Mid-Ebb Tide)

Date	B1	B2	B3	B4	CR1	CR2	F1A	H1	S1	S2A	S3	M1
02-04-2021												
05-04-2021												
07-04-2021												
09-04-2021												
12-04-2021												
14-04-2021												
16-04-2021												
19-04-2021												
21-04-2021												
23-04-2021												
26-04-2021												
28-04-2021												
30-04-2021												
No. of SS Exceedances	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note 1: Detailed results are presented in **Appendix D**

Legend:

	No exceedance of Action Level and Limit Level
	Exceedance of Action Level recorded at monitoring station located downstream of the Project based on dominant tidal flow
	Exceedance of Action Level recorded at monitoring station located upstream/unrelated stream (neither upstream nor downstream, far away) of the Project based on dominant tidal flow
	Exceedance of Limit Level recorded at monitoring station located downstream of the Project based on dominant tidal flow
	Exceedance of Limit Level recorded at monitoring station located upstream/unrelated stream of the Project based on dominant tidal flow
	Upstream/unrelated stream station with respect to IWMF Project during the respective tide based on dominant tidal flow
	Downstream station with respect to IWMF Project during the respective tide based on dominant tidal flow/station within the Project site
	NA for measurement
	Cancelled due to incident or adverse weather

Table 8.2 Summary of SS Compliance Status at Impact Stations (Mid-Flood Tide)

Date	B1	B2	B3	B4	CR1	CR2	F1A	H1	S1	S2A	S3	M1
02-04-2021												
05-04-2021												
07-04-2021												
09-04-2021												
12-04-2021												
14-04-2021												
16-04-2021												
19-04-2021												
21-04-2021												
23-04-2021												
26-04-2021												
28-04-2021												
30-04-2021												
No. of SS Exceedances	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note 1: Detailed results are presented in **Appendix D**

Legend:

	No exceedance of Action Level and Limit Level
	Exceedance of Action Level recorded at monitoring station located downstream of the Project based on dominant tidal flow
	Exceedance of Action Level recorded at monitoring station located upstream/unrelated stream (neither upstream nor downstream, far away) of the Project based on dominant tidal flow
	Exceedance of Limit Level recorded at monitoring station located downstream of the Project based on dominant tidal flow
	Exceedance of Limit Level recorded at monitoring station located upstream/unrelated stream of the Project based on dominant tidal flow
	Upstream/unrelated stream station with respect to IWMF Project during the respective tide based on dominant tidal flow
	Downstream station with respect to IWMF Project during the respective tide based on dominant tidal flow/station within the Project site
	NA for measurement
	Cancelled due to incident or adverse weather

8.3 Two (2) of the general water quality monitoring results of suspended solids (SS) obtained had exceeded Action Level. None of general water quality monitoring results of SS obtained during the reporting period had exceeded the Limit Level. Investigation was carried out immediately for each of the exceedance cases during the reporting period.

8.4 No project-related Action Level & Limit Level exceedance was recorded from the 1 April 2021 to 30 April 2021 as shown in **Appendix N**.

8.5 No notification of summons and prosecution was received in the reporting period.

8.6 Statistics on complaints, notifications of summons and successful prosecutions are summarized in **Appendix O**.

9. EM&A SITE INSPECTION

9.1 Site inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures under the Contract. In the reporting period, site inspections were carried out on 7, 13, 20 and 29 April 2021 at the site portions listed in **Table 9.1** below.

Table 9.1 Site Inspection Record

Date	Inspected Site Portion	Time
7 April 2021	Portion 1, 1A & 1B (near SKC)	10:30 – 11:30 AM
13 April 2021	Portion 1, 1A & 1B (near SKC)	10:30 – 11:30 AM
20 April 2021	Portion 1, 1A & 1B (near SKC)	10:30 – 11:30 AM
29 April 2021	Portion 1, 1A & 1B (near SKC)	10:30 – 11:30 AM

9.2 One joint site inspection with IEC was carried out on 20 April 2021.

9.3 Environmental deficiencies were observed during weekly site inspection. Key observations during the site inspections and during the reporting period are summarized in **Table 9.2**.

Table 9.2 Site Observations

Date	Environmental Observations	Follow-up Status
7 April 2021 (Site inspection)	Observation(s) and Recommendation(s) 1. At 永照 102, soil was observed at the edge of the barge, soil should be removed. 2. At A2,A3, chemical in-use should be placed on drip tray. 3. At BM16, drip tray for water pump was not plugged. 4. The updated CNP was not displayed.	1. At 永照 102, soil at the edge of the barge had been cleared. 2. At A2,A3, chemical in-use had been placed on drip tray. 3. At BM16, drip tray for water pump had been plugged. 4. The updated CNP had been displayed.
13 April 2021 (Site inspection)	Observation(s) and Recommendation(s) No major observation was observed.	Nil.
20 April 2021 (Site inspection)	Observation(s) and Recommendation(s) No major observation was observed.	Nil.
29 April 2021 (Site inspection)	Observation(s) and Recommendation(s) 1. At temporary pier A, drip tray for generator was not plugged. 2. At workshop A, drip tray for generator was not plugged.	1. At temporary pier A, drip tray for generator had been plugged 2. At workshop A, drip tray for generator had been plugged.

9.4 The Contractor had rectified all the observations identified during environmental site inspections in the reporting period.

9.5 According to the EIA Study Report, Environmental Permit, contract documents and Updated EM&A Manual, the mitigation measures detailed in the documents are implemented as much as practical during the reporting period. An updated Implementation Status of Environmental Mitigation Measures (EMIS) is provided in **Appendix B**.

10. FUTURE KEY ISSUES

10.1 Works to be undertaken in the next reporting month are:

- Reclamation Area:
  - Placing rock filter
  - Reclamation works
  - PVD Remedial Works
  - Installation of Settlement Markers
- Seawall Portion:
  - Installation of caisson
  - Installation of Chinese Pod

10.2 Potential environmental impacts arising from the above construction activities are mainly associated with water quality, construction noise, waste management and ecology.

10.3 The key environmental mitigation measures for the Project in the coming reporting period expected to be associated with the construction activities include:

- Reduction of noise from equipment and machinery on-site;
- Sorting, recycling, storage and disposal of general refuse and construction waste;
- Management of chemicals and avoidance of oil spillage on-site, especially under heavy rains and adverse weather; and
- Regulation on rate and means for filling works as stipulated in Table 1 of FEP or the approved Supporting Document for Reviewing Dredging Rate and Filling Rate, whichever is applicable;
- Confirmation of the absence of silt content in the rock filling material and the filling work is properly conducted;

10.4 The tentative schedule of regular construction noise, water quality and ecology monitoring in the next reporting period is presented in **Appendix P**. The regular construction noise, water quality and ecology monitoring will be conducted at the same monitoring locations in the next reporting period.

11. CONCLUSION AND RECOMMENDATIONS

11.1 This 34th monthly Environmental Monitoring and Audit (EM&A) Report presents the EM&A works undertaken during the period from 1 April to 30 April 2021, in accordance with the Updated EM&A Manual and the requirement under EP-429/2012/A and FEP-01/429/2012/A.

11.2 Construction noise, water quality, construction waste, marine mammal, coral and WBSE monitoring were carried out in the reporting period. No project-related exceedance of the Action and Limit Level was recorded from 1 April 2021 to 30 April 2021.

11.3 Weekly environmental site inspections were conducted during the reporting period. Environmental deficiencies were observed during site inspection and were rectified.

11.4 According to the environmental site inspections performed in the reporting month, the Contractor was reminded to pay attention on on-site housekeeping and the proper storage of the chemicals and construction waste.

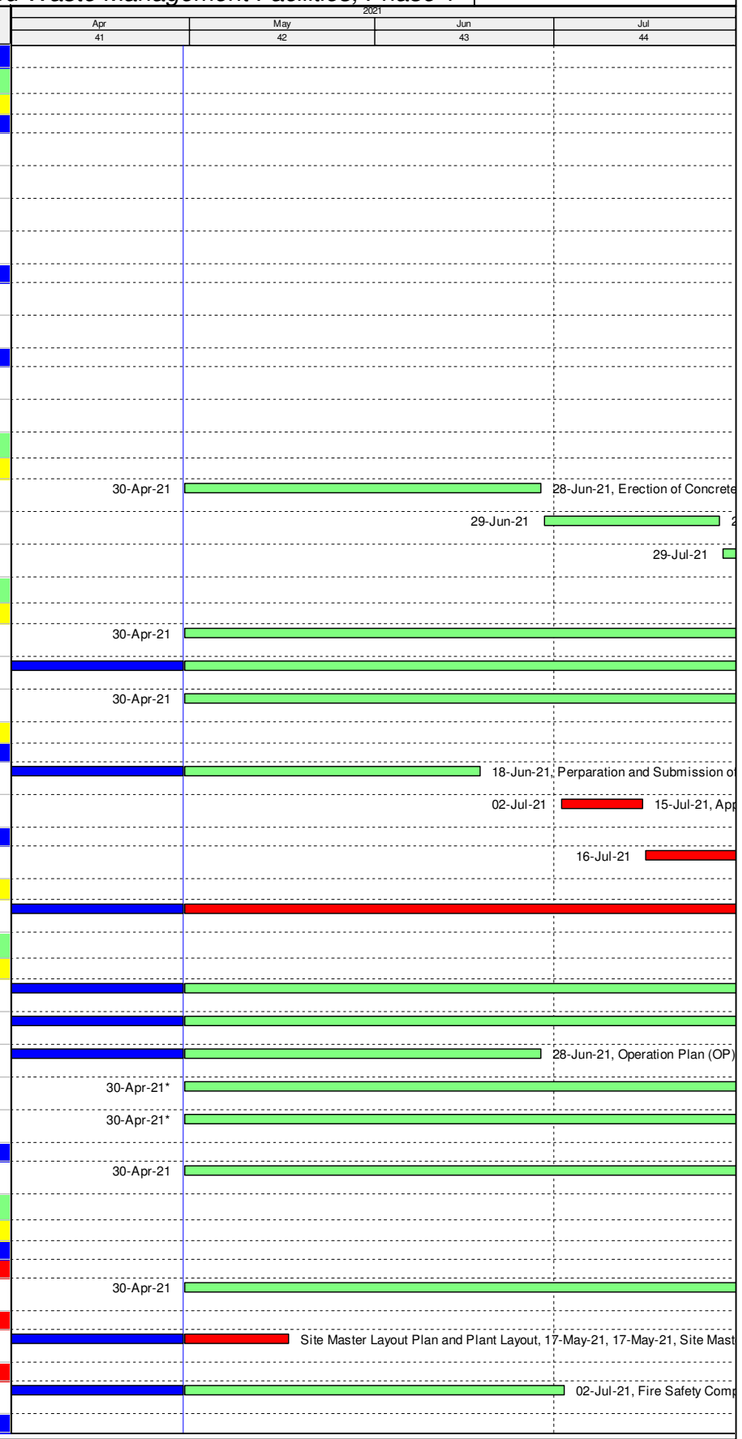
11.5 No environmental complaint was received in the reporting period.

11.6 No notification of summon or prosecution was received since commencement of the Contract.

11.7 The ET will keep track of the construction works to confirm compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

Appendix A Master Programme

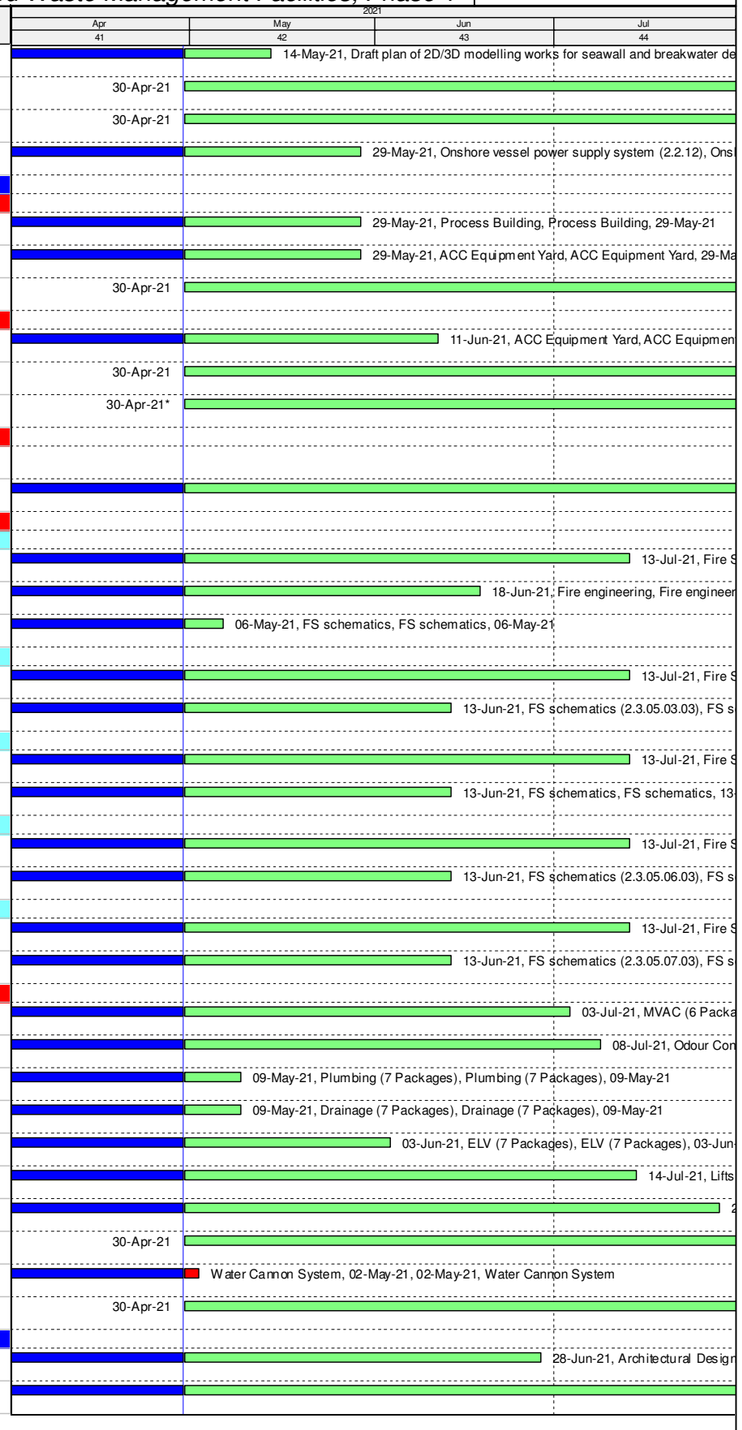
Activity ID	Activity Name	Original Duration	At Completion Duration	Duration % Complete	Activity % Complete	Remaining Duration	Primary Constraint	Current Start	Current Finish	Late Start	Late Finish	Total Float	M41 Remarks
EP_SP_66_12-WP6A-M41	Programme for Design and Construction Works WP6-M41	2794	2794	44.92%		1539		22-Nov-17 A	16-Jul-25	19-Apr-21	21-May-27	674	
EP_SP_66_12-WP6A-M41.01	Key Dates	2794	2794	87.33%		354		22-Nov-17 A	16-Jul-25	27-Jul-24	16-Jul-25	0	
EP_SP_66_12-WP6A-M41.01.1	Contractual Key Dates	2794	2794	87.33%		354		22-Nov-17 A	16-Jul-25	27-Jul-24	16-Jul-25	0	
EP_SP_66_12-WP6A-M41.01.1.1	Design and Construction Phase	2738	2738	89.12%		298		22-Nov-17 A	21-May-25	27-Jul-24	21-May-25	0	
01-1000	Contract Award/Date of Acceptance of Tender	0	0	100%	100%	0	Mandatory Start	22-Nov-17 A					
01-1010	Date of Commencement of the Design and the Works	0	0	100%	100%	0	Mandatory Start	15-Dec-17 A					
01-1015(3)(M12)	Original Substantial Completion of the Works	0	0	0%	0%	0	Mandatory Finish		27-Jul-24*		27-Jul-24	0	
01-1020	Extended Substantial Completion of The Works	0	0	0%	0%	0			21-May-25		21-May-25	0	
EP_SP_66_12-WP6A-M41.01.1.3	Extension of Time Granted	298	298	0%		298		27-Jul-24	21-May-25	27-Jul-24	21-May-25	0	
01-1015-1(3)(M12)	Extension of time granted (Claim No.1 to No.53) *Claim No.9 excluded	298	298	0%	0%	298		27-Jul-24	21-May-25	27-Jul-24	21-May-25	0	
01-1060	Issuance of FS Certificate	0	0	0%	0%	0	Mandatory Finish		29-Oct-24*		29-Oct-24	0	
EP_SP_66_12-WP6A-M41.01.1.2	Operation Phase	56	56	0%		56		22-May-25	16-Jul-25	22-May-25	16-Jul-25	0	
01-1030	Commencement of Operation	0	0	0%	0%	0	Mandatory Start	22-May-25*		22-May-25		0	
01-1230	Issue Certificate of Completion of the Works (56 days after Substantial Completion)	0	0	0%	0%	0	Finish On or Before		16-Jul-25*		16-Jul-25	0	
EP_SP_66_12-WP6A-M41.02	Contract Preliminaries	909	909	0%		909		30-Apr-21	25-Oct-23	21-May-21	22-Mar-24	149	
EP_SP_66_12-WP6A-M41.02.3	Erection of Concrete Batching Plant on Artificial Island	909	909	0%		909		30-Apr-21	25-Oct-23	21-May-21	22-Mar-24	149	
02-1080	Erection of Concrete Batching Plant	60	60	0%	0%	60		30-Apr-21	28-Jun-21	21-May-21	19-Jul-21	21	
02-1090	Commissioning of Concrete Batching Plant	30	30	0%	0%	30		29-Jun-21	28-Jul-21	20-Jul-21	18-Aug-21	21	
02-1100	Opertaion of Concrete Batching Plant	819	819	0%	0%	819		29-Jul-21	25-Oct-23	25-Dec-21	22-Mar-24	149	
EP_SP_66_12-WP6A-M41.03	Licence/Permit Applications	1035	2338	0%		1483		27-Dec-18 A	21-May-25	30-Apr-21	21-May-27	730	
EP_SP_66_12-WP6A-M41.03.1	License/Permit for Construction	965	2120	0%		1483		02-Aug-19 A	21-May-25	06-Aug-21	21-May-27	730	
03-1090	EPD APCO(SP) License for Concrete Batching Plant	120	120	0%	0%	120		30-Apr-21	27-Aug-21	22-Jan-27	21-May-27	2093	
03-1360(2)	CNP for 24Hrs	182	2120	0%	0%	1483		02-Aug-19 A	21-May-25	30-Apr-23	21-May-27	730	
03-1370_1(M34)	Landscape and Visual Plan	180	180	0%	0%	180		30-Apr-21	26-Oct-21	06-Aug-21	01-Feb-22	98	
EP_SP_66_12-WP6A-M41.03.4	Fire Services Installations (FSI) Certificatie	593	918	71.84%		167		10-Apr-19 A	13-Oct-21	13-May-21	13-Oct-21	0	
EP_SP_66_12-WP6A-M41.03.4.3	Fire Engineering Report	550	828	86%		77		10-Apr-19 A	15-Jul-21	13-May-21	15-Jul-21	0	
05-3000	Perparation and Submission of Fire Engineering Report to FSD	550	801	90.91%	90.91%	50		10-Apr-19 A	18-Jun-21	13-May-21	01-Jul-21	13	
05-4450	Approval of Fire Engineering Report by FSD	14	14	0%	0%	14		02-Jul-21	15-Jul-21	02-Jul-21	15-Jul-21	0	
EP_SP_66_12-WP6A-M41.03.4.1	Fire Services Installations Certificate Inspection	90	90	0%		90		16-Jul-21	13-Oct-21	16-Jul-21	13-Oct-21	0	
03-1555(5a)	General Building Plans and FSI Provision Design Submission to FSD	90	90	0%	0%	90		16-Jul-21	13-Oct-21	16-Jul-21	13-Oct-21	0	
EP_SP_66_12-WP6A-M41.03.5	Air Pollution Control (Specified Processes) License	600	1021	72.33%		166		27-Dec-18 A	12-Oct-21	30-Apr-21	12-Oct-21	0	
03-1730(3)	Early Engagement With EPD SP Licensing Department for Information exchange	600	1021	72.33%	72.33%	166		27-Dec-18 A	12-Oct-21	30-Apr-21	12-Oct-21	0	
EP_SP_66_12-WP6A-M41.04	General Submissions	1409	1475	82.54%		246		18-Dec-17 A	31-Dec-21	21-Nov-21	21-May-25	1237	
EP_SP_66_12-WP6A-M41.04.1	Contractor's Plans Submission and Approval	1409	1475	82.54%		246		18-Dec-17 A	31-Dec-21	21-Nov-21	21-May-25	1237	
04-1100(1)	Technical Resources Plan (TRP)	240	1474	0%	30%	246		19-Dec-17 A	31-Dec-21	19-Feb-23	22-Oct-23	660	
04-1200(1)	Works Plan (WP)	90	1475	0%	30%	246		18-Dec-17 A	31-Dec-21	19-Feb-23	22-Oct-23	660	
04-1400(1)	Operation Plan (OP)	240	1289	75%	75%	60		18-Dec-17 A	28-Jun-21	29-Jul-23	26-Sep-23	820	
04-1450(1)	Asset Management Plan (AMP)	120	120	0%	0%	120	Start On or Before	30-Apr-21*	27-Aug-21	21-Nov-21	20-Mar-22	205	
04-1500(1)	Handback Plan (HP)	120	120	0%	0%	120	Start On or Before	30-Apr-21*	27-Aug-21	21-Nov-21	20-Mar-22	205	
EP_SP_66_12-WP6A-M41.04.1.1	Provisional Assessment (PA)	180	180	0%		180		30-Apr-21	26-Oct-21	23-Nov-24	21-May-25	1303	
04-1500(1)10	Preliminary Assessmant	180	180	0%	0%	180		30-Apr-21	26-Oct-21	23-Nov-24	21-May-25	1303	
EP_SP_66_12-WP6A-M41.05	Design Submissions	1608	1324	86.01%		225		27-Apr-18 A	10-Dec-21	30-Apr-21	06-Jan-27	1853	
EP_SP_66_12-WP6A-M41.05.01	AIP Design Package Submissions	1608	1279	88.81%		180		27-Apr-18 A	26-Oct-21	30-Apr-21	06-Jan-27	1898	
EP_SP_66_12-WP6A-M41.05.01.01	AIP Process and Layout Design (2.1)	1200	1204	91.25%		105		27-Apr-18 A	12-Aug-21	30-Apr-21	23-Jul-22	345	
EP_SP_66_12-WP6A-M41.05.01.01.2	MSW treatment process design for mechanical treatment (2.1.02)	105	105	0%		105		30-Apr-21	12-Aug-21	10-Apr-22	23-Jul-22	345	
05-1090	Mechanical Treatment Plant	105	105	0%	0%	105		30-Apr-21	12-Aug-21	10-Apr-22	23-Jul-22	345	
EP_SP_66_12-WP6A-M41.05.01.01.6	Site Master Layout Plan and Plant Layout (2.1.06)	60	1117	70%		18		27-Apr-18 A	17-May-21	30-Apr-21	17-May-21	0	
05-3020	Site Master Layout Plan and Plant Layout	60	1117	70%	65%	18		27-Apr-18 A	17-May-21	30-Apr-21	17-May-21	0	
EP_SP_66_12-WP6A-M41.05.01.01.7	Statutory Fire Compliance (2.1.25)	30	815	0%		64		10-Apr-19 A	02-Jul-21	11-Aug-21	13-Oct-21	103	
05-2990	Fire Safety Compliance	30	815	0%	25%	64		10-Apr-19 A	02-Jul-21	11-Aug-21	13-Oct-21	103	
EP_SP_66_12-WP6A-M41.05.01.02	AIP Ground Treatment, Reclamation, Seawall, Breakwater, Berth (2.2	1020	1228	86.76%		135		03-May-18 A	11-Sep-21	05-Jun-21	22-May-22	253	



3-Month Rolling Programme (April 2021)

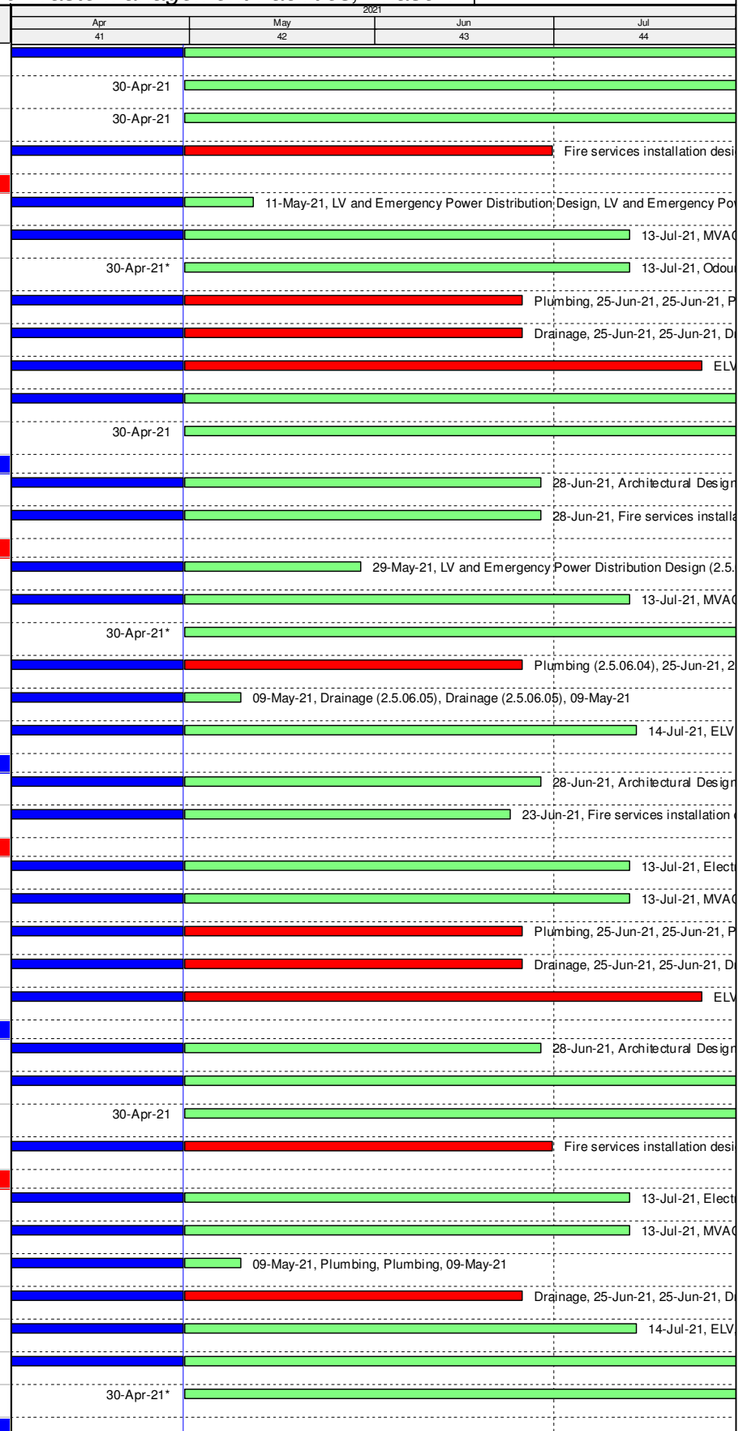
Remaining Work
Actual Work
Critical Remaining Work
Milestone
Actual Milestone
Critical Milestone

Activity ID	Activity Name	Original Duration	At Completion Duration	Duration % Complete	Activity % Complete	Remaining Duration	Primary Constraint	Current Start	Current Finish	Late Start	Late Finish	Total Float	M41 Remarks
05-1280	Draft plan of 2D/3D modelling works for seawall and breakwater design (2.2.05)	135	1108	88.89%	80%	15	Start On	03-May-18 A	14-May-21	05-Jun-21	19-Jun-21	36	
05-2960-1(M37)	Mooring Dolphins	135	135	0%	0%	135		30-Apr-21	11-Sep-21	08-Jan-22	22-May-22	253	
05-2970	Onshore crane Facility (2.2.11)	135	135	0%	0%	135		30-Apr-21	11-Sep-21	03-Jul-21	14-Nov-21	64	
05-2980	Onshore vessel power supply system (2.2.12)	135	283	77.78%	65%	30		20-Aug-20 A	29-May-21	16-Oct-21	14-Nov-21	169	
EP_SP_66_12-WP6A-M41.05.01.03 AIP Incineration Plant Buildings (2.3)		1398	1159	90.34%		135		11-Jul-18 A	11-Sep-21	30-Apr-21	06-Jan-27	1943	
EP_SP_66_12-WP6A-M41.05.01.03.1 General Layout Drawings and Fire Saftey Strategy (2.3.00)		1020	1075	86.76%		135		03-Oct-18 A	11-Sep-21	01-May-21	19-Oct-21	38	
05-1210	Process Building	135	970	77.78%	5%	30	Start On or After	03-Oct-18 A	29-May-21	01-May-21	30-May-21	1	
05-1220	ACC Equipment Yard	135	239	77.78%	77.78%	30		03-Oct-20 A	29-May-21	20-Sep-21	19-Oct-21	143	
05-1250	Chimney	135	135	0%	0%	135		30-Apr-21	11-Sep-21	31-May-21	12-Oct-21	31	
EP_SP_66_12-WP6A-M41.05.01.03.2 Foundation design (2.3.01)		286	397	52.8%		135		11-Aug-20 A	11-Sep-21	05-Aug-21	24-Jul-22	316	
05-3040	ACC Equipment Yard	43	305	0%	0%	43	Start On or After	11-Aug-20 A	11-Jun-21	27-Sep-21	08-Nov-21	150	
05-3070	Chimney	135	135	0%	0%	135		30-Apr-21	11-Sep-21	05-Aug-21	17-Dec-21	97	
05-3090	Reception Pavilion	135	135	0%	0%	135	Start On or After	30-Apr-21*	11-Sep-21	12-Mar-22	24-Jul-22	316	
EP_SP_66_12-WP6A-M41.05.01.03.3 Structural design (2.3.02)		617	835	78.12%		135		31-May-19 A	11-Sep-21	14-Jun-21	26-Oct-21	45	
05-1300	ACC Equipment Yard	98	59	100%	0%	0	Start On or After	23-Jul-19 A	20-Sep-19 A				
05-1330	Chimney	167	835	19.16%	5%	135	Start On or After	31-May-19 A	11-Sep-21	14-Jun-21	26-Oct-21	45	
EP_SP_66_12-WP6A-M41.05.01.03.6 Fire services installation design (2.3.05)		1174	929	93.61%		75		28-Dec-18 A	13-Jul-21	13-May-21	13-Oct-21	92	
EP_SP_66_12-WP6A-M41.05.01.03.6.1 Process Building (2.3.05.01)		1174	916	93.61%		75		10-Jan-19 A	13-Jul-21	13-May-21	13-Oct-21	92	
05-1510	Fire Systems	105	916	28.57%	5%	75		10-Jan-19 A	13-Jul-21	31-Jul-21	13-Oct-21	92	
05-1520	Fire engineering	550	801	90.91%	90.91%	50		10-Apr-19 A	18-Jun-21	13-May-21	01-Jul-21	13	
05-1530	FS schematics	105	848	93.33%	5%	7		10-Jan-19 A	06-May-21	24-Jun-21	30-Jun-21	55	
EP_SP_66_12-WP6A-M41.05.01.03.6.3 Turbin Hall Building (2.3.05.03)		105	929	28.57%		75		28-Dec-18 A	13-Jul-21	17-May-21	13-Oct-21	92	
05-5400	Fire Systems (2.3.05.03.01)	105	929	28.57%	5%	75		28-Dec-18 A	13-Jul-21	31-Jul-21	13-Oct-21	92	
05-5420 (M22)	FS schematics (2.3.05.03.03)	105	899	57.14%	5%	45		28-Dec-18 A	13-Jun-21	17-May-21	30-Jun-21	17	
EP_SP_66_12-WP6A-M41.05.01.03.6.5 Elevated Drive Way and Associated Structures (2.3.05.05)		180	576	58.33%		75		16-Dec-19 A	13-Jul-21	17-May-21	13-Oct-21	92	
05-5445 (M22)	Fire Systems	180	576	58.33%	5%	75		16-Dec-19 A	13-Jul-21	31-Jul-21	13-Oct-21	92	
05-5450 (M22)	FS schematics	180	546	75%	5%	45		16-Dec-19 A	13-Jun-21	17-May-21	30-Jun-21	17	
EP_SP_66_12-WP6A-M41.05.01.03.6.6 Reception Pavilion (2.3.05.06)		270	649	72.22%		75		04-Oct-19 A	13-Jul-21	17-May-21	13-Oct-21	92	
05-5460 (M22)	Fire Systems (2.3.05.06.01)	270	649	72.22%	5%	75		04-Oct-19 A	13-Jul-21	31-Jul-21	13-Oct-21	92	
05-5470 (M22)	FS schematics (2.3.05.06.03)	270	619	83.33%	5%	45		04-Oct-19 A	13-Jun-21	17-May-21	30-Jun-21	17	
EP_SP_66_12-WP6A-M41.05.01.03.6.7 Compressor & Closed Circuit (2.3.05.07)		140	672	46.43%		75		11-Sep-19 A	13-Jul-21	17-May-21	13-Oct-21	92	
05-5480 (M22)	Fire Systems (2.3.05.07.01)	140	672	46.43%	25%	75		11-Sep-19 A	13-Jul-21	31-Jul-21	13-Oct-21	92	
05-5490 (M22)	FS schematics (2.3.05.07.03)	140	642	67.86%	25%	45		11-Sep-19 A	13-Jun-21	17-May-21	30-Jun-21	17	
EP_SP_66_12-WP6A-M41.05.01.03.7 Building services design (excluding fire services installation des		1013	1159	86.67%		135		11-Jul-18 A	11-Sep-21	30-Apr-21	06-Jan-27	1943	
05-1560	MVAC (6 Packages)	105	906	38.1%	38.1%	65	Start On or After	10-Jan-19 A	03-Jul-21	20-Aug-21	23-Oct-21	112	
05-1570	Odour Control	135	1094	48.15%	5%	70	Start On or After	11-Jul-18 A	08-Jul-21	15-Aug-21	23-Oct-21	107	
05-1580	Plumbing (7 Packages)	210	846	95.24%	65%	10	Start On or After	15-Jan-19 A	09-May-21	02-May-21	11-May-21	2	
05-1590	Drainage (7 Packages)	210	846	95.24%	25%	10	Start On or After	15-Jan-19 A	09-May-21	02-May-21	11-May-21	2	
05-1600	ELV (7 Packages)	135	876	74.07%	65%	35	Start On or After	10-Jan-19 A	03-Jun-21	21-Jun-21	25-Jul-21	52	
05-1610	Lifts and Escalators (2 Packages)	135	563	43.7%	5%	76	Start On or After	30-Dec-19 A	14-Jul-21	20-Jul-21	03-Oct-21	81	
05-1630	Building Management System (BMS) (7 Packages)	135	279	33.33%	5%	90	Start On or After	23-Oct-20 A	28-Jul-21	18-Sep-21	16-Dec-21	141	
05-1770	Vehicle & Container Wash System	135	135	0%	0%	135	Finish On or Before	30-Apr-21	11-Sep-21*	01-Jul-21	12-Nov-21	62	
05-1770-1(M20)	Water Cannon System	135	692	97.78%	45%	3	Start On or After	11-Jun-19 A	02-May-21	30-Apr-21	02-May-21	0	
05-1770-2 (5a)	Process CCTV System	135	135	0%	0%	135		30-Apr-21	11-Sep-21	25-Aug-26	06-Jan-27	1943	
EP_SP_66_12-WP6A-M41.05.01.04 AIP Mechanical Treatment Plant Building (2.4)		915	1101	85.25%		135		07-Sep-18 A	11-Sep-21	30-Apr-21	19-Aug-22	342	
05-1640	Architectural Design (2.4.00)	105	1026	42.86%	65%	60		07-Sep-18 A	28-Jun-21	08-Mar-22	06-May-22	312	
05-1650	Foundation design (2.4.01)	105	768	0%	5%	105	Start On or After	07-Jul-19 A	12-Aug-21	19-Dec-21	02-Apr-22	233	



Remaining Work
Actual Work
Critical Remaining Work
Milestone
Actual Milestone
Critical Milestone

Activity ID	Activity Name	Original Duration	At Completion Duration	Duration % Complete	Activity % Complete	Remaining Duration	Primary Constraint	Current Start	Current Finish	Late Start	Late Finish	Total Float	M41 Remarks
05-1660	Structural design (2.4.02)	457	815	77.02%	5%	105	Start On or After	21-May-19 A	12-Aug-21	07-May-22	19-Aug-22	372	
05-1670	Electrical and instrumentation works design (2.4.03)	105	105	0%	0%	105		30-Apr-21	12-Aug-21	20-May-21	01-Sep-21	20	
05-1680	Mechanical works design (2.4.04)	105	105	0%	0%	105		30-Apr-21	12-Aug-21	20-May-21	01-Sep-21	20	
05-1690	Fire services installation design (2.4.05) (3 Packages)	105	834	40.95%	0%	62	Start On or After	20-Mar-19 A	30-Jun-21	30-Apr-21	30-Jun-21	0	
EP_SP_66_12-WP6A-M41.05.01.04.7 Building services design (excluding fire services installation des		866	907	84.41%		135		20-Mar-19 A	11-Sep-21	30-Apr-21	17-Nov-21	67	
05-1700	LV and Emergency Power Distribution Design	17	784	29.41%	5%	12	Start On or After	20-Mar-19 A	11-May-21	14-Jul-21	25-Jul-21	75	
05-1710	MVAC	135	842	44.44%	5%	75	Start On or After	25-Mar-19 A	13-Jul-21	10-Aug-21	23-Oct-21	102	
05-1720	Odour Control	75	75	0%	0%	75	Start On or After	30-Apr-21*	13-Jul-21	10-Aug-21	23-Oct-21	102	
05-1730	Plumbing	135	829	57.78%	5%	57	Start On or After	20-Mar-19 A	25-Jun-21	30-Apr-21	25-Jun-21	0	
05-1740	Drainage	135	829	57.78%	5%	57	Start On or After	20-Mar-19 A	25-Jun-21	30-Apr-21	25-Jun-21	0	
05-1750	ELV	135	859	35.56%	0%	87	Start On or After	20-Mar-19 A	25-Jul-21	30-Apr-21	25-Jul-21	0	
05-1760	Lifts	135	614	5.93%	0%	127	Start On or After	30-Dec-19 A	03-Sep-21	14-Jul-21	17-Nov-21	75	
05-1760-1(M20)	Building Management System (BMS)	135	135	0%	0%	135		30-Apr-21	11-Sep-21	21-May-21	02-Oct-21	21	
EP_SP_66_12-WP6A-M41.05.01.05 AIP Wastewater Treatment Plant (2.5)		1014	1045	89.64%		105		03-Oct-18 A	12-Aug-21	30-Apr-21	07-Nov-21	87	
05-1780	Architectural Design (2.5.00)	135	1000	55.56%	65%	60	Start On or After	03-Oct-18 A	28-Jun-21	09-Jun-21	07-Aug-21	40	
05-2790	Fire services installation design (2.5.05)	105	895	42.86%	5%	60		16-Jan-19 A	28-Jun-21	02-May-21	30-Jun-21	2	
EP_SP_66_12-WP6A-M41.05.01.05.7 Building services design (excluding fire services installation des		925	940	88.65%		105		16-Jan-19 A	12-Aug-21	30-Apr-21	07-Nov-21	87	
05-1830	LV and Emergency Power Distribution Design (2.5.06.01)	135	865	77.78%	25%	30	Start On or After	16-Jan-19 A	29-May-21	12-May-21	10-Jun-21	12	
05-1840	MVAC (2.5.06.02)	135	910	44.44%	25%	75	Start On or After	16-Jan-19 A	13-Jul-21	25-Aug-21	07-Nov-21	117	
05-1850	Odour Control (2.5.06.03)	105	105	0%	0%	105	Start On or After	30-Apr-21*	12-Aug-21	11-Jul-21	23-Oct-21	72	
05-1860	Plumbing (2.5.06.04)	135	892	57.78%	25%	57	Start On or After	16-Jan-19 A	25-Jun-21	30-Apr-21	25-Jun-21	0	
05-1870	Drainage (2.5.06.05)	135	845	92.59%	25%	10	Start On or After	16-Jan-19 A	09-May-21	02-May-21	11-May-21	2	
05-1880	ELV (2.5.06.06)	135	911	43.7%	25%	76	Start On or After	16-Jan-19 A	14-Jul-21	11-May-21	25-Jul-21	11	
EP_SP_66_12-WP6A-M41.05.01.06 AIP Water Treatment Plant Building (2.6)		329	1053	73.56%		87		07-Sep-18 A	25-Jul-21	30-Apr-21	07-Mar-22	225	
05-1900	Architectural Design (2.6.00)	105	1026	42.86%	65%	60	Start On or After	07-Sep-18 A	28-Jun-21	07-Jan-22	07-Mar-22	252	
05-1950	Fire services installation design (2.6.05) (3 Packages)	105	827	47.62%	47.62%	55		20-Mar-19 A	23-Jun-21	07-May-21	30-Jun-21	7	
EP_SP_66_12-WP6A-M41.05.01.06.7 Building services design (excluding fire services installation des		135	859	35.56%		87		20-Mar-19 A	25-Jul-21	30-Apr-21	23-Oct-21	90	
05-1960	Electrical Services and Lighting (2.6.06.01)	135	847	44.44%	5%	75	Start On or After	20-Mar-19 A	13-Jul-21	12-May-21	25-Jul-21	12	
05-1970	MVAC	135	842	44.44%	5%	75	Start On or After	25-Mar-19 A	13-Jul-21	10-Aug-21	23-Oct-21	102	
05-1990	Plumbing	135	829	57.78%	5%	57	Start On or After	20-Mar-19 A	25-Jun-21	30-Apr-21	25-Jun-21	0	
05-2000	Drainage	135	829	57.78%	5%	57	Start On or After	20-Mar-19 A	25-Jun-21	30-Apr-21	25-Jun-21	0	
05-2010	ELV	135	859	35.56%	5%	87	Start On or After	20-Mar-19 A	25-Jul-21	30-Apr-21	25-Jul-21	0	
EP_SP_66_12-WP6A-M41.05.01.07 AIP Administration Building (2.7)		1020	1136	86.76%		135		03-Aug-18 A	11-Sep-21	30-Apr-21	06-Jan-27	1943	
05-2020	Architectural Design (2.7.00)	135	1061	55.56%	65%	60	Start On or After	03-Aug-18 A	28-Jun-21	12-Jan-22	12-Mar-22	257	
05-2040	Structural design (2.7.02)	135	776	0%	65%	135	Start On or After	29-Jul-19 A	11-Sep-21	16-Oct-22	27-Feb-23	534	
05-2050	Electrical and instrumentation works design (2.7.03)	105	105	0%	0%	105		30-Apr-21	12-Aug-21	24-Sep-26	06-Jan-27	1973	
05-2060	Fire services installation design (3 Packages) (2.7.04)	135	667	54.07%	54.07%	62	Start On or After	03-Sep-19 A	30-Jun-21	30-Apr-21	30-Jun-21	0	
EP_SP_66_12-WP6A-M41.05.01.07.6 Building services design (excluding fire services installation des		682	740	80.21%		135		03-Sep-19 A	11-Sep-21	30-Apr-21	16-Dec-21	96	
05-2070	Electrical Services and Lighting (2.7.05.01)	135	680	44.44%	5%	75	Start On or After	03-Sep-19 A	13-Jul-21	12-May-21	25-Jul-21	12	
05-2080	MVAC	135	680	44.44%	5%	75	Start On or After	03-Sep-19 A	13-Jul-21	10-Aug-21	23-Oct-21	102	
05-2100	Plumbing	135	615	92.59%	5%	10	Start On or After	03-Sep-19 A	09-May-21	02-May-21	11-May-21	2	
05-2110	Drainage	135	662	57.78%	5%	57	Start On or After	03-Sep-19 A	25-Jun-21	30-Apr-21	25-Jun-21	0	
05-2120	ELV	135	681	43.7%	5%	76	Start On or After	03-Sep-19 A	14-Jul-21	11-May-21	25-Jul-21	11	
05-2130	Lifts and Escalators	135	592	22.22%	5%	105	Start On or After	30-Dec-19 A	12-Aug-21	21-Jun-21	03-Oct-21	52	
05-2130-1(M20)	Building Management System (BMS)	135	135	0%	0%	135	Start On or After	30-Apr-21*	11-Sep-21	04-Aug-21	16-Dec-21	96	
EP_SP_66_12-WP6A-M41.05.01.08 AIP IWMF Substation (2.8)		694	917	95.39%		32		27-Nov-18 A	31-May-21	30-Apr-21	31-May-21	0	



3-Month Rolling Programme (April 2021)

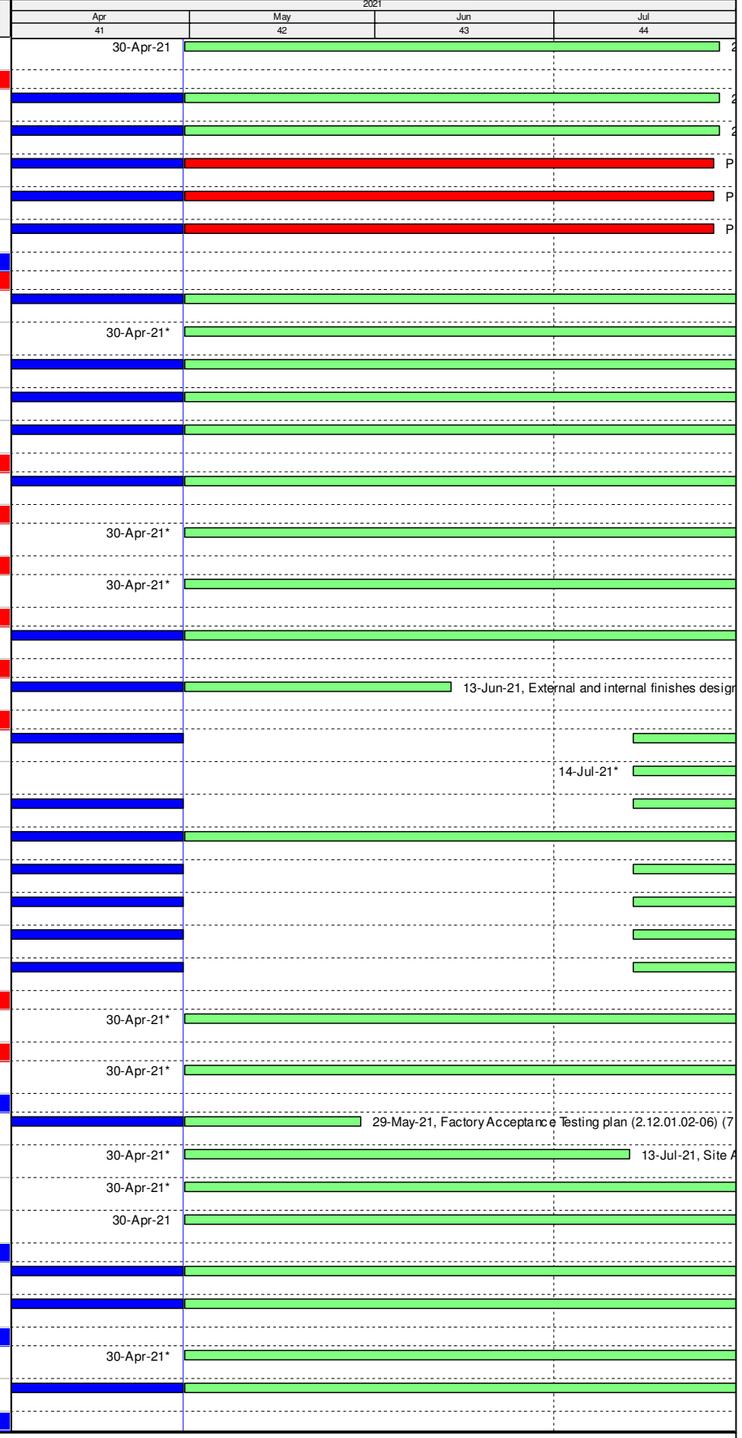
Remaining Work
Actual Work
Critical Remaining Work
Milestone
Actual Milestone
Critical Milestone

Activity ID	Activity Name	Original Duration	At Completion Duration	Duration % Complete	Activity % Complete	Remaining Duration	Primary Constraint	Current Start	Current Finish	Late Start	Late Finish	Total Float	M41 Remarks
05-2170	Electrical and instrumentation works design (2.8.03) (14 Packages)	180	565	93.33%	55%	12	Start On or After	25-Oct-19 A	11-May-21	30-Apr-21	11-May-21	0	
05-2190	Fire services installation design (2.8.05) (2 Packages)	170	917	81.18%	65%	32	Start On or After	27-Nov-18 A	31-May-21	30-Apr-21	31-May-21	0	
EP_SP_66_12-WP6A-M41.05.01.08.7	Building services design (excluding fire services installation des	135	178	100%		0		24-Dec-19 A	19-Jun-20 A				
05-2240-1(M20)	Building Management System (BMS)	135	178	100%	65%	0	Start On or After	24-Dec-19 A	19-Jun-20 A				
EP_SP_66_12-WP6A-M41.05.01.1	AIP Chimney	347	628	61.1%		135		24-Dec-19 A	11-Sep-21	07-Aug-21	20-Feb-22	162	
EP_SP_66_12-WP6A-M41.05.01.1.1	Building services design (excluding fire services installation desi	347	628	61.1%		135		24-Dec-19 A	11-Sep-21	07-Aug-21	20-Feb-22	162	
05-5430(5a)	Electrical Services and Lighting	135	135	0%	0%	135		30-Apr-21	11-Sep-21	07-Aug-21	19-Dec-21	99	
05-5440(5a)	MVAC	105	105	0%	0%	105		30-Apr-21	12-Aug-21	08-Nov-21	20-Feb-22	192	
05-5450(5a)	Plumbing	105	105	0%	0%	105		30-Apr-21	12-Aug-21	06-Sep-21	19-Dec-21	129	
05-5460(5a)	Drainage	135	135	0%	0%	135		30-Apr-21	11-Sep-21	07-Aug-21	19-Dec-21	99	
05-5470(5a)	ELV	135	135	0%	0%	135		30-Apr-21	11-Sep-21	07-Aug-21	19-Dec-21	99	
05-5480(5a)	Lift	135	135	0%	0%	135		30-Apr-21	11-Sep-21	07-Aug-21	19-Dec-21	99	
05-5490(5a)	Building Management System (BMS)	135	582	34.07%	25%	89		24-Dec-19 A	27-Jul-21	22-Sep-21	19-Dec-21	145	
EP_SP_66_12-WP6A-M41.05.01.2	AIP Weighbridge	105	105	0%		105		30-Apr-21	12-Aug-21	27-Nov-21	24-Jul-22	346	
EP_SP_66_12-WP6A-M41.05.01.2.1	Building services design (excluding fire services installation desi	105	105	0%		105		30-Apr-21	12-Aug-21	27-Nov-21	24-Jul-22	346	
05-5500(5a)	Electrical Services and Lighting	105	105	0%	0%	105		30-Apr-21	12-Aug-21	11-Apr-22	24-Jul-22	346	
05-5510(5a)	MVAC	105	105	0%	0%	105		30-Apr-21	12-Aug-21	27-Nov-21	11-Mar-22	211	
05-5520(5a)	Plumbing	105	105	0%	0%	105		30-Apr-21	12-Aug-21	27-Nov-21	11-Mar-22	211	
05-5530(5a)	Drainage	105	105	0%	0%	105		30-Apr-21	12-Aug-21	27-Nov-21	11-Mar-22	211	
05-5540(5a)	ELV	105	105	0%	0%	105		30-Apr-21	12-Aug-21	27-Nov-21	11-Mar-22	211	
05-5550(5a)	Lift	105	105	0%	0%	105		30-Apr-21	12-Aug-21	27-Nov-21	11-Mar-22	211	
05-5560(5a)	Building Management System (BMS)	105	105	0%	0%	105		30-Apr-21	12-Aug-21	11-Apr-22	24-Jul-22	346	
EP_SP_66_12-WP6A-M41.05.01.09	AIP Air Quality Monitoring Stations (2.9)	120	255	63.33%		44		01-Oct-20 A	12-Jun-21	10-Feb-23	25-Mar-23	651	
05-2250	Design of the Air Quality Monitoring Stations (2.9.01)	120	255	63.33%	63.33%	44	Start On or After	01-Oct-20 A	12-Jun-21	10-Feb-23	25-Mar-23	651	
EP_SP_66_12-WP6A-M41.05.01.10	AIP Roads and Utilities (2.10)	807	1020	83.27%		135		27-Nov-18 A	11-Sep-21	30-Apr-21	12-Jan-23	488	
EP_SP_66_12-WP6A-M41.05.01.10.2	Sewerage design on the Artificial Island (2.10.02)	135	163	100%		0		18-Sep-19 A	28-Feb-20 A				
05-2290	Contaminated Sewerage concept / sizing	135	163	100%	5%	0	Start On or After	18-Sep-19 A	28-Feb-20 A				
EP_SP_66_12-WP6A-M41.05.01.10.3	Drainage system design on the Artificial Island (2.10.03)	135	282	100%		0		22-May-19 A	28-Feb-20 A				
05-2310	First Flush Drainage System concept / sizing	135	282	100%	5%	0	Start On or After	22-May-19 A	28-Feb-20 A				
EP_SP_66_12-WP6A-M41.05.01.10.4	Water supply system design on the Artificial Island (2.10.04)	652	744	79.29%		135		30-Aug-19 A	11-Sep-21	30-Apr-21	13-Apr-22	214	
05-2330	Reuse Water Distribution System (2.10.04.02)	135	362	100%	65%	0	Start On or After	15-Nov-19 A	11-Nov-20 A				
05-2340	Reuse Water Distribution System - Irrigation System (2.10.04.03)	135	362	100%	0%	0	Start On or After	15-Nov-19 A	11-Nov-20 A				
05-2350	Rainwater harvesting System (2.10.04.04)	135	225	57.78%	5%	57	Start On or After	13-Nov-20 A	25-Jun-21	30-Apr-21	25-Jun-21	0	
05-2360	Water Tanks (2.10.04.05)	135	135	0%	0%	135	Start On or After	30-Apr-21*	11-Sep-21	30-Nov-21	13-Apr-22	214	
05-2370	External FS Systems (2.10.04.06)	135	678	0%	65%	135		04-Nov-19 A	11-Sep-21	30-Nov-21	13-Apr-22	214	
05-2370-1(M24)	E&M system for seawater intake and brine discharge (2.10.04.07)	90	699	0%	5%	90		30-Aug-19 A	28-Jul-21	28-Jun-21	25-Sep-21	59	
05-2370-2(M24)	Building Services system for seawater intake and brine discharge (2.10.04.09)	90	505	0%	5%	90		11-Mar-20 A	28-Jul-21	12-May-21	09-Aug-21	12	
05-2370-3(5a)	Chemical scrubber system for odour control (2.10.04.10)	90	90	0%	0%	90	Start On or After	30-Apr-21*	28-Jul-21	26-Jul-21	23-Oct-21	87	
EP_SP_66_12-WP6A-M41.05.01.10.6	Design of telecommunication and other utilities (2.10.06)	807	1020	83.27%		135		27-Nov-18 A	11-Sep-21	06-Jun-21	12-Jan-23	488	
05-2380	Power Distribution System concept / schematics (2.10.06.01)	135	258	0%	5%	135	Start On or After	28-Dec-20 A	11-Sep-21	06-Jul-21	17-Nov-21	67	
05-2410	Site ELV Network System - Communications System concept / schematics (2.10.06.04)	135	552	0%	5%	135	Start On or After	09-Mar-20 A	11-Sep-21	06-Jul-21	17-Nov-21	67	
05-2420	Site ELV Network System - Security Systems concept / schematics (2.10.06.05)	135	552	0%	5%	135	Start On or After	09-Mar-20 A	11-Sep-21	06-Jul-21	17-Nov-21	67	
05-2430	Site ELV Network System - Navigation aids concept / schematics (2.10.06.06)	135	135	0%	0%	135	Start On or After	30-Apr-21*	11-Sep-21	06-Jul-21	17-Nov-21	67	
05-2440	Microwave transmission of FS direct link (2.10.06.07)	135	975	33.33%	33.33%	90		27-Nov-18 A	28-Jul-21	06-Jun-21	03-Sep-21	37	
05-2450	Fuel Handling System concept / schematics (2.10.06.08)	135	597	0%	5%	135	Start On or After	24-Jan-20 A	11-Sep-21	31-Aug-22	12-Jan-23	488	
05-3190	Computerised Maintenance Management System (CMMS)	105	765	28.57%	5%	75	Start On or After	10-Jun-19 A	13-Jul-21	02-Nov-21	15-Jan-22	186	
05-3200	Information and Document Management System (IDMS)	105	730	28.57%	5%	75	Start On or After	15-Jul-19 A	13-Jul-21	02-Nov-21	15-Jan-22	186	

3-Month Rolling Programme (April 2021)

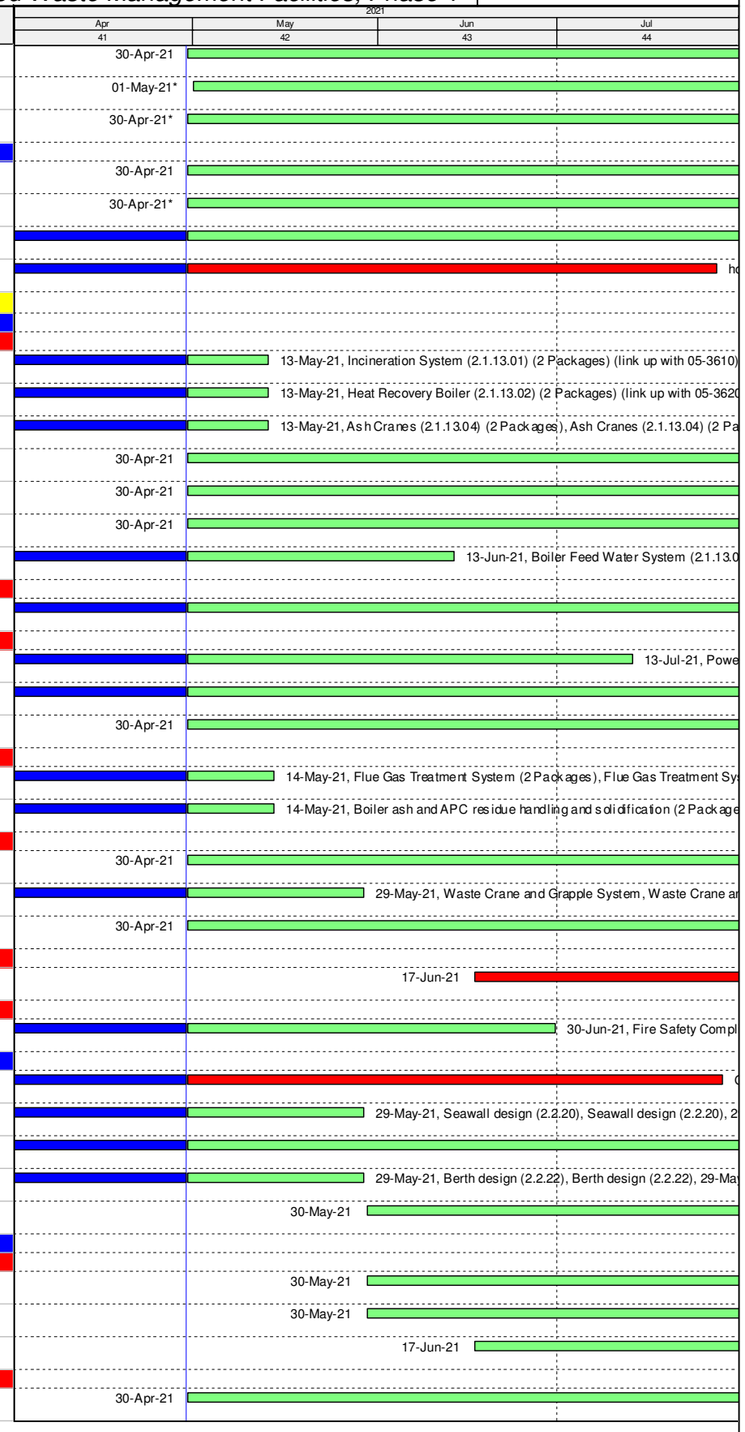
Remaining Work
Actual Work
Critical Remaining Work
Milestone
Actual Milestone
Critical Milestone

Activity ID	Activity Name	Original Duration	At Completion Duration	Duration % Complete	Activity % Complete	Remaining Duration	Primary Constraint	Current Start	Current Finish	Late Start	Late Finish	Total Float	M41 Remarks
05-3840 (M22)	Automatic Traffic Control System (ATCS) (2.10.06.12)	90	90	0%	0%	90		30-Apr-21	28-Jul-21	25-Jun-21	22-Sep-21	56	
EP_SP_66_12-WP6A-M41.05.01.10.7	Utility ducts/Pipebridges design (2.10.25)	167	335	46.11%		90		28-Aug-20 A	28-Jul-21	30-Apr-21	11-Aug-22	379	
05-2460	Design of Pipe / Utilities Trenches concept (2.10.06.09.01)	105	335	14.29%	5%	90		28-Aug-20 A	28-Jul-21	14-May-22	11-Aug-22	379	
05-2470	Sitewide Utilities Trenches Design (2.10.06.09.02)	105	335	14.29%	5%	90		28-Aug-20 A	28-Jul-21	14-May-22	11-Aug-22	379	
05-2480	Pipebridge network - Layout	135	334	34.07%	34.07%	89		28-Aug-20 A	27-Jul-21	30-Apr-21	27-Jul-21	0	
05-2490	Pipebridge network - Foundation Plan	135	334	34.07%	34.07%	89		28-Aug-20 A	27-Jul-21	30-Apr-21	27-Jul-21	0	
05-2500	Pipebridge network - Structure Plan	135	334	34.07%	34.07%	89		28-Aug-20 A	27-Jul-21	30-Apr-21	27-Jul-21	0	
EP_SP_66_12-WP6A-M41.05.01.11	AIP Architectural, Finishes and Landscaping Works (2.11)	392	576	54.08%		180		30-Mar-20 A	26-Oct-21	20-May-21	17-Apr-22	173	
EP_SP_66_12-WP6A-M41.05.01.11.1	External and internal finishes design for Incineration Plant Build	318	533	56.92%		137		30-Mar-20 A	13-Sep-21	31-Jul-21	26-Mar-22	194	
05-2510	External and internal finishes design for Incineration Plant Building (6 Packages)	137	498	0%	5%	137	Start On or After	04-May-20 A	13-Sep-21	26-Sep-21	09-Feb-22	149	
05-2520	External and internal finishes design for ACC Equipment Yard	137	137	0%	0%	137	Start On or After	30-Apr-21*	13-Sep-21	31-Jul-21	14-Dec-21	92	
05-2530	External and internal finishes design for Turbine Hall Building (3 Packages)	137	498	0%	5%	137	Start On or After	04-May-20 A	13-Sep-21	06-Aug-21	20-Dec-21	98	
05-2540	External and internal finishes design for Air Compressor Building (3 Packages)	137	498	0%	5%	137	Start On or After	04-May-20 A	13-Sep-21	06-Nov-21	22-Mar-22	190	
05-2560	External and internal finishes design for Reception Pavilion (5 Packages)	137	533	0%	5%	137	Start On or After	30-Mar-20 A	13-Sep-21	10-Nov-21	26-Mar-22	194	
EP_SP_66_12-WP6A-M41.05.01.11.2	External and internal finishes design for MT Plant Building (2.11.	136	504	0%		136		27-Apr-20 A	12-Sep-21	04-Sep-21	17-Jan-22	127	
05-2570	External and internal finishes design for MT Plant Building (7 Packages)	136	504	0%	5%	136	Start On or After	27-Apr-20 A	12-Sep-21	04-Sep-21	17-Jan-22	127	
EP_SP_66_12-WP6A-M41.05.01.11.3	External and internal finishes design for the Wastewater Treatme	135	135	0%		135		30-Apr-21	11-Sep-21	21-Sep-21	02-Feb-22	144	
05-2580	External and internal finishes design for the Wastewater Treatment Plant (3 Packages)	135	135	0%	0%	135	Start On or After	30-Apr-21*	11-Sep-21	21-Sep-21	02-Feb-22	144	
EP_SP_66_12-WP6A-M41.05.01.11.4	External and internal finishes design for the Water Treatment Pla	135	135	0%		135		30-Apr-21	11-Sep-21	05-Sep-21	17-Jan-22	128	
05-2590	External and internal finishes design for the Water Treatment Plant Building (3 Packages)	135	135	0%	0%	135	Start On or After	30-Apr-21*	11-Sep-21	05-Sep-21	17-Jan-22	128	
EP_SP_66_12-WP6A-M41.05.01.11.5	External and internal finishes design for the Administration Build	135	503	0%		135		27-Apr-20 A	11-Sep-21	20-Nov-21	03-Apr-22	204	
05-2600	External and internal finishes design for the Administration Building (6 Packages)	135	503	0%	5%	135	Start On or After	27-Apr-20 A	11-Sep-21	20-Nov-21	03-Apr-22	204	
EP_SP_66_12-WP6A-M41.05.01.11.6	External and internal finishes design for the IWMF Substation (2	135	441	66.67%		45		30-Mar-20 A	13-Jun-21	20-May-21	03-Jul-21	20	
05-2610	External and internal finishes design for the IWMF Substation (4 Packages)	135	441	66.67%	5%	45	Start On or After	30-Mar-20 A	13-Jun-21	20-May-21	03-Jul-21	20	
EP_SP_66_12-WP6A-M41.05.01.11.7	Landscape masterplan (2.11.07)	392	537	54.08%		180		08-May-20 A	26-Oct-21	20-Oct-21	17-Apr-22	173	
05-2620	Water Feature (2.11.07.01)	105	495	0%	5%	105	Start On or After	19-Jun-20 A	26-Oct-21	20-Oct-21	01-Feb-22	98	
05-2630	Planting details	105	105	0%	0%	105	Start On or After	14-Jul-21*	26-Oct-21	20-Oct-21	01-Feb-22	98	
05-2920_1(M34)	Turbine Hall Building (2.11.07.04)	105	537	0%	5%	105		08-May-20 A	26-Oct-21	03-Jan-22	17-Apr-22	173	
05-2920_2(M34)	Reception Pavilion (2.11.07.06)	105	462	0%	5%	105		08-May-20 A	12-Aug-21	03-Jan-22	17-Apr-22	248	
05-2920_3(M34)	MT Plant Building and Water Treatment Plant Building (2.11.07.07)	105	537	0%	5%	105		08-May-20 A	26-Oct-21	03-Jan-22	17-Apr-22	173	
05-2920_4(M34)	Administration Building (2.11.07.08)	105	537	0%	5%	105		08-May-20 A	26-Oct-21	03-Jan-22	17-Apr-22	173	
05-2920_5(M34)	IWMF Substation (2.11.07.09)	105	537	0%	5%	105		08-May-20 A	26-Oct-21	03-Jan-22	17-Apr-22	173	
05-2920_6(M34)	Process Building (2.11.07.10)	105	537	0%	5%	105		08-May-20 A	26-Oct-21	03-Jan-22	17-Apr-22	173	
EP_SP_66_12-WP6A-M41.05.01.11.8	Architectural Detailing - Site Wide (2.11.29)	107	107	0%		107		30-Apr-21	14-Aug-21	29-Aug-21	13-Dec-21	121	
05-2640	Architectural Detailing - Site Wide Concept	107	107	0%	0%	107	Start On or After	30-Apr-21*	14-Aug-21	29-Aug-21	13-Dec-21	121	
EP_SP_66_12-WP6A-M41.05.01.11.9	External and internal finishes design for Elavated Driveway	137	137	0%		137		30-Apr-21	13-Sep-21	27-Aug-21	10-Jan-22	119	
05-5410	External and internal finishes design for Elavated Driveway	137	137	0%	0%	137	Start On or After	30-Apr-21*	13-Sep-21	27-Aug-21	10-Jan-22	119	
EP_SP_66_12-WP6A-M41.05.01.12	AIP Testing and Commissioning (2.12)	775	843	86.45%		105		23-Apr-19 A	12-Aug-21	30-May-21	31-Aug-22	384	
05-2650-1(5)	Factory Acceptance Testing plan (2.12.01.02-06) (7 Packages)	60	768	50%	0%	30		23-Apr-19 A	29-May-21	16-Dec-21	14-Jan-22	230	
05-2660	Site Acceptance Testing plan (2.12.02)	75	75	0%	0%	75	Start On or After	30-Apr-21*	13-Jul-21	29-Jul-21	11-Oct-21	90	
05-2670	System commissioning plan (2.12.03)	105	105	0%	0%	105	Start On or After	30-Apr-21*	12-Aug-21	30-May-21	11-Sep-21	30	
05-2680	Plant commissioning plan (2.12.04)	105	105	0%	0%	105		30-Apr-21	12-Aug-21	19-May-22	31-Aug-22	384	
EP_SP_66_12-WP6A-M41.05.01.13	AIP Transportation Facilities for the Operation (2.13)	136	410	22.79%		105		29-Jun-20 A	12-Aug-21	19-May-21	11-Sep-21	30	
05-2690	Design of vehicles for MSW and Ash and Residues delivery (2.13.01)	105	410	0%	5%	105		29-Jun-20 A	12-Aug-21	30-May-21	11-Sep-21	30	
05-2700	Design of marine vessels for the use of the Employer and visitors (2.13.02)	105	339	0%	5%	105		08-Sep-20 A	12-Aug-21	19-May-21	31-Aug-21	19	
EP_SP_66_12-WP6A-M41.05.01.14	AIP Miscellaneous Works (2.14)	286	403	63.29%		105		06-Jul-20 A	12-Aug-21	20-Aug-21	07-Apr-23	603	
05-2710	Design of process related CCTV and existing onshore crane replacement works at Portion 2 (2.14.01)	105	105	0%	0%	105	Start On or After	30-Apr-21*	12-Aug-21	24-Dec-22	07-Apr-23	603	
05-2720	Design of visitors and environmental education facilities (2.14.02)	105	403	0%	5%	105		06-Jul-20 A	12-Aug-21	20-Aug-21	02-Dec-21	112	
EP_SP_66_12-WP6A-M41.05.01.15	AIP Miscellaneous Detailing (2.15)	136	136	0%		136		30-Apr-21	12-Sep-21	16-Sep-21	05-Sep-22	358	



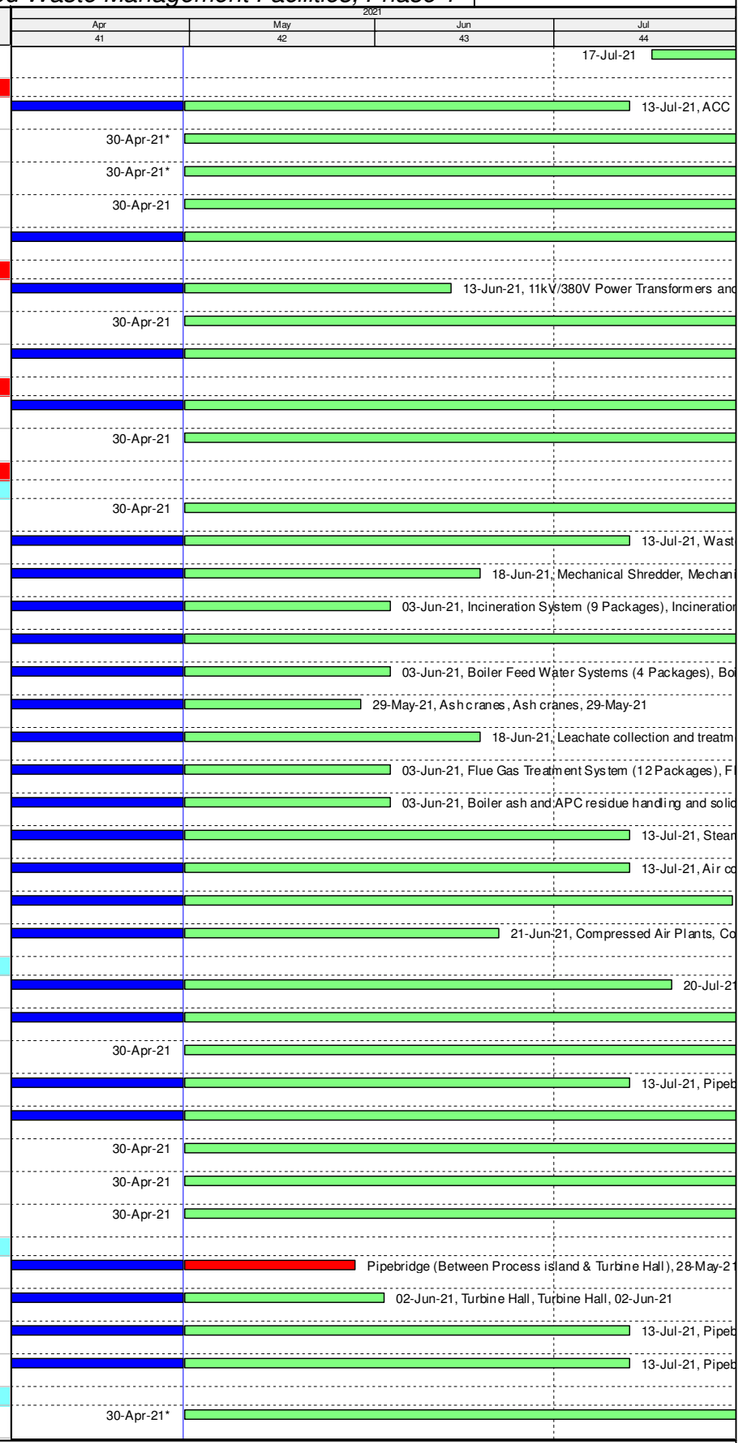
3-Month Rolling Programme (April 2021)

