ANEWR

Water Supplies Department
New Works Branch
Consultants Management Division
6/F Sha Tin Government Offices
1 Sheung Wo Che Road
Sha Tin
New Territories

Your reference:

Our reference: HKWSD202/50/107850

Date: 28 February 2022

Attention: Mr W K Lau/Mr H L Lai

BY EMAIL & POST
(email: simon_wk_lau@wsd.gov.hk/
jack_hl_lai@wsd.gov.hk)

Dear Sirs

Agreement No. CE 5/2019 (EP)
Independent Environmental Checker for First Stage of
Tseung Kwan O Desalination Plant – Investigation
Verification of Monthly EM&A Report No.23 (January 2022)

We refer to emails of 17, 23 and 24 February 2022 attaching Monthly EM&A Report No.23 (January 2022) for the captioned project prepared by the ET.

We have no further comments and hereby verify the captioned report in accordance with Clause 3.5 of the Environmental Permit no. EP-503/2015/A and Further Environmental Permit no. FEP-01/503/2015/A.

Should you have any queries regarding the above, please do not hesitate to contact the undersigned on 2618 2831.

Yours faithfully
ANEWR CONSULTING LIMITED

Louis Kwan
Independent Environmental Checker

KSYL/lsmt

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水務署
Water Supplies Department

Contract No. 13/WSD/17

Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Monthly EM&A Report No.23
(Period from 1 January to 31 January 2022)

Document No.

ASCL	/	200168078	/	MEMAR23	/	A
Publisher		Project Code		Sequential No.		Revision Index

	Prepared by:	Reviewed by:	Certified by:
Name	Howard Chan	Charlene LAI	Jacky LEUNG
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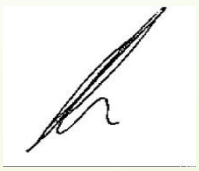
Signature			
Date:	14/02/2022	14/02/2022	14/02/2022

REVISION HISTORY

REV.	DESCRIPTION OF MODIFICATION	DATE
A	First Issue for Comments	14 February 2022

CONTENTS

EXECUTIVE SUMMARY

INTRODUCTION

A1. The Project, Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant (TKODP), is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO) and is currently governed by a Further Environmental Permit (EP No. FEP – 01/503/2015/A) for the construction and operation of the Contract.

A2. In accordance with the Environmental Monitoring and Audit (EM&A) Manual for the Contract, 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 Contract.

A3. This is the 23rd Monthly EM&A Report, prepared by ASCL, for the Contract summarizing the monitoring results and audit findings of the EM&A programme at and around Tseung Kwan O Area 137 (TKO 137) during the reporting period from 1 January 2022 to 31 January 2022.

A4. The EM&A programme for this contract has covered environmental monitoring on construction noise level at selected NSRs and Contractor's environmental performance auditing in the aspects of construction dust, construction noise, water quality, waste management, Landscape and Visual and Ecology.

SUMMARY OF MAIN WORKS UNDERTAKEN & KEY MITIGATION MEASURES IMPLEMENTED

A5. Key activities carried out in this reporting period for the Contract included the followings:

- Land Survey;
- Construction of ActiDAFF parapet;
- Construction of Reverse Osmosis (RO) Building – staircases and internal finishing;
- Construction of Sludge tank and Post Treatment Building (PTB);
- Construction of On-Site Chlorine Generation (OSCG) Building and carbon dioxide (CO2) tank area;
- Internal finishing works at Product Water Storage Tank (PWST) and Electrical Building and Main Electrical and Central Chiller Plant Building (MECCP);
- Construction of manhole and Glass Reinforced Plastic (GRP) pipe installation;
- Commence construction of Manholes no.15 and no.16 adjacent to ActiDAFF and Reverse Osmosis Area (RO);
- Construction of first and second floor walls and columns of Administration Building;
- Construction of reinforced concrete (RC) support of Inspection Corridor;
- Construction of 1st floor structural wall of Chemical Building;
- Dewatering, predrill, rock cutting and excavations at Outfall Shaft;

- Excavation & Lateral Support (ELS) erection and commencement of marine dredging at Intake Shaft;
- Concrete blinding laying and backfill with aggregate at Intake Shaft;
- Pipe jacking works at Combined Shaft for Intake & Outfall pipelines;
- Outfall Shaft - rock coring, chain-cut the bed rock inside the caisson and pumping clean seepage water within silt curtain area
- Intake Shaft - fitting in waling and welding inside the shaft
- Intake Shaft - excavate non-MD inside the shaft
- Intake Shaft - Blinding layer concreting works inside the shaft
- Intake Shaft - mobilizing vibratory hammer for retrieving 7 nrs. pipe piles
- Construction of base slab of Pump house

A6. The major environmental impacts brought by the above construction works include:

- Construction dust and noise generation from marine construction works, excavation works, construction works; rock cutting works and pipe piling driving works
- Waste generation from the construction activities
- Impact on water quality from marine construction works and inland construction works

A7. The key environmental mitigation measures implemented for the Contract in this reporting period associated with the above construction works include:

- Dust suppression by regular wetting and water spraying for construction works;
- Reduction of noise from equipment and machinery on-site and regular inspection to machinery and plants/vehicles on-site to ensure proper functioning;
- Sorting and storage of general refuse and construction waste; and
- Deployment of temporary silt curtain in the area where marine construction works were conducted and deployment of water sedimentation tanks for treatment of wastewater at inland and marine areas before discharge.

SUMMARY OF EXCEEDANCE & INVESTIGATION & FOLLOW-UP

A8. No noise monitoring was conducted during the reporting period since there are no Contract - related construction activities undertaken within a radius of 300m from the monitoring locations. No contract-related exceedance of the Action Level was recorded during the reporting period.

A9. The EM&A works for water quality were conducted during the reporting period in accordance with the EM&A Manual.

A10. Fifty-two (52) of the general water quality monitoring results of suspended solids (SS) obtained had exceeded the Action Level. Thirty-three (33) of the general water quality monitoring results of SS obtained during the reporting period had exceeded the Limit Level.

A11. Details of the exceedance are presented in **Appendix O**.

A12. Investigation on the reason of exceedance has been carried out, where the exceedances of SS on 1, 4, 6, 8, 11, 15, 18, 20, 22, 25, 27, 29 and 31 January 2022 were concluded to be unrelated to the Contract as detailed in the Incident Reports on Action Level or Limit Level Non-compliance along with supporting materials in **Appendix O.**

A13. It was concluded that all exceedances recorded in January were unrelated to the Contract.

A14. ACJCJ's Environmental Office received a text message on 14 January 2022 from EPD inspector claiming that susceptible oil spillage at the water surface nearby to Outfall Shaft was observed during their routine drone check on 13 January 2022. The message from EPD was relayed to ET by AJCJV on 15 January 2022. Immediate investigation by AJCJV has been made after the acknowledgement of the incident, whilst implementing emergency clean up measure on any residue oil spillage. After investigation, the oil spillage was unlikely originated from the Outfall Shaft. The incident may therefore be considered as non-project related. Detail of the incident could be referring to **Appendix O**.

A15. In this reporting period, 47 times of landfill gas monitoring were recorded at Wan Po Road (Ch1+360 – Ch1+513). No exceedance of action and limit levels for methane, oxygen and carbon dioxide was observed. Monitoring was conducted during excavations at 1m depth or more within the consultation zone and whenever workers entered the excavation on the day.

A16. Joint site inspections of the construction work by ET and IEC were carried out on 4, 11, 18, 26 and 31 January 2022 to audit the mitigation measures implementation status. 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

A17. No environmental complaint was received during the reporting period.

A18. Neither notification of summons nor prosecution was received for the Contract.

REPORTING CHANGE

A19. 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

A20. Key activities anticipated in the next reporting period for the Contract will include the followings:

- Land Survey;
- Construction of solar panel supports at roof of ActiDAFF;
- Construction of Reverse Osmosis (RO) Building - staircases and internal finishing;
- Construction of sludge thickener, Post Treatment Building (PTB);
- Construction of On-Site Chlorine Generation Building (OSCG Bldg) and carbon dioxide (CO2) Tank area;
- Internal finishing work at Product Water Storage Tank (PWST), Electrical Building and Main Electrical (elec), Building. and Central Chiller Plant Building (MECCP);
- Manhole construction and Glass Reinforced Plastic (GRP) pipe installation;
- Construction of manholes no.15 and no.16 adjacent to ActiDAFF and RO;
- Construction of 1/F to 2/F walls and columns of Administration Building;
- Construction of reinforced concrete (RC) support of Inspection Corridor;
- Construction of structural wall and Roof of Chemical Building;
- Outfall Shaft – Dewatering; Predrill, Rock cutting and excavations;
- Intake shaft – Retrieval of DN 2500 Tunnel Boring Machine (TBM) under water;
- Pipe jacking at Combined Shaft for Outfall pipelines; and
- Intake tunnel – Demobilize the jack pipe system and commencement of grouting works.

A21. The major environmental impacts brought by the above construction works will include:

- Construction dust and noise generation from pipe piling driven works, rock cutting works, drilling, excavation and construction works;
- Waste generation from construction activities; and
- Impact on water quality from marine construction works and inland construction works.

A22. The key environmental mitigation measures for the Contract in the coming reporting period associated with the above construction works will include:

- Dust suppression by regular wetting and water spraying for construction works;
- Reduction of noise from equipment and machinery on-site;
- Sorting and storage of general refuse and construction waste; and
- Deployment of temporary silt curtain in the area where marine construction works were conducted and deployment of water sedimentation tanks for treatment of wastewater at inland and marine areas before discharge.

1. BASIC CONTRACT INFORMATION

1.1. BACKGROUND

The Acciona Agua, S.A. Trading, Jardine Engineering Corporation, Limited and China State Construction Engineering (Hong Kong) Limited As AJC Joint Venture (AJCJV) is contracted to carry out the Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant (DPTKO) under Contract No. 13/WSD/17 (the Contract).

Acuity Sustainability Consulting Limited (ASCL) is commissioned by AJCJV to undertake the Environmental Team (ET) services as required and/or implied, both explicitly and implicitly, in the Environmental Permit (EP), Environmental Impact Assessment Report (EIA Report) (Register No. AEIAR-192/2015) and Environmental Monitoring and Audit Manual (EM&A Manual) for the Contract; and to carry out the Environmental Monitoring and Audit (EM&A) programme in fulfillment of the EIA Report's EM&A requirements and Contract No. 13/WSD/17 Specification requirements.

Pursuant to the Environmental Impact Assessment Ordinance (EIAO), the Director of Environmental Protection granted the Environmental Permit (No. EP-01/503/2015) and Variation of Environmental Permit (No. EP-01/503/2015/A) to Water Supplies Department (WSD); and granted the Further Environmental Permit (No. FEP-01/503/2015/A) to AJCJV for the Contract.

1.2. THE REPORTING SCOPE

This is the 23rd Monthly EM&A Report for the Contract which summarizes the key findings of the EM&A programme during the reporting period from 1 January to 31 January 2022.

1.3. CONTRACT ORGANIZATION

The Contract Organization structure for Construction Phase is presented in **Figure 1.1**.

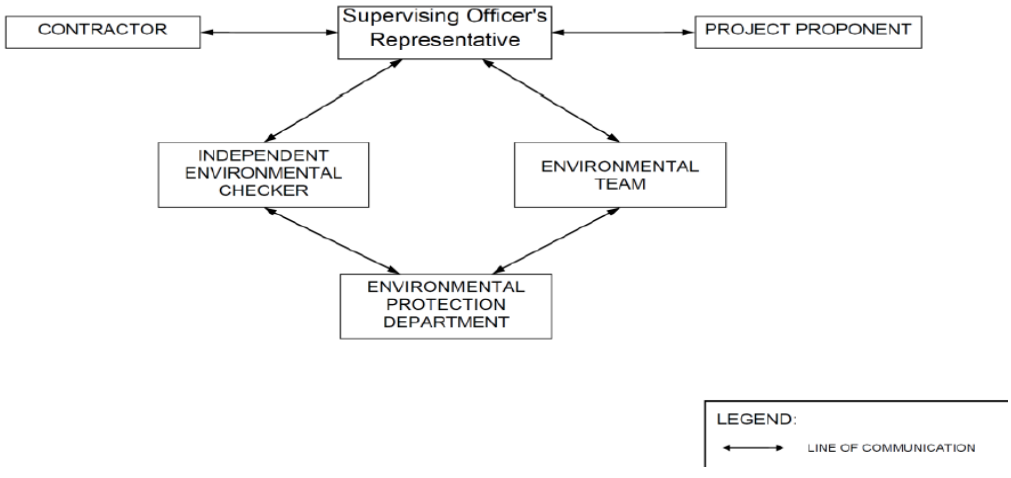


Figure 1.1 Contract Organization Chart

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.
Contract Proponent (Water Supplies Department)	SE/CM2	Benny Lam	2634-3573
Supervising Officer (Binnies Hong Kong Limited)	Project Manager	Christina Ko	2608-7302
	Chief Resident Engineer	Roger Wu	6343-1002
The Jardine Engineering Corporation, Limited, China State Construction Engineering (Hong Kong) Limited and Acciona Agua, S.A. Trading	Project Manager	Stephen Yeung	2807-4665
	Environmental Monitoring Manager	Brian Kam	9456-9541
Acuity Sustainability Consulting Limited	Environmental Team Leader	Jacky Leung	2698-6833
ANewR Consulting Limited	Independent Environmental Checker (IEC)	Louis Kwan	2618-2831

1.4. SUMMARY OF CONSTRUCTION WORKS

Details of the major construction activities undertaken in this reporting period are shown as below. The construction programme is presented in **Appendix A**.

Key activities carried out in this reporting period for the Contract included the followings:

- Land Survey;
- Construction of ActiDAFF parapet;
- Construction of Reverse Osmosis (RO) Building – staircases and internal finishing;
- Construction of Sludge tank and Post Treatment Building (PTB);
- Construction of On-Site Chlorine Generation (OSCG) Building and carbon dioxide (CO2) tank area;
- Internal finishing works at Product Water Storage Tank (PWST) and Electrical Building and Main Electrical and Central Chiller Plant Building (MECCP);
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- Concrete blinding laying and backfill with aggregate at Intake Shaft;
- Pipe jacking works at Combined Shaft for Intake & Outfall pipelines;
- Outfall Shaft - rock coring, chain-cut the bed rock inside the caisson and pumping clean seepage water within silt curtain area
- Intake Shaft - fitting in waling and welding inside the shaft
- Intake Shaft - excavate non-MD inside the shaft
- Intake Shaft - Blinding layer concreting works inside the shaft
- Intake Shaft - mobilizing vibratory hammer for retrieving 7 nrs. pipe piles
- Construction of base slab of Pump house

A summary of the valid permits, licences, and/or notifications on environmental protection for this Contract is presented in **Table 1.2**.

Table 1.2 Summary of the Status of Valid Environmental Licence, Notification, Permit and Documentations

Permit/ Licenses/ Notification	Reference	Validity Period	Remarks
Environmental Permit	FEP – 01/503/2015/A	Throughout the Contract	
Notification of Construction Works under the Air Pollution Control (Construction Dust) Regulation (Form NA)	Ref. No.: 451539	Throughout the Contract	
Wastewater Discharge Licence (Land and Marine works)	WT00035775-2020	23/08/2021 – 31/07/2025	
Chemical Waste Producer Registration	5213-839-A2987-01	Throughout the Contract	
Construction Noise Permit (24 hrs) – CNP for general works, TBM at Combined Shaft and marine works	GW-RE1041-21	01/11/2021 – 30/04/2022	
Billing Account for Disposal of Construction Waste	7036276	Throughout the Contract	
Vessel CHITs for fill disposal	7039300	*Application for renewal was submitted on 14 December 2021. Application in progress	
Dumping at Sea Ordinance (DASO) Permit to dump materials (Category M) at sea	EP/MD/22-083	03/12/2021 – 02/01/2022	
Dumping at Sea Ordinance (DASO) Permit to dump materials (Category L) at sea	EP/MD/22-028	02/08/2021 – 01/02/2022	

The status for all environmental aspects is presented in **Table 1.3**.

Table 1.3 Summary of Status for Key Environmental Aspects under the EM&A Manual

Parameters	**Status**
Water Quality	
Baseline Monitoring under EM&A Manual	The baseline water quality monitoring was conducted between 12 May 2020 to 6 Jun 2020
Impact Monitoring	On-going
Noise	
Baseline Monitoring	The baseline noise monitoring result has been reported in Baseline Monitoring Report and submitted to EPD under EP Condition 3.4
Impact Monitoring	On-going
Waste Management	
Mitigation Measures in Waste Monitoring Plan	On-going
Landfill Gas	
Regular Monitoring when Construction Works are within the 250m Consultation Zone	In this reporting period, 47 time of landfill gas monitoring was recorded at Wan Po Road (Ch1+360 – Ch1+513). No exceedance of action and limit levels for methane, oxygen and carbon dioxide was observed. Monitoring was conducted during excavations at 1m depth or more within the consultation zone and whenever workers entered the excavation on the day.
Environmental Audit	
Site Inspection covering Measures of Air Quality, Noise Impact, Water Quality, Waste, Ecological Quality, Fisheries, Landscape and Visual	On-going

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.