Activity ID	Activity Name	Original Duration	At Completion Duration	Duration % Complete	Activity % Complete	Remaining Duration	Primary Constraint	Current Start	Current Finish	Late Start	Late Finish	Total Float	M41 Remarks
05-2730	Covered walkway at passenger berth (2.15.02)	105	105	0%	0%	105		30-Apr-21	12-Aug-21	16-Sep-21	29-Dec-21	139	
05-2740	Gatehouses (2.15.03)	135	135	0%	0%	135	Start On or After	01-May-21*	12-Sep-21	24-Apr-22	05-Sep-22	358	
05-2750	Weighbridge office (2.15.04)	105	105	0%	0%	105	Start On or After	30-Apr-21*	12-Aug-21	26-Jan-22	10-May-22	271	
EP_SP_66_12-WP6A-M41.05.01.16 AIP Auxiliary Plant Systems (2.16)		316	487	57.28%		135		13-May-20 A	11-Sep-21	30-Apr-21	25-Aug-22	348	
05-2770	Vehicle Fuel Filling Station (2.16.02)	135	135	0%	0%	135		30-Apr-21	11-Sep-21	13-Apr-22	25-Aug-22	348	
05-2780	Stores systems (2.16.03)	135	135	0%	0%	135	Start On or After	30-Apr-21*	11-Sep-21	06-Jan-22	20-May-22	251	
05-2780-1(5a)	IWMF Laboratory (2.16.04)	135	487	0%	5%	135		13-May-20 A	11-Sep-21	04-Jul-21	15-Nov-21	65	
05-2780-2(5a)	hoisting systems (2.16.09)	135	315	34.07%	5%	89		16-Sep-20 A	27-Jul-21	30-Apr-21	27-Jul-21	0	
EP_SP_66_12-WP6A-M41.05.02 DDA Design Package Submissions		1056	1153	78.69%		225		15-Oct-18 A	10-Dec-21	30-Apr-21	19-Dec-23	739	
EP_SP_66_12-WP6A-M41.05.02.01 DDA Process and Layout Design (2.1)		395	904	61.27%		153		10-Apr-19 A	29-Sep-21	04-May-21	14-Aug-22	319	
EP_SP_66_12-WP6A-M41.05.02.01.1 MSW treatment process design for incineration (2.1.13)		317	477	66.88%		105		23-Apr-20 A	12-Aug-21	04-May-21	03-Dec-21	113	
05-5090	Incineration System (2.1.13.01) (2 Packages) (link up with 05-3610)	105	288	86.67%	5%	14		30-Jul-20 A	13-May-21	29-Sep-21	12-Oct-21	152	
05-5100	Heat Recovery Boiler (2.1.13.02) (2 Packages) (link up with 05-3620)	105	386	86.67%	5%	14	Start On or After	23-Apr-20 A	13-May-21	29-Sep-21	12-Oct-21	152	
05-5110	Ash Cranes (2.1.13.04) (2 Packages)	105	158	86.67%	5%	14		07-Dec-20 A	13-May-21	20-Nov-21	03-Dec-21	204	
05-5120	Leachate Collection and Treatment (2.1.13.05) (2 Packages)	105	105	0%	0%	105		30-Apr-21	12-Aug-21	21-Aug-21	03-Dec-21	113	
05-5130	Waste Water Treatment System (2.1.13.06) (2 Packages)	105	105	0%	0%	105		30-Apr-21	12-Aug-21	04-May-21	16-Aug-21	4	
05-5140	Overall Plan Water Scheme (2.1.13.07)	105	105	0%	0%	105		30-Apr-21	12-Aug-21	21-Aug-21	03-Dec-21	113	
05-5150	Boiler Feed Water System (2.1.13.03) (2 Packages)	105	315	57.14%	45%	45	Start On or After	03-Aug-20 A	13-Jun-21	20-Oct-21	03-Dec-21	173	
EP_SP_66_12-WP6A-M41.05.02.01.2 MSW treatment process design for mechanical treatment (2.1.14)		105	237	0%		105		19-Dec-20 A	12-Aug-21	02-May-22	14-Aug-22	367	
05-3510	Water Treatment Plant and Boiler Water Treatment (Demin Unit) Plant	105	237	0%	5%	105		19-Dec-20 A	12-Aug-21	02-May-22	14-Aug-22	367	
EP_SP_66_12-WP6A-M41.05.02.01.3 Waste heat recovery and Power generation system (2.1.15)		347	480	69.74%		105		20-Apr-20 A	12-Aug-21	30-Jul-21	05-Feb-22	177	
05-5220	Power Island (Steam Turbine Generator, Pressure Reducing and Desuperheating Station, Air Cooled Condenser)	105	415	28.57%	5%	75		25-May-20 A	13-Jul-21	30-Jul-21	12-Oct-21	91	
05-5230	Closed Circuit Cooling Water System	105	480	0%	5%	105		20-Apr-20 A	12-Aug-21	24-Oct-21	05-Feb-22	177	
05-5240	Compressed Air Plants	105	105	0%	0%	105		30-Apr-21	12-Aug-21	24-Oct-21	05-Feb-22	177	
EP_SP_66_12-WP6A-M41.05.02.01.4 Flue gas treatment process design for incineration (2.1.16)		105	387	85.71%		15		23-Apr-20 A	14-May-21	28-Sep-21	03-Dec-21	203	
05-4660	Flue Gas Treatment System (2 Packages)	105	387	85.71%	5%	15	Start On or After	23-Apr-20 A	14-May-21	28-Sep-21	12-Oct-21	151	
05-4980	Boiler ash and APC residue handling and solidification (2 Packages)	105	387	85.71%	5%	15	Start On or After	23-Apr-20 A	14-May-21	19-Nov-21	03-Dec-21	203	
EP_SP_66_12-WP6A-M41.05.02.01.5 Logistic arrangement design for MSW and Ash and Residues (2		347	403	69.74%		105		06-Jul-20 A	12-Aug-21	15-Jul-21	03-Dec-21	113	
05-4390	Weighbridge Systems	105	105	0%	0%	105		30-Apr-21	12-Aug-21	15-Jul-21	27-Oct-21	76	
05-4400	Waste Crane and Grapple System	105	328	71.43%	5%	30		06-Jul-20 A	29-May-21	07-Aug-21	05-Sep-21	99	
05-4410	Mechanical Shredder	105	105	0%	0%	105		30-Apr-21	12-Aug-21	21-Aug-21	03-Dec-21	113	
EP_SP_66_12-WP6A-M41.05.02.01.6 Site Master Layout Plan and Plant Layout (2.1.18)		105	105	0%		105		17-Jun-21	29-Sep-21	17-Jun-21	29-Sep-21	0	
05-3520	Site Master Layout Plan and Plant Layout	105	105	0%	0%	105		17-Jun-21	29-Sep-21	17-Jun-21	29-Sep-21	0	
EP_SP_66_12-WP6A-M41.05.02.01.7 Statutory Fire Compliance (2.1.26)		60	813	0%		62		10-Apr-19 A	30-Jun-21	13-Aug-21	13-Oct-21	105	
05-4420	Fire Safety Compliance	60	813	0%	0%	62		10-Apr-19 A	30-Jun-21	13-Aug-21	13-Oct-21	105	
EP_SP_66_12-WP6A-M41.05.02.02 DDA Ground Treatment, Reclamation, Seawall, Breakwater, Berth (2		996	1093	83.43%		165		15-Oct-18 A	11-Oct-21	30-Apr-21	27-Apr-22	198	
05-3430-2(M37)	Geotechnical Interpretative Report (2.2.02.02)	105	1018	14.29%	65%	90		15-Oct-18 A	28-Jul-21	30-Apr-21	28-Jul-21	0	
05-3450	Seawall design (2.2.20)	60	930	50%	65%	30		12-Nov-18 A	29-May-21	20-Jun-21	19-Jul-21	51	
05-3460	Breakwater design (2.2.21)	105	854	0%	65%	105		12-Apr-19 A	12-Aug-21	04-Dec-21	18-Mar-22	218	
05-3470	Berth design (2.2.22)	60	941	50%	65%	30		01-Nov-18 A	29-May-21	29-Mar-22	27-Apr-22	333	
05-3490	Onshore vessel power supply system (2.2.24)	135	135	0%	0%	135		30-May-21	11-Oct-21	15-Nov-21	29-Mar-22	169	
EP_SP_66_12-WP6A-M41.05.02.03 DDA Incineration Plant Buildings (2.3)		1017	1032	77.88%		225		13-Feb-19 A	10-Dec-21	30-Apr-21	04-Jun-23	541	
EP_SP_66_12-WP6A-M41.05.02.03.1 General Layout Drawings and Fire Saftey Strategy (2.3.25)		153	153	0%		153		30-May-21	29-Oct-21	31-May-21	03-Mar-22	125	
05-3290	Process Building	135	135	0%	0%	135		30-May-21	11-Oct-21	31-May-21	12-Oct-21	1	
05-3300	ACC Equipment Yard	135	135	0%	0%	135		30-May-21	11-Oct-21	20-Oct-21	03-Mar-22	143	
05-3310	Turbin Hall Building	135	135	0%	0%	135		17-Jun-21	29-Oct-21	06-Aug-21	18-Dec-21	50	
EP_SP_66_12-WP6A-M41.05.02.03.2 Foundation design (2.3.13)		215	215	0%		215		30-Apr-21	30-Nov-21	23-Aug-21	29-Apr-22	150	
05-3220	Process Building Waste Bunker, Tipping Hall, Basin Area and Workshop	137	137	0%	0%	137		30-Apr-21	13-Sep-21	23-Aug-21	06-Jan-22	115	



3-Month Rolling Programme (April 2021)

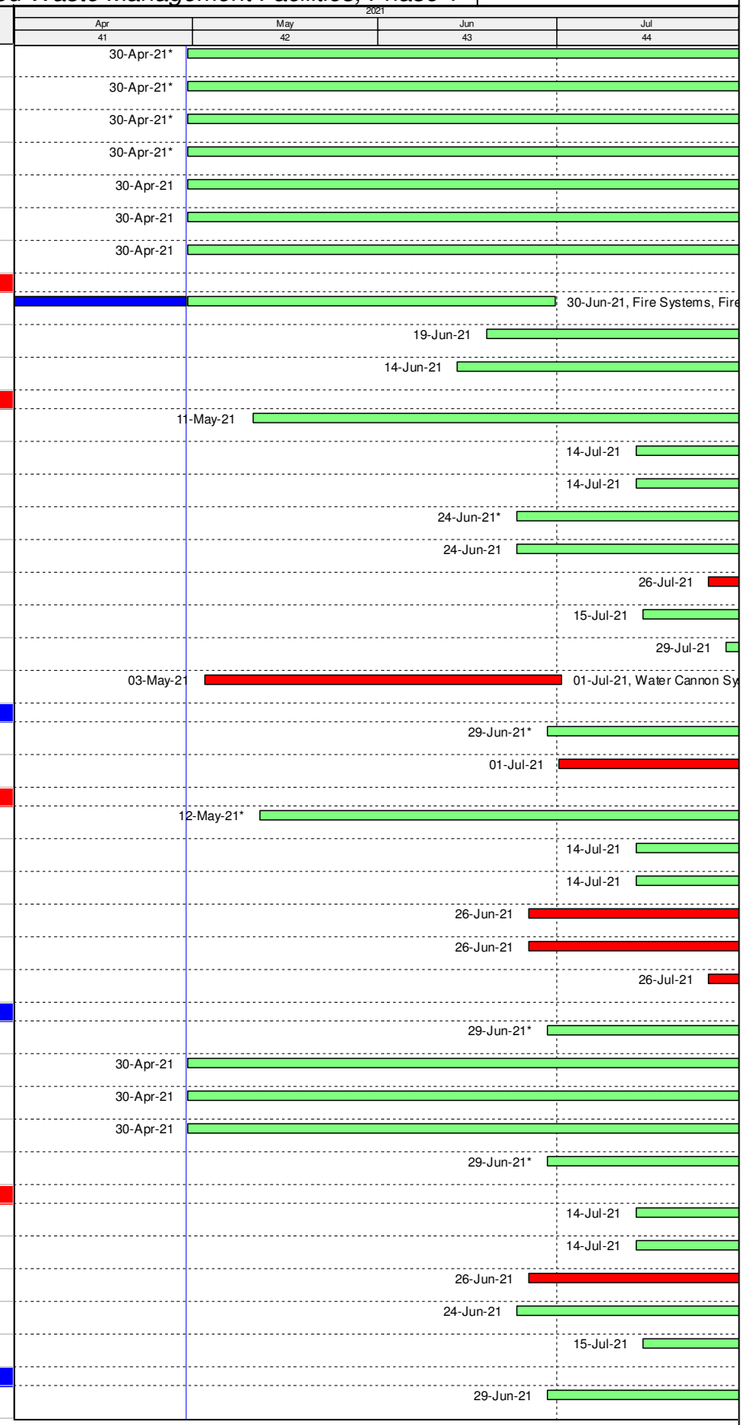
Activity ID	Activity Name	Original Duration	At Completion Duration	Duration % Complete	Activity % Complete	Remaining Duration	Primary Constraint	Current Start	Current Finish	Late Start	Late Finish	Total Float	M41 Remarks
05-3230	ACC Equipment Yard	137	137	0%	0%	137		17-Jul-21	30-Nov-21	14-Dec-21	29-Apr-22	150	
EP_SP_66_12-WP6A-M41.05.02.03.3	**Structural design (2.3.14)**	370	526	48.92%		189		28-May-20 A	04-Nov-21	26-Jun-21	04-Jun-23	577	
05-5340	ACC Equipment Yard	150	349	50%	65%	75	Start On or After	30-Jul-20 A	13-Jul-21	26-Jun-21	08-Sep-21	57	
05-5350	Turbin Hall Building (2.3.14.03)	189	189	0%	0%	189	Start On or After	30-Apr-21*	04-Nov-21	16-Apr-22	21-Oct-22	351	
05-5360	Compressor and CCCW Building	189	189	0%	0%	189	Start On or After	30-Apr-21*	04-Nov-21	28-Nov-22	04-Jun-23	577	
05-5380	Chimney, Elevated Drive Way and associated structures	189	189	0%	0%	189		30-Apr-21	04-Nov-21	10-Dec-21	16-Jun-22	224	
05-5390	Reception Pavilion Structural Design	189	526	0%	5%	189	Start On or After	28-May-20 A	04-Nov-21	04-Oct-22	10-Apr-23	522	
EP_SP_66_12-WP6A-M41.05.02.03.4	**Electrical and instrumentation works design (2.3.15)**	271	340	55.72%		120		22-Sep-20 A	27-Aug-21	28-Jun-21	28-Jun-22	305	
05-3360	11kV/380V Power Transformers and 11kV Earthing Transformer	105	265	57.14%	5%	45		22-Sep-20 A	13-Jun-21	15-May-22	28-Jun-22	380	
05-3370	E&IC Package 1 (Process Island)	120	120	0%	0%	120		30-Apr-21	27-Aug-21	28-Jun-21	25-Oct-21	59	
05-3380	E&IC Package 2 (Power Island)	165	248	27.27%	0%	120		23-Dec-20 A	27-Aug-21	28-Jun-21	25-Oct-21	59	
EP_SP_66_12-WP6A-M41.05.02.03.8	**Operation Management System (2.3.15.04)**	347	431	69.74%		105		08-Jun-20 A	12-Aug-21	16-Jan-22	30-Apr-22	261	
05-3390	Supervisory Control/Data Acquisition/Distributed Control (SCADA/DCS) System (12 Packages)	105	431	0%	5%	105		08-Jun-20 A	12-Aug-21	16-Jan-22	30-Apr-22	261	
05-3420	Automatic License Plate and Container Recoginition System (ALPCRS)	105	105	0%	0%	105		30-Apr-21	12-Aug-21	16-Jan-22	30-Apr-22	261	
EP_SP_66_12-WP6A-M41.05.02.03.5	**Mechanical works design (2.3.16)**	926	912	88.66%		105		13-Feb-19 A	12-Aug-21	30-Apr-21	21-Oct-22	435	
EP_SP_66_12-WP6A-M41.05.02.03.5.1	**Plant and Equipment**	897	912	88.29%		105		13-Feb-19 A	12-Aug-21	07-May-21	06-May-22	267	
05-3580	Weighbridge Systems	105	105	0%	0%	105		30-Apr-21	12-Aug-21	15-Jul-21	27-Oct-21	76	
05-3590	Waste Crane and Grapple System	105	287	28.57%	5%	75		30-Sep-20 A	13-Jul-21	06-Sep-21	19-Nov-21	129	
05-3600	Mechanical Shredder	105	253	52.38%	45%	50		09-Oct-20 A	18-Jun-21	30-May-21	18-Jul-21	30	
05-3610	Incineration System (9 Packages)	105	842	66.67%	5%	35		13-Feb-19 A	03-Jun-21	08-Sep-21	12-Oct-21	131	
05-3620	Heat Recovery Boiler (8 Packages)	105	817	2%	5%	103		17-May-19 A	10-Aug-21	07-May-21	17-Aug-21	7	
05-3630	Boiler Feed Water Systems (4 Packages)	105	689	66.67%	5%	35		16-Jul-19 A	03-Jun-21	12-Jun-21	16-Jul-21	43	
05-3640	Ash cranes	30	355	0%	0%	30		09-Jun-20 A	29-May-21	07-Aug-21	05-Sep-21	99	
05-3650	Leachate collection and treatment	105	262	52.38%	45%	50	Start On or After	30-Sep-20 A	18-Jun-21	30-May-21	18-Jul-21	30	
05-3790	Flue Gas Treatment System (12 Packages)	105	598	66.67%	5%	35		15-Oct-19 A	03-Jun-21	08-Sep-21	12-Oct-21	131	
05-3800	Boiler ash and APC residue handling and solidification	105	360	66.67%	5%	35	Start On or After	09-Jun-20 A	03-Jun-21	12-Jun-21	16-Jul-21	43	
05-3810	Steam Turbine Generator (STG) and Pressure Reducing and Desuperheating Station (PRDS)	105	349	28.57%	5%	75		30-Jul-20 A	13-Jul-21	30-Jul-21	12-Oct-21	91	
05-3820	Air cooled condenser	105	349	28.57%	5%	75		30-Jul-20 A	13-Jul-21	16-Jun-21	29-Aug-21	47	
05-3825(3)	Closed Circuit Cooling Water System	105	366	12.38%	5%	92		30-Jul-20 A	30-Jul-21	04-Feb-22	06-May-22	280	
05-3830	Compressed Air Plants	105	860	49.52%	5%	53		13-Feb-19 A	21-Jun-21	15-Mar-22	06-May-22	319	
EP_SP_66_12-WP6A-M41.05.02.03.5.2	**Process Pipeworks (Incl. Ductworks) and Valves**	531	820	80.23%		105		16-May-19 A	12-Aug-21	23-May-21	07-Jan-22	148	
05-3840	Process island (furnace-boiler-FGC)	105	797	21.9%	0%	82		16-May-19 A	20-Jul-21	13-Oct-21	02-Jan-22	166	
05-4350	Pipebridge A (Between Process island & Turbine Hall)	105	350	0%	5%	105		28-Aug-20 A	12-Aug-21	23-May-21	04-Sep-21	23	
05-4360	Compressed Air Plant area	105	105	0%	0%	105		30-Apr-21	12-Aug-21	04-Sep-21	17-Dec-21	127	
05-4370	Pipebridge B (Between CCCW Area & Turbine Hall)	105	320	28.57%	5%	75		28-Aug-20 A	13-Jul-21	30-May-21	12-Aug-21	30	
05-4380	Pipebridge C (Between Turbine Hall & ACC Equipment Yard)	105	350	0%	5%	105		28-Aug-20 A	12-Aug-21	23-May-21	04-Sep-21	23	
05-4950	Turbine Hall	105	105	0%	0%	105		30-Apr-21	12-Aug-21	25-Sep-21	07-Jan-22	148	
05-4960	ACC Equipment Yard	105	105	0%	0%	105		30-Apr-21	12-Aug-21	04-Sep-21	17-Dec-21	127	
05-4970	CCCW Area	105	105	0%	0%	105		30-Apr-21	12-Aug-21	04-Sep-21	17-Dec-21	127	
EP_SP_66_12-WP6A-M41.05.02.03.5.3	**Process steel structure support (For eqipment, piping & duct,**	376	349	80.05%		75		30-Jul-20 A	13-Jul-21	30-Apr-21	21-Oct-22	465	
05-3540	Pipebridge (Between Process island & Turbine Hall)	105	274	72.38%	5%	29		28-Aug-20 A	28-May-21	30-Apr-21	28-May-21	0	
05-3550	Turbine Hall	105	308	67.62%	0%	34		30-Jul-20 A	02-Jun-21	18-Sep-22	21-Oct-22	506	
05-3560	Pipebridge (Between CCCW Area & Turbine Hall)	105	320	28.57%	5%	75		28-Aug-20 A	13-Jul-21	30-May-21	12-Aug-21	30	
05-3570	Pipebridge (Between Turbine Hall & ACC Equipment Yard)	105	320	28.57%	5%	75		28-Aug-20 A	13-Jul-21	22-Jun-21	04-Sep-21	53	
EP_SP_66_12-WP6A-M41.05.02.03.5.4	**Equipment and piping insulation**	105	105	0%		105		30-Apr-21	12-Aug-21	17-May-21	17-Dec-21	127	
05-4500	Incineration System	105	105	0%	0%	105	Start On or After	30-Apr-21*	12-Aug-21	30-Jun-21	12-Oct-21	61	



3-Month Rolling Programme (April 2021)

Remaining Work
Actual Work
Critical Remaining Work
Milestone
Actual Milestone
Critical Milestone

Activity ID	Activity Name	Original Duration	At Completion Duration	Duration % Complete	Activity % Complete	Remaining Duration	Primary Constraint	Current Start	Current Finish	Late Start	Late Finish	Total Float	M41 Remarks
05-4510	Heat Recovery Boiler	105	105	0%	0%	105	Start On or After	30-Apr-21*	12-Aug-21	30-Jun-21	12-Oct-21	61	
05-4520	Boiler Feed Water Systems	105	105	0%	0%	105	Start On or After	30-Apr-21*	12-Aug-21	04-Sep-21	17-Dec-21	127	
05-4530	Flue Gas Treatment System	105	105	0%	0%	105	Start On or After	30-Apr-21*	12-Aug-21	30-Jun-21	12-Oct-21	61	
05-4540	Boiler ash and APC residue handling and solidification	105	105	0%	0%	105	Start On or After	30-Apr-21*	12-Aug-21	04-Sep-21	17-Dec-21	127	
05-4550	Steam Turbine Generator (STG) and Pressure Reducing and Desuperheating Station (PRDS)	105	105	0%	0%	105		30-Apr-21	12-Aug-21	30-Jun-21	12-Oct-21	61	
05-4560	Air cooled condenser	105	105	0%	0%	105		30-Apr-21	12-Aug-21	04-Sep-21	17-Dec-21	127	
05-4570	Closed Circuit Cooling Water System	105	105	0%	0%	105		30-Apr-21	12-Aug-21	17-May-21	29-Aug-21	17	
EP_SP_66_12-WP6A-M41.05.02.03.6 Fire services installation design (2.3.17)		211	901	28.91%		150		10-Apr-19 A	26-Sep-21	15-May-21	13-Oct-21	17	
05-3660	Fire Systems	90	813	31.11%	0%	62		10-Apr-19 A	30-Jun-21	15-May-21	15-Jul-21	15	
05-3670	Fire engineering	60	60	0%	0%	60		19-Jun-21	17-Aug-21	15-Aug-21	13-Oct-21	57	
05-3680	FS schematics	105	105	0%	0%	105		14-Jun-21	26-Sep-21	01-Jul-21	13-Oct-21	17	
EP_SP_66_12-WP6A-M41.05.02.03.7 Building services design (excluding fire services installation des		222	222	0%		222		03-May-21	10-Dec-21	03-May-21	30-Apr-22	141	
05-3690	Electrical Services and Lighting (7 Packages)	135	135	0%	0%	135		11-May-21	22-Sep-21	26-Jul-21	07-Dec-21	76	
05-3700	MVAC (6 Packages)	135	135	0%	0%	135		14-Jul-21	25-Nov-21	24-Oct-21	07-Mar-22	102	
05-3710	Odour Control	135	135	0%	0%	135		14-Jul-21	25-Nov-21	24-Oct-21	07-Mar-22	102	
05-3720	Plumbing (7 Packages)	135	135	0%	0%	135	Start On or After	24-Jun-21*	05-Nov-21	26-Jun-21	07-Nov-21	2	
05-3730	Drainage (7 Packages)	135	135	0%	0%	135		24-Jun-21	05-Nov-21	26-Jun-21	07-Nov-21	2	
05-3740	ELV (7 Packages)	135	135	0%	0%	135		26-Jul-21	07-Dec-21	26-Jul-21	07-Dec-21	0	
05-3750	Lifts and Escalators	135	135	0%	0%	135		15-Jul-21	26-Nov-21	04-Oct-21	15-Feb-22	81	
05-3770	Building Management System (BMS) ELV (7 Packages)	135	135	0%	0%	135		29-Jul-21	10-Dec-21	17-Dec-21	30-Apr-22	141	
05-3780-1(M20)	Water Cannon System	60	60	0%	0%	60		03-May-21	01-Jul-21	03-May-21	01-Jul-21	0	
EP_SP_66_12-WP6A-M41.05.02.04 DDA Mechanical Treatment Plant Building (2.4)		210	210	0%		210		12-May-21	07-Dec-21	26-Jun-21	19-Aug-22	255	
05-5160	Architectural Design (2.4.25)	105	105	0%	0%	105	Start On or After	29-Jun-21*	11-Oct-21	07-May-22	19-Aug-22	312	
05-5210	Fire services installation design (2.4.17)	105	105	0%	0%	105		01-Jul-21	13-Oct-21	01-Jul-21	13-Oct-21	0	
EP_SP_66_12-WP6A-M41.05.02.04.7 Building services design (excluding fire services installation des		210	210	0%		210		12-May-21	07-Dec-21	26-Jun-21	07-Mar-22	90	
05-3850	LV and Emergency Power Distribution Design	135	135	0%	0%	135	Start On or After	12-May-21*	23-Sep-21	26-Jul-21	07-Dec-21	75	
05-3860	MVAC	135	135	0%	0%	135		14-Jul-21	25-Nov-21	24-Oct-21	07-Mar-22	102	
05-3870	Odour Control	135	135	0%	0%	135		14-Jul-21	25-Nov-21	24-Oct-21	07-Mar-22	102	
05-3880	Plumbing	135	135	0%	0%	135		26-Jun-21	07-Nov-21	26-Jun-21	07-Nov-21	0	
05-3890	Drainage	135	135	0%	0%	135		26-Jun-21	07-Nov-21	26-Jun-21	07-Nov-21	0	
05-3900	Lighting and small power	135	135	0%	0%	135		26-Jul-21	07-Dec-21	26-Jul-21	07-Dec-21	0	
EP_SP_66_12-WP6A-M41.05.02.05 DDA Wastewater Treatment Plant (2.5)		211	211	0%		211		30-Apr-21	26-Nov-21	04-May-21	07-Mar-22	101	
05-3920	Architectural Design (2.5.25)	75	75	0%	0%	75	Start On or After	29-Jun-21*	11-Sep-21	08-Aug-21	21-Oct-21	40	
05-3930	Foundation design (2.5.13)	135	135	0%	0%	135		30-Apr-21	11-Sep-21	05-Sep-21	17-Jan-22	128	
05-3950	Electrical and instrumentation works design (2.5.15)	105	105	0%	0%	105		30-Apr-21	12-Aug-21	11-Jun-21	23-Sep-21	42	
05-3960	Mechanical works design (2.5.16) (2 Packages)	105	105	0%	0%	105		30-Apr-21	12-Aug-21	04-May-21	16-Aug-21	4	
05-3970	Fire services installation design (2.5.17) (2 Packages)	105	105	0%	0%	105	Start On or After	29-Jun-21*	11-Oct-21	01-Jul-21	13-Oct-21	2	
EP_SP_66_12-WP6A-M41.05.02.05.7 Building services design (excluding fire services installation des		156	156	0%		156		24-Jun-21	26-Nov-21	26-Jun-21	07-Mar-22	101	
05-3980	LV and Emergency Power Distribution Design for IWMF Waste Water Treatment Plant	135	135	0%	0%	135		14-Jul-21	25-Nov-21	26-Jul-21	07-Dec-21	12	
05-3990	MVAC	120	120	0%	0%	120		14-Jul-21	10-Nov-21	08-Nov-21	07-Mar-22	117	
05-4010	Plumbing	135	135	0%	0%	135		26-Jun-21	07-Nov-21	26-Jun-21	07-Nov-21	0	
05-4020	Drainage	135	135	0%	0%	135		24-Jun-21	05-Nov-21	26-Jun-21	07-Nov-21	2	
05-4030	ELV	135	135	0%	0%	135		15-Jul-21	26-Nov-21	26-Jul-21	07-Dec-21	11	
EP_SP_66_12-WP6A-M41.05.02.06 DDA Water Treatment Plant Building (2.6)		222	222	0%		222		30-Apr-21	07-Dec-21	11-Jun-21	16-Jul-22	221	
05-4050	Architectural Design (2.6.25)	105	105	0%	0%	105		29-Jun-21	11-Oct-21	08-Mar-22	20-Jun-22	252	



3-Month Rolling Programme (April 2021)

Remaining Work
Actual Work
Critical Remaining Work
Milestone
Actual Milestone
Critical Milestone

Activity ID	Activity Name	Original Duration	At Completion Duration	Duration % Complete	Activity % Complete	Remaining Duration	Primary Constraint	Current Start	Current Finish	Late Start	Late Finish	Total Float	M41 Remarks
05-4060	Foundation design (2.6.13)	180	180	0%	0%	180		30-Apr-21	26-Oct-21	18-Jan-22	16-Jul-22	263	
05-4080	Electrical and instrumentation works design (2.6.15)	105	105	0%	0%	105		30-Apr-21	12-Aug-21	11-Jun-21	23-Sep-21	42	
05-4090	Mechanical works design (2.6.16)	105	105	0%	0%	105		30-Apr-21	12-Aug-21	11-Jun-21	23-Sep-21	42	
05-4100	Fire services installation design (2.6.17)	105	105	0%	0%	105		24-Jun-21	06-Oct-21	01-Jul-21	13-Oct-21	7	
EP_SP_66_12-WP6A-M41.05.02.06.7 Building services design (excluding fire services installation des		165	165	0%		165		26-Jun-21	07-Dec-21	26-Jun-21	07-Mar-22	90	
05-4110	Electrical Services and Lighting	135	135	0%	0%	135		14-Jul-21	25-Nov-21	26-Jul-21	07-Dec-21	12	
05-4120	MVAC	135	135	0%	0%	135		14-Jul-21	25-Nov-21	24-Oct-21	07-Mar-22	102	
05-4140	Plumbing	135	135	0%	0%	135		26-Jun-21	07-Nov-21	26-Jun-21	07-Nov-21	0	
05-4150	Drainage	135	135	0%	0%	135		26-Jun-21	07-Nov-21	26-Jun-21	07-Nov-21	0	
05-4160	ELV	135	135	0%	0%	135		26-Jul-21	07-Dec-21	26-Jul-21	07-Dec-21	0	
EP_SP_66_12-WP6A-M41.05.02.07 DDA Administration Building (2.7)		156	156	0%		156		24-Jun-21	26-Nov-21	26-Jun-21	25-Jun-22	211	
05-4170	Architectural Design (2.7.21)	105	105	0%	0%	105	Start On or After	29-Jun-21*	11-Oct-21	13-Mar-22	25-Jun-22	257	
05-4210	Fire services installation design (2.7.14)	105	105	0%	0%	105		01-Jul-21	13-Oct-21	01-Jul-21	13-Oct-21	0	
EP_SP_66_12-WP6A-M41.05.02.07.6 Building services design (excluding fire services installation des		156	156	0%		156		24-Jun-21	26-Nov-21	26-Jun-21	07-Mar-22	101	
05-4220	Electrical Services and Lighting	135	135	0%	0%	135		14-Jul-21	25-Nov-21	26-Jul-21	07-Dec-21	12	
05-4230	MVAC	135	135	0%	0%	135		14-Jul-21	25-Nov-21	24-Oct-21	07-Mar-22	102	
05-4250	Plumbing	135	135	0%	0%	135		24-Jun-21	05-Nov-21	26-Jun-21	07-Nov-21	2	
05-4260	Drainage	135	135	0%	0%	135		26-Jun-21	07-Nov-21	26-Jun-21	07-Nov-21	0	
05-4270	ELV	135	135	0%	0%	135		15-Jul-21	26-Nov-21	26-Jul-21	07-Dec-21	11	
EP_SP_66_12-WP6A-M41.05.02.08 DDA IWMF Substation (2.8)		276	628	27.54%		200		27-Feb-20 A	15-Nov-21	12-May-21	21-Jul-22	248	
05-4290	Architectural Design (2.8.25)	105	105	0%	0%	105	Start On or After	30-Apr-21*	12-Aug-21	08-Jan-22	22-Apr-22	253	
05-4300	Foundation design (2.8.13)	200	200	0%	0%	200		30-Apr-21	15-Nov-21	02-Sep-21	20-Mar-22	125	
05-4310	Structural design (2.8.14)	195	623	0%	5%	195		27-Feb-20 A	10-Nov-21	08-Jan-22	21-Jul-22	253	
05-4320	Electrical and instrumentation works design (2.8.15)	135	135	0%	0%	135		12-May-21	23-Sep-21	12-May-21	23-Sep-21	0	
05-4340	Fire services installation design (2.8.17)	135	135	0%	0%	135		01-Jun-21	13-Oct-21	01-Jun-21	13-Oct-21	0	
EP_SP_66_12-WP6A-M41.05.02.08.7 Building services design (excluding fire services installation des		135	135	0%		135		30-Apr-21	11-Sep-21	26-Jun-21	30-Apr-22	231	
05-4990	Electrical Services and Lighting	135	135	0%	0%	135		30-Apr-21	11-Sep-21	26-Jul-21	07-Dec-21	87	
05-5000	MVAC	135	135	0%	0%	135		30-Apr-21	11-Sep-21	24-Oct-21	07-Mar-22	177	
05-5010	Plumbing	135	135	0%	0%	135		30-Apr-21	11-Sep-21	26-Jun-21	07-Nov-21	57	
05-5020	Drainage	135	135	0%	0%	135		30-Apr-21	11-Sep-21	26-Jun-21	07-Nov-21	57	
05-5030	ELV	135	135	0%	0%	135		30-Apr-21	11-Sep-21	26-Jul-21	07-Dec-21	87	
05-5030-1(M20)	Building Management System (BMS)	135	135	0%	0%	135		30-Apr-21	11-Sep-21	17-Dec-21	30-Apr-22	231	
EP_SP_66_12-WP6A-M41.05.02.1 DDA Chimney		135	135	0%		135		28-Jul-21	09-Dec-21	20-Dec-21	03-May-22	145	
EP_SP_66_12-WP6A-M41.05.02.1.1 Building services design (excluding fire services installation desi		135	135	0%		135		28-Jul-21	09-Dec-21	20-Dec-21	03-May-22	145	
05-6060(5a)	Building Management System (BMS)	135	135	0%	0%	135		28-Jul-21	09-Dec-21	20-Dec-21	03-May-22	145	
EP_SP_66_12-WP6A-M41.05.02.09 DDA Air Quality Monitoring Stations (2.9)		105	105	0%		105		13-Jun-21	25-Sep-21	26-Mar-23	08-Jul-23	651	
05-4490	Design of the Air Quality Monitoring Stations (2.9.03)	105	105	0%	0%	105		13-Jun-21	25-Sep-21	26-Mar-23	08-Jul-23	651	
EP_SP_66_12-WP6A-M41.05.02.10 DDA Roads and Utilities (2.10)		225	323	0%		225		22-Jan-21 A	10-Dec-21	30-Apr-21	19-Dec-23	739	
EP_SP_66_12-WP6A-M41.05.02.10.1 Permanent road works layout on the Artificial Island (2.10.13)		135	135	0%		135		30-Apr-21	11-Sep-21	25-Mar-23	19-Dec-23	829	
05-4470	Roads and hardstandings layout	135	135	0%	0%	135		30-Apr-21	11-Sep-21	25-Mar-23	06-Aug-23	694	
05-4480	Road signage and markings	135	135	0%	0%	135		30-Apr-21	11-Sep-21	07-Aug-23	19-Dec-23	829	
EP_SP_66_12-WP6A-M41.05.02.10.2 Sewerage design on the Artificial Island (2.10.14)		135	135	0%		135		30-Apr-21	11-Sep-21	26-Jun-21	10-Sep-22	364	
05-4430	Foul Sewerage	135	135	0%	0%	135		30-Apr-21	11-Sep-21	26-Jun-21	07-Nov-21	57	
05-4440	Contaminated Sewerage	135	135	0%	0%	135		30-Apr-21	11-Sep-21	29-Apr-22	10-Sep-22	364	
EP_SP_66_12-WP6A-M41.05.02.10.3 Drainage system design on the Artificial Island (2.10.15)		135	135	0%		135		30-Apr-21	11-Sep-21	26-Jun-21	14-Nov-21	64	
05-5310	Surface water Drainage System	135	135	0%	0%	135		30-Apr-21	11-Sep-21	26-Jun-21	07-Nov-21	57	
05-5320	First Flush Drainage System concept	135	135	0%	0%	135		30-Apr-21	11-Sep-21	03-Jul-21	14-Nov-21	64	
EP_SP_66_12-WP6A-M41.05.02.10.4 Water supply system design on the Artificial Island (2.10.16)		225	225	0%		225		30-Apr-21	10-Dec-21	26-Jun-21	21-Aug-22	254	

3-Month Rolling Programme (April 2021)

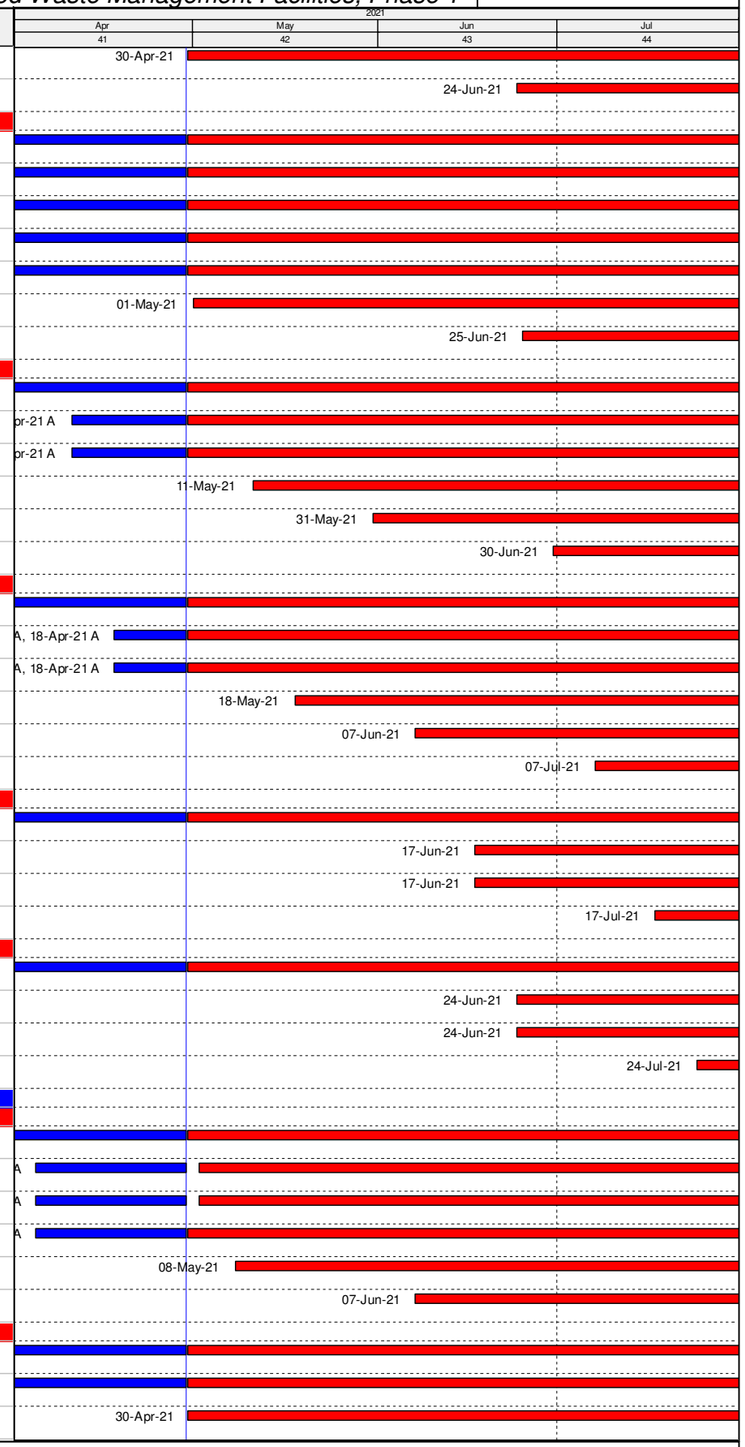
Remaining Work
Actual Work
Critical Remaining Work
Milestone
Actual Milestone
Critical Milestone

Activity ID	Activity Name	Original Duration	At Completion Duration	Duration % Complete	Activity % Complete	Remaining Duration	Primary Constraint	Current Start	Current Finish	Late Start	Late Finish	Total Float	M41 Remarks
05-5250	Potable Water Distribution System	135	135	0%	0%	135		30-Apr-21	11-Sep-21	09-Apr-22	21-Aug-22	344	
05-5260	Recycled Water System	135	135	0%	0%	135		30-Apr-21	11-Sep-21	09-Apr-22	21-Aug-22	344	
05-5270	Irrigation System	135	135	0%	0%	135		30-Apr-21	11-Sep-21	26-Jun-21	07-Nov-21	57	
05-5280	Rainwater harvesting System	135	135	0%	0%	135		26-Jun-21	07-Nov-21	26-Jun-21	07-Nov-21	0	
05-5300-1(M24)	E&M system for seawater intake and brine discharge (2.10.04.07)	90	90	0%	0%	90		30-May-21	27-Aug-21	28-Jul-21	25-Oct-21	59	
05-5300-2(M24)	Building Services system for seawater intake and brine discharge (2.10.04.09)	90	90	0%	0%	90		29-Jul-21	26-Oct-21	10-Aug-21	07-Nov-21	12	
05-5300-3(5a)	Chemical scrubber system for odour control (2.10.16.10)	135	135	0%	0%	135		29-Jul-21	10-Dec-21	24-Oct-21	07-Mar-22	87	
EP_SP_66_12-WP6A-M41.05.02.10.6 Design of telecommunication and other utilities (2.10.18)		180	180	0%		180		30-Apr-21	26-Oct-21	13-Jun-21	06-Aug-23	649	
05-3400 (M21)	Computerised Maintenance Management System (CMMS)	105	105	0%	0%	105		14-Jul-21	26-Oct-21	16-Jan-22	30-Apr-22	186	
05-3410 (M21)	Information and Document Management System (IDMS)	105	105	0%	0%	105		14-Jul-21	26-Oct-21	16-Jan-22	30-Apr-22	186	
05-4590	Site Lighting Concept / Schematics	135	135	0%	0%	135		30-Apr-21	11-Sep-21	25-Mar-23	06-Aug-23	694	
05-4600	Lightning Protection System concept / schematics	135	135	0%	0%	135		30-Apr-21	11-Sep-21	13-Jun-21	25-Oct-21	44	
EP_SP_66_12-WP6A-M41.05.02.10.7 Utility ducts/Pipebridges design (2.10.26)		181	323	0%		225		22-Jan-21 A	10-Dec-21	30-Apr-21	24-Dec-22	379	
05-5040	Design of Pipe / Utilities Trenches concept	135	135	0%	0%	135		29-Jul-21	10-Dec-21	12-Aug-22	24-Dec-22	379	
05-5050	Sitewide Utilities Trenches Design	135	135	0%	0%	135		29-Jul-21	10-Dec-21	12-Aug-22	24-Dec-22	379	
05-5430	Pipebridge network - Layout	135	187	34.07%	34.07%	89		22-Jan-21 A	27-Jul-21	30-Apr-21	27-Jul-21	0	
05-5440	Pipebridge network - Foundation Plan	135	187	34.07%	34.07%	89		22-Jan-21 A	27-Jul-21	30-Apr-21	27-Jul-21	0	
05-5450	Pipebridge network - Structure Plan	135	187	34.07%	34.07%	89		22-Jan-21 A	27-Jul-21	30-Apr-21	27-Jul-21	0	
EP_SP_66_12-WP6A-M41.05.02.11 DDA Architectural, Finishes and Landscaping Works (2.11)		152	152	0%		152		30-May-21	28-Oct-21	04-Jul-21	25-Apr-22	179	
EP_SP_66_12-WP6A-M41.05.02.11.1 External and internal finishes design for Incineration Plant Build		137	137	0%		137		30-May-21	13-Oct-21	05-Sep-21	25-Apr-22	194	
05-4670	External and internal finishes design for Incineration Plant Building (13 Packages)	137	137	0%	0%	137	Start On or After	30-May-21*	13-Oct-21	26-Oct-21	11-Mar-22	149	
05-4690	External and internal finishes design for Turbine Hall Building (7 Packages)	137	137	0%	0%	137	Start On or After	30-May-21*	13-Oct-21	05-Sep-21	19-Jan-22	98	
05-4700	External and internal finishes design for Air Compressor Building (7 Packages)	137	137	0%	0%	137	Start On or After	30-May-21*	13-Oct-21	06-Dec-21	21-Apr-22	190	
05-4720	External and internal finishes design for Reception Pavilion (10 Packages)	137	137	0%	0%	137	Start On or After	30-May-21*	13-Oct-21	10-Dec-21	25-Apr-22	194	
EP_SP_66_12-WP6A-M41.05.02.11.6 External and internal finishes design for the IWMF Substation (2		137	137	0%		137		14-Jun-21	28-Oct-21	04-Jul-21	17-Nov-21	20	
05-4770	External and internal finishes design for the IWMF Substation	137	137	0%	0%	137		14-Jun-21	28-Oct-21	04-Jul-21	17-Nov-21	20	
EP_SP_66_12-WP6A-M41.05.02.12 DDA Testing and Commissioning (2.12)		616	918	70.78%		180		23-Apr-19 A	26-Oct-21	12-Oct-21	13-Jul-22	260	
05-4810	Factory Acceptance Testing plan (2.12.09.01) (1 Packages)	60	60	0%	0%	60		30-Apr-21	28-Jun-21	16-Nov-21	14-Jan-22	200	
05-4810-1(5a)	Factory Acceptance Testing plan (2.12.09.02-07) (8 Packages)	60	798	0%	5%	60		23-Apr-19 A	28-Jun-21	16-Nov-21	14-Jan-22	200	
05-4820	Site Acceptance Testing plan (2.12.10)	105	105	0%	0%	105		14-Jul-21	26-Oct-21	12-Oct-21	24-Jan-22	90	
05-5430(M38)	Construction Plan for Prefabs 1-2-3 (2.12.09.07)	105	105	0%	0%	105		30-Apr-21	12-Aug-21	31-Mar-22	13-Jul-22	335	
EP_SP_66_12-WP6A-M41.06 Procurement of Major Equipment		1331	1530	63.71%		483		18-Jun-18 A	25-Aug-22	25-Apr-21	08-Jul-23	317	
EP_SP_66_12-WP6A-M41.06.1 Off-site Fabrication of Incineration Modules		1331	1519	63.71%		483		29-Jun-18 A	25-Aug-22	25-Apr-21	25-Aug-22	0	
EP_SP_66_12-WP6A-M41.06.1.25 Material Procurement		821	1064	96.59%		28		29-Jun-18 A	27-May-21	11-May-21	14-Jul-21	48	
06-1000-1(1)	Mechanical Equipment Material Submission and Approval	180	1031	97.22%	97.22%	5		09-Jul-18 A	04-May-21	10-Jul-21	14-Jul-21	71	
06-1000-2(1)	Pipe Material Submission and Approval	90	554	94.44%	92%	5		29-Oct-19 A	04-May-21	03-Jun-21	07-Jun-21	34	
06-1000-3(1)	Electircal and Instrumentation Material Submission and Approval	90	554	94.44%	94.44%	5		29-Oct-19 A	04-May-21	23-Jun-21	27-Jun-21	54	
06-1010-1(1)	Mechanical Equipment Procurement (incl. FAT)	360	1064	92.22%	92.22%	28		29-Jun-18 A	27-May-21	17-Jun-21	14-Jul-21	48	
06-1010-2(1)	Pipe Material Procurement (incl. FAT)	23	577	0%	0%	28		29-Oct-19 A	27-May-21	11-May-21	07-Jun-21	11	
06-1010-3(1)	Electircal and Instrumentation Material Procurement (Incl. FAT)	0	577	0%	0%	28		29-Oct-19 A	27-May-21	31-May-21	27-Jun-21	31	
EP_SP_66_12-WP6A-M41.06.1.26 Fabrication of Module (TPU)		600	1187	22%		468		12-May-19 A	10-Aug-22	25-Apr-21	10-Aug-22	0	
EP_SP_66_12-WP6A-M41.06.1.26.1 Process Island Furnace Boiler Liner 1		600	1174	24.17%		455		12-May-19 A	28-Jul-22	25-Apr-21	23-Jul-22	-5	
06-2010 (6)	Process Island Furnace Boiler Liner 1 Structure Cutting, Painting, Pre-assembly & Erection	600	979	56.67%	56.67%	260		12-May-19 A	14-Jan-22	30-Apr-21	14-Jan-22	0	
06-2020 (6)	Process Island Furnace Boiler Liner 1 Equipment Fabrication	520	379	44.23%	44.23%	290		31-Jan-21 A	13-Feb-22	30-Apr-21	13-Feb-22	0	
06-2030 (6)	Process Island Furnace Boiler Liner 1 Equipment Installation	520	379	44.23%	44.23%	290		31-Jan-21 A	13-Feb-22	30-Apr-21	13-Feb-22	0	
06-2040 (6)	Process Island Furnace Boiler Liner 1 Piping Fabrication & installation	375	376	14.67%	14.67%	320		05-Mar-21 A	15-Mar-22	30-Apr-21	15-Mar-22	0	
06-2050 (6)	Process Island Furnace Boiler Liner 1 Electircal & Instrumentation Fabrication & installation	375	365	2.67%	2.67%	365		30-Apr-21 A	29-Apr-22	30-Apr-21	29-Apr-22	0	

3-Month Rolling Programme (April 2021)

Remaining Work
Actual Work
Critical Remaining Work
Milestone
Actual Milestone
Critical Milestone

Activity ID	Activity Name	Original Duration	At Completion Duration	Duration % Complete	Activity % Complete	Remaining Duration	Primary Constraint	Current Start	Current Finish	Late Start	Late Finish	Total Float	M41 Remarks
06-2060 (6)	Process Island Furnace Boiler Liner 1 Pre-commissioning (FAT)	400	400	0%	0%	400		30-Apr-21	03-Jun-22	25-Apr-21	29-May-22	-5	
06-2070 (6)	Process Island Furnace Boiler Liner 1 Insulation	400	400	0%	0%	400		24-Jun-21	28-Jul-22	19-Jun-21	23-Jul-22	-5	
EP_SP_66_12-WP6A-M41.06.1.26.2 Process Island Furnace Boiler Liner 2		600	545	24%		456		31-Jan-21 A	29-Jul-22	30-Apr-21	29-Jul-22	0	
06-2100 (6)	Process Island Furnace Boiler Liner 2 Structure Cutting, Painting, Pre-assembly & Erection	600	355	55.67%	55.67%	266		31-Jan-21 A	20-Jan-22	30-Apr-21	20-Jan-22	0	
06-2110 (6)	Process Island Furnace Boiler Liner 2 Equipment Fabrication	375	352	21.07%	21.07%	296		05-Mar-21 A	19-Feb-22	30-Apr-21	19-Feb-22	0	
06-2120 (6)	Process Island Furnace Boiler Liner 2 Equipment Installation	375	352	21.07%	21.07%	296		05-Mar-21 A	19-Feb-22	30-Apr-21	19-Feb-22	0	
06-2130 (6)	Process Island Furnace Boiler Liner 2 Piping Fabrication & installation	375	375	13.07%	13.07%	326		12-Mar-21 A	21-Mar-22	30-Apr-21	21-Mar-22	0	
06-2140 (6)	Process Island Furnace Boiler Liner 2 Electircal & Instrumentation Fabrication & installation	400	400	7.25%	7.25%	371		01-Apr-21 A	05-May-22	30-Apr-21	05-May-22	0	
06-2150 (6)	Process Island Furnace Boiler Liner 2 Pre-commissioning (FAT)	400	400	0%	0%	400		01-May-21	04-Jun-22	01-May-21	04-Jun-22	0	
06-2160 (6)	Process Island Furnace Boiler Liner 2 Insulation	400	400	0%	0%	400		25-Jun-21	29-Jul-22	25-Jun-21	29-Jul-22	0	
EP_SP_66_12-WP6A-M41.06.1.26.3 Process Island Furnace Boiler Liner 3		600	550	23.17%		461		31-Jan-21 A	03-Aug-22	30-Apr-21	03-Aug-22	0	
06-2190 (6)	Process Island Furnace Boiler Liner 3 Structure Cutting, Painting, Pre-assembly & Erection	600	415	45.67%	45.67%	326		31-Jan-21 A	21-Mar-22	30-Apr-21	21-Mar-22	0	
06-2200 (6)	Process Island Furnace Boiler Liner 3 Equipment Fabrication	375	375	5.07%	5.07%	356		11-Apr-21 A	20-Apr-22	30-Apr-21	20-Apr-22	0	
06-2210 (6)	Process Island Furnace Boiler Liner 3 Equipment Installation	375	375	5.07%	5.07%	356		11-Apr-21 A	20-Apr-22	30-Apr-21	20-Apr-22	0	
06-2220 (6)	Process Island Furnace Boiler Liner 3 Piping Fabrication & installation	375	375	0%	0%	375		11-May-21	20-May-22	11-May-21	20-May-22	0	
06-2230 (6)	Process Island Furnace Boiler Liner 3 Electircal & Instrumentation Fabrication & installation	400	400	0%	0%	400		31-May-21	04-Jul-22	31-May-21	04-Jul-22	0	
06-2240 (6)	Process Island Furnace Boiler Liner 3 Pre-commissioning (FAT)	400	400	0%	0%	400		30-Jun-21	03-Aug-22	30-Jun-21	03-Aug-22	0	
EP_SP_66_12-WP6A-M41.06.1.26.4 Process Island Furnace Boiler Liner 4		600	557	22%		468		31-Jan-21 A	10-Aug-22	30-Apr-21	10-Aug-22	0	
06-2280 (6)	Process Island Furnace Boiler Liner 4 Structure Cutting, Painting, Pre-assembly & Erection	600	422	44.5%	44.5%	333		31-Jan-21 A	28-Mar-22	30-Apr-21	28-Mar-22	0	
06-2290 (6)	Process Island Furnace Boiler Liner 4 Equipment Fabrication	375	375	3.2%	3.2%	363		18-Apr-21 A	27-Apr-22	30-Apr-21	27-Apr-22	0	
06-2300 (6)	Process Island Furnace Boiler Liner 4 Equipment Installation	375	375	3.2%	3.2%	363		18-Apr-21 A	27-Apr-22	30-Apr-21	27-Apr-22	0	
06-2310 (6)	Process Island Furnace Boiler Liner 4 Piping Fabrication & installation	375	375	0%	0%	375		18-May-21	27-May-22	18-May-21	27-May-22	0	
06-2320 (6)	Process Island Furnace Boiler Liner 4 Electircal & Instrumentation Fabrication & installation	400	400	0%	0%	400		07-Jun-21	11-Jul-22	07-Jun-21	11-Jul-22	0	
06-2330 (6)	Process Island Furnace Boiler Liner 4 Pre-commissioning (FAT)	400	400	0%	0%	400		07-Jul-21	10-Aug-22	07-Jul-21	10-Aug-22	0	
EP_SP_66_12-WP6A-M41.06.1.26.5 Process Island Furnace Boiler Liner 5		600	542	24.5%		453		31-Jan-21 A	26-Jul-22	30-Apr-21	26-Jul-22	0	
06-2370 (6)	Process Island Furnace Boiler Liner 5 Structure Cutting, Painting, Pre-assembly & Erection	600	482	34.5%	34.5%	393		31-Jan-21 A	27-May-22	30-Apr-21	27-May-22	0	
06-2380 (6)	Process Island Furnace Boiler Liner 5 Equipment Fabrication	375	375	0%	0%	375		17-Jun-21	26-Jun-22	17-Jun-21	26-Jun-22	0	
06-2390 (6)	Process Island Furnace Boiler Liner 5 Equipment Installation	375	375	0%	0%	375		17-Jun-21	26-Jun-22	17-Jun-21	26-Jun-22	0	
06-2400 (6)	Process Island Furnace Boiler Liner 5 Piping Fabrication & installation	375	375	0%	0%	375		17-Jul-21	26-Jul-22	17-Jul-21	26-Jul-22	0	
EP_SP_66_12-WP6A-M41.06.1.26.6 Process Island Furnace Boiler Liner 6		521	549	11.71%		460		31-Jan-21 A	02-Aug-22	30-Apr-21	02-Aug-22	0	
06-2460 (6)	Process Island Furnace Boiler Liner 6 Structure Cutting, Painting, Pre-assembly & Erection	495	474	22.22%	22.22%	385		31-Jan-21 A	19-May-22	30-Apr-21	19-May-22	0	
06-2470 (6)	Process Island Furnace Boiler Liner 6 Equipment Fabrication	375	375	0%	0%	375		24-Jun-21	03-Jul-22	24-Jun-21	03-Jul-22	0	
06-2480 (6)	Process Island Furnace Boiler Liner 6 Equipment Installation	375	375	0%	0%	375		24-Jun-21	03-Jul-22	24-Jun-21	03-Jul-22	0	
06-2490 (6)	Process Island Furnace Boiler Liner 6 Piping Fabrication & installation	375	375	0%	0%	375		24-Jul-21	02-Aug-22	24-Jul-21	02-Aug-22	0	
EP_SP_66_12-WP6A-M41.06.1.7 Fabrication of Module (FGC)		556	572	13.13%		483		31-Jan-21 A	25-Aug-22	30-Apr-21	25-Aug-22	0	
EP_SP_66_12-WP6A-M41.06.1.7.1 Process Island FGC Liner 1		499	527	12.22%		438		31-Jan-21 A	11-Jul-22	30-Apr-21	11-Jul-22	0	
06-2000 (6)	Process Island FGC Liner 1 Structure Cutting, Painting, Pre-assembly & Erection	495	392	38.79%	38.79%	303		31-Jan-21 A	26-Feb-22	30-Apr-21	26-Feb-22	0	
06-2550 (6)	Process Island FGC Liner 1 Equipment Fabrication	375	358	11.73%	11.73%	331		05-Apr-21 A	28-Mar-22	02-May-21	28-Mar-22	0	
06-2560 (6)	Process Island FGC Liner 1 Equipment Installation	375	358	11.73%	11.73%	331		05-Apr-21 A	28-Mar-22	02-May-21	28-Mar-22	0	
06-2570 (6)	Process Island FGC Liner 1 Piping Fabrication & installation	375	388	3.2%	3.2%	363		05-Apr-21 A	27-Apr-22	30-Apr-21	27-Apr-22	0	
06-2580 (6)	Process Island FGC Liner 1 Electircal & Instrumentation Fabrication & installation	400	400	0%	0%	400		08-May-21	11-Jun-22	08-May-21	11-Jun-22	0	
06-2590 (6)	Process Island FGC Liner 1 Pre-commissioning (FAT)	400	400	0%	0%	400		07-Jun-21	11-Jul-22	07-Jun-21	11-Jul-22	0	
EP_SP_66_12-WP6A-M41.06.1.7.2 Process Island FGC Liner 2		507	535	12.03%		446		31-Jan-21 A	19-Jul-22	30-Apr-21	19-Jul-22	0	
06-2630 (6)	Process Island FGC Liner 2 Structure Cutting, Painting, Pre-assembly & Erection	495	400	37.17%	37.17%	311		31-Jan-21 A	06-Mar-22	30-Apr-21	06-Mar-22	0	
06-2640 (6)	Process Island FGC Liner 2 Equipment Fabrication	375	375	9.07%	9.07%	341		27-Mar-21 A	05-Apr-22	30-Apr-21	05-Apr-22	0	
06-2650 (6)	Process Island FGC Liner 2 Equipment Installation	341	341	0%	0%	341		30-Apr-21	05-Apr-22	30-Apr-21	05-Apr-22	0	



3-Month Rolling Programme (April 2021)

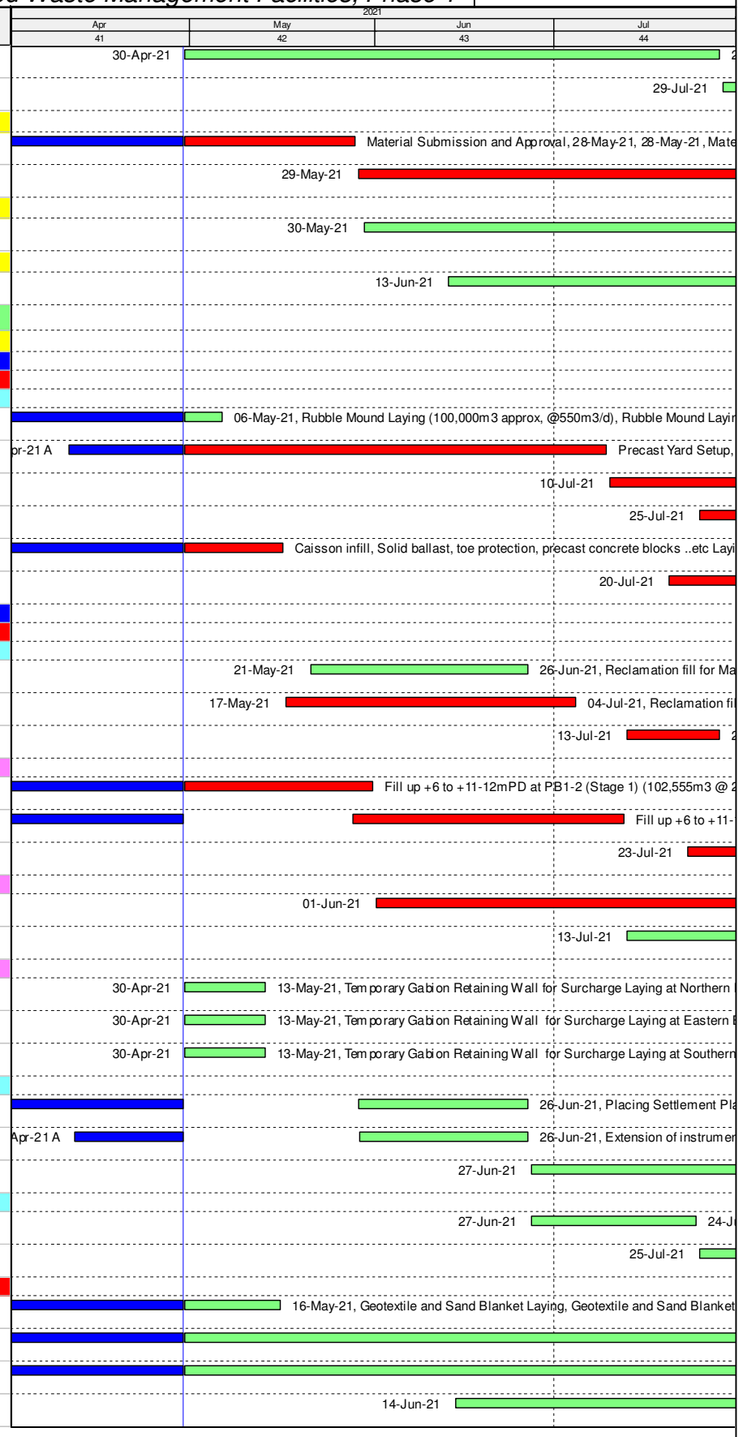
Remaining Work
Actual Work
Critical Remaining Work
Milestone
Actual Milestone
Critical Milestone

Activity ID	Activity Name	Original Duration	At Completion Duration	Duration % Complete	Activity % Complete	Remaining Duration	Primary Constraint	Current Start	Current Finish	Late Start	Late Finish	Total Float	M41 Remarks
06-2660 (6)	Process Island FGC Liner 2 Piping Fabrication & installation	375	375	1.07%	1.07%	371		26-Apr-21 A	05-May-22	30-Apr-21	05-May-22	0	
06-2670 (6)	Process Island FGC Liner 2 Electircal & Instrumentation Fabrication & installation	400	400	0%	0%	400		16-May-21	19-Jun-22	16-May-21	19-Jun-22	0	
06-2680 (6)	Process Island FGC Liner 2 Pre-commissioning (FAT)	400	400	0%	0%	400		15-Jun-21	19-Jul-22	15-Jun-21	19-Jul-22	0	
EP_SP_66_12-WP6A-M41.06.1.7.3 Process Island FGC Liner 3		537	565	11.36%		476		31-Jan-21 A	18-Aug-22	30-Apr-21	18-Aug-22	0	
06-2720 (6)	Process Island FGC Liner 3 Structure Cutting, Painting, Pre-assembly & Erection	495	460	25.05%	25.05%	371		31-Jan-21 A	05-May-22	30-Apr-21	05-May-22	0	
06-2730 (6)	Process Island FGC Liner 3 Equipment Fabrication	375	375	0%	0%	375		26-May-21	04-Jun-22	26-May-21	04-Jun-22	0	
06-2740 (6)	Process Island FGC Liner 3 Equipment Installation	375	375	0%	0%	375		26-May-21	04-Jun-22	26-May-21	04-Jun-22	0	
06-2750 (6)	Process Island FGC Liner 3 Piping Fabrication & installation	375	375	0%	0%	375		25-Jun-21	04-Jul-22	25-Jun-21	04-Jul-22	0	
06-2760 (6)	Process Island FGC Liner 3 Electircal & Instrumentation Fabrication & installation	400	400	0%	0%	400		15-Jul-21	18-Aug-22	15-Jul-21	18-Aug-22	0	
EP_SP_66_12-WP6A-M41.06.1.7.4 Process Island FGC Liner 4		483	544	0%		483		28-Feb-21 A	25-Aug-22	30-Apr-21	25-Aug-22	0	
06-2810 (6)	Process Island FGC Liner 4 Structure Cutting, Painting, Pre-assembly & Erection	439	439	13.9%	13.9%	378		28-Feb-21 A	12-May-22	30-Apr-21	12-May-22	0	
06-2820 (6)	Process Island FGC Liner 4 Equipment Fabrication	375	375	0%	0%	375		02-Jun-21	11-Jun-22	02-Jun-21	11-Jun-22	0	
06-2830 (6)	Process Island FGC Liner 4 Equipment Installation	375	375	0%	0%	375		02-Jun-21	11-Jun-22	02-Jun-21	11-Jun-22	0	
06-2840 (6)	Process Island FGC Liner 4 Piping Fabrication & installation	375	375	0%	0%	375		02-Jul-21	11-Jul-22	02-Jul-21	11-Jul-22	0	
06-2850 (6)	Process Island FGC Liner 4 Electircal & Instrumentation Fabrication & installation	400	400	0%	0%	400		22-Jul-21	25-Aug-22	22-Jul-21	25-Aug-22	0	
EP_SP_66_12-WP6A-M41.06.1.7.5 Process Island FGC Liner 5		495	495	11.52%		438		04-Mar-21 A	11-Jul-22	30-Apr-21	11-Jul-22	0	
06-2900 (6)	Process Island FGC Liner 5 Structure Cutting, Painting, Pre-assembly & Erection	495	495	11.52%	11.52%	438		04-Mar-21 A	11-Jul-22	30-Apr-21	11-Jul-22	0	
EP_SP_66_12-WP6A-M41.06.1.7.6 Process Island FGC Liner 6		495	519	13.13%		430		31-Jan-21 A	03-Jul-22	30-Apr-21	03-Jul-22	0	
06-2990 (6)	Process Island FGC Liner 6 Structure Cutting, Painting, Pre-assembly & Erection	495	519	13.13%	13.13%	430		31-Jan-21 A	03-Jul-22	30-Apr-21	03-Jul-22	0	
EP_SP_66_12-WP6A-M41.06.2 Off-site Fabrication of Turbine Modules		587	1392	41.23%		345		18-Jun-18 A	09-Apr-22	30-Apr-21	01-Aug-22	114	
EP_SP_66_12-WP6A-M41.06.2.1 Material Procurement		546	1345	45.42%		298		18-Jun-18 A	21-Feb-22	30-Apr-21	21-Feb-22	0	
06-1050-2(1)	Pipe Material Submission and Approval	90	90	0%	0%	90		15-May-21	12-Aug-21	10-Oct-21	07-Jan-22	148	
06-1050-3(1)	Electircal and Instrumentation Material Submission and Approval	90	90	0%	0%	90		30-Apr-21	28-Jul-21	24-Nov-21	21-Feb-22	208	
06-1060-1(1)	Mechanical Equipment Procurement (Incl. FAT)	380	1255	45.26%	45.26%	208		18-Jun-18 A	23-Nov-21	30-Apr-21	23-Nov-21	0	
06-1060-2(1)	Pipe Material Procurement (Incl. FAT)	180	612	0%	0%	215		29-Mar-20 A	30-Nov-21	07-Jun-21	07-Jan-22	38	
06-1060-3(1)	Electircal and Instrumentation Material Procurement (Incl. FAT)	365	695	18.36%	18.36%	298		29-Mar-20 A	21-Feb-22	30-Apr-21	21-Feb-22	0	
EP_SP_66_12-WP6A-M41.06.2.2 Fabrication of Module (Power Island)		345	377	0%		345		29-Mar-21 A	09-Apr-22	30-Apr-21	01-Aug-22	114	
EP_SP_66_12-WP6A-M41.06.2.2.1 Turbine Module 1		300	330	0.67%		298		29-Mar-21 A	21-Feb-22	30-Apr-21	21-Feb-22	0	
06-1070-1(1)	Turbine Module 1 - Structure Cutting, Painting, Pre-assembly & Erection	285	285	11.23%	11.23%	253		29-Mar-21 A	07-Jan-22	30-Apr-21	07-Jan-22	0	
06-1070-2(1)	Turbine Module 1 - Equipment Fabrication	300	300	0.67%	0.67%	298		28-Apr-21 A	21-Feb-22	30-Apr-21	21-Feb-22	0	
06-1070-3(1)	Turbine Module 1 - Equipment Installation	300	300	0.67%	0.67%	298		28-Apr-21 A	21-Feb-22	30-Apr-21	21-Feb-22	0	
EP_SP_66_12-WP6A-M41.06.2.2.2 Turbine Module 2		345	345	0%		345		30-Apr-21	09-Apr-22	07-Aug-21	17-Jul-22	99	
06-1070-1(1)10	Turbine Module 2 - Structure Cutting, Painting, Pre-assembly & Erection	300	300	0%	0%	300		30-Apr-21	23-Feb-22	07-Aug-21	02-Jun-22	99	
06-1070-2(1)10	Turbine Module 2 - Equipment Fabrication	300	300	0%	0%	300		14-Jun-21	09-Apr-22	21-Sep-21	17-Jul-22	99	
06-1070-3(1)10	Turbine Module 2 - Equipment Installation	300	300	0%	0%	300		14-Jun-21	09-Apr-22	21-Sep-21	17-Jul-22	99	
EP_SP_66_12-WP6A-M41.06.2.2.3 Turbine Module 3		345	345	0%		345		30-Apr-21	09-Apr-22	22-Aug-21	01-Aug-22	114	
06-1070-1(1)20	Turbine Module 3 - Structure Cutting, Painting, Pre-assembly & Erection	300	300	0%	0%	300		30-Apr-21	23-Feb-22	22-Aug-21	17-Jun-22	114	
06-1070-2(1)20	Turbine Module 3 - Equipment Fabrication	300	300	0%	0%	300		14-Jun-21	09-Apr-22	06-Oct-21	01-Aug-22	114	
06-1070-3(1)20	Turbine Module 3 - Equipment Installation	300	300	0%	0%	300		14-Jun-21	09-Apr-22	06-Oct-21	01-Aug-22	114	
EP_SP_66_12-WP6A-M41.06.3 Procurement for ACC Units		200	170	30.5%		139		30-Mar-21 A	15-Sep-21	30-Apr-21	15-Sep-21	0	
06-1110	Material & Equipment Procurement	200	170	30.5%	30.5%	139		30-Mar-21 A	15-Sep-21	30-Apr-21	15-Sep-21	0	
EP_SP_66_12-WP6A-M41.06.4 Procurement for MT Plant Equipment		180	180	0%		180		19-Jun-21	15-Dec-21	19-Jul-21	14-Jan-22	30	
06-1150-1(1)	Mechanical Equipment Material Submission and Approval	180	180	0%	0%	180		19-Jun-21	15-Dec-21	19-Jul-21	14-Jan-22	30	
EP_SP_66_12-WP6A-M41.06.5 Procurement for WWTP Equipment		180	180	0%		180		30-Apr-21	26-Oct-21	17-Aug-21	12-Feb-22	109	
06-1190-3(1)	Electircal and Instrumentation Material Submission and Approval	180	180	0%	0%	180		30-Apr-21	26-Oct-21	17-Aug-21	12-Feb-22	109	
EP_SP_66_12-WP6A-M41.06.7 Procurement for HV Transformers and Associated Equipmen		550	1076	22.73%		425		19-Jul-19 A	28-Jun-22	24-Sep-21	25-Nov-22	150	
EP_SP_66_12-WP6A-M41.06.7.1 Procurement of Transformers & EDG		550	989	38.55%		338		19-Jul-19 A	02-Apr-22	24-Sep-21	27-Aug-22	147	
06-1280(1)	Procurement of Transfromers	550	989	38.55%	38.55%	338		19-Jul-19 A	02-Apr-22	24-Sep-21	27-Aug-22	147	
EP_SP_66_12-WP6A-M41.06.7.2 Procurement of Switchboard/Pannels and Cables		425	425	0%		425		30-Apr-21	28-Jun-22	27-Sep-21	25-Nov-22	150	

3-Month Rolling Programme (April 2021)

Remaining Work
Actual Work
Critical Remaining Work
Milestone
Actual Milestone
Critical Milestone

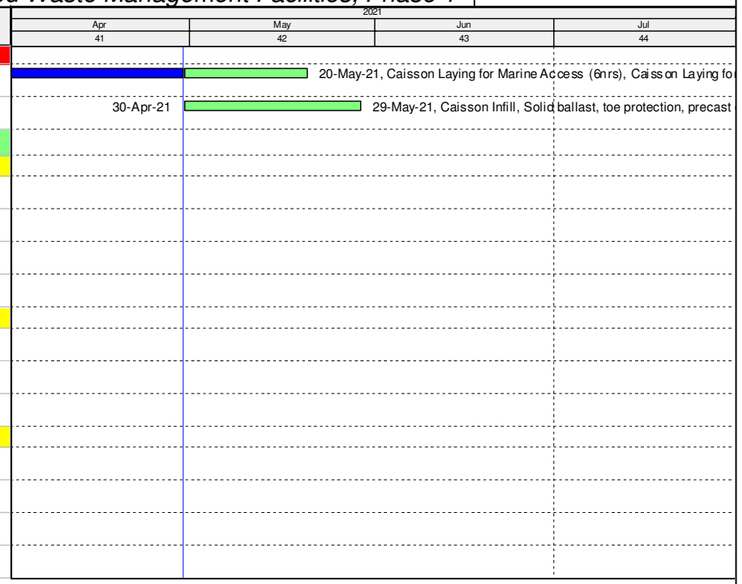
Activity ID	Activity Name	Original Duration	At Completion Duration	Duration % Complete	Activity % Complete	Remaining Duration	Primary Constraint	Current Start	Current Finish	Late Start	Late Finish	Total Float	M41 Remarks
06-2090(1)	Material Submission and Approval	90	90	0%	0%	90		30-Apr-21	28-Jul-21	27-Sep-21	25-Dec-21	150	
06-2100(1)	Material & Equipment Procurement	335	335	0%	0%	335		29-Jul-21	28-Jun-22	26-Dec-21	25-Nov-22	150	
EP_SP_66_12-WP6A-M41.06.10 Procruement and Off-site Fabrication of Pipe Bridges (Inc		270	454	22.59%		209		28-Aug-20 A	24-Nov-21	30-Apr-21	24-Nov-21	0	
06-1390(1)	Material Submission and Approval	90	274	67.78%	67.78%	29		28-Aug-20 A	28-May-21	30-Apr-21	28-May-21	0	
06-1400	Material & Equipment Procurement	180	180	0%	0%	180		29-May-21	24-Nov-21	29-May-21	24-Nov-21	0	
EP_SP_66_12-WP6A-M41.06.18 Procurement for Cranage Equipment		120	120	0%		120		30-May-21	26-Sep-21	06-Sep-21	03-Jan-22	99	
06-1710	Material Submission and Approval	120	120	0%	0%	120		30-May-21	26-Sep-21	06-Sep-21	03-Jan-22	99	
EP_SP_66_12-WP6A-M41.06.21 Procurement for Air Quality Monitoring Station Equipment		90	90	0%		90		13-Jun-21	10-Sep-21	10-Apr-23	08-Jul-23	666	
06-2150(1)	Material Submission and Approval	90	90	0%	0%	90		13-Jun-21	10-Sep-21	10-Apr-23	08-Jul-23	666	
EP_SP_66_12-WP6A-M41.08 Maritime Works		818	1121	63.2%		301		31-Jan-19 A	24-Feb-22	19-Apr-21	17-May-22	82	
EP_SP_66_12-WP6A-M41.08.1 Marine Construction		818	1121	63.2%		301		31-Jan-19 A	24-Feb-22	19-Apr-21	17-May-22	82	
EP_SP_66_12-WP6A-M41.08.1.1 Phase I - Construction of Perimeter Seawalls		818	850	63.2%		301		29-Oct-19 A	24-Feb-22	30-Apr-21	24-Feb-22	0	
EP_SP_66_12-WP6A-M41.08.1.1.1 Seawall and Berth at DCM Area		818	850	63.2%		301		29-Oct-19 A	24-Feb-22	30-Apr-21	24-Feb-22	0	
EP_SP_66_12-WP6A-M41.08.1.1.1.5 Seawall Structural Works		818	850	63.2%		301		29-Oct-19 A	24-Feb-22	30-Apr-21	24-Feb-22	0	
08-1100	Rubble Mound Laying (100,000m3 approx, @550m3/d)	182	313	96.5%	96.5%	6		27-Jun-20 A	06-May-21	15-May-21	21-May-21	16	
08-1105-07 (6)	Precast Yard Setup	90	90	21.11%	21.11%	71	Start On or After	11-Apr-21 A	09-Jul-21	30-Apr-21	09-Jul-21	0	
08-1105-08 (6)	Prefabrication of Precast Beam and Slab for Seawall A	140	140	0%	0%	140		10-Jul-21	26-Nov-21	10-Jul-21	26-Nov-21	0	
08-1105-09 (6)	Prefabrication of Precast Beam & Slab for Seawall B	140	140	0%	0%	140		25-Jul-21	11-Dec-21	25-Jul-21	11-Dec-21	0	
08-1115(3)	Caisson infill, Solid ballast, toe protection, precast concrete blocks ..etc Laying	250	566	93.2%	93.2%	17		29-Oct-19 A	16-May-21	30-Apr-21	16-May-21	0	
08-1120	Construction of Seawall and Wave Wall Extension from +3mPD to Deck Level for Seawall A	220	220	0%	0%	220		20-Jul-21	24-Feb-22	20-Jul-21	24-Feb-22	0	
EP_SP_66_12-WP6A-M41.08.1.2 Phase II - Reclamation, Breakwater and Berth Construction		754	1074	66.32%		254		31-Jan-19 A	08-Jan-22	19-Apr-21	17-May-22	129	
EP_SP_66_12-WP6A-M41.08.1.2.1 Reclamation		254	284	0%		254		31-Mar-21 A	08-Jan-22	19-Apr-21	15-Jan-22	7	
EP_SP_66_12-WP6A-M41.08.1.2.1.6 Reclamation Works		254	283	0%		254		01-Apr-21 A	08-Jan-22	19-Apr-21	15-Jan-22	7	
08-1200-3 (M35)	Reclamation fill for Marine Access from -9.0mPD to +2.5mPD (~300,000m3 @ 4000m3/d)	37	37	0%	0%	37		21-May-21	26-Jun-21	22-May-21	27-Jun-21	1	
08-1210-1(6)	Reclamation fill from +2.5 to Formation Level (289,000m3 @6000m3/d)	49	49	0%	0%	49		17-May-21	04-Jul-21	17-May-21	04-Jul-21	0	
08-1220(6)	Reclamation fill for Marine Access from +2.5 to Formation Level (91,000m3 @6000m3/d)	16	16	0%	0%	16		13-Jul-21	28-Jul-21	13-Jul-21	28-Jul-21	0	
EP_SP_66_12-WP6A-M41.08.1.2.1.6.3 Surcharge Filling		118	147	0%		118		01-Apr-21 A	25-Aug-21	19-Apr-21	25-Aug-21	0	
08-3000(6)	Fill up +6 to +11-12mPD at PB1-2 (Stage 1) (102,555m3 @ 2000m3/d)	50	61	36%	36%	32		01-Apr-21 A	31-May-21	19-Apr-21	20-May-21	-11	
08-3010(6)	Fill up +6 to +11-12mPD at PB2-3 (Stage 2) (102,555m3 @ 2000m3/d)	52	103	12%	12%	46		01-Apr-21 A	12-Jul-21	28-May-21	12-Jul-21	0	
08-3020(6)	Fill up +6 to +12mPD at ACC, TH, CCCW & Substation (Stage 3-1) (67,500m3 @ 2000m3/d)	34	34	0%	0%	34		23-Jul-21	25-Aug-21	23-Jul-21	25-Aug-21	0	
EP_SP_66_12-WP6A-M41.08.1.2.1.6.4 Surcharge Period		222	222	0%		222		01-Jun-21	08-Jan-22	21-May-21	15-Jan-22	7	
08-3090(6)	Loading @ +11-12mPD at PB1-2 (Stage 1)	180	180	0%	0%	180		01-Jun-21	27-Nov-21	21-May-21	16-Nov-21	-11	
08-3100(6)	Loading @ +11-12mPD at PB2-3 (Stage 2)	180	180	0%	0%	180		13-Jul-21	08-Jan-22	20-Jul-21	15-Jan-22	7	
EP_SP_66_12-WP6A-M41.08.1.2.1.6.5 Retaining Wall		14	14	0%		14		30-Apr-21	13-May-21	07-May-21	19-Jul-21	67	
08-3140(6)	Temporary Gabion Retaining Wall for Surcharge Laying at Northern Edge (~50m)	14	14	0%	0%	14		30-Apr-21	13-May-21	06-Jul-21	19-Jul-21	67	
08-3150(6)	Temporary Gabion Retaining Wall for Surcharge Laying at Eastern Edge (~50m)	14	14	0%	0%	14		30-Apr-21	13-May-21	07-May-21	20-May-21	7	
08-3160(6)	Temporary Gabion Retaining Wall for Surcharge Laying at Southern Edge (~50m)	14	14	0%	0%	14		30-Apr-21	13-May-21	07-May-21	20-May-21	7	
EP_SP_66_12-WP6A-M41.08.1.2.1.1 Instrumentation		120	130	40.83%		71		31-Mar-21 A	07-Aug-21	30-May-21	27-Aug-21	20	
08-1340 (M23)	Placing Settlement Plates for Settlement Markers & Instrumentation on +2.5mPD (~42nrs)	60	88	51.67%	51.67%	29		31-Mar-21 A	26-Jun-21	30-May-21	27-Jun-21	1	
08-1350 (M23)	Extension of instruments above +2.5mPD	65	76	56.4%	56.4%	28		12-Apr-21 A	26-Jun-21	30-May-21	27-Jun-21	1	
08-1370 (M23)	Extension of instruments to finished levels	42	42	0%	0%	42		27-Jun-21	07-Aug-21	17-Jul-21	27-Aug-21	20	
EP_SP_66_12-WP6A-M41.08.1.2.1.2 PVD Remedial Works		118	118	0%		118		27-Jun-21	22-Oct-21	01-Jul-21	26-Oct-21	4	
08-1390 (M34)20	GI for ground condition varification at other Zone for PVD (10 nr approx @0.5 nr/day) Inc Report	28	28	0%	0%	28		27-Jun-21	24-Jul-21	01-Jul-21	28-Jul-21	4	
08-1390 (M34)25	Install Sand Drains at other Zones (approx. 549 nr @ 8nr/day/4 set of equipment)	90	90	0%	0%	90		25-Jul-21	22-Oct-21	29-Jul-21	26-Oct-21	4	
EP_SP_66_12-WP6A-M41.08.1.2.2 Breakwater		696	1015	71.91%		195		31-Jan-19 A	11-Nov-21	03-Nov-21	17-May-22	188	
08-1250	Geotextile and Sand Blanket Laying	45	836	64%	64%	16		31-Jan-19 A	16-May-21	17-Mar-22	02-Apr-22	322	
08-1280	Rubble Mound Laying (100,000m3 approx, @550m3/d)	188	401	12%	12%	165		06-Sep-20 A	12-Oct-21	03-Nov-21	17-Apr-22	188	
08-1285(1)	Prefabrication for Caission	180	473	12%	12%	158		19-Jun-20 A	05-Oct-21	10-Nov-21	17-Apr-22	195	
08-1290	Caisson Laying (Total 29nrs, @2 nrs/week)	150	150	0%	0%	150		14-Jun-21	11-Nov-21	19-Dec-21	17-May-22	188	



3-Month Rolling Programme (April 2021)

Remaining Work
Actual Work
Critical Remaining Work
Milestone
Actual Milestone
Critical Milestone

Activity ID	Activity Name	Original Duration	At Completion Duration	Duration % Complete	Activity % Complete	Remaining Duration	Primary Constraint	Current Start	Current Finish	Late Start	Late Finish	Total Float	M41 Remarks
EP_SP_66_12-WP6A-M41.08.1.2.3	**Seawall and Berth at Marine Access**	85	113	64.55%		30		06-Feb-21 A	29-May-21	01-May-21	20-Jun-21	22	
08-1320(2)	Caisson Laying for Marine Access (6nrs)	42	104	50%	50%	21		06-Feb-21 A	20-May-21	01-May-21	21-May-21	1	
08-1320(5A)	Caisson Infill, Solid ballast, toe protection, precast concrete blocks ..etc Laying	30	30	0%	0%	30		30-Apr-21	29-May-21	22-May-21	20-Jun-21	22	
EP_SP_66_12-WP6A-M41.15	**Works By CLP**	637	637	0%		637		11-Jan-23	09-Oct-24	11-Jan-23	30-Oct-24	21	
EP_SP_66_12-WP6A-M41.15.1	**Installation of Transmission System**	403	403	0%		403		11-Jan-23	18-Feb-24	11-Jan-23	18-Apr-24	60	
15-0800	450 days Prior to Commencement of System Commissioning Test	0	0	0%	0%	0			21-Mar-23		20-Mar-23	0	
15-0900	Completion of Civil Provision for Transmission	0	0	0%	0%	0			11-Jan-23		11-Jan-23	0	
15-1000	Construction of Transmission System	90	90	0%	0%	90		22-Oct-23	19-Jan-24	22-Oct-23	19-Jan-24	0	
15-1002	Cable Testing	30	30	0%	0%	30		20-Jan-24	18-Feb-24	20-Mar-24	18-Apr-24	60	
EP_SP_66_12-WP6A-M41.15.2	**Remaining Installation Works by CLP**	300	300	0%		300		22-Oct-23	16-Aug-24	22-Oct-23	17-Aug-24	1	
15-1005	Handover of CLP Equipment Room for Telecom / Digitals / Security / Metering equipment Installation and testing	210	210	0%	0%	210		22-Oct-23	18-May-24	22-Oct-23	18-May-24	0	
15-1010	132kV cable termination at IWMF 132kV switchgear (2 panels) and associated HVAC circuits	60	60	0%	0%	60		19-Apr-24	17-Jun-24	19-Apr-24	17-Jun-24	0	
15-1020	Overall testing and commissioning of 2 x CHS-IWMF circuits	90	90	0%	0%	90		19-May-24	16-Aug-24	20-May-24	17-Aug-24	1	
EP_SP_66_12-WP6A-M41.15.3	**Metering & Energization**	53	53	0%		53		17-Aug-24	09-Oct-24	17-Aug-24	30-Oct-24	21	
15-1030	Energization of Incoming Power Supply Main System	0	0	0%	0%	0			17-Aug-24		17-Aug-24	0	
15-1040	Energization of Incoming Power Supply Sub System	0	0	0%	0%	0			17-Aug-24		17-Aug-24	0	
15-1050	Export Power System Final Inspection and Metering works	30	30	0%	0%	30		10-Sep-24	09-Oct-24	01-Oct-24	30-Oct-24	21	
15-1060	Connection to Grid	0	0	0%	0%	0			09-Oct-24		30-Oct-24	21	



Remaining Work
Actual Work
Critical Remaining Work
Milestone
Actual Milestone
Critical Milestone

Appendix B Summary of Implementation Status of Environmental Mitigation

Appendix B

Table B.1 Implementation Schedule for Air Quality Measures for the IWMF at the artificial island near SKC

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
S3b.8.1	Air Pollution Control (Construction Dust) Regulation & Good Site Practices • Use of regular watering, with complete coverage, to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather. • Use of frequent watering for particularly dusty construction areas and areas close to ASRs. • Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines. • Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs. • Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations. • Establishment and use of vehicle wheel and body washing facilities at the exit points of the site. • Provision of wind shield and dust extraction units or similar dust mitigation measures at the loading	Work site / During the construction period	Contractor		✓			Air Pollution Control (Construction Dust) Regulation	Implemented, N/A for dust control measures for transportation outside site boundary.

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	points, and use of water sprinklers at the loading area where dust generation is likely during the loading process of loose material, particularly in dry seasons/ periods. • Imposition of speed controls for vehicles on unpaved site roads. Ten kilometers per hour is the recommended limit. • Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs • Instigation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.								
S3b.6.3	<u>Odour Removal by Deodorizers</u> • Deodorizers with 95% odour removal efficiency would be installed for the air ventilated from the mechanical treatment plant before discharge to the atmosphere	Waste reception halls, the waste storage area, the mechanical treatment plant / During design & operation phase	IWMF Operator	✓		✓		EIAO-TM	N/A
S3b.8.2	<u>Air Pollution Control and Stack Monitoring</u>	IWMF stack emissions / During	IWMF Operator	✓		✓		EIAO-TM, Supporting Document for	N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	• Air pollution control and stack monitoring system will be installed for the IWMF to ensure that the emissions from the IWMF stack will meet the proposed target emission limits. • Voluntary Enhancement Measures in Flue Gas Cleaning and Emission Monitoring: 1. Two-stage bag filter system with reagent recirculation; 2. In addition to SCR, provide SNCR for removal of NO_x; tighten emission limit for half-hourly and daily NO_x to 160 mg/m^3 and 80 mg/m_3 respectively; 3. Well-mixed feed waste: to minimize the fluctuation of pollutant loading on the flue gas treatment system; 4. Two more AQMSs would be set up at South Lantau and Shek Kwu Chau respectively; 5. Limit levels will be set under the IWMF DBO contract to require that waste feed shall cease if any of the air pollutant has exceeded 95% of the emission concentration limit as stipulated in the Special Process license; and 6. Each incineration chamber shall be fitted with auxiliary burners to ensure complete burn out of the combustion gases.	design & operation phase						Application for Variation of Environmental Permit (EP-429/2012)	

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
-	Treated Fly Ash and Air Pollution Control Residues: • During testing and commissioning, the Contractor shall sample and test every container of treated fly ash and air pollution control residues for conformance to the Incineration Residue Pollution Control Limits and leachability criteria shown in Table 2 of the Environmental Permit. If a test result confirms that any one of the samples does not conform to the limits and the criteria, the Contractor shall be required to sample and test every container of treated fly ash and air pollution control residues for conformance to the Incineration Residue Pollution Control Limits and leachability criteria for the next six months. • During the first six months of operation, if the requirements in (a) could be fully conformed with, the Contractor shall sample and test every shipload of treated fly ash and air pollution control residues for conformance to the Incineration Residue Pollution Control Limits and leachability criteria shown in Table 2 of the Environmental Permit. The Contractor shall take two samples from each shipload for testing and the Contractor shall not dispose of any of that shipload of treated fly ash and air	IWMF stack emissions / During design & operation phase	IWMF Operator	✓		✓		Supporting Document for Application for Variation of Environmental Permit (EP-429/2012)	N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	pollution control residues until the test results confirm that the two samples conform to the limits and the criteria. If a test result confirms that any one of the two samples does not conform to the limits and the criteria, the Contractor shall be required to sample and test every shipload of treated fly ash and air pollution control residues for conformance to the Incineration Residue Pollution Control Limits and leachability criteria for the next six months. The Contractor shall make due allowance in the Design and the Operation for the time to sample and test treated fly ash and air pollution control residues before disposal. • Provided that there is no non-conformance to the Incineration Residue Pollution Control Limits and leachability criteria shown in Table 2 of the Environmental Permit throughout a continuous sixmonth period in the Operation Period, the testing frequency shall be reduced to monthly interval.Two samples from one shipload of treated fly ash and air pollution control residues shall be collected and tested for conformance to the Incineration Residue Pollution Control Limits and leachability criteria. The Contractor shall not dispose of any of the treated fly ash and air pollution								

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	control residues in the shipload which the samples are taken until the test results confirm that the samples conform to the limits and the criteria. If the test result confirm that any one of the samples does not conform to the limits and the criteria, the Contractor shall be required to sample and test every shipload of treated fly ash and air pollution control residues for conformance to the Incineration Residue Pollution Control Limits and leachability criteria shown in Table 2 of the Environmental Permit for the next six months.								
-	<u>Bottom Ash:</u> • During testing and commissioning, the Contractor shall sample and test every container of bottom ash for conformance to the leachability criteria shown in Table 2 of the Environmental Permit. If a test result confirms that any one of the samples does not conform to the criteria, the Contractor shall be required to sample and test every container of bottom ash for conformance to the leachability criteria for the next six months. • During the first six months of operation, if the requirements in (d) could be fully conformed with, the Contractor shall sample and test one shipload of bottom ash each month for	IWMF stack emissions / During design & operation phase	IWMF Operator	✓		✓		Supporting Document for Application for Variation of Environmental Permit (EP-429/2012)	N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	conformance to the leachability criteria shown in Table 2 of the Environmental Permit. The Contractor shall take two samples from the shipload for testing and the Contractor shall not dispose of any of that shipload of bottom ash until the test results confirm that the two samples conform to the criteria. If a test result confirms that any one of the two samples does not conform to the criteria, the Contractor shall be required to sample and test each shipload of bottom ash for conformance to the leachability criteria for the next six months. The Contractor shall make due allowance in the Design and the Operation for the time to sample and test bottom ash before disposal. • Provided that there is no non-conformance to the leachability criteria shown in Table 2 of the Environmental Permit throughout a continuous six month period in the Operation Period, the Contractor shall be allowed to take two samples from any one shipload of bottom ash once every six months for conformance to the leachability criteria. The Contractor shall not dispose of any of the bottom ash in the shipload which the samples are taken until the test								

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	results confirm that the samples conform to the criteria. If the test result confirm that any one of the samples does not conform to the criteria, the Contractor shall be required to sample and test one shipload of bottom ash each month for conformance to the leachability criteria shown in Table 2 of the Environmental Permit for the next six months as stipulated above.								

* Des - Design, C - Construction, O – Operation, and Dec - Decommissioning

Table B.2 Implementation Schedule for Noise Impact Measures for the IWMF at the artificial island near SKC

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
S4b.8	Good site practices to limit noise emissions at source and use of quiet plant and working methods, whenever practicable.	Work Sites / Construction Period	EPD and its contractors		✓			EIAO-TM	Implemented
S4b.6 & S4b.8	All the ventilation fans installed in the below will be provided with silencers or acoustics treatment. (i) Stack of the incinerator (ii) Ventilation systems within the IWMF Enclosure and discharge silencer or other acoustic treatment equipment should be installed in the air-cooled chillers Other than provision of silencer or other acoustic treatment equipment for the stack of the incinerator and ventilation system, the detailed design should incorporate the following good practice in order to minimize the nuisance on the neighboring NSRs. (i) The exhaust of the ventilation system and any opening of the building should be located facing away from any NSRs; and (ii) Louver or other acoustic treatment equipment could also be applied to the exhaust of the ventilation system.	Within IWMF area / Construction Period	EPD and its contractors	✓		✓		EIAO-TM	N/A

-	<u>Voluntary Enhancement Measure</u> • Provision of air-conditioner and double glazed windows to nearby NSR at Shek Kwu Chau (i.e. SARDA) as precautionary measures.	IWMF site	Design team, contractor, IWMF operator	✓	✓			Supporting Document for Application for Variation of Environmental Permit (EP-429/2012)	Implemented

* Des - Design, C - Construction, O – Operation, and Dec - Decommissioning

Table B.3 Implementation Schedule for Water Quality Measures for the Artificial Island near SKC

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
S5b.8.1.1	<u>Drainage and Construction Site Runoff</u> The site practices outlined in ProPECC PN 1/94 "Construction Site Drainage" should be followed as far as practicable in order to minimise surface runoff and the chance of erosion. These practices include the following items: • At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct storm water to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of construction. • Boundaries of earthworks should be surrounded by dykes or embankments for flood protection, as necessary. • Sand/silt removal facilities such as sand/silt traps and sediment basins should be provided to remove sand/silt particles from runoff to meet the requirements of the TM-DSS. The design of efficient silt removal facilities	Work site / During the construction period	Contractor		✓			EIAO-TM; ProPECC PN 1/94; WPCO	N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	should be based on the guidelines in Appendix A1 of ProPECC PN 1/94, which states that the retention time for silt/sand traps should be 5 minutes under maximum flow conditions. The detailed design of the sand/silt traps shall be undertaken by the contractor prior to the commencement of construction. • Water pumped out from foundation piles must be discharged into silt removal facilities. • Measures should be taken to minimize the ingress of site runoff and drainage into excavations. Drainage water pumped out from excavations should be discharged into storm drains via silt removal facilities. • During rainstorms, exposed slope/soil surfaces should be covered by a tarpaulin or other means, as far as practicable. Other measures that need to be implemented before, during and after rainstorms are summarized in ProPECC PN 1/94. • Exposed soil areas should be minimized to reduce potential for increased siltation and contamination of runoff. • Earthwork final surfaces should be well compacted and subsequent permanent work or surface protection should be immediately performed.								

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	• Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric during rainstorms.								
S5b.8.1.2	General Construction Activities Construction solid waste should be collected, handled and disposed of properly to avoid entering to the nearby watercourses and public drainage system. Rubbish and litter from construction sites should also be collected to prevent spreading of rubbish and litter from the site area. It is recommended to clean the construction sites on a regular basis.	Work site / During the construction period	Contractor		✓			EIAO-TM; ProPECC PN 1/94; WPCO	Implemented

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
S5b.8.1.3	There is a need to apply to EPD for a discharge license for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge license. All the run-off and wastewater generated from the works areas should be treated so that it satisfies all the standards listed in the TM-DSS. The beneficial uses of the treated effluent for other on-site activities such as dust suppression and general cleaning etc., can minimize water consumption and reduce the effluent discharge volume. If monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring should be carried out in accordance with the relevant WPCO license which is under the ambit of regional office of EPD.	Work site / During the construction period	Contractor		✓			EIAO-TM; ProPECC PN 1/94; WPCO	Discharge License was issued on 22/08/2019.
S5b.8.1.4	Accidental Spillage Contractor must register as a chemical waste producer if chemical wastes would be produced from construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	Work site / During the construction period	Contractor		✓			EIAO-TM; ProPECC PN 1/94; WPCO; WDO	Deficiency of Mitigation Measures but rectified by the Contractor.
S5b.8.1.5	Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas which	Work site / During the construction period	Contractor		✓			EIAO-TM; ProPECC PN 1/94; WPCO; WDO	Implemented.

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	appropriately equipped to control these discharges.								
S5b.8.1.6	Oils and fuels should only be used and stored in designated areas which have pollution prevention facilities. All fuel tanks and storage areas should be sited on sealed areas in order to prevent spillage of fuels and solvents to the nearby watercourses. All waste oils and fuels should be collected in designated tanks prior to disposal.	Work site / During the construction period	Contractor		✓			EIAO-TM; ProPECC PN 1/94; WPCO; WDO	Deficiency of Mitigation Measures but rectified by the Contractor.
S5b.8.1.7	Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows: • Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport. • Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents. • Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.	Work site / During the construction period	Contractor		✓			EIAO-TM; ProPECC PN 1/94; WPCO; WDO	Deficiency of Mitigation Measures but rectified by the Contractor.
S5b.8.1.8	<u>Sewage Effluent</u> Temporary sanitary facilities, such as portable chemical toilets, should be employed on-site where necessary to	Work site / During the construction period	Contractor		✓			EIAO-TM; ProPECC PN 1/94; WPCO	N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	handle sewage from the workforce. A licensed contractor would be responsible. for appropriate disposal and maintenance of these facilities.								
S5b.8.1.9	<u>Reclamation and Construction of Breakwaters</u> • The proposed dredging and reclamation should be commenced in phases. The breakwaters and seawalls should be constructed and the reclamation should be started within the enclosed breakwaters after the completion of the breakwater. Silt curtain should be applied around caissons / blockwork during the filling of the cell to prevent the loss of fine in the filling material. • The maximum production rate for dredging for the anti-scouring protection layer shall not exceed the permitted maximum daily dredging rate and carried out within its respective distance from the nearest non-translocatable coral community by the dredging contractor as specified in S.2.18 of the Further Environmental Permit (no.:FEP-01/429/2012/A). It is recommended to employ closed grab with small capacity of 2 m^3 to control the dredging rate. • Any gap that may need to be provided for marine access will be located at the middle of the North Western seawall, away from the identified coral communities and will be shielded by silt curtains systems to control sediment plume dispersion. • The silt curtain system at marine access opening should be closed as soon as the	Work site / During the marine construction period	Contractor		✓			EIAO-TM; WPCO, Supporting Document for Application for Variation of Environmental Permit (EP-429/2012) Further Environmental Permit No. FEP-01/429/2012/A	Implemented.

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	barges passes through the marine access opening in order to minimize the period of curtain opening. Filling should only be carried out behind the silt curtain when the silt curtain is completely closed. • To enhance the effectiveness of the silt curtain at the marine access, the northern breakwater would be built before the commencement of the reclamation to reduce the current velocity towards the marine access opening. • The silt curtain system at marine access opening should be regularly checked and maintained to ensure proper functioning. • Where public fill is proposed for filling below +2.5mPD, the fine content in the public fill will be controlled to 25% which is in line with the CEDD's General Specification; • The filling for reclamation should be carried out behind the seawall. The filling material should only consist of public fill, rock and sand. The filling composition and filling rates at each filling area should follow those delineated in Table 1 of the FEP-01/429/2012/. The filling above high watermark is not restricted; • No dredging should be carried out within 16m to the nearest non-translocatable coral community; • Daily site audit including full-time on-site monitoring by the ET is recommended during the dredging for anti-scouring protection layer								

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	for checking the compliance with the permitted no. of grab; • Closed grab dredger should be used to minimize the loss of sediment during the raising of the loaded grabs through the water column; • Frame-type silt curtains should be deployed around the dredging operations; • Floating-type silt curtains should be used to surround the circular cell during the sheetpiling work; • The descent speed of grabs should be controlled to minimize the seabed impact speed; • Barges should be loaded carefully to avoid splashing of material; • All barges used for the transport of dredged materials should be fitted with tight bottom seals in order to prevent leakage of material during loading and transport; • No concurrence works between laying of submarine cables and dredging/reclamation works within the same location is allowed. For works close to each other, the construction program should be arranged so that the dredging/reclamation works within area bounded by the breakwaters and the laying of cables would not operate within a distance of 80m from each other to avoid any accumulative impact on the environment (in case if such tight schedule is necessary).								

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	• All barges should be filled to a level which ensures that material does not spill over during loading and transport to the disposal site and that adequate freeboard is maintained to ensure that the decks are not washed by wave action. • No DCM works should be carried out within 100m to the nearest non-translocatable coral colony / colonies. • Silt curtains should be employed to enclose DCM field trial and any full scale DCM work to minimize the potential impacts on water aspect. • A sand blanket is to be placed on top of the marine deposit using tremie pipes prior to the DCM ground treatment to avoid seabed sediment disturbance.								
S5b.8.2.3	Operational Phase Discharges A pipeline drainage system will serve the development area collecting surface runoff from paved areas, roof, etc. Sustainable drainage principle would be adopted in the drainage system design to minimize peak surface runoff, maximize permeable surface and maximize beneficial use of rainwater.	Within IWMF site / During the operational phase	IWMF Operator	✓		✓		WPCO	N/A
S5b.8.2.4	Oil interceptors should be provided in the drainage system of any potentially contaminated areas (such as truck parking area and maintenance workshop) and regularly cleaned to prevent the release of oil products into the storm water drainage system in case of accidental spillages.	Within IWMF site / During the operational phase	IWMF Operator	✓		✓		WPCO; WDO	N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	Accidental spillage should be cleaned up as soon as practicable and all waste oils and fuels should be collected and handled in compliance with the Waste Disposal Ordinance.								
S5b.8.2.5	Refuse Entrapment Collection and removal of floating refuse should be performed at regular intervals for keeping the water within the Project site boundary and the neighboring water free from rubbish.	Within the Project site / During the operational phase	IWMF Operator			✓		WPCO	N/A
S5b.8.2.6	Transportation of bottom ash, fly ash and APC residues to WENT Landfill for disposal Covered container should be used in the shipping of the incineration waste to limit the contact between the incineration waste and the marine water. A comprehensive emergency response plan for any accidental spillage should be submitted by the operation contractor to the EPD for agreement before the operation of the facilities. Salvage and cleanup action to recover the spilled incineration waste containers following the spillage should be carried out according to the emergency response plan to mitigate the environmental impact in case of spillage.	Transportation of Incineration Ash / During the operational phase	IWMF Operator			✓			N/A

* Des - Design, C - Construction, O – Operation, and Dec - Decommissioning

Table B.4 Implementation Schedule for Waste Management Measures for the IWMF at the artificial island near SKC

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
6b.5.1.2	<u>Good Site Practices</u> Adverse environmental impacts in relation to waste management are not expected, provided that good site practices are strictly followed. Recommendations for good site practices during the construction activities would include: • Obtain relevant waste disposal permits from appropriate authorities, in accordance with the Waste Disposal Ordinance (Cap. 354) and subsidiary Regulations and the Land (Miscellaneous Provisions) Ordinance (Cap. 28); • Provide staff training for proper waste management and chemical handling procedures; • Provide sufficient waste disposal points and regular waste collection; • Provide appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; and • Carry out regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; • Separate chemical wastes for special handling and disposed of to licensed facility for treatment; and • Employ licensed waste collector to collect waste.	Work Site/ During Construction Period	Contractor		✓			WDO; LDO; ETWB TCW No. 19/2005; EIAO-TM	Implemented
6b.5.1.3	<u>Waste Reduction Measures</u>	Work Site/ During Design	Contractor	✓	✓				Implemented

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	Good management and control can prevent the generation of a significant amount of waste. Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include: • Design foundation works that could minimize the amount of excavated material to be generated. • Provide training to workers on the importance of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycling; • Sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc.); • Segregate and store different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal; • Encourage the collection of aluminum cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the work force; • Proper storage and site practices to minimize the potential for damage or contamination of construction materials; and • Plan and stock construction materials carefully to minimize amount of waste to be	& Construction Period							N/A for foundation and demolition items

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	generated and to avoid unnecessary generation of waste.								
6b.5.1.7	<u>Dredged Sediment – Application of Dumping Permit</u> The project proponent should agree in advance with MFC of CEDD on the site allocation. The project proponent or contractor for the dredging works shall then apply for the site allocations of marine sediment disposal based on the prior agreement with MFC/CEDD. The project proponent or contractor should also be responsible for the application of all necessary permits from relevant authorities, including the dumping permit as required under DASO from EPD, for the disposal of dredged sediment prior to the commencement of the dredging works.	Seawall and Reclamation site / Construction Period	EPD and its contractor	✓	✓			DASO ETWB TCW 34/2002	Implemented
6b.5.1.8	<u>Dredged Sediment – Sediment Quality Report</u> The project proponent or contractor will need to satisfy the appropriate authorities that the quality of the marine sediment to be dredged has been identified according to the requirements of ETWB TCW 34/2002. This should be completed well before the dredging works and would include at least the submission of a formal Sediment Quality Report under Tier I of ETWB TCW No. 34/2002 to DEP for approval. Subject to advice from DEP, it is possible that further marine SI in accordance with ETWB TCW 34/2002 might be necessary for the application of dumping permit under DASO. In such case, a sediment sampling and testing	Seawall and Reclamation site / Construction Period	EPD and its contractor	✓				DASO ETWB TCW 34/2002	Implemented

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	proposal shall be submitted to and approved by DEP before the additional marine SI works.								
6b.5.1.9	Dredged Sediment – Sediment Transportation The barge transporting the sediments to the designated disposal sites should be equipped with tight fitting seals to prevent leakage and should not be filled to a level that would cause overflow of materials or laden water during loading or transportation. In addition, monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the DEP.	Seawall and Reclamation site / Construction Period	EPD and its contractor		✓			DASO ETWB TCW 34/2002	Implemented
6b.5.1.10	Construction and Demolition Materials In order to minimize the impact resulting from collection and transportation of C&D materials for off-site disposal, the excavated material arising from site formation and foundation works should be reused on-site as backfilling material and for landscaping works as far as practicable. Other mitigation requirements are listed below: • A Waste Management Plan (WMP), which becomes part of the Environmental Management Plan (EMP), should be prepared in accordance with ETWB TCW No.19/2005; • A recording system for the amount of wastes generated, recycled and disposed	Work Site/ During Design & Construction Period	Contractor	✓	✓			ETWB TCW No. 19/2005	Implemented

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	(including the disposal sites) should be adopted for easy tracking; and • In order to monitor the disposal of C&D materials at public filling facilities and landfills and to control fly-tipping, a trip-ticket system should be adopted (refer to *ETWB TCW No. 31/2004*).								
6b.5.1.11 – 6b.5.1.12	The Contactor should prepare and implement an EMP in accordance with ETWB TCW No.19/2005, which describes the arrangements for avoidance, reuse, recovery, recycling, storage, collection, treatment and disposal of different categories of waste to be generated from construction activities. Such a management plan should incorporate site specific factors, such as the designation of areas for segregation and temporary storage of reusable and recyclable materials. The EMP should be submitted to the Engineer for approval. The Contractor should implement waste management practices in the EMP throughout the construction stage of the Project. The EMP should be reviewed regularly and updated by the Contractor, preferably on a monthly basis. All surplus C&D materials arising from or in connection with construction works should become the property of the Contractor when it is removed unless otherwise stated. The Contractor would be responsible for devising a system to work for on-site sorting of C&D materials and promptly removing all sorted and process materials arising from the	Work Site/ During Design & Construction Period	Contractor	✓	✓			ETWB TCW No. 19/2005	Implemented

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	construction activities to minimize temporary stockpiling on-site. The system should be included in the EMP identifying the source of generation, estimated quantity, arrangement for on-site sorting, collection, temporary storage areas and frequency of collection by recycling Contractors or frequency of removal off-site.								
6b.5.1.13	<u>Chemical Wastes</u> Should chemical wastes be produced at the construction site, the Contractor would be required to register with EPD as a Chemical Waste Producer and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste (such as explosive, flammable, oxidizing, irritant, toxic, harmful, or corrosive). The Contractor should employ a licensed collector to transport and dispose of the chemical wastes, to either the Chemical Waste Treatment Centre at Tsing Yi, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Work Site/ During Construction Period	Contractor		✓			Waste Disposal (Chemical Waste) (General) Regulation	Deficiency of Mitigation Measures but rectified by the Contractor.

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
6b.5.1.14	<u>General Refuse</u> General refuse should be stored in enclosed bins or compaction units separate from C&D materials. A licensed waste collector should be employed by the Contractor to remove general refuse from the site, separately from C&D materials. Preferably an enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.	Work Site/ During Construction Period	Contractor		✓			Public Health and Municipal Services Ordinance	Implemented
6b.5.1.16 – 6b.5.1.33	<u>Biogas Generation</u> The Contractor shall review the data and analysis results, and the data from further Site Investigation, if any. Subject to the review findings, the following gas protection measures may be considered if necessary: - gas monitoring after reclamation; - passive ventilation; - gas impermeable membrane; - ventilation with "at risk" rooms; - protection of utilities or below ground services; - precautions during construction works; - precautions prior to entry of belowground services	Reclamation site (if dredging at the reclamation site is not required) / Design & Construction Period	Designer and/or contractor	✓	✓			EPD/TR8/97	N/A
6b.5.2.1	<u>Good Site Practices</u>	IWMF Site/During	IWMF Operator			✓		Waste Disposal Ordinance (Cap.354);	N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	It is recommended that the following good operational practices should be adopted to minimise waste management impacts: • Obtain the necessary waste disposal permits from the appropriate authorities, in accordance with the Waste Disposal Ordinance (Cap. 354) and Waste Disposal (Chemical Waste) (General) Regulation; • Nomination of an approved person to be responsible for good site practice, arrangements for collection and effective disposal to an appropriate facility of all wastes generated at the site; • Use of a waste haulier licensed to collect specific category of waste; • A trip-ticket system should be included as one of the contractual requirements and implemented by the Environmental Team to monitor the disposal of solid wastes at landfills, and to control fly tipping. Reference should be made to ETWB TCW No. 31/2004. • Training of site personnel in proper waste management and chemical waste handling procedures; • Separation of chemical wastes for special handling and appropriate treatment at a licensed facility; • Routine cleaning and maintenance programme for drainage systems, sumps and oil interceptors;	Operation Period						Waste Disposal (Chemical Waste) (General) Regulation; ETWB TCW No. 1/2004	

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	• Provision of sufficient waste disposal points and regular collection for disposal; • Adoption of appropriate measures to minimize windblown litter and dust during transportation of waste, such as covering trucks or transporting wastes in enclosed containers; and • Implementation of a recording system for the amount of wastes generated, and disposed of (including recycled the disposal sites).								
6b.5.2.2	<u>Waste Reduction Measures</u> Good management and control can prevent the generation of significant amounts of waste. It is recommended that the following good operational practices should be adopted to ensure waste reduction: • Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal; • Encourage collection of aluminum cans, plastic bottles and packaging material (e.g. carton boxes) and office paper by individual collectors. Separate labelled bins should be provided to help segregate this waste from other general refuse generated by the work force; and • Any unused chemicals or those with remaining functional capacity should be reused as far as practicable.	IWMF Site/ During Operation Period	IWMF Operator			✓			Implemented

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
6b.5.2.3	<u>Storage, Handling, Treatment, Collection and Disposal of</u> <u>Incineration By-Products</u> The following measures are recommended for the storage, handling and collection of the incineration by-products: • Ash should be stored in storage silos; • Ash should be handled and conveyed in closed systems fully segregated from the ambient environment; • Ash should be wetted with water to control fugitive dust, where necessary; • All fly ash and APC residues should be treated, e.g. by cement solidification or chemical stabilization, for compliance with the proposed Incineration Residue Pollution Control Limits and leachability criteria prior to disposal; • The ash should be transported in covered trucks or containers to the designated landfill site. The Contractor should provide EPD with chemical analysis results of the bottom ash, and treated fly ash and APC residues to confirm that the ash/residue can comply with the proposed Incineration Residue Pollution Control Limits before disposal.	IWMF Site/ During Operation Period	IWMF Operator			✓		Incineration Residue Pollution Control Limits	N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
6b.6.3.1	<u>Fuel Oil Tank Construction and Test</u> • The fuel tank to be installed should be of specified durability. • Double skin tanks are preferred. • Underground fuel storage tank should be placed within a concrete pit. • The concrete pit shall be accessible to allow regular tank integrity tests to be carried out at regular intervals. • Tank integrity tests should be conducted by an independent qualified surveyor or structural engineer. • Any potential problems identified in the test should be rectified as soon as possible.	Fuel Oil Storage Tank/ During Design, Construction and Operation Periods	IWMF Contractor	✓	✓	✓			N/A
6b.6.3.1	<u>Fuel Oil Pipeline Construction and Test</u> • Installation of aboveground fuel oil pipelines is preferable; if underground pipelines are unavoidable, concrete lined trenches should be constructed to contain the pipelines. • Double skin pipelines are preferred. • Distance between the fuel oil refuelling points and the fuel oil storage tank shall be minimized.	Fuel Oil Pipelines/ During Design, Construction and Operation Periods	IWMF Contractor	✓	✓	✓			N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	• Integrity tests for the pipelines should be conducted by an independent qualified surveyor or structural engineer at regular intervals. • Any potential problems identified in the test should be rectified as soon as possible.								
6b.6.3.1	<u>Fuel Oil Leakage Detection</u> • Installation of leak detection device at storage tank and pipelines. • Installation and use of pressure gauges (e.g. at the two ends of a filling line) in fuel filling, which allows unexpected pressure drop or difference and sign of leakage to be detected.	Fuel Oil Storage Tank and Pipelines/ During Design, Construction and Operation Periods	IWMF Contractor	✓	✓	✓			N/A
6b.6.3.1	<u>Fuel Oil Storage Tank Refuelling</u> • Storage tank refuelling (from road tanker) should only be conducted by authorized staff of the oil company using the company's standard procedures.	Fuel Oil Refuelling Point/ During Operation Period	IWMF Operator			✓			N/A
6b.6.3.1	<u>Fuel Oil Spillage Response</u> An Oil Spill Response Plan should be prepared by the operator to document the appropriate response procedures for oil spillage incidents in detail. General procedures to be taken in case of fuel oil spillage are presented below. • Training	IWMF Site/ During Operation Period	IWMF Operator			✓			N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	- Training on oil spill response actions should be given to relevant staff. The training shall cover the followings: ➢Tools & resources to combat oil spillage and fire, e.g. locations of oil spill handling equipment and fire fighting equipment; ➢General methods to deal with oil spillage and fire incidents; ➢Procedures for emergency drills in the event of oil spills and fire; and ➢Regular drills shall be carried out. • Communication -Establish communication channel with the Fire Services Department (FSD) and EPD to report any oil spillage incident so that necessary assistance from relevant department can be quickly sought. • Response Procedures -Any fuel oil spillage within the IWMF site should be immediately reported to the Plant Manager with necessary details including location, source, possible cause and extent of the spillage. -Plant Manager should immediately attend to the spillage and initiate any appropriate action to confine and clean up the spillage. The response								

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	procedures shall include the following: ➢Identify and isolate the source of spillage as soon as possible. ➢Contain the oil spillage and avoid infiltration into soil/ groundwater and discharge to storm water channels. ➢Remove the oil spillage. ➢Clean up the contaminated area. ➢If the oil spillage occurs during storage tank refuelling, the refueling operation should immediately be stopped. ➢Recovered contaminated fuel oil and the associated material to remove the spilled oil should be considered as chemical waste. The handling and disposal procedures for chemical wastes are discussed in the following paragraphs.								
6b.6.3.2	<u>Chemicals and Chemical Wastes Handling & Storage</u> • Chemicals and chemical wastes should only be stored in suitable containers in purpose-built areas. • The storage of chemical wastes should comply with the requirements of the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. • The storage areas for chemicals and chemical wastes shall have an	Chemicals and Chemical Wastes Storage Area / During Operation Period	IWMF Operator			✓			N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	impermeable floor or surface. The impermeable floor/ surface shall possess the following properties: - Not liable to chemically react with the materials and their containers to be stored. - Able to withstand normal loading and physical damage caused by container handling - The integrity and condition of the impermeable floor or surface should be inspected at regular intervals to ensure that it is satisfactorily maintained ➢ For liquid chemicals and chemical wastes storage, the storage area should be bunded to contain at least 110% of the storage capacity of the largest containers or 20% of the total quantity of the chemicals/chemical wastes stored, whichever is the greater. ➢ Storage containers shall be checked at regular intervals for their structural integrity and to ensure that the caps or fill points are tightly closed. ➢ Chemical handling shall be conducted by trained workers under supervision.								
6b.6.3.2	<u>Chemicals and Chemical Wastes Spillage Response</u>	IWMF Site/ During	IWMF Operator			✓			N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	A Chemicals and/ or Chemical Wastes Spillage Response Plan shall be prepared by the operator to document in detail the appropriate response procedures for chemicals or chemical wastes spillage incidents. General procedures to be undertaken in case of chemicals/ chemical waste spillages are presented below. • Training - Training on spill response actions should be given to relevant staff. The training shall cover the followings: ➢ Tools & resources to handle spillage, e.g. locations of spill handling equipment; ➢ General methods to deal with spillage; and ➢ Procedures for emergency drills in the event of spills. • Communication - Establish communication channel with FSD and EPD to report the spillage incident so that necessary assistance from relevant department can be quickly sought. • Response Procedures	Operation Period							

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	- Any spillage within the IWMF site should be reported to the Plant Manager. - Plant Manager shall attend to the spillage and initiate any appropriate actions needed to confine and clean up the spillage. The response procedures shall include the followings: ➢ Identify and isolate the source of spillage as soon as possible; ➢ Contain the spillage and avoid infiltration into soil/ groundwater and discharge to storm water channels (in case the spillage occurs at locations out of the designated storage areas); ➢ Remove the spillage; the removal method/ procedures documented in the Material Safety Data Sheet (MSDS) of the chemicals spilled should be observed; ➢ Clean up the contaminated area (in case the spillage occurs at locations out of the designated storage areas); and								

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	➢ The waste arising from the cleanup operation should be considered as chemical wastes.								
6b.6.3.3	<u>Preventive Measures for Incineration By-products Handling</u> The recommended measures listed below can minimize the potential contamination to the surrounding environment due to the incineration by-products: • Ash should be stored in storage silos; • Ash should be handled and conveyed in closed systems fully segregated from the ambient environment; • Ash should be wetted with water to control fugitive dust, where necessary; • All fly ash and APC residues should be treated, e.g. by cement solidification or chemical stabilization, for compliance with the proposed Incineration Residue Pollution Control Limits and leachability criteria prior to disposal; • The ash should be transported in covered trucks or containers to the designated landfill site.	Storage, Handling & Collection of Incineration Ash at IWMF/ During Operation Period	IWMF Operator			✓			N/A
6b.6.3.4 - 6b.6.3.6	<u>Incident Record</u>	IWMF Site/ During	IWMF Operator			✓		Guidance Manual for Use of Risk-based Remediation	N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	After any spillage, an incident report should be prepared by the Plant Manager. The incident report should contain details of the incident including the cause of the incident, the material spilled and estimated spillage amount, and also the response actions undertaken. The incident record should be kept carefully and able to be retrieved when necessary. The incident report should provide sufficient details for the evaluation of any environmental impacts due to the spillage and assessment of the effectiveness of measures taken. In case any spillage or accidents results in significant land contamination, EPD should be informed immediately and the IWMF operator should be responsible for the cleanup of the affected area. The responses procedures described in **Section 6b.6.3.1** and **Section 6b.6.3.2** of EIA report should be followed accordingly together with the land contamination assessment and remediation guidelines stipulated in the *Guidance Manual for Use of Risk-based Remediation Goals for Contaminated Land Management and the Guidance Note for Contaminated Land and Remediation.*	Operation Period						Goals for Contaminated Land Management and the Guidance Note for Contaminated Land and Remediation.	

* Des - Design, C - Construction, O – Operation, and Dec - Decommissioning

Table B.5 Implementation Schedule for Ecological Quality Measures for the IWMF at the artificial island near SKC

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
7b.8.2.1	<u>Measures to avoid direct loss of intertidal habitat</u> • The site boundary has been proposed to avoid direct contact with the intertidal natural rocky shore of Shek Kwu Chau. It avoids direct loss of intertidal communities and the existing natural rocky shore habitat, where Reef Egret and White-bellied Sea Eagle have been recorded within and in the vicinity of this habitat.	IWMF site	Design team	✓				EIAO-TM	N/A
7b.8.2.2	<u>Measures to minimise loss of coastal subtidal habitat</u> • Extensive coral colonies were recorded at the coastal hard bottom habitat at Shek Kwu Chau. To avoid and minimise the extensive direct impact on the coral colonies, the proposed reclamation area has been moved further offshore to minimise loss of subtial habitat near shore.	IWMF site	Design team	✓				EIAO-TM	N/A
7b.8.2.3	<u>Zero Discharge Scheme</u> • The design scheme of the Project has avoided discharge of wastewater into the marine environment. A zero discharge scheme would be adopted during the operation of the Project. An on-site wastewater treatment plant would be provided to treat the wastewater generated from the IWMF (mainly human sewage). The treated effluent would be re-used in the incineration	IWMF site	Design team, IWMF operator	✓		✓		WPCO	N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	plant and mechanical treatment plant, or for onsite washdown and landscape.								
7b.8.2.4	<u>Measures to avoid loss of plant species of conservation importance</u> • Landing portal construction works would not cause direct lost to the recorded individual of protected plant species, • *Aquilaria sinensis*, at the coastal shrubland habitat at Cheung Sha. As a precautionary measure, the plant should be tagged with eye-catching tape and fenced off prior to works, in order to avoid any damage by workers.	Cheung Sha landing portal	Design team, Contractor	✓	✓		✓	EIAO-TM	N/A
7b.8.3.1-7b.8.3.15	<u>Measures to minimise water quality impact</u> • Measures for water quality as recommended in **Section 5b** of the EIA Report should be implemented.	Work site	Design team, contractor, IWMF operator	✓	✓	✓	✓	EIAO-TM; ProPECC PN 1/94; WPCO	Implemented
7b.8.3.16 - 7b.8.3.30	<u>Measures to minimise disturbance on Finless Porpoise</u> *Minimisation of Habitat Loss for Finless Porpoise* • Substantial revision has been made on the layout plan and form of the breakwater, in order to minimise the potential loss of important habitat for Finless Porpoise. The revision has greatly reduced the size of the embayment area, as well as the Project footprint. As a result, the size of habitat loss for Finless Porpoise has	IWMF site, work site, marine traffic route	Design team, contractor, IWMF operator	✓	✓	✓	✓	EIAO-TM, Supporting Document for Application for Variation of the Environmental Permit (EP-429/2012)	Implemented for avoidance of construction works that may produce underwater acoustic disturbance, Vessel Travel Route implementation, training of staff; N/A for others

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	reduced from the original ~50 ha, down to ~31 ha. *Avoidance of peak season for finless porpoise occurrence* • To minimise potential acoustic disturbance from construction activities on Finless Porpoise, construction works that may produce underwater acoustic disturbance should be scheduled outside the months with peak Finless Porpoise occurrence (December to May), including: - sheet piling works for construction of cofferdam surrounding the reclamation area (Phase 1); - sheet piling works for construction of the shorter section of breakwater (Phase 1); - sheet piling works for construction of the remaining section of breakwater (Phase 3); - bored piling works for berth area (Phase 3); and - submarine cable installation works between Shek Kwu Chau and Cheung Sha. Such works should be restricted within June to November. This approach would not only avoid the peak season for Finless Porpoise occurrence, the magnitude of impacts arise								

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	from acoustic disturbance would also be minimised. • Submarine cable installation works are also recommended to be scheduled within June to November, when sightings of Finless Porpoise is scarce in the area of the proposed alignment of the submarine cable. • Since the DCM ground treatment and the installation of precast seawalls and breakwaters should generate no underwater acoustic disturbance to Finless Porpoise, no specific mitigation measures are required. *Opt for quieter construction methods and plants* • Considering the sensitivity of marine mammals to underwater acoustic disturbance, instead of the previously proposed conventional breakwater and reclamation peripheral structure, which requires noisy piling works, the current circular cells structure for breakwater and reclamation peripheral structure is proposed. A quieter sheet piling method using vibratory hammer or hydraulic impact hammer, should be adopted for the installation of circular cells for cellular cofferdam and northern breakwater during								

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	Phase 1, and southern breakwater Phase 3; • Non-percussive bore piling method would be adopted for the installation of tubular piles for the berth construction during Phase 3. *Monitored exclusion zones* • During the installation/re-installation/relocation process of floating type silt curtains, in order to avoid the accidental entrance and entrapment of marine mammals within the silt curtains, a monitored exclusion zone of 250 m radius from silt curtain should be implemented. The exclusion zone should be closely monitored by an experienced marine mammal observer at least 30 minutes before the start of installation/re-installation/relocation process. If a marine mammal is noted within the exclusion zone, all marine works should stop immediately and remain idle for 30 minutes, or until the exclusion zone is free from marine mammals. • The experienced marine mammal observer should be well trained to detect marine mammals. Binoculars should be used to search the exclusion zone from an elevated platform with unobstructed visibility. The observer should also be independent								

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	from the project proponent and has the power to call-off construction activities. • In addition, as marine mammals cannot be effectively monitored within the proposed monitored exclusion zone at night, or during adverse weather conditions (i.e. Beaufort 5 or above, visibility of 300 meters or below), marine works should be avoided under weather conditions with low visibility. *Marine mammal watching plan* • Upon the completion of the installation/re-installation/relocation of floating type silt curtain, all marine works would be conducted within a fully enclosed environment within the silt curtain, hence exclusion zone monitoring would no longer be required. Subsequently, a marine mammal watching plan should be implemented. The plan should include regular inspection of silt curtains, and visual inspection of the waters surrounded by the curtains. Special attention should be paid to Phase 2 (reclamation) where the floating type still curtain would be opened occasionally for vessel access, leaving a temporary 50 m opening. An action plan should be devised to cope with any unpredicted incidents such as the case when								

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	marine mammals are found within the waters surrounded by the silt curtains. *Small openings at silt curtains* • The openings for vessel access at the silt curtains should be as small as possible to minimise the risk of accidental entrance. *Adoption of regular travel route* • During construction and operation, captains of all vessels should adopt regular travel route, in order to minimize the chance of vessel collision with marine mammals, which may otherwise result in damage to health or mortality. The regular travel route should avoid areas with high sighting density of Finless Porpoise as much as possible. *Vessel speed limit* • The frequent vessel traffic in the vicinity of works area may increase the chance of mammal mammals being killed or seriously injured by vessel collision. A speed limit of ten knots should be strictly enforced within areas with high density of Finless Porpoise. • Passive acoustic monitoring and land-based theodolite monitoring surveys should be								

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	adopted to verify the predicted impacts and effectiveness of the proposed mitigation measures. *Training of Staff* • Staff, including captains of vessels, should be aware of the guidelines for safe vessel operations in the presence of cetaceans during construction and operation phases. Adequate trainings should be provided								
7b.8.3.31 - 7b.8.3.34	<u>Measures to minimise impact on corals</u> *Coral translocation* • Coral communities within and in proximity to the proposed dredging sites would be disturbed by the Project due to the dredging operations. In order to minimise direct loss of coral communities, translocation of corals that are attached to movable rocks with diameter less than 50 cm are recommended. In order to avoid disturbance to corals during the spawning period, the spawning season of corals (June to August) should be avoided; and that translocation should be carried out during the winter season (November-March).	IWMF site	Design team, contractor, IWMF operator	✓	✓	✓	✓	EIAO-TM	Implemented, tagged coral found missing after hitting by typhoons Re-tagging of 10 coral colonies at indirect impact site and control site were conducted in November and December 2018 respectively.

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	• The REA survey results suggest that the 198 directly affected coral colonies were attached to movable rocks (less than 50 cm in diameter). It is technically feasible to translocate them to avoid direct loss. • Prior to coral translocation, a more detailed baseline survey, including a coral mapping survey, is recommended to further confirm the exact number and location of coral colonies within the potentially affected area. A more detailed coral translocation plan, including selection of suitable recipient site, plan for coral translocation, and event / action plan for coral monitoring should be submitted upon approval of this Project, prior to commencement of construction works. Advice from relevant governmental departments (i.e. AFCD) and professionals would be sought after, in order to identify a desirable location for the relocation of coral communities. Post-translocation monitoring on the translocated corals should also be considered. *Coral monitoring programme* • A coral monitoring programme is recommended to assess any adverse and unacceptable impacts to the coral								

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	communities at the coasts of Shek Kwu Chau during construction of the Project. *Phasing of Works* • To minimize environmental impacts, the proposed phasing of construction works has been carefully designed to reduce the amount of concurrent works, hence minimize SS elevation and the associated impacts on corals.								
7b.8.3.35 - 7b.8.3.41	<u>Specific measures to minimize disturbance on breeding White-bellied Sea Eagle</u> *Avoidance of noisy works during the breeding season of White-bellied Sea Eagle* • To minimize potential noise disturbance from construction activities on WBSE, noisy construction works should be scheduled outside their breeding season (December to May) to minimise potential degradation in breeding ground quality and breeding activities, including: - sheet piling works for construction of cofferdam surrounding the reclamation area (Phase 1); - sheet piling works for construction of the shorter section of breakwater (Phase 1);	IWMF site, marine traffic route	Design Team, Contractor, IWMF operator	✓	✓	✓	✓	EIAO-TM	Implemented

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	- sheet piling works for construction of the remaining section of breakwater (Phase 3); and - bored piling works for berth area (Phase 3). *Opt for quieter construction methods and plants* • To minimise potential construction noise disturbance on WBSE, quieter construction methods and plants should be adopted. The recommended noise mitigation measures in the **Noise** chapter (**Section 4b.8** of the EIA Report) should be implemented to minimise potential noise disturbance to acceptable levels. *Restriction on vessel access near the nest of White-bellied Sea Eagle* • During construction and operation, in order to minimize disturbance on the existing WBSE nest, a pre-defined practical route to restrict vessel access near the nest should be adopted to keep vessels and boats as far away from the nest as possible. *White-bellied Sea Eagle monitoring programme* • A WBSE monitoring programme is recommended to assess any adverse and unacceptable impacts to the breeding								

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	activities of WBSE during construction and operation of the Project. Monitoring surveys for WBSE would include pre-construction phase (twice per month for duration of three months during their breeding season -between December and May, immediately before the commencement of works), construction phase, and operation phase (two years after the completion of construction works). • Surveys should be conducted twice per month during their breeding season (from December to May); and once per month outside breeding season (June to November). More details on monitoring for WBSE are presented in the EM&A Manual. *Education of staff* • Staff, including captains of all vessels during construction and operation phases, should be aware of the ecological importance of WBSE. Awareness should be raised among staff to minimise any intentional or unintentional disturbance to the nest. *Minimisation of Glare Disturbance* • To minimise glare disturbance on WBSE, which may cause disorientation of birds								

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	by interfering with their magnetic compass, and disruption in behavioural patterns such as reproduction, fat storage and foraging pattern, any un-necessary outdoor lighting should be avoided, and in-ward and down-ward pointing of lights should be adopted.								
-	<u>Construction of Seawall/Breakwaters</u> • To widen the open channel between the Artificial Island and Shek Kwu Chau. • To design the precast concrete seawall with environmental friendly features.	IWMF site	Design team, contractor, IWMF operator	✓	✓			Supporting Document for Application for Variation of Environmental Permit (EP-429/2012)	N/A
7b.8.3.42	<u>Opt for Quieter Construction Methods and Plants</u> • Quieter construction methods and plants should be used to minimise disturbance to the nearby terrestrial habitat and the associated wildlife.	Work site	Design team, contractor, IWMF operator	✓	✓	✓	✓	EIAO-TM	Implemented
7b.8.3.43	<u>Measures to minimize impacts from artificial lighting</u> • Unnecessary lighting should be avoided, and shielding of lights should be provided to minimize disturbance from light pollution on fauna groups.	IWMF site	Design team, contractor, IWMF operator	✓	✓	✓		EIAO-TM	Implemented
7b.8.3.44 - 7b.8.3.45	<u>Measures to minimize accidental spillage</u> • Regular maintenance of vessels, vehicles and equipment that may cause leakage and spillage should only be undertaken within	Work site	Contractor, IWMF operator		✓	✓	✓	EIAO-TM	Deficiency of Mitigation Measures but rectified by the Contractor.

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	pre-designated areas, which are appropriately equipped to control the associated discharges. • Oils, fuels and chemicals should be contained in suitable containers, and only be used and stored in designated areas which have pollution prevention facilities. All fuel tanks and storage areas should be sited on sealed areas in order to prevent spillage of fuels and solvents to the nearby watercourses. All waste oils and fuels should be collected in designated tanks prior to disposal.								
7b.8.3.46	<u>Measures to minimise sewage effluent</u> • Temporary sanitary facilities, such as portable chemical toilets, should be employed on-site where necessary to handle sewage from the workforce.	Work site	Contractor		✓			EIAO-TM	N/A
7b.8.3.47	<u>Measures to minimise drainage and construction runoff</u> • Potential ecological impacts resulted from potential degradation of water quality due to unmitigated surface runoff could be minimised via the detailed mitigation measures in **Section 5b.8** of the EIA Report. The following presents some of the mitigation measures:	Work site	Contractor		✓		✓	EIAO-TM	N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	- On-site drainage system with implemented sedimentation control facilities. - Channels, earth bunds or sand bag barriers should be provided on site to direct storm water to silt removal facilities. - Provision of embankment at boundaries of earthworks for flood protection. - Water pumped out from foundation piles must be discharged into silt removal facilities. - During rainstorms, exposed slope/soil surfaces should be covered by tarpaulin or other means, as far as practicable. - Exposed soil surface should be minimized to reduce siltation and runoff. - Earthwork final surfaces should be well compacted. Subsequent permanent surface protection should be immediately performed. - Open stockpiles of construction materials, and construction wastes on-site should be covered with tarpaulin or similar fabric during rainstorms.								
7b.8.3.48	<u>Measures to minimise impacts from general construction activities</u> • To avoid the entering of construction solid waste into the nearby habitats, construction solid waste should be collected, handled	Work site	Contractor		✓			EIAO-TM	Implemented

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	and disposed of properly to avoid entering to the nearby habitats. It is recommended to clean the construction sites on a regular basis.								
7b.8.3.49	<u>Pest Control</u> Good waste management practices should be adopted at the IWMF in order to minimise the risk of introduction of pest to the island: - Transportation of wastes in enclosed containers - Waste storage area should be well maintained and cleaned - Waste should only be disposed of at designated areas - Timely removal of the newly arrived waste - Removal of items that are capable of retaining water - Rapid clean up of any waste spillages - Maintenance of a tidy and clean site environment - Regular application of pest control - Education of staff the importance of site cleanliness	IWMF site	IWMF operator			✓			N/A
7b.8.3.50	<u>Control of Marine Habitat Quality during Operation Phase</u> • Depending on the seabed condition of the approach channel for marine vessels during operation phase of the IWMF, maintenance dredging may be required to	IWMF site	IWMF operator			✓		EIAO-TM; WPCO	N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	ensure safe access. In order to avoid degradation in water quality due to elevation in SS and dispersion of sediment plume due to dredging works, it is recommended that any future maintenance dredging works should not be carried out within 100 m from the shore, similar to that of the dredging for anti-scouring protection layer during construction phase. All maintenance dredging works should be carried out with the implementation of silt curtain to control the dispersion of SS. The production rate should comply with the permit dredging rate and number of grab per hour.								
7b.8.4.1 – 7b.8.4.8	<u>Compensation of loss of important habitat of Finless Porpoise</u> *Designation of Marine Park* • The Project Proponent has made a firm commitment to seek to designate a marine park of approximately 700 ha in the waters between Soko Islands and Shek Kwu Chau, in accordance with the statutory process stipulated in the Marine Parks Ordinance, as a compensation measure for the habitat loss arising from the construction of the IWMF at the artificial island near SKC. • The Project Proponent shall seek to complete the designation by 2018 to tie in	Waters between Shek Kwu Chau and Soko Islands	Project Proponent	✓		✓		EIAO-TM	N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	with the operation of the IWMF at the artificial island near SKC. • A further study should be carried out to review relevant previous studies and collate available information on the ecological characters of the proposed area for marine park designation; and review available survey data for Finless Porpoise, water quality, fisheries, marine traffic and planned development projects in the vicinity. Based on the findings, ecological profiles of the proposed area for marine park designation should be established, and the extent and location of the proposed marine park be determined. The adequacy of enhancement measures should also be reviewed. • In addition, a management plan for the proposed marine park should be proposed, covering information on the responsible departments for operation and management (O&M) of the marine park, as well as the O&M duties of each of the departments involved. Consultation with relevant government departments and stakeholders should be conducted under the study. The study should be submitted to Director of Environmental Protection (DEP) for approval before the commencement of construction works.								

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	• The Project Proponent should provide assistance to AFCD during the process of the marine park designation. .								
7b.8.5.1 – 7b.8.5.4	Additional Enhancement or Precautionary Measures *Deployment of Artificial Reefs* • Deployment of artificial reefs (ARs) is an enhancement measure for the marine habitats. ARs are proposed to be deployed within the proposed marine park under this Project. The exact location, dimension and type of ARs to be deployed are to be further investigated along with the further study of the proposed marine park under this Project. The proposed ARs would be deployed at the same time as the complete designation of marine park. *Release of Fish Fry at Artificial Reefs and Marine Park* • Release of fish fry at the proposed ARs, as well as the proposed marine park under this study, should enhance the fish resources in the nearby waters, and subsequently food sources for Finless Porpoise. The proposed ARs with various micro-habitats would have the potential to provide shelter and nursery ground for the released fish fry.	Within the proposed marine park under this study	Project Proponent	✓		✓		EIAO-TM	N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	The frequency and quantity of fry to be released should be agreed by AFCD.								

* Des - Design, C - Construction, O – Operation, and Dec - Decommissioning

Table B.6 Implementation Schedule for Fisheries Measures for the IWMF at the artificial island near SKC

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
8b.8.1.2	Measure to minimize loss of and disturbance on fisheries resources • Alteration to the phasing of works, construction method, and layout plan of the IWMF at the artificial island near SKC has been made. The total fishing ground to be permanently lost due to the project has been significantly reduced from ~50 ha to ~31 ha. By adopting the current circular cells instead of the conventional seawall construction method, SS elevation would be greatly reduced, minimizing adverse impact on the health of fisheries resources.	IWMF site	Design team, contractor	✓	✓		✓	EIAO-TM	N/A
8b.8.1.3	Measure to minimize impingement and entrainment • Provision of a screen at the water intake point for desalination plant would be essential to minimize the risk of impingement and entrainment of fisheries resources (including fish, larvae and egg) through the intake point.	IWMF site	Design team, contractor, IWMF operator	✓	✓	✓		EIAO-TM	N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
8b.8.1.4- 8b.8.1.6	<u>Measures to control water quality</u> • No wastewater effluent, anti-fouling agent, heavy metals and other contaminants would be released during operation phase of the Project. • Mitigation measures recommended in the water quality impact assessment during construction and operation would serve to protect fisheries resources from indirect impacts resulted from the Project	Work site, IWMF site	Design team, contractor, IWMF operator	✓	✓	✓	✓	EIAO-TM	Implemented
8b.8.1.7 – 8b.8.1.8	<u>Additional Enhancement / Precautionary Measures</u> • Artificial Reefs (ARs) are proposed to be deployed within the proposed marine park under this Project as an enhancement measure for the marine habitats. This enhancement feature would bring positive impacts to the previously identified important spawning and nursery ground for fisheries resources. *Release of Fish Fry at Artificial Reefs* • Release of fish fry has been proposed under this Project. The proposed deployment of ARs within the proposed marine park would provide shelter and nursery ground for the released fish fry. The frequency and quantity of fry to be released should be agreed by AFCD.	Within the proposed marine park in the waters between Soko Islands and Shek Kwu Chau	Project Proponent	✓		✓		EIAO-TM	N/A

* Des - Design, C - Construction, O – Operation, and Dec - Decommissioning

Table B.7 Implementation Schedule for Landscape and Visual Measures for the IWMF at the artificial island near SKC

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
S10b.10 MLVC- 01	Grass-hydroseeded bare soil surface and stock pile area	Work site / During construction phase	Contractor		✓				N/A
S10b.10 MLVC-02	<u>Landscape Design</u> 1) Early planting using fast grow trees and tall shrubs at strategic locations within site as buffer to block view corridors to the site from the VSRs, and to locally screen haul roads, excavation works and site preparation works. 2) Use of tree species of dense tree crown to serve as visual barrier. 3) Hard and soft landscape treatment (e.g. trees and shrubs) of open areas within development to provide a background for the outdoor containers from open view, shade and shelter, and a green appearance from surrounding viewpoints. 4) Planting strip along the periphery of the project site. 5) Selected tree species suitable for the coastal condition.	Work site / During design & construction phases	Contractor	✓	✓				N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
S10b.10 MLVC-03	<u>Adoption of Natural Features of the Existing Shoreline</u> 1) Use of boulders in different sizes and with the similar textures of the existing rocky shores for the construction of breakwater and artificial shoreline in order to blend into the existing natural shoreline. 2) Use of cellular cofferdam together with the natural boulders to form a curvature shoreline for the reclamation area to echo with the natural shoreline of SKC.	Work site / During construction phase	Contractor		✓				N/A
S10b.10 MLVC-04	<u>Greening Design (Rooftop & Vertical Greening)</u> 1) Implementation of rooftop and vertical greening (vertical building envelope) along the periphery of each building block to increase the amenity value of the work, moderate temperature extremes and enhance building energy performance. The greening appearance of the building shall enhance its visual harmony with the natural surroundings as well as reduce the apparent visual mass of the structure. 2) Sufficient space between concrete enclosure and stack to minimize heat transfer. 3) Introduction of landscape decks at the stack to further enhance the overall natural and green concept unique for this site.	Work site / During design & construction phases	Contractor	✓	✓				N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
S10b.10 MVC-01	<u>Visual Mitigation and Aesthetic Design</u> 1) Use of natural materials with recessive color to minimize the bulkiness of the building. 2) Adoption of innovative aesthetic design to the chimney to minimize or visually mitigate the massing of the chimney so as to reduce its visual impact to the surroundings. 3) Color of the chimney in a gradual changing manner to match with the color of the sky. 4) Provision of observation deck for public enjoyment at the top of the chimney to diminish the feeling of chimney. 5) Provision of sky gardens between the two stacks to allow additional greening for enhancing the aesthetic quality. Maintenance access (elevator and staircase) from the ground floor to the sky gardens will be provided to allow maintenance of the sky gardens. 6) Integration of the visitor's walkway with different material façade design of incinerator plant to enhance the aesthetic quality.	Structures in IWMF / During design & constructio n phases	Contractor	✓	✓				N/A
S10b.10 MVC-02	Control of the security floodlight for construction areas at night to avoid excessive glare to the surrounding receiver.	Work site / During construction phase	Contractor		✓				Implemented

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
S10b.10 MVC-03	Optimization of the construction sequence and construction programme to minimize the duration of impact.	Work site / During design & construction phases	Contractor	✓	✓				Implemented
S10b.10 MVC-04	Storage of the backfilling materials for site formation & construction materials / wastes on site at a maximum height of 2m, covered with an impermeable material of visually un-obtrusive material (in earth tone).	Work site / During construction phase	Contractor		✓				N/A
S10b.10 MVC-05	Reduction of the number of construction traffic at the site to practical minimum.	Work site / During construction phase	Contractor		✓				Implemented
S10b.10 MLVO-01	<u>Planting Maintenance</u> Provision of proper planting maintenance and replacement of defective plant species on the new planting areas to enhance aesthetic and landscape quality.	Project site / During Operation phase	Contractor			✓			N/A
S10b.10 MVO-01	<u>Environmental Education Centre</u> Development of an Environmental Education Center, in which regular exhibitions and lectures to promote environmental awareness and waste reduction concept would be provided, as a part of the IWMF for the general public to alleviate negative public perceptions of the development.	Project site / During Operation phase	Contractor			✓			N/A
S10b.10 MVO-02	<u>Control of Light</u> Control the numbers of lights and their intensity to a level that is good enough to meet the safety requirements at night but not excessive.	Project site / During Operation phase	Contractor			✓			N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
S10b.10 MVO-03	Control of Operation Time Minimization of the frequency of waste transportation to practical minimum (e.g. limit the reception of MSW from 8 am to 8 pm)	Project site / During Operation phase	Contractor			✓			N/A

* Des - Design, C - Construction, O – Operation, and Dec - Decommissioning

Appendix C Impact Monitoring Schedule of the Reporting Month

Impact Monitoring Schedule for IWMF

Apr-21

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
				Impact Water Quality monitoring for B1, B2, B3, B4, H1, C1A, C2A, F1A, CR1, CR2, M1 Tidal Period: Ebb Tide: 12:00 - 19:10 Flood Tide: 05:50 - 12:00 Monitoring Time: Mid-ebb: 13:50 - 17:20 *Mid-flood: 08:00 - 11:30	
4	5	6	7	8	9	10
	Impact Water Quality monitoring for B1, B2, B3, B4, H1, C1A, C2A, F1A, CR1, CR2, M1 Tidal Period: Ebb Tide: 15:00 - 23:59 Flood Tide: 00:00 - 15:00 Monitoring Time: &Mid-ebb: 15:30 - 19:00 *Mid-flood: 08:00 - 11:30		Impact Water Quality monitoring for B1, B2, B3, B4, H1, C1A, C2A, F1A, CR1, CR2, M1 Tidal Period: Ebb Tide: 08:32 - 12:00 Flood Tide: 12:00 - 18:04 Monitoring Time: Mid-ebb: 08:31 - 12:01 Mid-flood: 13:17 - 16:47 Ecology monitoring for Marine Mammals by Vessel-based Line-Transect Survey	Impact Daytime, Evening & Night time Noise monitoring for M1, M2 & M3	Impact Water Quality monitoring for B1, B2, B3, B4, H1, C1A, C2A, F1A, CR1, CR2, M1 Tidal Period: Ebb Tide: 09:08 - 13:44 Flood Tide: 13:44 - 20:00 Monitoring Time: &Mid-ebb: 09:41 - 13:11 Mid-flood: 15:07 - 18:37 Daytime, Evening & Night time Noise monitoring for M1, M2 & M3	
11	12	13	14	15	16	17
	Impact Water Quality monitoring for B1, B2, B3, B4, H1, C1A, C2A, F1A, CR1, CR2, M1 Tidal Period: Ebb Tide: 08:32 - 12:00 Flood Tide: 12:00 - 18:04 Monitoring Time: Mid-ebb: 10:59 - 14:29 &#Mid-flood: 15:30 - 19:00 Daytime, Evening & Night time Noise monitoring for M1, M2 & M3	Impact Daytime, Evening & Night time Noise monitoring for M1, M2 & M3	Impact Water Quality monitoring for B1, B2, B3, B4, H1, C1A, C2A, F1A, CR1, CR2, M1 Tidal Period: Ebb Tide: 10:27 - 17:00 Flood Tide: 04:00 - 10:27 Monitoring Time: Mid-ebb: 11:58 - 15:28 *#Mid-flood: 08:00 - 11:30	Impact Ecology monitoring for WBSE	Impact Water Quality monitoring for B1, B2, B3, B4, H1, C1A, C2A, F1A, CR1, CR2, M1 Tidal Period: Ebb Tide: 09:08 - 13:44 Flood Tide: 13:44 - 20:00 Monitoring Time: Mid-ebb: 12:39 - 16:09 *Mid-flood: 08:00 - 11:30	
18	19	20	21	22	23	24
	Impact Water Quality monitoring for B1, B2, B3, B4, H1, C1A, C2A, F1A, CR1, CR2, M1 Tidal Period: Ebb Tide: 12:00 - 21:28 Flood Tide: 00:00 - 12:00 Monitoring Time: Mid-ebb: 14:59 - 18:29 *Mid-flood: 08:00 - 11:30 Daytime, Evening & Night time Noise monitoring for M1, M2 & M3	Impact Daytime, Evening & Night time Noise monitoring for M1, M2 & M3 Ecology monitoring for Marine Mammals by Vessel-based Line-Transect Survey	Impact Water Quality monitoring for B1, B2, B3, B4, H1, C1A, C2A, F1A, CR1, CR2, M1 Tidal Period: Ebb Tide: 15:17 - 23:59 Flood Tide: 00:00 - 15:17 Monitoring Time: &Mid-ebb: 15:30 - 19:00 *Mid-flood: 08:00 - 11:30		Impact Water Quality monitoring for B1, B2, B3, B4, H1, C1A, C2A, F1A, CR1, CR2, M1 Tidal Period: Ebb Tide: 09:00 - 13:17 Flood Tide: 13:17 - 19:30 Monitoring Time: Mid-ebb: 08:00 - 12:00 Mid-flood: 12:00 - 18:06	
25	26	27	28	29	30	
	Impact Water Quality monitoring for B1, B2, B3, B4, H1, C1A, C2A, F1A, CR1, CR2, M1 Tidal Period: Ebb Tide: 09:00 - 14:46 Flood Tide: 14:46 - 21:20 Monitoring Time: Mid-ebb: 10:08 - 13:38 &Mid-flood: 15:30 - 19:00 Daytime, Evening & Night time Noise monitoring for M1, M2 & M3	Impact Daytime, Evening & Night time Noise monitoring for M1, M2 & M3	Impact Water Quality monitoring for B1, B2, B3, B4, H1, C1A, C2A, F1A, CR1, CR2, M1 Tidal Period: Ebb Tide: 10:00 - 16:22 Flood Tide: 04:00 - 10:00 Monitoring Time: Mid-ebb: 12:00 - 15:30 *#Mid-flood: 08:00 - 11:30	Impact Ecology monitoring for WBSE	Impact Water Quality monitoring for B1, B2, B3, B4, H1, C1A, C2A, F1A, CR1, CR2, M1 Tidal Period: Ebb Tide: 11:00 - 18:00 Flood Tide: 04:42 - 11:00 Monitoring Time: Mid-ebb: 12:45 - 16:15 *#Mid-flood: 08:00 - 11:30	

Remarks:
1. Daytime Noise Monitoring (07:00-1900), Evening Time Noise Monitoring (1900-2300), Night Time Noise Monitoring (2300-0700)
2. Water Quality Monitoring for S1,S2 and S3 will only conduct during DCM works, refer to Detailed DCM Plan

Note:
* - as per Marine Department Notice No 107 of 2018, all vessels employed for the works should stay in the works area outside the hours of works (0700 to 2300). Due to safty concern, Water Quality Monitoring would start at 0800.
# - Prioritized routing: Mid-Ebb: C1→S3→CR2→CR1→H1→Remaining stations and Mid-Flood: C2→CR1→S3→CR2→H1→Remaining stations
$ - Since predicted tide is shorter than 3.5 hours, method of 90% tidal period as monitoring time is approached.
& - Due to safety concern for sampling event in night-time, method of 90% tidal period as monitoring time is approached and end at 1900.