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

2. NOISE

2.1. MONITORING REQUIREMENTS

To ensure no adverse noise impact, noise monitoring is recommended to be carried out within 300m radius from the nearby noise sensitive receivers (NSRs), during construction phase. The NSRs selected as monitoring station are (i) NSR4 – Creative Secondary School, (ii) NSR24 – PLK Laws Foundation College, and (iii) NSR31 – School of Continuing and Professional Studies – CUHK respectively.

In accordance with the EM&A Manual, baseline noise level at the noise monitoring stations were established as presented in the Baseline Monitoring Report. Impact noise monitoring will be 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 on normal weekdays.

Referring to EM&A manual Section 4.1.2, the impact noise monitoring should be carried out at all the designated monitoring stations when there are contract-related construction activities undertaken within a radius of 300m from the monitoring stations.

No impact monitoring for noise impact was conducted in the reporting month due to the overly distant monitoring station from the works location, where they were farther than 1 km from the closest monitoring station NSR4 to the works location.

Impact noise monitoring will be conducted weekly in the reporting period between 0700-1900 on normal weekdays. Construction works would follow stipulations of the valid Construction Noise Permits if works had to be conducted during restricted hours or public holidays.

Construction noise level were 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 on normal weekdays. **Table 2.1** summarizes the monitoring parameters, frequency and duration of the impact noise monitoring.

Table 2.1 Noise Monitoring Parameters, Time, Frequency and Duration

Time	Duration	Interval	Parameters
Daytime: 0700-1900	Day time: 0700-1900 (during normal weekdays)	Continuously in $L_{eq\ 5min}$/$L_{eq\ 30min}$ (average of 6 consecutive $L_{eq\ 5min}$)	$L_{eq\ 30min}$ $L_{10\ 30min}$ & $L_{90\ 30min}$

2.2. MONITORING LOCATIONS

The monitoring locations should normally be made at a point 1m from the exterior of the NSRs building façade and be at a position 1.2m above the ground. A correction of +3dB(A) should be made to the free-field measurements.

According to the environmental findings detailed in the EIA report and Baseline Monitoring Report, the designated locations for the construction noise monitoring are listed in **Table 2.2** below.

Table 2.2 Noise Sensitive Receivers

NSR ID	Noise Sensitive Receivers	Monitoring Location	Position
NSR 4	Creative Secondary School	Roof Floor	1 m from facade
NSR 24	PLK Laws Foundation College	Pedestrian Road on Ground Floor	Free-field
NSR 31	School of Continuing and Professional Studies - CUHK	Roof Floor	1 m from facade

Three noise monitoring locations for impact monitoring at the nearby sensitive receivers are shown in **Figure 2.1-2.3**.

Figure 2.1 NSR4 Creative Secondary School

Figure 2.2 NSR24 PLK Laws Foundation College

Figure 2.3 NSR31 School of Continuing and Professional Studies - CUHK

2.3. IMPACT MONITORING METHODOLOGY

Integrated sound level meter shall be used for the noise monitoring. The meter shall be in compliance with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications. 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 before and after the noise measurements agree to within 1.0 dB(A). Calibration certificates of the instruments used to be shown at **Appendix F** are intentionally left blank since no impact monitoring equipment was used in the reporting month.

Noise measurements shall not be made in the presence of fog, rain, wind with a steady speed exceeding 5 m/s or wind with gusts exceeding 10 m/s. The wind speed shall be checked with a portable wind speed meter capable of measuring the wind speed in m/s.

Table 2.3 Impact Noise Monitoring Equipment

Equipment	Brand and Model	Detection Limit
Sound Level Meter	Nti XL2	30-130 dB(A)
Sound Level Meter Calibrator	Rion NC-74	Nil
Pocket Wind Meter Anemometer	Kestrel 1000 Wind Meter	Nil

2.4. ACTION AND LIMIT LEVELS

The Action/Limit Levels are 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 are presented in **Table 2.4**.

Table 2.4 Action and Limit Levels for Noise per EM&A Manual

Time Period	Action	Limit (dB(A))
0700-1900 on normal weekdays	When one documented complaint is received from any one of the noise sensitive receivers	• 70 dB(A) for school and • 65 dB(A) during examination period

Notes: Limits specified in the GW-TM and IND-TM for construction and operation noise, respectively.

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

2.5. MONITORING RESULTS AND OBSERVATIONS

Referring to EM&A manual Section 4.1.2, the impact noise monitoring should be carried out when there are Contract-related construction activities undertaken within a radius of 300m from the monitoring stations. No monitoring station was located within a radius of 300m of the Contract site as shown in **Figure 2.4**, no impact monitoring for noise impact was conducted in the reporting period.

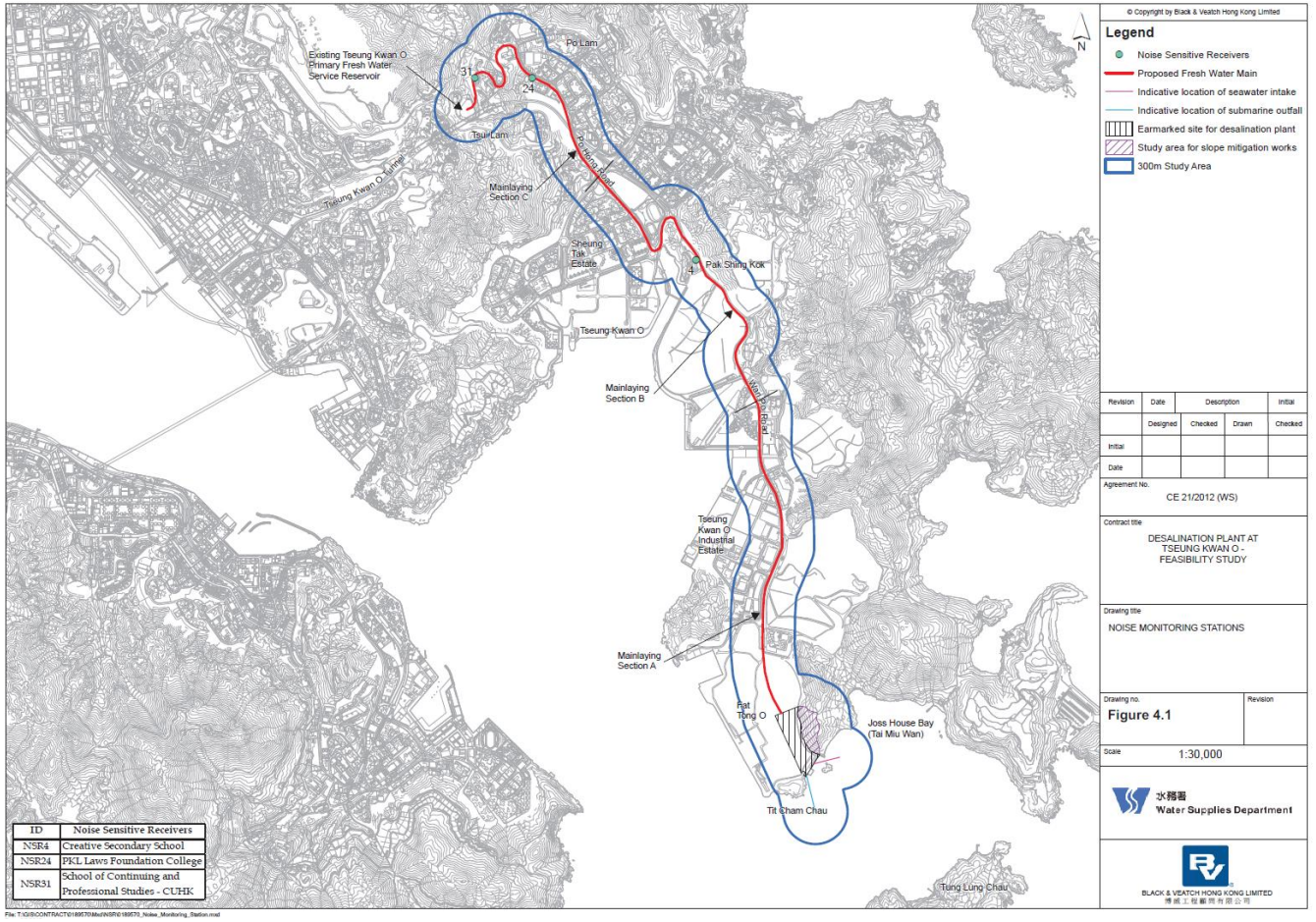


Figure 2.4 Site Layout Plan with Noise Sensitive Receivers and Desalination Plant

3. WATER QUALITY

In accordance with the recommendations of the EIA, water quality EM&A is required during dredging for the submarine pipelines and, during operation phase. In addition, baseline water quality monitoring will be required prior to the commencement of marine construction activities. The following Section provides details of the water quality monitoring to be undertaken by the Environmental Team (ET) to verify the distance of sediment and brine plume dispersion and to identify whether the potential exists for any indirect impacts to occur to ecological sensitive receivers. The water quality monitoring programme will be carried out to allow any deteriorating water quality to be readily detected and timely action taken to rectify the situation. The status and locations of water quality sensitive receivers and the marine works location may change after issuing this Document. If required, the ET in consultation with IEC will propose updated monitoring locations and seek approval from EPD.

Water quality monitoring for the Contract can be divided into the following stages:

- Dredging activities during construction phase;
- Discharge of effluent from main disinfection during construction phase;
- Operation phase – first year upon commissioning; and,
- Continuous monitoring of effluent quality.

In addition, the marine works contractor is required to complete a silt curtain efficiency test for the combined use of floating silt curtain type and cage type silt curtain for dredging at seawater intake to confirm the silt curtain reduction efficiency assumptions of the assessment. The details of testing plan together with the silt curtain deployment plan shall be submitted by the ET to seek approval from the IEC and EPD.

With the onset of marine dredging activities in late April 2021 at Outfall Shaft Area, a silt curtain efficiency test has been conducted at the Outfall Shaft Area on 16th April 2021 at 6 monitoring intervals (08:00, 10:00, 12:00, 14:00, 16:00, 18:00). The baseline monitoring event has been conducted on 10th April 2021 at 5 monitoring locations. Testing protocols and methodologies had followed the guidelines as presented in the EM&A Manual *Annex C*. Detailed analysis of in-situ and laboratory data was presented in a separate report which has been submitted to EPD after approval by IEC on 31 May 2021. The overall Silt Removal Effectiveness at Outfall Shaft Area for the combined used of cage and floating type silt curtains was 95.28%.

3.1.1. WATER QUALITY PARAMETERS

The parameters that have been selected for measurement in situ and in the laboratory are those that were either determined in the EIA to be those with the most potential to be affected by the construction works or are a standard check on water quality conditions. Parameters to be measured in the baseline monitoring are listed in **Table 3.1**.

Table 3.1 Parameters measured in the baseline marine water quality monitoring

Parameters	Unit	Abbreviation
In-situ measurements		
Dissolved oxygen	mg/L	DO
Temperature	^{o}C	-
pH	-	-
Turbidity	NTU	-
Salinity	$^{0}/_{00}$	-
Total Residual Chlorine NOTE1	mg/L	TRC
Laboratory measurements		
Suspended Solids	mg/L	SS
Iron-Soluble NOTE2	mg/L	Fe
Anti-scalant as Reactive Phosphorus NOTE2	mg/L	PO_4 as P-

NOTE 1: Monitoring of TRC will be conducted when cleaning and sterilization of the new freshwater main is carried out.
NOTE 2: The testing methods shall be submitted to EPD for approval prior to the commencement of monitoring programme

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

3.1.2. MONITORING EQUIPMENT

For water quality monitoring, the following equipment will be used:

Dissolved Oxygen and Temperature Measuring Equipment - The instrument will be a portable, weatherproof dissolved oxygen measuring instrument complete with cable, sensor, comprehensive operation manuals, and will be operable from a DC power source. It will be capable of measuring: dissolved oxygen levels in the range of 0 - 20 mg/L and 0 - 200% saturation; and a temperature of 0 - 45 degrees Celsius. It shall have a membrane electrode with automatic temperature compensation complete with a cable of not less than 35 m in length. Sufficient stocks of spare electrodes and cables shall be available for replacement where necessary (e.g. YSI model 59 DO meter, YSI 5739 probe, YSI 5795A submersible stirrer with reel and cable or an approved similar instrument).

Turbidity Measurement Equipment - The instrument will be a portable, weatherproof turbidity-measuring unit complete with cable, sensor and comprehensive operation manuals. The equipment will be operated from a DC power source, it will have a photoelectric sensor capable of measuring turbidity between 0 - 1000 NTU and will be complete with a cable with at least 35 m in length (for example Hach 2100P or an approved similar instrument).

Salinity Measurement Instrument - A portable salinometer capable of measuring salinity in the range of 0 - 40 ppt will be provided for measuring salinity of the water at each monitoring location.

Water Depth Gauge – A portable, battery-operated echo sounder (for example Seafarer 700 or a similar approved instrument) will be used for the determination of water depth at each designated monitoring station. This unit will preferably be affixed to the bottom of the work boat if the same vessel is to be used throughout the monitoring programme. The echo sounder should be suitably calibrated. The ET shall seek approval for their proposed equipment with the client prior to deployment.

Current Velocity and Direction – No specific equipment is recommended for measuring the current velocity and direction. The environmental contractor shall seek approval of their proposed equipment with the client prior to deployment.

Positioning Device – A Global Positioning System (GPS) shall be used during monitoring to allow accurate recording of the position of the monitoring vessel before taking measurements. The Differential GPS, or equivalent instrument, should be suitably calibrated at appropriate checkpoint (e.g. Quarry Bay Survey Nail) to verify that the monitoring station is at the correct position before the water quality monitoring commence.

Water Sampling Equipment - A water sampler, consisting of a PVC or glass cylinder of not less than two litres, which can be effectively sealed with cups at both ends, will be used (e.g. Kahlsico Water Sampler 13SWB203 or an approved similar instrument). The water sampler will have 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.

Total Residual Chlorine for Discharge of Sterilization Water - Total residual chlorine (TRC) shall be measured in-situ using a handheld colorimeter with its testing toolkits.

3.1.3. SAMPLING / TESTING PROTOCOLS

All in situ monitoring instruments will be checked, calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme before use, and subsequently re-calibrated at monthly intervals throughout the stages of the water quality monitoring. Responses of sensors and electrodes will be checked with certified standard solutions before each use.

On-site calibration of field equipment shall follow the "Guide to On-Site Test Methods for the Analysis of Waters", BS 1427: 2009. Sufficient stocks of spare parts shall be maintained for replacements when

necessary. Backup monitoring equipment shall also be made available so that monitoring can proceed uninterrupted even when equipment is under maintenance, calibration etc.

3.1.4. LABORATORY MEASUREMENT AND ANALYSIS

All laboratory work shall be carried out in a HOKLAS accredited laboratory. Sufficient volume of each water sample shall be collected at the monitoring stations for carrying out the laboratory analyses. Using chain of custody forms, collected water samples will be transferred to an HOKLAS accredited laboratory for immediate processing. The determination work shall start within the next working day after collection of the water samples. The laboratory measurements shall be provided to the client within 5 working days of the sampling event. Analytical methodology and sample preservation of other parameters will be based on the latest edition of Standard Methods for the Examination of Waste and Wastewater published by APHA, AWWA and WPCF and methods by USEPA, or suitable method in accordance with requirements of HOKLAS or another internationally accredited scheme. The submitted information should include pre-treatment procedures, instrument use, Quality Assurance/Quality Control (QA/QC) details (such as blank, spike recovery, number of duplicate samples per-batch etc), detection limits and accuracy. The QA/QC details shall be in accordance with requirements of HOKLAS or another internationally accredited scheme.

Parameters for laboratory measurements, their standard methods and their detection limits are presented in **Table 3.2**.

Table 3.2 Laboratory measurements, standard methods and corresponding detection limits of marine water quality monitoring

Parameters	Standard Methods	Detection Limit	Reporting Limit	Precision
Dissolved oxygen (mg/L)	Instrumental, CTD	0.1	-	±25%
Temperature (^{o}C)	Instrumental, CTD	0.1	-	±25%
pH	Instrumental, CTD	0.1	-	±25%
Turbidity (NTU)	Instrumental, CTD	0.1	-	±25%
Salinity ($^{0}/_{00}$)	Instrumental, CTD	0.1	-	±25%
Suspended Solids (mg/L)	APHA 17th Ed 2540D	1.0	2.0	±17%
Total Residual Chlorine (mg/L)	APHA 21st Ed 4500 – Cl G NOTE1	0.1NOTE1	0.2NOTE1	±10% NOTE1
Iron-soluble	USEPA 6010C NOTE 1	0.2NOTE1	0.2NOTE1	±25%NOTE1

Parameters	Standard Methods	Detection Limit	Reporting Limit	Precision
Anti-scalant as Reactive phosphorus	APHA 4500P: B&F NOTE1	0.01NOTE1	0.01NOTE1	±25%NOTE1

NOTE1: The testing methods, Quality Assurance/Quality Control (QA/QC) details, detection limits and accuracy shall be submitted to EPD for approval prior to the commencement of monitoring programme.