Appendix D Water Quality Monitoring Data

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
B1	20210402	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:26	9.52	8.50	31.37	26.79	3.25	3
B1	20210402	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:26	10.14	8.26	31.18	26.78	3.18	3
B1	20210402	Cloudy	Moderate	Mid-Flood	Bottom	3.7	9:25	10.31	8.32	31.30	26.84	2.73	3
B1	20210402	Cloudy	Moderate	Mid-Flood	Bottom	3.7	9:25	9.24	8.35	31.12	26.94	3.04	3
B2	20210402	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:43	9.98	8.17	31.37	27.07	2.80	2
B2	20210402	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:43	10.18	8.30	30.92	27.04	2.36	3
B2	20210402	Cloudy	Moderate	Mid-Flood	Bottom	3.7	9:42	9.25	8.55	31.08	27.12	2.82	3
B2	20210402	Cloudy	Moderate	Mid-Flood	Bottom	3.7	9:42	9.78	8.61	30.91	27.07	2.69	3
B3	20210402	Cloudy	Moderate	Mid-Flood	Surface	1.0	10:13	9.99	8.43	31.53	27.15	2.98	3
B3	20210402	Cloudy	Moderate	Mid-Flood	Surface	1.0	10:13	9.09	8.43	31.47	27.06	2.92	3
B3	20210402	Cloudy	Moderate	Mid-Flood	Bottom	3.6	10:12	9.13	8.54	31.11	27.04	3.00	3
B3	20210402	Cloudy	Moderate	Mid-Flood	Bottom	3.6	10:12	8.98	8.32	31.67	27.22	3.37	4
B4	20210402	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:59	9.59	8.45	31.44	26.86	3.10	3
B4	20210402	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:59	9.27	8.22	31.34	26.98	2.72	4
B4	20210402	Cloudy	Moderate	Mid-Flood	Bottom	4.2	9:58	10.01	8.61	31.26	27.07	3.12	3
B4	20210402	Cloudy	Moderate	Mid-Flood	Bottom	4.2	9:58	9.31	8.45	31.64	26.93	3.48	2
C1A	20210402	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:56	10.25	8.28	31.69	26.75	3.28	2
C1A	20210402	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:56	9.37	8.53	30.97	26.66	2.96	2
C1A	20210402	Cloudy	Moderate	Mid-Flood	Middle	6.0	8:57	10.35	8.38	31.33	26.74	2.71	2
C1A	20210402	Cloudy	Moderate	Mid-Flood	Middle	6.0	8:57	9.46	8.20	30.97	26.72	2.77	2
C1A	20210402	Cloudy	Moderate	Mid-Flood	Bottom	10.9	8:55	9.77	8.44	31.01	26.63	2.97	2
C1A	20210402	Cloudy	Moderate	Mid-Flood	Bottom	10.9	8:55	10.02	8.58	31.40	26.72	3.25	3
C2A	20210402	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:01	10.14	8.32	31.29	26.48	2.78	2
C2A	20210402	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:01	9.27	8.45	31.38	26.66	2.90	3
C2A	20210402	Cloudy	Moderate	Mid-Flood	Middle	5.9	8:02	9.12	8.57	30.89	26.68	2.57	3
C2A	20210402	Cloudy	Moderate	Mid-Flood	Middle	5.9	8:02	10.26	8.27	31.27	26.47	2.84	4
C2A	20210402	Cloudy	Moderate	Mid-Flood	Bottom	10.7	8:00	9.95	8.22	31.48	26.51	2.99	3

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
C2A	20210402	Cloudy	Moderate	Mid-Flood	Bottom	10.7	8:00	9.99	8.42	31.15	26.73	2.88	4
CR1	20210402	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:23	10.06	8.20	30.96	26.50	2.48	3
CR1	20210402	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:23	9.09	8.23	31.69	26.73	2.67	4
CR1	20210402	Cloudy	Moderate	Mid-Flood	Middle	6.2	8:24	9.81	8.47	31.04	26.64	2.84	3
CR1	20210402	Cloudy	Moderate	Mid-Flood	Middle	6.2	8:24	9.13	8.32	31.52	26.46	3.12	4
CR1	20210402	Cloudy	Moderate	Mid-Flood	Bottom	11.3	8:22	10.01	8.18	31.63	26.68	3.56	4
CR1	20210402	Cloudy	Moderate	Mid-Flood	Bottom	11.3	8:22	9.67	8.32	31.47	26.48	3.50	4
CR2	20210402	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:36	9.73	8.37	31.38	26.71	2.99	4
CR2	20210402	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:36	10.13	8.47	31.64	26.43	3.17	3
CR2	20210402	Cloudy	Moderate	Mid-Flood	Middle	5.9	8:37	9.32	8.38	31.40	26.74	2.97	3
CR2	20210402	Cloudy	Moderate	Mid-Flood	Middle	5.9	8:37	9.19	8.17	31.13	26.61	3.03	2
CR2	20210402	Cloudy	Moderate	Mid-Flood	Bottom	10.7	8:35	9.83	8.54	31.49	26.79	3.58	2
CR2	20210402	Cloudy	Moderate	Mid-Flood	Bottom	10.7	8:35	9.11	8.34	31.21	26.54	3.18	2
F1A	20210402	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:28	10.11	8.31	30.99	26.95	2.43	5
F1A	20210402	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:28	8.90	8.41	31.12	26.74	2.47	5
F1A	20210402	Cloudy	Moderate	Mid-Flood	Middle	4.1	9:29	10.07	8.39	31.66	26.90	3.00	4
F1A	20210402	Cloudy	Moderate	Mid-Flood	Middle	4.1	9:29	10.12	8.18	31.65	26.75	2.92	3
F1A	20210402	Cloudy	Moderate	Mid-Flood	Bottom	7.2	9:27	9.24	8.59	31.06	26.86	2.67	2
F1A	20210402	Cloudy	Moderate	Mid-Flood	Bottom	7.2	9:27	9.82	8.26	31.29	26.72	2.94	3
H1	20210402	Cloudy	Moderate	Mid-Flood	Surface	1.0	10:12	9.23	8.38	31.15	27.12	2.25	2
H1	20210402	Cloudy	Moderate	Mid-Flood	Surface	1.0	10:12	8.94	8.29	30.90	27.14	2.21	3
H1	20210402	Cloudy	Moderate	Mid-Flood	Middle	4.2	10:13	9.95	8.51	30.93	27.15	3.49	2
H1	20210402	Cloudy	Moderate	Mid-Flood	Middle	4.2	10:13	10.20	8.50	31.72	27.18	3.23	3
H1	20210402	Cloudy	Moderate	Mid-Flood	Bottom	7.3	10:11	9.34	8.19	31.32	27.16	3.08	4
H1	20210402	Cloudy	Moderate	Mid-Flood	Bottom	7.3	10:11	9.18	8.18	31.56	27.14	3.69	5
M1	20210402	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:57	8.94	8.29	31.32	26.79	2.47	4
M1	20210402	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:57	9.98	8.48	31.38	26.79	2.79	5

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
M1	20210402	Cloudy	Moderate	Mid-Flood	Middle	3.7	8:58	10.01	8.54	31.24	26.62	3.26	3
M1	20210402	Cloudy	Moderate	Mid-Flood	Middle	3.7	8:58	9.79	8.48	31.42	26.83	2.99	3
M1	20210402	Cloudy	Moderate	Mid-Flood	Bottom	6.4	8:56	9.48	8.33	31.19	26.67	2.95	3
M1	20210402	Cloudy	Moderate	Mid-Flood	Bottom	6.4	8:56	9.65	8.33	31.14	26.80	2.73	3
B1	20210402	Cloudy	Moderate	Mid-Ebb	Surface	1.0	14:19	9.75	8.22	31.36	28.09	2.42	2
B1	20210402	Cloudy	Moderate	Mid-Ebb	Surface	1.0	14:19	10.42	8.28	31.70	28.26	2.40	3
B1	20210402	Cloudy	Moderate	Mid-Ebb	Bottom	4.0	14:18	9.38	8.30	31.64	28.14	2.89	2
B1	20210402	Cloudy	Moderate	Mid-Ebb	Bottom	4.0	14:18	9.25	8.57	31.76	28.27	3.35	3
B2	20210402	Cloudy	Moderate	Mid-Ebb	Surface	1.0	14:35	9.82	8.48	31.48	28.34	3.11	3
B2	20210402	Cloudy	Moderate	Mid-Ebb	Surface	1.0	14:35	9.53	8.42	31.32	28.22	2.91	4
B2	20210402	Cloudy	Moderate	Mid-Ebb	Bottom	4.3	14:34	10.77	8.37	31.40	28.24	3.33	4
B2	20210402	Cloudy	Moderate	Mid-Ebb	Bottom	4.3	14:34	10.37	8.37	31.43	28.29	2.96	4
B3	20210402	Cloudy	Moderate	Mid-Ebb	Surface	1.0	14:07	10.69	8.28	31.83	28.10	2.64	5
B3	20210402	Cloudy	Moderate	Mid-Ebb	Surface	1.0	14:07	9.63	8.19	31.33	28.28	2.63	4
B3	20210402	Cloudy	Moderate	Mid-Ebb	Bottom	4.3	14:06	9.90	8.49	31.44	28.26	2.88	4
B3	20210402	Cloudy	Moderate	Mid-Ebb	Bottom	4.3	14:06	9.56	8.43	31.69	28.08	2.75	4
B4	20210402	Cloudy	Moderate	Mid-Ebb	Surface	1.0	14:17	10.18	8.56	31.07	28.18	2.23	5
B4	20210402	Cloudy	Moderate	Mid-Ebb	Surface	1.0	14:17	9.52	8.31	31.61	28.18	2.28	4
B4	20210402	Cloudy	Moderate	Mid-Ebb	Bottom	3.1	14:16	10.56	8.51	31.30	28.12	2.44	2
B4	20210402	Cloudy	Moderate	Mid-Ebb	Bottom	3.1	14:16	9.19	8.41	31.39	28.18	2.68	3
C1A	20210402	Cloudy	Moderate	Mid-Ebb	Surface	1.0	13:51	10.70	8.40	31.68	28.18	2.98	4
C1A	20210402	Cloudy	Moderate	Mid-Ebb	Surface	1.0	13:51	10.19	8.32	31.26	28.05	2.96	3
C1A	20210402	Cloudy	Moderate	Mid-Ebb	Middle	5.1	13:52	10.66	8.52	31.76	28.15	2.84	4
C1A	20210402	Cloudy	Moderate	Mid-Ebb	Middle	5.1	13:52	9.47	8.38	31.15	28.17	3.26	5
C1A	20210402	Cloudy	Moderate	Mid-Ebb	Bottom	9.2	13:50	10.21	8.39	31.15	28.01	3.25	5
C1A	20210402	Cloudy	Moderate	Mid-Ebb	Bottom	9.2	13:50	9.16	8.21	31.72	28.22	3.26	4
C2A	20210402	Cloudy	Moderate	Mid-Ebb	Surface	1.0	13:51	9.17	8.28	31.26	28.05	2.28	3

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
C2A	20210402	Cloudy	Moderate	Mid-Ebb	Surface	1.0	13:51	10.76	8.48	31.22	28.06	2.49	4
C2A	20210402	Cloudy	Moderate	Mid-Ebb	Middle	5.9	13:52	10.41	8.30	31.18	28.15	2.49	3
C2A	20210402	Cloudy	Moderate	Mid-Ebb	Middle	5.9	13:52	10.76	8.47	31.35	28.21	2.38	3
C2A	20210402	Cloudy	Moderate	Mid-Ebb	Bottom	10.7	13:50	9.86	8.36	31.84	28.11	3.58	3
C2A	20210402	Cloudy	Moderate	Mid-Ebb	Bottom	10.7	13:50	9.89	8.16	31.53	28.27	3.22	2
CR1	20210402	Cloudy	Moderate	Mid-Ebb	Surface	1.0	15:28	10.36	8.37	31.69	28.07	2.40	3
CR1	20210402	Cloudy	Moderate	Mid-Ebb	Surface	1.0	15:28	9.31	8.35	31.51	28.12	2.52	3
CR1	20210402	Cloudy	Moderate	Mid-Ebb	Middle	6.8	15:29	10.10	8.31	31.15	28.01	2.95	2
CR1	20210402	Cloudy	Moderate	Mid-Ebb	Middle	6.8	15:29	10.35	8.20	31.64	27.97	3.04	3
CR1	20210402	Cloudy	Moderate	Mid-Ebb	Bottom	12.5	15:27	9.57	8.39	31.13	28.04	3.13	2
CR1	20210402	Cloudy	Moderate	Mid-Ebb	Bottom	12.5	15:27	10.06	8.38	31.84	28.07	3.50	3
CR2	20210402	Cloudy	Moderate	Mid-Ebb	Surface	1.0	15:15	10.38	8.47	31.67	28.28	2.46	4
CR2	20210402	Cloudy	Moderate	Mid-Ebb	Surface	1.0	15:15	10.10	8.56	31.25	28.10	2.36	5
CR2	20210402	Cloudy	Moderate	Mid-Ebb	Middle	5.4	15:16	9.18	8.22	31.45	28.19	3.02	5
CR2	20210402	Cloudy	Moderate	Mid-Ebb	Middle	5.4	15:16	10.29	8.32	31.56	28.13	3.03	4
CR2	20210402	Cloudy	Moderate	Mid-Ebb	Bottom	9.8	15:14	10.58	8.31	31.67	28.16	3.04	2
CR2	20210402	Cloudy	Moderate	Mid-Ebb	Bottom	9.8	15:14	10.27	8.33	31.26	28.03	2.74	3
F1A	20210402	Cloudy	Moderate	Mid-Ebb	Surface	1.0	15:12	9.24	8.17	31.14	28.03	2.98	3
F1A	20210402	Cloudy	Moderate	Mid-Ebb	Surface	1.0	15:12	10.47	8.38	31.40	28.15	2.55	4
F1A	20210402	Cloudy	Moderate	Mid-Ebb	Middle	4.1	15:13	10.71	8.21	31.44	28.12	3.10	3
F1A	20210402	Cloudy	Moderate	Mid-Ebb	Middle	4.1	15:13	9.82	8.56	31.84	28.11	2.81	4
F1A	20210402	Cloudy	Moderate	Mid-Ebb	Bottom	7.1	15:11	9.13	8.43	31.71	28.24	2.61	3
F1A	20210402	Cloudy	Moderate	Mid-Ebb	Bottom	7.1	15:11	10.35	8.27	31.66	28.18	2.80	4
H1	20210402	Cloudy	Moderate	Mid-Ebb	Surface	1.0	15:00	9.40	8.19	31.43	28.18	2.89	4
H1	20210402	Cloudy	Moderate	Mid-Ebb	Surface	1.0	15:00	10.10	8.36	31.17	28.22	3.01	3
H1	20210402	Cloudy	Moderate	Mid-Ebb	Middle	4.1	15:01	9.24	8.23	31.27	28.22	2.61	3
H1	20210402	Cloudy	Moderate	Mid-Ebb	Middle	4.1	15:01	9.74	8.36	31.65	28.11	2.81	2

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
H1	20210402	Cloudy	Moderate	Mid-Ebb	Bottom	7.1	14:59	9.68	8.39	31.77	28.25	3.03	3
H1	20210402	Cloudy	Moderate	Mid-Ebb	Bottom	7.1	14:59	10.74	8.33	31.28	28.10	2.94	2
M1	20210402	Cloudy	Moderate	Mid-Ebb	Surface	1.0	14:46	10.64	8.40	31.09	28.33	2.70	3
M1	20210402	Cloudy	Moderate	Mid-Ebb	Surface	1.0	14:46	9.85	8.33	31.83	28.24	3.11	2
M1	20210402	Cloudy	Moderate	Mid-Ebb	Middle	4.4	14:47	9.96	8.28	31.61	28.32	2.79	2
M1	20210402	Cloudy	Moderate	Mid-Ebb	Middle	4.4	14:47	10.58	8.28	31.79	28.29	3.11	3
M1	20210402	Cloudy	Moderate	Mid-Ebb	Bottom	7.8	14:45	9.46	8.44	31.50	28.31	2.72	3
M1	20210402	Cloudy	Moderate	Mid-Ebb	Bottom	7.8	14:45	9.29	8.49	31.48	28.31	2.81	3
B1	20210405	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:25	9.09	8.56	30.86	22.70	3.17	3
B1	20210405	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:25	8.36	8.24	30.67	22.86	3.22	2
B1	20210405	Cloudy	Moderate	Mid-Flood	Bottom	4.2	9:24	8.36	8.48	30.88	22.79	3.75	4
B1	20210405	Cloudy	Moderate	Mid-Flood	Bottom	4.2	9:24	8.48	8.40	30.60	22.92	3.40	3
B2	20210405	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:41	8.73	8.45	30.20	22.70	3.33	3
B2	20210405	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:41	8.94	8.58	30.86	22.93	3.64	2
B2	20210405	Cloudy	Moderate	Mid-Flood	Bottom	3.7	9:40	8.49	8.53	30.64	22.98	3.22	3
B2	20210405	Cloudy	Moderate	Mid-Flood	Bottom	3.7	9:40	8.92	8.44	30.35	22.93	3.32	2
B3	20210405	Cloudy	Moderate	Mid-Flood	Surface	1.0	10:14	9.00	8.54	30.44	22.89	2.55	4
B3	20210405	Cloudy	Moderate	Mid-Flood	Surface	1.0	10:14	9.04	8.55	30.96	22.99	2.68	3
B3	20210405	Cloudy	Moderate	Mid-Flood	Bottom	4.1	10:13	8.88	8.57	30.45	23.02	3.34	3
B3	20210405	Cloudy	Moderate	Mid-Flood	Bottom	4.1	10:13	8.67	8.45	30.30	22.89	3.50	2
B4	20210405	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:59	8.85	8.20	30.65	22.89	2.86	3
B4	20210405	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:59	8.57	8.49	30.93	22.90	2.59	2
B4	20210405	Cloudy	Moderate	Mid-Flood	Bottom	3.9	9:58	8.43	8.27	30.23	22.83	3.44	3
B4	20210405	Cloudy	Moderate	Mid-Flood	Bottom	3.9	9:58	8.25	8.19	30.69	22.78	3.18	3
C1A	20210405	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:55	8.41	8.41	30.76	22.96	3.57	2
C1A	20210405	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:55	8.68	8.52	30.48	22.65	3.47	2
C1A	20210405	Cloudy	Moderate	Mid-Flood	Middle	5.1	8:56	9.06	8.34	30.68	22.70	3.60	2

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
C1A	20210405	Cloudy	Moderate	Mid-Flood	Middle	5.1	8:56	8.35	8.43	31.00	22.67	3.76	2
C1A	20210405	Cloudy	Moderate	Mid-Flood	Bottom	9.2	8:54	8.96	8.57	30.23	22.79	3.63	2
C1A	20210405	Cloudy	Moderate	Mid-Flood	Bottom	9.2	8:54	8.50	8.35	30.26	22.64	3.89	3
C2A	20210405	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:01	8.81	8.58	30.31	22.45	3.35	4
C2A	20210405	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:01	8.58	8.28	30.39	22.46	3.36	4
C2A	20210405	Cloudy	Moderate	Mid-Flood	Middle	5.9	8:02	9.11	8.42	30.75	22.67	3.27	4
C2A	20210405	Cloudy	Moderate	Mid-Flood	Middle	5.9	8:02	9.01	8.56	31.03	22.47	3.35	3
C2A	20210405	Cloudy	Moderate	Mid-Flood	Bottom	10.7	8:00	8.52	8.58	30.32	22.56	3.38	2
C2A	20210405	Cloudy	Moderate	Mid-Flood	Bottom	10.7	8:00	8.81	8.28	30.42	22.60	3.98	2
CR1	20210405	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:23	9.03	8.32	30.46	22.58	3.14	3
CR1	20210405	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:23	8.87	8.21	30.40	22.58	2.78	3
CR1	20210405	Cloudy	Moderate	Mid-Flood	Middle	6.2	8:24	8.87	8.48	30.44	22.53	2.93	2
CR1	20210405	Cloudy	Moderate	Mid-Flood	Middle	6.2	8:24	8.94	8.25	30.58	22.72	3.43	3
CR1	20210405	Cloudy	Moderate	Mid-Flood	Bottom	11.4	8:22	8.96	8.51	30.49	22.49	3.98	2
CR1	20210405	Cloudy	Moderate	Mid-Flood	Bottom	11.4	8:22	8.85	8.26	30.26	22.49	3.61	2
CR2	20210405	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:37	8.44	8.33	30.44	22.73	3.39	4
CR2	20210405	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:37	9.06	8.40	30.23	22.55	3.20	4
CR2	20210405	Cloudy	Moderate	Mid-Flood	Middle	5.5	8:38	8.62	8.35	30.53	22.61	2.98	3
CR2	20210405	Cloudy	Moderate	Mid-Flood	Middle	5.5	8:38	8.76	8.31	30.24	22.75	3.12	4
CR2	20210405	Cloudy	Moderate	Mid-Flood	Bottom	10.0	8:36	8.34	8.28	30.42	22.59	3.67	3
CR2	20210405	Cloudy	Moderate	Mid-Flood	Bottom	10.0	8:36	8.82	8.31	30.43	22.69	3.87	4
F1A	20210405	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:26	8.93	8.50	30.41	22.74	3.53	2
F1A	20210405	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:26	9.00	8.44	30.48	22.84	2.96	2
F1A	20210405	Cloudy	Moderate	Mid-Flood	Middle	4.2	9:27	8.75	8.21	30.29	22.79	2.98	2
F1A	20210405	Cloudy	Moderate	Mid-Flood	Middle	4.2	9:27	8.75	8.53	30.63	22.71	2.77	2
F1A	20210405	Cloudy	Moderate	Mid-Flood	Bottom	7.3	9:25	8.75	8.49	30.47	22.96	3.51	3
F1A	20210405	Cloudy	Moderate	Mid-Flood	Bottom	7.3	9:25	8.51	8.20	30.51	22.96	4.00	3

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
H1	20210405	Cloudy	Moderate	Mid-Flood	Surface	1.0	10:05	8.44	8.54	30.90	23.01	2.96	5
H1	20210405	Cloudy	Moderate	Mid-Flood	Surface	1.0	10:05	8.24	8.27	30.79	23.03	2.71	4
H1	20210405	Cloudy	Moderate	Mid-Flood	Middle	4.1	10:06	8.69	8.44	30.56	22.98	2.97	5
H1	20210405	Cloudy	Moderate	Mid-Flood	Middle	4.1	10:06	9.00	8.52	30.97	22.92	2.79	4
H1	20210405	Cloudy	Moderate	Mid-Flood	Bottom	7.2	10:04	8.79	8.54	30.61	23.02	3.97	3
H1	20210405	Cloudy	Moderate	Mid-Flood	Bottom	7.2	10:04	8.79	8.28	30.55	22.74	4.05	2
M1	20210405	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:02	8.90	8.53	30.84	22.70	2.89	3
M1	20210405	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:02	8.23	8.19	30.44	22.97	3.17	3
M1	20210405	Cloudy	Moderate	Mid-Flood	Middle	4.0	9:03	8.40	8.39	30.86	22.66	2.77	3
M1	20210405	Cloudy	Moderate	Mid-Flood	Middle	4.0	9:03	8.56	8.30	30.69	22.73	2.78	3
M1	20210405	Cloudy	Moderate	Mid-Flood	Bottom	7.0	9:01	8.68	8.47	30.32	22.85	3.43	2
M1	20210405	Cloudy	Moderate	Mid-Flood	Bottom	7.0	9:01	8.90	8.31	30.73	22.77	3.63	2
B1	20210405	Cloudy	Moderate	Mid-Ebb	Surface	1.0	16:01	9.12	8.31	30.42	22.80	2.80	2
B1	20210405	Cloudy	Moderate	Mid-Ebb	Surface	1.0	16:01	8.89	8.59	30.87	22.85	2.52	2
B1	20210405	Cloudy	Moderate	Mid-Ebb	Bottom	3.9	16:00	8.99	8.25	30.68	22.87	3.06	3
B1	20210405	Cloudy	Moderate	Mid-Ebb	Bottom	3.9	16:00	8.88	8.58	31.17	22.79	3.23	3
B2	20210405	Cloudy	Moderate	Mid-Ebb	Surface	1.0	16:18	8.77	8.39	31.08	22.83	3.36	3
B2	20210405	Cloudy	Moderate	Mid-Ebb	Surface	1.0	16:18	8.36	8.27	30.98	22.91	3.38	3
B2	20210405	Cloudy	Moderate	Mid-Ebb	Bottom	4.9	16:17	8.81	8.38	31.01	22.87	3.44	2
B2	20210405	Cloudy	Moderate	Mid-Ebb	Bottom	4.9	16:17	8.42	8.45	30.32	22.69	4.10	3
B3	20210405	Cloudy	Moderate	Mid-Ebb	Surface	1.0	15:48	9.13	8.33	30.26	22.99	3.41	2
B3	20210405	Cloudy	Moderate	Mid-Ebb	Surface	1.0	15:48	8.69	8.46	30.82	23.11	3.28	2
B3	20210405	Cloudy	Moderate	Mid-Ebb	Bottom	3.8	15:47	8.94	8.49	31.00	22.83	4.02	3
B3	20210405	Cloudy	Moderate	Mid-Ebb	Bottom	3.8	15:47	8.49	8.46	30.45	23.04	3.88	2
B4	20210405	Cloudy	Moderate	Mid-Ebb	Surface	1.0	15:58	8.65	8.37	31.16	22.92	3.23	2
B4	20210405	Cloudy	Moderate	Mid-Ebb	Surface	1.0	15:58	8.62	8.29	31.14	22.92	2.96	3
B4	20210405	Cloudy	Moderate	Mid-Ebb	Bottom	3.5	15:57	8.94	8.27	30.87	22.89	3.68	2

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
B4	20210405	Cloudy	Moderate	Mid-Ebb	Bottom	3.5	15:57	9.09	8.32	31.09	23.10	4.18	3
C1A	20210405	Cloudy	Moderate	Mid-Ebb	Surface	1.0	15:31	8.99	8.57	31.23	23.01	3.27	2
C1A	20210405	Cloudy	Moderate	Mid-Ebb	Surface	1.0	15:31	9.25	8.33	30.67	22.80	3.03	3
C1A	20210405	Cloudy	Moderate	Mid-Ebb	Middle	5.2	15:32	8.52	8.27	30.86	22.97	2.88	3
C1A	20210405	Cloudy	Moderate	Mid-Ebb	Middle	5.2	15:32	9.16	8.56	30.60	23.02	3.33	2
C1A	20210405	Cloudy	Moderate	Mid-Ebb	Bottom	9.4	15:30	8.71	8.34	30.53	22.99	3.34	2
C1A	20210405	Cloudy	Moderate	Mid-Ebb	Bottom	9.4	15:30	9.01	8.45	31.09	22.92	3.52	2
C2A	20210405	Cloudy	Moderate	Mid-Ebb	Surface	1.0	15:31	8.68	8.32	31.19	23.01	3.19	3
C2A	20210405	Cloudy	Moderate	Mid-Ebb	Surface	1.0	15:31	8.38	8.44	31.08	22.87	2.93	2
C2A	20210405	Cloudy	Moderate	Mid-Ebb	Middle	6.0	15:32	9.21	8.49	31.19	22.99	3.13	3
C2A	20210405	Cloudy	Moderate	Mid-Ebb	Middle	6.0	15:32	8.42	8.50	30.86	22.99	3.17	3
C2A	20210405	Cloudy	Moderate	Mid-Ebb	Bottom	10.9	15:30	8.34	8.46	31.00	23.01	3.55	3
C2A	20210405	Cloudy	Moderate	Mid-Ebb	Bottom	10.9	15:30	8.67	8.51	30.96	22.99	3.80	3
CR1	20210405	Cloudy	Moderate	Mid-Ebb	Surface	1.0	17:13	8.46	8.25	30.94	22.69	3.62	3
CR1	20210405	Cloudy	Moderate	Mid-Ebb	Surface	1.0	17:13	8.76	8.24	30.75	22.66	3.46	3
CR1	20210405	Cloudy	Moderate	Mid-Ebb	Middle	6.2	17:12	9.00	8.48	30.94	22.62	3.00	3
CR1	20210405	Cloudy	Moderate	Mid-Ebb	Middle	6.2	17:12	9.12	8.29	30.43	22.73	2.92	2
CR1	20210405	Cloudy	Moderate	Mid-Ebb	Bottom	11.4	17:11	9.06	8.59	30.91	22.56	4.05	3
CR1	20210405	Cloudy	Moderate	Mid-Ebb	Bottom	11.4	17:11	8.47	8.35	31.19	22.69	3.89	2
CR2	20210405	Cloudy	Moderate	Mid-Ebb	Surface	1.0	17:00	8.63	8.52	30.81	22.53	3.60	3
CR2	20210405	Cloudy	Moderate	Mid-Ebb	Surface	1.0	17:00	8.72	8.45	30.96	22.54	3.49	2
CR2	20210405	Cloudy	Moderate	Mid-Ebb	Middle	5.4	16:59	8.38	8.39	30.76	22.74	3.00	2
CR2	20210405	Cloudy	Moderate	Mid-Ebb	Middle	5.4	16:59	9.18	8.29	30.54	22.51	2.77	2
CR2	20210405	Cloudy	Moderate	Mid-Ebb	Bottom	9.8	16:58	8.41	8.27	30.70	22.67	3.39	2
CR2	20210405	Cloudy	Moderate	Mid-Ebb	Bottom	9.8	16:58	9.13	8.26	30.97	22.58	3.78	2
F1A	20210405	Cloudy	Moderate	Mid-Ebb	Surface	1.0	16:58	8.81	8.49	31.00	22.64	3.57	2
F1A	20210405	Cloudy	Moderate	Mid-Ebb	Surface	1.0	16:58	8.44	8.28	31.19	22.68	3.41	2

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
F1A	20210405	Cloudy	Moderate	Mid-Ebb	Middle	4.5	16:57	8.93	8.53	31.19	22.62	3.62	2
F1A	20210405	Cloudy	Moderate	Mid-Ebb	Middle	4.5	16:57	9.24	8.33	30.90	22.74	3.24	3
F1A	20210405	Cloudy	Moderate	Mid-Ebb	Bottom	8.0	16:56	8.72	8.25	30.31	22.51	3.03	3
F1A	20210405	Cloudy	Moderate	Mid-Ebb	Bottom	8.0	16:56	9.11	8.50	31.02	22.69	3.51	2
H1	20210405	Cloudy	Moderate	Mid-Ebb	Surface	1.0	16:45	9.28	8.49	30.39	22.60	2.61	3
H1	20210405	Cloudy	Moderate	Mid-Ebb	Surface	1.0	16:45	8.50	8.42	30.50	22.71	2.86	3
H1	20210405	Cloudy	Moderate	Mid-Ebb	Middle	4.0	16:46	8.54	8.54	30.47	22.58	3.31	3
H1	20210405	Cloudy	Moderate	Mid-Ebb	Middle	4.0	16:46	8.91	8.27	31.02	22.58	2.91	2
H1	20210405	Cloudy	Moderate	Mid-Ebb	Bottom	6.9	16:44	9.12	8.27	30.87	22.61	4.13	3
H1	20210405	Cloudy	Moderate	Mid-Ebb	Bottom	6.9	16:44	8.74	8.45	30.34	22.63	3.72	2
M1	20210405	Cloudy	Moderate	Mid-Ebb	Surface	1.0	16:32	9.18	8.47	30.92	22.62	2.65	3
M1	20210405	Cloudy	Moderate	Mid-Ebb	Surface	1.0	16:32	8.31	8.42	30.39	22.76	3.08	2
M1	20210405	Cloudy	Moderate	Mid-Ebb	Middle	4.8	16:31	8.46	8.31	30.26	22.77	2.63	2
M1	20210405	Cloudy	Moderate	Mid-Ebb	Middle	4.8	16:31	9.27	8.42	31.07	22.66	2.77	3
M1	20210405	Cloudy	Moderate	Mid-Ebb	Bottom	8.6	16:30	8.72	8.43	30.99	22.80	3.49	2
M1	20210405	Cloudy	Moderate	Mid-Ebb	Bottom	8.6	16:30	8.83	8.32	30.75	22.67	3.90	3
B1	20210407	Cloudy	Moderate	Mid-Ebb	Surface	1.0	8:59	10.14	8.52	30.90	22.36	3.08	2
B1	20210407	Cloudy	Moderate	Mid-Ebb	Surface	1.0	8:59	9.13	8.42	31.16	22.40	3.01	2
B1	20210407	Cloudy	Moderate	Mid-Ebb	Bottom	4.1	8:58	9.06	8.36	30.59	22.36	3.73	3
B1	20210407	Cloudy	Moderate	Mid-Ebb	Bottom	4.1	8:58	9.42	8.42	30.84	22.53	3.25	3
B2	20210407	Cloudy	Moderate	Mid-Ebb	Surface	1.0	9:16	9.93	8.40	30.43	22.40	2.79	3
B2	20210407	Cloudy	Moderate	Mid-Ebb	Surface	1.0	9:16	9.91	8.43	30.60	22.67	2.33	3
B2	20210407	Cloudy	Moderate	Mid-Ebb	Bottom	4.0	9:15	10.28	8.36	30.52	22.56	3.78	2
B2	20210407	Cloudy	Moderate	Mid-Ebb	Bottom	4.0	9:15	9.44	8.38	30.90	22.64	3.20	3
B3	20210407	Cloudy	Moderate	Mid-Ebb	Surface	1.0	11:16	9.79	8.34	31.17	23.02	2.74	2
B3	20210407	Cloudy	Moderate	Mid-Ebb	Surface	1.0	11:16	10.33	8.49	30.40	22.73	3.24	2
B3	20210407	Cloudy	Moderate	Mid-Ebb	Bottom	3.5	11:15	9.25	8.39	31.07	23.04	3.01	3

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
B3	20210407	Cloudy	Moderate	Mid-Ebb	Bottom	3.5	11:15	10.19	8.51	30.55	22.86	3.13	2
B4	20210407	Cloudy	Moderate	Mid-Ebb	Surface	1.0	11:04	10.18	8.46	30.56	22.72	2.47	2
B4	20210407	Cloudy	Moderate	Mid-Ebb	Surface	1.0	11:04	10.36	8.52	31.15	22.72	2.34	3
B4	20210407	Cloudy	Moderate	Mid-Ebb	Bottom	3.8	11:03	9.17	8.53	30.78	22.92	3.32	2
B4	20210407	Cloudy	Moderate	Mid-Ebb	Bottom	3.8	11:03	9.69	8.39	30.44	22.69	3.51	3
C1A	20210407	Cloudy	Moderate	Mid-Ebb	Surface	1.0	8:33	9.74	8.36	30.42	22.57	2.57	2
C1A	20210407	Cloudy	Moderate	Mid-Ebb	Surface	1.0	8:33	9.46	8.34	30.64	22.59	2.35	3
C1A	20210407	Cloudy	Moderate	Mid-Ebb	Middle	4.7	8:32	9.19	8.36	30.74	22.32	3.04	3
C1A	20210407	Cloudy	Moderate	Mid-Ebb	Middle	4.7	8:32	10.35	8.57	31.14	22.31	2.75	2
C1A	20210407	Cloudy	Moderate	Mid-Ebb	Bottom	8.3	8:31	9.52	8.47	31.01	22.52	3.68	2
C1A	20210407	Cloudy	Moderate	Mid-Ebb	Bottom	8.3	8:31	9.86	8.50	30.56	22.54	3.22	2
C2A	20210407	Cloudy	Moderate	Mid-Ebb	Surface	1.0	10:40	9.58	8.42	30.55	22.97	2.86	3
C2A	20210407	Cloudy	Moderate	Mid-Ebb	Surface	1.0	10:40	9.21	8.43	30.59	22.90	2.47	2
C2A	20210407	Cloudy	Moderate	Mid-Ebb	Middle	6.1	10:39	9.72	8.56	30.46	22.78	3.18	3
C2A	20210407	Cloudy	Moderate	Mid-Ebb	Middle	6.1	10:39	9.53	8.49	30.61	22.90	3.33	3
C2A	20210407	Cloudy	Moderate	Mid-Ebb	Bottom	11.1	10:38	10.21	8.34	30.45	22.88	3.18	3
C2A	20210407	Cloudy	Moderate	Mid-Ebb	Bottom	11.1	10:38	9.75	8.55	30.99	22.80	3.30	3
CR1	20210407	Cloudy	Moderate	Mid-Ebb	Surface	1.0	10:12	9.51	8.29	30.39	22.79	3.18	3
CR1	20210407	Cloudy	Moderate	Mid-Ebb	Surface	1.0	10:12	9.15	8.47	30.85	22.57	2.97	3
CR1	20210407	Cloudy	Moderate	Mid-Ebb	Middle	6.6	10:11	10.18	8.49	30.98	22.93	2.99	3
CR1	20210407	Cloudy	Moderate	Mid-Ebb	Middle	6.6	10:11	8.94	8.36	30.65	22.68	3.11	2
CR1	20210407	Cloudy	Moderate	Mid-Ebb	Bottom	12.2	10:10	9.95	8.53	30.59	22.89	2.83	3
CR1	20210407	Cloudy	Moderate	Mid-Ebb	Bottom	12.2	10:10	10.18	8.59	31.12	22.57	2.80	2
CR2	20210407	Cloudy	Moderate	Mid-Ebb	Surface	1.0	9:58	10.37	8.39	31.05	22.57	2.32	3
CR2	20210407	Cloudy	Moderate	Mid-Ebb	Surface	1.0	9:58	9.06	8.52	31.09	22.58	2.78	2
CR2	20210407	Cloudy	Moderate	Mid-Ebb	Middle	5.7	9:57	9.44	8.54	30.91	22.68	3.14	2
CR2	20210407	Cloudy	Moderate	Mid-Ebb	Middle	5.7	9:57	9.55	8.50	30.64	22.62	3.34	2

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
CR2	20210407	Cloudy	Moderate	Mid-Ebb	Bottom	10.3	9:56	9.17	8.26	30.55	22.85	3.54	2
CR2	20210407	Cloudy	Moderate	Mid-Ebb	Bottom	10.3	9:56	9.22	8.37	30.40	22.68	3.18	2
F1A	20210407	Cloudy	Moderate	Mid-Ebb	Surface	1.0	10:37	9.81	8.27	30.72	22.77	3.48	2
F1A	20210407	Cloudy	Moderate	Mid-Ebb	Surface	1.0	10:37	9.83	8.35	30.84	22.97	3.08	2
F1A	20210407	Cloudy	Moderate	Mid-Ebb	Middle	4.0	10:36	9.58	8.29	30.68	22.97	3.08	2
F1A	20210407	Cloudy	Moderate	Mid-Ebb	Middle	4.0	10:36	10.14	8.48	30.72	22.74	2.57	3
F1A	20210407	Cloudy	Moderate	Mid-Ebb	Bottom	7.0	10:35	9.45	8.55	30.57	22.73	3.17	3
F1A	20210407	Cloudy	Moderate	Mid-Ebb	Bottom	7.0	10:35	10.15	8.41	30.57	22.68	3.67	2
H1	20210407	Cloudy	Moderate	Mid-Ebb	Surface	1.0	9:44	9.91	8.27	30.49	22.58	2.78	3
H1	20210407	Cloudy	Moderate	Mid-Ebb	Surface	1.0	9:44	9.99	8.40	30.53	22.71	2.81	3
H1	20210407	Cloudy	Moderate	Mid-Ebb	Middle	4.1	9:43	9.08	8.35	30.90	22.67	3.27	3
H1	20210407	Cloudy	Moderate	Mid-Ebb	Middle	4.1	9:43	9.13	8.28	30.71	22.59	3.17	2
H1	20210407	Cloudy	Moderate	Mid-Ebb	Bottom	7.2	9:42	9.72	8.36	30.41	22.77	3.51	3
H1	20210407	Cloudy	Moderate	Mid-Ebb	Bottom	7.2	9:42	10.15	8.27	31.01	22.47	3.72	2
M1	20210407	Cloudy	Moderate	Mid-Ebb	Surface	1.0	10:11	9.75	8.56	30.89	22.53	3.23	3
M1	20210407	Cloudy	Moderate	Mid-Ebb	Surface	1.0	10:11	9.31	8.55	31.07	22.60	2.81	2
M1	20210407	Cloudy	Moderate	Mid-Ebb	Middle	4.9	10:10	10.36	8.43	30.54	22.63	2.98	2
M1	20210407	Cloudy	Moderate	Mid-Ebb	Middle	4.9	10:10	9.35	8.41	30.43	22.63	3.16	3
M1	20210407	Cloudy	Moderate	Mid-Ebb	Bottom	8.7	10:09	9.12	8.35	30.60	22.83	2.94	2
M1	20210407	Cloudy	Moderate	Mid-Ebb	Bottom	8.7	10:09	9.27	8.54	30.59	22.75	2.77	3
B1	20210407	Cloudy	Moderate	Mid-Flood	Surface	1.0	13:45	8.88	8.37	30.71	23.19	2.11	3
B1	20210407	Cloudy	Moderate	Mid-Flood	Surface	1.0	13:45	9.58	8.57	30.69	23.41	2.51	2
B1	20210407	Cloudy	Moderate	Mid-Flood	Bottom	4.4	13:44	9.66	8.44	30.82	23.26	2.70	4
B1	20210407	Cloudy	Moderate	Mid-Flood	Bottom	4.4	13:44	9.10	8.49	30.81	23.23	3.16	3
B2	20210407	Cloudy	Moderate	Mid-Flood	Surface	1.0	14:03	9.47	8.39	30.59	23.42	3.12	3
B2	20210407	Cloudy	Moderate	Mid-Flood	Surface	1.0	14:03	9.84	8.45	30.84	23.47	2.87	2
B2	20210407	Cloudy	Moderate	Mid-Flood	Bottom	3.9	14:02	8.94	8.43	30.59	23.49	2.86	3

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
B2	20210407	Cloudy	Moderate	Mid-Flood	Bottom	3.9	14:02	10.20	8.49	31.08	23.54	3.39	2
B3	20210407	Cloudy	Moderate	Mid-Flood	Surface	1.0	13:34	9.22	8.33	30.76	23.18	2.87	4
B3	20210407	Cloudy	Moderate	Mid-Flood	Surface	1.0	13:34	9.33	8.26	30.99	23.22	2.98	3
B3	20210407	Cloudy	Moderate	Mid-Flood	Bottom	3.6	13:33	9.82	8.43	30.57	23.36	3.62	3
B3	20210407	Cloudy	Moderate	Mid-Flood	Bottom	3.6	13:33	8.76	8.41	30.74	23.42	3.38	2
B4	20210407	Cloudy	Moderate	Mid-Flood	Surface	1.0	13:46	9.49	8.35	30.75	23.20	3.14	3
B4	20210407	Cloudy	Moderate	Mid-Flood	Surface	1.0	13:46	9.73	8.40	31.09	23.33	3.00	2
B4	20210407	Cloudy	Moderate	Mid-Flood	Bottom	3.8	13:45	9.78	8.47	31.11	23.26	3.44	3
B4	20210407	Cloudy	Moderate	Mid-Flood	Bottom	3.8	13:45	9.75	8.60	31.08	23.41	3.06	3
C1A	20210407	Cloudy	Moderate	Mid-Flood	Surface	1.0	13:19	8.97	8.45	30.85	23.22	2.85	2
C1A	20210407	Cloudy	Moderate	Mid-Flood	Surface	1.0	13:19	8.96	8.44	30.84	23.24	2.72	2
C1A	20210407	Cloudy	Moderate	Mid-Flood	Middle	5.5	13:18	9.28	8.36	30.56	23.15	2.34	2
C1A	20210407	Cloudy	Moderate	Mid-Flood	Middle	5.5	13:18	9.79	8.61	30.70	23.13	2.61	2
C1A	20210407	Cloudy	Moderate	Mid-Flood	Bottom	9.9	13:17	8.87	8.31	30.70	23.32	3.23	2
C1A	20210407	Cloudy	Moderate	Mid-Flood	Bottom	9.9	13:17	9.77	8.52	30.81	23.29	2.81	3
C2A	20210407	Cloudy	Moderate	Mid-Flood	Surface	1.0	13:19	8.67	8.35	30.73	23.26	3.04	4
C2A	20210407	Cloudy	Moderate	Mid-Flood	Surface	1.0	13:19	8.95	8.30	31.11	23.43	2.95	4
C2A	20210407	Cloudy	Moderate	Mid-Flood	Middle	5.7	13:18	9.56	8.27	30.87	23.39	2.69	4
C2A	20210407	Cloudy	Moderate	Mid-Flood	Middle	5.7	13:18	10.08	8.51	30.73	23.23	2.40	3
C2A	20210407	Cloudy	Moderate	Mid-Flood	Bottom	10.3	13:17	8.73	8.37	30.86	23.35	3.33	2
C2A	20210407	Cloudy	Moderate	Mid-Flood	Bottom	10.3	13:17	9.07	8.33	30.46	23.17	3.11	2
CR1	20210407	Cloudy	Moderate	Mid-Flood	Surface	1.0	14:57	9.13	8.39	31.04	23.26	2.97	3
CR1	20210407	Cloudy	Moderate	Mid-Flood	Surface	1.0	14:57	9.82	8.47	30.57	23.43	2.84	3
CR1	20210407	Cloudy	Moderate	Mid-Flood	Middle	6.1	14:56	8.44	8.38	30.55	23.16	2.89	2
CR1	20210407	Cloudy	Moderate	Mid-Flood	Middle	6.1	14:56	9.97	8.58	30.84	23.14	3.05	3
CR1	20210407	Cloudy	Moderate	Mid-Flood	Bottom	11.1	14:55	9.62	8.29	30.40	23.38	2.63	2
CR1	20210407	Cloudy	Moderate	Mid-Flood	Bottom	11.1	14:55	8.98	8.60	30.63	23.22	2.88	2

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
CR2	20210407	Cloudy	Moderate	Mid-Flood	Surface	1.0	14:45	8.70	8.29	31.00	23.48	2.37	4
CR2	20210407	Cloudy	Moderate	Mid-Flood	Surface	1.0	14:45	9.25	8.54	30.82	23.50	1.99	4
CR2	20210407	Cloudy	Moderate	Mid-Flood	Middle	5.9	14:44	9.84	8.61	30.97	23.25	2.98	3
CR2	20210407	Cloudy	Moderate	Mid-Flood	Middle	5.9	14:44	8.78	8.47	30.66	23.53	2.54	4
CR2	20210407	Cloudy	Moderate	Mid-Flood	Bottom	10.8	14:43	10.14	8.40	30.71	23.30	3.62	3
CR2	20210407	Cloudy	Moderate	Mid-Flood	Bottom	10.8	14:43	10.16	8.45	30.98	23.31	3.62	4
F1A	20210407	Cloudy	Moderate	Mid-Flood	Surface	1.0	14:51	9.21	8.50	30.68	23.16	3.02	2
F1A	20210407	Cloudy	Moderate	Mid-Flood	Surface	1.0	14:51	8.92	8.28	30.64	23.18	2.85	2
F1A	20210407	Cloudy	Moderate	Mid-Flood	Middle	4.0	14:50	9.88	8.32	30.46	23.50	3.14	2
F1A	20210407	Cloudy	Moderate	Mid-Flood	Middle	4.0	14:50	8.91	8.48	30.92	23.17	2.86	2
F1A	20210407	Cloudy	Moderate	Mid-Flood	Bottom	7.0	14:49	10.09	8.61	31.09	23.21	3.11	3
F1A	20210407	Cloudy	Moderate	Mid-Flood	Bottom	7.0	14:49	9.53	8.33	31.08	23.31	2.89	3
H1	20210407	Cloudy	Moderate	Mid-Flood	Surface	1.0	14:31	9.13	8.42	30.50	23.41	2.88	5
H1	20210407	Cloudy	Moderate	Mid-Flood	Surface	1.0	14:31	8.69	8.37	31.04	23.51	2.48	4
H1	20210407	Cloudy	Moderate	Mid-Flood	Middle	4.1	14:30	8.77	8.52	30.50	23.42	2.73	5
H1	20210407	Cloudy	Moderate	Mid-Flood	Middle	4.1	14:30	9.35	8.35	30.52	23.45	3.19	4
H1	20210407	Cloudy	Moderate	Mid-Flood	Bottom	7.1	14:29	9.13	8.41	30.57	23.56	2.73	3
H1	20210407	Cloudy	Moderate	Mid-Flood	Bottom	7.1	14:29	9.38	8.54	30.66	23.59	2.83	2
M1	20210407	Cloudy	Moderate	Mid-Flood	Surface	1.0	14:24	8.83	8.32	31.13	23.59	2.71	3
M1	20210407	Cloudy	Moderate	Mid-Flood	Surface	1.0	14:24	9.88	8.52	30.88	23.40	2.84	3
M1	20210407	Cloudy	Moderate	Mid-Flood	Middle	4.2	14:23	9.90	8.33	30.76	23.44	2.98	3
M1	20210407	Cloudy	Moderate	Mid-Flood	Middle	4.2	14:23	8.62	8.32	31.13	23.33	2.82	3
M1	20210407	Cloudy	Moderate	Mid-Flood	Bottom	7.4	14:22	10.14	8.56	30.86	23.48	2.51	2
M1	20210407	Cloudy	Moderate	Mid-Flood	Bottom	7.4	14:22	9.33	8.45	30.59	23.42	2.62	2
B1	20210409	Cloudy	Moderate	Mid-Ebb	Surface	1.0	10:12	8.57	8.57	31.18	20.61	2.07	3
B1	20210409	Cloudy	Moderate	Mid-Ebb	Surface	1.0	10:12	8.06	8.47	30.34	20.51	2.10	2
B1	20210409	Cloudy	Moderate	Mid-Ebb	Bottom	3.5	10:11	9.03	8.22	31.02	20.67	2.88	3

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
B1	20210409	Cloudy	Moderate	Mid-Ebb	Bottom	3.5	10:11	8.83	8.54	30.53	20.54	2.47	3
B2	20210409	Cloudy	Moderate	Mid-Ebb	Surface	1.0	10:29	8.44	8.25	30.66	20.44	2.83	3
B2	20210409	Cloudy	Moderate	Mid-Ebb	Surface	1.0	10:29	8.38	8.32	30.70	20.50	2.44	2
B2	20210409	Cloudy	Moderate	Mid-Ebb	Bottom	4.2	10:28	7.68	8.34	30.64	20.50	3.07	3
B2	20210409	Cloudy	Moderate	Mid-Ebb	Bottom	4.2	10:28	7.97	8.39	30.60	20.41	3.34	2
B3	20210409	Cloudy	Moderate	Mid-Ebb	Surface	1.0	11:45	8.06	8.18	30.54	20.74	2.89	2
B3	20210409	Cloudy	Moderate	Mid-Ebb	Surface	1.0	11:45	8.42	8.50	30.45	20.77	3.06	2
B3	20210409	Cloudy	Moderate	Mid-Ebb	Bottom	3.6	11:44	7.97	8.52	30.50	20.69	2.16	4
B3	20210409	Cloudy	Moderate	Mid-Ebb	Bottom	3.6	11:44	8.81	8.25	31.05	20.67	2.41	3
B4	20210409	Cloudy	Moderate	Mid-Ebb	Surface	1.0	11:30	8.05	8.19	30.33	20.64	2.73	3
B4	20210409	Cloudy	Moderate	Mid-Ebb	Surface	1.0	11:30	8.53	8.43	31.20	20.88	3.02	3
B4	20210409	Cloudy	Moderate	Mid-Ebb	Bottom	3.3	11:29	9.02	8.37	30.99	20.85	3.09	4
B4	20210409	Cloudy	Moderate	Mid-Ebb	Bottom	3.3	11:29	8.41	8.41	30.66	20.85	3.11	3
C1A	20210409	Cloudy	Moderate	Mid-Ebb	Surface	1.0	9:43	8.36	8.16	30.79	20.44	2.11	2
C1A	20210409	Cloudy	Moderate	Mid-Ebb	Surface	1.0	9:43	7.99	8.29	30.70	20.39	2.20	2
C1A	20210409	Cloudy	Moderate	Mid-Ebb	Middle	4.9	9:42	8.30	8.18	30.67	20.44	3.25	2
C1A	20210409	Cloudy	Moderate	Mid-Ebb	Middle	4.9	9:42	8.67	8.37	30.64	20.40	3.11	2
C1A	20210409	Cloudy	Moderate	Mid-Ebb	Bottom	8.8	9:41	8.19	8.36	30.32	20.65	2.53	3
C1A	20210409	Cloudy	Moderate	Mid-Ebb	Bottom	8.8	9:41	8.54	8.35	30.40	20.56	2.64	2
C2A	20210409	Cloudy	Moderate	Mid-Ebb	Surface	1.0	11:49	8.17	8.25	30.43	20.64	2.80	3
C2A	20210409	Cloudy	Moderate	Mid-Ebb	Surface	1.0	11:49	8.97	8.17	31.00	20.74	2.60	2
C2A	20210409	Cloudy	Moderate	Mid-Ebb	Middle	5.7	11:48	8.94	8.33	30.42	20.87	3.18	3
C2A	20210409	Cloudy	Moderate	Mid-Ebb	Middle	5.7	11:48	7.83	8.56	30.69	20.85	2.66	2
C2A	20210409	Cloudy	Moderate	Mid-Ebb	Bottom	10.4	11:47	8.45	8.43	31.15	20.86	2.78	3
C2A	20210409	Cloudy	Moderate	Mid-Ebb	Bottom	10.4	11:47	8.83	8.47	31.15	20.91	2.53	3
CR1	20210409	Cloudy	Moderate	Mid-Ebb	Surface	1.0	11:26	7.67	8.55	30.81	20.73	2.70	2
CR1	20210409	Cloudy	Moderate	Mid-Ebb	Surface	1.0	11:26	7.71	8.24	30.27	20.77	2.83	2

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
CR1	20210409	Cloudy	Moderate	Mid-Ebb	Middle	6.8	11:25	7.73	8.36	30.49	20.73	2.92	3
CR1	20210409	Cloudy	Moderate	Mid-Ebb	Middle	6.8	11:25	8.45	8.42	30.87	20.67	2.76	2
CR1	20210409	Cloudy	Moderate	Mid-Ebb	Bottom	12.6	11:24	7.90	8.26	31.19	20.73	3.04	3
CR1	20210409	Cloudy	Moderate	Mid-Ebb	Bottom	12.6	11:24	7.65	8.55	30.57	20.77	3.58	2
CR2	20210409	Cloudy	Moderate	Mid-Ebb	Surface	1.0	11:13	8.52	8.56	30.51	20.70	2.70	3
CR2	20210409	Cloudy	Moderate	Mid-Ebb	Surface	1.0	11:13	8.18	8.53	31.16	20.59	2.47	3
CR2	20210409	Cloudy	Moderate	Mid-Ebb	Middle	5.8	11:12	7.94	8.56	31.15	20.77	2.92	3
CR2	20210409	Cloudy	Moderate	Mid-Ebb	Middle	5.8	11:12	9.03	8.22	30.86	20.71	2.91	2
CR2	20210409	Cloudy	Moderate	Mid-Ebb	Bottom	10.5	11:11	7.95	8.44	30.47	20.72	2.93	3
CR2	20210409	Cloudy	Moderate	Mid-Ebb	Bottom	10.5	11:11	8.10	8.48	31.04	20.74	3.01	2
F1A	20210409	Cloudy	Moderate	Mid-Ebb	Surface	1.0	11:02	8.20	8.26	30.60	20.78	2.75	3
F1A	20210409	Cloudy	Moderate	Mid-Ebb	Surface	1.0	11:02	9.03	8.42	30.84	20.60	2.99	4
F1A	20210409	Cloudy	Moderate	Mid-Ebb	Middle	4.4	11:01	7.85	8.33	30.65	20.74	2.71	3
F1A	20210409	Cloudy	Moderate	Mid-Ebb	Middle	4.4	11:01	8.11	8.26	30.72	20.77	2.29	3
F1A	20210409	Cloudy	Moderate	Mid-Ebb	Bottom	7.7	11:00	8.85	8.23	30.63	20.77	3.37	2
F1A	20210409	Cloudy	Moderate	Mid-Ebb	Bottom	7.7	11:00	9.05	8.31	30.92	20.52	3.13	2
H1	20210409	Cloudy	Moderate	Mid-Ebb	Surface	1.0	10:59	8.51	8.23	31.24	20.51	2.63	2
H1	20210409	Cloudy	Moderate	Mid-Ebb	Surface	1.0	10:59	8.62	8.56	30.99	20.67	3.04	3
H1	20210409	Cloudy	Moderate	Mid-Ebb	Middle	4.4	10:58	9.11	8.53	30.55	20.63	2.91	3
H1	20210409	Cloudy	Moderate	Mid-Ebb	Middle	4.4	10:58	8.81	8.19	31.03	20.54	2.75	2
H1	20210409	Cloudy	Moderate	Mid-Ebb	Bottom	7.8	10:57	8.49	8.49	30.74	20.61	2.64	3
H1	20210409	Cloudy	Moderate	Mid-Ebb	Bottom	7.8	10:57	9.12	8.55	30.30	20.63	2.45	2
M1	20210409	Cloudy	Moderate	Mid-Ebb	Surface	1.0	10:40	8.89	8.37	30.76	20.50	2.06	2
M1	20210409	Cloudy	Moderate	Mid-Ebb	Surface	1.0	10:40	8.64	8.42	30.91	20.53	1.91	3
M1	20210409	Cloudy	Moderate	Mid-Ebb	Middle	5.0	10:39	7.98	8.41	30.96	20.64	2.71	2
M1	20210409	Cloudy	Moderate	Mid-Ebb	Middle	5.0	10:39	7.79	8.41	30.50	20.49	2.44	2
M1	20210409	Cloudy	Moderate	Mid-Ebb	Bottom	8.9	10:38	8.24	8.22	30.69	20.71	2.75	2

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
M1	20210409	Cloudy	Moderate	Mid-Ebb	Bottom	8.9	10:38	8.78	8.30	30.50	20.67	3.10	2
B1	20210409	Cloudy	Moderate	Mid-Flood	Surface	1.0	15:36	8.79	8.20	30.33	20.99	3.13	3
B1	20210409	Cloudy	Moderate	Mid-Flood	Surface	1.0	15:36	8.89	8.24	30.64	20.99	2.90	3
B1	20210409	Cloudy	Moderate	Mid-Flood	Bottom	4.1	15:35	8.60	8.24	31.27	21.02	3.29	3
B1	20210409	Cloudy	Moderate	Mid-Flood	Bottom	4.1	15:35	8.52	8.32	31.30	21.11	2.90	2
B2	20210409	Cloudy	Moderate	Mid-Flood	Surface	1.0	15:53	8.10	8.23	30.86	20.98	2.03	2
B2	20210409	Cloudy	Moderate	Mid-Flood	Surface	1.0	15:53	8.65	8.21	30.82	21.27	2.38	2
B2	20210409	Cloudy	Moderate	Mid-Flood	Bottom	3.9	15:52	7.97	8.47	30.85	21.20	2.84	2
B2	20210409	Cloudy	Moderate	Mid-Flood	Bottom	3.9	15:52	8.15	8.39	31.31	21.07	2.61	3
B3	20210409	Cloudy	Moderate	Mid-Flood	Surface	1.0	15:25	7.95	8.59	30.24	21.27	2.71	3
B3	20210409	Cloudy	Moderate	Mid-Flood	Surface	1.0	15:25	8.13	8.30	30.40	21.17	3.06	4
B3	20210409	Cloudy	Moderate	Mid-Flood	Bottom	3.7	15:24	8.18	8.30	31.00	20.97	3.50	3
B3	20210409	Cloudy	Moderate	Mid-Flood	Bottom	3.7	15:24	8.34	8.57	30.62	21.23	3.54	4
B4	20210409	Cloudy	Moderate	Mid-Flood	Surface	1.0	15:35	8.15	8.37	30.43	21.12	2.85	4
B4	20210409	Cloudy	Moderate	Mid-Flood	Surface	1.0	15:35	8.27	8.54	30.90	21.07	3.01	3
B4	20210409	Cloudy	Moderate	Mid-Flood	Bottom	3.5	15:34	8.88	8.44	31.00	21.30	3.43	4
B4	20210409	Cloudy	Moderate	Mid-Flood	Bottom	3.5	15:34	7.66	8.30	31.10	21.31	3.10	4
C1A	20210409	Cloudy	Moderate	Mid-Flood	Surface	1.0	15:09	8.54	8.43	30.29	21.10	2.90	2
C1A	20210409	Cloudy	Moderate	Mid-Flood	Surface	1.0	15:09	8.83	8.51	30.46	21.08	2.55	2
C1A	20210409	Cloudy	Moderate	Mid-Flood	Middle	6.0	15:08	8.56	8.35	31.33	21.11	3.11	3
C1A	20210409	Cloudy	Moderate	Mid-Flood	Middle	6.0	15:08	7.94	8.45	31.03	21.36	2.93	2
C1A	20210409	Cloudy	Moderate	Mid-Flood	Bottom	10.9	15:07	7.63	8.27	31.33	21.21	3.06	2
C1A	20210409	Cloudy	Moderate	Mid-Flood	Bottom	10.9	15:07	8.31	8.56	31.10	21.30	3.07	3
C2A	20210409	Cloudy	Moderate	Mid-Flood	Surface	1.0	15:09	8.02	8.30	31.10	21.09	2.96	2
C2A	20210409	Cloudy	Moderate	Mid-Flood	Surface	1.0	15:09	7.78	8.55	30.37	21.14	3.13	3
C2A	20210409	Cloudy	Moderate	Mid-Flood	Middle	6.0	15:08	7.65	8.60	30.99	21.20	2.49	2
C2A	20210409	Cloudy	Moderate	Mid-Flood	Middle	6.0	15:08	8.06	8.51	31.07	21.26	2.81	3

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
C2A	20210409	Cloudy	Moderate	Mid-Flood	Bottom	10.9	15:07	8.67	8.53	31.09	21.40	3.48	3
C2A	20210409	Cloudy	Moderate	Mid-Flood	Bottom	10.9	15:07	8.29	8.45	30.57	21.04	3.58	2
CR1	20210409	Cloudy	Moderate	Mid-Flood	Surface	1.0	16:49	7.47	8.44	31.14	21.11	2.69	4
CR1	20210409	Cloudy	Moderate	Mid-Flood	Surface	1.0	16:49	8.39	8.59	30.90	20.95	3.00	3
CR1	20210409	Cloudy	Moderate	Mid-Flood	Middle	6.2	16:48	8.07	8.29	30.37	20.91	2.68	4
CR1	20210409	Cloudy	Moderate	Mid-Flood	Middle	6.2	16:48	8.90	8.28	30.25	20.93	2.28	3
CR1	20210409	Cloudy	Moderate	Mid-Flood	Bottom	11.4	16:47	8.59	8.26	30.28	21.05	3.26	3
CR1	20210409	Cloudy	Moderate	Mid-Flood	Bottom	11.4	16:47	7.92	8.55	30.67	21.06	3.41	3
CR2	20210409	Cloudy	Moderate	Mid-Flood	Surface	1.0	16:35	8.59	8.35	30.31	21.13	1.99	3
CR2	20210409	Cloudy	Moderate	Mid-Flood	Surface	1.0	16:35	7.76	8.46	31.07	20.87	1.99	3
CR2	20210409	Cloudy	Moderate	Mid-Flood	Middle	5.4	16:34	8.81	8.47	31.00	20.98	2.48	3
CR2	20210409	Cloudy	Moderate	Mid-Flood	Middle	5.4	16:34	7.77	8.46	30.41	20.94	2.15	2
CR2	20210409	Cloudy	Moderate	Mid-Flood	Bottom	9.8	16:33	8.62	8.52	31.24	21.20	2.69	2
CR2	20210409	Cloudy	Moderate	Mid-Flood	Bottom	9.8	16:33	8.26	8.38	30.35	21.05	2.75	2
F1A	20210409	Cloudy	Moderate	Mid-Flood	Surface	1.0	16:35	8.65	8.31	30.95	21.09	2.76	2
F1A	20210409	Cloudy	Moderate	Mid-Flood	Surface	1.0	16:35	8.67	8.59	30.73	21.20	2.99	3
F1A	20210409	Cloudy	Moderate	Mid-Flood	Middle	4.2	16:34	8.71	8.51	30.63	20.84	2.74	3
F1A	20210409	Cloudy	Moderate	Mid-Flood	Middle	4.2	16:34	8.00	8.40	30.76	21.21	3.01	3
F1A	20210409	Cloudy	Moderate	Mid-Flood	Bottom	7.4	16:33	8.81	8.54	30.37	20.84	2.80	4
F1A	20210409	Cloudy	Moderate	Mid-Flood	Bottom	7.4	16:33	8.24	8.34	31.07	21.10	2.76	3
H1	20210409	Cloudy	Moderate	Mid-Flood	Surface	1.0	16:21	8.20	8.31	30.75	21.12	2.57	4
H1	20210409	Cloudy	Moderate	Mid-Flood	Surface	1.0	16:21	7.88	8.52	30.35	21.01	2.96	3
H1	20210409	Cloudy	Moderate	Mid-Flood	Middle	3.9	16:20	8.65	8.23	31.03	20.95	3.00	2
H1	20210409	Cloudy	Moderate	Mid-Flood	Middle	3.9	16:20	7.58	8.19	30.47	21.03	3.22	3
H1	20210409	Cloudy	Moderate	Mid-Flood	Bottom	6.7	16:19	7.89	8.37	31.17	21.23	3.31	3
H1	20210409	Cloudy	Moderate	Mid-Flood	Bottom	6.7	16:19	8.60	8.36	30.93	20.97	3.60	2
M1	20210409	Cloudy	Moderate	Mid-Flood	Surface	1.0	16:09	7.34	8.28	30.67	20.90	3.13	2

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
M1	20210409	Cloudy	Moderate	Mid-Flood	Surface	1.0	16:09	7.45	8.58	30.50	21.00	2.65	2
M1	20210409	Cloudy	Moderate	Mid-Flood	Middle	4.0	16:08	8.19	8.46	30.63	20.89	2.88	3
M1	20210409	Cloudy	Moderate	Mid-Flood	Middle	4.0	16:08	8.24	8.38	31.15	21.01	3.14	2
M1	20210409	Cloudy	Moderate	Mid-Flood	Bottom	6.9	16:07	8.12	8.52	30.77	21.16	2.65	4
M1	20210409	Cloudy	Moderate	Mid-Flood	Bottom	6.9	16:07	8.66	8.58	31.33	20.89	2.48	3
B1	20210412	Sunny	Moderate	Mid-Ebb	Surface	1.0	11:29	8.82	8.52	30.37	28.27	2.99	3
B1	20210412	Sunny	Moderate	Mid-Ebb	Surface	1.0	11:29	8.87	8.55	30.86	28.28	2.69	3
B1	20210412	Sunny	Moderate	Mid-Ebb	Bottom	3.8	11:28	9.21	8.73	30.68	28.22	2.83	2
B1	20210412	Sunny	Moderate	Mid-Ebb	Bottom	3.8	11:28	9.13	8.48	31.03	28.39	2.41	3
B2	20210412	Sunny	Moderate	Mid-Ebb	Surface	1.0	11:45	8.14	8.45	30.32	28.37	2.48	3
B2	20210412	Sunny	Moderate	Mid-Ebb	Surface	1.0	11:45	9.31	8.59	31.14	28.46	2.90	4
B2	20210412	Sunny	Moderate	Mid-Ebb	Bottom	4.2	11:44	9.48	8.37	30.48	28.42	2.80	2
B2	20210412	Sunny	Moderate	Mid-Ebb	Bottom	4.2	11:44	8.98	8.66	31.02	28.44	2.50	3
B3	20210412	Sunny	Moderate	Mid-Ebb	Surface	1.0	12:28	8.08	8.43	30.35	28.75	2.41	3
B3	20210412	Sunny	Moderate	Mid-Ebb	Surface	1.0	12:28	7.92	8.63	30.45	28.81	2.02	3
B3	20210412	Sunny	Moderate	Mid-Ebb	Bottom	4.3	12:27	9.21	8.56	30.29	28.60	2.53	2
B3	20210412	Sunny	Moderate	Mid-Ebb	Bottom	4.3	12:27	8.87	8.56	31.05	28.46	2.57	2
B4	20210412	Sunny	Moderate	Mid-Ebb	Surface	1.0	12:16	8.46	8.51	30.29	28.77	2.69	4
B4	20210412	Sunny	Moderate	Mid-Ebb	Surface	1.0	12:16	8.36	8.73	31.11	28.58	2.71	3
B4	20210412	Sunny	Moderate	Mid-Ebb	Bottom	3.9	12:15	8.08	8.51	30.38	28.73	2.49	5
B4	20210412	Sunny	Moderate	Mid-Ebb	Bottom	3.9	12:15	8.55	8.51	30.16	28.53	2.61	4
C1A	20210412	Sunny	Moderate	Mid-Ebb	Surface	1.0	11:01	8.13	8.48	30.41	28.31	2.46	2
C1A	20210412	Sunny	Moderate	Mid-Ebb	Surface	1.0	11:01	8.17	8.39	30.15	28.33	2.49	3
C1A	20210412	Sunny	Moderate	Mid-Ebb	Middle	5.1	11:00	8.00	8.65	30.47	28.06	2.47	3
C1A	20210412	Sunny	Moderate	Mid-Ebb	Middle	5.1	11:00	8.14	8.47	30.14	28.41	2.44	4
C1A	20210412	Sunny	Moderate	Mid-Ebb	Bottom	9.2	10:59	9.73	8.64	30.56	28.39	3.10	4
C1A	20210412	Sunny	Moderate	Mid-Ebb	Bottom	9.2	10:59	8.00	8.45	30.94	28.33	3.05	4

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
C2A	20210412	Sunny	Moderate	Mid-Ebb	Surface	1.0	13:09	8.52	8.44	31.04	28.78	2.89	3
C2A	20210412	Sunny	Moderate	Mid-Ebb	Surface	1.0	13:09	8.04	8.51	30.27	28.63	3.06	3
C2A	20210412	Sunny	Moderate	Mid-Ebb	Middle	5.8	13:08	8.07	8.40	30.26	28.88	3.21	3
C2A	20210412	Sunny	Moderate	Mid-Ebb	Middle	5.8	13:08	8.77	8.54	30.57	28.84	3.12	4
C2A	20210412	Sunny	Moderate	Mid-Ebb	Bottom	10.6	13:07	9.50	8.42	30.22	28.64	3.12	3
C2A	20210412	Sunny	Moderate	Mid-Ebb	Bottom	10.6	13:07	9.29	8.61	30.44	28.61	3.37	2
CR1	20210412	Sunny	Moderate	Mid-Ebb	Surface	1.0	12:40	9.13	8.48	31.05	28.61	2.21	3
CR1	20210412	Sunny	Moderate	Mid-Ebb	Surface	1.0	12:40	8.09	8.41	30.46	28.92	2.07	3
CR1	20210412	Sunny	Moderate	Mid-Ebb	Middle	6.3	12:39	8.60	8.73	31.18	28.96	2.25	2
CR1	20210412	Sunny	Moderate	Mid-Ebb	Middle	6.3	12:39	8.90	8.37	30.25	28.63	2.40	3
CR1	20210412	Sunny	Moderate	Mid-Ebb	Bottom	11.6	12:38	9.21	8.58	31.18	28.96	3.02	2
CR1	20210412	Sunny	Moderate	Mid-Ebb	Bottom	11.6	12:38	9.42	8.37	30.43	28.59	2.76	3
CR2	20210412	Sunny	Moderate	Mid-Ebb	Surface	1.0	12:27	9.74	8.71	30.82	28.81	3.03	2
CR2	20210412	Sunny	Moderate	Mid-Ebb	Surface	1.0	12:27	8.32	8.46	30.99	28.60	2.85	2
CR2	20210412	Sunny	Moderate	Mid-Ebb	Middle	6.2	12:26	9.60	8.56	30.27	28.62	3.05	2
CR2	20210412	Sunny	Moderate	Mid-Ebb	Middle	6.2	12:26	8.93	8.46	30.65	28.81	2.81	2
CR2	20210412	Sunny	Moderate	Mid-Ebb	Bottom	11.3	12:25	8.33	8.45	30.99	28.49	2.87	2
CR2	20210412	Sunny	Moderate	Mid-Ebb	Bottom	11.3	12:25	9.39	8.61	30.77	28.70	3.22	2
F1A	20210412	Sunny	Moderate	Mid-Ebb	Surface	1.0	11:45	9.07	8.51	30.52	28.36	1.93	3
F1A	20210412	Sunny	Moderate	Mid-Ebb	Surface	1.0	11:45	8.86	8.56	30.79	28.54	2.22	2
F1A	20210412	Sunny	Moderate	Mid-Ebb	Middle	4.6	11:44	8.58	8.42	30.42	28.35	3.16	4
F1A	20210412	Sunny	Moderate	Mid-Ebb	Middle	4.6	11:44	9.30	8.55	30.44	28.47	3.02	4
F1A	20210412	Sunny	Moderate	Mid-Ebb	Bottom	8.1	11:43	8.57	8.56	30.40	28.42	2.82	6
F1A	20210412	Sunny	Moderate	Mid-Ebb	Bottom	8.1	11:43	9.68	8.42	30.42	28.33	2.72	6
H1	20210412	Sunny	Moderate	Mid-Ebb	Surface	1.0	12:13	8.10	8.52	30.90	28.64	2.53	6
H1	20210412	Sunny	Moderate	Mid-Ebb	Surface	1.0	12:13	8.39	8.54	30.93	28.59	2.87	5
H1	20210412	Sunny	Moderate	Mid-Ebb	Middle	4.2	12:12	8.49	8.57	30.30	28.77	3.16	4

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
H1	20210412	Sunny	Moderate	Mid-Ebb	Middle	4.2	12:12	9.63	8.62	30.28	28.78	3.22	3
H1	20210412	Sunny	Moderate	Mid-Ebb	Bottom	7.3	12:11	7.99	8.64	30.35	28.73	3.23	4
H1	20210412	Sunny	Moderate	Mid-Ebb	Bottom	7.3	12:11	8.69	8.62	30.96	28.57	3.38	3
M1	20210412	Sunny	Moderate	Mid-Ebb	Surface	1.0	11:14	8.74	8.65	30.41	28.26	2.78	3
M1	20210412	Sunny	Moderate	Mid-Ebb	Surface	1.0	11:14	9.66	8.67	30.94	28.39	2.91	2
M1	20210412	Sunny	Moderate	Mid-Ebb	Middle	5.0	11:13	9.16	8.41	30.77	28.40	3.08	2
M1	20210412	Sunny	Moderate	Mid-Ebb	Middle	5.0	11:13	9.60	8.46	30.15	28.19	2.81	3
M1	20210412	Sunny	Moderate	Mid-Ebb	Bottom	8.9	11:12	9.63	8.66	30.24	28.32	3.57	3
M1	20210412	Sunny	Moderate	Mid-Ebb	Bottom	8.9	11:12	8.02	8.73	30.65	28.26	3.23	4
B1	20210412	Sunny	Moderate	Mid-Flood	Surface	1.0	15:58	7.93	8.56	30.29	28.18	2.76	4
B1	20210412	Sunny	Moderate	Mid-Flood	Surface	1.0	15:58	8.70	8.38	30.09	28.37	2.41	4
B1	20210412	Sunny	Moderate	Mid-Flood	Bottom	4.3	15:57	9.01	8.60	31.07	28.36	3.52	2
B1	20210412	Sunny	Moderate	Mid-Flood	Bottom	4.3	15:57	7.78	8.56	30.77	28.46	2.98	3
B2	20210412	Sunny	Moderate	Mid-Flood	Surface	1.0	16:14	8.91	8.36	30.70	28.47	2.52	6
B2	20210412	Sunny	Moderate	Mid-Flood	Surface	1.0	16:14	7.70	8.43	30.70	28.33	2.76	5
B2	20210412	Sunny	Moderate	Mid-Flood	Bottom	3.8	16:13	7.85	8.55	30.12	28.14	3.14	4
B2	20210412	Sunny	Moderate	Mid-Flood	Bottom	3.8	16:13	7.79	8.39	30.49	28.41	2.89	3
B3	20210412	Sunny	Moderate	Mid-Flood	Surface	1.0	15:46	8.81	8.36	30.64	28.39	2.86	2
B3	20210412	Sunny	Moderate	Mid-Flood	Surface	1.0	15:46	8.36	8.65	30.28	28.58	3.12	3
B3	20210412	Sunny	Moderate	Mid-Flood	Bottom	3.4	15:45	9.57	8.43	30.18	28.63	2.49	5
B3	20210412	Sunny	Moderate	Mid-Flood	Bottom	3.4	15:45	9.28	8.68	30.64	28.20	2.41	6
B4	20210412	Sunny	Moderate	Mid-Flood	Surface	1.0	15:59	8.06	8.44	30.30	28.40	2.44	6
B4	20210412	Sunny	Moderate	Mid-Flood	Surface	1.0	15:59	8.51	8.60	30.71	28.26	2.66	5
B4	20210412	Sunny	Moderate	Mid-Flood	Bottom	4.2	15:58	9.30	8.52	31.02	28.32	3.45	6
B4	20210412	Sunny	Moderate	Mid-Flood	Bottom	4.2	15:58	8.33	8.46	30.92	28.17	3.06	5
C1A	20210412	Sunny	Moderate	Mid-Flood	Surface	1.0	15:32	8.74	8.48	30.83	28.50	2.74	5
C1A	20210412	Sunny	Moderate	Mid-Flood	Surface	1.0	15:32	9.39	8.67	30.62	28.33	2.36	5

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
C1A	20210412	Sunny	Moderate	Mid-Flood	Middle	5.9	15:31	9.57	8.39	30.70	28.53	2.62	5
C1A	20210412	Sunny	Moderate	Mid-Flood	Middle	5.9	15:31	8.97	8.35	30.16	28.61	2.93	4
C1A	20210412	Sunny	Moderate	Mid-Flood	Bottom	10.7	15:30	8.47	8.59	30.34	28.30	2.54	3
C1A	20210412	Sunny	Moderate	Mid-Flood	Bottom	10.7	15:30	7.92	8.41	30.27	28.69	2.83	3
C2A	20210412	Sunny	Moderate	Mid-Flood	Surface	1.0	15:32	9.16	8.38	31.04	28.72	2.37	4
C2A	20210412	Sunny	Moderate	Mid-Flood	Surface	1.0	15:32	8.45	8.51	30.38	28.42	2.73	4
C2A	20210412	Sunny	Moderate	Mid-Flood	Middle	5.6	15:31	8.13	8.38	31.05	28.30	2.39	6
C2A	20210412	Sunny	Moderate	Mid-Flood	Middle	5.6	15:31	9.62	8.39	30.54	28.59	2.35	6
C2A	20210412	Sunny	Moderate	Mid-Flood	Bottom	10.1	15:30	8.67	8.63	30.49	28.61	3.17	7
C2A	20210412	Sunny	Moderate	Mid-Flood	Bottom	10.1	15:30	7.94	8.35	30.06	28.70	3.27	6
CR1	20210412	Sunny	Moderate	Mid-Flood	Surface	1.0	17:10	8.81	8.59	30.40	28.06	2.04	6
CR1	20210412	Sunny	Moderate	Mid-Flood	Surface	1.0	17:10	8.41	8.36	30.45	28.13	2.41	7
CR1	20210412	Sunny	Moderate	Mid-Flood	Middle	6.4	17:09	8.09	8.59	30.34	28.03	2.99	5
CR1	20210412	Sunny	Moderate	Mid-Flood	Middle	6.4	17:09	9.13	8.42	30.95	27.84	3.08	6
CR1	20210412	Sunny	Moderate	Mid-Flood	Bottom	11.7	17:08	8.54	8.57	30.07	27.75	3.16	6
CR1	20210412	Sunny	Moderate	Mid-Flood	Bottom	11.7	17:08	9.37	8.59	30.13	28.04	3.61	6
CR2	20210412	Sunny	Moderate	Mid-Flood	Surface	1.0	16:56	8.74	8.63	30.30	27.93	2.62	5
CR2	20210412	Sunny	Moderate	Mid-Flood	Surface	1.0	16:56	8.61	8.57	30.44	27.94	3.07	5
CR2	20210412	Sunny	Moderate	Mid-Flood	Middle	5.4	16:55	7.77	8.35	30.20	27.82	2.89	6
CR2	20210412	Sunny	Moderate	Mid-Flood	Middle	5.4	16:55	9.17	8.46	30.51	28.06	2.59	7
CR2	20210412	Sunny	Moderate	Mid-Flood	Bottom	9.8	16:54	9.20	8.63	30.59	28.13	2.86	7
CR2	20210412	Sunny	Moderate	Mid-Flood	Bottom	9.8	16:54	7.82	8.37	30.58	27.84	3.19	6
F1A	20210412	Sunny	Moderate	Mid-Flood	Surface	1.0	17:03	9.39	8.64	30.25	27.85	2.78	4
F1A	20210412	Sunny	Moderate	Mid-Flood	Surface	1.0	17:03	8.79	8.50	30.55	27.92	2.44	4
F1A	20210412	Sunny	Moderate	Mid-Flood	Middle	4.4	17:02	8.04	8.61	30.94	27.89	3.02	6
F1A	20210412	Sunny	Moderate	Mid-Flood	Middle	4.4	17:02	7.70	8.58	31.02	27.98	2.55	5
F1A	20210412	Sunny	Moderate	Mid-Flood	Bottom	7.8	17:01	8.19	8.31	30.95	27.80	3.23	6

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
F1A	20210412	Sunny	Moderate	Mid-Flood	Bottom	7.8	17:01	7.73	8.46	30.91	28.21	3.57	6
H1	20210412	Sunny	Moderate	Mid-Flood	Surface	1.0	16:41	8.73	8.49	30.76	28.37	2.26	7
H1	20210412	Sunny	Moderate	Mid-Flood	Surface	1.0	16:41	8.97	8.54	30.65	28.29	2.29	7
H1	20210412	Sunny	Moderate	Mid-Flood	Middle	4.2	16:40	9.37	8.31	30.78	28.29	2.16	4
H1	20210412	Sunny	Moderate	Mid-Flood	Middle	4.2	16:40	9.35	8.59	30.40	27.88	2.42	5
H1	20210412	Sunny	Moderate	Mid-Flood	Bottom	7.3	16:39	8.75	8.51	30.50	27.87	2.82	4
H1	20210412	Sunny	Moderate	Mid-Flood	Bottom	7.3	16:39	8.46	8.37	30.48	28.09	2.50	4
M1	20210412	Sunny	Moderate	Mid-Flood	Surface	1.0	16:32	8.51	8.34	30.87	28.14	2.45	4
M1	20210412	Sunny	Moderate	Mid-Flood	Surface	1.0	16:32	9.10	8.63	30.92	28.49	2.69	5
M1	20210412	Sunny	Moderate	Mid-Flood	Middle	4.2	16:31	8.97	8.40	30.79	28.48	2.76	4
M1	20210412	Sunny	Moderate	Mid-Flood	Middle	4.2	16:31	9.45	8.55	30.15	28.13	2.47	5
M1	20210412	Sunny	Moderate	Mid-Flood	Bottom	7.4	16:30	7.94	8.56	30.80	28.21	2.40	5
M1	20210412	Sunny	Moderate	Mid-Flood	Bottom	7.4	16:30	8.72	8.53	30.90	28.21	2.50	6
B1	20210414	Sunny	Moderate	Mid-Flood	Surface	1.0	9:31	8.07	8.43	30.84	26.65	2.53	3
B1	20210414	Sunny	Moderate	Mid-Flood	Surface	1.0	9:31	8.67	8.41	30.23	26.63	2.90	4
B1	20210414	Sunny	Moderate	Mid-Flood	Bottom	4.4	9:30	8.22	8.19	30.75	26.49	2.97	5
B1	20210414	Sunny	Moderate	Mid-Flood	Bottom	4.4	9:30	8.01	8.28	30.43	26.41	3.53	6
B2	20210414	Sunny	Moderate	Mid-Flood	Surface	1.0	9:50	8.52	8.45	30.80	26.63	2.83	7
B2	20210414	Sunny	Moderate	Mid-Flood	Surface	1.0	9:50	8.11	8.28	30.78	26.68	2.66	7
B2	20210414	Sunny	Moderate	Mid-Flood	Bottom	3.8	9:49	8.29	8.22	30.71	26.62	2.79	7
B2	20210414	Sunny	Moderate	Mid-Flood	Bottom	3.8	9:49	8.58	8.44	31.01	26.69	3.18	7
B3	20210414	Sunny	Moderate	Mid-Flood	Surface	1.0	10:02	8.56	8.20	30.22	26.76	2.38	6
B3	20210414	Sunny	Moderate	Mid-Flood	Surface	1.0	10:02	8.67	8.20	30.40	26.84	2.38	6
B3	20210414	Sunny	Moderate	Mid-Flood	Bottom	4.3	10:01	8.69	8.27	30.69	26.64	2.79	4
B3	20210414	Sunny	Moderate	Mid-Flood	Bottom	4.3	10:01	8.02	8.48	30.83	26.75	2.70	5
B4	20210414	Sunny	Moderate	Mid-Flood	Surface	1.0	9:49	8.37	8.36	30.82	26.58	2.88	7
B4	20210414	Sunny	Moderate	Mid-Flood	Surface	1.0	9:49	8.32	8.42	31.00	26.71	2.51	8

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
B4	20210414	Sunny	Moderate	Mid-Flood	Bottom	3.5	9:48	8.89	8.35	30.25	26.68	3.38	5
B4	20210414	Sunny	Moderate	Mid-Flood	Bottom	3.5	9:48	8.53	8.34	30.28	26.67	3.79	6
C1A	20210414	Sunny	Moderate	Mid-Flood	Surface	1.0	9:01	9.20	8.48	30.29	26.34	2.73	6
C1A	20210414	Sunny	Moderate	Mid-Flood	Surface	1.0	9:01	8.35	8.29	31.03	26.18	2.30	7
C1A	20210414	Sunny	Moderate	Mid-Flood	Middle	5.8	9:00	8.94	8.36	30.89	26.30	2.70	7
C1A	20210414	Sunny	Moderate	Mid-Flood	Middle	5.8	9:00	9.06	8.17	30.57	26.41	2.42	6
C1A	20210414	Sunny	Moderate	Mid-Flood	Bottom	10.6	8:59	8.34	8.48	30.23	26.39	3.42	5
C1A	20210414	Sunny	Moderate	Mid-Flood	Bottom	10.6	8:59	8.24	8.43	30.64	26.26	3.83	6
C2A	20210414	Sunny	Moderate	Mid-Flood	Surface	1.0	8:02	7.93	8.32	30.66	26.31	2.66	6
C2A	20210414	Sunny	Moderate	Mid-Flood	Surface	1.0	8:02	8.40	8.32	30.64	26.23	2.95	5
C2A	20210414	Sunny	Moderate	Mid-Flood	Middle	5.6	8:01	8.14	8.19	30.77	26.14	3.28	7
C2A	20210414	Sunny	Moderate	Mid-Flood	Middle	5.6	8:01	8.80	8.17	30.87	26.12	2.88	7
C2A	20210414	Sunny	Moderate	Mid-Flood	Bottom	10.1	8:00	8.36	8.18	30.76	26.24	2.90	7
C2A	20210414	Sunny	Moderate	Mid-Flood	Bottom	10.1	8:00	8.00	8.49	30.38	26.30	2.82	7
CR1	20210414	Sunny	Moderate	Mid-Flood	Surface	1.0	8:23	9.15	8.28	30.25	26.24	2.80	7
CR1	20210414	Sunny	Moderate	Mid-Flood	Surface	1.0	8:23	9.18	8.17	30.49	26.34	3.10	7
CR1	20210414	Sunny	Moderate	Mid-Flood	Middle	6.5	8:22	9.06	8.42	30.89	26.32	2.79	6
CR1	20210414	Sunny	Moderate	Mid-Flood	Middle	6.5	8:22	8.48	8.18	30.60	26.17	3.19	7
CR1	20210414	Sunny	Moderate	Mid-Flood	Bottom	12.0	8:21	8.05	8.47	30.56	26.29	3.28	4
CR1	20210414	Sunny	Moderate	Mid-Flood	Bottom	12.0	8:21	8.02	8.49	30.44	26.19	3.67	5
CR2	20210414	Sunny	Moderate	Mid-Flood	Surface	1.0	8:39	8.12	8.31	30.42	26.20	3.28	5
CR2	20210414	Sunny	Moderate	Mid-Flood	Surface	1.0	8:39	8.14	8.41	30.32	26.29	3.06	5
CR2	20210414	Sunny	Moderate	Mid-Flood	Middle	5.6	8:38	8.68	8.23	30.68	26.25	2.57	6
CR2	20210414	Sunny	Moderate	Mid-Flood	Middle	5.6	8:38	9.09	8.49	30.20	26.29	2.98	5
CR2	20210414	Sunny	Moderate	Mid-Flood	Bottom	10.1	8:37	8.23	8.19	30.41	26.28	3.11	7
CR2	20210414	Sunny	Moderate	Mid-Flood	Bottom	10.1	8:37	8.59	8.32	30.23	26.26	3.27	6
F1A	20210414	Sunny	Moderate	Mid-Flood	Surface	1.0	9:20	8.72	8.31	30.95	26.66	2.58	6

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
F1A	20210414	Sunny	Moderate	Mid-Flood	Surface	1.0	9:20	8.67	8.25	30.91	26.43	2.87	7
F1A	20210414	Sunny	Moderate	Mid-Flood	Middle	3.8	9:19	8.87	8.37	30.82	26.57	2.99	6
F1A	20210414	Sunny	Moderate	Mid-Flood	Middle	3.8	9:19	8.34	8.20	30.21	26.60	2.50	6
F1A	20210414	Sunny	Moderate	Mid-Flood	Bottom	6.6	9:18	8.31	8.27	30.34	26.43	3.78	6
F1A	20210414	Sunny	Moderate	Mid-Flood	Bottom	6.6	9:18	9.11	8.29	30.93	26.72	3.83	5
H1	20210414	Sunny	Moderate	Mid-Flood	Surface	1.0	10:19	8.74	8.48	30.63	26.62	3.20	4
H1	20210414	Sunny	Moderate	Mid-Flood	Surface	1.0	10:19	8.36	8.32	30.81	26.72	3.21	5
H1	20210414	Sunny	Moderate	Mid-Flood	Middle	3.9	10:18	8.48	8.37	30.65	26.65	3.10	6
H1	20210414	Sunny	Moderate	Mid-Flood	Middle	3.9	10:18	8.89	8.33	30.69	26.62	3.47	5
H1	20210414	Sunny	Moderate	Mid-Flood	Bottom	6.7	10:17	8.81	8.17	30.81	26.65	3.62	6
H1	20210414	Sunny	Moderate	Mid-Flood	Bottom	6.7	10:17	8.24	8.43	30.99	26.66	3.49	5
M1	20210414	Sunny	Moderate	Mid-Flood	Surface	1.0	8:53	8.69	8.25	30.31	26.44	2.71	5
M1	20210414	Sunny	Moderate	Mid-Flood	Surface	1.0	8:53	8.57	8.43	30.94	26.24	2.86	6
M1	20210414	Sunny	Moderate	Mid-Flood	Middle	4.3	8:52	8.89	8.45	30.41	26.26	3.05	6
M1	20210414	Sunny	Moderate	Mid-Flood	Middle	4.3	8:52	8.44	8.41	30.82	26.26	3.44	7
M1	20210414	Sunny	Moderate	Mid-Flood	Bottom	7.6	8:51	9.16	8.16	30.67	26.45	2.67	6
M1	20210414	Sunny	Moderate	Mid-Flood	Bottom	7.6	8:51	8.77	8.26	30.74	26.29	2.84	7
B1	20210414	Sunny	Moderate	Mid-Ebb	Surface	1.0	12:30	8.53	8.46	31.22	26.85	2.67	5
B1	20210414	Sunny	Moderate	Mid-Ebb	Surface	1.0	12:30	8.24	8.49	30.48	26.83	2.85	5
B1	20210414	Sunny	Moderate	Mid-Ebb	Bottom	3.5	12:29	8.16	8.29	30.90	26.78	2.88	5
B1	20210414	Sunny	Moderate	Mid-Ebb	Bottom	3.5	12:29	8.56	8.24	30.43	26.85	3.20	6
B2	20210414	Sunny	Moderate	Mid-Ebb	Surface	1.0	12:46	8.18	8.35	30.71	27.05	3.18	5
B2	20210414	Sunny	Moderate	Mid-Ebb	Surface	1.0	12:46	8.71	8.46	30.70	26.82	3.09	4
B2	20210414	Sunny	Moderate	Mid-Ebb	Bottom	4.4	12:45	8.45	8.32	30.52	26.81	2.94	3
B2	20210414	Sunny	Moderate	Mid-Ebb	Bottom	4.4	12:45	8.74	8.42	30.82	26.99	3.06	4
B3	20210414	Sunny	Moderate	Mid-Ebb	Surface	1.0	12:24	9.05	8.47	31.00	26.98	2.46	7
B3	20210414	Sunny	Moderate	Mid-Ebb	Surface	1.0	12:24	8.17	8.34	30.91	26.77	2.49	6

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
B3	20210414	Sunny	Moderate	Mid-Ebb	Bottom	4.4	12:23	8.71	8.32	30.67	26.89	3.15	7
B3	20210414	Sunny	Moderate	Mid-Ebb	Bottom	4.4	12:23	8.69	8.35	30.99	26.85	3.13	6
B4	20210414	Sunny	Moderate	Mid-Ebb	Surface	1.0	12:34	8.79	8.36	30.71	26.79	2.70	5
B4	20210414	Sunny	Moderate	Mid-Ebb	Surface	1.0	12:34	7.82	8.40	31.18	26.88	2.43	6
B4	20210414	Sunny	Moderate	Mid-Ebb	Bottom	3.7	12:33	8.60	8.28	30.51	26.86	3.25	5
B4	20210414	Sunny	Moderate	Mid-Ebb	Bottom	3.7	12:33	7.82	8.30	30.94	26.95	3.67	6
C1A	20210414	Sunny	Moderate	Mid-Ebb	Surface	1.0	12:02	8.77	8.54	30.66	26.84	2.11	5
C1A	20210414	Sunny	Moderate	Mid-Ebb	Surface	1.0	12:02	8.07	8.54	31.19	26.96	2.38	6
C1A	20210414	Sunny	Moderate	Mid-Ebb	Middle	5.6	12:01	8.80	8.39	31.12	26.86	2.75	5
C1A	20210414	Sunny	Moderate	Mid-Ebb	Middle	5.6	12:01	8.12	8.29	31.04	26.83	3.15	6
C1A	20210414	Sunny	Moderate	Mid-Ebb	Bottom	10.1	12:00	8.77	8.46	30.50	26.84	2.67	7
C1A	20210414	Sunny	Moderate	Mid-Ebb	Bottom	10.1	12:00	8.33	8.34	30.76	26.91	2.56	8
C2A	20210414	Sunny	Moderate	Mid-Ebb	Surface	1.0	12:10	8.36	8.51	31.10	26.82	2.23	5
C2A	20210414	Sunny	Moderate	Mid-Ebb	Surface	1.0	12:10	7.85	8.43	31.13	26.88	2.16	4
C2A	20210414	Sunny	Moderate	Mid-Ebb	Middle	5.9	12:09	8.56	8.40	31.20	26.79	3.26	6
C2A	20210414	Sunny	Moderate	Mid-Ebb	Middle	5.9	12:09	8.16	8.30	30.45	26.85	2.98	5
C2A	20210414	Sunny	Moderate	Mid-Ebb	Bottom	10.7	12:08	8.99	8.36	31.06	26.87	2.93	6
C2A	20210414	Sunny	Moderate	Mid-Ebb	Bottom	10.7	12:08	8.10	8.53	30.88	26.94	2.51	7
CR1	20210414	Sunny	Moderate	Mid-Ebb	Surface	1.0	13:41	8.37	8.37	30.81	26.88	2.60	7
CR1	20210414	Sunny	Moderate	Mid-Ebb	Surface	1.0	13:41	7.77	8.43	30.57	26.87	2.74	6
CR1	20210414	Sunny	Moderate	Mid-Ebb	Middle	6.3	13:40	8.19	8.41	31.00	26.83	3.04	5
CR1	20210414	Sunny	Moderate	Mid-Ebb	Middle	6.3	13:40	8.11	8.35	30.60	26.82	2.84	5
CR1	20210414	Sunny	Moderate	Mid-Ebb	Bottom	11.5	13:39	7.74	8.33	31.03	26.86	3.14	5
CR1	20210414	Sunny	Moderate	Mid-Ebb	Bottom	11.5	13:39	9.02	8.43	31.11	26.86	2.64	5
CR2	20210414	Sunny	Moderate	Mid-Ebb	Surface	1.0	13:27	8.60	8.45	30.46	26.93	2.91	4
CR2	20210414	Sunny	Moderate	Mid-Ebb	Surface	1.0	13:27	8.01	8.41	31.22	26.92	2.92	5
CR2	20210414	Sunny	Moderate	Mid-Ebb	Middle	5.6	13:26	8.36	8.52	30.51	26.86	2.78	4

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
CR2	20210414	Sunny	Moderate	Mid-Ebb	Middle	5.6	13:26	7.72	8.29	30.41	27.00	2.52	5
CR2	20210414	Sunny	Moderate	Mid-Ebb	Bottom	10.2	13:25	7.70	8.40	30.62	26.99	2.51	5
CR2	20210414	Sunny	Moderate	Mid-Ebb	Bottom	10.2	13:25	8.81	8.38	30.57	26.95	2.86	6
F1A	20210414	Sunny	Moderate	Mid-Ebb	Surface	1.0	13:34	8.87	8.47	30.40	26.97	2.95	4
F1A	20210414	Sunny	Moderate	Mid-Ebb	Surface	1.0	13:34	7.73	8.35	30.91	26.93	3.13	5
F1A	20210414	Sunny	Moderate	Mid-Ebb	Middle	4.3	13:33	8.97	8.43	30.44	26.98	3.04	4
F1A	20210414	Sunny	Moderate	Mid-Ebb	Middle	4.3	13:33	8.06	8.53	30.42	27.00	3.07	5
F1A	20210414	Sunny	Moderate	Mid-Ebb	Bottom	7.5	13:32	8.02	8.31	30.55	26.98	3.62	5
F1A	20210414	Sunny	Moderate	Mid-Ebb	Bottom	7.5	13:32	7.96	8.43	31.06	26.92	3.65	5
H1	20210414	Sunny	Moderate	Mid-Ebb	Surface	1.0	13:13	8.60	8.33	31.03	26.91	2.90	5
H1	20210414	Sunny	Moderate	Mid-Ebb	Surface	1.0	13:13	8.55	8.44	30.54	26.89	2.43	4
H1	20210414	Sunny	Moderate	Mid-Ebb	Middle	4.5	13:12	8.96	8.43	30.94	27.06	2.84	5
H1	20210414	Sunny	Moderate	Mid-Ebb	Middle	4.5	13:12	8.52	8.29	30.81	26.92	2.67	4
H1	20210414	Sunny	Moderate	Mid-Ebb	Bottom	8.0	13:11	8.55	8.36	30.92	26.87	2.75	6
H1	20210414	Sunny	Moderate	Mid-Ebb	Bottom	8.0	13:11	8.32	8.46	30.93	26.91	3.26	6
M1	20210414	Sunny	Moderate	Mid-Ebb	Surface	1.0	13:09	8.74	8.52	30.46	27.06	2.99	8
M1	20210414	Sunny	Moderate	Mid-Ebb	Surface	1.0	13:09	8.28	8.48	31.17	27.01	2.95	8
M1	20210414	Sunny	Moderate	Mid-Ebb	Middle	4.9	13:08	7.81	8.54	30.76	26.92	2.47	6
M1	20210414	Sunny	Moderate	Mid-Ebb	Middle	4.9	13:08	8.93	8.43	30.79	26.95	2.26	7
M1	20210414	Sunny	Moderate	Mid-Ebb	Bottom	8.7	13:07	8.06	8.41	30.44	26.93	3.27	6
M1	20210414	Sunny	Moderate	Mid-Ebb	Bottom	8.7	13:07	8.35	8.36	31.17	26.94	3.13	7
B1	20210416	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:28	7.77	8.56	32.29	23.89	2.93	10
B1	20210416	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:28	8.29	8.21	31.73	23.88	2.87	10
B1	20210416	Cloudy	Moderate	Mid-Flood	Bottom	4.0	9:27	8.64	8.48	31.67	23.93	3.01	10
B1	20210416	Cloudy	Moderate	Mid-Flood	Bottom	4.0	9:27	9.02	8.39	31.65	23.88	3.60	11
B2	20210416	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:46	7.84	8.36	31.84	23.95	2.67	14
B2	20210416	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:46	8.51	8.47	32.22	23.99	2.81	14

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
B2	20210416	Cloudy	Moderate	Mid-Flood	Bottom	4.2	9:45	7.95	8.32	31.69	23.90	3.90	12
B2	20210416	Cloudy	Moderate	Mid-Flood	Bottom	4.2	9:45	8.95	8.15	31.95	23.80	3.76	13
B3	20210416	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:47	9.00	8.22	32.19	23.93	2.76	10
B3	20210416	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:47	8.63	8.55	32.31	23.93	2.38	9
B3	20210416	Cloudy	Moderate	Mid-Flood	Bottom	4.1	9:46	9.12	8.52	31.59	24.04	3.82	10
B3	20210416	Cloudy	Moderate	Mid-Flood	Bottom	4.1	9:46	8.09	8.34	31.60	24.05	3.70	10
B4	20210416	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:36	8.93	8.47	32.41	23.80	3.04	13
B4	20210416	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:36	8.51	8.48	31.68	23.89	2.74	12
B4	20210416	Cloudy	Moderate	Mid-Flood	Bottom	4.4	9:35	7.83	8.38	32.41	24.03	3.22	11
B4	20210416	Cloudy	Moderate	Mid-Flood	Bottom	4.4	9:35	8.68	8.21	32.36	23.99	2.87	12
C1A	20210416	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:00	9.28	8.37	32.07	23.90	2.77	10
C1A	20210416	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:00	9.20	8.15	32.12	23.74	2.41	11
C1A	20210416	Cloudy	Moderate	Mid-Flood	Middle	5.7	8:59	8.78	8.31	31.73	23.81	2.66	11
C1A	20210416	Cloudy	Moderate	Mid-Flood	Middle	5.7	8:59	8.92	8.56	31.80	23.74	3.07	10
C1A	20210416	Cloudy	Moderate	Mid-Flood	Bottom	10.4	8:58	8.21	8.44	32.17	23.71	3.11	8
C1A	20210416	Cloudy	Moderate	Mid-Flood	Bottom	10.4	8:58	8.16	8.27	32.23	23.61	2.92	7
C2A	20210416	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:02	8.57	8.52	31.59	23.75	2.81	7
C2A	20210416	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:02	7.65	8.25	32.36	23.47	3.29	6
C2A	20210416	Cloudy	Moderate	Mid-Flood	Middle	5.9	8:01	7.99	8.25	32.05	23.59	3.38	6
C2A	20210416	Cloudy	Moderate	Mid-Flood	Middle	5.9	8:01	8.26	8.26	32.05	23.72	3.46	5
C2A	20210416	Cloudy	Moderate	Mid-Flood	Bottom	10.7	8:00	8.63	8.36	32.35	23.53	3.11	6
C2A	20210416	Cloudy	Moderate	Mid-Flood	Bottom	10.7	8:00	8.70	8.38	32.13	23.52	3.16	5
CR1	20210416	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:24	8.94	8.16	31.90	23.72	2.94	5
CR1	20210416	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:24	7.66	8.27	32.28	23.65	3.23	6
CR1	20210416	Cloudy	Moderate	Mid-Flood	Middle	6.4	8:23	7.71	8.24	32.18	23.76	3.22	5
CR1	20210416	Cloudy	Moderate	Mid-Flood	Middle	6.4	8:23	8.69	8.40	31.85	23.51	2.91	5
CR1	20210416	Cloudy	Moderate	Mid-Flood	Bottom	11.8	8:22	9.33	8.26	32.04	23.52	3.74	3

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
CR1	20210416	Cloudy	Moderate	Mid-Flood	Bottom	11.8	8:22	9.21	8.45	32.22	23.45	3.23	4
CR2	20210416	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:40	7.76	8.29	31.79	23.59	3.19	6
CR2	20210416	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:40	9.16	8.15	31.89	23.65	3.22	5
CR2	20210416	Cloudy	Moderate	Mid-Flood	Middle	5.4	8:39	8.39	8.49	31.82	23.59	2.88	4
CR2	20210416	Cloudy	Moderate	Mid-Flood	Middle	5.4	8:39	8.05	8.39	31.85	23.77	2.66	5
CR2	20210416	Cloudy	Moderate	Mid-Flood	Bottom	9.8	8:38	8.84	8.29	31.62	23.79	3.28	4
CR2	20210416	Cloudy	Moderate	Mid-Flood	Bottom	9.8	8:38	8.13	8.27	31.88	23.71	2.93	5
F1A	20210416	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:06	8.66	8.33	32.02	23.92	3.23	7
F1A	20210416	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:06	8.36	8.32	31.77	23.90	2.84	6
F1A	20210416	Cloudy	Moderate	Mid-Flood	Middle	3.9	9:05	7.66	8.53	31.77	23.80	2.81	6
F1A	20210416	Cloudy	Moderate	Mid-Flood	Middle	3.9	9:05	8.14	8.24	31.83	23.89	3.13	7
F1A	20210416	Cloudy	Moderate	Mid-Flood	Bottom	6.7	9:04	8.43	8.16	31.88	23.87	3.65	5
F1A	20210416	Cloudy	Moderate	Mid-Flood	Bottom	6.7	9:04	9.33	8.32	31.99	23.84	3.71	6
H1	20210416	Cloudy	Moderate	Mid-Flood	Surface	1.0	10:17	8.91	8.44	32.08	23.96	2.78	7
H1	20210416	Cloudy	Moderate	Mid-Flood	Surface	1.0	10:17	8.93	8.35	32.07	23.99	2.91	6
H1	20210416	Cloudy	Moderate	Mid-Flood	Middle	4.3	10:16	8.06	8.29	31.60	23.99	2.89	7
H1	20210416	Cloudy	Moderate	Mid-Flood	Middle	4.3	10:16	7.78	8.51	32.07	23.90	2.63	8
H1	20210416	Cloudy	Moderate	Mid-Flood	Bottom	7.6	10:15	9.28	8.44	32.32	23.99	3.24	7
H1	20210416	Cloudy	Moderate	Mid-Flood	Bottom	7.6	10:15	8.73	8.25	32.24	23.88	3.39	8
M1	20210416	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:40	7.65	8.45	32.12	23.65	2.73	5
M1	20210416	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:40	7.67	8.30	32.06	23.80	2.58	4
M1	20210416	Cloudy	Moderate	Mid-Flood	Middle	4.1	8:39	8.02	8.49	31.74	23.78	3.14	5
M1	20210416	Cloudy	Moderate	Mid-Flood	Middle	4.1	8:39	9.15	8.22	31.81	23.65	2.76	4
M1	20210416	Cloudy	Moderate	Mid-Flood	Bottom	7.1	8:38	8.87	8.46	32.19	23.81	3.86	5
M1	20210416	Cloudy	Moderate	Mid-Flood	Bottom	7.1	8:38	7.92	8.28	31.62	23.78	3.35	6
B1	20210416	Cloudy	Moderate	Mid-Ebb	Surface	1.0	13:12	8.57	8.46	31.92	24.67	2.49	5
B1	20210416	Cloudy	Moderate	Mid-Ebb	Surface	1.0	13:12	8.43	8.33	31.57	24.68	2.94	6

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
B1	20210416	Cloudy	Moderate	Mid-Ebb	Bottom	4.0	13:11	8.65	8.26	31.46	24.88	2.91	4
B1	20210416	Cloudy	Moderate	Mid-Ebb	Bottom	4.0	13:11	9.07	8.22	31.85	24.82	3.47	5
B2	20210416	Cloudy	Moderate	Mid-Ebb	Surface	1.0	13:30	8.95	8.33	31.57	24.93	2.43	6
B2	20210416	Cloudy	Moderate	Mid-Ebb	Surface	1.0	13:30	7.57	8.17	32.14	24.90	2.32	5
B2	20210416	Cloudy	Moderate	Mid-Ebb	Bottom	4.9	13:29	8.91	8.11	31.66	24.93	3.01	5
B2	20210416	Cloudy	Moderate	Mid-Ebb	Bottom	4.9	13:29	8.84	8.14	31.53	24.92	2.73	4
B3	20210416	Cloudy	Moderate	Mid-Ebb	Surface	1.0	12:59	8.32	8.22	32.20	24.71	3.30	5
B3	20210416	Cloudy	Moderate	Mid-Ebb	Surface	1.0	12:59	8.50	8.39	31.92	24.88	2.86	4
B3	20210416	Cloudy	Moderate	Mid-Ebb	Bottom	4.3	12:58	7.96	8.17	32.25	24.85	3.71	5
B3	20210416	Cloudy	Moderate	Mid-Ebb	Bottom	4.3	12:58	8.73	8.18	31.40	24.78	3.75	4
B4	20210416	Cloudy	Moderate	Mid-Ebb	Surface	1.0	13:12	8.68	8.20	32.24	24.78	2.24	4
B4	20210416	Cloudy	Moderate	Mid-Ebb	Surface	1.0	13:12	8.09	8.11	32.05	24.74	2.32	5
B4	20210416	Cloudy	Moderate	Mid-Ebb	Bottom	3.9	13:11	7.73	8.22	31.97	24.71	3.34	5
B4	20210416	Cloudy	Moderate	Mid-Ebb	Bottom	3.9	13:11	8.90	8.27	31.92	24.86	3.54	4
C1A	20210416	Cloudy	Moderate	Mid-Ebb	Surface	1.0	12:41	8.23	8.24	32.22	24.64	2.66	6
C1A	20210416	Cloudy	Moderate	Mid-Ebb	Surface	1.0	12:41	9.07	8.36	32.21	24.62	2.25	6
C1A	20210416	Cloudy	Moderate	Mid-Ebb	Middle	4.9	12:40	8.86	8.24	31.71	24.84	2.36	4
C1A	20210416	Cloudy	Moderate	Mid-Ebb	Middle	4.9	12:40	8.69	8.17	32.25	24.85	2.37	5
C1A	20210416	Cloudy	Moderate	Mid-Ebb	Bottom	8.8	12:39	8.34	8.25	31.73	24.81	3.33	4
C1A	20210416	Cloudy	Moderate	Mid-Ebb	Bottom	8.8	12:39	8.16	8.23	32.22	24.79	2.78	5
C2A	20210416	Cloudy	Moderate	Mid-Ebb	Surface	1.0	12:43	7.82	8.22	31.48	24.69	2.31	7
C2A	20210416	Cloudy	Moderate	Mid-Ebb	Surface	1.0	12:43	9.09	8.34	32.34	24.71	2.59	8
C2A	20210416	Cloudy	Moderate	Mid-Ebb	Middle	5.8	12:42	7.50	8.39	32.33	24.58	2.72	7
C2A	20210416	Cloudy	Moderate	Mid-Ebb	Middle	5.8	12:42	8.25	8.46	32.26	24.78	2.49	8
C2A	20210416	Cloudy	Moderate	Mid-Ebb	Bottom	10.5	12:41	8.57	8.21	31.42	24.57	3.73	6
C2A	20210416	Cloudy	Moderate	Mid-Ebb	Bottom	10.5	12:41	8.77	8.37	32.16	24.77	3.57	7
CR1	20210416	Cloudy	Moderate	Mid-Ebb	Surface	1.0	14:30	7.50	8.43	32.08	24.95	2.65	5

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
CR1	20210416	Cloudy	Moderate	Mid-Ebb	Surface	1.0	14:30	8.80	8.34	32.24	25.02	2.48	5
CR1	20210416	Cloudy	Moderate	Mid-Ebb	Middle	6.6	14:29	7.59	8.17	31.94	24.84	2.96	5
CR1	20210416	Cloudy	Moderate	Mid-Ebb	Middle	6.6	14:29	8.74	8.11	32.02	24.96	3.48	6
CR1	20210416	Cloudy	Moderate	Mid-Ebb	Bottom	12.1	14:28	8.16	8.40	32.18	24.98	3.87	6
CR1	20210416	Cloudy	Moderate	Mid-Ebb	Bottom	12.1	14:28	8.45	8.32	32.12	24.87	3.26	5
CR2	20210416	Cloudy	Moderate	Mid-Ebb	Surface	1.0	14:16	7.48	8.11	31.82	24.85	3.01	8
CR2	20210416	Cloudy	Moderate	Mid-Ebb	Surface	1.0	14:16	7.93	8.32	31.71	24.76	3.18	7
CR2	20210416	Cloudy	Moderate	Mid-Ebb	Middle	5.8	14:15	8.42	8.26	31.75	24.80	3.17	8
CR2	20210416	Cloudy	Moderate	Mid-Ebb	Middle	5.8	14:15	8.03	8.14	32.15	24.72	2.89	7
CR2	20210416	Cloudy	Moderate	Mid-Ebb	Bottom	10.5	14:14	7.64	8.13	32.07	24.74	2.79	5
CR2	20210416	Cloudy	Moderate	Mid-Ebb	Bottom	10.5	14:14	8.21	8.32	32.11	24.82	3.03	6
F1A	20210416	Cloudy	Moderate	Mid-Ebb	Surface	1.0	14:17	8.17	8.27	32.30	24.74	3.24	8
F1A	20210416	Cloudy	Moderate	Mid-Ebb	Surface	1.0	14:17	7.70	8.17	31.59	24.81	3.01	8
F1A	20210416	Cloudy	Moderate	Mid-Ebb	Middle	4.5	14:16	9.00	8.45	32.21	24.89	3.07	7
F1A	20210416	Cloudy	Moderate	Mid-Ebb	Middle	4.5	14:16	7.99	8.40	32.33	24.87	2.60	8
F1A	20210416	Cloudy	Moderate	Mid-Ebb	Bottom	7.9	14:15	8.24	8.43	31.90	24.73	3.49	6
F1A	20210416	Cloudy	Moderate	Mid-Ebb	Bottom	7.9	14:15	8.91	8.14	31.51	24.78	3.67	5
H1	20210416	Cloudy	Moderate	Mid-Ebb	Surface	1.0	13:59	7.84	8.43	31.79	24.77	2.56	6
H1	20210416	Cloudy	Moderate	Mid-Ebb	Surface	1.0	13:59	7.65	8.46	31.55	24.88	2.18	6
H1	20210416	Cloudy	Moderate	Mid-Ebb	Middle	4.0	13:58	8.86	8.13	32.05	24.75	2.81	5
H1	20210416	Cloudy	Moderate	Mid-Ebb	Middle	4.0	13:58	8.22	8.11	32.13	24.82	2.42	4
H1	20210416	Cloudy	Moderate	Mid-Ebb	Bottom	7.0	13:57	7.59	8.16	32.13	24.83	3.02	3
H1	20210416	Cloudy	Moderate	Mid-Ebb	Bottom	7.0	13:57	9.09	8.10	31.42	24.86	3.10	4
M1	20210416	Cloudy	Moderate	Mid-Ebb	Surface	1.0	13:49	8.29	8.40	31.60	24.84	2.30	5
M1	20210416	Cloudy	Moderate	Mid-Ebb	Surface	1.0	13:49	8.22	8.16	32.09	24.96	2.60	6
M1	20210416	Cloudy	Moderate	Mid-Ebb	Middle	4.8	13:48	7.51	8.31	32.35	24.91	2.82	6
M1	20210416	Cloudy	Moderate	Mid-Ebb	Middle	4.8	13:48	8.85	8.40	31.43	24.90	2.50	5

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
M1	20210416	Cloudy	Moderate	Mid-Ebb	Bottom	8.6	13:47	8.79	8.35	32.11	24.98	3.71	4
M1	20210416	Cloudy	Moderate	Mid-Ebb	Bottom	8.6	13:47	8.04	8.24	32.18	24.89	3.19	4
B1	20210419	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:10	8.46	8.15	29.96	22.90	2.86	10
B1	20210419	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:10	8.79	8.52	30.21	22.75	2.95	9
B1	20210419	Cloudy	Moderate	Mid-Flood	Bottom	3.4	9:09	9.26	8.50	30.70	22.87	3.49	9
B1	20210419	Cloudy	Moderate	Mid-Flood	Bottom	3.4	9:09	8.53	8.29	29.94	22.74	3.20	10
B2	20210419	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:27	8.38	8.16	29.91	22.98	2.67	10
B2	20210419	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:27	9.69	8.36	30.16	22.79	2.95	11
B2	20210419	Cloudy	Moderate	Mid-Flood	Bottom	3.4	9:26	9.20	8.16	30.61	23.00	2.73	8
B2	20210419	Cloudy	Moderate	Mid-Flood	Bottom	3.4	9:26	9.27	8.23	30.31	23.03	3.15	7
B3	20210419	Cloudy	Moderate	Mid-Flood	Surface	1.0	10:38	8.40	8.42	30.62	22.96	2.25	10
B3	20210419	Cloudy	Moderate	Mid-Flood	Surface	1.0	10:38	9.41	8.25	30.68	23.18	2.59	11
B3	20210419	Cloudy	Moderate	Mid-Flood	Bottom	3.9	10:37	9.19	8.31	30.24	23.22	2.74	9
B3	20210419	Cloudy	Moderate	Mid-Flood	Bottom	3.9	10:37	9.03	8.28	30.68	23.18	3.25	10
B4	20210419	Cloudy	Moderate	Mid-Flood	Surface	1.0	10:19	8.75	8.49	30.29	23.17	2.18	7
B4	20210419	Cloudy	Moderate	Mid-Flood	Surface	1.0	10:19	8.72	8.28	30.51	23.17	2.48	8
B4	20210419	Cloudy	Moderate	Mid-Flood	Bottom	3.6	10:18	8.49	8.46	29.94	23.00	3.32	11
B4	20210419	Cloudy	Moderate	Mid-Flood	Bottom	3.6	10:18	8.40	8.23	30.13	23.10	2.95	10
C1A	20210419	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:43	8.32	8.39	30.13	22.69	2.53	7
C1A	20210419	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:43	8.16	8.48	30.06	22.73	2.87	8
C1A	20210419	Cloudy	Moderate	Mid-Flood	Middle	5.5	8:42	8.24	8.37	30.39	22.94	2.93	7
C1A	20210419	Cloudy	Moderate	Mid-Flood	Middle	5.5	8:42	8.06	8.34	30.45	22.69	2.71	8
C1A	20210419	Cloudy	Moderate	Mid-Flood	Bottom	9.9	8:41	9.61	8.40	30.36	22.80	2.89	10
C1A	20210419	Cloudy	Moderate	Mid-Flood	Bottom	9.9	8:41	9.07	8.32	30.56	22.92	3.01	11
C2A	20210419	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:02	9.26	8.35	30.38	22.85	3.21	8
C2A	20210419	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:02	9.70	8.34	30.56	22.61	3.22	9
C2A	20210419	Cloudy	Moderate	Mid-Flood	Middle	5.6	8:01	8.00	8.21	30.66	22.82	2.89	11

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
C2A	20210419	Cloudy	Moderate	Mid-Flood	Middle	5.6	8:01	9.13	8.55	30.10	22.82	2.86	8
C2A	20210419	Cloudy	Moderate	Mid-Flood	Bottom	10.2	8:00	9.15	8.35	30.07	22.74	2.98	9
C2A	20210419	Cloudy	Moderate	Mid-Flood	Bottom	10.2	8:00	9.32	8.15	30.14	22.74	3.34	10
CR1	20210419	Cloudy	Moderate	Mid-Flood	Surface	1.0	10:21	9.49	8.51	29.97	23.16	2.31	9
CR1	20210419	Cloudy	Moderate	Mid-Flood	Surface	1.0	10:21	9.65	8.16	30.63	23.10	2.72	9
CR1	20210419	Cloudy	Moderate	Mid-Flood	Middle	6.2	10:20	9.13	8.40	30.46	23.02	2.88	9
CR1	20210419	Cloudy	Moderate	Mid-Flood	Middle	6.2	10:20	9.57	8.26	30.35	22.91	3.12	10
CR1	20210419	Cloudy	Moderate	Mid-Flood	Bottom	11.4	10:19	8.81	8.47	30.58	22.96	3.70	12
CR1	20210419	Cloudy	Moderate	Mid-Flood	Bottom	11.4	10:19	8.00	8.54	30.70	23.18	3.46	11
CR2	20210419	Cloudy	Moderate	Mid-Flood	Surface	1.0	10:04	9.20	8.27	30.56	22.95	3.24	9
CR2	20210419	Cloudy	Moderate	Mid-Flood	Surface	1.0	10:04	9.49	8.49	29.98	23.02	3.09	10
CR2	20210419	Cloudy	Moderate	Mid-Flood	Middle	5.4	10:03	8.91	8.31	29.94	23.13	2.56	9
CR2	20210419	Cloudy	Moderate	Mid-Flood	Middle	5.4	10:03	8.84	8.43	30.30	23.02	2.62	10
CR2	20210419	Cloudy	Moderate	Mid-Flood	Bottom	9.8	10:02	9.18	8.22	29.91	22.90	2.91	9
CR2	20210419	Cloudy	Moderate	Mid-Flood	Bottom	9.8	10:02	9.37	8.37	30.29	22.86	3.09	9
F1A	20210419	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:11	8.18	8.56	30.12	22.91	2.67	8
F1A	20210419	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:11	9.15	8.22	30.19	22.82	2.57	7
F1A	20210419	Cloudy	Moderate	Mid-Flood	Middle	4.4	9:10	9.33	8.45	30.39	22.76	3.39	8
F1A	20210419	Cloudy	Moderate	Mid-Flood	Middle	4.4	9:10	8.63	8.31	30.53	22.75	3.09	9
F1A	20210419	Cloudy	Moderate	Mid-Flood	Bottom	7.8	9:09	8.87	8.15	30.69	22.95	3.07	8
F1A	20210419	Cloudy	Moderate	Mid-Flood	Bottom	7.8	9:09	9.22	8.42	30.20	22.86	3.53	9
H1	20210419	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:25	9.63	8.55	30.63	22.85	2.59	6
H1	20210419	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:25	7.97	8.28	30.53	22.73	3.02	7
H1	20210419	Cloudy	Moderate	Mid-Flood	Middle	4.1	8:24	8.15	8.15	30.32	22.66	2.86	8
H1	20210419	Cloudy	Moderate	Mid-Flood	Middle	4.1	8:24	8.97	8.15	30.50	22.63	3.17	9
H1	20210419	Cloudy	Moderate	Mid-Flood	Bottom	7.2	8:23	9.61	8.16	29.96	22.74	3.41	8
H1	20210419	Cloudy	Moderate	Mid-Flood	Bottom	7.2	8:23	8.07	8.20	30.01	22.69	2.91	9

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
M1	20210419	Cloudy	Moderate	Mid-Flood	Surface	1.0	10:00	8.51	8.53	30.63	22.90	3.17	6
M1	20210419	Cloudy	Moderate	Mid-Flood	Surface	1.0	10:00	9.51	8.38	30.09	23.12	2.79	6
M1	20210419	Cloudy	Moderate	Mid-Flood	Middle	4.3	9:59	8.53	8.25	30.44	23.14	3.25	8
M1	20210419	Cloudy	Moderate	Mid-Flood	Middle	4.3	9:59	8.74	8.36	30.51	22.93	3.33	7
M1	20210419	Cloudy	Moderate	Mid-Flood	Bottom	7.6	9:58	7.93	8.22	30.08	23.00	3.03	9
M1	20210419	Cloudy	Moderate	Mid-Flood	Bottom	7.6	9:58	8.36	8.55	30.21	22.90	2.89	10
B1	20210419	Cloudy	Moderate	Mid-Ebb	Surface	1.0	15:30	8.73	8.24	30.65	23.21	2.73	10
B1	20210419	Cloudy	Moderate	Mid-Ebb	Surface	1.0	15:30	8.91	8.39	30.65	23.22	2.99	9
B1	20210419	Cloudy	Moderate	Mid-Ebb	Bottom	4.0	15:29	9.84	8.38	30.40	23.29	2.98	8
B1	20210419	Cloudy	Moderate	Mid-Ebb	Bottom	4.0	15:29	9.44	8.19	30.36	23.30	2.88	7
B2	20210419	Cloudy	Moderate	Mid-Ebb	Surface	1.0	15:47	8.76	8.14	29.91	23.15	3.25	11
B2	20210419	Cloudy	Moderate	Mid-Ebb	Surface	1.0	15:47	9.92	8.36	29.94	23.19	3.01	10
B2	20210419	Cloudy	Moderate	Mid-Ebb	Bottom	4.8	15:46	9.93	8.32	30.31	23.24	3.44	8
B2	20210419	Cloudy	Moderate	Mid-Ebb	Bottom	4.8	15:46	8.45	8.20	30.69	23.29	2.95	9
B3	20210419	Cloudy	Moderate	Mid-Ebb	Surface	1.0	15:15	9.88	8.36	30.42	23.39	2.57	10
B3	20210419	Cloudy	Moderate	Mid-Ebb	Surface	1.0	15:15	8.43	8.18	30.02	23.26	2.78	11
B3	20210419	Cloudy	Moderate	Mid-Ebb	Bottom	3.4	15:14	9.85	8.19	30.73	23.23	3.49	9
B3	20210419	Cloudy	Moderate	Mid-Ebb	Bottom	3.4	15:14	10.01	8.38	30.67	23.36	3.04	8
B4	20210419	Cloudy	Moderate	Mid-Ebb	Surface	1.0	15:37	9.43	8.36	30.70	23.26	3.11	8
B4	20210419	Cloudy	Moderate	Mid-Ebb	Surface	1.0	15:37	8.76	8.42	29.87	23.33	3.30	8
B4	20210419	Cloudy	Moderate	Mid-Ebb	Bottom	4.0	15:36	8.58	8.15	30.20	23.22	3.54	9
B4	20210419	Cloudy	Moderate	Mid-Ebb	Bottom	4.0	15:36	8.71	8.16	30.17	23.24	3.06	3
C1A	20210419	Cloudy	Moderate	Mid-Ebb	Surface	1.0	15:01	9.42	8.15	30.52	23.31	2.81	11
C1A	20210419	Cloudy	Moderate	Mid-Ebb	Surface	1.0	15:01	9.85	8.37	30.01	23.15	2.49	12
C1A	20210419	Cloudy	Moderate	Mid-Ebb	Middle	5.4	15:00	9.81	8.37	29.94	23.28	2.80	10
C1A	20210419	Cloudy	Moderate	Mid-Ebb	Middle	5.4	15:00	9.26	8.09	30.40	23.19	3.01	11
C1A	20210419	Cloudy	Moderate	Mid-Ebb	Bottom	9.8	14:59	8.63	8.08	30.22	23.28	3.00	8

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
C1A	20210419	Cloudy	Moderate	Mid-Ebb	Bottom	9.8	14:59	9.24	8.28	30.14	23.31	3.25	7
C2A	20210419	Cloudy	Moderate	Mid-Ebb	Surface	1.0	15:02	9.20	8.18	30.51	23.22	2.53	10
C2A	20210419	Cloudy	Moderate	Mid-Ebb	Surface	1.0	15:02	9.29	8.27	29.86	23.19	2.46	9
C2A	20210419	Cloudy	Moderate	Mid-Ebb	Middle	5.9	15:01	9.81	8.29	30.19	23.22	2.67	8
C2A	20210419	Cloudy	Moderate	Mid-Ebb	Middle	5.9	15:01	9.51	8.17	30.51	23.26	2.86	9
C2A	20210419	Cloudy	Moderate	Mid-Ebb	Bottom	10.8	15:00	8.78	8.24	30.12	23.13	3.76	8
C2A	20210419	Cloudy	Moderate	Mid-Ebb	Bottom	10.8	15:00	8.88	8.30	30.30	23.24	3.57	9
CR1	20210419	Cloudy	Moderate	Mid-Ebb	Surface	1.0	16:45	8.72	8.20	30.17	23.14	2.37	7
CR1	20210419	Cloudy	Moderate	Mid-Ebb	Surface	1.0	16:45	9.98	8.23	29.82	23.11	2.41	8
CR1	20210419	Cloudy	Moderate	Mid-Ebb	Middle	6.2	16:44	9.95	8.27	30.04	23.14	3.21	8
CR1	20210419	Cloudy	Moderate	Mid-Ebb	Middle	6.2	16:44	8.80	8.15	29.91	23.13	3.47	8
CR1	20210419	Cloudy	Moderate	Mid-Ebb	Bottom	11.3	16:43	8.76	8.43	30.58	23.22	2.73	8
CR1	20210419	Cloudy	Moderate	Mid-Ebb	Bottom	11.3	16:43	8.81	8.41	29.97	23.16	3.10	8
CR2	20210419	Cloudy	Moderate	Mid-Ebb	Surface	1.0	16:30	8.77	8.35	30.54	23.21	3.41	7
CR2	20210419	Cloudy	Moderate	Mid-Ebb	Surface	1.0	16:30	9.84	8.36	29.83	23.12	3.26	8
CR2	20210419	Cloudy	Moderate	Mid-Ebb	Middle	5.8	16:29	8.82	8.27	30.76	23.08	2.95	8
CR2	20210419	Cloudy	Moderate	Mid-Ebb	Middle	5.8	16:29	9.32	8.08	29.90	23.16	2.46	9
CR2	20210419	Cloudy	Moderate	Mid-Ebb	Bottom	10.5	16:28	9.26	8.21	30.50	23.07	2.93	8
CR2	20210419	Cloudy	Moderate	Mid-Ebb	Bottom	10.5	16:28	8.50	8.09	30.23	23.22	3.02	9
F1A	20210419	Cloudy	Moderate	Mid-Ebb	Surface	1.0	16:28	8.50	8.18	30.70	23.15	2.68	9
F1A	20210419	Cloudy	Moderate	Mid-Ebb	Surface	1.0	16:28	9.12	8.12	30.31	23.16	2.75	9
F1A	20210419	Cloudy	Moderate	Mid-Ebb	Middle	4.4	16:27	10.00	8.39	30.36	23.07	3.41	8
F1A	20210419	Cloudy	Moderate	Mid-Ebb	Middle	4.4	16:27	9.35	8.16	30.26	23.19	3.09	8
F1A	20210419	Cloudy	Moderate	Mid-Ebb	Bottom	7.7	16:26	9.64	8.33	29.89	23.15	3.17	7
F1A	20210419	Cloudy	Moderate	Mid-Ebb	Bottom	7.7	16:26	9.76	8.24	30.76	23.12	2.82	7
H1	20210419	Cloudy	Moderate	Mid-Ebb	Surface	1.0	16:15	9.03	8.36	30.30	23.24	2.85	8
H1	20210419	Cloudy	Moderate	Mid-Ebb	Surface	1.0	16:15	8.49	8.37	30.03	23.08	2.86	9

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
H1	20210419	Cloudy	Moderate	Mid-Ebb	Middle	4.2	16:14	9.84	8.38	30.06	23.10	2.77	7
H1	20210419	Cloudy	Moderate	Mid-Ebb	Middle	4.2	16:14	8.58	8.07	30.37	23.31	3.23	6
H1	20210419	Cloudy	Moderate	Mid-Ebb	Bottom	7.4	16:13	8.89	8.33	30.64	23.08	3.89	7
H1	20210419	Cloudy	Moderate	Mid-Ebb	Bottom	7.4	16:13	9.52	8.42	30.60	23.21	3.73	6
M1	20210419	Cloudy	Moderate	Mid-Ebb	Surface	1.0	16:14	9.04	8.12	29.94	23.23	3.33	9
M1	20210419	Cloudy	Moderate	Mid-Ebb	Surface	1.0	16:14	9.75	8.15	29.87	23.30	2.90	8
M1	20210419	Cloudy	Moderate	Mid-Ebb	Middle	4.4	16:13	8.79	8.28	29.90	23.26	3.23	7
M1	20210419	Cloudy	Moderate	Mid-Ebb	Middle	4.4	16:13	9.37	8.13	30.40	23.11	2.98	7
M1	20210419	Cloudy	Moderate	Mid-Ebb	Bottom	7.7	16:12	8.55	8.13	30.23	23.08	3.68	7
M1	20210419	Cloudy	Moderate	Mid-Ebb	Bottom	7.7	16:12	9.44	8.06	30.71	23.14	3.89	6
B1	20210421	Sunny	Moderate	Mid-Flood	Surface	1.0	9:27	9.23	8.51	32.07	24.28	2.49	4
B1	20210421	Sunny	Moderate	Mid-Flood	Surface	1.0	9:27	8.14	8.61	31.81	24.47	2.97	5
B1	20210421	Sunny	Moderate	Mid-Flood	Bottom	3.6	9:26	8.97	8.59	31.55	24.47	3.43	6
B1	20210421	Sunny	Moderate	Mid-Flood	Bottom	3.6	9:26	9.10	8.45	31.77	24.46	3.29	6
B2	20210421	Sunny	Moderate	Mid-Flood	Surface	1.0	9:44	8.63	8.55	31.56	24.45	3.31	7
B2	20210421	Sunny	Moderate	Mid-Flood	Surface	1.0	9:44	8.31	8.62	31.55	24.39	2.90	7
B2	20210421	Sunny	Moderate	Mid-Flood	Bottom	3.5	9:43	8.71	8.57	31.88	24.33	3.19	8
B2	20210421	Sunny	Moderate	Mid-Flood	Bottom	3.5	9:43	7.57	8.38	31.56	24.56	3.68	8
B3	20210421	Sunny	Moderate	Mid-Flood	Surface	1.0	10:39	8.66	8.43	31.52	24.46	2.97	8
B3	20210421	Sunny	Moderate	Mid-Flood	Surface	1.0	10:39	9.28	8.60	32.13	24.68	2.74	7
B3	20210421	Sunny	Moderate	Mid-Flood	Bottom	3.4	10:38	7.88	8.58	31.60	24.43	2.85	7
B3	20210421	Sunny	Moderate	Mid-Flood	Bottom	3.4	10:38	9.25	8.65	31.97	24.56	3.17	6
B4	20210421	Sunny	Moderate	Mid-Flood	Surface	1.0	10:25	7.79	8.47	31.94	24.56	3.28	7
B4	20210421	Sunny	Moderate	Mid-Flood	Surface	1.0	10:25	7.87	8.63	31.68	24.63	3.40	8
B4	20210421	Sunny	Moderate	Mid-Flood	Bottom	4.4	10:24	8.76	8.64	31.88	24.36	2.89	6
B4	20210421	Sunny	Moderate	Mid-Flood	Bottom	4.4	10:24	7.74	8.49	31.80	24.46	3.41	7
C1A	20210421	Sunny	Moderate	Mid-Flood	Surface	1.0	8:59	8.35	8.39	31.45	24.22	3.14	7

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
C1A	20210421	Sunny	Moderate	Mid-Flood	Surface	1.0	8:59	8.26	8.56	31.66	24.26	2.86	7
C1A	20210421	Sunny	Moderate	Mid-Flood	Middle	5.7	8:58	9.19	8.56	31.72	24.16	2.47	5
C1A	20210421	Sunny	Moderate	Mid-Flood	Middle	5.7	8:58	7.79	8.52	31.98	24.17	2.44	6
C1A	20210421	Sunny	Moderate	Mid-Flood	Bottom	10.4	8:57	8.86	8.43	31.46	24.37	3.83	4
C1A	20210421	Sunny	Moderate	Mid-Flood	Bottom	10.4	8:57	7.79	8.62	32.00	24.20	3.94	5
C2A	20210421	Sunny	Moderate	Mid-Flood	Surface	1.0	8:02	7.61	8.64	32.00	24.14	2.71	6
C2A	20210421	Sunny	Moderate	Mid-Flood	Surface	1.0	8:02	9.28	8.41	32.10	24.30	2.35	7
C2A	20210421	Sunny	Moderate	Mid-Flood	Middle	5.8	8:01	8.91	8.40	31.94	24.19	2.47	6
C2A	20210421	Sunny	Moderate	Mid-Flood	Middle	5.8	8:01	9.18	8.46	32.14	24.19	2.59	6
C2A	20210421	Sunny	Moderate	Mid-Flood	Bottom	10.6	8:00	8.54	8.50	31.94	24.09	3.47	6
C2A	20210421	Sunny	Moderate	Mid-Flood	Bottom	10.6	8:00	9.06	8.42	31.73	24.21	2.98	5
CR1	20210421	Sunny	Moderate	Mid-Flood	Surface	1.0	8:24	7.58	8.52	31.94	24.22	3.02	9
CR1	20210421	Sunny	Moderate	Mid-Flood	Surface	1.0	8:24	8.11	8.42	32.00	24.21	3.31	8
CR1	20210421	Sunny	Moderate	Mid-Flood	Middle	6.5	8:23	9.15	8.41	31.69	24.25	3.03	7
CR1	20210421	Sunny	Moderate	Mid-Flood	Middle	6.5	8:23	8.47	8.61	31.56	24.29	3.05	8
CR1	20210421	Sunny	Moderate	Mid-Flood	Bottom	12.0	8:22	8.86	8.54	31.48	24.15	3.64	7
CR1	20210421	Sunny	Moderate	Mid-Flood	Bottom	12.0	8:22	9.31	8.59	31.76	24.31	3.28	6
CR2	20210421	Sunny	Moderate	Mid-Flood	Surface	1.0	8:38	8.22	8.42	32.00	24.20	3.02	7
CR2	20210421	Sunny	Moderate	Mid-Flood	Surface	1.0	8:38	8.54	8.60	31.76	24.18	3.02	7
CR2	20210421	Sunny	Moderate	Mid-Flood	Middle	5.5	8:37	7.96	8.55	32.00	24.16	2.77	6
CR2	20210421	Sunny	Moderate	Mid-Flood	Middle	5.5	8:37	7.98	8.38	31.95	24.31	3.16	5
CR2	20210421	Sunny	Moderate	Mid-Flood	Bottom	9.9	8:36	8.21	8.55	31.56	24.25	2.77	5
CR2	20210421	Sunny	Moderate	Mid-Flood	Bottom	9.9	8:36	7.71	8.38	32.11	24.16	2.95	5
F1A	20210421	Sunny	Moderate	Mid-Flood	Surface	1.0	9:54	7.81	8.37	32.12	24.40	2.80	6
F1A	20210421	Sunny	Moderate	Mid-Flood	Surface	1.0	9:54	9.09	8.52	32.08	24.38	2.94	5
F1A	20210421	Sunny	Moderate	Mid-Flood	Middle	4.2	9:53	8.15	8.45	31.82	24.48	2.79	5
F1A	20210421	Sunny	Moderate	Mid-Flood	Middle	4.2	9:53	9.10	8.55	32.07	24.31	3.08	6

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
F1A	20210421	Sunny	Moderate	Mid-Flood	Bottom	7.3	9:52	9.12	8.42	31.87	24.31	3.71	5
F1A	20210421	Sunny	Moderate	Mid-Flood	Bottom	7.3	9:52	8.50	8.64	31.52	24.32	3.22	5
H1	20210421	Sunny	Moderate	Mid-Flood	Surface	1.0	10:12	8.63	8.55	31.75	24.53	2.60	5
H1	20210421	Sunny	Moderate	Mid-Flood	Surface	1.0	10:12	8.58	8.55	31.82	24.62	2.29	6
H1	20210421	Sunny	Moderate	Mid-Flood	Middle	4.3	10:11	7.71	8.44	31.63	24.42	2.87	5
H1	20210421	Sunny	Moderate	Mid-Flood	Middle	4.3	10:11	8.61	8.49	32.15	24.54	3.09	6
H1	20210421	Sunny	Moderate	Mid-Flood	Bottom	7.6	10:10	8.92	8.52	31.73	24.59	3.34	6
H1	20210421	Sunny	Moderate	Mid-Flood	Bottom	7.6	10:10	8.81	8.46	31.35	24.43	3.49	5
M1	20210421	Sunny	Moderate	Mid-Flood	Surface	1.0	9:16	8.39	8.40	32.08	24.40	2.37	5
M1	20210421	Sunny	Moderate	Mid-Flood	Surface	1.0	9:16	8.95	8.50	31.58	24.40	2.28	6
M1	20210421	Sunny	Moderate	Mid-Flood	Middle	4.1	9:15	9.00	8.47	31.97	24.55	2.51	6
M1	20210421	Sunny	Moderate	Mid-Flood	Middle	4.1	9:15	9.12	8.62	31.50	24.29	2.48	7
M1	20210421	Sunny	Moderate	Mid-Flood	Bottom	7.2	9:14	9.10	8.62	32.12	24.50	3.65	9
M1	20210421	Sunny	Moderate	Mid-Flood	Bottom	7.2	9:14	9.34	8.42	32.15	24.49	3.62	8
B1	20210421	Sunny	Moderate	Mid-Ebb	Surface	1.0	15:58	8.44	8.50	31.73	24.76	3.32	9
B1	20210421	Sunny	Moderate	Mid-Ebb	Surface	1.0	15:58	7.64	8.57	32.30	24.73	3.46	9
B1	20210421	Sunny	Moderate	Mid-Ebb	Bottom	3.8	15:57	7.71	8.39	31.79	25.23	3.19	6
B1	20210421	Sunny	Moderate	Mid-Ebb	Bottom	3.8	15:57	8.22	8.59	32.48	24.95	3.57	6
B2	20210421	Sunny	Moderate	Mid-Ebb	Surface	1.0	16:16	8.41	8.51	31.89	26.42	3.27	6
B2	20210421	Sunny	Moderate	Mid-Ebb	Surface	1.0	16:16	7.91	8.40	31.76	25.13	3.34	7
B2	20210421	Sunny	Moderate	Mid-Ebb	Bottom	4.5	16:15	7.95	8.55	31.84	24.92	2.84	6
B2	20210421	Sunny	Moderate	Mid-Ebb	Bottom	4.5	16:15	8.98	8.40	32.04	25.17	3.08	6
B3	20210421	Sunny	Moderate	Mid-Ebb	Surface	1.0	15:48	8.30	8.44	32.21	26.52	3.27	7
B3	20210421	Sunny	Moderate	Mid-Ebb	Surface	1.0	15:48	7.75	8.42	32.14	25.73	2.90	7
B3	20210421	Sunny	Moderate	Mid-Ebb	Bottom	3.7	15:47	7.87	8.52	32.06	25.42	3.62	9
B3	20210421	Sunny	Moderate	Mid-Ebb	Bottom	3.7	15:47	8.34	8.45	32.27	24.86	3.23	9
B4	20210421	Sunny	Moderate	Mid-Ebb	Surface	1.0	16:00	7.97	8.40	32.12	26.27	2.94	7

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
B4	20210421	Sunny	Moderate	Mid-Ebb	Surface	1.0	16:00	8.01	8.57	32.49	25.63	3.00	8
B4	20210421	Sunny	Moderate	Mid-Ebb	Bottom	3.2	15:59	7.58	8.39	32.00	26.65	2.92	7
B4	20210421	Sunny	Moderate	Mid-Ebb	Bottom	3.2	15:59	8.77	8.54	31.59	26.83	2.95	8
C1A	20210421	Sunny	Moderate	Mid-Ebb	Surface	1.0	15:32	7.68	8.41	31.72	24.74	2.97	5
C1A	20210421	Sunny	Moderate	Mid-Ebb	Surface	1.0	15:32	8.33	8.43	32.43	24.64	2.79	6
C1A	20210421	Sunny	Moderate	Mid-Ebb	Middle	5.3	15:31	7.60	8.57	31.77	26.10	3.13	6
C1A	20210421	Sunny	Moderate	Mid-Ebb	Middle	5.3	15:31	9.10	8.42	31.97	26.67	3.10	5
C1A	20210421	Sunny	Moderate	Mid-Ebb	Bottom	9.6	15:30	8.39	8.56	32.55	25.88	3.51	7
C1A	20210421	Sunny	Moderate	Mid-Ebb	Bottom	9.6	15:30	8.62	8.46	32.15	25.39	2.97	6
C2A	20210421	Sunny	Moderate	Mid-Ebb	Surface	1.0	15:32	7.82	8.52	32.35	26.39	3.12	7
C2A	20210421	Sunny	Moderate	Mid-Ebb	Surface	1.0	15:32	8.83	8.46	31.76	25.59	3.27	7
C2A	20210421	Sunny	Moderate	Mid-Ebb	Middle	5.7	15:31	8.51	8.41	32.28	24.67	3.47	7
C2A	20210421	Sunny	Moderate	Mid-Ebb	Middle	5.7	15:31	7.86	8.55	32.53	26.76	2.99	7
C2A	20210421	Sunny	Moderate	Mid-Ebb	Bottom	10.3	15:30	7.56	8.38	32.28	25.94	3.29	6
C2A	20210421	Sunny	Moderate	Mid-Ebb	Bottom	10.3	15:30	8.34	8.44	32.30	25.27	3.54	5
CR1	20210421	Sunny	Moderate	Mid-Ebb	Surface	1.0	17:10	7.89	8.45	31.62	25.76	2.94	7
CR1	20210421	Sunny	Moderate	Mid-Ebb	Surface	1.0	17:10	8.63	8.38	32.57	24.89	3.21	6
CR1	20210421	Sunny	Moderate	Mid-Ebb	Middle	6.7	17:09	8.41	8.51	32.14	26.21	3.26	6
CR1	20210421	Sunny	Moderate	Mid-Ebb	Middle	6.7	17:09	8.58	8.43	32.32	24.69	3.20	7
CR1	20210421	Sunny	Moderate	Mid-Ebb	Bottom	12.4	17:08	7.45	8.53	32.25	24.84	3.13	6
CR1	20210421	Sunny	Moderate	Mid-Ebb	Bottom	12.4	17:08	8.94	8.56	32.33	25.09	3.67	6
CR2	20210421	Sunny	Moderate	Mid-Ebb	Surface	1.0	16:58	8.45	8.41	31.94	25.63	3.18	5
CR2	20210421	Sunny	Moderate	Mid-Ebb	Surface	1.0	16:58	8.24	8.58	31.62	26.17	2.87	6
CR2	20210421	Sunny	Moderate	Mid-Ebb	Middle	5.5	16:57	8.27	8.46	31.69	25.81	3.59	6
CR2	20210421	Sunny	Moderate	Mid-Ebb	Middle	5.5	16:57	8.44	8.52	31.99	25.97	3.61	7
CR2	20210421	Sunny	Moderate	Mid-Ebb	Bottom	10.0	16:56	8.80	8.52	31.68	24.56	2.91	6
CR2	20210421	Sunny	Moderate	Mid-Ebb	Bottom	10.0	16:56	9.09	8.50	31.98	25.59	2.78	7