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

3.1.5. MONITORING LOCATION

The water quality monitoring locations for baseline are in accordance with the EM&A Manual and detailed in **Table 3.3** below. A schedule for water quality monitoring shall be prepared by the ET and approved by IEC and EPD prior to the commencement of the monitoring.

Table 3.3 Location of Baseline Water Quality Monitoring Station

Station	Easting	Northing	Description
CE	843550	815243	Upstream control station at ebb tide
CF	846843	810193	Upstream control station at flood tide
WSR1	846864	812014	Ecological sensitive receiver at Tung Lung Chau
WSR2	847645	812993	Fisheries sensitive receiver at Tung Lung Chau
WSR3	848023	813262	Ecological sensitive receiver at Tung Lung Chau
WSR4	847886	814154	Ecological sensitive receiver at Tai Miu Wan
WSR16	845039	815287	Ecological sensitive receiver at Fat Tong Chau
WSR33	847159	814488	Ecological sensitive receiver at Tai Miu Wan
WSR36	846878	814081	Ecological sensitive receiver at Kwun Tsai
WSR37	846655	813810	Ecological sensitive receiver at Tit Cham Chau
NF1	846542	813614	Edge of mixing zone, ~ 200m west of outfall diffuser
NF2	846942	813614	Edge of mixing zone, ~ 200m east of outfall diffuser
NF3	846742	813414	Edge of mixing zone, ~ 200m south of outfall diffuser

WSR1 to WSR37 were identified in accordance with Annex 14 of the EIAO-TM as well as Clause 3.4.4.2 of the Environmental Impact Assessment Study Brief for Desalination Plant at Tseung Kwan O (No. ESB-266/2013). WSR1 to WSR3 are sited near the Tung Lung Chau Fish Culture Zone; WSR16 and WSR36 are sited near the coral assemblages along the coastlines of Fat Tong Chau and Kwun Tsai respectively; WSR 4 and WSR33 are sited near the Coastal Protection Area and coral assemblages in waters of Tai Miu Wan; WSR37 is sited near the fisheries resource including spawning and nursery grounds at the coastal water of Tit Cham Chau.

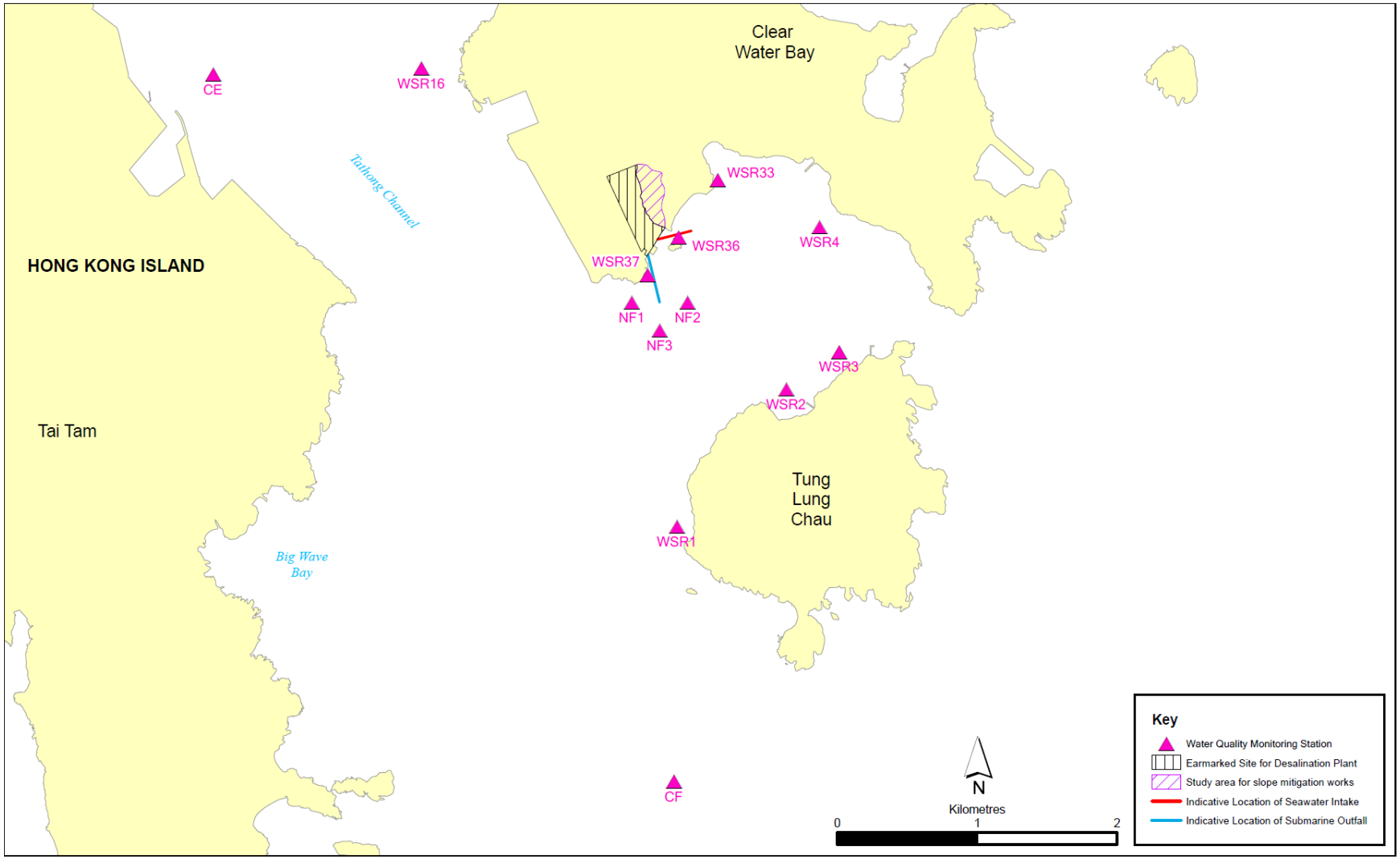


Figure 3.1 Baseline and Impact water quality monitoring locations under EM&A Manual

3.1.6. SAMPLING FREQUENCY

During periods when there are dredging works, impact monitoring should be undertaken at the monitoring stations as shown in **Figure 3.1** and **Table 3.3** three days per week during the construction phase after the commencement of marine construction works and dredging activities. Monitoring at each station would be undertaken at both mid-ebb and mid-flood tides on the same day. The tidal range selected for the baseline monitoring will be at least 0.5 m for both flood and ebb tides as far as practicable. The interval between two sets of monitoring would not be less than 36 hours. The monitoring frequency would be increased in the case of exceedances of Action/Limit Levels if considered necessary by ET. Monitoring frequency would be maintained as far as practicable.

The monitoring location/position, time, water depth, water temperature, salinity, weather conditions, sea conditions, tidal stage, special phenomena and work underway at the marine works site will be recorded.

3.1.7. SAMPLING DEPTHS & REPLICATION

For baseline monitoring, each station will be sampled and measurements/ water samples will be taken at three depths, 1 m below the sea surface, mid-depth and 1 m above the seabed. For stations that are less than 3 m in depth, only the mid depth sample shall be taken. For stations that are less than 6 m in depth, only the surface and seabed sample shall be taken. For in situ measurements, duplicate readings shall be made at each water depth at each station. Duplicate water samples shall be collected at each water depth at each station. All observations and results were recorded in the data record sheets in **Appendix L**.

3.1.8. ACTION AND LIMIT LEVELS

The Action and Limit Levels have been set based on the derivation criteria specified in the EM&A Manual, as shown in **Table 3.4** below. Based on the baseline water quality monitoring data and the derivation criteria specified in **Table 3.4**, the Action/Limit Levels have been derived and are presented in **Table 3.5**.

3.2. MONITORING PROGRAMME

The ET of the Contract had conducted the baseline water monitoring between 12 May 2020 to 6 Jun 2020 at the thirteen designated monitoring stations and the six designated monitoring at waters near TKO in accordance with the EM&A Manual and Contract Specification respectively. The monitoring results was presented in Baseline Water Quality Monitoring Report separately.

The commencement of marine construction and dredging activities for the Contract have been conducted in March and April 2021 respectively.

Table 3.4 Criteria of Action and Limit Levels for Water Quality

Parameters	Action	Limit
Construction Phase Impact Monitoring		
DO in mg/L	Surface and Middle 5%-ile of baseline data for surface and middle layer Bottom 5%-ile of baseline data for bottom layers Tung Lung Chau Fish Culture Zone 5.1 mgL^{-1} or level at control station (whichever the lower)	Surface and Middle 4 $mg\ L^{-1}$ Bottom 2 $mg\ L^{-1}$ Tung Lung Chau Fish Culture Zone 5.0 mgL-1 or level at control station (whichever the lower)
SS in mg/L (Depth-averaged)	≥ 95 %-ile of baseline data or 20% exceedance of value at any impact station compared with corresponding data from control station	≥ 99 %-ile of baseline data or 30% exceedance of value at any impact station compared with corresponding data from control station
Turbidity in NTU (Depth-averaged)	≥ 95 %-ile of baseline data or 20% exceedance of value at any impact station compared with corresponding data from control station	≥ 99 %-ile of baseline data or 30% exceedance of value at any impact station compared with corresponding data from control station
First-year Operation Phase Monitoring		
DO in mg/L	Surface and Middle 5%-ile of baseline data for surface and middle layer Bottom 5%-ile of baseline data for bottom layers Tung Lung Chau Fish Culture Zone 5.1 mgL^{-1} or level at control station (whichever the lower)	Surface and Middle 4 $mg\ L^{-1}$ Bottom 2 $mg\ L^{-1}$ Tung Lung Chau Fish Culture Zone 5.0 mgL^{-1} or level at control station (whichever the lower)

SS in mg/L (Depth-averaged)	≥ 95 %-ile of baseline data or 20% exceedance of value at any impact station compared with corresponding data from control station	≥ 99 %-ile of baseline data or 30% exceedance of value at any impact station compared with corresponding data from control station
Turbidity in NTU (Depth-averaged)	≥ 95 %-ile of baseline data or 20% exceedance of value at any impact station compared with corresponding data from control station	≥ 99 %-ile of baseline data or 30% exceedance of value at any impact station compared with corresponding data from control station
Salinity in PSU (Depth-averaged)	109% of baseline level or 9% exceedance of value at any impact station compared with corresponding data from control station	110% of baseline level or 10% exceedance of value at any impact station compared with corresponding data from control station
Iron in mg/L (Depth-averaged)	0.3 mgL^{-1}	0.3 mgL^{-1}

Table 3.5 Derived Action and Limit Levels for Water Quality

Parameters	Action	Limit
Construction Phase Impact Monitoring		
DO in mg/L	Surface and Middle 7.30 mg L^{-1} Bottom 7.31 mg L^{-1} Tung Lung Chau Fish Culture Zone 5.1 mgL^{-1} or level at control station (whichever the lower)	Surface and Middle 4 mg L^{-1} Bottom 2 mg L^{-1} Tung Lung Chau Fish Culture Zone 5.0 mgL^{-1} or level at control station (whichever the lower)
SS in mg/L (Depth-averaged)	5.00 mg L^{-1} or 20% exceedance of value at any impact station compared with corresponding data from control station	6.00 mg L^{-1} or 30% exceedance of value at any impact station compared with corresponding data from control station
Turbidity in NTU (Depth-averaged)	2.41 NTU or 20% exceedance of value at any impact station compared with corresponding data from control station	2.84 NTU or 30% exceedance of value at any impact station compared with corresponding data from control station
First-year Operation Phase Monitoring [iv]		
DO in mg/L	Surface and Middle 7.30 mg L^{-1} Bottom 7.31 mg L^{-1} Tung Lung Chau Fish Culture Zone 5.1 mgL^{-1} or level at control station (whichever the lower)	Surface and Middle 4 mg L^{-1} Bottom 2 mg L^{-1} Tung Lung Chau Fish Culture Zone 5.0 mgL^{-1} or level at control station (whichever the lower)
SS in mg/L (Depth-averaged)	5.00 mg L^{-1} or 20% exceedance of valueat any impact station compared with corresponding data from control station	6.00 mg L^{-1} or 30% exceedance of value at any impact station compared with corresponding data from control station

Turbidity in NTU (Depth-averaged)	2.41 NTU or 20% exceedance of value at any impact station compared with corresponding data from control station	2.84 NTU or 30% exceedance of value at any impact station compared with corresponding data from control station
Salinity in PSU (Depth-averaged)	34.28 PSU or 9% exceedance of value at any impact station compared with corresponding data from control station	34.60 PSU or 10% exceedance of value at any impact station compared with corresponding data from control station
Iron in mg/L (Depth-averaged)	0.3 mgL^{-1}	0.3 mgL^{-1}

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, iron and Salinity, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
iv. For the Action and Limit Levels adopted during First-year Operation Phase Monitoring, further review would be made according to the EM&A Manual during Operation Phase.

3.3. MONITORING RESULTS AND OBSERVATIONS

General water quality monitoring at the ten monitoring stations (CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36 and WSR37) were conducted on 1, 4, 6, 8, 11, 13, 15, 18, 20, 22, 25, 27, 29 and 31 January 2022.

Fifty-two (52) of the general water quality monitoring results of suspended solids (SS) obtained had exceeded the Action Level. Thirty-three (33) of the general water quality monitoring results of SS obtained during the reporting period had exceeded the Limit Level.

Details of the exceedance are presented in **Appendix O**.

Investigation on the reason of exceedance has been carried out, where the exceedances of SS on1, 4, 6, 8, 11, 15, 18, 20, 22, 25, 27, 29 and 31 January 2022 were concluded to be unrelated to the Contract as detailed in the Incident Reports on Action Level or Limit Level Non-compliance along with supporting materials in **Appendix O.**

Monitoring results of 6 key parameters: Salinity, DO, turbidity, SS, pH and temperature in this reporting, are summarized in **Table 3.6** and **Table 3.7**, and detailed results are presented in **Appendix L**.

Table 3.6 Summary of Impact Water Quality Monitoring Results (Mid-Flood)

Locations		Parameters						
		Salinity (ppt)	Dissolved Oxygen (mg/L)		pH	Turbidity (NTU)	Suspended Solids (mg/L)	Temp.(°C)
			Surface & Middle	Bottom				
CE	Avg.	32.8	8.8	8.8	8.2	3.3	4.1	21.1
	Min.	30.1	8.1	8.1	8.0	2.3	2.5	19.7
	Max.	35.1	9.6	9.6	8.5	4.3	12.0	23.1
CF	Avg.	32.8	8.7	8.7	8.3	3.9	5.4	21.2
	Min.	30.3	8.2	8.2	8.0	2.2	2.5	20.1
	Max.	34.9	9.0	9.1	8.5	5.7	22.0	22.9
WSR1	Avg.	32.8	8.7	8.6	8.2	2.7	4.4	21.1
	Min.	30.3	8.2	8.2	8.0	1.6	2.5	19.6
	Max.	35.0	9.4	9.4	8.5	4.0	8.0	22.7
WSR2	Avg.	33.0	9.0	8.9	8.3	2.3	5.0	21.2
	Min.	31.1	8.3	8.4	8.0	1.5	2.5	19.7
	Max.	35.0	9.8	9.9	8.5	3.4	21.0	23.2
WSR3	Avg.	32.4	8.7	8.7	8.3	2.7	6.5	23.5
	Min.	31.1	7.7	7.7	8.1	1.6	2.5	21.9
	Max.	33.3	9.4	9.4	8.5	4.6	23.0	25.8
WSR4	Avg.	32.7	8.8	8.8	8.2	2.7	6.4	21.2
	Min.	30.6	8.3	8.0	8.0	1.8	2.5	20.0
	Max.	35.3	9.6	9.6	8.4	3.8	36.0	22.5
WSR16	Avg.	32.2	8.8	8.8	8.3	2.9	6.4	23.6
	Min.	31.0	8.1	8.0	8.1	1.7	3.0	22.0
	Max.	33.8	9.5	9.5	8.5	4.3	26.0	25.6
WSR33	Avg.	32.7	8.6	8.6	8.3	2.9	4.3	21.1
	Min.	30.6	8.0	8.0	8.0	1.8	2.5	19.9
	Max.	34.3	9.0	9.1	8.5	4.3	8.0	22.6
WSR36	Avg.	32.7	8.9	8.8	8.3	2.7	4.9	21.1
	Min.	30.9	8.3	8.2	8.1	1.3	2.5	19.9
	Max.	35.2	9.7	9.8	8.5	4.0	13.0	22.6
WSR37	Avg.	32.8	8.8	8.8	8.3	2.8	5.3	21.1
	Min.	30.6	8.3	8.3	8.0	1.8	2.5	19.8
	Max.	35.2	9.8	9.7	8.5	4.4	23.0	22.8

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. Measurement data of Suspending Solids would be rounding to 2.5mg/L if the value was less than 2.5mg/L to facilitate data analysing.