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
F1A	20210421	Sunny	Moderate	Mid-Ebb	Surface	1.0	17:00	8.56	8.56	32.52	26.61	2.39	7
F1A	20210421	Sunny	Moderate	Mid-Ebb	Surface	1.0	17:00	7.47	8.53	32.21	24.81	2.85	6
F1A	20210421	Sunny	Moderate	Mid-Ebb	Middle	4.0	16:59	7.49	8.53	32.34	26.42	2.90	5
F1A	20210421	Sunny	Moderate	Mid-Ebb	Middle	4.0	16:59	7.57	8.46	31.96	25.37	3.30	6
F1A	20210421	Sunny	Moderate	Mid-Ebb	Bottom	7.0	16:58	8.01	8.47	32.15	25.22	3.51	6
F1A	20210421	Sunny	Moderate	Mid-Ebb	Bottom	7.0	16:58	7.86	8.56	31.99	24.92	3.38	6
H1	20210421	Sunny	Moderate	Mid-Ebb	Surface	1.0	16:44	8.92	8.43	32.39	26.36	2.46	5
H1	20210421	Sunny	Moderate	Mid-Ebb	Surface	1.0	16:44	8.08	8.56	31.91	25.47	2.40	6
H1	20210421	Sunny	Moderate	Mid-Ebb	Middle	4.4	16:43	7.72	8.54	32.37	24.66	2.56	5
H1	20210421	Sunny	Moderate	Mid-Ebb	Middle	4.4	16:43	8.87	8.56	32.09	25.05	2.96	6
H1	20210421	Sunny	Moderate	Mid-Ebb	Bottom	7.8	16:42	8.90	8.55	31.90	25.22	3.11	7
H1	20210421	Sunny	Moderate	Mid-Ebb	Bottom	7.8	16:42	7.68	8.53	31.98	25.21	2.79	6
M1	20210421	Sunny	Moderate	Mid-Ebb	Surface	1.0	16:34	8.70	8.47	31.71	26.34	2.91	7
M1	20210421	Sunny	Moderate	Mid-Ebb	Surface	1.0	16:34	8.87	8.46	31.67	25.13	3.10	8
M1	20210421	Sunny	Moderate	Mid-Ebb	Middle	4.5	16:33	7.52	8.52	32.56	26.39	2.44	7
M1	20210421	Sunny	Moderate	Mid-Ebb	Middle	4.5	16:33	8.11	8.51	32.38	25.06	2.49	7
M1	20210421	Sunny	Moderate	Mid-Ebb	Bottom	8.0	16:32	8.81	8.48	32.14	26.31	3.44	8
M1	20210421	Sunny	Moderate	Mid-Ebb	Bottom	8.0	16:32	8.59	8.37	31.78	26.46	3.50	9
B1	20210423	Sunny	Moderate	Mid-Flood	Surface	1.0	8:48	8.91	8.59	29.77	26.70	2.57	4
B1	20210423	Sunny	Moderate	Mid-Flood	Surface	1.0	8:48	9.85	8.52	30.21	26.83	2.15	3
B1	20210423	Sunny	Moderate	Mid-Flood	Bottom	3.8	8:47	9.52	8.61	30.14	26.80	2.56	5
B1	20210423	Sunny	Moderate	Mid-Flood	Bottom	3.8	8:47	10.19	8.28	30.11	26.84	2.97	4
B2	20210423	Sunny	Moderate	Mid-Flood	Surface	1.0	9:04	8.68	8.59	29.96	26.94	2.20	4
B2	20210423	Sunny	Moderate	Mid-Flood	Surface	1.0	9:04	9.82	8.39	29.86	26.71	2.26	3
B2	20210423	Sunny	Moderate	Mid-Flood	Bottom	3.5	9:03	9.08	8.56	29.97	26.69	3.49	4
B2	20210423	Sunny	Moderate	Mid-Flood	Bottom	3.5	9:03	8.62	8.63	30.20	26.72	2.98	5
B3	20210423	Sunny	Moderate	Mid-Flood	Surface	1.0	10:18	9.14	8.44	30.16	27.27	2.74	5

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
B3	20210423	Sunny	Moderate	Mid-Flood	Surface	1.0	10:18	9.57	8.62	30.45	27.24	2.97	5
B3	20210423	Sunny	Moderate	Mid-Flood	Bottom	3.6	10:17	9.49	8.63	30.35	27.23	3.14	5
B3	20210423	Sunny	Moderate	Mid-Flood	Bottom	3.6	10:17	10.10	8.46	29.82	27.10	3.20	4
B4	20210423	Sunny	Moderate	Mid-Flood	Surface	1.0	10:04	9.93	8.30	30.24	27.25	2.16	5
B4	20210423	Sunny	Moderate	Mid-Flood	Surface	1.0	10:04	9.27	8.48	30.06	26.98	2.09	6
B4	20210423	Sunny	Moderate	Mid-Flood	Bottom	4.4	10:03	9.79	8.63	29.80	26.92	3.22	4
B4	20210423	Sunny	Moderate	Mid-Flood	Bottom	4.4	10:03	10.09	8.55	30.14	26.94	2.94	5
C1A	20210423	Sunny	Moderate	Mid-Flood	Surface	1.0	8:19	9.51	8.28	30.42	26.79	2.37	4
C1A	20210423	Sunny	Moderate	Mid-Flood	Surface	1.0	8:19	10.25	8.63	29.84	26.73	2.74	5
C1A	20210423	Sunny	Moderate	Mid-Flood	Middle	5.9	8:18	9.47	8.61	30.37	26.63	3.13	6
C1A	20210423	Sunny	Moderate	Mid-Flood	Middle	5.9	8:18	8.54	8.34	30.56	26.86	2.96	6
C1A	20210423	Sunny	Moderate	Mid-Flood	Bottom	10.7	8:17	9.82	8.44	30.10	26.67	2.91	6
C1A	20210423	Sunny	Moderate	Mid-Flood	Bottom	10.7	8:17	9.23	8.66	30.38	26.81	3.16	6
C2A	20210423	Sunny	Moderate	Mid-Flood	Surface	1.0	10:20	9.32	8.45	30.59	27.10	2.93	4
C2A	20210423	Sunny	Moderate	Mid-Flood	Surface	1.0	10:20	9.87	8.49	29.99	27.14	2.90	5
C2A	20210423	Sunny	Moderate	Mid-Flood	Middle	5.5	10:19	9.07	8.40	30.33	27.24	2.76	6
C2A	20210423	Sunny	Moderate	Mid-Flood	Middle	5.5	10:19	8.75	8.55	29.80	27.29	3.23	5
C2A	20210423	Sunny	Moderate	Mid-Flood	Bottom	10.0	10:18	9.48	8.62	29.97	27.22	3.30	6
C2A	20210423	Sunny	Moderate	Mid-Flood	Bottom	10.0	10:18	8.97	8.33	29.78	27.34	3.40	7
CR1	20210423	Sunny	Moderate	Mid-Flood	Surface	1.0	9:59	8.73	8.49	30.19	27.24	2.34	4
CR1	20210423	Sunny	Moderate	Mid-Flood	Surface	1.0	9:59	9.22	8.42	30.42	27.16	2.44	4
CR1	20210423	Sunny	Moderate	Mid-Flood	Middle	6.3	9:58	8.70	8.37	30.29	27.05	2.65	4
CR1	20210423	Sunny	Moderate	Mid-Flood	Middle	6.3	9:58	9.11	8.62	30.48	27.26	2.45	5
CR1	20210423	Sunny	Moderate	Mid-Flood	Bottom	11.5	9:57	8.94	8.32	29.93	27.18	3.17	5
CR1	20210423	Sunny	Moderate	Mid-Flood	Bottom	11.5	9:57	9.98	8.31	30.55	26.97	3.28	4
CR2	20210423	Sunny	Moderate	Mid-Flood	Surface	1.0	9:46	8.75	8.41	30.44	26.97	2.84	3
CR2	20210423	Sunny	Moderate	Mid-Flood	Surface	1.0	9:46	10.09	8.51	30.19	27.00	3.06	2

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
CR2	20210423	Sunny	Moderate	Mid-Flood	Middle	5.6	9:45	8.87	8.59	30.42	27.13	3.10	4
CR2	20210423	Sunny	Moderate	Mid-Flood	Middle	5.6	9:45	9.12	8.45	30.58	26.85	3.23	5
CR2	20210423	Sunny	Moderate	Mid-Flood	Bottom	10.1	9:44	9.06	8.45	29.82	26.99	3.26	4
CR2	20210423	Sunny	Moderate	Mid-Flood	Bottom	10.1	9:44	9.79	8.51	30.40	27.05	3.45	5
F1A	20210423	Sunny	Moderate	Mid-Flood	Surface	1.0	9:35	9.50	8.52	30.43	27.04	2.58	5
F1A	20210423	Sunny	Moderate	Mid-Flood	Surface	1.0	9:35	8.76	8.59	30.34	26.87	2.82	4
F1A	20210423	Sunny	Moderate	Mid-Flood	Middle	4.0	9:34	8.59	8.54	30.01	26.84	2.87	6
F1A	20210423	Sunny	Moderate	Mid-Flood	Middle	4.0	9:34	8.68	8.53	30.33	26.90	3.07	5
F1A	20210423	Sunny	Moderate	Mid-Flood	Bottom	6.9	9:33	8.58	8.64	29.78	27.09	3.26	5
F1A	20210423	Sunny	Moderate	Mid-Flood	Bottom	6.9	9:33	9.36	8.49	30.55	26.86	3.02	6
H1	20210423	Sunny	Moderate	Mid-Flood	Surface	1.0	9:31	8.78	8.35	30.01	26.85	2.87	7
H1	20210423	Sunny	Moderate	Mid-Flood	Surface	1.0	9:31	9.00	8.47	30.29	27.11	2.57	6
H1	20210423	Sunny	Moderate	Mid-Flood	Middle	4.3	9:30	9.95	8.57	30.58	26.99	3.25	7
H1	20210423	Sunny	Moderate	Mid-Flood	Middle	4.3	9:30	9.32	8.52	29.93	26.84	2.83	6
H1	20210423	Sunny	Moderate	Mid-Flood	Bottom	7.5	9:29	9.64	8.51	29.95	26.91	3.14	6
H1	20210423	Sunny	Moderate	Mid-Flood	Bottom	7.5	9:29	9.32	8.66	30.51	26.90	3.54	6
M1	20210423	Sunny	Moderate	Mid-Flood	Surface	1.0	9:05	8.64	8.51	30.53	26.91	2.65	5
M1	20210423	Sunny	Moderate	Mid-Flood	Surface	1.0	9:05	9.80	8.33	30.54	26.85	2.33	4
M1	20210423	Sunny	Moderate	Mid-Flood	Middle	3.9	9:04	8.65	8.36	29.93	26.84	2.95	5
M1	20210423	Sunny	Moderate	Mid-Flood	Middle	3.9	9:04	8.66	8.63	30.57	26.79	2.68	4
M1	20210423	Sunny	Moderate	Mid-Flood	Bottom	6.8	9:03	10.20	8.39	30.58	26.80	3.44	6
M1	20210423	Sunny	Moderate	Mid-Flood	Bottom	6.8	9:03	9.71	8.56	30.27	26.78	2.99	6
B1	20210423	Sunny	Moderate	Mid-Ebb	Surface	1.0	13:48	9.01	8.51	30.15	28.27	2.83	4
B1	20210423	Sunny	Moderate	Mid-Ebb	Surface	1.0	13:48	9.69	8.31	29.74	28.32	2.85	3
B1	20210423	Sunny	Moderate	Mid-Ebb	Bottom	4.0	13:47	9.12	8.59	30.18	28.33	3.09	3
B1	20210423	Sunny	Moderate	Mid-Ebb	Bottom	4.0	13:47	8.66	8.36	29.74	28.42	3.16	2
B2	20210423	Sunny	Moderate	Mid-Ebb	Surface	1.0	14:05	9.62	8.47	30.44	28.50	2.40	5

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
B2	20210423	Sunny	Moderate	Mid-Ebb	Surface	1.0	14:05	9.12	8.49	30.47	28.21	2.26	6
B2	20210423	Sunny	Moderate	Mid-Ebb	Bottom	4.3	14:04	9.28	8.54	30.38	28.46	3.00	5
B2	20210423	Sunny	Moderate	Mid-Ebb	Bottom	4.3	14:04	9.40	8.41	30.04	28.30	3.34	5
B3	20210423	Sunny	Moderate	Mid-Ebb	Surface	1.0	13:37	8.84	8.40	30.67	28.36	2.11	5
B3	20210423	Sunny	Moderate	Mid-Ebb	Surface	1.0	13:37	8.65	8.53	29.96	28.30	2.34	6
B3	20210423	Sunny	Moderate	Mid-Ebb	Bottom	4.0	13:36	9.95	8.41	29.79	28.45	3.38	4
B3	20210423	Sunny	Moderate	Mid-Ebb	Bottom	4.0	13:36	9.72	8.44	30.12	28.20	3.30	5
B4	20210423	Sunny	Moderate	Mid-Ebb	Surface	1.0	13:48	9.53	8.57	29.73	28.42	2.86	5
B4	20210423	Sunny	Moderate	Mid-Ebb	Surface	1.0	13:48	10.05	8.65	29.78	28.55	2.80	6
B4	20210423	Sunny	Moderate	Mid-Ebb	Bottom	3.5	13:47	9.76	8.43	30.23	28.34	3.00	4
B4	20210423	Sunny	Moderate	Mid-Ebb	Bottom	3.5	13:47	8.76	8.30	30.27	28.48	2.83	4
C1A	20210423	Sunny	Moderate	Mid-Ebb	Surface	1.0	13:20	8.80	8.48	30.62	28.32	1.99	5
C1A	20210423	Sunny	Moderate	Mid-Ebb	Surface	1.0	13:20	8.62	8.42	29.98	28.15	2.35	4
C1A	20210423	Sunny	Moderate	Mid-Ebb	Middle	4.7	13:19	9.09	8.54	30.54	28.40	2.75	6
C1A	20210423	Sunny	Moderate	Mid-Ebb	Middle	4.7	13:19	9.25	8.44	30.33	28.35	2.42	5
C1A	20210423	Sunny	Moderate	Mid-Ebb	Bottom	8.3	13:18	9.89	8.43	30.05	28.38	3.10	6
C1A	20210423	Sunny	Moderate	Mid-Ebb	Bottom	8.3	13:18	8.50	8.31	30.34	28.41	2.66	5
C2A	20210423	Sunny	Moderate	Mid-Ebb	Surface	1.0	13:20	9.16	8.55	29.78	28.26	2.68	3
C2A	20210423	Sunny	Moderate	Mid-Ebb	Surface	1.0	13:20	9.25	8.30	30.54	28.19	2.50	4
C2A	20210423	Sunny	Moderate	Mid-Ebb	Middle	5.9	13:19	9.88	8.62	29.83	28.40	2.38	6
C2A	20210423	Sunny	Moderate	Mid-Ebb	Middle	5.9	13:19	8.89	8.45	30.40	28.41	2.24	5
C2A	20210423	Sunny	Moderate	Mid-Ebb	Bottom	10.8	13:18	9.53	8.30	30.64	28.46	2.61	5
C2A	20210423	Sunny	Moderate	Mid-Ebb	Bottom	10.8	13:18	9.52	8.61	30.64	28.14	2.99	6
CR1	20210423	Sunny	Moderate	Mid-Ebb	Surface	1.0	15:00	9.84	8.52	29.74	28.16	2.39	4
CR1	20210423	Sunny	Moderate	Mid-Ebb	Surface	1.0	15:00	9.27	8.61	30.20	28.30	2.52	5
CR1	20210423	Sunny	Moderate	Mid-Ebb	Middle	6.4	14:59	9.81	8.32	29.88	28.48	2.54	5
CR1	20210423	Sunny	Moderate	Mid-Ebb	Middle	6.4	14:59	9.44	8.45	29.92	28.34	2.36	4

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
CR1	20210423	Sunny	Moderate	Mid-Ebb	Bottom	11.7	14:58	9.10	8.31	30.42	28.31	3.23	6
CR1	20210423	Sunny	Moderate	Mid-Ebb	Bottom	11.7	14:58	10.06	8.41	30.38	28.47	3.14	6
CR2	20210423	Sunny	Moderate	Mid-Ebb	Surface	1.0	14:47	9.54	8.51	29.78	28.53	2.27	5
CR2	20210423	Sunny	Moderate	Mid-Ebb	Surface	1.0	14:47	10.04	8.32	30.51	28.30	2.39	5
CR2	20210423	Sunny	Moderate	Mid-Ebb	Middle	5.7	14:46	8.51	8.48	30.10	28.50	2.32	5
CR2	20210423	Sunny	Moderate	Mid-Ebb	Middle	5.7	14:46	8.67	8.55	29.74	28.50	1.96	6
CR2	20210423	Sunny	Moderate	Mid-Ebb	Bottom	10.3	14:45	10.03	8.37	30.60	28.48	2.55	4
CR2	20210423	Sunny	Moderate	Mid-Ebb	Bottom	10.3	14:45	8.96	8.47	30.26	28.41	2.30	5
F1A	20210423	Sunny	Moderate	Mid-Ebb	Surface	1.0	14:50	9.31	8.52	30.18	28.46	2.92	6
F1A	20210423	Sunny	Moderate	Mid-Ebb	Surface	1.0	14:50	8.78	8.58	30.64	28.39	2.85	5
F1A	20210423	Sunny	Moderate	Mid-Ebb	Middle	4.4	14:49	9.84	8.30	30.42	28.22	2.38	5
F1A	20210423	Sunny	Moderate	Mid-Ebb	Middle	4.4	14:49	8.70	8.40	29.71	28.38	2.19	4
F1A	20210423	Sunny	Moderate	Mid-Ebb	Bottom	7.8	14:48	8.77	8.45	29.74	28.29	2.56	3
F1A	20210423	Sunny	Moderate	Mid-Ebb	Bottom	7.8	14:48	9.25	8.60	30.29	28.45	2.64	4
H1	20210423	Sunny	Moderate	Mid-Ebb	Surface	1.0	14:32	9.01	8.42	29.83	28.50	2.36	4
H1	20210423	Sunny	Moderate	Mid-Ebb	Surface	1.0	14:32	8.71	8.53	30.39	28.31	2.56	4
H1	20210423	Sunny	Moderate	Mid-Ebb	Middle	4.4	14:31	9.23	8.33	30.06	28.50	2.56	4
H1	20210423	Sunny	Moderate	Mid-Ebb	Middle	4.4	14:31	9.90	8.64	29.96	28.35	2.88	3
H1	20210423	Sunny	Moderate	Mid-Ebb	Bottom	7.7	14:30	8.56	8.34	30.27	28.27	3.21	3
H1	20210423	Sunny	Moderate	Mid-Ebb	Bottom	7.7	14:30	8.56	8.39	30.14	28.30	2.91	4
M1	20210423	Sunny	Moderate	Mid-Ebb	Surface	1.0	14:22	9.30	8.44	29.86	28.50	2.59	4
M1	20210423	Sunny	Moderate	Mid-Ebb	Surface	1.0	14:22	8.73	8.65	29.94	28.50	2.66	4
M1	20210423	Sunny	Moderate	Mid-Ebb	Middle	4.8	14:21	10.14	8.41	30.47	28.21	2.63	5
M1	20210423	Sunny	Moderate	Mid-Ebb	Middle	4.8	14:21	9.06	8.56	30.08	28.27	2.66	6
M1	20210423	Sunny	Moderate	Mid-Ebb	Bottom	8.6	14:20	9.70	8.36	30.12	28.33	2.90	6
M1	20210423	Sunny	Moderate	Mid-Ebb	Bottom	8.6	14:20	9.64	8.65	30.22	28.50	3.40	5
B1	20210426	Cloudy	Moderate	Mid-Ebb	Surface	1.0	10:37	8.72	8.17	31.71	23.93	2.32	11

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
B1	20210426	Cloudy	Moderate	Mid-Ebb	Surface	1.0	10:37	8.53	8.44	31.23	23.73	2.36	12
B1	20210426	Cloudy	Moderate	Mid-Ebb	Bottom	3.8	10:36	8.48	8.24	31.81	23.74	3.49	10
B1	20210426	Cloudy	Moderate	Mid-Ebb	Bottom	3.8	10:36	8.81	8.40	31.28	23.80	3.41	9
B2	20210426	Cloudy	Moderate	Mid-Ebb	Surface	1.0	10:53	8.61	8.47	31.97	23.84	3.20	9
B2	20210426	Cloudy	Moderate	Mid-Ebb	Surface	1.0	10:53	9.37	8.36	31.42	23.80	3.13	8
B2	20210426	Cloudy	Moderate	Mid-Ebb	Bottom	4.5	10:52	8.40	8.51	31.70	23.91	3.22	10
B2	20210426	Cloudy	Moderate	Mid-Ebb	Bottom	4.5	10:52	8.56	8.47	31.88	23.84	3.49	9
B3	20210426	Cloudy	Moderate	Mid-Ebb	Surface	1.0	12:13	9.57	8.40	31.30	24.03	2.41	10
B3	20210426	Cloudy	Moderate	Mid-Ebb	Surface	1.0	12:13	9.10	8.49	31.48	24.12	2.45	10
B3	20210426	Cloudy	Moderate	Mid-Ebb	Bottom	4.0	12:12	8.53	8.48	31.04	23.86	3.67	11
B3	20210426	Cloudy	Moderate	Mid-Ebb	Bottom	4.0	12:12	9.52	8.19	31.09	24.08	3.42	11
B4	20210426	Cloudy	Moderate	Mid-Ebb	Surface	1.0	12:00	8.37	8.21	31.32	23.97	2.80	9
B4	20210426	Cloudy	Moderate	Mid-Ebb	Surface	1.0	12:00	9.08	8.36	31.31	24.14	2.87	10
B4	20210426	Cloudy	Moderate	Mid-Ebb	Bottom	3.4	11:59	9.27	8.51	31.84	23.84	2.64	14
B4	20210426	Cloudy	Moderate	Mid-Ebb	Bottom	3.4	11:59	8.22	8.43	31.65	24.11	2.82	14
C1A	20210426	Cloudy	Moderate	Mid-Ebb	Surface	1.0	10:10	8.10	8.27	31.84	23.73	2.23	16
C1A	20210426	Cloudy	Moderate	Mid-Ebb	Surface	1.0	10:10	8.41	8.48	31.89	23.61	2.64	16
C1A	20210426	Cloudy	Moderate	Mid-Ebb	Middle	5.2	10:09	9.40	8.16	31.76	23.56	2.39	14
C1A	20210426	Cloudy	Moderate	Mid-Ebb	Middle	5.2	10:09	7.95	8.41	31.25	23.49	2.75	13
C1A	20210426	Cloudy	Moderate	Mid-Ebb	Bottom	9.3	10:08	8.71	8.18	31.64	23.60	3.49	11
C1A	20210426	Cloudy	Moderate	Mid-Ebb	Bottom	9.3	10:08	7.99	8.34	31.90	23.61	3.59	12
C2A	20210426	Cloudy	Moderate	Mid-Ebb	Surface	1.0	12:11	8.42	8.40	31.71	24.07	2.56	11
C2A	20210426	Cloudy	Moderate	Mid-Ebb	Surface	1.0	12:11	8.86	8.43	31.84	24.14	2.15	12
C2A	20210426	Cloudy	Moderate	Mid-Ebb	Middle	5.7	12:10	9.42	8.23	31.58	24.20	3.05	11
C2A	20210426	Cloudy	Moderate	Mid-Ebb	Middle	5.7	12:10	8.05	8.20	31.40	23.88	2.78	10
C2A	20210426	Cloudy	Moderate	Mid-Ebb	Bottom	10.3	12:09	8.14	8.31	31.96	24.15	3.00	11
C2A	20210426	Cloudy	Moderate	Mid-Ebb	Bottom	10.3	12:09	9.28	8.43	31.34	23.86	3.27	10

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
CR1	20210426	Cloudy	Moderate	Mid-Ebb	Surface	1.0	11:49	8.31	8.43	31.17	24.04	2.37	10
CR1	20210426	Cloudy	Moderate	Mid-Ebb	Surface	1.0	11:49	7.98	8.25	31.66	24.04	2.41	9
CR1	20210426	Cloudy	Moderate	Mid-Ebb	Middle	6.5	11:48	8.25	8.16	31.30	24.09	2.67	10
CR1	20210426	Cloudy	Moderate	Mid-Ebb	Middle	6.5	11:48	7.93	8.52	31.31	23.85	2.93	9
CR1	20210426	Cloudy	Moderate	Mid-Ebb	Bottom	12.0	11:47	8.25	8.45	31.19	24.04	3.19	11
CR1	20210426	Cloudy	Moderate	Mid-Ebb	Bottom	12.0	11:47	9.23	8.22	31.72	24.06	3.49	11
CR2	20210426	Cloudy	Moderate	Mid-Ebb	Surface	1.0	11:37	9.16	8.43	31.65	23.85	3.08	11
CR2	20210426	Cloudy	Moderate	Mid-Ebb	Surface	1.0	11:37	9.42	8.43	31.79	24.02	3.03	12
CR2	20210426	Cloudy	Moderate	Mid-Ebb	Middle	5.9	11:36	8.53	8.33	31.96	24.01	2.99	11
CR2	20210426	Cloudy	Moderate	Mid-Ebb	Middle	5.9	11:36	9.07	8.18	31.24	23.83	2.86	12
CR2	20210426	Cloudy	Moderate	Mid-Ebb	Bottom	10.7	11:35	8.56	8.43	31.08	23.97	2.91	15
CR2	20210426	Cloudy	Moderate	Mid-Ebb	Bottom	10.7	11:35	8.50	8.40	31.22	24.01	3.27	14
F1A	20210426	Cloudy	Moderate	Mid-Ebb	Surface	1.0	11:31	8.82	8.31	31.80	24.07	2.80	12
F1A	20210426	Cloudy	Moderate	Mid-Ebb	Surface	1.0	11:31	8.00	8.26	31.75	24.09	3.09	12
F1A	20210426	Cloudy	Moderate	Mid-Ebb	Middle	4.2	11:30	9.10	8.41	32.00	23.83	3.10	11
F1A	20210426	Cloudy	Moderate	Mid-Ebb	Middle	4.2	11:30	8.09	8.43	31.41	23.86	2.84	12
F1A	20210426	Cloudy	Moderate	Mid-Ebb	Bottom	7.3	11:29	9.50	8.33	31.68	24.00	3.19	11
F1A	20210426	Cloudy	Moderate	Mid-Ebb	Bottom	7.3	11:29	8.41	8.26	31.52	24.05	3.55	13
H1	20210426	Cloudy	Moderate	Mid-Ebb	Surface	1.0	11:21	9.17	8.34	31.08	23.81	2.78	13
H1	20210426	Cloudy	Moderate	Mid-Ebb	Surface	1.0	11:21	9.06	8.39	31.50	23.95	2.82	11
H1	20210426	Cloudy	Moderate	Mid-Ebb	Middle	4.1	11:20	8.88	8.40	31.05	23.91	3.34	14
H1	20210426	Cloudy	Moderate	Mid-Ebb	Middle	4.1	11:20	8.17	8.33	31.05	23.92	2.85	13
H1	20210426	Cloudy	Moderate	Mid-Ebb	Bottom	7.2	11:19	8.59	8.37	31.08	24.01	3.68	14
H1	20210426	Cloudy	Moderate	Mid-Ebb	Bottom	7.2	11:19	9.57	8.27	31.15	23.93	3.26	14
M1	20210426	Cloudy	Moderate	Mid-Ebb	Surface	1.0	11:01	8.54	8.33	31.64	23.70	2.90	15
M1	20210426	Cloudy	Moderate	Mid-Ebb	Surface	1.0	11:01	8.52	8.47	31.31	23.81	3.03	15
M1	20210426	Cloudy	Moderate	Mid-Ebb	Middle	4.4	11:00	8.06	8.20	31.19	23.88	2.67	14

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
M1	20210426	Cloudy	Moderate	Mid-Ebb	Middle	4.4	11:00	7.98	8.32	31.39	23.86	3.14	13
M1	20210426	Cloudy	Moderate	Mid-Ebb	Bottom	7.7	10:59	9.45	8.33	31.84	23.89	3.26	11
M1	20210426	Cloudy	Moderate	Mid-Ebb	Bottom	7.7	10:59	8.68	8.43	31.03	23.93	2.91	12
B1	20210426	Cloudy	Moderate	Mid-Flood	Surface	1.0	15:59	9.47	8.37	31.48	24.24	2.66	9
B1	20210426	Cloudy	Moderate	Mid-Flood	Surface	1.0	15:59	9.42	8.30	31.63	24.09	2.95	10
B1	20210426	Cloudy	Moderate	Mid-Flood	Bottom	4.2	15:58	8.11	8.12	31.32	24.31	2.99	9
B1	20210426	Cloudy	Moderate	Mid-Flood	Bottom	4.2	15:58	9.50	8.54	31.65	24.11	2.84	8
B2	20210426	Cloudy	Moderate	Mid-Flood	Surface	1.0	16:16	9.17	8.21	31.26	24.23	3.04	11
B2	20210426	Cloudy	Moderate	Mid-Flood	Surface	1.0	16:16	9.18	8.26	31.18	24.03	3.00	10
B2	20210426	Cloudy	Moderate	Mid-Flood	Bottom	3.7	16:15	8.01	8.43	31.14	24.19	3.04	10
B2	20210426	Cloudy	Moderate	Mid-Flood	Bottom	3.7	16:15	9.35	8.29	31.42	24.21	3.60	9
B3	20210426	Cloudy	Moderate	Mid-Flood	Surface	1.0	15:46	9.42	8.54	31.43	24.23	2.89	9
B3	20210426	Cloudy	Moderate	Mid-Flood	Surface	1.0	15:46	8.11	8.25	31.88	24.00	2.93	9
B3	20210426	Cloudy	Moderate	Mid-Flood	Bottom	3.3	15:45	8.71	8.13	31.65	24.17	3.09	11
B3	20210426	Cloudy	Moderate	Mid-Flood	Bottom	3.3	15:45	9.15	8.38	31.60	24.05	3.61	11
B4	20210426	Cloudy	Moderate	Mid-Flood	Surface	1.0	16:03	8.08	8.37	31.23	24.03	2.70	11
B4	20210426	Cloudy	Moderate	Mid-Flood	Surface	1.0	16:03	8.71	8.49	31.81	24.00	2.72	12
B4	20210426	Cloudy	Moderate	Mid-Flood	Bottom	4.2	16:02	8.91	8.33	31.78	24.02	3.38	12
B4	20210426	Cloudy	Moderate	Mid-Flood	Bottom	4.2	16:02	9.43	8.44	31.65	24.05	3.17	11
C1A	20210426	Cloudy	Moderate	Mid-Flood	Surface	1.0	15:32	9.49	8.52	31.80	24.19	3.10	11
C1A	20210426	Cloudy	Moderate	Mid-Flood	Surface	1.0	15:32	7.94	8.49	31.74	24.15	2.88	12
C1A	20210426	Cloudy	Moderate	Mid-Flood	Middle	5.5	15:31	8.10	8.34	31.39	24.14	2.85	11
C1A	20210426	Cloudy	Moderate	Mid-Flood	Middle	5.5	15:31	8.85	8.53	31.51	24.03	2.66	12
C1A	20210426	Cloudy	Moderate	Mid-Flood	Bottom	10.0	15:30	8.35	8.54	31.48	24.02	3.87	9
C1A	20210426	Cloudy	Moderate	Mid-Flood	Bottom	10.0	15:30	8.50	8.44	31.14	24.03	3.42	8
C2A	20210426	Cloudy	Moderate	Mid-Flood	Surface	1.0	15:32	8.89	8.15	31.24	24.12	2.77	7
C2A	20210426	Cloudy	Moderate	Mid-Flood	Surface	1.0	15:32	8.61	8.13	31.28	24.01	2.74	6

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
C2A	20210426	Cloudy	Moderate	Mid-Flood	Middle	6.0	15:31	8.58	8.38	31.27	24.21	3.17	7
C2A	20210426	Cloudy	Moderate	Mid-Flood	Middle	6.0	15:31	8.96	8.41	31.33	24.21	2.82	7
C2A	20210426	Cloudy	Moderate	Mid-Flood	Bottom	11.0	15:30	8.62	8.49	31.47	24.26	3.70	9
C2A	20210426	Cloudy	Moderate	Mid-Flood	Bottom	11.0	15:30	8.43	8.33	31.26	24.23	3.45	8
CR1	20210426	Cloudy	Moderate	Mid-Flood	Surface	1.0	17:11	8.47	8.54	31.62	23.82	2.53	11
CR1	20210426	Cloudy	Moderate	Mid-Flood	Surface	1.0	17:11	9.20	8.13	31.82	23.89	2.64	12
CR1	20210426	Cloudy	Moderate	Mid-Flood	Middle	6.2	17:10	7.98	8.29	31.67	24.03	3.09	11
CR1	20210426	Cloudy	Moderate	Mid-Flood	Middle	6.2	17:10	8.86	8.38	31.77	24.08	2.67	11
CR1	20210426	Cloudy	Moderate	Mid-Flood	Bottom	11.4	17:09	8.76	8.24	31.13	24.06	3.54	9
CR1	20210426	Cloudy	Moderate	Mid-Flood	Bottom	11.4	17:09	9.12	8.43	31.72	23.87	3.51	10
CR2	20210426	Cloudy	Moderate	Mid-Flood	Surface	1.0	16:56	8.33	8.37	31.12	24.09	3.03	11
CR2	20210426	Cloudy	Moderate	Mid-Flood	Surface	1.0	16:56	8.54	8.37	31.29	23.89	3.18	10
CR2	20210426	Cloudy	Moderate	Mid-Flood	Middle	5.6	16:55	9.48	8.13	31.40	24.06	2.88	11
CR2	20210426	Cloudy	Moderate	Mid-Flood	Middle	5.6	16:55	9.39	8.30	31.90	23.90	2.48	10
CR2	20210426	Cloudy	Moderate	Mid-Flood	Bottom	10.1	16:54	9.30	8.29	31.42	23.88	3.67	12
CR2	20210426	Cloudy	Moderate	Mid-Flood	Bottom	10.1	16:54	9.12	8.11	31.82	24.11	3.24	13
F1A	20210426	Cloudy	Moderate	Mid-Flood	Surface	1.0	17:10	8.63	8.35	31.78	24.00	2.30	10
F1A	20210426	Cloudy	Moderate	Mid-Flood	Surface	1.0	17:10	9.38	8.47	31.22	23.91	2.46	9
F1A	20210426	Cloudy	Moderate	Mid-Flood	Middle	4.1	17:09	8.74	8.34	31.44	24.13	2.49	9
F1A	20210426	Cloudy	Moderate	Mid-Flood	Middle	4.1	17:09	8.11	8.18	31.27	23.93	2.71	10
F1A	20210426	Cloudy	Moderate	Mid-Flood	Bottom	7.1	17:08	9.00	8.53	31.92	23.98	3.63	12
F1A	20210426	Cloudy	Moderate	Mid-Flood	Bottom	7.1	17:08	7.91	8.21	31.37	24.05	3.13	12
H1	20210426	Cloudy	Moderate	Mid-Flood	Surface	1.0	16:44	8.02	8.36	31.92	24.14	2.89	11
H1	20210426	Cloudy	Moderate	Mid-Flood	Surface	1.0	16:44	7.89	8.38	31.56	23.87	3.13	10
H1	20210426	Cloudy	Moderate	Mid-Flood	Middle	4.2	16:43	9.00	8.11	31.82	24.08	3.29	10
H1	20210426	Cloudy	Moderate	Mid-Flood	Middle	4.2	16:43	8.61	8.41	31.12	24.18	3.30	9
H1	20210426	Cloudy	Moderate	Mid-Flood	Bottom	7.4	16:42	8.44	8.46	31.44	23.88	3.20	9

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
H1	20210426	Cloudy	Moderate	Mid-Flood	Bottom	7.4	16:42	8.86	8.24	31.23	24.28	2.79	9
M1	20210426	Cloudy	Moderate	Mid-Flood	Surface	1.0	16:45	8.43	8.35	31.92	24.22	2.79	10
M1	20210426	Cloudy	Moderate	Mid-Flood	Surface	1.0	16:45	8.09	8.54	31.33	24.04	2.70	11
M1	20210426	Cloudy	Moderate	Mid-Flood	Middle	3.8	16:44	8.20	8.51	31.91	24.09	3.34	9
M1	20210426	Cloudy	Moderate	Mid-Flood	Middle	3.8	16:44	8.65	8.15	31.57	24.35	3.34	10
M1	20210426	Cloudy	Moderate	Mid-Flood	Bottom	6.5	16:43	9.06	8.25	31.86	24.22	2.81	9
M1	20210426	Cloudy	Moderate	Mid-Flood	Bottom	6.5	16:43	8.34	8.18	31.20	24.16	3.11	8
B1	20210428	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:18	9.06	8.61	30.46	26.39	2.89	4
B1	20210428	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:18	8.86	8.60	30.90	26.42	2.83	3
B1	20210428	Cloudy	Moderate	Mid-Flood	Bottom	3.4	9:17	9.29	8.30	30.64	26.60	3.05	4
B1	20210428	Cloudy	Moderate	Mid-Flood	Bottom	3.4	9:17	9.08	8.30	30.42	26.60	2.76	3
B2	20210428	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:38	8.77	8.57	30.20	26.58	2.44	3
B2	20210428	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:38	8.56	8.51	30.83	26.65	2.66	4
B2	20210428	Cloudy	Moderate	Mid-Flood	Bottom	3.7	9:37	9.15	8.52	30.62	26.60	3.17	5
B2	20210428	Cloudy	Moderate	Mid-Flood	Bottom	3.7	9:37	8.48	8.38	30.80	26.70	3.15	6
B3	20210428	Cloudy	Moderate	Mid-Flood	Surface	1.0	10:35	8.39	8.58	30.67	26.86	3.14	2
B3	20210428	Cloudy	Moderate	Mid-Flood	Surface	1.0	10:35	9.19	8.53	30.62	26.73	2.73	2
B3	20210428	Cloudy	Moderate	Mid-Flood	Bottom	4.3	10:34	8.74	8.52	30.90	26.94	2.67	3
B3	20210428	Cloudy	Moderate	Mid-Flood	Bottom	4.3	10:34	8.74	8.49	30.56	26.78	3.15	3
B4	20210428	Cloudy	Moderate	Mid-Flood	Surface	1.0	10:21	9.06	8.45	30.44	26.98	2.12	3
B4	20210428	Cloudy	Moderate	Mid-Flood	Surface	1.0	10:21	8.47	8.26	30.31	26.77	2.24	3
B4	20210428	Cloudy	Moderate	Mid-Flood	Bottom	4.1	10:20	8.68	8.34	30.75	26.79	2.82	4
B4	20210428	Cloudy	Moderate	Mid-Flood	Bottom	4.1	10:20	9.13	8.38	30.91	26.74	3.08	5
C1A	20210428	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:52	9.15	8.44	30.51	26.59	2.60	4
C1A	20210428	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:52	9.00	8.26	30.22	26.42	2.50	5
C1A	20210428	Cloudy	Moderate	Mid-Flood	Middle	5.8	8:51	9.01	8.19	30.46	26.58	2.78	4
C1A	20210428	Cloudy	Moderate	Mid-Flood	Middle	5.8	8:51	9.07	8.35	30.75	26.65	3.06	4

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
C1A	20210428	Cloudy	Moderate	Mid-Flood	Bottom	10.5	8:50	8.89	8.42	30.33	26.61	3.19	3
C1A	20210428	Cloudy	Moderate	Mid-Flood	Bottom	10.5	8:50	8.89	8.34	30.56	26.35	3.64	4
C2A	20210428	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:02	9.35	8.35	30.42	26.33	2.85	3
C2A	20210428	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:02	8.42	8.39	30.55	26.20	3.00	3
C2A	20210428	Cloudy	Moderate	Mid-Flood	Middle	5.9	8:01	8.52	8.44	30.67	26.21	2.94	3
C2A	20210428	Cloudy	Moderate	Mid-Flood	Middle	5.9	8:01	8.92	8.34	30.33	26.53	3.00	4
C2A	20210428	Cloudy	Moderate	Mid-Flood	Bottom	10.8	8:00	8.41	8.61	30.78	26.26	2.90	6
C2A	20210428	Cloudy	Moderate	Mid-Flood	Bottom	10.8	8:00	8.88	8.30	30.55	26.41	2.73	5
CR1	20210428	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:19	8.96	8.51	30.63	26.51	2.84	4
CR1	20210428	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:19	8.77	8.45	30.43	26.26	2.71	4
CR1	20210428	Cloudy	Moderate	Mid-Flood	Middle	6.6	8:18	8.46	8.20	30.45	26.28	2.73	4
CR1	20210428	Cloudy	Moderate	Mid-Flood	Middle	6.6	8:18	9.31	8.21	30.88	26.25	3.00	5
CR1	20210428	Cloudy	Moderate	Mid-Flood	Bottom	12.1	8:17	9.04	8.19	30.40	26.18	3.35	4
CR1	20210428	Cloudy	Moderate	Mid-Flood	Bottom	12.1	8:17	8.71	8.50	30.90	26.25	3.31	4
CR2	20210428	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:32	8.76	8.44	30.74	26.33	2.05	5
CR2	20210428	Cloudy	Moderate	Mid-Flood	Surface	1.0	8:32	8.84	8.53	30.57	26.62	2.29	4
CR2	20210428	Cloudy	Moderate	Mid-Flood	Middle	5.4	8:31	8.71	8.59	30.63	26.53	3.10	4
CR2	20210428	Cloudy	Moderate	Mid-Flood	Middle	5.4	8:31	9.02	8.50	30.85	26.48	3.24	3
CR2	20210428	Cloudy	Moderate	Mid-Flood	Bottom	9.8	8:30	8.65	8.60	30.55	26.66	3.12	4
CR2	20210428	Cloudy	Moderate	Mid-Flood	Bottom	9.8	8:30	8.82	8.47	30.44	26.30	3.18	3
F1A	20210428	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:55	8.99	8.21	30.36	26.80	2.53	5
F1A	20210428	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:55	8.58	8.25	30.80	26.70	2.40	4
F1A	20210428	Cloudy	Moderate	Mid-Flood	Middle	4.0	9:54	8.64	8.18	30.42	26.80	3.27	4
F1A	20210428	Cloudy	Moderate	Mid-Flood	Middle	4.0	9:54	9.12	8.38	30.81	26.85	3.02	5
F1A	20210428	Cloudy	Moderate	Mid-Flood	Bottom	6.9	9:53	8.43	8.35	30.21	26.70	3.22	4
F1A	20210428	Cloudy	Moderate	Mid-Flood	Bottom	6.9	9:53	8.56	8.57	30.85	26.71	3.54	3
H1	20210428	Cloudy	Moderate	Mid-Flood	Surface	1.0	10:05	8.87	8.47	30.26	26.78	3.05	3

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
H1	20210428	Cloudy	Moderate	Mid-Flood	Surface	1.0	10:05	8.80	8.61	30.58	26.77	3.17	3
H1	20210428	Cloudy	Moderate	Mid-Flood	Middle	4.2	10:04	8.55	8.55	30.40	26.86	2.96	3
H1	20210428	Cloudy	Moderate	Mid-Flood	Middle	4.2	10:04	9.29	8.26	30.61	26.79	2.88	3
H1	20210428	Cloudy	Moderate	Mid-Flood	Bottom	7.4	10:03	9.10	8.30	30.57	26.87	3.43	5
H1	20210428	Cloudy	Moderate	Mid-Flood	Bottom	7.4	10:03	8.91	8.53	30.30	26.69	3.69	6
M1	20210428	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:35	8.65	8.28	30.21	26.57	2.62	6
M1	20210428	Cloudy	Moderate	Mid-Flood	Surface	1.0	9:35	8.67	8.24	30.78	26.50	2.61	5
M1	20210428	Cloudy	Moderate	Mid-Flood	Middle	4.3	9:34	9.10	8.28	30.89	26.55	2.86	4
M1	20210428	Cloudy	Moderate	Mid-Flood	Middle	4.3	9:34	8.45	8.46	30.29	26.52	2.54	4
M1	20210428	Cloudy	Moderate	Mid-Flood	Bottom	7.6	9:33	8.96	8.51	30.80	26.38	2.81	3
M1	20210428	Cloudy	Moderate	Mid-Flood	Bottom	7.6	9:33	8.45	8.19	30.43	26.59	2.80	4
B1	20210428	Cloudy	Moderate	Mid-Ebb	Surface	1.0	12:30	9.00	8.28	30.95	27.54	2.78	3
B1	20210428	Cloudy	Moderate	Mid-Ebb	Surface	1.0	12:30	8.98	8.15	30.25	27.30	2.78	2
B1	20210428	Cloudy	Moderate	Mid-Ebb	Bottom	3.6	12:29	8.47	8.47	30.30	27.42	3.51	3
B1	20210428	Cloudy	Moderate	Mid-Ebb	Bottom	3.6	12:29	9.42	8.35	30.81	27.30	3.40	3
B2	20210428	Cloudy	Moderate	Mid-Ebb	Surface	1.0	12:47	9.07	8.49	30.73	27.43	2.65	5
B2	20210428	Cloudy	Moderate	Mid-Ebb	Surface	1.0	12:47	8.43	8.37	30.10	27.43	3.08	4
B2	20210428	Cloudy	Moderate	Mid-Ebb	Bottom	4.0	12:46	8.76	8.32	30.35	27.35	2.75	2
B2	20210428	Cloudy	Moderate	Mid-Ebb	Bottom	4.0	12:46	8.55	8.20	30.19	27.56	2.44	2
B3	20210428	Cloudy	Moderate	Mid-Ebb	Surface	1.0	12:04	8.71	8.48	30.47	27.41	3.05	2
B3	20210428	Cloudy	Moderate	Mid-Ebb	Surface	1.0	12:04	9.01	8.20	30.82	27.35	2.93	2
B3	20210428	Cloudy	Moderate	Mid-Ebb	Bottom	4.3	12:03	8.55	8.20	30.22	27.43	3.53	4
B3	20210428	Cloudy	Moderate	Mid-Ebb	Bottom	4.3	12:03	8.53	8.43	30.56	27.32	3.31	4
B4	20210428	Cloudy	Moderate	Mid-Ebb	Surface	1.0	12:17	8.81	8.20	30.35	27.43	2.29	3
B4	20210428	Cloudy	Moderate	Mid-Ebb	Surface	1.0	12:17	9.07	8.20	30.34	27.39	2.50	2
B4	20210428	Cloudy	Moderate	Mid-Ebb	Bottom	3.8	12:16	8.96	8.41	30.24	27.26	3.56	2
B4	20210428	Cloudy	Moderate	Mid-Ebb	Bottom	3.8	12:16	8.68	8.18	30.32	27.33	3.11	3

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
C1A	20210428	Cloudy	Moderate	Mid-Ebb	Surface	1.0	12:02	9.40	8.19	30.50	27.32	3.07	2
C1A	20210428	Cloudy	Moderate	Mid-Ebb	Surface	1.0	12:02	8.47	8.29	30.48	27.43	2.71	3
C1A	20210428	Cloudy	Moderate	Mid-Ebb	Middle	5.2	12:01	9.31	8.19	30.35	27.30	2.90	2
C1A	20210428	Cloudy	Moderate	Mid-Ebb	Middle	5.2	12:01	9.08	8.29	30.73	27.42	3.15	3
C1A	20210428	Cloudy	Moderate	Mid-Ebb	Bottom	9.3	12:00	9.46	8.55	30.25	27.37	3.28	4
C1A	20210428	Cloudy	Moderate	Mid-Ebb	Bottom	9.3	12:00	8.26	8.49	30.83	27.42	2.74	5
C2A	20210428	Cloudy	Moderate	Mid-Ebb	Surface	1.0	13:59	9.07	8.31	30.15	27.46	3.23	3
C2A	20210428	Cloudy	Moderate	Mid-Ebb	Surface	1.0	13:59	9.30	8.42	30.28	27.40	3.18	3
C2A	20210428	Cloudy	Moderate	Mid-Ebb	Middle	5.8	13:58	9.02	8.22	30.99	27.42	3.00	3
C2A	20210428	Cloudy	Moderate	Mid-Ebb	Middle	5.8	13:58	8.93	8.53	30.71	27.57	2.52	3
C2A	20210428	Cloudy	Moderate	Mid-Ebb	Bottom	10.6	13:57	8.83	8.16	30.30	27.37	3.27	4
C2A	20210428	Cloudy	Moderate	Mid-Ebb	Bottom	10.6	13:57	9.37	8.25	30.16	27.37	3.27	3
CR1	20210428	Cloudy	Moderate	Mid-Ebb	Surface	1.0	13:40	9.30	8.50	30.06	27.52	2.08	5
CR1	20210428	Cloudy	Moderate	Mid-Ebb	Surface	1.0	13:40	8.54	8.42	30.46	27.61	2.21	4
CR1	20210428	Cloudy	Moderate	Mid-Ebb	Middle	6.7	13:39	8.79	8.23	30.82	27.75	2.33	3
CR1	20210428	Cloudy	Moderate	Mid-Ebb	Middle	6.7	13:39	8.69	8.17	30.48	27.53	2.29	2
CR1	20210428	Cloudy	Moderate	Mid-Ebb	Bottom	12.4	13:38	9.32	8.47	30.70	27.46	3.36	2
CR1	20210428	Cloudy	Moderate	Mid-Ebb	Bottom	12.4	13:38	8.67	8.56	30.13	27.69	3.52	3
CR2	20210428	Cloudy	Moderate	Mid-Ebb	Surface	1.0	13:28	9.44	8.32	30.25	27.65	3.18	4
CR2	20210428	Cloudy	Moderate	Mid-Ebb	Surface	1.0	13:28	8.71	8.32	30.21	27.60	3.14	4
CR2	20210428	Cloudy	Moderate	Mid-Ebb	Middle	5.6	13:27	8.85	8.44	30.54	27.57	2.59	3
CR2	20210428	Cloudy	Moderate	Mid-Ebb	Middle	5.6	13:27	9.32	8.26	30.33	27.65	2.92	3
CR2	20210428	Cloudy	Moderate	Mid-Ebb	Bottom	10.1	13:26	9.15	8.43	30.61	27.65	2.94	3
CR2	20210428	Cloudy	Moderate	Mid-Ebb	Bottom	10.1	13:26	8.43	8.14	30.77	27.54	2.73	3
F1A	20210428	Cloudy	Moderate	Mid-Ebb	Surface	1.0	13:15	8.64	8.54	30.53	27.70	2.46	5
F1A	20210428	Cloudy	Moderate	Mid-Ebb	Surface	1.0	13:15	8.70	8.52	30.44	27.63	2.81	4
F1A	20210428	Cloudy	Moderate	Mid-Ebb	Middle	4.6	13:14	9.22	8.48	30.91	27.68	2.25	3

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
F1A	20210428	Cloudy	Moderate	Mid-Ebb	Middle	4.6	13:14	8.85	8.31	30.21	27.51	2.30	4
F1A	20210428	Cloudy	Moderate	Mid-Ebb	Bottom	8.2	13:13	8.48	8.52	30.81	27.66	3.11	3
F1A	20210428	Cloudy	Moderate	Mid-Ebb	Bottom	8.2	13:13	9.22	8.34	30.16	27.73	2.75	4
H1	20210428	Cloudy	Moderate	Mid-Ebb	Surface	1.0	13:12	9.20	8.54	30.87	27.66	2.97	4
H1	20210428	Cloudy	Moderate	Mid-Ebb	Surface	1.0	13:12	9.06	8.47	30.24	27.47	2.99	3
H1	20210428	Cloudy	Moderate	Mid-Ebb	Middle	3.9	13:11	8.63	8.39	30.64	27.69	3.32	2
H1	20210428	Cloudy	Moderate	Mid-Ebb	Middle	3.9	13:11	8.52	8.51	30.85	27.54	2.83	3
H1	20210428	Cloudy	Moderate	Mid-Ebb	Bottom	6.8	13:10	8.40	8.18	30.43	27.42	2.62	2
H1	20210428	Cloudy	Moderate	Mid-Ebb	Bottom	6.8	13:10	8.25	8.35	30.88	27.62	2.54	3
M1	20210428	Cloudy	Moderate	Mid-Ebb	Surface	1.0	12:55	8.63	8.27	30.52	27.61	2.81	5
M1	20210428	Cloudy	Moderate	Mid-Ebb	Surface	1.0	12:55	8.92	8.50	30.07	27.50	3.19	4
M1	20210428	Cloudy	Moderate	Mid-Ebb	Middle	4.9	12:54	9.11	8.54	30.85	27.36	2.94	3
M1	20210428	Cloudy	Moderate	Mid-Ebb	Middle	4.9	12:54	8.45	8.22	30.85	27.34	2.67	3
M1	20210428	Cloudy	Moderate	Mid-Ebb	Bottom	8.8	12:53	9.00	8.25	30.81	27.34	3.15	4
M1	20210428	Cloudy	Moderate	Mid-Ebb	Bottom	8.8	12:53	9.15	8.33	30.33	27.62	2.68	3
B1	20210430	Sunny	Moderate	Mid-Flood	Surface	1.0	9:22	9.21	8.30	29.93	26.95	2.39	3
B1	20210430	Sunny	Moderate	Mid-Flood	Surface	1.0	9:22	9.18	8.20	30.05	26.85	2.29	3
B1	20210430	Sunny	Moderate	Mid-Flood	Bottom	3.6	9:21	10.13	8.49	30.15	26.93	2.99	4
B1	20210430	Sunny	Moderate	Mid-Flood	Bottom	3.6	9:21	9.97	8.23	30.14	26.84	2.60	4
B2	20210430	Sunny	Moderate	Mid-Flood	Surface	1.0	9:38	9.92	8.46	29.91	26.94	2.69	4
B2	20210430	Sunny	Moderate	Mid-Flood	Surface	1.0	9:38	9.61	8.43	29.77	26.69	3.07	3
B2	20210430	Sunny	Moderate	Mid-Flood	Bottom	4.1	9:37	9.67	8.20	30.27	26.83	3.00	5
B2	20210430	Sunny	Moderate	Mid-Flood	Bottom	4.1	9:37	9.56	8.53	29.84	26.79	3.26	4
B3	20210430	Sunny	Moderate	Mid-Flood	Surface	1.0	10:00	9.64	8.52	30.19	27.07	2.02	5
B3	20210430	Sunny	Moderate	Mid-Flood	Surface	1.0	10:00	9.57	8.37	30.29	27.04	2.36	5
B3	20210430	Sunny	Moderate	Mid-Flood	Bottom	4.0	9:59	9.92	8.16	30.16	26.83	3.27	5
B3	20210430	Sunny	Moderate	Mid-Flood	Bottom	4.0	9:59	10.08	8.21	30.11	26.87	3.01	5

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
B4	20210430	Sunny	Moderate	Mid-Flood	Surface	1.0	9:50	9.38	8.48	29.99	27.05	2.11	6
B4	20210430	Sunny	Moderate	Mid-Flood	Surface	1.0	9:50	9.12	8.58	30.29	26.88	2.21	7
B4	20210430	Sunny	Moderate	Mid-Flood	Bottom	4.3	9:49	10.04	8.48	29.75	26.92	2.80	5
B4	20210430	Sunny	Moderate	Mid-Flood	Bottom	4.3	9:49	9.62	8.47	29.73	27.02	2.67	5
C1A	20210430	Sunny	Moderate	Mid-Flood	Surface	1.0	8:57	9.85	8.41	30.12	26.59	2.68	5
C1A	20210430	Sunny	Moderate	Mid-Flood	Surface	1.0	8:57	9.97	8.58	30.30	26.85	2.66	4
C1A	20210430	Sunny	Moderate	Mid-Flood	Middle	5.8	8:56	9.20	8.47	29.91	26.74	2.47	5
C1A	20210430	Sunny	Moderate	Mid-Flood	Middle	5.8	8:56	9.24	8.31	29.77	26.92	2.81	6
C1A	20210430	Sunny	Moderate	Mid-Flood	Bottom	10.6	8:55	9.24	8.46	30.07	26.67	2.62	6
C1A	20210430	Sunny	Moderate	Mid-Flood	Bottom	10.6	8:55	9.32	8.16	29.90	26.61	3.06	6
C2A	20210430	Sunny	Moderate	Mid-Flood	Surface	1.0	8:02	9.97	8.18	29.77	26.23	2.11	5
C2A	20210430	Sunny	Moderate	Mid-Flood	Surface	1.0	8:02	9.82	8.38	30.12	26.38	2.48	5
C2A	20210430	Sunny	Moderate	Mid-Flood	Middle	5.6	8:01	9.50	8.39	30.00	26.28	2.98	5
C2A	20210430	Sunny	Moderate	Mid-Flood	Middle	5.6	8:01	9.44	8.22	29.76	26.41	2.50	6
C2A	20210430	Sunny	Moderate	Mid-Flood	Bottom	10.2	8:00	10.16	8.22	30.27	26.24	2.80	7
C2A	20210430	Sunny	Moderate	Mid-Flood	Bottom	10.2	8:00	10.10	8.36	30.07	26.25	2.51	7
CR1	20210430	Sunny	Moderate	Mid-Flood	Surface	1.0	8:26	10.01	8.37	29.73	26.34	2.34	5
CR1	20210430	Sunny	Moderate	Mid-Flood	Surface	1.0	8:26	9.18	8.47	30.29	26.46	2.11	5
CR1	20210430	Sunny	Moderate	Mid-Flood	Middle	6.4	8:25	10.11	8.27	30.26	26.43	2.33	4
CR1	20210430	Sunny	Moderate	Mid-Flood	Middle	6.4	8:25	9.65	8.48	29.80	26.56	2.70	4
CR1	20210430	Sunny	Moderate	Mid-Flood	Bottom	11.7	8:24	10.03	8.13	29.82	26.72	3.35	4
CR1	20210430	Sunny	Moderate	Mid-Flood	Bottom	11.7	8:24	10.04	8.23	29.87	26.55	3.35	4
CR2	20210430	Sunny	Moderate	Mid-Flood	Surface	1.0	8:39	10.08	8.54	30.28	26.55	2.56	5
CR2	20210430	Sunny	Moderate	Mid-Flood	Surface	1.0	8:39	10.17	8.53	30.20	26.66	3.06	4
CR2	20210430	Sunny	Moderate	Mid-Flood	Middle	5.6	8:38	9.94	8.31	30.17	26.65	2.75	4
CR2	20210430	Sunny	Moderate	Mid-Flood	Middle	5.6	8:38	9.43	8.52	29.94	26.44	3.02	3
CR2	20210430	Sunny	Moderate	Mid-Flood	Bottom	10.2	8:37	9.85	8.58	29.98	26.59	3.63	4

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
CR2	20210430	Sunny	Moderate	Mid-Flood	Bottom	10.2	8:37	9.48	8.44	30.19	26.64	3.25	3
F1A	20210430	Sunny	Moderate	Mid-Flood	Surface	1.0	9:19	10.04	8.35	30.01	26.88	2.78	4
F1A	20210430	Sunny	Moderate	Mid-Flood	Surface	1.0	9:19	9.51	8.34	30.00	26.75	3.12	4
F1A	20210430	Sunny	Moderate	Mid-Flood	Middle	4.4	9:18	9.19	8.57	30.21	26.83	2.56	4
F1A	20210430	Sunny	Moderate	Mid-Flood	Middle	4.4	9:18	10.05	8.49	29.79	26.88	2.63	4
F1A	20210430	Sunny	Moderate	Mid-Flood	Bottom	7.8	9:17	9.47	8.28	29.78	26.92	3.18	5
F1A	20210430	Sunny	Moderate	Mid-Flood	Bottom	7.8	9:17	9.20	8.20	29.71	26.92	3.11	6
H1	20210430	Sunny	Moderate	Mid-Flood	Surface	1.0	10:07	10.17	8.54	30.19	27.10	2.86	4
H1	20210430	Sunny	Moderate	Mid-Flood	Surface	1.0	10:07	9.71	8.51	30.18	27.12	2.85	3
H1	20210430	Sunny	Moderate	Mid-Flood	Middle	3.9	10:06	9.71	8.19	29.87	26.95	2.46	4
H1	20210430	Sunny	Moderate	Mid-Flood	Middle	3.9	10:06	10.12	8.36	29.95	27.03	2.29	4
H1	20210430	Sunny	Moderate	Mid-Flood	Bottom	6.8	10:05	9.24	8.13	30.16	26.93	2.90	5
H1	20210430	Sunny	Moderate	Mid-Flood	Bottom	6.8	10:05	9.88	8.45	29.75	27.11	3.22	5
M1	20210430	Sunny	Moderate	Mid-Flood	Surface	1.0	8:48	9.63	8.47	30.04	26.66	3.07	4
M1	20210430	Sunny	Moderate	Mid-Flood	Surface	1.0	8:48	9.74	8.33	29.94	26.68	3.01	4
M1	20210430	Sunny	Moderate	Mid-Flood	Middle	3.7	8:47	10.06	8.50	30.28	26.42	2.89	4
M1	20210430	Sunny	Moderate	Mid-Flood	Middle	3.7	8:47	9.18	8.19	30.07	26.72	2.52	3
M1	20210430	Sunny	Moderate	Mid-Flood	Bottom	6.4	8:46	9.38	8.42	30.06	26.72	3.19	2
M1	20210430	Sunny	Moderate	Mid-Flood	Bottom	6.4	8:46	9.37	8.30	30.07	26.55	2.93	3
B1	20210430	Sunny	Moderate	Mid-Ebb	Surface	1.0	13:10	8.48	8.57	30.22	27.18	2.17	5
B1	20210430	Sunny	Moderate	Mid-Ebb	Surface	1.0	13:10	9.04	8.35	30.67	27.19	2.16	5
B1	20210430	Sunny	Moderate	Mid-Ebb	Bottom	3.9	13:09	9.28	8.60	30.52	27.21	3.41	6
B1	20210430	Sunny	Moderate	Mid-Ebb	Bottom	3.9	13:09	8.48	8.31	30.28	27.25	2.85	6
B2	20210430	Sunny	Moderate	Mid-Ebb	Surface	1.0	13:24	9.41	8.50	30.39	27.26	3.00	7
B2	20210430	Sunny	Moderate	Mid-Ebb	Surface	1.0	13:24	8.51	8.46	31.02	27.16	3.01	6
B2	20210430	Sunny	Moderate	Mid-Ebb	Bottom	4.8	13:23	8.56	8.29	30.40	27.36	2.86	6
B2	20210430	Sunny	Moderate	Mid-Ebb	Bottom	4.8	13:23	8.81	8.42	30.39	27.28	3.37	5
B3	20210430	Sunny	Moderate	Mid-Ebb	Surface	1.0	13:03	8.72	8.24	30.65	27.29	2.74	6
B3	20210430	Sunny	Moderate	Mid-Ebb	Surface	1.0	13:03	9.30	8.63	30.42	27.27	2.90	6
B3	20210430	Sunny	Moderate	Mid-Ebb	Bottom	4.3	13:02	9.34	8.50	30.51	27.44	2.89	5

Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
B3	20210430	Sunny	Moderate	Mid-Ebb	Bottom	4.3	13:02	8.86	8.63	30.78	27.41	2.70	4
B4	20210430	Sunny	Moderate	Mid-Ebb	Surface	1.0	13:12	9.21	8.33	30.73	27.33	2.50	4
B4	20210430	Sunny	Moderate	Mid-Ebb	Surface	1.0	13:12	9.28	8.62	30.91	27.18	2.85	4
B4	20210430	Sunny	Moderate	Mid-Ebb	Bottom	3.5	13:11	8.68	8.60	30.59	27.30	2.97	6
B4	20210430	Sunny	Moderate	Mid-Ebb	Bottom	3.5	13:11	9.38	8.57	30.27	27.42	2.87	6
C1A	20210430	Sunny	Moderate	Mid-Ebb	Surface	1.0	12:47	8.72	8.41	30.54	27.36	2.90	5
C1A	20210430	Sunny	Moderate	Mid-Ebb	Surface	1.0	12:47	9.04	8.19	30.47	27.37	2.64	6
C1A	20210430	Sunny	Moderate	Mid-Ebb	Middle	5.2	12:46	8.65	8.61	30.44	27.23	2.83	4
C1A	20210430	Sunny	Moderate	Mid-Ebb	Middle	5.2	12:46	9.38	8.32	30.81	27.45	3.09	4
C1A	20210430	Sunny	Moderate	Mid-Ebb	Bottom	9.4	12:45	8.55	8.69	30.30	27.21	3.13	3
C1A	20210430	Sunny	Moderate	Mid-Ebb	Bottom	9.4	12:45	9.25	8.40	30.54	27.19	3.51	4
C2A	20210430	Sunny	Moderate	Mid-Ebb	Surface	1.0	12:47	9.18	8.62	30.65	27.38	2.40	4
C2A	20210430	Sunny	Moderate	Mid-Ebb	Surface	1.0	12:47	8.57	8.32	30.87	27.18	2.76	4
C2A	20210430	Sunny	Moderate	Mid-Ebb	Middle	5.8	12:46	9.40	8.18	30.37	27.24	3.10	6
C2A	20210430	Sunny	Moderate	Mid-Ebb	Middle	5.8	12:46	9.05	8.26	30.72	27.21	2.82	6
C2A	20210430	Sunny	Moderate	Mid-Ebb	Bottom	10.5	12:45	9.31	8.29	30.28	27.17	3.10	7
C2A	20210430	Sunny	Moderate	Mid-Ebb	Bottom	10.5	12:45	9.45	8.50	30.77	27.36	2.59	6
CR1	20210430	Sunny	Moderate	Mid-Ebb	Surface	1.0	14:19	8.58	8.69	30.38	27.57	2.82	7
CR1	20210430	Sunny	Moderate	Mid-Ebb	Surface	1.0	14:19	8.86	8.40	31.07	27.42	3.04	7
CR1	20210430	Sunny	Moderate	Mid-Ebb	Middle	6.9	14:18	9.10	8.66	31.07	27.58	2.70	5
CR1	20210430	Sunny	Moderate	Mid-Ebb	Middle	6.9	14:18	8.41	8.36	30.36	27.39	3.02	6
CR1	20210430	Sunny	Moderate	Mid-Ebb	Bottom	12.7	14:17	8.72	8.20	30.52	27.45	3.21	5
CR1	20210430	Sunny	Moderate	Mid-Ebb	Bottom	12.7	14:17	9.16	8.38	30.85	27.42	3.31	5
CR2	20210430	Sunny	Moderate	Mid-Ebb	Surface	1.0	14:06	8.39	8.53	30.70	27.33	3.17	6
CR2	20210430	Sunny	Moderate	Mid-Ebb	Surface	1.0	14:06	9.41	8.43	30.25	27.33	2.90	6
CR2	20210430	Sunny	Moderate	Mid-Ebb	Middle	5.9	14:05	9.23	8.20	30.69	27.45	2.14	5
CR2	20210430	Sunny	Moderate	Mid-Ebb	Middle	5.9	14:05	9.56	8.43	30.46	27.36	2.10	5
CR2	20210430	Sunny	Moderate	Mid-Ebb	Bottom	10.7	14:04	9.37	8.70	30.74	27.54	2.93	3
CR2	20210430	Sunny	Moderate	Mid-Ebb	Bottom	10.7	14:04	9.52	8.20	30.48	27.58	3.30	3
F1A	20210430	Sunny	Moderate	Mid-Ebb	Surface	1.0	14:20	8.49	8.48	31.01	27.40	2.93	4

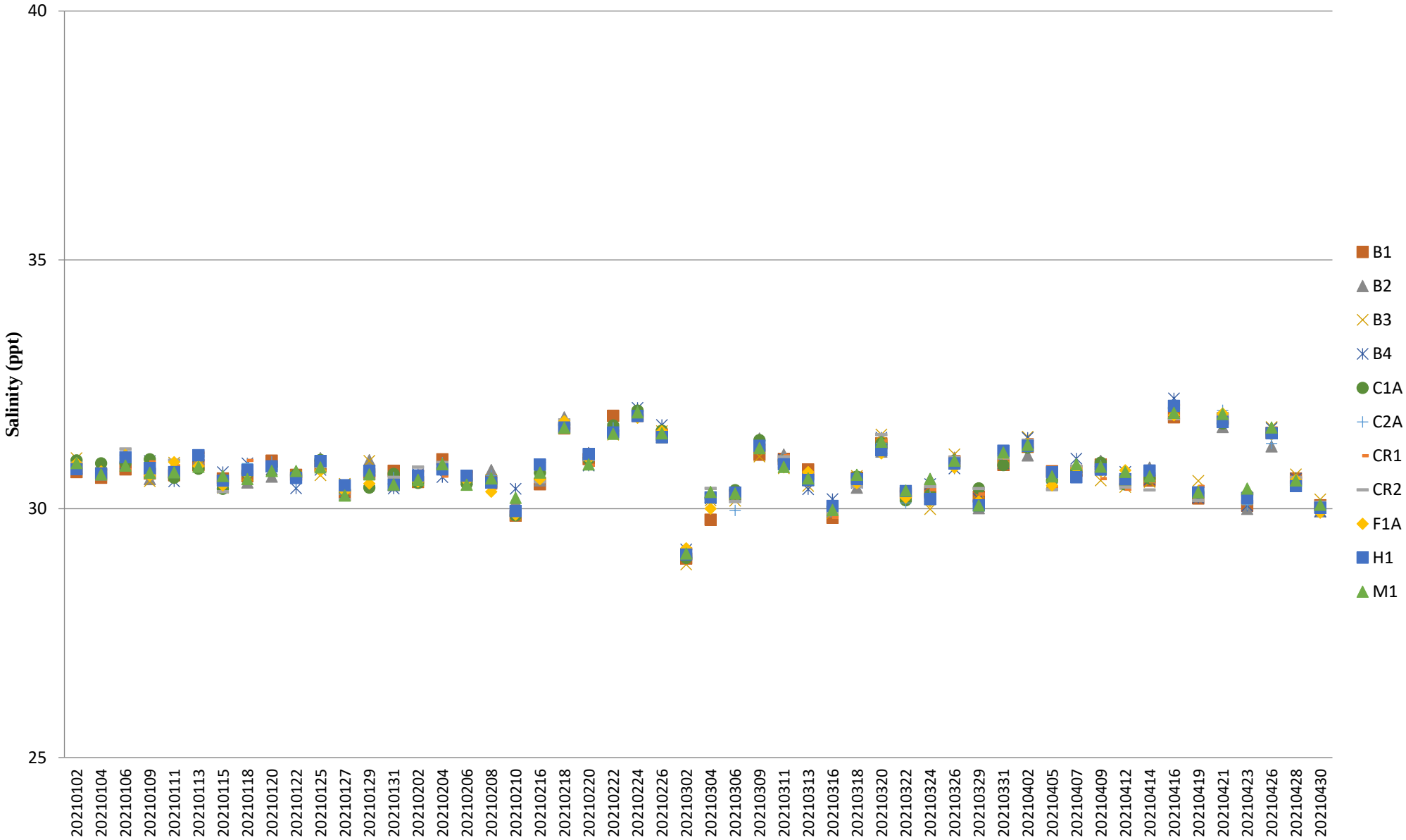
Location	Date (YYYYMMDD)	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time (hh:mm)	DO (mg/L)	pH	Sal (ppt)	Temp (°C) note1	Turbidty (NTU) note 2	SS (mg/L)
F1A	20210430	Sunny	Moderate	Mid-Ebb	Surface	1.0	14:20	8.42	8.59	30.86	27.62	2.61	4
F1A	20210430	Sunny	Moderate	Mid-Ebb	Middle	4.4	14:19	8.80	8.49	30.28	27.42	2.96	5
F1A	20210430	Sunny	Moderate	Mid-Ebb	Middle	4.4	14:19	9.27	8.49	30.87	27.47	2.77	5
F1A	20210430	Sunny	Moderate	Mid-Ebb	Bottom	7.8	14:18	8.73	8.67	30.96	27.53	3.47	5
F1A	20210430	Sunny	Moderate	Mid-Ebb	Bottom	7.8	14:18	9.01	8.57	30.46	27.50	3.48	5
H1	20210430	Sunny	Moderate	Mid-Ebb	Surface	1.0	13:52	9.00	8.23	30.74	27.56	2.54	3
H1	20210430	Sunny	Moderate	Mid-Ebb	Surface	1.0	13:52	9.40	8.45	30.58	27.35	2.98	5
H1	20210430	Sunny	Moderate	Mid-Ebb	Middle	4.4	13:51	8.48	8.18	30.62	27.49	3.17	5
H1	20210430	Sunny	Moderate	Mid-Ebb	Middle	4.4	13:51	8.40	8.33	30.33	27.37	2.91	5
H1	20210430	Sunny	Moderate	Mid-Ebb	Bottom	7.7	13:50	8.46	8.19	30.55	27.21	3.03	5
H1	20210430	Sunny	Moderate	Mid-Ebb	Bottom	7.7	13:50	8.67	8.21	30.72	27.57	3.29	6
M1	20210430	Sunny	Moderate	Mid-Ebb	Surface	1.0	13:48	8.57	8.67	30.27	27.29	2.04	6
M1	20210430	Sunny	Moderate	Mid-Ebb	Surface	1.0	13:48	8.57	8.65	30.69	27.51	2.38	6
M1	20210430	Sunny	Moderate	Mid-Ebb	Middle	5.0	13:47	9.27	8.67	30.95	27.20	2.22	5
M1	20210430	Sunny	Moderate	Mid-Ebb	Middle	5.0	13:47	9.53	8.32	30.95	27.21	2.66	5
M1	20210430	Sunny	Moderate	Mid-Ebb	Bottom	8.9	13:46	9.39	8.46	30.27	27.29	3.51	4
M1	20210430	Sunny	Moderate	Mid-Ebb	Bottom	8.9	13:46	8.70	8.50	30.79	27.17	3.55	4

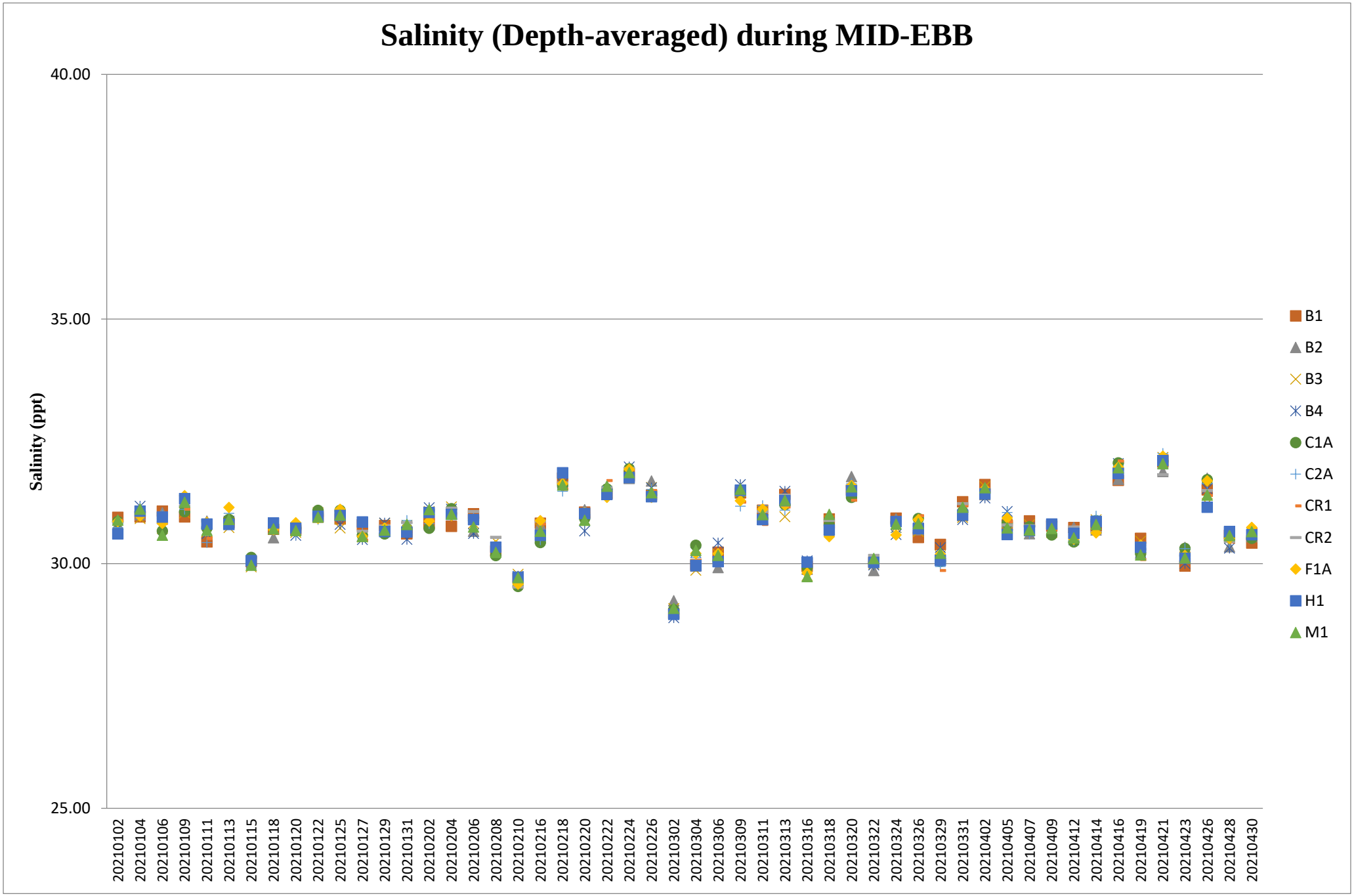
Remark:

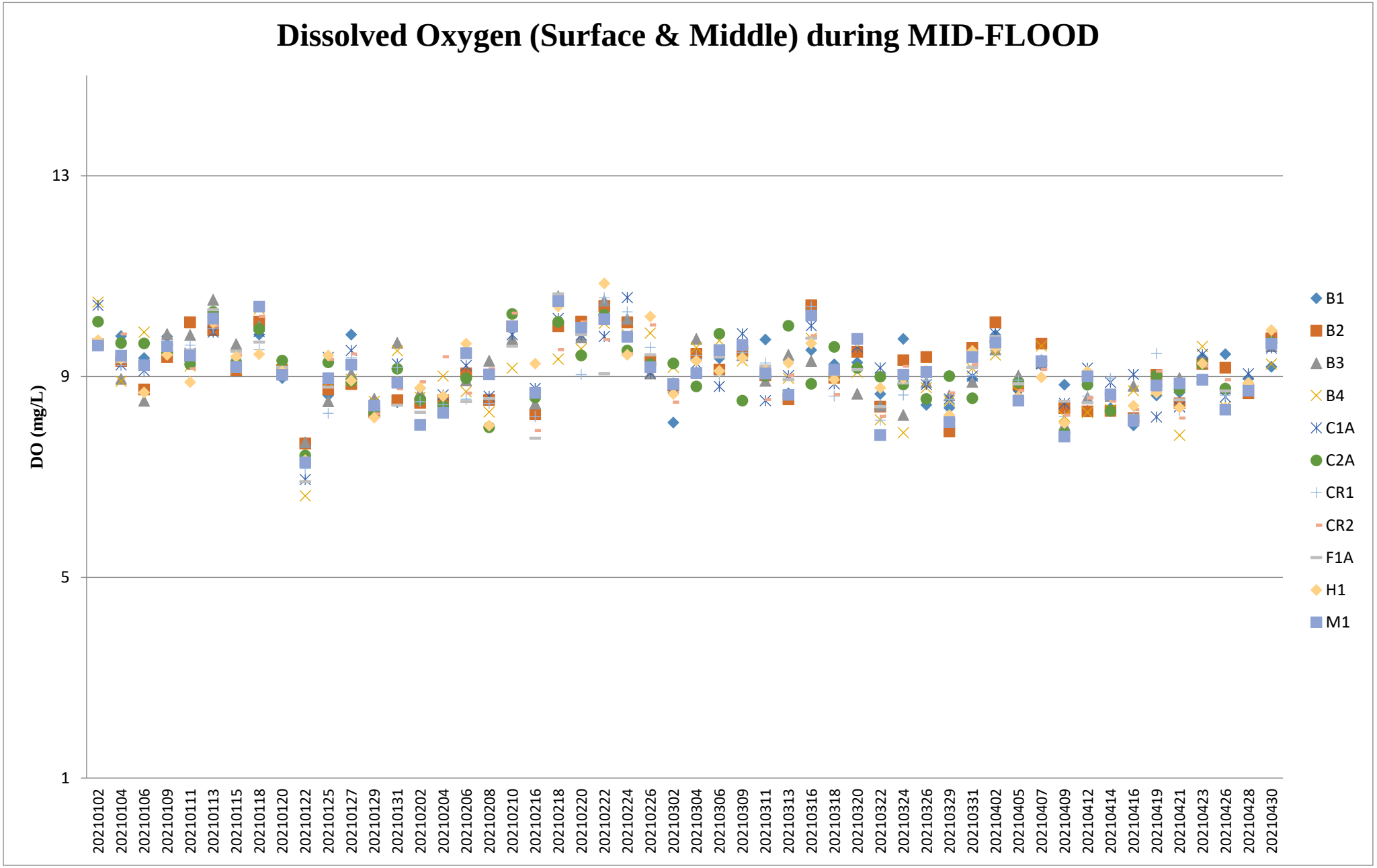
Note 1: The contractor had queried the abnormal fluctuation of seawater temperature during the reporting period.