Table 3.7 Summary of Impact Water Quality Monitoring Results (Mid-Ebb)

Locations		Parameters						
		Salinity (ppt)	Dissolved Oxygen (mg/L)		pH	Turbidity (NTU)	Suspended Solids (mg/L)	Temp.(°C)
			Surface & Middle	Bottom				
CE	Avg.	32.8	8.7	8.7	8.2	3.9	4.7	21.2
	Min.	30.9	7.9	7.9	8.1	2.8	2.5	19.8
	Max.	34.8	9.8	9.7	8.4	5.2	11.0	22.8
CF	Avg.	32.6	8.6	8.6	8.2	3.3	5.2	21.2
	Min.	30.6	7.9	7.9	8.0	2.3	2.5	20.2
	Max.	34.4	9.4	9.4	8.5	4.7	17.0	22.9
WSR1	Avg.	32.9	8.6	8.6	8.2	2.8	5.4	21.2
	Min.	30.1	8.1	8.1	7.9	1.6	2.5	19.8
	Max.	35.1	9.3	9.3	8.4	4.1	13.0	23.0
WSR2	Avg.	32.8	8.7	8.7	8.3	2.4	4.5	21.1
	Min.	30.5	8.0	8.1	8.0	1.5	2.5	19.8
	Max.	34.6	9.2	9.2	8.5	3.8	8.0	22.9
WSR3	Avg.	32.6	8.7	8.7	8.2	2.8	5.2	21.1
	Min.	29.9	8.2	8.3	7.9	1.4	2.5	20.1
	Max.	34.6	9.6	9.6	8.4	4.5	20.0	22.9
WSR4	Avg.	32.7	8.8	8.8	8.2	2.8	5.8	21.2
	Min.	30.3	8.1	8.1	8.0	1.6	2.5	19.9
	Max.	34.8	9.7	9.7	8.5	4.4	28.0	23.5
WSR16	Avg.	32.9	8.7	8.7	8.3	2.8	4.9	21.1
	Min.	30.0	7.9	8.0	7.9	1.8	2.5	19.8
	Max.	34.8	9.4	9.3	8.4	4.0	13.0	23.0
WSR33	Avg.	32.7	8.6	8.7	8.2	2.7	5.5	21.2
	Min.	30.4	8.1	8.0	7.9	1.8	2.5	19.9
	Max.	34.3	9.4	9.3	8.4	4.2	16.0	23.3
WSR36	Avg.	32.7	8.5	8.5	8.2	2.9	4.5	21.2
	Min.	29.9	8.1	8.1	7.9	1.8	2.5	19.8
	Max.	34.7	9.0	9.0	8.4	4.0	9.0	23.1
WSR37	Avg.	32.7	8.7	8.7	8.2	2.9	5.3	21.2
	Min.	30.1	8.0	7.9	7.9	1.6	2.5	20.0
	Max.	34.3	9.3	9.3	8.4	4.0	27.0	23.4

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. Measurement data of Suspending Solids would be rounding to 2.5mg/L if the value was less than 2.5mg/L to facilitate data analysing.

4. WASTE

The waste generated from this Contract 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 Contract are also grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials. With reference to relevant handling records and trip tickets of this Contract, 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 H.**

Table 4.1 Quantities of Waste Generated from the Contract during January 2022

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	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper / cardboard packaging	Plastics (see Note)	Chemical Waste	Others, e.g. general refuse
	(in ,000kg)	(in ,000kg)	(in ,000kg)	(in ,000kg)	(in ,000kg)	(in ,000kg)	(in ,000kg)	(in ,000kg)	(in ,000kg)	(in ,000kg)	(in ,000kg)
January 2022*	233.850	0	0	0	233.850	0	0	0.069	0.005	0	109.02

Notes: (1) Plastics refer to plastic bottles / containers, plastic sheets / foam from packaging material

* The data may be updated in the next reporting month after final confirmation by the end of the month.

5. LANDFILL GAS MONITORING

5.1. MONITORING REQUIREMENT

In accordance with Section 11 of the EM&A Manual, monitoring of landfill gas is required for construction works within the 250m Consultation Zone. Part of the desalination plant and the indicative area of natural slope mitigation works fall within the SENT Landfill Extension Consultation Zone; and part of the 1,200 mm diameter fresh water mains along Wan Po Road falls within the SENT Landfill and SENT Landfill Extension Consultation Zones, TKO Stage II/III Restored Landfill and TKO Stage I Restored Landfill Consultation Zones.

5.2. MONITORING LOCATION

Monitoring of oxygen, methane, carbon dioxide and barometric pressure would be performed for excavations at 1m depth or more within the consultation Zone.

During construction of works within the consultation zones, excavations of 1m depth or more was monitored:

- At the ground surface before excavation commences;
- Immediately before any worker enters the excavation;
- At the beginning of each working day for the entire period the excavation remains open; and
- Periodically through the working day whilst workers are in the excavation.

For excavations between 300mm and 1m deep, measurements should be carried out:

- Directly after the excavation has been completed; and
- Periodically whilst the excavation remains open.

5.3. MONITORING PROGRAMME

Since part of the desalination plant (Wan Po Road and MIC compound/Basketball Court) and the indicative area of natural slope mitigation works fall within the SENT Landfill Extension Consultation Zone in this contract (**Figure 5.1**), landfill gas monitoring would be required for Wan Po Road and MIC compound/Basketball Court (**Figure 5.2**) if excavations were conducted at more than 300mm deep. Although SENT Landfill Extension has commenced operation since November 2021, no excavation works were conducted at MIC compound/Basketball Court. Hence no landfill gas monitoring would be scheduled for MIC compound/Basketball Court at the current stage. In this reporting period, 47 time of landfill gas monitoring was recorded at Wan Po Road (Ch1+360 – Ch1+513). No exceedance of action and limit levels for oxygen, methane and carbon dioxide was observed. Monitoring was conducted during excavations at 1m depth or more within the consultation zone and whenever workers entered the excavation on the day.

5.4. MONITORING LOCATION

The area required to be monitored for landfill gas in the reporting period is shown in **Figure 5.2**.

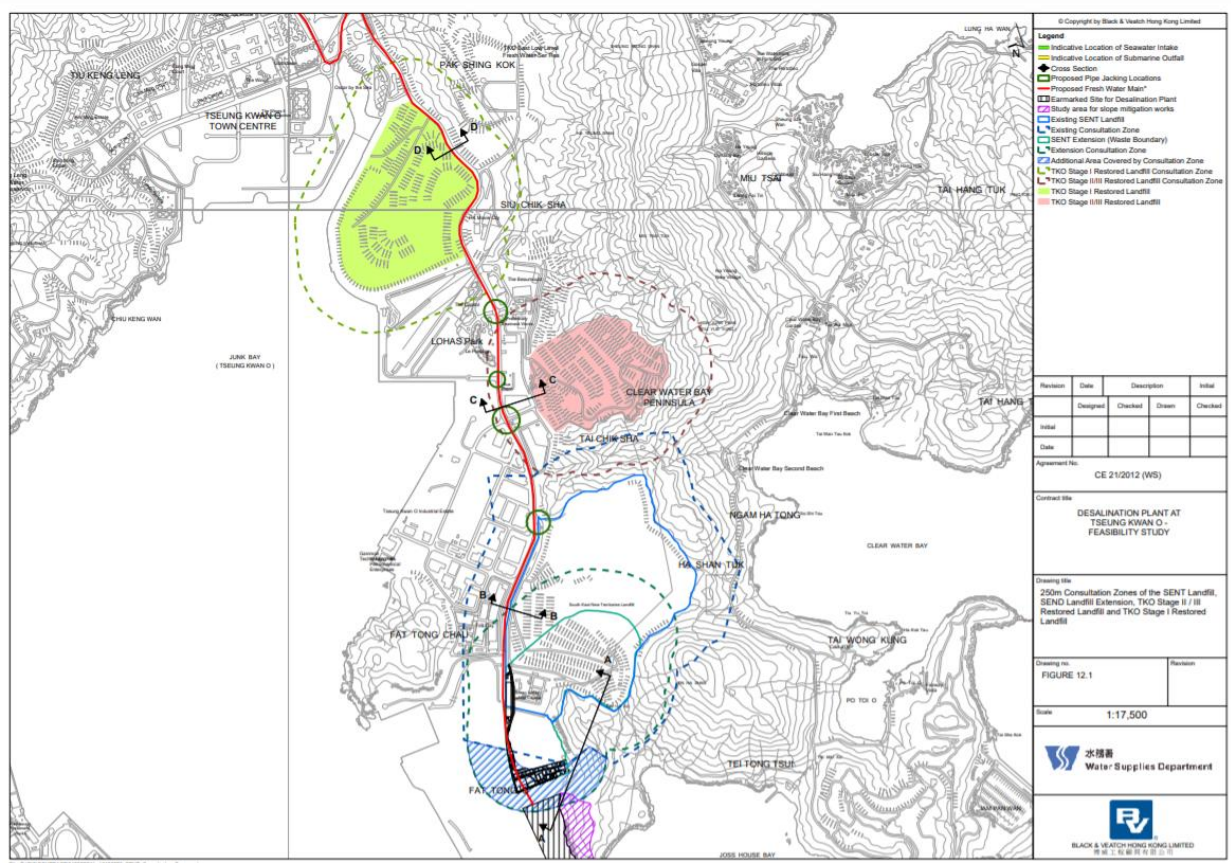


Figure 5.1 Overview of the SENT Extension Consultation Zone and the Contract Site Area

5.5. MONITORING PARAMETERS

LFG monitoring was carried out to identify any migration between the landfill and the Contract and to ensure the safety of the construction, operation and maintenance personnel working on-site, visitors and any other person within the Contract area.

The following parameters were monitored:

- Methane
- Oxygen
- Carbon Dioxide
- Barometric Pressure

Action and Limit Level are provided in **Table 5.1**.

Table 5.1 Action and Limit Level for Landfill Gas Monitoring Equipment

Parameters	Action Level	Limit Level
Oxygen (O2)	<19% O2	<19% O2
Methane (CH4)	>10% LEL	>80% LEL
Carbon Dioxide (CO2)	>0.5% CO2	>1.5% CO2

5.6. MONITORING EQUIPMENT

Landfill Gas monitoring was carried out using intrinsically-safe, portable multi-gas monitoring instruments. The gas monitoring equipment is:

- Complying with the Landfill Gas Hazard Assessment Guidance Note as intrinsically safe;
- Capable of continuous barometric pressure and gas pressure measurements;
- Normally operated in diffusion mode unless required for spot sampling, when it should be capable of operating by means of an aspirator or pump;
- Having low battery, fault and over range indication incorporated;
- Capable of storing monitoring data, and shall be capable of being downloaded directly;
- Measure in the following ranges:

methane	0-100% LOWER EXPLOSION LIMIT (LEL) AND 0-100% V/V;
oxygen	0-25% V/V;
carbon dioxide	0-5% v/v; and
barometric pressure	mBar (absolute)

- alarm (both audibly and visually) in the event that the concentrations of the following are exceeded:

methane	>10% LEL;
oxygen	<19%
carbon dioxide	>0.5% by volume
barometric pressure	mBar (absolute)

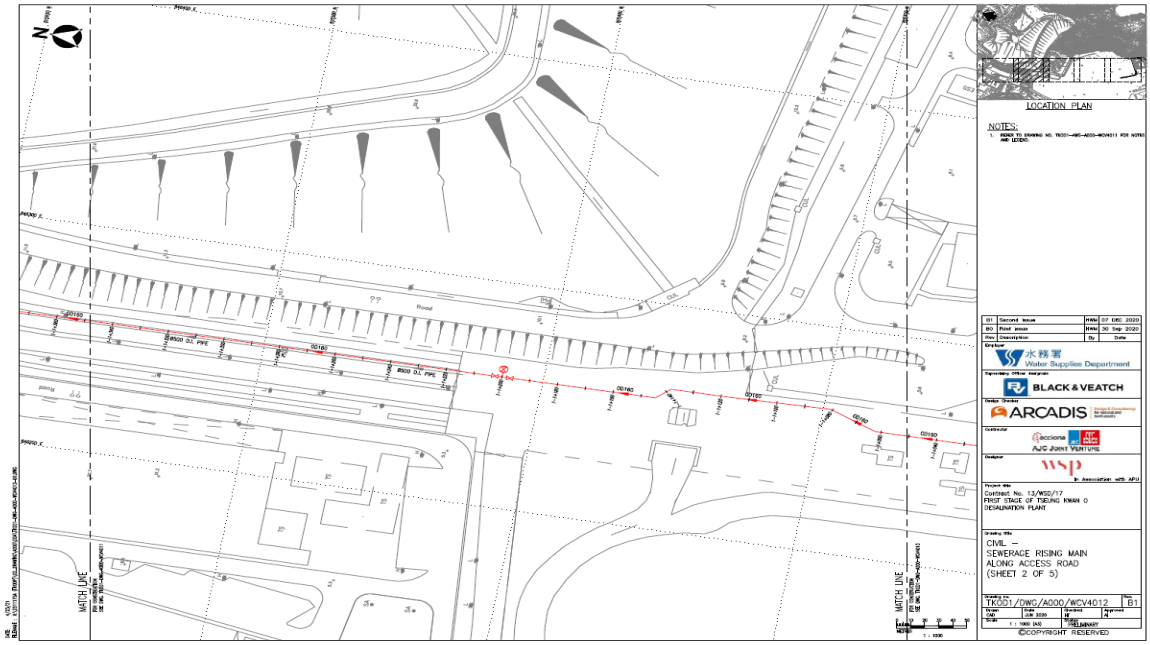


Figure 5.2 Location Map for Landfill Gas Monitoring at Wan Po Road

5.7. MONITORING RESULTS AND OBSERVATIONS

In this reporting period, 47 time of landfill gas monitoring was recorded at Wan Po Road (Ch1+360 – Ch1+513). No exceedance of action and limit levels for methane, oxygen and carbon dioxide was observed. Monitoring was conducted during excavations at 1m depth or more within the consultation zone and whenever workers entered the excavation on the day.

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

The Environmental Complaint Handling Procedure is shown in below **Figure 6.1:**

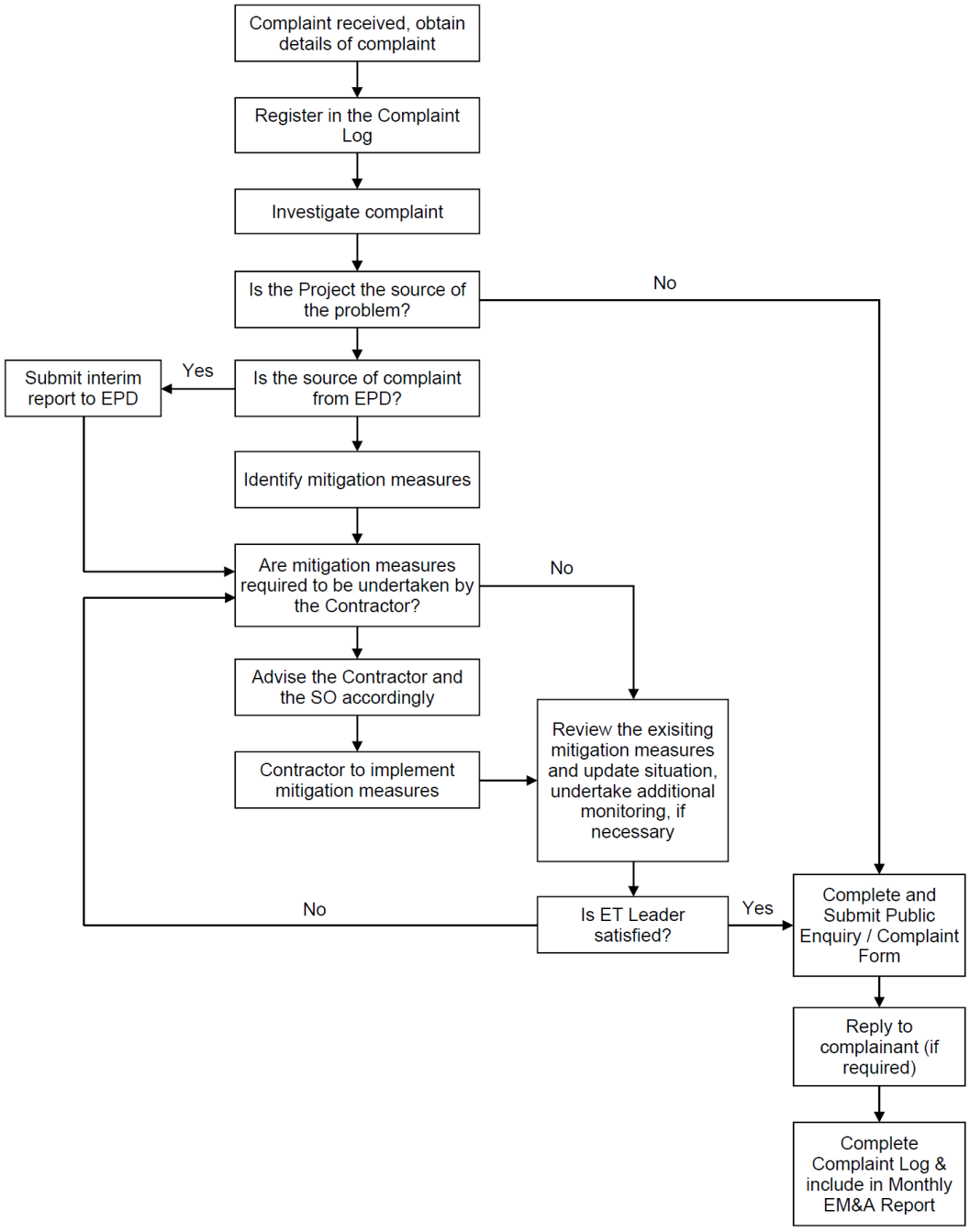


Figure 6.1 Environmental Complaint Handling Procedures

No noise monitoring was conducted during the reporting period since there are no Contract-related construction activities undertaken within a radius of 300m from the monitoring locations.

General water quality monitoring at the ten monitoring stations (CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36 and WSR37) were conducted on 1, 4, 6, 8, 11, 13, 15, 18, 20, 22, 25, 27, 29 and 31 January 2022.

Fifty-two (52) of the general water quality monitoring results of suspended solids (SS) obtained had exceeded the Action Level. Thirty-three (33) of the general water quality monitoring results of SS obtained during the reporting period had exceeded the Limit Level.

Details of the exceedance are presented in **Appendix O**.

Investigation on the reason of exceedance has been carried out, where the exceedances of SS on 1, 4, 6, 8, 11, 15, 18, 20, 22, 25, 27, 29 and 31 January 2022 were concluded to be unrelated to the Contract as detailed in the Incident Reports on Action Level or Limit Level Non-compliance along with supporting materials in **Appendix O.**

In this reporting period, 47 time of landfill gas monitoring was recorded at Wan Po Road (Ch1+360 – Ch1+513). No exceedance of action and limit levels for methane, oxygen and carbon dioxide was observed. Monitoring was conducted during excavations at 1m depth or more within the consultation zone and whenever workers entered the excavation on the day.

ACJCJ's Environmental Office received a text message on 14 January 2022 from EPD inspector claiming that susceptible oil spillage at the water surface nearby to Outfall Shaft was observed during their routine drone check on 13 January 2022. The message from EPD was relayed to ET by AJCJV on 15 January 2022. Immediate investigation by AJCJV has been made after the acknowledgement of the incident, whilst implementing emergency clean up measure on any residue oil spillage. After investigation, the oil spillage was unlikely originated from the Outfall Shaft. The incident may therefore be considered as non-project related. Detail of the incident could be referring to **Appendix O**.

Moreover, oil stains were also observed at CEDD pier after leaving of Explosives Vessel on 28 January 2022 by Supervising Officer's Representative (SOR) during site inspection. ET will keep closely monitoring the performance of Contractor, implementation of water quality mitigation measure and other contamination issue around the Project site, to ensure the EM&A requirement is properly implemented.

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

Statistics on complaints and regulatory compliance are summarized in **Appendix J.**

7. EM&A SITE INSPECTION

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 4, 11, 18, 26 and 31 January 2022 at the site portions listed in **Table 7.1** below.

Table 7.1 Summaries of Site Inspection Record

Date	Inspected Site Portion	Time
4 January 2022	TKO 137	14:35 – 17:00
11 January 2022	TKO 137	14:38 – 17:00
18 January 2022	TKO 137	14:30 – 17:15
26 January 2022	TKO 137	09:00 – 12:30
31 January 2022	TKO 137	09:30 – 10:38

Joint site inspections with IEC were carried out on 4, 11, 18, 26 and 31 January 2022.

Environmental deficiencies were observed during weekly site inspection. Key observations during the site inspections and during the reporting period are summarized in **Table 7.2**.

Table 7.2 Site Observations

Date	Environmental Observations	Follow-up Status
4 January 2022	No major observations were recorded on the reporting day.	Nil.
11 January 2022	No major observations were recorded on the reporting day.	Nil.
18 January 2022	Observation(s) and Recommendation(s) 1. It has been observed during the site inspection on 18 January 2022 that there is a new sources of underground seepage marine water in the outfall shaft caisson that was not by-pass through an uncontaminated isolation system. The main contractor was urged to take immediate remediate action to ensure the seepage marine water should be contained in an isolation system before by-pass through a silt curtain.	1. The seepage water is separated.
26 January 2022	Observation(s) and Recommendation(s) 1. The main contractor was reminded that all chemical containers should be placed in drip tray (VTEC Area, Product water Storage Area and Reverse Osmosis Area) & chemical waste should be stored in	1. Chemical moved to proper storage area.

Date	Environmental Observations	Follow-up Status
	appropriate chemical waste container at reverse osmosis area.	
31 January 2022	No major observations were recorded on the reporting day.	Nil

According to the EIA Study Report, Environmental Permit, contract documents and EM&A Manual, the mitigation measures detailed in the documents should be implemented as much as practical during the reporting period. An updated Implementation Status of Environmental Mitigation Measures (EMIS) is provided in **Appendix C**. Site inspection proforma of the reporting period is provided in **Appendix I.**

8. FUTURE KEY ISSUES

Works to be undertaken in the next reporting month are:

- Land Survey;
- Construction of solar panel supports at roof of ActiDAFF;
- Construction of Reverse Osmosis (RO) Building - staircases and internal finishing;
- Construction of sludge thickener, Post treatment building (PTB);
- Construction of On-Site Chlorine Generation (OSCG) Building and carbon dioxide (CO_2) Tank area;
- Internal finishing work at Product Water Storage Tank (PWST), Electrical Building and Main Electrical (elec), Building and Central Chiller Plant Building (MECCP);
- Manhole construction and Glass Reinforced Plastic (GRP) pipe installation;
- Construction of manholes no,15 and no.16 adjacent to ActiDAFF and RO;
- Construction of 1/F to 2/F walls and columns of Administration Building;
- Construction of reinforced concrete (RC) support of Inspection Corridor;
- Construction of structural wall and Roof of Chemical Building;
- Outfall Shaft – Dewatering; Predrill, Rock cutting and excavations;
- Intake shaft – Retrieval of DN 2500 Tunnel Boring Machine (TBM) under water;
- Pipe jacking at Combined Shaft for Outfall pipelines; and
- Intake tunnel – Demobilize the jack pipe system and commencement of grouting works.

The major environmental impacts brought by the above construction works will include:

- Construction dust and noise generation from construction pipe piling driving works, breaking rock surface, excavation works and marine construction works
- Waste generation from construction activities
- Impact on water quality from marine construction works and inland construction works

The key environmental mitigation measures for the Project in the coming reporting period associated with the above construction works will include:

- Dust suppression by regular wetting and water spraying for construction works
- Reduction of noise from equipment and machinery on-site by regular checking of on-site plant/vehicle to ensure proper functioning
- Sorting and storage of general refuse and construction waste
- Deployment of temporary silt curtain in the area where marine construction works were conducted and deployment of water sedimentation tanks for treatment of wastewater at inland and marine areas before discharge

Referring to EM&A Manual Section 4.1.2, the impact noise monitoring should be carried out at all the designated monitoring stations when there are project-related construction activities undertaken within a radius of 300m from the monitoring stations.

The impact noise monitoring schedule for the next reporting month to be shown at **Appendix K** is not included since no impact noise monitoring will be conducted in the next reporting month.

9. CONCLUSIONS AND RECOMMENDATIONS

This is the 23rd Monthly EM&A Report for the Project which summarizes the key findings of the EM&A programme during the reporting period from 1 January to 31 January 2022, in accordance with the EM&A Manual and the requirement under FEP-01/503/2015/A.

No noise monitoring was conducted in the reporting period due to the over distant monitoring station from the works location, in which construction activities were not undertaken within a radius of 300m from the monitoring locations.

The EM&A works for water quality were conducted during the reporting period in accordance with the EM&A Manual.

Fifty-two (52) of the general water quality monitoring results of suspended solids (SS) obtained had exceeded the Action Level. Thirty-three (33) of the general water quality monitoring results of SS obtained during the reporting period had exceeded the Limit Level.

Details of the exceedance are presented in **Appendix O**.

Investigation on the reason of exceedance has been carried out, where the exceedances of SS on 1, 4, 6, 8, 11, 15, 18, 20, 22, 25, 27, 29 and 31 January 2022 were concluded to be unrelated to the Contract as detailed in the Incident Reports on Action Level or Limit Level Non-compliance along with supporting materials in **Appendix O.**

It was concluded that all exceedances recorded in January were unrelated to the project.

In this reporting period, 47 time of landfill gas monitoring was recorded at Wan Po Road (Ch1+360 – Ch1+513). No exceedance of action and limit levels for methane, oxygen and carbon dioxide was observed. Monitoring was conducted during excavations at 1m depth or more within the consultation zone and whenever workers entered the excavation on the day.

ACJCJ's Environmental Office received a text message on 14 January 2022 from EPD inspector claiming that susceptible oil spillage at the water surface nearby to Outfall Shaft was observed during their routine drone check on 13 January 2022. The message from EPD was relayed to ET by AJCJV on 15 January 2022. Immediate investigation by AJCJV has been made after the acknowledgement of the incident, whilst implementing emergency clean up measure on any residue oil spillage. After investigation, the oil spillage was unlikely originated from the Outfall Shaft. The incident may therefore be considered as non-project related. Detail of the incident could be referring to **Appendix O**.

Moreover, oil stains were also observed at CEDD pier after leaving of Explosives Vessel on 28 January 2022 by Supervising Officer's Representative (SOR) during site inspection. ET will keep closely monitoring the performance of Contractor, implementation of water quality mitigation measure and other contamination issue around the Project site, to ensure the EM&A requirement is properly implemented.

Weekly environmental site inspection was conducted during the reporting period. No major deficiency was observed during site inspection. The environmental performance of the project was therefore considered satisfactory.

According to the environmental site inspections performed in the reporting month, the Contractor is reminded to pay attention on maintaining proper materials storage, site hygiene and dust suppression mitigation measures.

No environmental complaint was received in the reporting period.

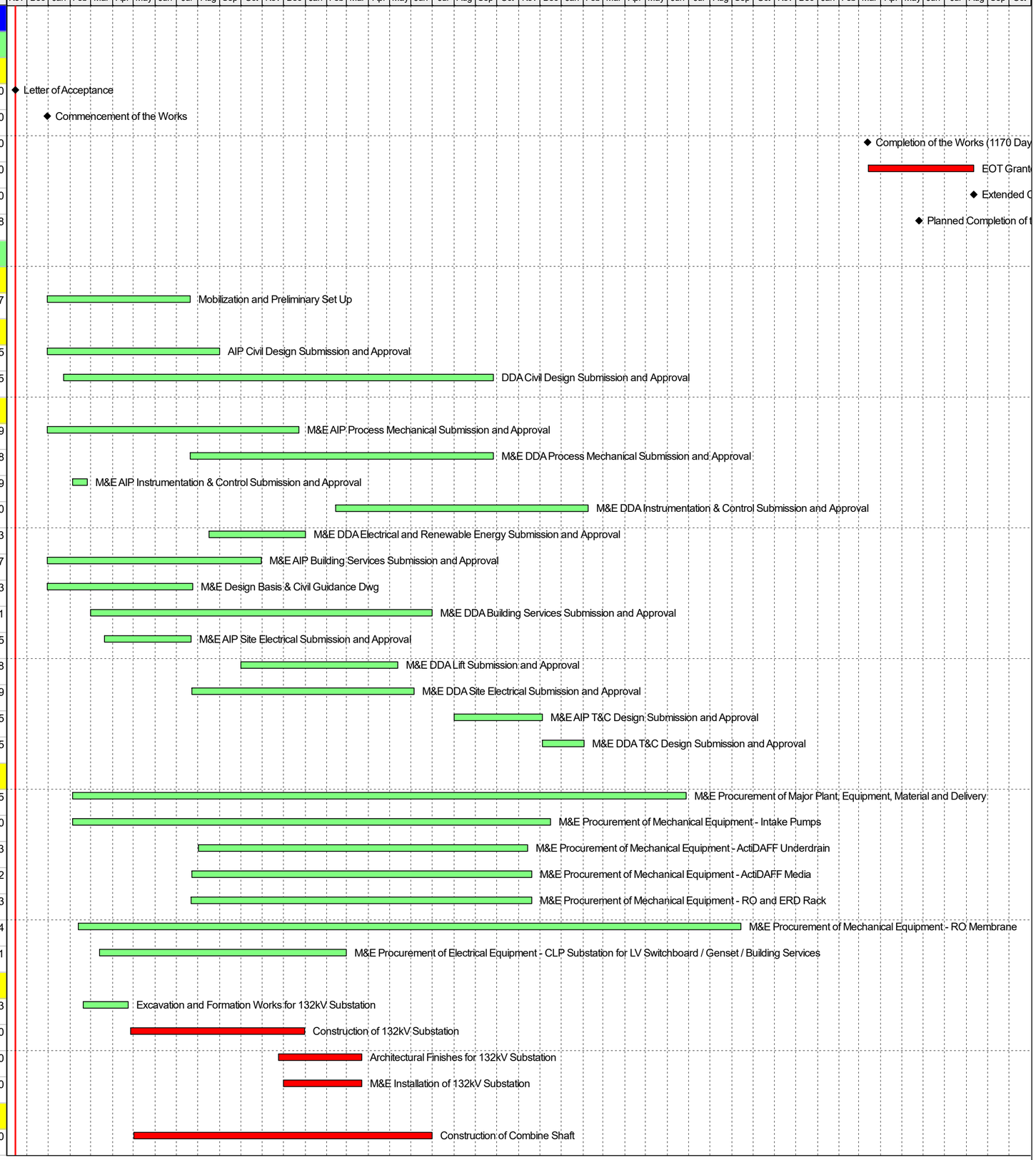
No notification of summons or prosecution was received since commencement of the Contract.