2: Measurements of turbidity would be rounding to 0.1 NTU for proven accuracy as per the equipment specs during utilization of data.

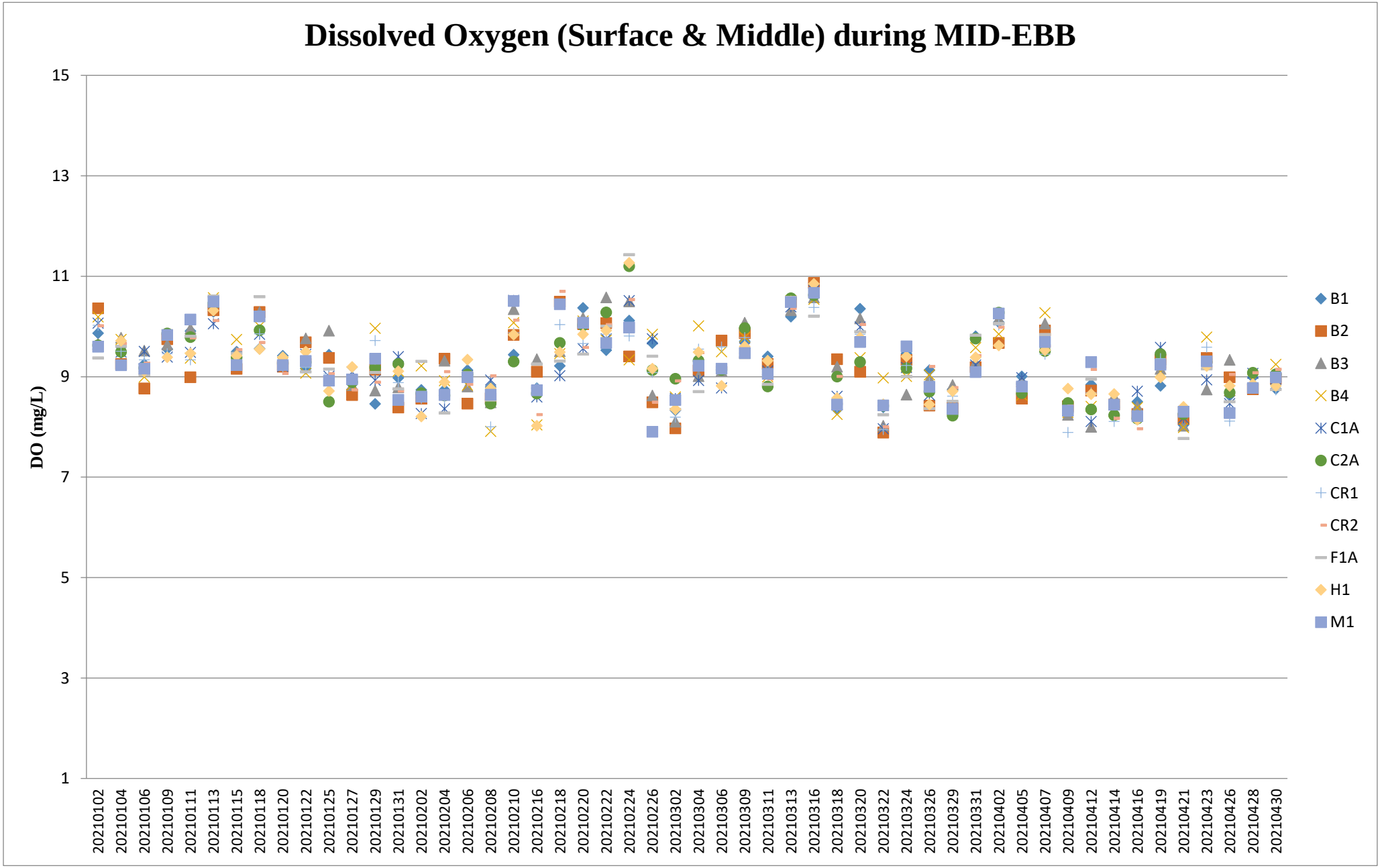
Salinity (Depth-averaged) during MID-FLOOD



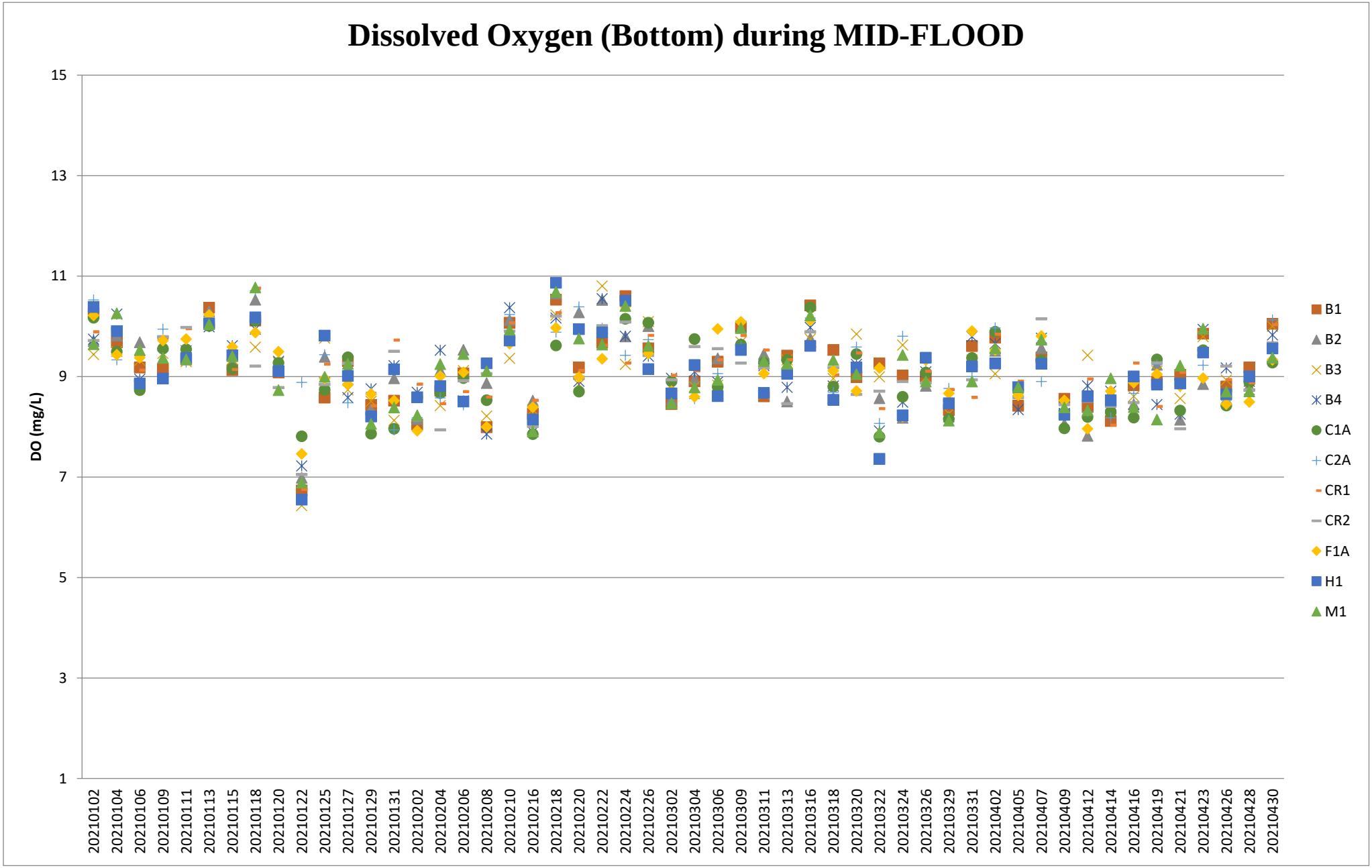

Salinity (Depth-averaged) during MID-EBB
Salinity (ppt)
40.00
35.00
30.00
25.00
20210102
20210104
20210106
20210109
20210111
20210113
20210115
20210118
20210120
20210122
20210125
20210127
20210129
20210131
20210202
20210204
20210206
20210208
20210210
20210216
20210218
20210220
20210222
20210224
20210226
20210302
20210304
20210306
20210309
20210311
20210313
20210316
20210318
20210320
20210322
20210324
20210326
20210329
20210331
20210402
20210405
20210407
20210409
20210412
20210414
20210416
20210419
20210421
20210423
20210426
20210428
20210430
B1
B2
B3
B4
C1A
C2A
CR1
CR2
F1A
H1
M1



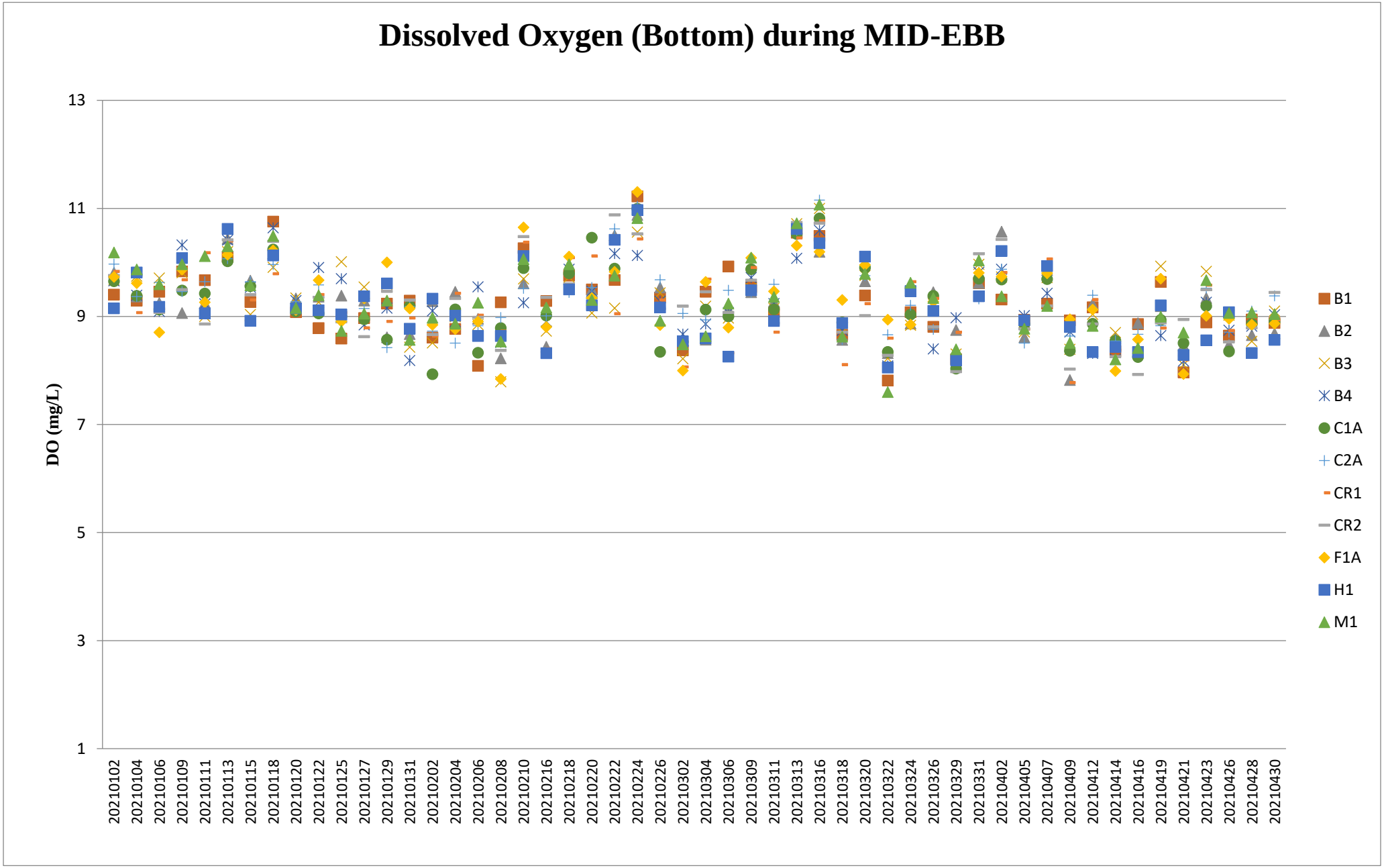
Note: The Action and Limit Level of dissolved oxygen can be referred to **Table 2.8** of the monthly EM&A report.



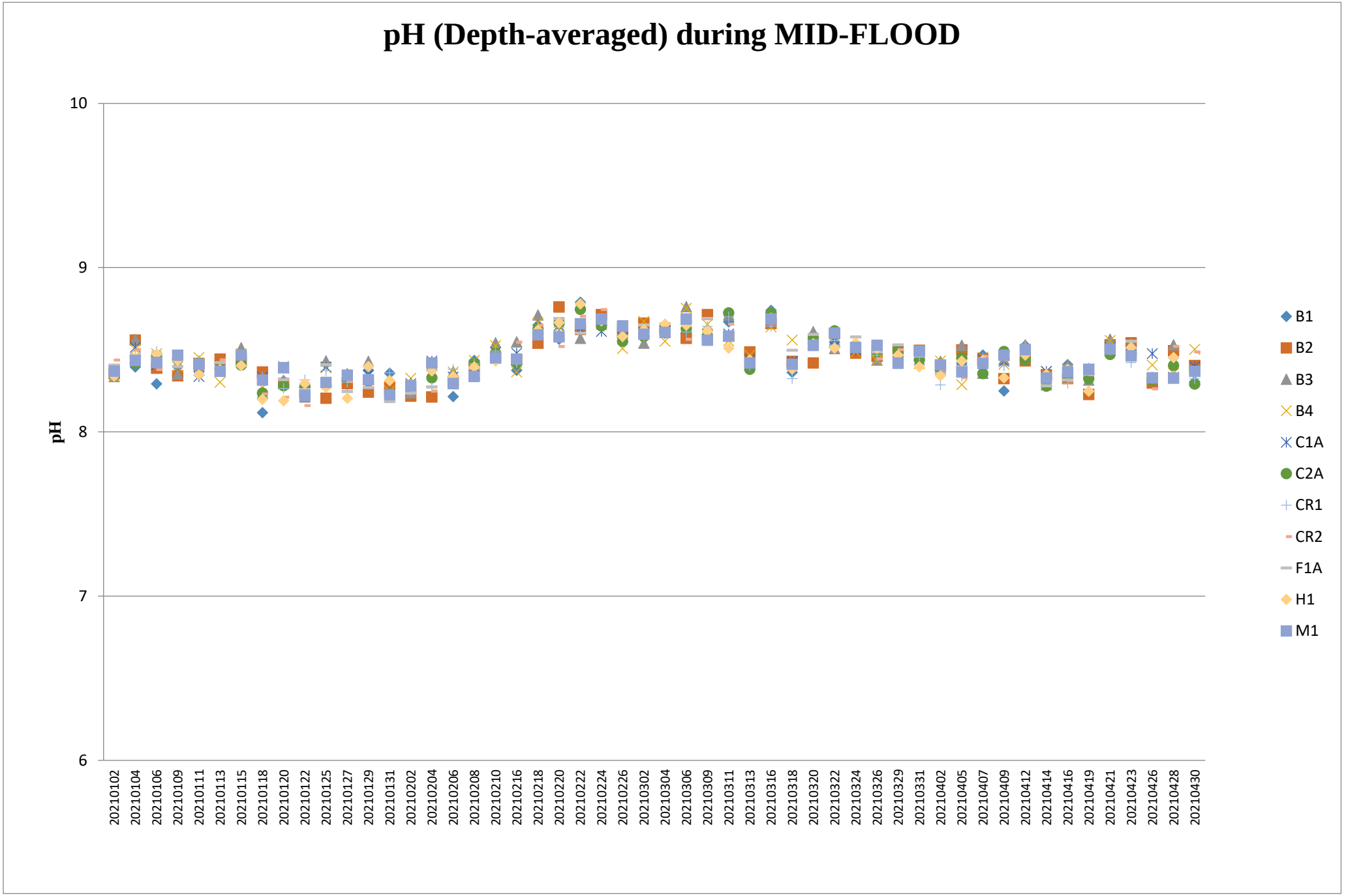
Note: The Action and Limit Level of dissolved oxygen can be referred to **Table 2.8** of the monthly EM&A report.

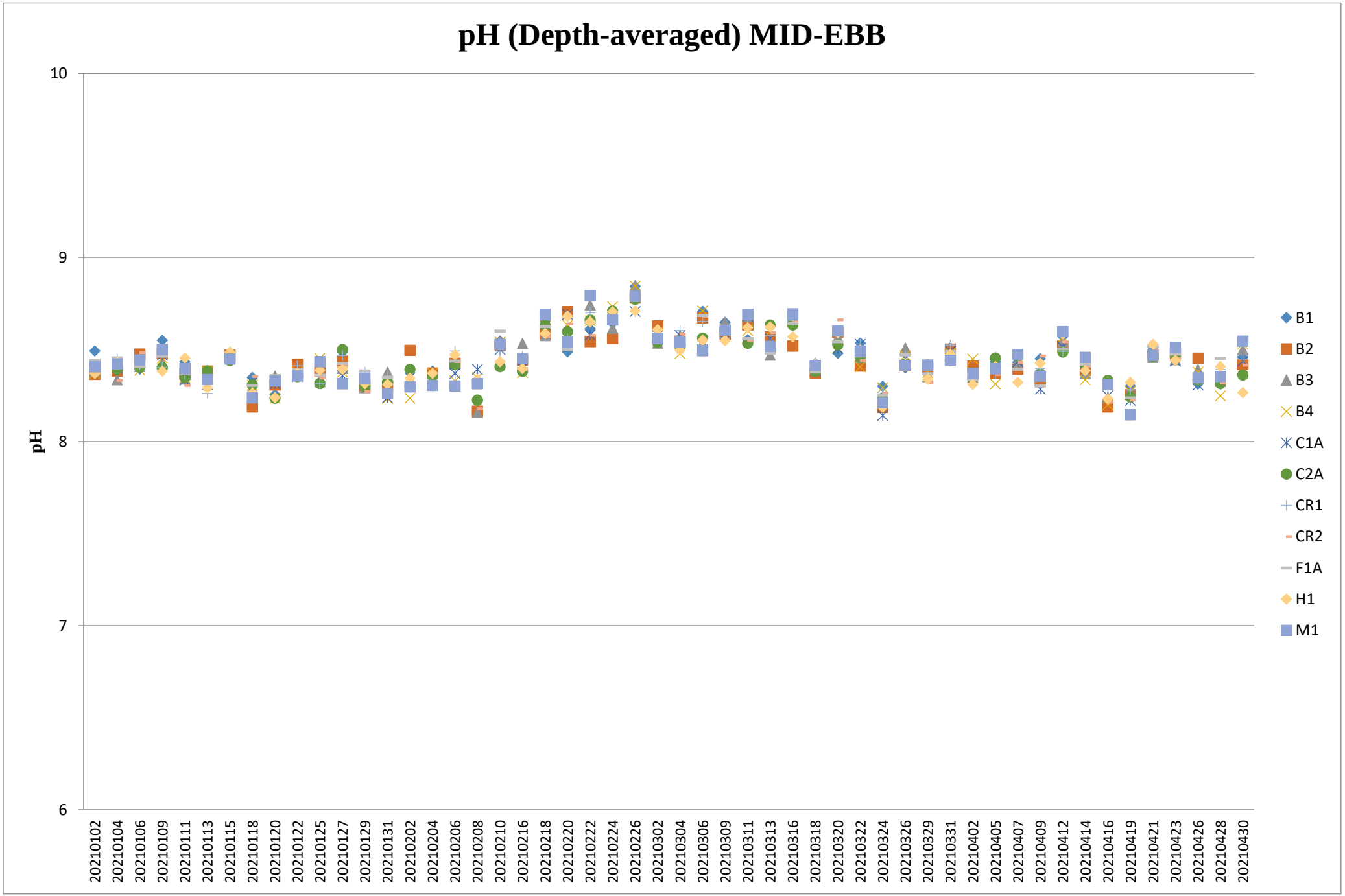


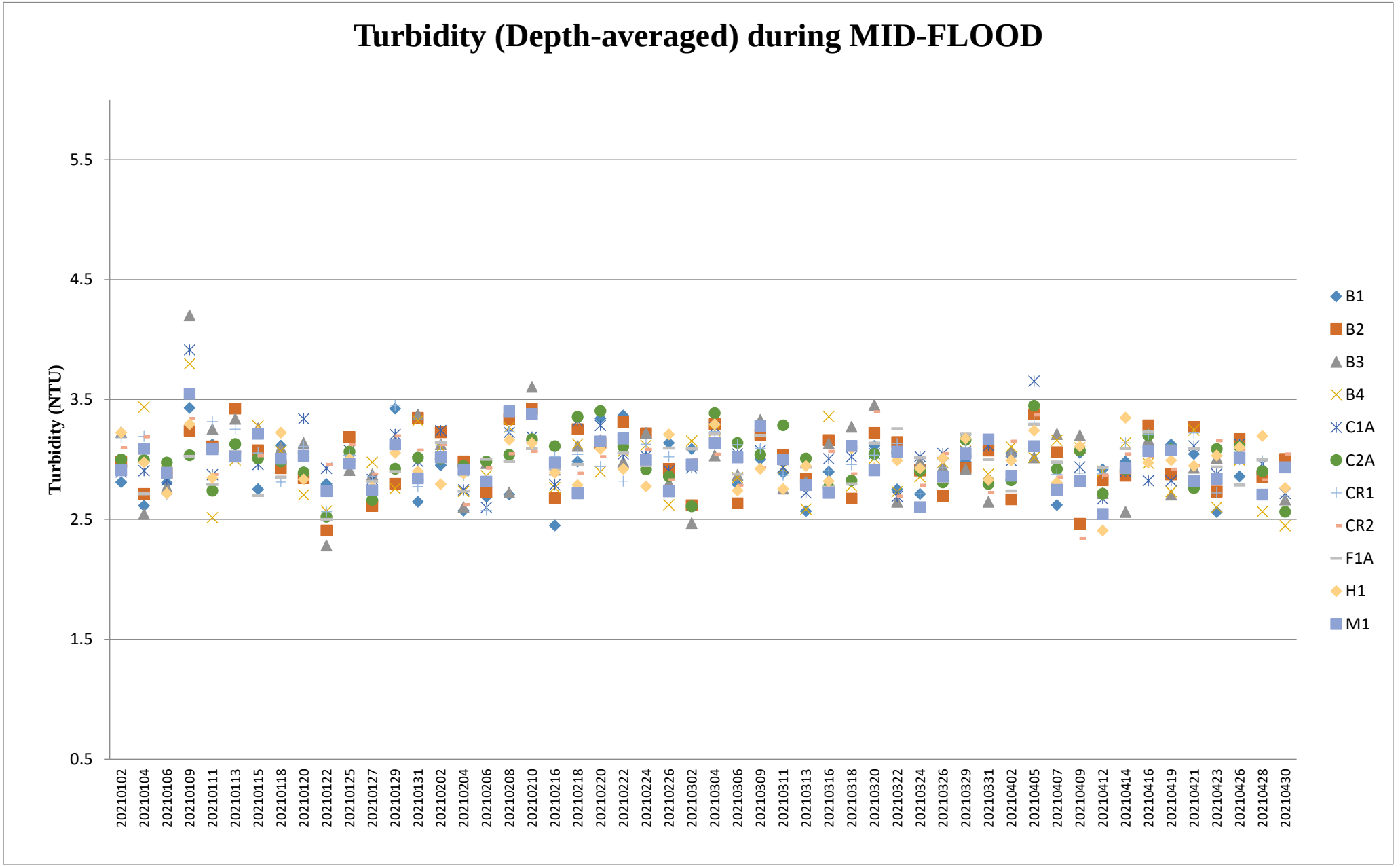
Note: The Action and Limit Level of dissolved oxygen can be referred to **Table 2.8** of the monthly EM&A report.



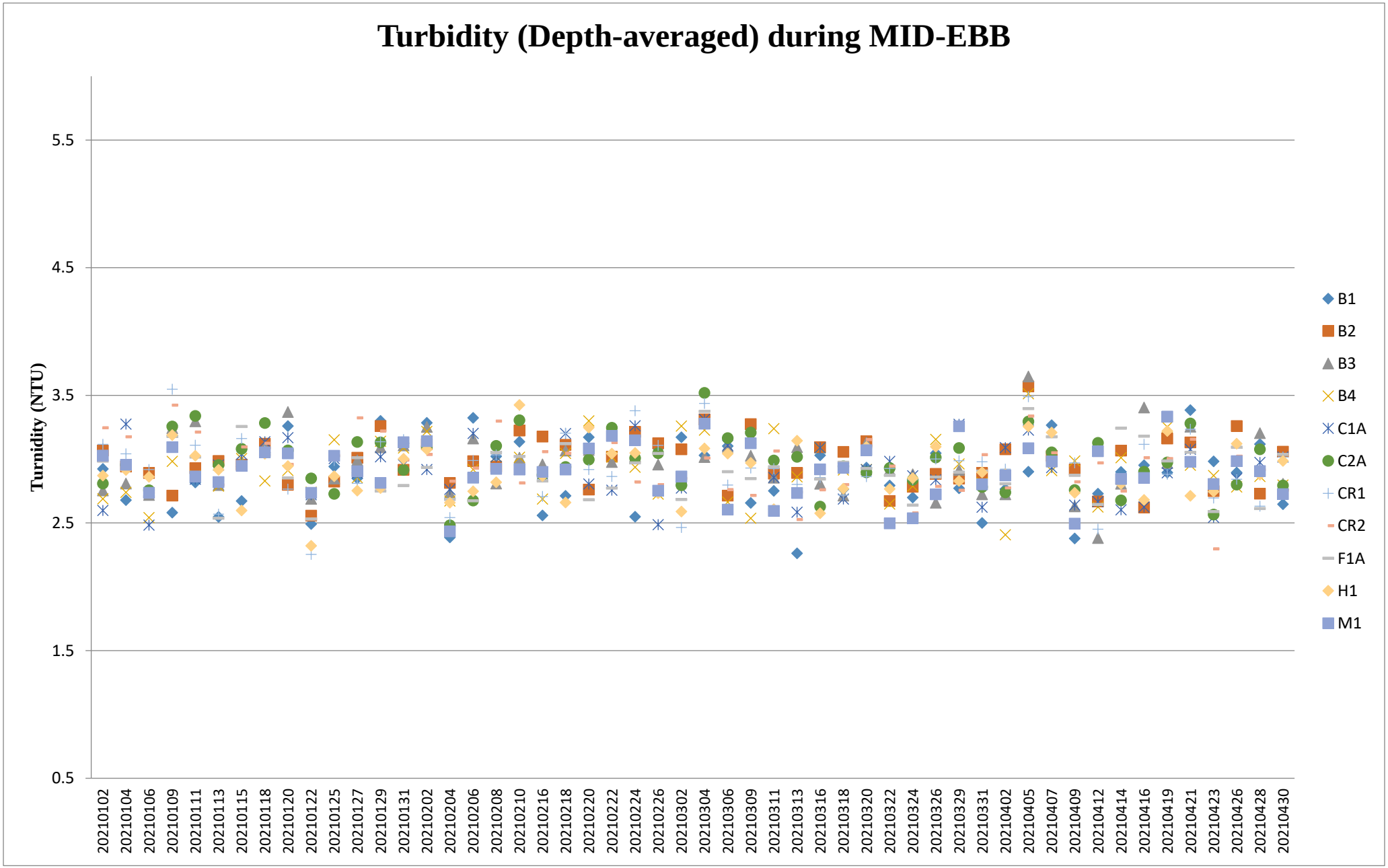
Note: The Action and Limit Level of dissolved oxygen can be referred to **Table 2.8** of the monthly EM&A report.


pH (Depth-averaged) during MID-FLOOD
pH
10
9
8
7
6
20210102
20210104
20210106
20210109
20210111
20210113
20210115
20210118
20210120
20210122
20210125
20210127
20210129
20210131
20210202
20210204
20210206
20210208
20210210
20210216
20210218
20210220
20210222
20210224
20210226
20210302
20210304
20210306
20210309
20210311
20210313
20210316
20210318
20210320
20210322
20210324
20210326
20210329
20210331
20210402
20210405
20210407
20210409
20210412
20210414
20210416
20210419
20210421
20210423
20210426
20210428
20210430
B1
B2
B3
B4
C1A
C2A
CR1
CR2
F1A
H1
M1

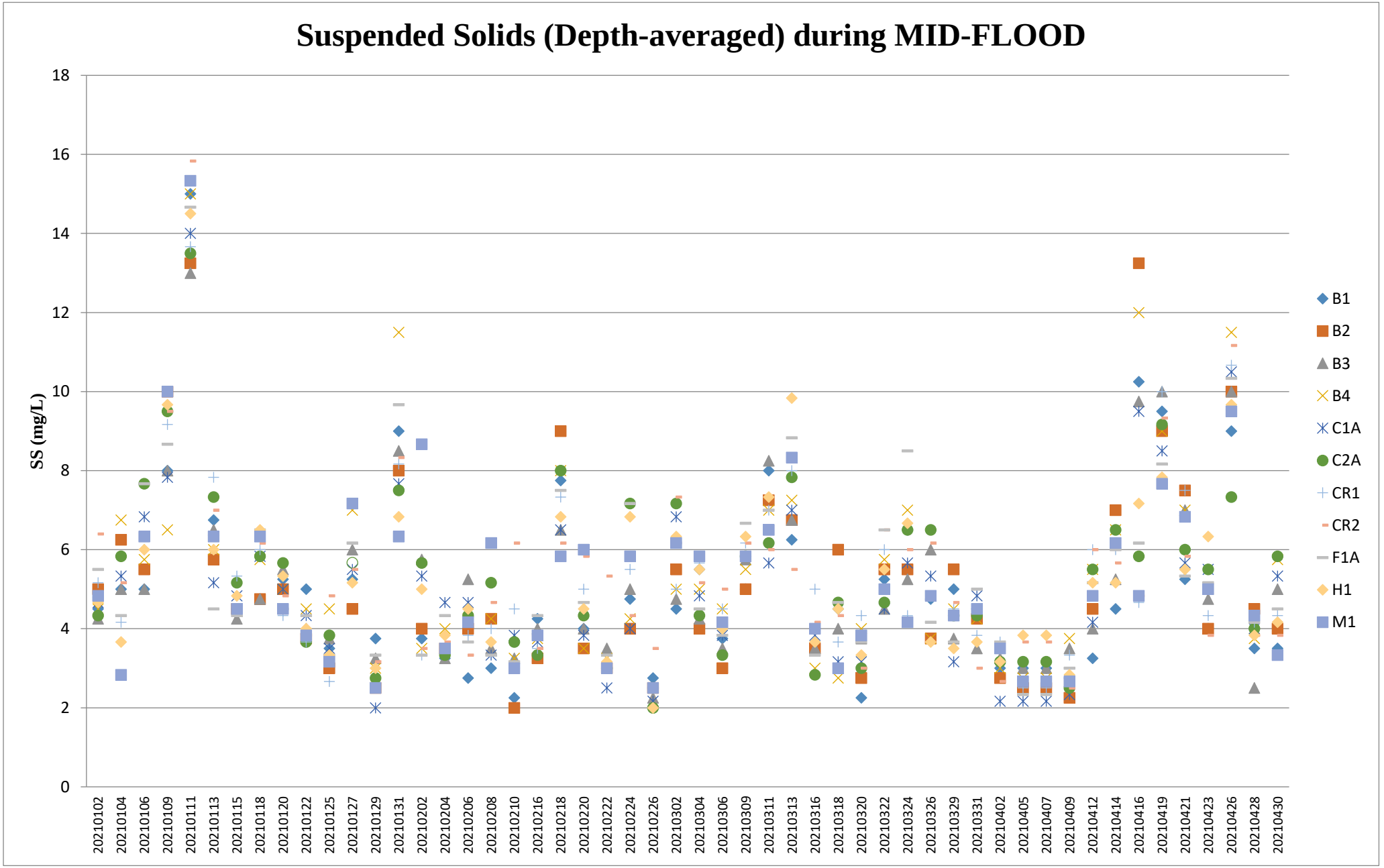

pH (Depth-averaged) MID-EBB
pH
10
9
8
7
6
20210102
20210104
20210106
20210109
20210111
20210113
20210115
20210118
20210120
20210122
20210125
20210127
20210129
20210131
20210202
20210204
20210206
20210208
20210210
20210216
20210218
20210220
20210222
20210224
20210226
20210302
20210304
20210306
20210309
20210311
20210313
20210316
20210318
20210320
20210322
20210324
20210326
20210329
20210331
20210402
20210405
20210407
20210409
20210412
20210414
20210416
20210419
20210421
20210423
20210426
20210428
20210430
B1
B2
B3
B4
C1A
C2A
CR1
CR2
F1A
H1
M1



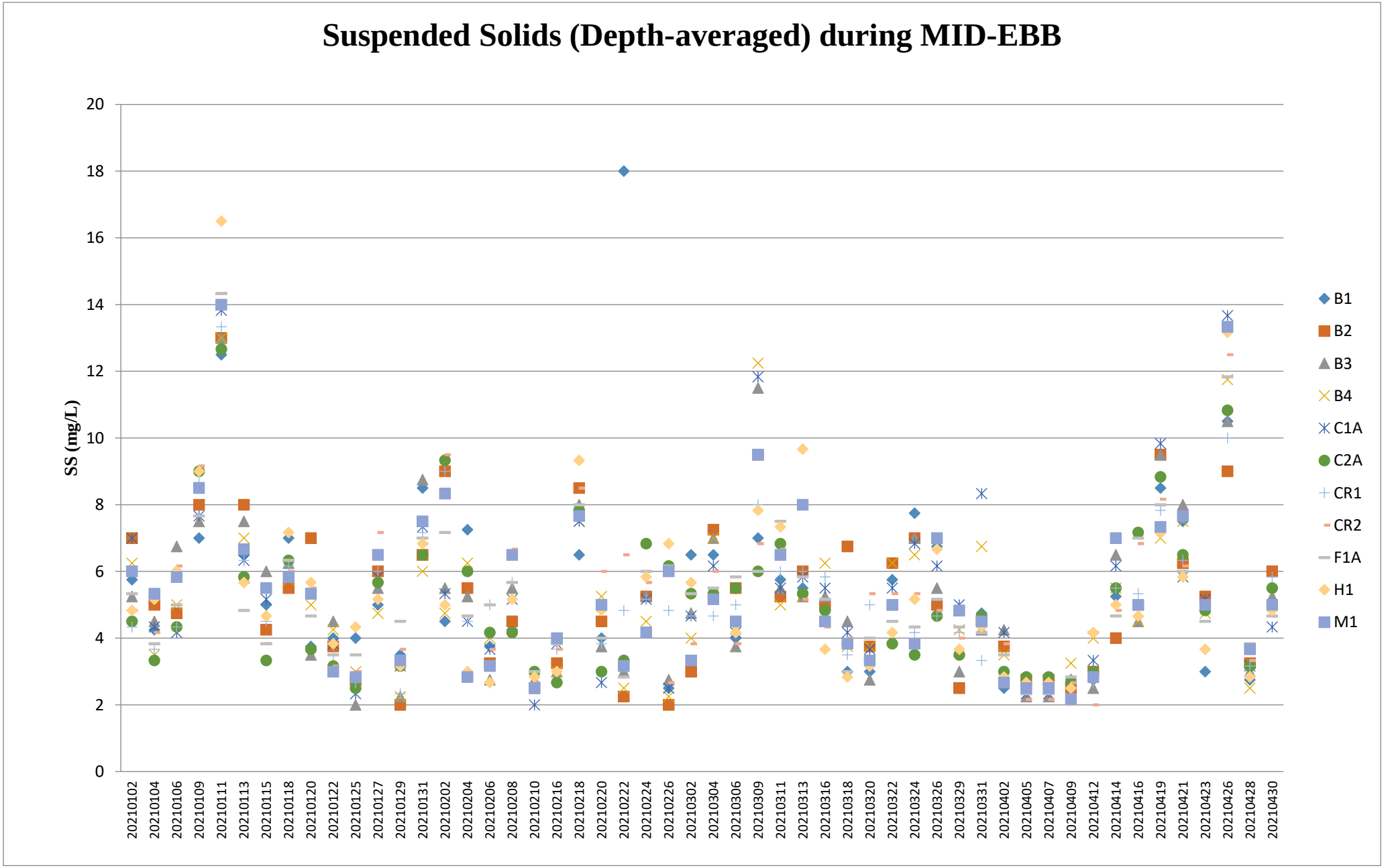
Note: The Action and Limit Level of turbidity can be referred to **Table 2.8** of the monthly EM&A report.



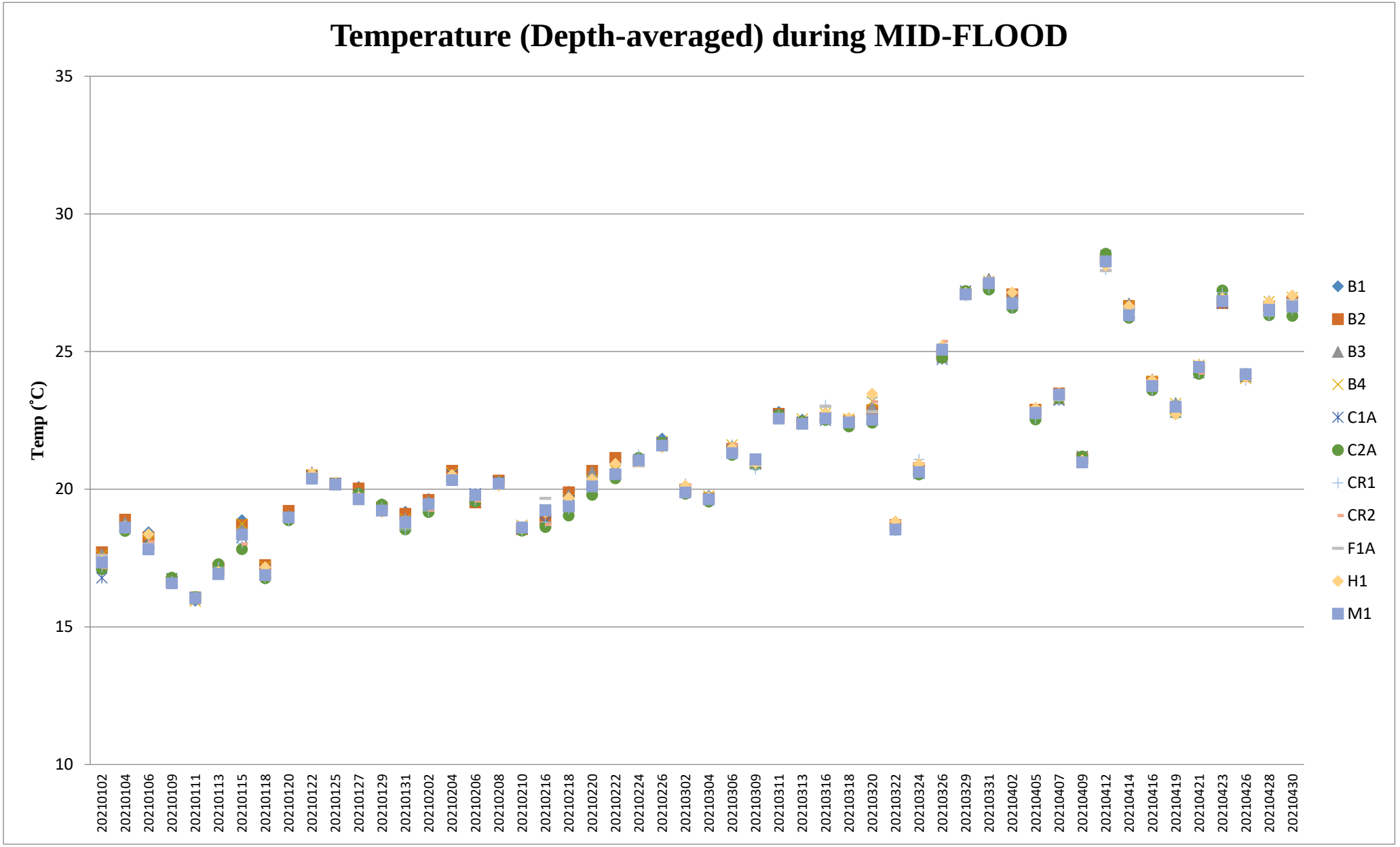
Note: The Action and Limit Level of turbidity can be referred to **Table 2.8** of the monthly EM&A report.



Note: The Action and Limit Level of suspended solids can be referred to **Table 2.8** of the monthly EM&A report.

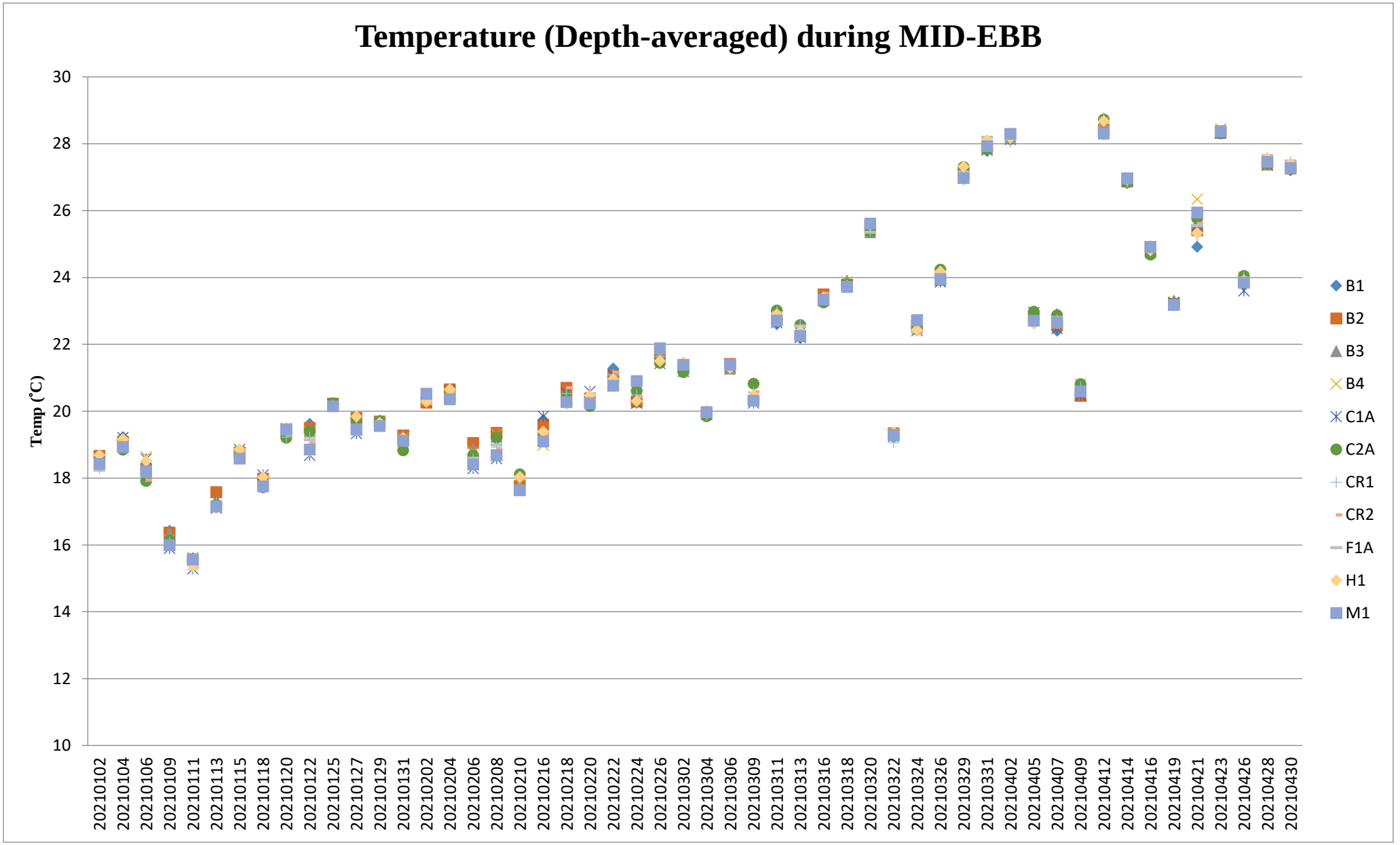


Note: The Action and Limit Level of suspended solids can be referred to **Table 2.8** of the monthly EM&A report.



Note: I. The Action and Limit Level of temperature can be referred to **Table 2.8** of the monthly EM&A report.

II. The contractor had queried the abnormal fluctuation of seawater temperature during the reporting period.



Note: I. The Action and Limit Level of temperature can be referred to **Table 2.8** of the monthly EM&A report.

II. The contractor had queried the abnormal fluctuation of seawater temperature during the reporting period.

Appendix E HOKLAS Laboratory Certificate

Hong Kong Accreditation Service
香港認可處

Certificate of Accreditation
認可證書

This is to certify that
特此證明

ALS TECHNICHEM (HK) PTY LIMITED

11/F., Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, New Territories, Hong Kong
香港新界葵涌永業街1-3號忠信針織中心11樓

has been accepted by the HKAS Executive, on the recommendation of the Accreditation Advisory Board, as a
為香港認可處執行機關根據認可諮詢委員會建議而接受的

HOKLAS Accredited Laboratory
「香港實驗所認可計劃」認可實驗所

This laboratory meets the requirements of ISO / IEC 17025 : 2005 – General requirements for the competence
此實驗所符合ISO / IEC 17025 : 2005 –《測試及校正實驗所能力的通用規定》所訂的要求，
of testing and calibration laboratories and it has been accredited for performing specific tests or calibrations as
獲認可進行載於香港實驗所認可計劃《認可實驗所名冊》內下述測試類別中的指定
listed in the HOKLAS Directory of Accredited Laboratories within the test category of
測試或校正工作

Environmental Testing
環境測試

This laboratory is accredited in accordance with the recognised international Standard ISO / IEC 17025 : 2005.
本實驗所乃根據公認的國際標準 ISO / IEC 17025 : 2005 獲得認可。
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory
這項認可資格顯示在指定範疇所需的技術能力及實驗所質量管理體系的運作
quality management system (see joint IAF-ILAC-ISO Communiqué).
(見國際認可論壇、國際實驗所認可合作組織及國際標準化組織的聯合公報)。

The common seal of the Hong Kong Accreditation Service is affixed hereto by the authority of the HKAS Executive
香港認可處根據認可處執行機關的權限在此蓋上通用印章

CHAN Sing Sing, Terence, Executive Administrator
執行幹事 陳成城
Issue Date : 5 May 2009
簽發日期：二零零九年五月五日

Registration Number : HOKLAS 066
註冊號碼：

Date of First Registration : 15 September 1995
首次註冊日期：一九九五年九月十五日

This certificate is issued subject to the terms and conditions laid down by HKAS
本證書按照香港認可處訂立的條款及條件發出

L 000552

Hong Kong Accreditation Service
香港認可處

Certificate of Accreditation
認可證書

This is to certify that
特此證明

ACUMEN LABORATORY AND TESTING LIMITED
浩科檢測中心有限公司

Lot 12, Tam Kon Shan Road, North Tsing Yi, New Territories, Hong Kong
香港新界青衣北担杆山路12路段

has been accepted by the HKAS Executive, on the recommendation of the Accreditation Advisory Board, as a
在認可諮詢委員會的建議下獲香港認可處執行機關接受為

HOKLAS Accredited Laboratory
「香港實驗所認可計劃」認可實驗所

This laboratory meets the requirements of ISO/IEC 17025:2005 and it has been accredited for performing specific tests or calibrations as listed in the scope of accreditation within the test category of

Environmental Testing

此實驗所符合ISO/IEC 17025:2005所訂的要求
並獲認可進行載於認可範圍內下述測試類別中的指定測試或校正工作

環境測試

This accreditation to ISO/IEC 17025:2005 demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (see joint IAF-ILAC-ISO Communiqué).
此項 ISO/IEC 17025:2005 的認可資格證明此實驗所具備指定範疇內所須的技術能力並實施一套實驗所質量管理體系(見國際認可論壇、國際實驗所認可合作組織及國際標準化組織的聯合公報)。

The common seal of the Hong Kong Accreditation Service is affixed hereto by the authority of the HKAS Executive
現經香港認可處執行機關授權在此蓋上香港認可處的印章

WONG Wang-wah, Executive Administrator
執行幹事 黃宏華
Issue Date : 16 July 2014
簽發日期：二零一四年七月十六日

Registration Number : HOKLAS 241
註冊號碼：

Date of First Registration : 16 July 2014
首次註冊日期：二零一四年七月十六日

This certificate is issued subject to the terms and conditions laid down by HKAS
本證書按照香港認可處訂立的條款及條件發出

L 001195

Appendix F Water Quality Equipment Calibration Certificate

專業化驗有限公司
QUALITY PRO TEST-CONSULT LIMITED
Unit 10, 14/F, Wah Wai Centre, 38-40 Au Pui Wan St., Fotan, Hong Kong
Email: info@qualityprotest.com; Website: www.qualityprotest.com
Tel: (852) 3956 8717; Fax: (852) 3956 3928

REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : BA020068
Date of Issue : 26 February 2021

PART A – CUSTOMER INFORMATION

Acuity Sustainability Consulting Limited
Unit C, 11/F, Ford Glory Plaza
37-39 Wing Hong Street
Cheung Sha Wan, Kowloon, Hong Kong
Attn: Mr. Nelson TSUI

PART B – DESCRIPTION

Name of Equipment	:	Multi Water Quality Checker U-53
Manufacturer	:	Horiba
Serial Number	:	A55XB7UP
Date of Received	:	Feb 25, 2021
Date of Calibration	:	Feb 26, 2021
Date of Next Calibration[a]	:	May 25, 2021

PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Parameter	Reference Method
pH at 25°C	APHA 21e 4500-H^+ B
Dissolved Oxygen	APHA 21e 4500-O G
Salinity	APHA 21e 2520 B
Turbidity	APHA 21e 2130 B
Temperature	Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure.
Oxidation-Reduction Potential	APHA 22e 2580 B

PART D – CALIBRATION RESULTS[b,c]

(1) pH at 25°C

Target (pH unit)	Displayed Reading[d] (pH Unit)	Tolerance[e](pH Unit)	Results
4.00	4.11	0.11	Satisfactory
7.42	7.36	-0.06	Satisfactory
10.01	10.16	0.15	Satisfactory

Tolerance of pH should be less than ±0.20 (pH unit)

(2) Temperature

Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
16	16.84	0.84	Satisfactory
21	20.80	-0.20	Satisfactory
39	38.74	-0.26	Satisfactory

Tolerance limit of temperature should be less than ±2.0 (°C)

~ CONTINUED ON NEXT PAGE ~

Remark(s): -

[a] The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted form relevant international standards.
[b] The results relate only to the calibrated equipment as received
[c] The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.
[d] "Displayed Reading" denotes the figure shown on item under calibration/ checking regardless of equipment precision or significant figures.
[e] The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted form relevant international standards.

LEE Chun-ning, Desmond
Senior Chemist

專業化驗有限公司
QUALITY PRO TEST-CONSULT LIMITED
Unit 10, 14/F, Wah Wai Centre, 38-40 Au Pui Wan St., Fotan, Hong Kong
Email: info@qualityprotest.com; Website: www.qualityprotest.com
Tel: (852) 3956 8717; Fax: (852) 3956 3928

REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

PART D – CALIBRATION RESULTS (Cont'd)

(3) Dissolved Oxygen

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
0.26	0.60	0.34	Satisfactory
3.87	4.10	0.23	Satisfactory
7.18	7.10	-0.08	Satisfactory
8.49	8.49	0.00	Satisfactory

Tolerance limit of dissolved oxygen should be less than ±0.50 (mg/L)

(4) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	9.80	-2.00	Satisfactory
20	18.30	-8.50	Satisfactory
30	31.70	5.67	Satisfactory

Tolerance limit of salinity should be less than ±10.0 (%)

(5) Turbidity

Expected Reading (NTU)	Displayed Reading[f] (NTU)	Tolerance[g] (%)	Results
0	0.00	--	Satisfactory
10	10.5	5.0	Satisfactory
20	21.2	6.0	Satisfactory
100	104	4.0	Satisfactory
800	813	1.6	Satisfactory

Tolerance limit of turbidity should be less than ±10.0 (%)

(6) Oxidation-Reduction Potential

Expected Reading (mV)	Displayed Reading (mV)	Tolerance (mV)[g]	Results
229	227	-2	Satisfactory

Tolerance limit of Oxidation-Reduction Potential should be less than ±10 (mV)

~ END OF REPORT ~

Remark(s): -

[f] *"Displayed Reading" presents the figures shown on item under calibration/ checking regardless of equipment precision or significant figures.*

[g] *The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted form relevant international standards.*

專業化驗有限公司
QUALITY PRO TEST-CONSULT LIMITED
Unit 10, 14/F, Wah Wai Centre, 38-40 Au Pui Wan St., Fotan, Hong Kong
Email: info@qualityprotest.com; Website: www.qualityprotest.com
Tel: (852) 3956 8717; Fax: (852) 3956 3928

REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : BA030040
Date of Issue : 11 March 2021

PART A – CUSTOMER INFORMATION

Acuity Sustainability Consulting Limited
Unit C, 11/F, Ford Glory Plaza
37-39 Wing Hong Street
Cheung Sha Wan, Kowloon, Hong Kong
Attn: Mr. Nelson TSUI

PART B – DESCRIPTION

Name of Equipment	:	Multi Water Quality Checker U-53
Manufacturer	:	Horiba
Serial Number	:	L20550GA
Date of Received	:	Mar 04, 2021
Date of Calibration	:	Mar 09, 2021
Date of Next Calibration[a]	:	Jun 08, 2021

PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Parameter	Reference Method
pH at 25°C	APHA 21e 4500-H^+ B
Dissolved Oxygen	APHA 21e 4500-O G
Salinity	APHA 21e 2520 B
Turbidity	APHA 21e 2130 B
Temperature	Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

PART D – CALIBRATION RESULTS[b,c]

(1) pH at 25°C

Target (pH unit)	Displayed Reading[d] (pH Unit)	Tolerance[e](pH Unit)	Results
4.00	4.06	0.06	Satisfactory
7.42	7.38	-0.04	Satisfactory
10.01	10.11	0.10	Satisfactory

Tolerance of pH should be less than ±0.20 (pH unit)

(2) Temperature

Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
13	13.46	0.46	Satisfactory
25	24.23	-0.77	Satisfactory
38	37.65	-0.35	Satisfactory

Tolerance limit of temperature should be less than ±2.0 (°C)

~ CONTINUED ON NEXT PAGE ~

Remark(s): -

(a) The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted form relevant international standards.
(b) The results relate only to the calibrated equipment as received
(c) The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.
(d) "Displayed Reading" denotes the figure shown on item under calibration/ checking regardless of equipment precision or significant figures.
(e) The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted form relevant international standards.

LEE Chun-ning, Desmond
Senior Chemist

專業化驗有限公司
QUALITY PRO TEST-CONSULT LIMITED
Unit 10, 14/F, Wah Wai Centre, 38-40 Au Pui Wan St., Fotan, Hong Kong
Email: info@qualityprotest.com; Website: www.qualityprotest.com
Tel: (852) 3956 8717; Fax: (852) 3956 3928

REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : BA030040
Date of Issue : 11 March 2021

PART D – CALIBRATION RESULTS (Cont'd)

(3) Dissolved Oxygen

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
1.50	1.23	-0.27	Satisfactory
4.66	4.21	-0.45	Satisfactory
7.04	6.75	-0.29	Satisfactory
8.48	8.28	-0.20	Satisfactory

Tolerance limit of dissolved oxygen should be less than ±0.50 (mg/L)

(4) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	9.77	-2.30	Satisfactory
20	20.25	1.25	Satisfactory
30	30.90	3.00	Satisfactory

Tolerance limit of salinity should be less than ±10.0 (%)

(5) Turbidity

Expected Reading (NTU)	Displayed Reading[f] (NTU)	Tolerance[g] (%)	Results
0	0.00	--	Satisfactory
10	10.9	9.0	Satisfactory
20	20.5	2.5	Satisfactory
100	101	1.0	Satisfactory
800	782	-2.3	Satisfactory

Tolerance limit of turbidity should be less than ±10.0 (%)

~ END OF REPORT ~

Remark(s): -
(f) "Displayed Reading" presents the figures shown on item under calibration/ checking regardless of equipment precision or significant figures.
(g) The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted form relevant international standards.

專業化驗有限公司
QUALITY PRO TEST-CONSULT LIMITED
Unit 10, 14/F, Wah Wai Centre, 38-40 Au Pui Wan St., Fotan, Hong Kong
Email: info@qualityprotest.com; Website: www.qualityprotest.com
Tel: (852) 3956 8717; Fax: (852) 3956 3928

REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : BA020038
Date of Issue : 24 February 2021

PART A – CUSTOMER INFORMATION

Acuity Sustainability Consulting Limited
Unit C, 11/F, Ford Glory Plaza
37-39 Wing Hong Street
Cheung Sha Wan, Kowloon, Hong Kong
Attn: Mr. Nelson TSUI

PART B – DESCRIPTION

Name of Equipment	:	Multi Water Quality Checker U-53
Manufacturer	:	Horiba
Serial Number	:	UHB5F2BB
Date of Received	:	Feb 10, 2021
Date of Calibration	:	Feb 24, 2021
Date of Next Calibration[a]	:	May 24, 2021

PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Parameter	Reference Method
pH at 25°C	APHA 21e 4500-H^+ B
Dissolved Oxygen	APHA 21e 4500-O G
Salinity	APHA 21e 2520 B
Turbidity	APHA 21e 2130 B
Temperature	Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

PART D – CALIBRATION RESULTS[b,c]

(1) pH at 25°C

Target (pH unit)	Displayed Reading[d] (pH Unit)	Tolerance[e](pH Unit)	Results
4.00	4.06	0.06	Satisfactory
7.42	7.44	0.02	Satisfactory
10.01	9.95	-0.06	Satisfactory

Tolerance of pH should be less than ±0.20 (pH unit)

(2) Temperature

Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
17	17.24	0.24	Satisfactory
24	24.16	0.16	Satisfactory
34	34.17	0.17	Satisfactory

Tolerance limit of temperature should be less than ±2.0 (°C)

~ CONTINUED ON NEXT PAGE ~

Remark(s): -

[a] *The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted form relevant international standards.*
[b] *The results relate only to the calibrated equipment as received*
[c] *The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.*
[d] *"Displayed Reading" denotes the figure shown on item under calibration/ checking regardless of equipment precision or significant figures.*
[e] *The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted form relevant international standards.*

LEE Chun-ning, Desmond
Senior Chemist

專業化驗有限公司
QUALITY PRO TEST-CONSULT LIMITED
Unit 10, 14/F, Wah Wai Centre, 38-40 Au Pui Wan St., Fotan, Hong Kong
Email: info@qualityprotest.com; Website: www.qualityprotest.com
Tel: (852) 3956 8717; Fax: (852) 3956 3928

REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : BA020038
Date of Issue : 24 February 2021

PART D – CALIBRATION RESULTS (Cont'd)

(3) Dissolved Oxygen

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
0.45	0.00	-0.45	Satisfactory
2.10	1.95	-0.15	Satisfactory
4.40	3.99	-0.41	Satisfactory
8.59	8.11	-0.48	Satisfactory

Tolerance limit of dissolved oxygen should be less than ±0.50 (mg/L)

(4) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	9.16	-8.40	Satisfactory
20	18.39	-8.05	Satisfactory
30	28.11	-6.30	Satisfactory

Tolerance limit of salinity should be less than ±10.0 (%)

(5) Turbidity

Expected Reading (NTU)	Displayed Reading[f] (NTU)	Tolerance[g] (%)	Results
0	0.95	--	Satisfactory
10	10.8	8.0	Satisfactory
20	21.6	8.0	Satisfactory
100	98.0	-2.0	Satisfactory
800	754	-5.8	Satisfactory

Tolerance limit of turbidity should be less than ±10.0 (%)

~ END OF REPORT ~

Remark(s): -

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

[g] The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted form relevant international standards.

Appendix G Event / Action Plan for Water Quality Exceedance

Event	Action			
	ET	IEC	SO	Contractor
Action level being exceeded by one sampling day	Repeat in-situ measurement to confirm findings; Identify source(s) of impact; Inform IEC and Contractor; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC and Contractor; Repeat measurement on next day of exceedance. (The above actions should be taken within 1 working day after the exceedance is identified)	Discuss with ET and Contractor on the mitigation measures; Review proposals on mitigation measures submitted by Contractor and advise the SO accordingly; Assess the effectiveness of the implemented mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)	Discuss with IEC on the proposed mitigation measures; Make agreement on the mitigation measures to be implemented. (The above actions should be taken within 1 working day after the exceedance is identified)	Inform the SO and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with ET and IEC and propose mitigation measures to IEC and SO within 3 working days; Implement the agreed mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)
Action level being exceeded by more than one consecutive sampling days	Identify source(s) of impact; Inform IEC and Contractor; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC and Contractor; Ensure mitigation measures are implemented; Prepare to increase the monitoring frequency to daily; Repeat measurement on next working day of exceedance. (The above actions should be taken within 1 working day after Action Level being exceeded by two consecutive sampling days)	Discuss with ET and Contractor on the mitigation measures; Review proposals on mitigation measures submitted by Contractor and advise the SO accordingly; Assess the effectiveness of the implemented mitigation measures. (The above actions should be taken within 1 working day after Action Level being exceeded by two consecutive sampling days)	Discuss with IEC on the proposed mitigation measures; Make agreement on the mitigation measures to be implemented. Assess the effectiveness of the implemented mitigation measures. (The above actions should be taken within 1 working day after Action Level being exceeded by two consecutive sampling days)	Inform the SO and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with ET and IEC and propose mitigation measures to IEC and SO within 3 working days; Implement the agreed mitigation measures. (The above actions should be taken within 1 working day after Action Level being exceeded by two consecutive sampling days)

Event	Action			
	ET	IEC	SO	Contractor
Limit level being exceeded by one sampling day	Inform the SO and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with Contractor, IEC and SO and propose mitigation measures to IEC and SO within 3 working days; Implement the agreed mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)	Discuss with ET and Contractor on the mitigation measures; Review proposals on mitigation measures submitted by Contractor and advise the SO accordingly; Assess the effectiveness of the implemented mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)	Discuss with IEC, ET and Contractor on the proposed mitigation measures; Request Contractor to critically review the working methods; Make agreement on the mitigation measures to be implemented. Assess the effectiveness of the implemented measures. (The above actions should be taken within 1 working day after the exceedance is identified)	Inform the SO and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with ET, IEC and SO and propose mitigation measures to IEC and SO within 3 working days; Implement the agreed mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)

Event	Action			
	ET	IEC	SO	Contractor
Limit level being exceeded by more than one consecutive sampling days	Identify source(s) of impact; Inform IEC, Contractor and EPD; Check monitoring data, all plant, equipment and Contractor's working methods. Discuss mitigation measures with IEC, SO and Contractor. Ensure mitigation measures are implemented; Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days. (The above actions should be taken within 1 working day after Limit Level being exceeded by two consecutive sampling days)	Discuss with ET and Contractor on the mitigation measures; Review proposals on mitigation measures submitted by Contractor and advise the SO accordingly; Assess the effectiveness of the implemented mitigation measures. (The above actions should be taken within 1 working day after Limit Level being exceeded by two consecutive sampling days)	Discuss with IEC, ET and Contractor on the proposed mitigation measures; Request Contractor to critically review the working methods; Make agreement on the mitigation measures to be implemented. Assess the effectiveness of the implemented measures. Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the marine work until no exceedance of Limit level. (The above actions should be taken within 1 working day after Limit Level being exceeded by two consecutive sampling days)	Inform the SO and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with ET, IEC and SO and propose mitigation measures to IEC and SO within 3 working days; Implement the agreed mitigation measures; As directed by the SOR, to slow down or to stop all or part of the marine work or construction activities. (The above actions should be taken within 1 working day after Limit Level being exceeded by two consecutive sampling days)

Appendix H Noise Monitoring Equipment Calibration Certificate

SVANTEK

ISO9001 certified

FACTORY CALIBRATION DATA OF THE *SVAN 971 No. 96063*

with preamplifier SVANTEK type SV18 No. 97278 and with microphone ACO type 7052E No. 78092

1. CALIBRATION* (acoustical)

LEVEL METER function; Range: Low; Reference frequency: 1000Hz; Sound Pressure Level: **114.00** dB.

Characteristic	Correct value [dB]	Indication [dB]	Error [dB]
Z	114.00	114.05	0.05
A	114.00	114.05	0.05
C	114.00	114.05	0.05

Calibration measured with the microphone ACO type 7052E No. 78092. Calibration factor: 0.52 dB.

2. LINEARITY TEST* (electrical)

LEVEL METER function; Range: Low; Characteristic: A; f_{sin}= 31.5 Hz

Nominal result LEQ [dB]	24.0	25.0	26.0	28.0	30.0	40.0	60.0	83.0
Error [dB]	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0

LEVEL METER function; Range: Low; Characteristic: A; f_{sin}= 1000 Hz

Nominal result LEQ [dB]	24.0	25.0	26.0	28.0	30.0	40.0	60.0	80.0	100.0	123.0
Error [dB]	0.1	0.0	0.0	0.0	0.0	-0.0	-0.0	-0.0	0.0	-0.0

LEVEL METER function; Range: Low; Characteristic: A; f_{sin}= 8000 Hz

Nominal result LEQ [dB]	24.0	25.0	26.0	28.0	30.0	40.0	60.0	80.0	100.0	122.0
Error [dB]	0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0

LEVEL METER function; Range: High; Characteristic: A; f_{sin}= 31.5 Hz

Nominal result LEQ [dB]	34.0	35.0	36.0	38.0	40.0	60.0	80.0	97.0
Error [dB]	0.1	0.1	0.0	0.0	0.0	0.0	-0.0	0.0

LEVEL METER function; Range: High; Characteristic: A; f_{sin}= 1000 Hz

Nominal result LEQ [dB]	34.0	35.0	36.0	38.0	40.0	60.0	80.0	100.0	120.0	137.0
Error [dB]	0.1	0.1	0.1	0.0	0.0	-0.0	0.0	0.0	-0.0	0.0

LEVEL METER function; Range: High; Characteristic: A; f_{sin}= 8000 Hz

Nominal result LEQ [dB]	34.0	35.0	36.0	38.0	40.0	60.0	80.0	100.0	120.0	136.0
Error [dB]	0.0	0.0	-0.0	0.0	-0.0	-0.0	0.0	-0.0	-0.0	-0.0

1/3 OCTAVE (1kHz); Range: Low; f_{sin}= 1000 Hz

Nominal result [dB]	25.0	30.0	40.0	60.0	80.0	100.0	120.0	123.0
Error [dB]	0.1	0.0	-0.0	-0.0	-0.0	0.0	-0.0	-0.0

3. TONE BURST RESPONSE*

LEVEL METER function; Characteristic: A; f_{sin}= 4000 Hz; Burst duration: 2s

Range: **Low**; Steady level nominal result = 120dB

Result	Detector	Duration [ms]	1000	500	200	100	50	20	10	5	2	1	0.5	0.25
MAX	Fast	Indication [dB]	119.9	119.8	119.0	117.3	115.1	111.6	108.8	105.8	101.9	98.9	95.8	92.8
		Error [dB]	0.0	0.0	0.0	-0.0	-0.0	-0.0	-0.1	0.0	-0.0	-0.1	-0.1	-0.1
	Slow	Indication [dB]	117.9	115.8	112.4	109.6	106.7	102.8	99.8	96.8	92.8	-	-	-
		Error [dB]	-0.1	-0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-	-	-
SEL	-	Indication [dB]	119.9	116.9	112.9	109.9	106.9	102.9	99.9	96.9	92.9	89.9	86.8	83.8
		Error [dB]	0.0	-0.0	0.0	0.0	-0.0	0.0	-0.0	-0.0	-0.0	-0.1	-0.1	-0.1

Range: **Low**; Steady level nominal result = 60dB

Result	Detector	Duration [ms]	1000	500	200	100	50	20	10	5	2	1	0.5
MAX	Fast	Indication [dB]	59.9	59.9	59.0	57.3	55.1	51.6	48.8	45.9	41.9	38.9	35.9
		Error [dB]	0.0	0.0	0.0	0.0	-0.0	0.0	-0.0	0.0	-0.0	-0.0	-0.1
	Slow	Indication [dB]	57.9	55.8	52.4	49.6	46.7	42.8	39.8	36.8	32.8	-	-
		Error [dB]	-0.0	-0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-	-
SEL	-	Indication [dB]	59.9	56.9	52.9	49.9	46.9	42.9	39.9	36.9	32.9	29.9	26.9
		Error [dB]	0.0	-0.0	0.0	0.0	-0.0	0.0	0.0	-0.0	0.0	0.0	-0.0

Range: **Low**; Steady level nominal result = 35dB

Result	Detector	Duration [ms]	1000	500	200
MAX	Fast	Indication [dB]	34.9	34.8	33.9
		Error [dB]	-0.0	-0.0	0.0
	Slow	Indication [dB]	32.9	30.8	27.4
		Error [dB]	-0.1	-0.0	-0.1
SEL	-	Indication [dB]	34.9	31.9	28.0
		Error [dB]	-0.0	-0.0	0.0

Range: **High**; Steady level nominal result = 134dB

Result	Detector	Duration [ms]	1000	500	200	100	50	20	10	5	2	1	0.5	0.25
MAX	Fast	Indication [dB]	133.9	133.9	133.0	131.3	129.1	125.6	122.8	119.9	115.9	112.9	109.9	106.8
		Error [dB]	0.0	0.0	0.0	0.0	-0.0	-0.0	-0.0	0.0	-0.0	-0.0	-0.1	-0.1
	Slow	Indication [dB]	131.9	129.8	126.4	123.6	120.7	116.8	113.8	110.8	106.8	-	-	-
		Error [dB]	-0.1	-0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-	-	-
SEL	-	Indication [dB]	133.9	130.9	127.0	123.9	120.9	117.0	113.9	110.9	106.9	103.9	100.8	97.8
		Error [dB]	0.0	-0.0	0.0	0.0	-0.0	0.0	0.0	-0.0	-0.0	-0.0	-0.1	-0.1

Range: **High**; Steady level nominal result = 54dB

Result	Detector	Duration [ms]	1000	500	200	100	50
MAX	Fast	Indication [dB]	53.9	53.9	53.0	51.4	49.1
		Error [dB]	-0.0	0.0	0.0	0.0	-0.0
	Slow	Indication [dB]	51.9	49.8	46.4	43.6	40.8
		Error [dB]	-0.1	-0.0	-0.1	-0.1	0.0
SEL	-	Indication [dB]	53.9	50.9	47.0	44.0	41.0
		Error [dB]	-0.0	-0.0	0.0	0.0	0.0

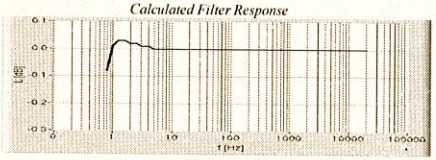
Range: **High**; Steady level nominal result = 45dB

Result	Detector	Duration [ms]	1000	500	200
MAX	Fast	Indication [dB]	45.0	44.9	44.0
		Error [dB]	0.0	0.0	0.0
	Slow	Indication [dB]	42.9	40.8	37.4
		Error [dB]	-0.1	-0.0	-0.1
SEL	-	Indication [dB]	45.0	41.9	38.0
		Error [dB]	0.0	-0.0	0.0

4. FREQUENCY RESPONSE* (electrical)

LEVEL METER function; Characteristic: Z; Range: Low; Input signal =120 dB;

Calculated Filter Response



Measured Filter Response with Preamplifier SV18
(f-frequency, L-level)

f [Hz]	L [dB]	f [Hz]	L [dB]	f [Hz]	L [dB]
10	-0.1	63	0.0	4000	0.0
12.5	0.0	125	0.0	8000	0.0
16	0.0	250	0.0	16000	0.0
20	0.0	500	0.0	20000	0.0
25	0.0	1000	0.0		
31.5	0.0	2000	0.0		

All frequencies are nominal center values for the 1/3 octave bands

5. INTERNAL NOISE LEVEL* (electrical - compensated)

LEVEL METER function; Range: Low; (Back-light – off) ; Calibration factor: 0dB

Characteristic	Z	A	C
Level [dB]	≤20	≤12	≤12

* measured with preamplifier SVANTEK type SV18 No. 97278.