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

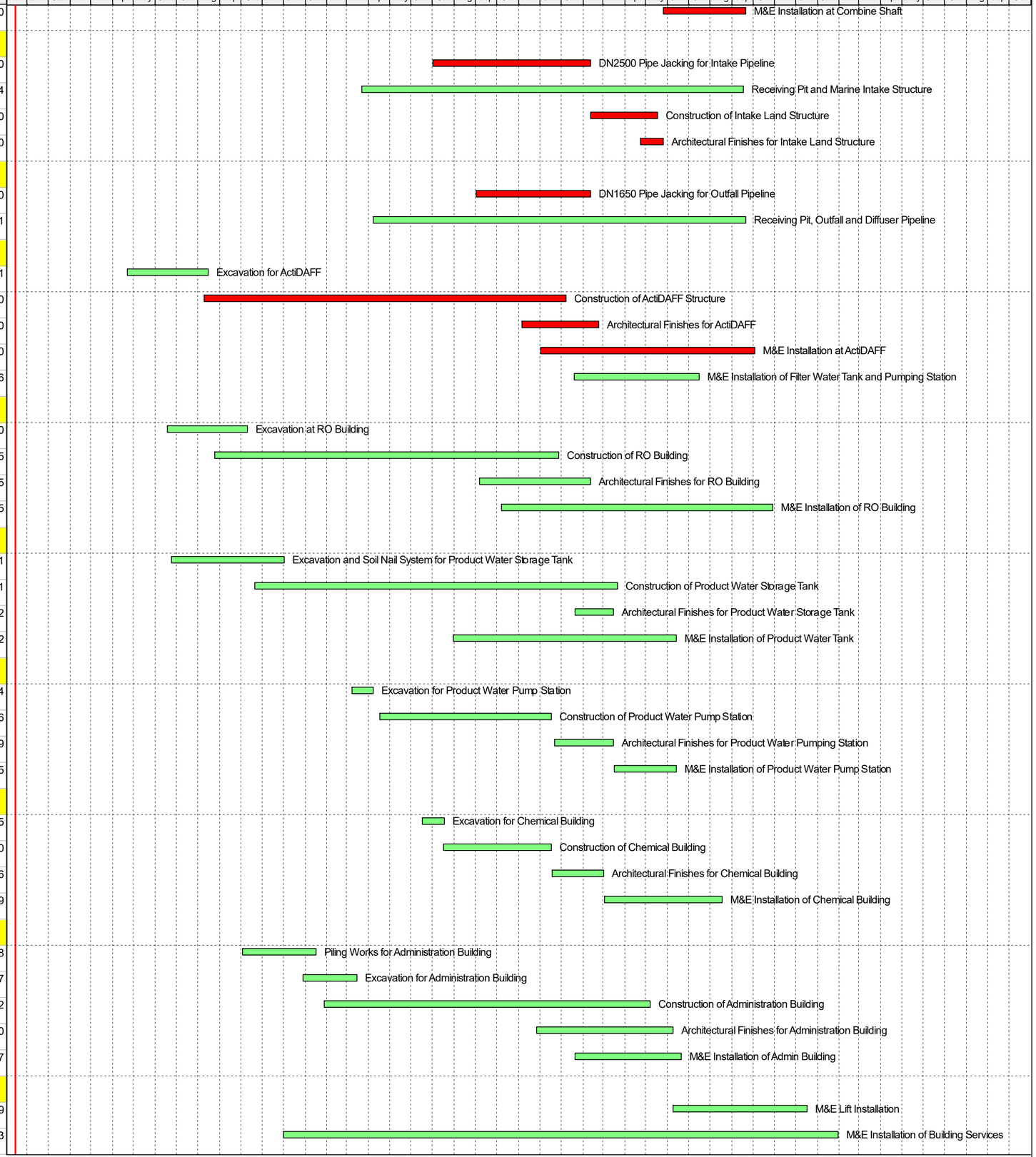
Appendix A

Master Programme

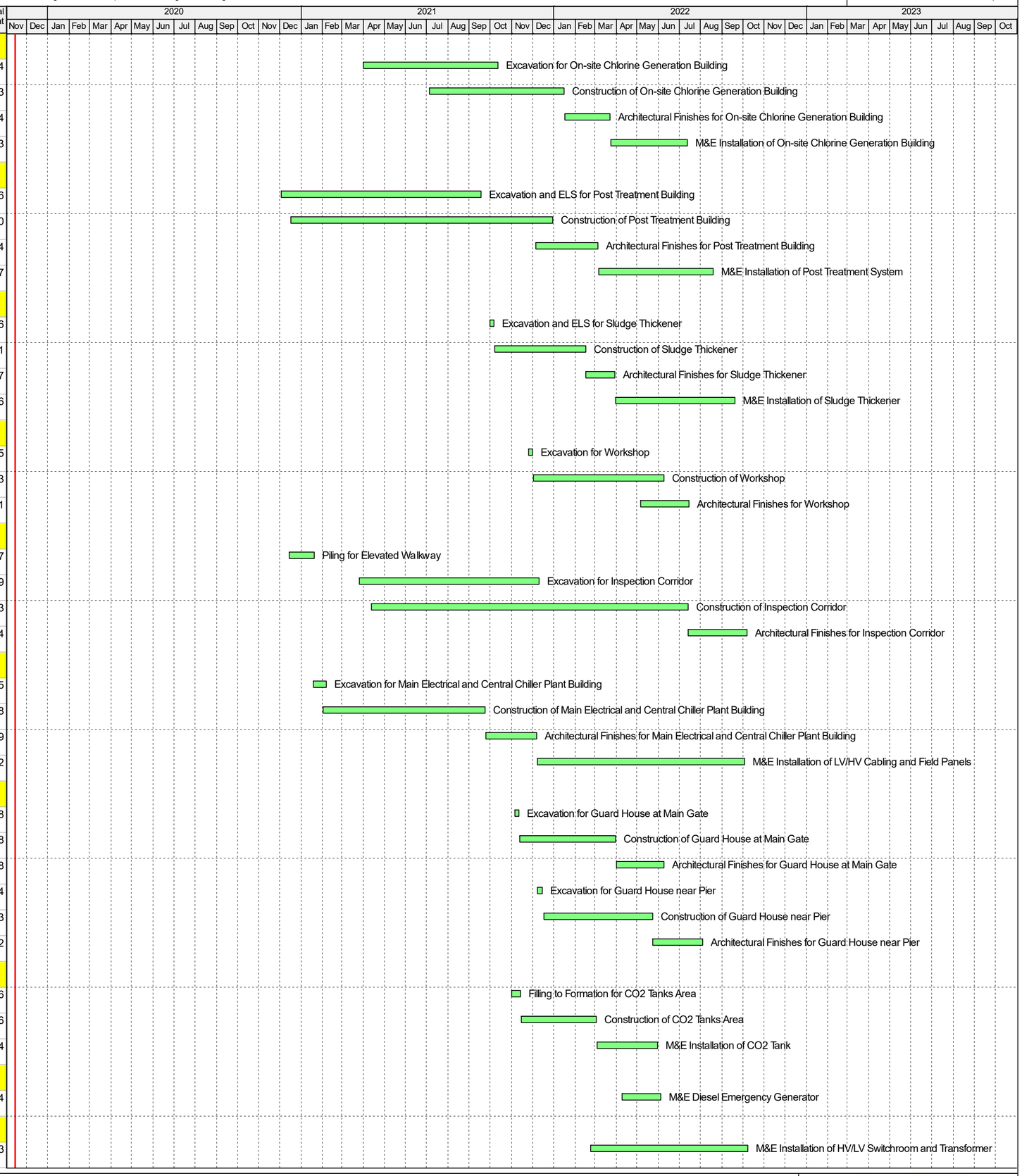
Activity ID	Activity Name	Calendar	Original Duration	Early Start	Early Finish	Total Float
Programme of the Works						
Key Dates						
Commencement and Completion Date						
KD0000100	Letter of Acceptance	IWP0 - 7	0	15-Nov-19		0
KD0000110	Commencement of the Works	IWP0 - 7	0	30-Dec-19		0
KD0000120	Completion of the Works (1170 Days)	IWP0 - 7	0		13-Mar-23	0
KD0000130	EOT Granted for Completion of the Works (150.5 Days)	IWP0 - 7	151	14-Mar-23	11-Aug-23	0
KD0000500	Extended Completion of the Works	IWP0 - 7	0		11-Aug-23	0
KD0000510	Planned Completion of the Works incl. DfMA	IWP0 - 7	0		25-May-23	78
Executive Summaries						
Preliminary Setup						
ES0001000	Mobilization and Preliminary Set Up	IWP0 - 7	204	30-Dec-19	20-Jul-20	117
Civil Design AIP and DDA						
ES0001010	AIP Civil Design Submission and Approval	IWP0 - 7	246	30-Dec-19	31-Aug-20	105
ES0001020	DDA Civil Design Submission and Approval	IWP0 - 7	613	22-Jan-20	25-Sep-21	85
M&E Design AIP and DDA						
ES0002000	M&E AIP Process Mechanical Submission and Approval	IWP0 - 7	359	30-Dec-19	22-Dec-20	109
ES0002010	M&E DDA Process Mechanical Submission and Approval	IWP0 - 7	432	21-Jul-20	25-Sep-21	108
ES0002020	M&E AIP Instrumentation & Control Submission and Approval	IWP0 - 7	22	04-Feb-20	25-Feb-20	779
ES0002030	M&E DDA Instrumentation & Control Submission and Approval	IWP0 - 7	360	13-Feb-21	07-Feb-22	150
ES0002050	M&E DDA Electrical and Renewable Energy Submission and Approval	IWP0 - 7	137	17-Aug-20	31-Dec-20	83
ES0002060	M&E AIP Building Services Submission and Approval	IWP0 - 7	306	30-Dec-19	30-Oct-20	117
ES0002065	M&E Design Basis & Civil Guidance Dwg	IWP0 - 7	208	30-Dec-19	24-Jul-20	263
ES0002070	M&E DDA Building Services Submission and Approval	IWP0 - 7	487	01-Mar-20	30-Jun-21	31
ES0002085	M&E AIP Site Electrical Submission and Approval	IWP0 - 7	124	21-Mar-20	22-Jul-20	215
ES0002090	M&E DDA Lift Submission and Approval	IWP0 - 7	224	01-Oct-20	12-May-21	68
ES0002095	M&E DDA Site Electrical Submission and Approval	IWP0 - 7	317	23-Jul-20	04-Jun-21	129
ES0002100	M&E AIP T&C Design Submission and Approval	IWP0 - 7	126	01-Aug-21	04-Dec-21	175
ES0002110	M&E DDA T&C Design Submission and Approval	IWP0 - 7	60	05-Dec-21	02-Feb-22	175
Procurement of Major Plant & Equipment Schedule						
ES0002320	M&E Procurement of Major Plant, Equipment, Material and Delivery	IWP0 - 7	875	04-Feb-20	27-Jun-22	85
ES2420	M&E Procurement of Mechanical Equipment - Intake Pumps	IWP0 - 7	682	04-Feb-20	16-Dec-21	160
ES2430	M&E Procurement of Mechanical Equipment - ActiDAFF Underdrain	IWP0 - 7	469	02-Aug-20	13-Nov-21	83
ES2440	M&E Procurement of Mechanical Equipment - ActiDAFF Media	IWP0 - 7	485	23-Jul-20	19-Nov-21	152
ES2450	M&E Procurement of Mechanical Equipment - RO and ERD Rack	IWP0 - 7	486	22-Jul-20	19-Nov-21	133
ES2460	M&E Procurement of Mechanical Equipment - RO Membrane	IWP0 - 7	945	12-Feb-20	13-Sep-22	124
ES2470	M&E Procurement of Electrical Equipment - CLP Substation for LV Switchboard / Genset / Building Services	IWP0 - 7	352	14-Mar-20	28-Feb-21	1
132kV Substation						
ES0001460	Excavation and Formation Works for 132kV Substation	IWP0 - 7	65	19-Feb-20	23-Apr-20	3
ES0001470	Construction of 132kV Substation	IWP0 - 7	248	27-Apr-20	30-Dec-20	0
ES0001480	Architectural Finishes for 132kV Substation	IWP0 - 7	120	23-Nov-20	22-Mar-21	0
ES0002240	M&E Installation of 132kV Substation	IWP0 - 7	112	01-Dec-20	22-Mar-21	0
Combine Shaft						
ES0001060	Construction of Combine Shaft	IWP0 - 7	425	02-May-20	30-Jun-21	0



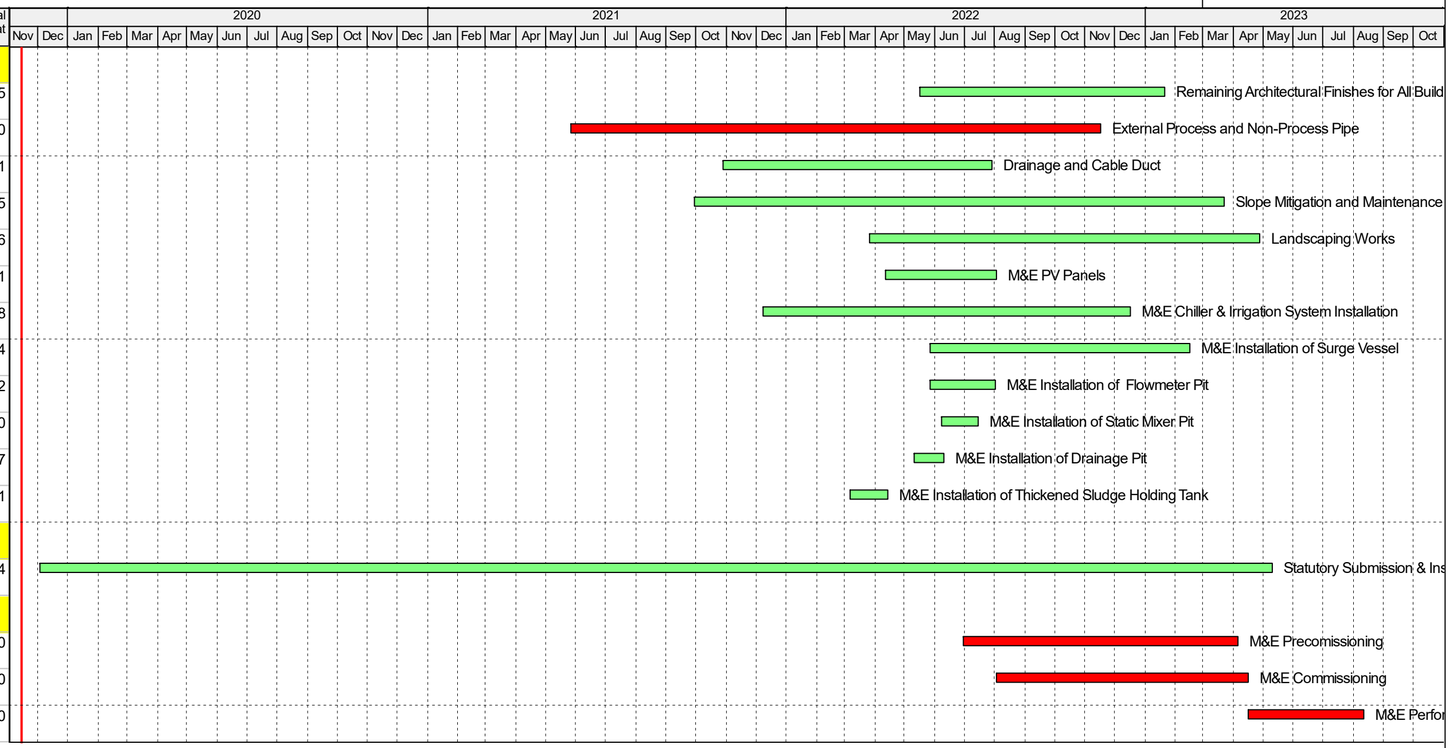
Activity ID	Activity Name	Calendar	Original Duration	Early Start	Early Finish	Total Float
ES0002120	M&E Installation at Combine Shaft	IWP0 - 7	118	26-May-22	20-Sep-22	0
Intake						
ES0001070	DN2500 Pipe Jacking for Intake Pipeline	IWP0 - 7	225	02-Jul-21	11-Feb-22	0
ES0001080	Receiving Pit and Marine Intake Structure	IWP0 - 7	545	22-Mar-21	17-Sep-22	4
ES0001110	Construction of Intake Land Structure	IWP0 - 7	96	11-Feb-22	17-May-22	0
ES0001120	Architectural Finishes for Intake Land Structure	IWP0 - 7	33	23-Apr-22	25-May-22	0
OutFall						
ES0001090	DN1650 Pipe Jacking for Outfall Pipeline	IWP0 - 7	164	01-Sep-21	11-Feb-22	0
ES0001100	Receiving Pit, Outfall and Diffuser Pipeline	IWP0 - 7	531	08-Apr-21	20-Sep-22	1
ActiDAFF						
ES0001140	Excavation for ActiDAFF	IWP0 - 7	116	22-Apr-20	15-Aug-20	11
ES0001150	Construction of ActiDAFF Structure	IWP0 - 7	516	10-Aug-20	07-Jan-22	0
ES0001160	Architectural Finishes for ActiDAFF	IWP0 - 7	110	06-Nov-21	23-Feb-22	0
ES0002130	M&E Installation at ActiDAFF	IWP0 - 7	306	02-Dec-21	03-Oct-22	0
ES0002140	M&E Installation of Filter Water Tank and Pumping Station	IWP0 - 7	179	19-Jan-22	16-Jul-22	46
Reverse Osmosis Building						
ES0001170	Excavation at RO Building	IWP0 - 7	115	18-Jun-20	10-Oct-20	30
ES0001180	Construction of RO Building	IWP0 - 7	491	25-Aug-20	28-Dec-21	25
ES0001190	Architectural Finishes for RO Building	IWP0 - 7	159	06-Sep-21	11-Feb-22	25
ES0002150	M&E Installation of RO Building	IWP0 - 7	387	07-Oct-21	28-Oct-22	25
Product Water Storage Tank						
ES0001240	Excavation and Soil Nail System for Product Water Storage Tank	IWP0 - 7	161	24-Jun-20	01-Dec-20	21
ES0001250	Construction of Product Water Storage Tank	IWP0 - 7	517	21-Oct-20	21-Mar-22	21
ES0001260	Architectural Finishes for Product Water Storage Tank	IWP0 - 7	55	20-Jan-22	15-Mar-22	22
ES0002210	M&E Installation of Product Water Tank	IWP0 - 7	318	31-Jul-21	13-Jun-22	122
Product Water Pumping Station						
ES0001270	Excavation for Product Water Pump Station	IWP0 - 7	31	08-Mar-21	07-Apr-21	54
ES0001280	Construction of Product Water Pump Station	IWP0 - 7	245	17-Apr-21	17-Dec-21	66
ES0001290	Architectural Finishes for Product Water Pumping Station	IWP0 - 7	85	22-Dec-21	16-Mar-22	59
ES0002215	M&E Installation of Product Water Pump Station	IWP0 - 7	89	17-Mar-22	13-Jun-22	35
Chemical Building						
ES0001300	Excavation for Chemical Building	IWP0 - 7	31	17-Jun-21	17-Jul-21	5
ES0001310	Construction of Chemical Building	IWP0 - 7	154	17-Jul-21	17-Dec-21	20
ES0001320	Architectural Finishes for Chemical Building	IWP0 - 7	75	18-Dec-21	02-Mar-22	16
ES0002220	M&E Installation of Chemical Building	IWP0 - 7	168	03-Mar-22	17-Aug-22	9
Administration Building						
ES0001330	Piling Works for Administration Building	IWP0 - 7	106	03-Oct-20	16-Jan-21	18
ES0001340	Excavation for Administration Building	IWP0 - 7	78	28-Dec-20	15-Mar-21	17
ES0001350	Construction of Administration Building	IWP0 - 7	465	28-Jan-21	07-May-22	12
ES0001360	Architectural Finishes for Administration Building	IWP0 - 7	195	26-Nov-21	08-Jun-22	10
ES0002230	M&E Installation of Admin Building	IWP0 - 7	152	20-Jan-22	20-Jun-22	67
Building Services & Lift Installation						
ES0002270	M&E Lift Installation	IWP0 - 7	191	09-Jun-22	16-Dec-22	129
ES0002280	M&E Installation of Building Services	IWP0 - 7	791	01-Dec-20	30-Jan-23	63



Activity ID	Activity Name	Calendar	Original Duration	Early Start	Early Finish	Total Float
OSCG Building						
ES0001400	Excavation for On-site Chlorine Generation Building	IWP0 - 7	195	01-Apr-21	12-Oct-21	14
ES0001410	Construction of On-site Chlorine Generation Building	IWP0 - 7	195	05-Jul-21	15-Jan-22	13
ES0001420	Architectural Finishes for On-site Chlorine Generation Building	IWP0 - 7	66	17-Jan-22	23-Mar-22	14
ES0002200	M&E Installation of On-site Chlorine Generation Building	IWP0 - 7	111	24-Mar-22	12-Jul-22	13
Post Treatment Building						
ES0001210	Excavation and ELS for Post Treatment Building	IWP0 - 7	289	03-Dec-20	17-Sep-21	36
ES0001220	Construction of Post Treatment Building	IWP0 - 7	379	17-Dec-20	30-Dec-21	40
ES0001230	Architectural Finishes for Post Treatment Building	IWP0 - 7	90	06-Dec-21	05-Mar-22	34
ES0002180	M&E Installation of Post Treatment System	IWP0 - 7	166	07-Mar-22	19-Aug-22	47
Sludge Thickener						
ES0001680	Excavation and ELS for Sludge Thickener	IWP0 - 7	7	30-Sep-21	06-Oct-21	16
ES0001690	Construction of Sludge Thickener	IWP0 - 7	132	07-Oct-21	15-Feb-22	51
ES0001700	Architectural Finishes for Sludge Thickener	IWP0 - 7	43	16-Feb-22	30-Mar-22	57
ES0002190	M&E Installation of Sludge Thickener	IWP0 - 7	173	31-Mar-22	19-Sep-22	16
Workshop						
ES0001560	Excavation for Workshop	IWP0 - 7	7	25-Nov-21	01-Dec-21	55
ES0001570	Construction of Workshop	IWP0 - 7	190	02-Dec-21	09-Jun-22	53
ES0001580	Architectural Finishes for Workshop	IWP0 - 7	70	06-May-22	14-Jul-22	51
Inspection Corridor						
ES0001590	Piling for Elevated Walkway	IWP0 - 7	36	15-Dec-20	19-Jan-21	177
ES0001600	Excavation for Inspection Corridor	IWP0 - 7	260	26-Mar-21	10-Dec-21	19
ES0001610	Construction of Inspection Corridor	IWP0 - 7	458	12-Apr-21	13-Jul-22	3
ES0001620	Architectural Finishes for Inspection Corridor	IWP0 - 7	85	14-Jul-22	06-Oct-22	4
Main Electrical and Central Chiller Plant Building						
ES0001430	Excavation for Main Electrical and Central Chiller Plant Building	IWP0 - 7	20	18-Jan-21	06-Feb-21	35
ES0001440	Construction of Main Electrical and Central Chiller Plant Building	IWP0 - 7	235	01-Feb-21	23-Sep-21	28
ES0001450	Architectural Finishes for Main Electrical and Central Chiller Plant Building	IWP0 - 7	75	24-Sep-21	07-Dec-21	29
ES0002260	M&E Installation of LV/HV Cabling and Field Panels	IWP0 - 7	300	08-Dec-21	03-Oct-22	2
Guard House						
ES0001490	Excavation for Guard House at Main Gate	IWP0 - 7	7	05-Nov-21	11-Nov-21	98
ES0001500	Construction of Guard House at Main Gate	IWP0 - 7	140	12-Nov-21	31-Mar-22	98
ES0001510	Architectural Finishes for Guard House at Main Gate	IWP0 - 7	69	01-Apr-22	08-Jun-22	98
ES0001520	Excavation for Guard House near Pier	IWP0 - 7	8	08-Dec-21	15-Dec-21	44
ES0001530	Construction of Guard House near Pier	IWP0 - 7	158	17-Dec-21	23-May-22	43
ES0001540	Architectural Finishes for Guard House near Pier	IWP0 - 7	72	24-May-22	03-Aug-22	42
CO2 Tank						
ES0001370	Filling to Formation for CO2 Tanks Area	IWP0 - 7	13	01-Nov-21	13-Nov-21	86
ES0001380	Construction of CO2 Tanks Area	IWP0 - 7	109	15-Nov-21	03-Mar-22	86
ES0002170	M&E Installation of CO2 Tank	IWP0 - 7	88	04-Mar-22	30-May-22	184
Diesel Emergency Generator						
ES0002250	M&E Diesel Emergency Generator	IWP0 - 7	57	09-Apr-22	04-Jun-22	64
Switch Room and Transformer Installation						
ES0002300	M&E Installation of HV/LV Switchroom and Transformer	IWP0 - 7	227	23-Feb-22	07-Oct-22	133



Activity ID	Activity Name	Calendar	Original Duration	Early Start	Early Finish	Total Float
Miscellaneous						
ES0001630	Remaining Architectural Finishes for All Buildings	IWP0 - 7	249	17-May-22	20-Jan-23	115
ES0001640	External Process and Non-Process Pipe	IWP0 - 7	539	27-May-21	16-Nov-22	0
ES0001650	Drainage and Cable Duct	IWP0 - 7	274	28-Oct-21	28-Jul-22	1
ES0001660	Slope Mitigation and Maintenance Access	IWP0 - 7	540	29-Sep-21	22-Mar-23	5
ES0001670	Landscaping Works	IWP0 - 7	398	26-Mar-22	27-Apr-23	16
ES0002290	M&E PV Panels	IWP0 - 7	113	12-Apr-22	02-Aug-22	51
ES0002310	M&E Chiller & Irrigation System Installation	IWP0 - 7	374	08-Dec-21	16-Dec-22	108
ES0002350	M&E Installation of Surge Vessel	IWP0 - 7	265	27-May-22	15-Feb-23	24
ES0002360	M&E Installation of Flowmeter Pit	IWP0 - 7	67	27-May-22	01-Aug-22	52
ES0002370	M&E Installation of Static Mixer Pit	IWP0 - 7	37	08-Jun-22	14-Jul-22	70
ES0002380	M&E Installation of Drainage Pit	IWP0 - 7	31	11-May-22	10-Jun-22	57
ES0002390	M&E Installation of Thickened Sludge Holding Tank	IWP0 - 7	39	07-Mar-22	14-Apr-22	161
Statutory Submission & Inspection						
ES0002330	Statutory Submission & Inspection	IWP0 - 7	1255	03-Dec-19	10-May-23	14
Testing and Commissioning						
ES0002400	M&E Precomissioning	IWP0 - 7	280	30-Jun-22	05-Apr-23	0
ES0002410	M&E Commissioning	IWP0 - 7	256	03-Aug-22	15-Apr-23	0
ES0002420	M&E Performance Test	IWP0 - 7	118	16-Apr-23	11-Aug-23	0



Appendix B

Overview of Desalination Plant in Tseung Kwan O

N

846 500 E

847 000 E

814 500 N

814 000 N

TEMPORARY WORKS AREA 1

GLA-TSK 692 TGLA

GLA-TSK 692 TGLA

GLA/TRD-088

ROW FOR GLA/TRD-088

GLA-TSK 745 TGLA

GLA-TSK 567

PORTION A

PORTION B

PROPOSED WORKS LIMIT FOR SLOPE MITIGATION WORKS IN COUNTRY PARK

INDICATIVE LOCATION OF PROPOSED SEAWATER INTAKE

INDICATIVE LOCATION OF PROPOSED OUTFALL

A B C D E F G H I J K L M N O

LEGEND:

- BOUNDARY OF SENT LANDFILL EXTENSION
- BOUNDARY OF WORKS AREA FOR TKO DESALINATION PLANT
- SITE PHASING
- ALLOCATED LAND BOUNDARIES

GLA-TSK 692 TGLA

NOTE: TEMPORARY WORKS AREA 1 WILL BE HANDED OVER AT +6 MPD WITH A TOLERANCE OF ±500mm.

POINT	EASTING	NORTHING
A	846581.93	814505.03
B	846610.11	813979.23
C	846614.73	813975.12
D	846629.09	813997.84
E	846644.75	813986.74
F	846646.80	813985.28
G	846677.24	814034.67
H	846686.56	814028.89
I	846766.21	814158.11
J	846459.65	814448.83
K	846578.45	814048.11
L	846613.89	814105.63
M	846614.60	814117.96
N	846676.84	814207.77
O	846756.68	814164.57

PRELIMINARY – NOT FOR CONSTRUCTION

Revision	Date	Description	Initial
B	10/03	UPDATE NOTES	YLC
A	07/18	UPDATE COORDINATES	YLC

	Designed	Checked	Drawn	Checked
Initial	YLC	CKH	SZ	WLS
Date	02/18	02/18	02/18	02/18

Approved

Agreement No.
CE 8/2015 (WS)

Contract No.
13/WSD/17

Contract Title
DESIGN, BUILD AND OPERATE FIRST STAGE OF TSEUNG KWAN O DESALINATION PLANT

Drawing Title
SITE HANDOVER WORKS AREAS

Drawing No.
190495/K/TEND/10/0003

Revision
B

Scale
A1 1 : 1500
A3 1 : 3000

水務署
Water Supplies Department

BLACK & VEATCH HONG KONG LIMITED
博威工程顧問有限公司

BUILDINGS IN FIRST STAGE

CODE	NAME OF BUILDING	TOTAL G.F.A. (m^2)	SITE COVERAGE (m^2)
B	COMBINE SHAFT	759,876	759,876
C	ACTIDAFF	10027,547	5455,346
G	REVERSE OSMOSIS BUILDING AND ELECTRICAL BUILDING	4511,455	5367,935
H	CO2 TANKS AREA	-	-
J	PRODUCT WATER STORAGE TANK, PUMP STATION AND ELECTRICAL BUILDING	1974,610	2833,980
K	SLUDGE TREATMENT BUILDING, TANK AND PUMP ROOM	2531,044	1228,361
M	ADMINISTRATION BUILDING & ELECTRICAL BUILDING C	2459,713	1114,062
N	MAIN ELECTRICAL AND CENTRAL CHILLER PLANT BUILDING	-	459,893
R1	ELECTROCHLORINATION BUILDING & ELECTRICAL BUILDING A	657,992	525,776
S	132 kV SUBSTATION	-	943,560
T	IRRIGATION WATER TANK AND PUMP ROOM	-	156,148
R2	CHEMICAL BUILDING	813,056	813,056
V	VISITOR GALLERY	1330,410	1330,410
X1	GUARD HOUSE AND FS CONTROL ROOM	39,585	39,585
X2	GUARD HOUSE	22,035	22,035
Y	R + D OUTDOOR	-	-
Z	WASTE WATER TREATMENT PLANT	48,000	48,000
	TOTAL =	25175,323	21498,023

LEGEND / ABBREVIATION

H/L WINDOW	HIGH LEVEL WINDOW
M.L.	METAL LOUVRES
C.L.	CAT LADDER
A.U.T.	ACCESSIBLE UNISEX TOILET
⊕	PROPOSED FINISH FLOOR LEVEL IN METER ABOVE P.D.
⊕	STRUCTURAL FLOOR LEVEL IN METER ABOVE P.D.
M/A/L	MECHANICAL VENTILATION & ARTIFICIAL LIGHTING
F.E.	4.5kg CO^2 FIRE EXTINGUISHER
H.R.	HOSE REEL
Ⓐ	FIREMAN'S LIFT
Ⓓ	LIFT FOR THE BARRIER FREE ACCESS
P.D.	PIPE DUCT

PLOT RATIO & SITE COVERAGE CALCULATION:

SITE AREA OF THE FIRST STAGE = 56108 m²

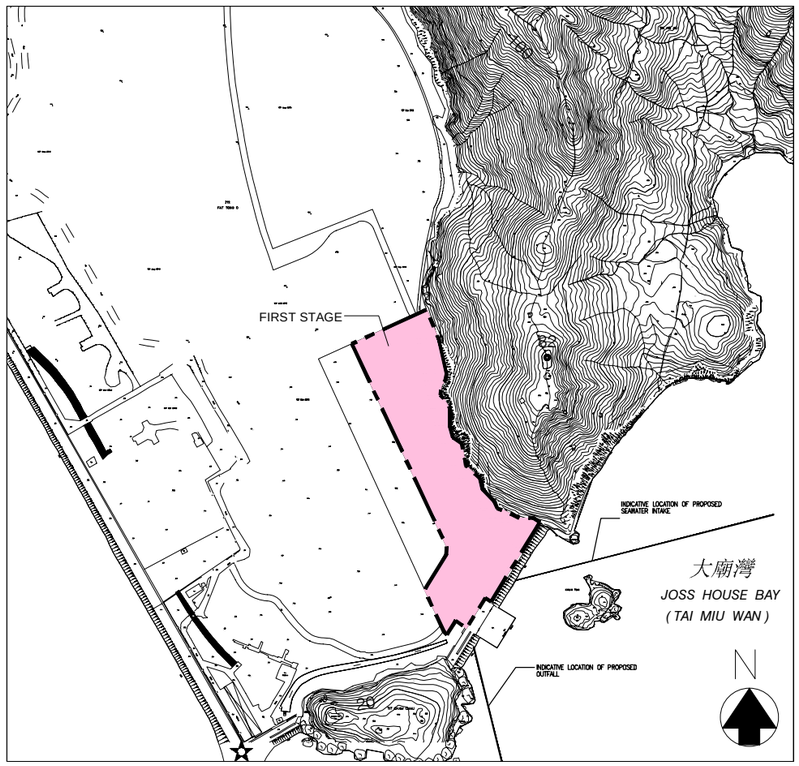
TOTAL G.F.A. = 25092.141 m²
TOTAL SITE COVERAGE = 21414.841 m²

PLOT RATIO = 25092.141 / 56108
= 0.447 < PERMITTED

SITE COVERAGE = 21414.841 / 56108 x 100
= 38.167%

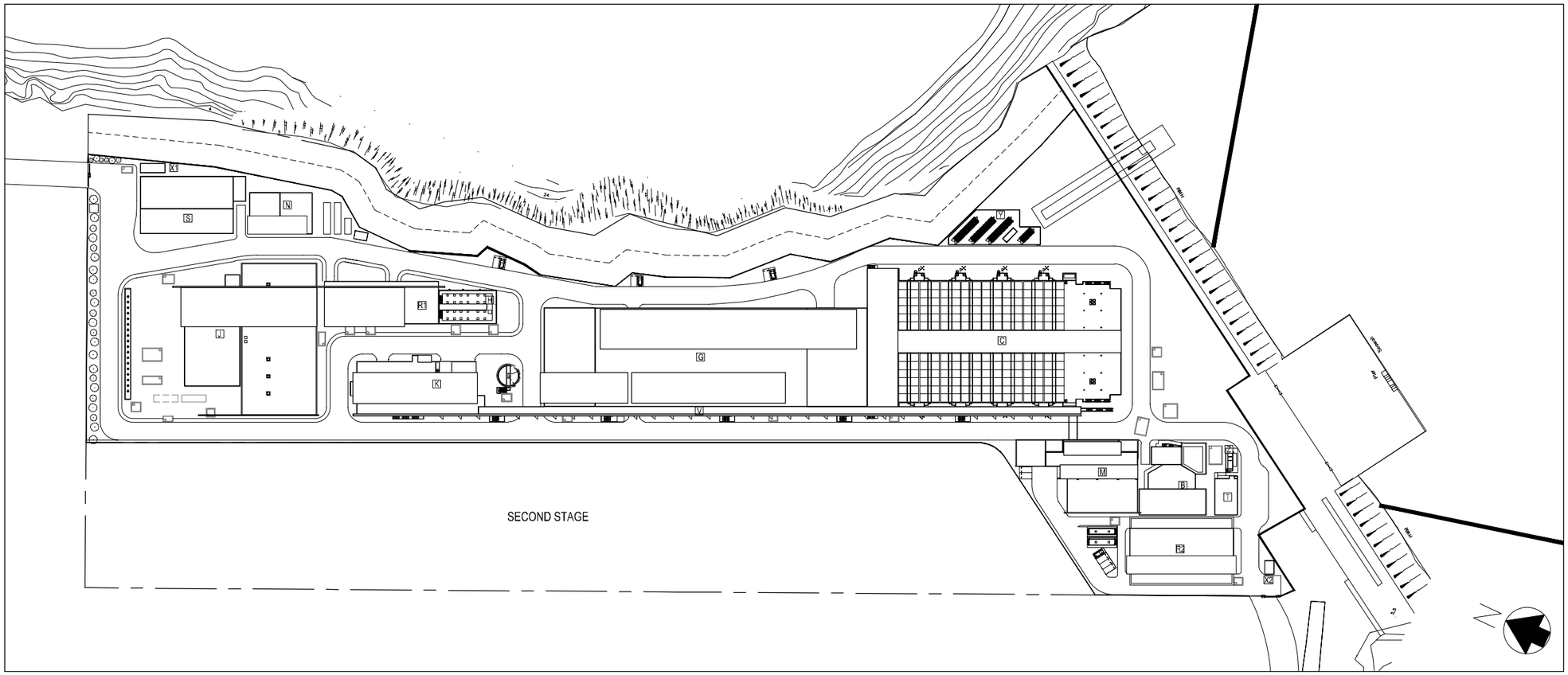
SITE LOCATION PLAN

1 : 5000



FIRST STAGE OF TSEUNG KWAN O DESALINATION PLANT

1 : 1000



Rev	Description	By	Date
0	TENDER SUBMISSION	CAD	JAN 19

Employer
水務署
Water Supplies Department

Employer's Consultant
BLACK & VEATCH

Tenderer
acciona Agua JEC CRCC
AJC JOINT VENTURE

Designer
wsp

Project title
CONTRACT NO. 13/WSD/17

DESIGN, BUILD AND OPERATE
FIRST STAGE OF TSEUNG KWAN O
DESALINATION PLANT

Drawing title
ARCHITECTURAL –
PLOT RATIO AND SITE COVERAGE CALCULATION, LEGEND ABBREVIATION

Drawing no.	Rev.
TKO/AJC/W/A000/AR/001	0

Drawn	Date	Checked	Approved
CKAL	JAN 19	S.C.	T.C.