6. INTERNAL NOISE LEVEL (acoustical - compensated)

LEVEL METER function; Characteristic: A; (Backlight – off)

Range	Low	High
Indication [dB]	≤15	19.8

Noise measured in special chamber, with reference microphone G.R.A.S type 40AN No. 73421

ENVIRONMENTAL CONDITIONS

Temperature	Relative humidity	Ambient pressure
27 °C	55%	999 hPa

TEST EQUIPMENT

Item	Manufacturer	Model	Serial no.	Description
1.	SVANTEK	SVAN 401	100	Signal generator
2.	SVANTEK	SVAN 912A	4369	Sound & Vibration Analyser
3.	RIGOL	DM3068	DM30155100773	Digital multimeter
4.	SVANTEK	SV33B	93171	Acoustic calibrator
5.	SVANTEK	ST02	-	Microphone equivalent electrical impedance (18pF)

CONFORMITY & TEST DECLARATION

1. Herewith Svantek company declares that this instrument has been calibrated and tested in compliance with the internal ISO9001 procedures and meets all specification given in the Manual(s) or respectively surpass them.
2. The acoustic calibration was performed using the Sound Calibrator and is traceable to the GUM (Central Office of Measures) reference standard - sound level calibrator type 4231 No 2292773.
3. The information appearing on this sheet has been compiled specifically for this instrument. This form is produced with advanced equipment & procedures which permit comprehensive quality assurance verification of all data supplied herein.
4. This calibration sheet shall not be reproduced except in full, without written permission of the SVANTEK Ltd.

Calibration specialist: Krzysztof Kubel .....

Test date: 2020-07-02

SVANTEK

1/2" Prepolarized Condenser Microphone

Calibration Chart

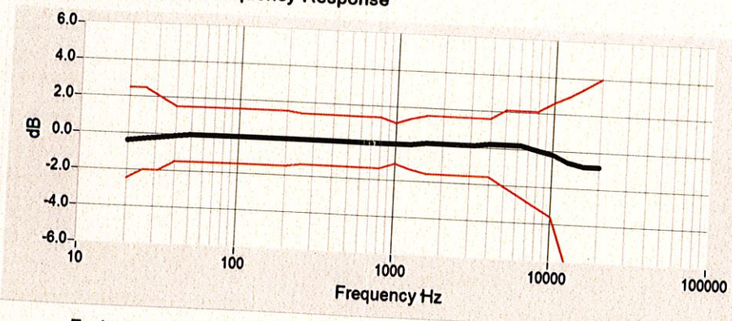
Type: ***7052E*** Serial No: ***78092***

Measured sensitivity: **32.74 mV/Pa**
-29.70 dB re. 1V/Pa

Manufacturer: ***ACO PACIFIC***

Date: **2020-06-04** Signature: .....

Measured Free-Field Frequency Response



Environmental Calibration Conditions: **22 °C 40 % 990 hPa**

SVANTEK

ISO9001 certified

FACTORY CALIBRATION DATA OF THE *SVAN 971 No. 96062*

with preamplifier SVANTEK type SV18 No. 97276 and with microphone ACO type 7052E No. 78090

1. CALIBRATION* (acoustical)

LEVEL METER function; Range: Low; Reference frequency: 1000Hz; Sound Pressure Level: **114.00** dB.

Characteristic	Correct value [dB]	Indication [dB]	Error [dB]
Z	114.00	114.01	0.01
A	114.00	114.01	0.01
C	114.00	114.01	0.01

Calibration measured with the microphone ACO type 7052E No. 78090. Calibration factor: 0.56 dB.

2. LINEARITY TEST* (electrical)

LEVEL METER function; Range: Low; Characteristic: A; f_{sin}= 31.5 Hz

Nominal result LEQ [dB]	24.0	25.0	26.0	28.0	30.0	40.0	60.0	83.0
Error [dB]	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0

LEVEL METER function; Range: Low; Characteristic: A; f_{sin}= 1000 Hz

Nominal result LEQ [dB]	24.0	25.0	26.0	28.0	30.0	40.0	60.0	80.0	100.0	123.0
Error [dB]	0.1	0.1	0.1	0.0	0.0	0.0	-0.0	-0.0	0.0	-0.0

LEVEL METER function; Range: Low; Characteristic: A; f_{sin}= 8000 Hz

Nominal result LEQ [dB]	24.0	25.0	26.0	28.0	30.0	40.0	60.0	80.0	100.0	122.0
Error [dB]	0.1	0.0	0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0

LEVEL METER function; Range: High; Characteristic: A; f_{sin}= 31.5 Hz

Nominal result LEQ [dB]	34.0	35.0	36.0	38.0	40.0	60.0	80.0	97.0
Error [dB]	0.0	0.0	0.0	0.0	0.0	0.0	-0.0	0.0

LEVEL METER function; Range: High; Characteristic: A; f_{sin}= 1000 Hz

Nominal result LEQ [dB]	34.0	35.0	36.0	38.0	40.0	60.0	80.0	100.0	120.0	137.0
Error [dB]	0.1	0.1	0.0	0.0	-0.0	-0.0	0.0	0.0	-0.0	-0.0

LEVEL METER function; Range: High; Characteristic: A; f_{sin}= 8000 Hz

Nominal result LEQ [dB]	34.0	35.0	36.0	38.0	40.0	60.0	80.0	100.0	120.0	136.0
Error [dB]	0.1	0.0	0.0	0.0	0.0	-0.0	0.0	-0.0	-0.0	-0.0

1/3 OCTAVE (1kHz); Range: Low; f_{sin}= 1000 Hz

Nominal result [dB]	25.0	30.0	40.0	60.0	80.0	100.0	120.0	123.0
Error [dB]	0.1	0.0	0.0	-0.0	-0.0	0.0	-0.0	-0.0

3. TONE BURST RESPONSE*

LEVEL METER function; Characteristic: A; f_{sin}= 4000 Hz; Burst duration: 2s

Range: Low; Steady level nominal result = 120dB

Result	Detector	Duration [ms]	1000	500	200	100	50	20	10	5	2	1	0.5	0.25
MAX	Fast	Indication [dB]	120.0	119.9	119.0	117.4	115.2	111.7	108.8	105.9	102.0	99.0	95.9	92.9
		Error [dB]	0.0	0.0	0.0	0.0	-0.0	-0.0	-0.1	0.0	-0.0	-0.0	-0.1	-0.1
	Slow	Indication [dB]	117.9	115.9	112.5	109.7	106.8	102.9	99.9	96.9	92.9	-	-	-
		Error [dB]	-0.1	-0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-	-	-
SEL	-	Indication [dB]	120.0	117.0	113.0	110.0	107.0	103.0	100.0	97.0	93.0	90.0	86.9	83.9
		Error [dB]	0.0	-0.0	0.0	0.0	-0.0	0.0	-0.0	-0.0	-0.0	-0.0	-0.1	-0.1

Range: **Low**; Steady level nominal result = 60dB

Result	Detector	Duration [ms]	1000	500	200	100	50	20	10	5	2	1	0.5
MAX	Fast	Indication [dB]	60.0	59.9	59.0	57.4	55.2	51.7	48.9	45.9	42.0	39.0	35.9
		Error [dB]	0.0	0.0	0.0	-0.0	-0.0	-0.0	-0.0	0.0	-0.0	-0.0	-0.1
	Slow	Indication [dB]	58.0	55.9	52.5	49.7	46.8	42.9	39.9	36.9	32.9	-	-
		Error [dB]	-0.0	-0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-	-
SEL	-	Indication [dB]	60.0	57.0	53.0	50.0	47.0	43.0	40.0	37.0	33.0	30.0	27.0
		Error [dB]	0.0	-0.0	0.0	0.0	-0.0	0.0	0.0	-0.0	0.0	-0.0	-0.0

Range: **Low**; Steady level nominal result = 35dB

Result	Detector	Duration [ms]	1000	500	200
MAX	Fast	Indication [dB]	35.0	34.9	34.0
		Error [dB]	-0.0	-0.0	-0.0
	Slow	Indication [dB]	32.9	30.9	27.6
		Error [dB]	-0.1	-0.0	-0.0
SEL	-	Indication [dB]	35.0	32.0	28.0
		Error [dB]	-0.0	-0.0	0.0

Range: **High**; Steady level nominal result = 134dB

Result	Detector	Duration [ms]	1000	500	200	100	50	20	10	5	2	1	0.5	0.25
MAX	Fast	Indication [dB]	134.0	133.9	133.0	131.4	129.2	125.7	122.8	119.9	116.0	113.0	109.9	106.9
		Error [dB]	0.0	0.0	0.0	0.0	-0.0	-0.0	-0.1	0.0	-0.0	-0.0	-0.1	-0.1
	Slow	Indication [dB]	131.9	129.9	126.5	123.7	120.8	116.9	113.9	110.9	106.9	-	-	-
		Error [dB]	-0.1	-0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-	-	-
SEL	-	Indication [dB]	134.0	131.0	127.0	124.0	121.0	117.0	114.0	111.0	107.0	104.0	100.9	97.9
		Error [dB]	0.0	-0.0	0.0	0.0	-0.0	0.0	0.0	-0.0	-0.0	-0.0	-0.1	-0.1

Range: **High**; Steady level nominal result = 54dB

Result	Detector	Duration [ms]	1000	500	200	100	50
MAX	Fast	Indication [dB]	54.0	53.9	53.0	51.4	49.2
		Error [dB]	0.0	0.0	0.0	0.0	-0.0
	Slow	Indication [dB]	52.0	49.9	46.5	43.7	40.8
		Error [dB]	-0.0	-0.0	-0.1	-0.1	-0.1
SEL	-	Indication [dB]	54.0	51.0	47.0	44.0	41.0
		Error [dB]	0.0	-0.0	0.0	0.0	-0.0

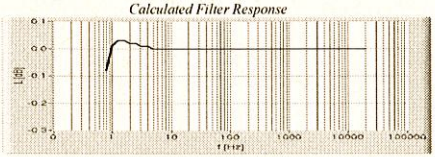
Range: **High**; Steady level nominal result = 45dB

Result	Detector	Duration [ms]	1000	500	200
MAX	Fast	Indication [dB]	45.0	44.9	44.0
		Error [dB]	0.0	0.0	0.0
	Slow	Indication [dB]	43.0	40.9	37.6
		Error [dB]	-0.0	-0.0	0.0
SEL	-	Indication [dB]	45.0	42.0	38.1
		Error [dB]	0.0	0.0	0.1

4. FREQUENCY RESPONSE* (electrical)

LEVEL METER function; Characteristic: Z; Range: Low; Input signal =120 dB;

Calculated Filter Response



Measured Filter Response with Preamplifier SV18 (f-frequency, L-level)

f [Hz]	L [dB]	f [Hz]	L [dB]	f [Hz]	L [dB]
10	-0.1	63	0.0	4000	0.0
12.5	0.0	125	0.0	8000	0.0
16	0.0	250	0.0	16000	0.0
20	0.0	500	0.0	20000	0.0
25	0.0	1000	0.0		
31.5	0.0	2000	0.0		

All frequencies are nominal center values for the 1/3 octave bands

5. INTERNAL NOISE LEVEL* (electrical - compensated)

LEVEL METER function; Range: Low; (Back-light – off) ; Calibration factor: 0dB

Characteristic	Z	A	C
Level [dB]	≤20	≤12	≤12

* measured with preamplifier SVANTEK type SV18 No. 97276.

6. INTERNAL NOISE LEVEL (acoustical - compensated)

LEVEL METER function; Characteristic: A; (Backlight – off)

Range	Low	High
Indication [dB]	≤15	19.6

Noise measured in special chamber, with reference microphone G.R.A.S type 40AN No. 73421

ENVIRONMENTAL CONDITIONS

Temperature	Relative humidity	Ambient pressure
27 °C	55%	999 hPa

TEST EQUIPMENT

Item	Manufacturer	Model	Serial no.	Description
1.	SVANTEK	SVAN 401	100	Signal generator
2.	SVANTEK	SVAN 912A	4369	Sound &Vibration Analyser
3.	RIGOL	DM3068	DM30155100773	Digital multimeter
4.	SVANTEK	SV33B	93171	Acoustic calibrator
5.	SVANTEK	ST02	-	Microphone equivalent electrical impedance (18pF)

CONFORMITY & TEST DECLARATION

1. Herewith Svantek company declares that this instrument has been calibrated and tested in compliance with the internal ISO9001 procedures and meets all specification given in the Manual(s) or respectively surpass them.

2. The acoustic calibration was performed using the Sound Calibrator and is traceable to the GUM (Central Office of Measures) reference standard - sound level calibrator type 4231 No 2292773.

3. The information appearing on this sheet has been compiled specifically for this instrument. This form is produced with advanced equipment & procedures which permit comprehensive quality assurance verification of all data supplied herein.

4. This calibration sheet shall not be reproduced except in full, without written permission of the SVANTEK Ltd.

Calibration specialist: Krzysztof Kubeł ..... Test date: 2020-07-02

SVANTEK

1/2" Prepolarized Condenser Microphone

Calibration Chart

Type: ***7052E*** Serial No: ***78090***

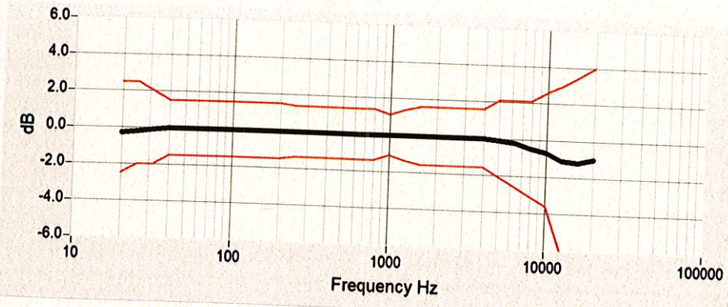
Measured sensitivity: **32.74 mV/Pa**

-29.70 dB re. 1V/Pa

Manufacturer: ***ACO PACIFIC***

Date: **2020-06-04** Signature: .....

Measured Free-Field Frequency Response



Environmental Calibration Conditions: **22 °C 40 % 990 hPa**

Certificate of Calibration

for

Description:	***Sound Level Meter***
Manufacturer:	***NTi Audio***
Type No.:	***XL2 (Serial No.: A2A-13663-E0)***
Microphone:	***ACO 7052 (Serial No.: 73912)***
Preamplifier:	***NTi Audio MA220 (Serial No.: 5735)***

Submitted by:

Customer:	*Acuity Sustainability Consulting Limited*
Address:	*Unit C, 11/F, Ford Glory Plaza, No. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong*

Upon receipt for calibration, the instrument was found to be:

☑ **Within**
☐ **Outside**

the allowable tolerance.

The test equipment used for calibration are traceable to National Standards via:
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory

Date of receipt: ***08 September 2020***

Date of calibration: ***09 September 2020***

Calibrated by: _____
Calibration Technician

Certified by: _____
Mr. Ng Yan Wa
Laboratory Manager

Date of issue: 09 September 2020

ACOUSTICS AND AIR TESTING LABORATORY CO. LTD. (A+A)*L

Room 422,Leader Industrial Centre,57-59 Au Pui Wan Street ,Fo Tan, Shatin,N.T.,Hong Kong
Tel: (852) 2668 3423 Fax:(852) 2668 6946

1. Calibration Precaution:

- The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
- The results presented are the mean of 3 measurements at each calibration point.

2. Calibration Conditions:

Air Temperature:	23.8 °C
Air Pressure:	1008 hPa
Relative Humidity:	62.5 %

3. Calibration Equipment:

	Type	Serial No.	Calibration Report Number	Traceable to
Multifunction Calibrator	B&K 4226	2288467	AV200041	HOKLAS

4. Calibration Results

Sound Pressure Level

Reference Sound Pressure Level

Setting of Unit-under-test (UUT)			Applied value		UUT Reading,	IEC 61672 Class 1
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB
30-130	dBA SPL	Fast	94	1000	94.0	±0.4

Linearity

Setting of Unit-under-test (UUT)			Applied value		UUT Reading,	IEC 61672 Class 1
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB
30-130	dBA SPL	Fast	94	1000	94.0	Ref
			104		104.0	±0.3
			114		114.0	±0.3

Time Weighting

Setting of Unit-under-test (UUT)			Applied value		UUT Reading,	IEC 61672 Class 1
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB
30-130	dBA SPL	Fast	94	1000	94.0	Ref
		Slow			94.0	±0.3

Room 422,Leader Industrial Centre,57-59 Au Pui Wan Street ,Fo Tan, Shatin,N.T.,Hong Kong
Tel: (852) 2668 3423 Fax:(852) 2668 6946
Homepage: http://www.aa-lab.com E-mail : inquiry@aa-lab.com

Frequency Response

Linear Response

Setting of Unit-under-test (UUT)			Applied value		UUT Reading,	IEC 61672 Class 1
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB
30-130	dB SPL	Fast	94	31.5	94.3	±2.0
				63	94.3	±1.5
				125	94.3	±1.5
				250	94.2	±1.4
				500	94.1	±1.4
				1000	94.0	Ref
				2000	93.8	±1.6
				4000	93.6	±1.6
				8000	93.4	+2.1; -3.1

A-weighting

Setting of Unit-under-test (UUT)			Applied value		UUT Reading,	IEC 61672 Class 1
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB
30-130	dBA SPL	Fast	94	31.5	54.8	-39.4 ±2.0
				63	68.0	-26.2 ±1.5
				125	78.1	-16.1 ±1.5
				250	85.5	-8.6 ±1.4
				500	90.8	-3.2 ±1.4
				1000	94.0	Ref
				2000	95.0	+1.2 ±1.6
				4000	94.6	+1.0 ±1.6
				8000	92.3	-1.1 +2.1; -3.1

C-weighting

Setting of Unit-under-test (UUT)			Applied value		UUT Reading,	IEC 61672 Class 1
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB
30-130	dBC SPL	Fast	94	31.5	91.2	-3.0 ±2.0
				63	93.4	-0.8 ±1.5
				125	94.1	-0.2 ±1.5
				250	94.1	-0.0 ±1.4
				500	94.1	-0.0 ±1.4
				1000	94.0	Ref
				2000	93.6	-0.2 ±1.6
				4000	92.8	-0.8 ±1.6
				8000	90.4	-3.0 +2.1; -3.1

Room 422,Leader Industrial Centre,57-59 Au Pui Wan Street ,Fo Tan, Shatin,N.T.,Hong Kong
Tel: (852) 2668 3423 Fax:(852) 2668 6946
Homepage: http://www.aa-lab.com E-mail: inquiry@aa-lab.com

5. *Calibration Results Applied*

The results apply to the particular unit-under-test only. All calibration points are within manufacture's specification as IEC 61672 Class 1.

Uncertainties of Applied Value:

94 dB	31.5 Hz	± 0.05
	63 Hz	± 0.05
	125 Hz	± 0.05
	250 Hz	± 0.05
	500 Hz	± 0.05
	1000 Hz	± 0.05
	2000 Hz	± 0.05
	4000 Hz	± 0.05
	8000 Hz	± 0.10
104 dB	1000 Hz	± 0.05
114 dB	1000 Hz	± 0.05

The uncertainties are evaluated for a 95% confidence level.

Note:
The values given in this certification only related to the values measured at the time of the calibration and any uncertainties quoted will not allow for the equipment long-term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the calibration. (A+A)*L shall not be liable for any loss or damage resulting from the use of the equipment.

Room 422,Leader Industrial Centre,57-59 Au Pui Wan Street ,Fo Tan, Shatin,N.T.,Hong Kong
Tel: (852) 2668 3423 Fax:(852) 2668 6946

綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.
香港新界葵涌永基路22-24號椰林閣集團大廈全幢
The Whole Block of YLK Group Building, Nos. 22-24 Wing Kei Road, Kwai Chung, New Territories, Hong Kong.
Tel: (852) 2873 6860 Fax: (852) 2555 7533 E-mail: smec@cigismec.com Website: www.cigismec.com

HOKLAS 028 CAL

CERTIFICATE OF CALIBRATION

Certificate No.: 20CA0803 01 **Page:** 1 **of** 2

Item tested

Description: Acoustical Calibrator (Class 1)
Manufacturer: Pulsar Instruments Ltd.
Type/Model No.: 105
Serial/Equipment No.: 63705
Adaptors used: -

Item submitted by

Curstomer: Acuity Sustainability Consulting Limited.
Address of Customer: -
Request No.: -
Date of receipt: 03-Aug-2020

Date of test: 06-Aug-2020

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2341427	11-May-2021	SCL
Preamplifier	B&K 2673	2743150	03-Jun-2021	CEPREI
Measuring amplifier	B&K 2610	2346941	03-Jun-2021	CEPREI
Signal generator	DS 360	33873	19-May-2021	CEPREI
Digital multi-meter	34401A	US36087050	19-May-2021	CEPREI
Audio analyzer	8903B	GB41300350	18-May-2021	CEPREI
Universal counter	53132A	MY40003662	18-May-2021	CEPREI

Ambient conditions

Temperature: 22 ± 1 °C
Relative humidity: 55 ± 10 %
Air pressure: 1005 ± 5 hPa

Test specifications

1, The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B and the lab calibration procedure SMTP004-CA-156.
2, The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.
3, The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes.

Test results

This is to certify that the sound calibrator conforms to the requirements of annex B of IEC 60942: 1997 for the conditions under which the test was performed. This does not imply that the sound calibrator meets IEC 60942 under any other conditions.

Details of the performed measurements are presented on **page 2** of this certificate.

Approved Signatory: Feng Junqi **Date:** 07-Aug-2020 **Company Chop:** SOILS & MATERIALS ENGINEERING COMPANY LTD. 綜合試驗有限公司

Comments: The results reported in this certificate refer to the conditon of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.
香港新界葵涌永基路22-24號椰林閣集團大廈全幢
The Whole Block of YLK Group Building, Nos. 22-24 Wing Kei Road, Kwai Chung, New Territories, Hong Kong.
Tel: (852) 2873 6860 Fax: (852) 2555 7533 E-mail: smec@cigismec.com Website: www.cigismec.com

HOKLAS 028
CAL

CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 20CA0803 01 **Page:** 2 **of** 2

1, Measured Sound Pressure Level

The output Sound Pressure Level in the calibrator head was measured at the setting and frequency shown using a calibrated laboratory standard microphone and insert voltage technique. The results are given in below with the estimated uncertainties.

(Output level in dB re 20 μPa)

Frequency Shown Hz	Output Sound Pressure Level Setting dB	Measured Output Sound Pressure Level dB	Estimated Expanded Uncertainty dB
1000	94.00	93.78	0.10

2, Sound Pressure Level Stability - Short Term Fluctuations

The Short Term Fluctuations was determined by measuring the maximum and minimum of the fast weighted DC output of the B&K 2610 measuring amplifier over a 20 second time interval as required in the standard. The Short Term Fluctuation was found to be:

At 1000 Hz **STF = 0.027 dB**

Estimated expanded uncertainty 0.005 dB

3, Actual Output Frequency

The determination of actual output frequency was made using a B&K 4180 microphone together with a B&K 2673 preamplifier connected to a B&K 2610 measuring amplifier. The AC output of the B&K 2610 was taken to an universal counter which was used to determine the frequency averaged over 20 second of operation as required by the standard. The actual output frequency at 1 KHz was:

At 1000 Hz **Actual Frequency = 1000.3 Hz**

Estimated expanded uncertainty 0.1 Hz Coverage factor k = 2.2

4, Total Noise and Distortion

For the Total Noise and Distortion measurement, the unfiltered AC output of the B&K 2610 measuring amplifier was connected to an Agilent Type 8903 B distortion analyser. The TND result at 1 KHz was:

At 1000 Hz **TND = 0.6 %**

Estimated expanded uncertainty 0.7 %

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

- End -

Calibrated by: Fung Chi Yip **Date:** 06-Aug-2020

Checked by: Feng Junqi **Date:** 07-Aug-2020

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

Appendix I Event / Action Plan for Noise Exceedance

Event	Actions to be taken by Environmental Team as immediate as practicable	Actions to be taken by Independent Environmental Checker as immediate as practicable	Actions to be taken by Supervising Officer's Representative as immediate as practicable	Actions to be taken by Contractor as immediate as practicable
Action Level being exceeded	1. Notify IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, SO and Contractor; 4. Discuss with the IEC and Contractor on remedial measures 5. required; Increase monitoring frequency to check mitigation effectiveness. (The above actions should be taken within 2 working .days after the exceedance is identified)	1. Review the investigation results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the SO accordingly; 3. Advise the SO on the effectiveness of the proposed remedial measures. (The above actions should be taken within 2 working days after the exceedance is identified).	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be 4. implemented; Supervise the implementation of remedial measures. (The above actions should be taken within 2 working days after the exceedance is identified).	1. Submit noise mitigation proposals to IEC and SO; 2. Implement noise mitigation proposals. (The above actions should be taken within 2 working days after the exceedance is identified)
Limit Level being exceeded	1. Inform IEC, SO, Contractor and 2. EPD; Repeat measurements to confirm 3. findings; 4. Increase monitoring frequency; Identify source and investigate the 5. cause of exceedance; Carry out analysis of Contractor's 6. working procedures; Discuss with the IEC, Contractor 7. and SO on remedial measures required; Assess effectiveness of 8. Contractor's remedial actions and keep IEC, EPD and SO informed of the results; If exceedance stops, cease additional monitoring. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Discuss amongst SO, ET, and Contractor on the potential remedial actions; 2. Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the SO accordingly; (The above actions should be taken within 2 working days after the exceedance is identified)	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be 4. implemented; Supervise the implementation of 5. remedial measures; If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC and SO within 3 working days 3. of notification; Implement the agreed 4. proposals; Submit further proposal if 5. problem still not under control; Stop the relevant portion of works as instructed by the SO until the exceedance is abated. (The above actions should be taken within 2 working days after the exceedance is identified)

Appendix J Noise Monitoring Data

Location:	Shek Kwu Chau Treatment & Rehabilitation Centre Hostel 1 (M1 / N_S1)
Monitoring date:	9, 12, 19, 26 April 2021 (Daytime)
	9&10, 12&13, 19&20, 26&27 April 2021 (Evening & Night time)
Parameter :	$L_{eq\ 30min}$ (Daytime), $L_{eq\ 5min}$ (Evening & Night time)
Noise source other than construction activities from the Project:	Nil

Noise Monitoring Data:

Date	Start time		End time	Weather	$L_{eq\ 30min}$ dB(A) / $L_{eq\ 5min}$ dB(A)	Sound Level Meter Used	Calibrator Used
9 Apr 2021	16:00	-	16:30	Cloudy	60.0	XL2 (Serial No. A2A-13663-E0)	Pulsar 105 (No. 63705)
9 Apr 2021	19:00	-	19:05	Fine	56.4	XL2 (Serial No. A2A-13663-E0)	Pulsar 105 (No. 63705)
	20:00	-	20:05		57.7		
	21:00	-	21:05		56.2		
10 Apr 2021	01:00	-	01:05	Fine	54.4	XL2 (Serial No. A2A-13663-E0)	Pulsar 105 (No. 63705)
	03:00	-	03:05		52.8		
	05:00	-	05:05		54.5		
12 Apr 2021	16:04	-	16:34	Cloudy	63.2	XL2 (Serial No. A2A-13663-E0)	Pulsar 105 (No. 63705)
12 Apr 2021	19:04	-	19:09	Fine	61.2	XL2 (Serial No. A2A-13663-E0)	Pulsar 105 (No. 63705)
	20:04	-	20:09		59.6		
	21:04	-	21:09		58.1		
13 Apr 2021	01:04	-	01:09	Fine	53.1	XL2 (Serial No. A2A-13663-E0)	Pulsar 105 (No. 63705)
	03:04	-	03:09		55.8		
	05:04	-	05:09		50.2		
19 Apr 2021	16:01	-	16:31	Cloudy	63.5	XL2 (Serial No. A2A-13663-E0)	Pulsar 105 (No. 63705)
19 Apr 2021	19:01	-	19:06	Fine	60.2	XL2 (Serial No. A2A-13663-E0)	Pulsar 105 (No. 63705)
	20:01	-	20:06		62.7		
	21:01	-	21:06		61.8		
20 Apr 2021	01:01	-	01:06	Fine	60.1	XL2 (Serial No. A2A-13663-E0)	Pulsar 105 (No. 63705)
	03:01	-	03:06		58.7		
	05:01	-	05:06		55.1		
26 Apr 2021	16:03	-	16:34	Cloudy	60.3	XL2 (Serial No. A2A-13663-E0)	Pulsar 105 (No. 63705)
26 Apr 2021	19:03	-	19:08	Fine	56.3	XL2 (Serial No. A2A-13663-E0)	Pulsar 105 (No. 63705)
	20:03	-	20:08		57.9		
	21:03	-	21:08		55.1		

Date	Start time		End time	Weather	$L_{eq\ 30min}$ dB(A) / $L_{eq\ 5min}$ dB(A)	Sound Level Meter Used	Calibrator Used
27 Apr 2021	01:01	-	01:06	Fine	53.2	XL2 (Serial No. A2A-13663-E0)	Pulsar 105 (No. 63705)
	03:01	-	03:06		50.2		
	05:01	-	05:06		58.4		

Location:	Shek Kwu Chau Treatment & Rehabilitation Centre Hostel 2 (M2 / N_S2)
Monitoring date:	9, 12, 19, 26 April 2021 (Daytime)
	9&10, 12&13, 19&20, 26&27 April 2021 (Evening & Night time)
Parameter :	$L_{eq\ 30min}$ (Daytime), $L_{eq\ 5min}$ (Evening & Night time)
Noise source other than construction activities from the Project:	Nil

Noise Monitoring Data:

Date	Start time		End time	Weather	$L_{eq\ 30min}$ dB(A) / $L_{eq\ 5min}$ dB(A)	Sound Level Meter Used	Calibrator Used
9 Apr 2021	16:00	-	16:30	Cloudy	57.8	SVAN 971 (Serial No. 96062)	Pulsar 105 (No. 63705)
9 Apr 2021	19:00	-	19:05	Fine	55.0	SVAN 971 (Serial No. 96062)	Pulsar 105 (No. 63705)
	20:00	-	20:05		51.1		
	21:00	-	21:05		53.2		
10 Apr 2021	01:00	-	01:05	Fine	51.7	SVAN 971 (Serial No. 96062)	Pulsar 105 (No. 63705)
	03:00	-	03:05		52.9		
	05:00	-	05:05		53.9		
12 Apr 2021	16:04	-	16:34	Cloudy	60.2	SVAN 971 (Serial No. 96062)	Pulsar 105 (No. 63705)
12 Apr 2021	19:04	-	19:09	Fine	57.2	SVAN 971 (Serial No. 96062)	Pulsar 105 (No. 63705)
	20:04	-	20:09		56.3		
	21:04	-	21:09		57.1		
13 Apr 2021	01:04	-	01:09	Fine	48.6	SVAN 971 (Serial No. 96062)	Pulsar 105 (No. 63705)
	03:04	-	03:09		50.8		
	05:04	-	05:09		49.6		
19 Apr 2021	16:01	-	16:31	Cloudy	62.3	SVAN 971 (Serial No. 96062)	Pulsar 105 (No. 63705)
19 Apr 2021	19:01	-	19:06	Fine	61.1	SVAN 971 (Serial No. 96062)	Pulsar 105 (No. 63705)
	20:01	-	20:06		63.4		
	21:01	-	21:06		64.3		
20 Apr 2021	01:01	-	01:06	Fine	58.1	SVAN 971 (Serial No. 96062)	Pulsar 105 (No. 63705)
	03:01	-	03:06		59.3		
	05:01	-	05:06		60.5		
26 Apr 2021	16:03	-	16:34	Cloudy	62.2	SVAN 971 (Serial No. 96062)	Pulsar 105 (No. 63705)
26 Apr 2021	19:03	-	19:08	Fine	60.5	SVAN 971 (Serial No. 96062)	Pulsar 105 (No. 63705)
	20:03	-	20:08		61.8		
	21:03	-	21:08		55.2		

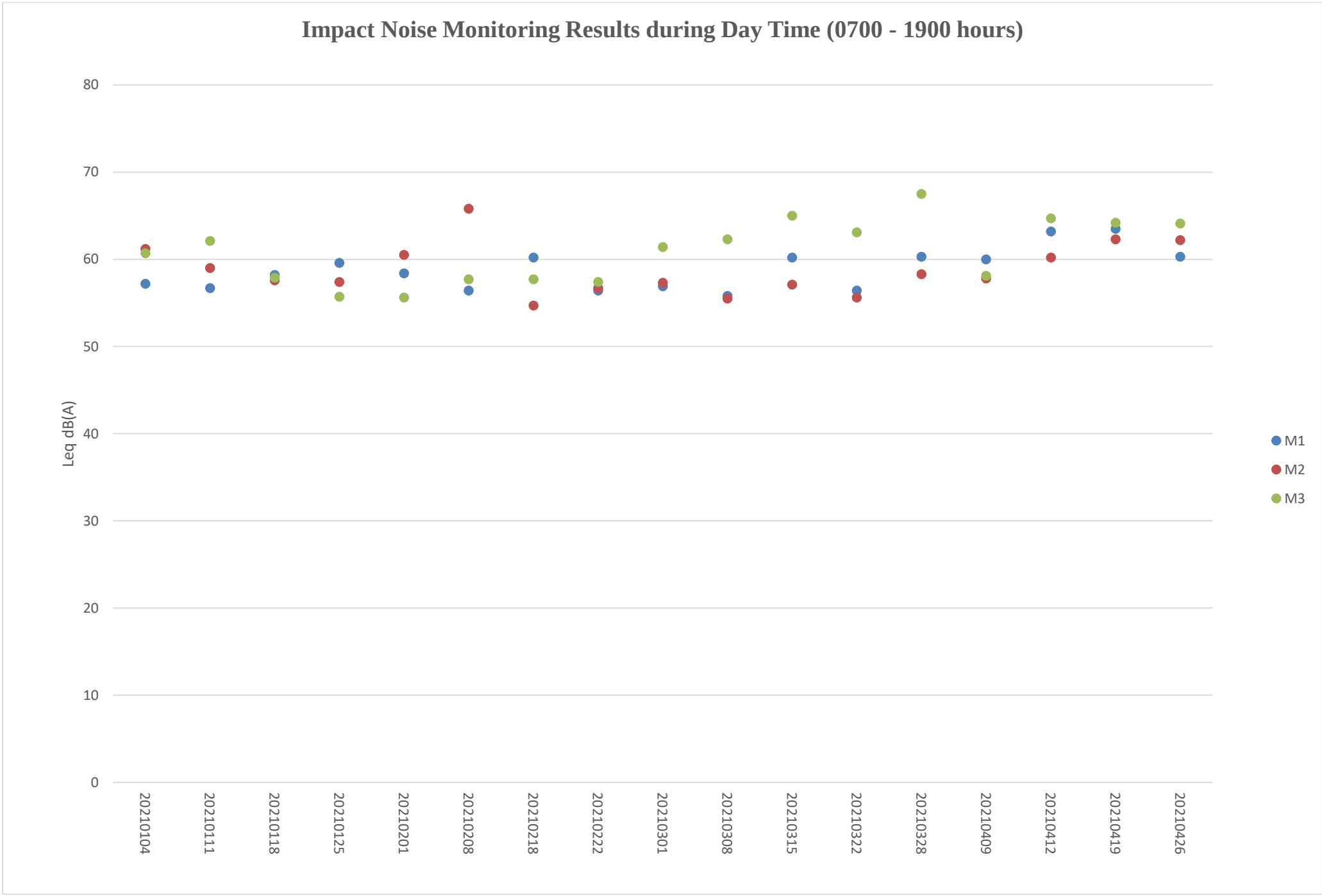
Date	Start time		End time	Weather	$L_{eq\ 30min}$ dB(A) / $L_{eq\ 5min}$ dB(A)	Sound Level Meter Used	Calibrator Used
27 Apr 2021	01:01	-	01:06	Fine	57.8	SVAN 971 (Serial No. 96062)	Pulsar 105 (No. 63705)
	03:01	-	03:06		55.6		
	05:01	-	05:06		55.2		

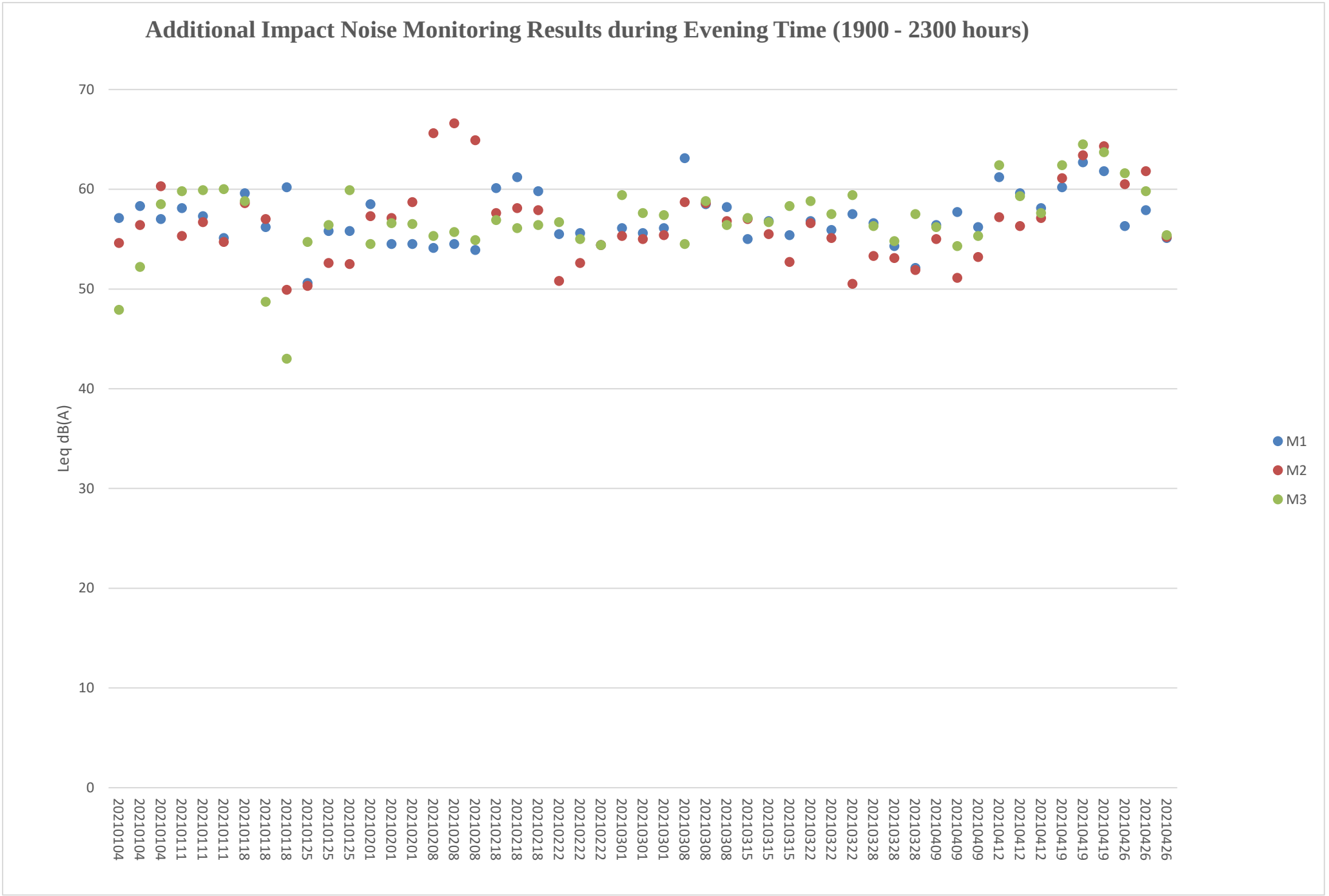
Location:	Shek Kwu Chau Treatment & Rehabilitation Centre Hostel 3 (M3 / N_S3)
Monitoring date:	9, 12, 19, 26 April 2021 (Daytime)
	9&10, 12&13, 19&20, 26&27 April 2021 (Evening & Night time)
Parameter :	$L_{eq\ 30min}$ (Daytime), $L_{eq\ 5min}$ (Evening & Night time)
Noise source other than construction activities from the Project:	Nil

Noise Monitoring data:

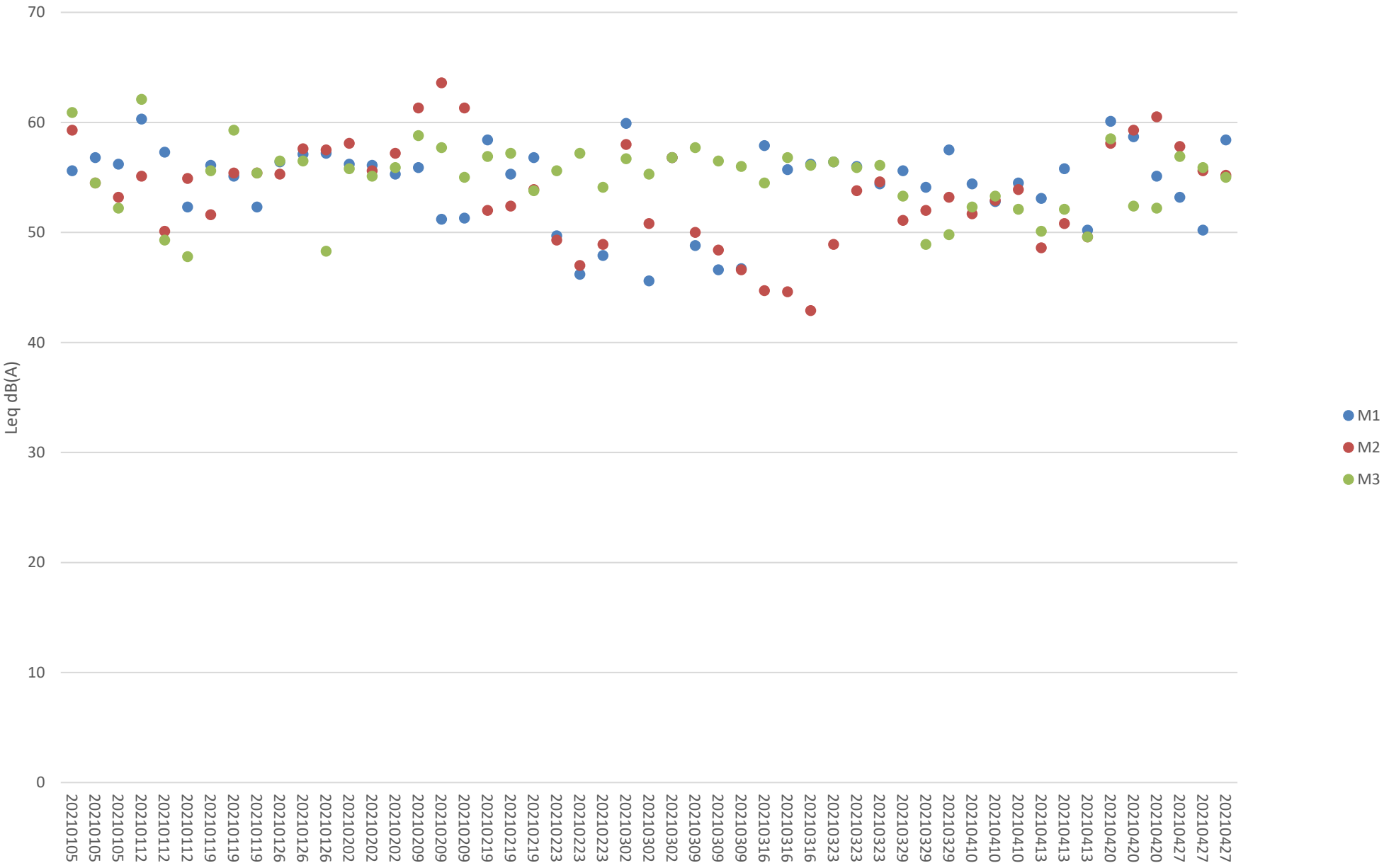
Date	Start time		End time	Weather	$L_{eq\ 30min}$ dB(A) / $L_{eq\ 5min}$ dB(A)	Sound Level Meter Used	Calibrator Used
9 Apr 2021	16:00	-	16:30	Sunny	58.1	SVAN 971 (Serial No. 96063)	Pulsar 105 (No. 63705)
9 Apr 2021	19:00	-	19:05	Fine	56.2	SVAN 971 (Serial No. 96063)	Pulsar 105 (No. 63705)
	20:00	-	20:05		54.3		
	21:00	-	21:05		55.3		
10 Apr 2021	01:00	-	01:05	Fine	52.3	SVAN 971 (Serial No. 96063)	Pulsar 105 (No. 63705)
	03:00	-	03:05		53.3		
	05:00	-	05:05		52.1		
12 Apr 2021	16:04	-	16:34	Fine	64.7	SVAN 971 (Serial No. 96063)	Pulsar 105 (No. 63705)
12 Apr 2021	19:04	-	19:09	Fine	62.4	SVAN 971 (Serial No. 96063)	Pulsar 105 (No. 63705)
	20:04	-	20:09		59.3		
	21:04	-	21:09		57.6		
13 Apr 2021	01:04	-	01:09	Fine	50.1	SVAN 971 (Serial No. 96063)	Pulsar 105 (No. 63705)
	03:04	-	03:09		52.1		
	05:04	-	05:09		49.6		
19 Apr 2021	16:01	-	16:31	Sunny	64.2	SVAN 971 (Serial No. 96063)	Pulsar 105 (No. 63705)
19 Apr 2021	19:01	-	19:06	Fine	62.4	SVAN 971 (Serial No. 96063)	Pulsar 105 (No. 63705)
	20:01	-	20:06		64.5		
	21:01	-	21:06		63.7		
20 Apr 2021	01:01	-	01:06	Fine	58.5	SVAN 971 (Serial No. 96063)	Pulsar 105 (No. 63705)
	03:01	-	03:06		52.4		
	05:01	-	05:06		52.2		
26 Apr 2021	16:03	-	16:34	Sunny	64.1	SVAN 971 (Serial No. 96063)	Pulsar 105 (No. 63705)
26 Apr 2021	19:03	-	19:08	Fine	61.6	SVAN 971 (Serial No. 96063)	Pulsar 105 (No. 63705)
	20:03	-	20:08		59.8		
	21:03	-	21:08		55.4		

Date	Start time		End time	Weather	$L_{eq\ 30min}$ dB(A) / $L_{eq\ 5min}$ dB(A)	Sound Level Meter Used	Calibrator Used
27 Apr 2021	01:01	-	01:06	Fine	56.9	SVAN 971 (Serial No. 96063)	Pulsar 105 (No. 63705)
	03:01	-	03:06		55.9		
	05:01	-	05:06		55.0		


Impact Noise Monitoring Results during Day Time (0700 - 1900 hours)
Leq dB(A)
80
70
60
50
40
30
20
10
0
20210104
20210111
20210118
20210125
20210201
20210208
20210218
20210222
20210301
20210308
20210315
20210322
20210328
20210409
20210412
20210419
20210426
M1
M2
M3


Additional Impact Noise Monitoring Results during Evening Time (1900 - 2300 hours)
Leq dB(A)
70
60
50
40
30
20
10
0
20210104
20210104
20210104
20210111
20210111
20210111
20210118
20210118
20210118
20210125
20210125
20210125
20210201
20210201
20210201
20210208
20210208
20210208
20210218
20210218
20210218
20210222
20210222
20210222
20210301
20210301
20210301
20210308
20210308
20210308
20210315
20210315
20210315
20210322
20210322
20210322
20210328
20210328
20210328
20210409
20210409
20210409
20210412
20210412
20210412
20210419
20210419
20210419
20210426
20210426
20210426
M1
M2
M3

Additional Impact Noise Monitoring Results during Night Time (2300 - 0700 hours)



Appendix K Waste Flow Table

吉寶西格斯 - 振華聯營公司

Keppel Seghers - Zhen Hua Joint Venture

Monthly Summary Waste Flow Table for 2018 (year)

Project : Integrated Waste Management Facilities, Phase 1 Contract No.: EP/SP/66/12

Month	Actual Quantities of Inert C&D Materials Generated Monthly								Actual Quantities of C&D Wastes Generated Monthly					
	Total Quantity Generated	Hard Rock and Large Broken Concrete (see Note 1)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill Sand	Imported Fill Public fill	Imported Fill Rock	Metals	Paper/ cardboard packaging	Plastics (see Note 2)	Chemical Waste		Others, e.g. general refuse (see Note 3)
	(in ,000m^3)	(in ,000m^3)	(in ,000m^3)	(in ,000m^3	(in ,000m^3)	(in ,000m^3)			(in ,000 kg)	(in ,000kg)	(in ,000kg)	(in ,000kg)	(in ,000L)	(in ,000 m^3)
Jan	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0065
Sep	0	0	0	0	0	2.9619	0	0	0	0	0	0	0	0
Oct	0	0	0	0	0	3.0771	0	0	0	0	0	0	0	0.0130
Nov	0	0	0	0	0	6.7871	0	0	0	0	0	0	0	0
Dec	0	0	0	0	0	59.0709	0	0	0	0	0	0.2000	0.8700	0
Total	0	0	0	0	0	71.8970	0	0	0	0	0	0.2000	0.8700	0.0195

Notes:
(1) Broken concrete for recycling into aggregates.
(2) Plastics refer to plastic bottles/ containers, plastic sheets/ foam from packaging materials.
(3) Use the conversion factor : 1 full load of dumping truck being equivalent to 6.5m^3 by volume.

吉寶西格斯 - 振華聯營公司
Keppel Seghers - Zhen Hua Joint Venture

Monthly Summary Waste Flow Table for 2019 (year)

Project : Integrated Waste Management Facilities, Phase 1 Contract No.: EP/SP/66/12

Month	Actual Quantities of Inert C&D Materials Generated Monthly								Actual Quantities of C&D Wastes Generated Monthly					
	Total Quantity Generated	Hard Rock and Large Broken Concrete (see Note 1)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill Sand	Imported Fill Public fill	Imported Fill Rock	Metals	Paper/ cardboard packaging	Plastics (see Note 2)	Chemical Waste		Others, e.g. general refuse (see Note 3)
	(in ,000m^3)	(in ,000m^3)	(in ,000m^3)	(in ,000m^3	(in ,000m^3)	(in ,000m^3)			(in ,000 kg)	(in ,000kg)	(in ,000kg)	(in ,000kg)	(in ,000L)	(in ,000 m^3)
Jan	0	0	0	0	0	82.6139	0	0	0	0	0	0	0	0.0065
Feb	0	0	0	0	0	46.7821	0	0	0	0	0	0	0	0
Mar	0	0	0	0	0	97.1000	0	0.7552	0	0.2560	0	0	0	0
Apr	0	0	0	0	0	58.0413	0	0	0	0	0	0	0	0
May	0	0	0	0	0	14.5625	0	1.4648	0	0	0	0	0	0.0065
Jun	0	0	0	0	0	0	0	6.8421	0	0	0	0	0	0
Sub-total	0	0	0	0	0	299.0998	0	9.0621	0	0.2560	0	0	0	0.0130
Jul	0	0	0	0	0	0	0	0.4289	0	0	0	0	8.4000	0.0130
Aug	0	0	0	0	0	2.5775	0	10.5600	0	0	0	0	0	0
Sep	0	0	0	0	0	6.1081	0	8.4704	0	0.3530	0	0	0	0.0065
Oct	0	0	0	0	0	9.8875	0	7.1900	0	0	0	0	0	0
Nov	0	0	0	0	0	38.3088	0	19.3105	0	0	0	0	0	0.0195
Dec	0	0	0	0	0	54.3469	0	26.9807	0	0	0	0	0	0.0910
Total	0	0	0	0	0	410.3286	0	82.0026	0	0.6090	0	0	8.4000	0.1430

Notes:
(1) Broken concrete for recycling into aggregates.
(2) Plastics refer to plastic bottles/ containers, plastic sheets/ foam from packaging materials.
(3) Use the conversion factor : 1 full load of dumping truck being equivalent to 6.5m^3 by volume.

吉寶西格斯 - 振華聯營公司
Keppel Seghers - Zhen Hua Joint Venture

Monthly Summary Waste Flow Table for 2020 (year)

Project : Integrated Waste Management Facilities, Phase 1 Contract No.: EP/SP/66/12

Month	Actual Quantities of Inert C&D Materials Generated Monthly								Actual Quantities of C&D Wastes Generated Monthly					
	Total Quantity Generated	Hard Rock and Large Broken Concrete (see Note 1)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill Sand	Imported Fill Public fill	Imported Fill Rock	Metals	Paper/ cardboard packaging	Plastics (see Note 2)	Chemical Waste		Others, e.g. general refuse (see Note 3)
	(in ,000m^3)	(in ,000m^3)	(in ,000m^3)	(in ,000m^3	(in ,000m^3)	(in ,000m^3)			(in ,000 kg)	(in ,000kg)	(in ,000kg)	(in ,000kg)	(in ,000L)	(in ,000 m^3)
Jan	0	0	0	0	0	37.1550	0	25.0812	0	0	0	0	0	0.0065
Feb	0	0	0	0	0	27.7910	0	18.8300	0	0	0	0	0	0.0065
Mar	0	0	0	0	0	22.5669	0	26.1586	0	0	0	0	7.2000	0.0065
Apr	0	0	0	0	0	12.7800	0	10.1825	0	0	0	0	0	0.0195
May	0	0	0	0	0	16.1138	0	24.3740	0	0.4220	0	0	0	0.0195
Jun	0	0	0	0	0	31.5177	0	28.3030	0	0	0	0	0	0.0065
Sub-total	0	0	0	0	0	147.9244	0	132.9293	0	0.4220	0	0	7.2000	0.0650
Jul	0	0	0	0	0	34.7856	17.0606	35.1800	0	0	0	0	0	0.0195
Aug	0	0	0	0	0	27.1375	65.5667	27.9335	0	0	0	0	0	0
Sep	0	0	0	0	0	11.9813	110.1328	43.5435	0	0	0	0	0	0.0195
Oct	0	0	0	0	0	2.8213	131.6600	22.5415	0	0	0	0	0	0.0130
Nov	0	0	0	0	0	0	162.1811	44.6475	0	0.4090	0	0	0.4000	0.0130
Dec	0	0	0	0	0	0	174.9800	57.8380	0	0	0	0	0	0.0130
Total	0	0	0	0	0	224.6501	661.5812	364.6133	0	0.8310	0	0	7.6000	0.1430

Notes:
(1) Broken concrete for recycling into aggregates.
(2) Plastics refer to plastic bottles/ containers, plastic sheets/ foam from packaging materials.
(3) Use the conversion factor : 1 full load of dumping truck being equivalent to 6.5m^3 by volume.

吉寶西格斯 - 振華聯營公司
Keppel Seghers - Zhen Hua Joint Venture

Monthly Summary Waste Flow Table for 2021 (year)

Project : Integrated Waste Management Facilities, Phase 1 Contract No.: EP/SP/66/12

Month	Actual Quantities of Inert C&D Materials Generated Monthly								Actual Quantities of C&D Wastes Generated Monthly					
	Total Quantity Generated	Hard Rock and Large Broken Concrete (see Note 1)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill Sand	Imported Fill Public fill	Imported Fill Rock	Metals	Paper/ cardboard packaging	Plastics (see Note 2)	Chemical Waste		Others, e.g. general refuse (see Note 3)
	(in ,000m^3)	(in ,000m^3)	(in ,000m^3)	(in ,000m^3	(in ,000m^3)	(in ,000m^3)			(in ,000 kg)	(in ,000kg)	(in ,000kg)	(in ,000kg)	(in ,000L)	(in ,000 m^3)
Jan	0	0	0	0	0	0	198.1311	36.4775	0	0	0	0	0	0.0065
Feb	0	0	0	0	0	0	143.9511	20.9960	0	0	0	0	0	0.6305
Mar	0	0	0	0	0	0	103.1833	23.4510	0	0	0	0	0	0.0130
Apr	0	0	0	0	0	0	161.2956	27.2810	0	0	0	0	0	0.0130
May														
Jun														
Sub-total	0	0	0	0	0	0	606.5611	108.2055	0	0	0	0	0	0.6630
Jul														
Aug														
Sep														
Oct														
Nov														
Dec														
Total	0	0	0	0	0	0	606.5611	108.2055	0	0	0	0	0	0.6630

Notes:
(1) Broken concrete for recycling into aggregates.
(2) Plastics refer to plastic bottles/ containers, plastic sheets/ foam from packaging materials.
(3) Use the conversion factor : 1 full load of dumping truck being equivalent to 6.5m^3 by volume.

Appendix L Event / Action Plan for Coral Monitoring

Event	Action			
	ET Leader	IEC	SO	Contractor
Action Level Exceedance	1. Check monitoring data 2. Inform the IEC, SO ,and Contractor of the findings; 3. Increase the monitoring to at least once a month to confirm findings; 4. Propose mitigation measures for consideration	1. Discuss monitoring with the ET and the Contractor; 2. Review proposals for additional monitoring and any other measures submitted by the Contractor and advise the SO accordingly.	1. Discuss with the IEC additional monitoring requirements and any other measures proposed by the ET; 2. Make the agreement on the measures to be implemented.	1. Inform the SO and confirm notification of the non-compliance in writing; 2. Discuss with the ET and the IEC and propose measures to the IEC and the SO; 3. Implement the agreed measures.
Limit Level Exceedance	1. Undertake Steps 1-4 as in the Action Level Exceedance. If further exceedance of Limit Level, propose enhancement measures for consideration.	1. Discuss monitoring with the ET and the Contractor; 2. Review proposals for additional monitoring and any other measures submitted by the Contractor and advise the SO accordingly.	1. Discuss with the IEC additional monitoring requirements and any other measures proposed by the ET; 2. Make the agreement on the measures to be implemented.	1. Inform the SO and confirm notification of the non-compliance in writing; 2. Discuss with the ET and the IEC and propose measures to the IEC and the SO; 3. Implement the agreed measures.

Appendix M Event / Action Plan for White-Bellied Sea Eagle

Event	Action		
	Environmental Team	**Audit Team**	**Contractor**
Absence of White-bellied Sea Eagle during a whole day of monitoring.	Inform audit team. Increase monitoring frequency to daily.	Inform site engineer and contractor. If the absence remains: • Review construction activities and noise monitoring records of the associated period; • Identify potential causes of the absence; • Propose remedial measures, such as change of construction method and sequence; • Confirm the feasibility of the proposed remedial measures with site engineer and contractor; • Discuss with environmental team about the effectiveness of the proposed remedial measures.	Implement the agreed remedial measures.

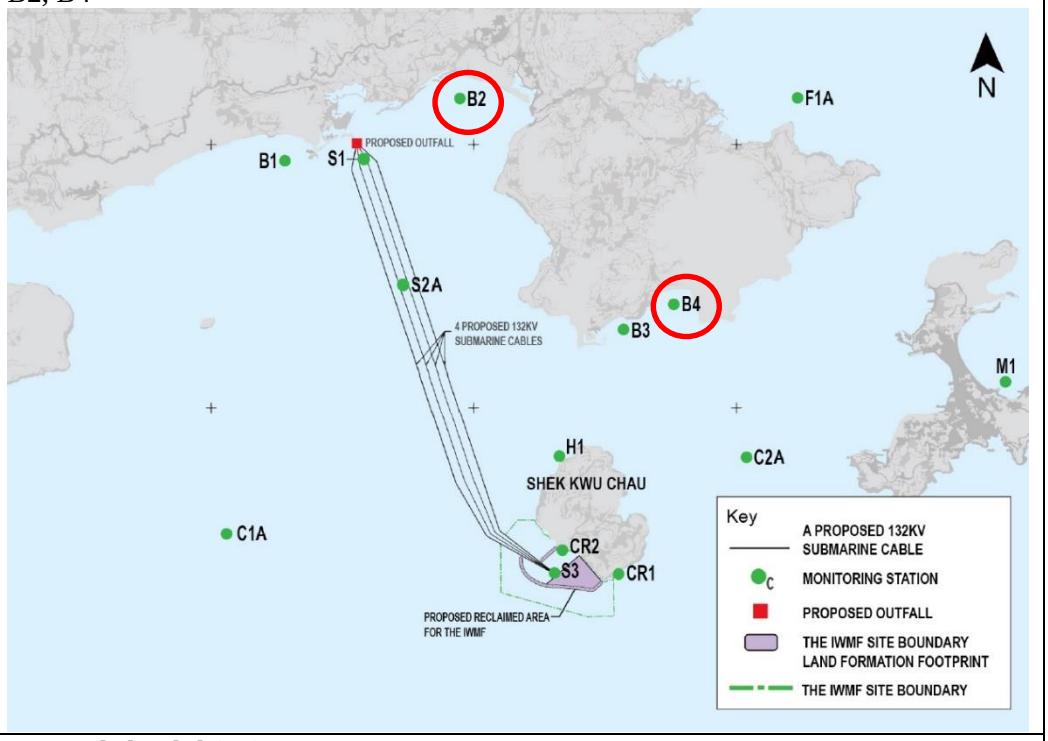
Appendix N Exceedance Report

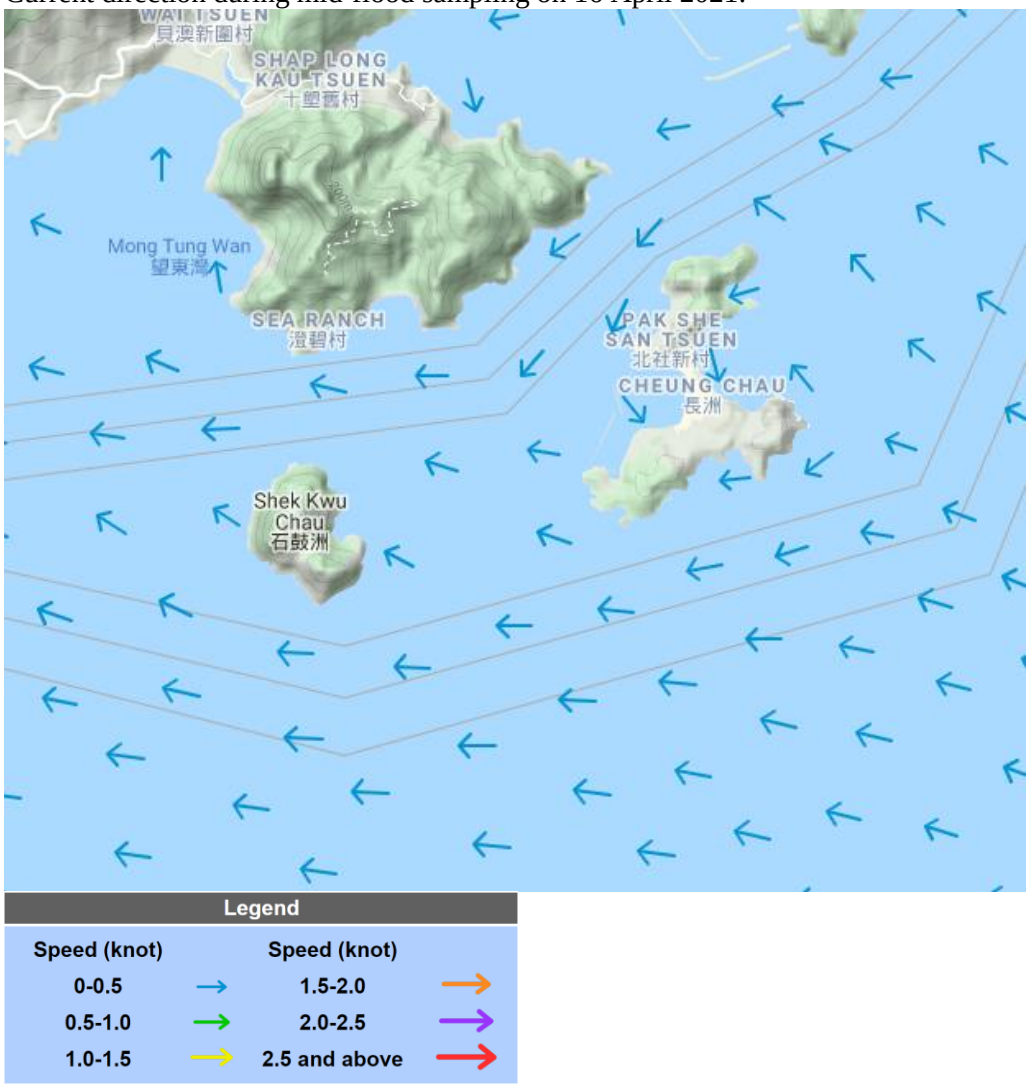
Statistical Summary of Exceedances in the Reporting Period

Water Quality (Regular Monitoring)			
Location	**Action Level**	**Limit Level**	**Total**
B1	0	0	0
B2	1	0	1
B3	0	0	0
B4	1	0	1
CR1	0	0	0
CR2	0	0	0
F1A	0	0	0
H1	0	0	0
S1	0	0	0
S2A	0	0	0
S3	0	0	0
M1	0	0	0

Noise (Day Time)			
Location	**Action Level**	**Limit Level**	**Total**
M1	0	0	0
M2	0	0	0
M3	0	0	0
Noise (Evening Time)			
Location	**Action Level**	**Limit Level**	**Total**
M1	0	0	0
M2	0	0	0
M3	0	0	0
Noise (Night Time)			
Location	**Action Level**	**Limit Level**	**Total**
M1	0	0	0
M2	0	0	0
M3	0	0	0

Incident Report on Action Level or Limit Level Non-compliance

Project	Integrated Waste Management Facilities, Phase 1		
Date	16 Apr 2021 (Lab result received on 21 Apr 2021)		
Time	08:00 – 11:30 (Mid Flood)		
Mid-Flood			
Monitoring Location	B2, B4 		
Parameter	Suspended Solid (SS)		
Action & Limit Levels	Action Level	Limit Level	
	≥ 12.0 mg/L	≥ 14.0 mg/L	
Measurement Level	Impact Station(s) of Exceedance	Control Stations	Impact Station(s) of Exceedance
	13.3 mg/L (B2) 12.0 mg/L (B4)	9.5 mg/L (C1A) 5.8 mg/L (C2A)	10.3 mg/L (B1) 9.8 mg/L (B3) 6.2 mg/L (F1A) 7.2 mg/L (H1) 4.8 mg/L (M1) 4.7 mg/L (CR1) 4.8 mg/L (CR2)
Possible reason for Action or Limit Level Non-compliance	Works scheduled on site on 16 April 2021 include reclamation works, in fill of caisson, laying of underlayer rock, working platform installation and laying of rockfill Dominating sea current direction was found to be from Southeast to Northwest at waters around Shek Kwu Chau. B2 and B4 are located at unrelated stream direction (neither upstream nor downstream, far away) to the works location, exceedance of this monitoring station is deemed to be unrelated to the Project. The installation of caisson No.19 was completed on 18 Mar 2021, the reclamation area was enclosed. Floating type silt curtain at marine access was abandoned, thus no silt curtain checking was conducted by contractor. According to the field observation by sampling team during sampling event, no silt		

	plume was observed in the Project site. Site tidiness in the present barges in the Project site were checked during weekly site inspection on 13 April 2021. No major observation of improper site practices that could contribute to the increase of the suspended solids recorded.
Remarks	Current direction during mid-flood sampling on 16 April 2021:  (Sourced from http://current.hydro.gov.hk/en/map.html)
Prepared by	Joe Ho
Date	22 April 2021

Appendix O Complaint Log

Statistical Summary of Environmental Complaints

Reporting Period	Environmental Complaint Statistics		
	Frequency	**Cumulative**	**Complaint Nature**
1 Apr 2021- 30 Apr 2021	0	0	N/A

Statistical Summary of Environmental Summons

Reporting Period	Environmental Summons Statistics		
	Frequency	**Cumulative**	**Details**
1 Apr 2021- 30 Apr 2021	0	0	N/A

Statistical Summary of Environmental Prosecution

Reporting Period	Environmental Prosecution Statistics		
	Frequency	**Cumulative**	**Details**
1 Apr 2021- 30 Apr 2021	0	0	N/A

Appendix P Impact Monitoring Schedule of Next Reporting Month

Impact Monitoring Schedule for iWMF

May-21

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5	6	7	8
	Impact Water Quality monitoring for B1, B2, B3, B4, H1, C1A, C2A, F1A, CR1, CR2, M1 Tidal Period: Ebb Tide: 13:24 - 21:47 Flood Tide: 00:00 - 13:24 Monitoring Time: &Mid-ebb: 15:30 - 19:00 *Mid-flood: 8:00 - 11:30 Daytime, Evening & Night time Noise monitoring for M1, M2 & M3	Impact Daytime, Evening & Night time Noise monitoring for M1, M2 & M3 Ecology monitoring for Marine Mammals by Vessel-based Line-Transect Survey	Impact Water Quality monitoring for B1, B2, B3, B4, H1, C1A, C2A, F1A, CR1, CR2, M1 Tidal Period: Ebb Tide: 07:00 - 11:00 Flood Tide: 11:00 - 16:16 Monitoring Time: *#$Mid-ebb: 08:00 - 11:00 Mid-flood: 11:53 - 15:23		Impact Water Quality monitoring for B1, B2, B3, B4, H1, C1A, C2A, F1A, CR1, CR2, M1 Tidal Period: Ebb Tide: 07:58 - 13:00 Flood Tide: 13:00 - 18:45 Monitoring Time: Mid-ebb: 08:44 - 12:14 Mid-flood: 14:07 - 17:37 Daytime, Evening & Night time Noise monitoring for M1, M2 & M3	
9	10	11	12	13	14	15
	Impact Water Quality monitoring for B1, B2, B3, B4, H1, C1A, C2A, F1A, CR1, CR2, M1 Tidal Period: Ebb Tide: 09:00 - 15:00 Flood Tide: 15:00 - 21:15 Monitoring Time: Mid-ebb: 10:15 - 13:45 &Mid-flood: 15:30 - 19:00 Daytime, Evening & Night time Noise monitoring for M1, M2 & M3	Impact Daytime, Evening & Night time Noise monitoring for M1, M2 & M3	Impact Water Quality monitoring for B1, B2, B3, B4, H1, C1A, C2A, F1A, CR1, CR2, M1 Tidal Period: Ebb Tide: 09:25 - 16:00 Flood Tide: 16:00 - 23:00 Monitoring Time: Mid-ebb: 10:57 - 14:27 &Mid-flood: 15:30 - 19:00	Impact Ecology monitoring for WBSE	Impact Water Quality monitoring for B1, B2, B3, B4, H1, C1A, C2A, F1A, CR1, CR2, M1 Tidal Period: Ebb Tide: 10:00 - 17:27 Flood Tide: 04:00 - 10:00 Monitoring Time: Mid-ebb: 11:58 - 15:28 *Mid-flood: 08:00 - 11:30	
16	17	18	19	20	21	22
	Impact Water Quality monitoring for B1, B2, B3, B4, H1, C1A, C2A, F1A, CR1, CR2, M1 Tidal Period: Ebb Tide: 11:00 - 20:00 Flood Tide: 04:11 - 11:00 Monitoring Time: Mid-ebb: 13:45 - 17:15 *Mid-flood: 08:00 - 11:30 Daytime, Evening & Night time Noise monitoring for M1, M2 & M3	Impact Daytime, Evening & Night time Noise monitoring for M1, M2 & M3 Ecology monitoring for Marine Mammals by Vessel-based Line-Transect Survey	Impact Water Quality monitoring for B1, B2, B3, B4, H1, C1A, C2A, F1A, CR1, CR2, M1 Tidal Period: Ebb Tide: 13:00 - 21:57 Flood Tide: 00:00 - 13:00 Monitoring Time: &Mid-ebb: 15:30 - 19:00 *Mid-flood: 08:00 - 11:30		Impact Water Quality monitoring for B1, B2, B3, B4, H1, C1A, C2A, F1A, CR1, CR2, M1 Tidal Period: Ebb Tide: 06:40 - 10:16 Flood Tide: 10:16 - 17:00 Monitoring Time: *#Mid-ebb: 08:00 - 11:30 Mid-flood: 11:53 - 15:23	
23	24	25	26	27	28	29
	Impact Water Quality monitoring for B1, B2, B3, B4, H1, C1A, C2A, F1A, CR1, CR2, M1 Tidal Period: Ebb Tide: 07:34 - 14:00 Flood Tide: 14:00 - 20:16 Monitoring Time: Mid-ebb: 09:02 - 12:32 Mid-flood: 15:23 - 18:53 Daytime, Evening & Night time Noise monitoring for M1, M2 & M3	Impact Daytime, Evening & Night time Noise monitoring for M1, M2 & M3	Impact Water Quality monitoring for B1, B2, B3, B4, H1, C1A, C2A, F1A, CR1, CR2, M1 Tidal Period: Ebb Tide: 08:37 - 15:28 Flood Tide: 15:28 - 22:29 Monitoring Time: Mid-ebb: 10:17 - 13:47 &Mid-flood: 15:30 - 19:00	Impact Ecology monitoring for WBSE	Impact Water Quality monitoring for B1, B2, B3, B4, H1, C1A, C2A, F1A, CR1, CR2, M1 Tidal Period: Ebb Tide: 10:00 - 17:16 Flood Tide: 04:00 - 10:00 Monitoring Time: Mid-ebb: 11:53 - 15:23 *#Mid-flood: 08:00 - 10:00	
30	31					
	Impact Water Quality monitoring for B1, B2, B3, B4, H1, C1A, C2A, F1A, CR1, CR2, M1 Tidal Period: Ebb Tide: 12:15 - 20:14 Flood Tide: 06:00 - 12:15 Monitoring Time: Mid-ebb: 14:29 - 17:59 *Mid-flood: 08:00 - 11:30 Daytime, Evening & Night time Noise monitoring for M1, M2 & M3					

Remarks:
1. Daytime Noise Monitoring (07:00-1900), Evening Time Noise Monitoring (1900-2300), Night Time Noise Monitoring (2300-0700)
2. Water Quality Monitoring for S1,S2 and S3 will only conduct during DCM works, refer to Detailed DCM Plan

Note:
* - as per Marine Department Notice No 107 of 2018, all vessels employed for the works should stay in the works area outside the hours of works (0700 to 2300). Due to safty concern, Water Quality Monitoring would start at 0800.
# - Prioritized routing: Mid-Ebb: C1→S3→CR2→CR1→H1→Remaining stations and Mid-Flood: C2→CR1→S3→CR2→H1→Remaining stations
$ - Since predicted tide is shorter than 3.5 hours, method of 90% tidal period as monitoring time is approached.
& - Due to safety concern for sampling event in night-time, method of 90% tidal period as monitoring time is approached and end at 1900.