Scale	Status
N.T.S.	–

Appendix C

Summary of Implementation Status of Environmental Mitigation

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation status	Relevant Legislation & Guidelines
				D	C	O		
Air Quality								
S4.8.1	Impervious dust screen or sheeting will be provided to enclose scaffolding from the ground floor level of building for construction of superstructure of the new buildings.	Land site/ During Construction	Contractor(s)		✓		Implemented	Air Pollution Control (Construction Dust)
S4.8.1	Impervious sheet will be provided for skip hoist for material transport.	Land site/ During Construction, particularly dry season	Contractor(s)		✓		NA	
S4.8.1	The area where dusty work takes place should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after dusty activities as far as practicable.	Land site/ During Construction	Contractor(s)		✓		Implemented	
S4.8.1	All dusty materials should be sprayed with water or a dust suppression chemical immediately prior to any loading, unloading or transfer operation.	Land site/ During Construction	Contractor(s)		✓		Implemented	
S4.8.1	Dropping heights for excavated materials should be controlled to a practical height to minimize the fugitive dust arising from unloading.	Land site/ During Construction	Contractor(s)		✓		Implemented	
S4.8.1	During transportation by truck, materials should not be loaded to a level higher than the side and tail boards, and should be dampened or covered before transport.	Land site/ During Construction	Contractor(s)		✓		Implemented	
S4.8.1	Wheel washing device should be provided at the exits of the work sites. Immediately before leaving a construction site, every vehicle shall be washed to remove any dusty material from its body and wheels as far as practicable.	Land site/ During Construction	Contractor(s)		✓		Implemented	
S4.8.1	Road sections between vehicle-wash areas and vehicular entrance will be paved.	Land site/ During Construction	Contractor(s)		✓		Implemented	
S4.8.1	Hoarding of not less than 2.4m high from ground level will be provided along the length of the Project Site boundary.	Land site/ During construction	Contractor(s)	✓	✓		N/A	
S4.8.1	Haul roads will be kept clear of dusty materials and will be sprayed with water so as to maintain the entire road surface wet at all times.	Land site/ During construction	Contractor(s)		✓		Implemented	

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation status	Relevant Legislation & Guidelines
				D	C	O		
S4.8.1	Temporary stockpiles of dusty materials will be either covered entirely by impervious sheets or sprayed with water to maintain the entire surface wet all the time.	Land site/ During construction	Contractor(s)		✓		Implemented	
S4.8.1	Stockpiles of more than 20 bags of cement, dry pulverised fuel ash and dusty construction materials will be covered entirely by impervious sheeting sheltered on top and 3-sides.	Land site/ During construction	Contractor(s)		✓		N/A	
S4.8.1	All exposed areas will be kept wet always to minimise dust emission.	Land site/ During construction	Contractor(s)		✓		Implemented	
S4.8.1	Ultra-low-sulphur diesel (ULSD) will be used for all construction plant on-site, as defined as diesel fuel containing not more than 0.005% sulphur by weight) as stipulated in Environment, Transport and Works Bureau Technical Circular (ETWB-TC(W)) No 19/2005 on Environmental Management on Construction Sites.	Land site/ During construction/ During Operation	Contractor(s)		✓	✓	Implemented	Environment, Transport and Works Bureau Technical Circular (ETWB-TC(W)) No 19/2005 on Environmental Management on Construction Sites
S4.8.1	The engine of the construction equipment during idling will be switched off.	Land site/ During construction	Contractor(s)		✓		Implemented	
S4.8.1	Concrete batching plant will be required on site. control measures recommended in the Guidance Note on a Best Practicable Means for Cement Works (Concrete Batching Plant) (BPM 3/2 (93)) will be implemented. The control measures recommended in the Guidance Note on a Best Practicable Means for Cement Works (Concrete Batching Plant) (BPM 3/2 (93)) will be implemented.	Land site/ During construction	Contractor(s)		✓		N/A	
S4.8.1	Regular maintenance of construction equipment deployed on-site will be conducted to prevent black smoke emission.	Land site/ During construction	Contractor(s)		✓		Implemented	
S4.10	To ensure proper implementation of the recommended dust mitigation measures and good construction site practices during the construction phase, environmental site audits on weekly basis is recommended throughout the construction period.	Land site/ During construction	Contractor(s)/ Environmental Team (ET) & Independent Environmental Checker (IEC)		✓		Implemented	

Note: D – Design stage C – Construction O – Operation

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation status	Relevant Legislation & Guidelines
				D	C	O		
Noise								
S5.7	Only well-maintained plant will be operated on-site and plant will be serviced regularly during the construction phase.	All area/ During construction	Contractor(s)		✓		Implemented	A Practical Guide for the Reduction of Noise from Construction Works,
S5.7	Silencers or mufflers on construction equipment will be utilised and will be properly maintained during the construction phase.	Noise control/ During construction	Contractor(s)		✓		N/A	A Practical Guide for the Reduction of Noise from Construction Works,
S5.7	Mobile plant, if any, will be sited as far away from NSRs as possible.	Noise control/ During construction	Contractor(s)		✓		N/A	A Practical Guide for the Reduction of Noise from Construction Works,
S5.7	Machines and plant (such as trucks) that may be in intermittent use will be shut down between work periods or will be throttled down to a minimum.	Noise control/ During construction	Contractor(s)		✓		Implemented	A Practical Guide for the Reduction of Noise from Construction Works,
S5.7	Plants known to emit noise strongly in one direction will, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.	Noise control/ During construction	Contractor(s)		✓		N/A	A Practical Guide for the Reduction of Noise from Construction Works,
S5.7	Material stockpiles and other structures will be effectively utilised, wherever practicable, in screening noise from on-site construction activities.	Noise control/ During construction	Contractor(s)		✓		N/A	A Practical Guide for the Reduction of Noise from Construction Works,
S5.7	Use of Quite Powered Mechanical Equipment (QPME).	Noise control/ During construction	Contractor(s)		✓		Implemented	A Practical Guide for the Reduction of Noise from Construction Works,
S5.7	Movable noise barriers of 3m in height with skid footing should be used and located within a few metres of stationary plant and mobile plant such that the line of sight to the NSR is blocked by the barriers. The length of the barrier should be at least five times greater than its height. The noise barrier material should have a superficial surface density of at least 7 kg m^{-2} and have no o or gappeningss.	Noise control/ During construction	Contractor(s)		✓		N/A	A Practical Guide for the Reduction of Noise from Construction Works,
S5.7	The noise insulating sheet should be deployed such that there would be no opening or gaps on the joints.	Noise control/ During construction	Contractor(s)		✓		N/A	A Practical Guide for the Reduction of Noise from Construction Works,
S5.7	Construction activities (e.g. excavation/shoring, reinstatement	Noise control/	Contractor(s)	✓	✓		Implemented	A Practical Guide for

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation status	Relevant Legislation & Guidelines
				D	C	O		
	(asphalt), and pipe jacking) will be planned and carried out in sequence, such that items of PME proposed for these activities will not be operated simultaneously.	During construction						the Reduction of Noise from Construction Works
S5.7	PMEs will not be used at the works areas near educational institutions with residual impact (ie the "influence area" within a radius of 40m) during school hours in order to reduce impact to the educational institutions.	Noise control / During construction	Contractor(s)		✓		N/A	A Practical Guide for the Reduction of Noise from Construction Works
S5.7	Noise enclosures or acoustic sheds would be used to cover stationary PME such as generators. Portable/Movable noise enclosure made of material with superficial surface density of at least 7 kg m^{-2} may be used for screening the noise from operation of the saw/groover, concrete.	Noise control/ Pre-construction/ During construction	Contractor(s)	✓	✓		N/A	
S5.9	Sawcutting pavement, breaking up of pavement, excavation /shoring, pipe laying, backfilling, reinstatement (concrete) and pipe jacking shall be scheduled outside the examination period.	Noise control/ Pre-construction/ During construction	Contractor(s)	✓	✓		N/A	
S5.9	In view the duration of noise exceedance at Creative Secondary School, PLK Laws Foundation College, TKO Kei Tak Primary School and School of Continuing and Professional Studies-CUHK is limited to 8 weeks, the construction work in the influence areas near the four schools shall be scheduled during long school holidays (eg summer holiday, Easter holiday or Christmas holiday, etc) as far as practicable. Scheduling the construction work for the four schools.	Noise control/ Pre-construction/ During construction	Contractor(s)	✓	✓		N/A	
S5.10	A noise monitoring programme shall be implemented for the construction phase.	Designated monitoring stations as defined in EM&A Manual/During construction phase	Environmental Team (ET)		✓		N/A	
S5.10	The effectiveness of on-site control measures could also be evaluated through the regular site audits.	All facilities/ During construction	Contractor(s)/ Environmental Team (ET) & Independent Environmental Checker (IEC)		✓		Implemented	-

Note: D – Design stage C – Construction O – Operation

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation status	Relevant Legislation & Guidelines
				D	C	O		
Water Quality								
S6.9	Dredged marine sediment will be disposed of in a gazetted marine disposal area in accordance with marine dumping permit conditions of the Dumping at Sea Ordinance (DASO).	Marine Dredging/ During construction	Contractor(s)		✓		Implemented	Dumping at Sea Ordinance (DASO)
S6.9	Disposal vessels will be fitted with tight bottom seals in order to prevent leakage of material during transport.	Marine Dredging/ During construction	Contractor(s)		✓		Implemented	-
S6.9	Barges will be filled to a level, which ensures that material does not spill over during transport to the disposal site and that adequate freeboard is maintained to ensure that the decks are not washed by wave action.	Marine Dredging/ During construction	Contractor(s)		✓		Implemented	-
S6.9	After dredging, any excess materials will be cleaned from decks and exposed fittings before the vessel is moved from the dredging area.	Marine Dredging/ During construction	Contractor(s)		✓		Implemented	-
S6.9	All vessels should be well maintained and inspected before use to limit any potential discharges to the marine environment.	Marine Dredging/ During construction	Contractor(s)		✓		Implemented	-
S6.9	All vessels must have a clean ballast system.	Marine Dredging/ During construction	Contractor(s)		✓		Implemented	-
S6.9	No discharge of sewage/grey wastewater should be allowed. Waste water from potentially contaminated area on working vessels should be minimized and collected. These kinds of wastewater should be brought back to port and discharged at appropriate collection and treatment system.	Marine Dredging/ During construction	Contractor(s)		✓		observation issued. Rectified after observation	-
S6.9	No soil waste is allowed to be disposed overboard.	Marine Dredging/ During construction	Contractor(s)		✓		N/A	-

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation status	Relevant Legislation & Guidelines
				D	C	O		
S6.9	Silt removal facilities such as silt traps or sedimentation facilities will be provided to remove silt particles from runoff to meet the requirements of the TM standard under the WPCO. The design of silt removal facilities will be based on the guidelines provided in ProPECC PN 1/94. All drainage facilities and erosion and sediment control structures will be inspected on a regular basis and maintained to confirm proper and efficient	Land site & drainage/ During construction	Contractor(s)		✓		Implemented, reminder issued.	ProPECC PN 1/94 TM Standard under the WPCO
S6.9	Earthworks to form the final surfaces will be followed up with surface protection and drainage works to prevent erosion caused by rainstorms.	Land site & drainage/ During construction	Contractor(s)		✓		Implemented	-
S6.9	Appropriate surface drainage will be designed and provided where necessary.	Land site & drainage/ During construction	Contractor(s)		✓		Implemented	-
S6.9	The precautions to be taken at any time of year when rainstorms are likely together with the actions to be taken when a rainstorm is imminent or forecasted and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94.	Land site & drainage/ During construction	Contractor(s)	✓	✓		Implemented	ProPECC PN 1/94
S6.9	Oil interceptors will be provided in the drainage system where necessary and regularly emptied to prevent the release of oil and grease into the storm water drainage system after accidental spillages.	Land site & drainage/ During construction	Contractor(s)		✓		N/A	-
S6.9	Temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge, if any, will be adequately designed for the controlled release of storm flows.	Land site & drainage/ During construction	Contractor(s)		✓		Implemented	-
S6.9	The temporary diverted drainage, if any, will be reinstated to the original condition when the construction work has finished or when the temporary diversion is no longer required.	Land site & drainage/ During construction	Contractor(s)		✓		N/A	-
S6.9	Appropriate numbers of portable toilets shall be provided by a licensed contractor to serve the construction workers over the construction site to prevent direct disposal of sewage into the water environment.	Land site & drainage/ During construction	Contractor(s)		✓		Implemented	-

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation status	Relevant Legislation & Guidelines
				D	C	O		
S6.9 and S6.12	The sterilization water should be dechlorinated with total residual chlorine (TRC) level below 1 mg/L before discharge to public sewer. In situ testing of TRC should also be conducted for the discharge of chlorinated water for pipeline disinfection to ensure sufficient dechlorination before discharge to public sewer.	Sterilization of water mains prior to commissioning	Contractor(s)		✓	✓	N/A	Technical Memorandum for Effluents Discharged into Drainage and Sewerage Systems Inland and Coastal Waters
S6.9	The cleaning and flushing water should also be treated and desilted to the relevant discharge requirement stipulated in TM-DSS before discharging.	Sterilization of water mains prior to commissioning	Contractor(s)		✓	✓	N/A	Technical Memorandum for Effluents Discharged into Drainage and Sewerage Systems Inland and Coastal Waters
S6.9	Site drainage should be well maintained and good construction practices should be observed to ensure that oil, fuels, solvents and other chemicals are managed, stored and handled properly and do not enter the nearby water streams.	Land site & drainage/ During construction/ During operation	Contractor(s)		✓	✓	Implemented, reminder issued.	-
S6.12	Regular site inspections will be carried out in order to confirm that regulatory requirements are being met and that contractors are implementing the standard site practice and mitigation measures as proposed to reduce potential impacts to water quality.	During construction	Contractor(s)/ Environmental Team (ET) & Independent Environmental Checker (IEC)		✓		Implemented	-

Note: D – Design stage C – Construction O – Operation

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation Status	Relevant Legislation & Guidelines
				D	C	O		
Waste Management								
S8.5	Nomination of approved personnel to be responsible for standard site practices, arrangements for collection and effective disposal to an appropriate facility of all wastes generated at the site.	Contract mobilisation/ During construction	Contractor(s)		✓		Implemented	-
S8.5	Training of site personnel in proper waste management and chemical handling procedures. Training will be provided to workers on the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycling at the beginning of the construction works.	Contract mobilisation/ During construction	Contractor(s)		✓		Implemented	-
S8.5	Provision of sufficient waste disposal points and regular collection for disposal.	All area/ During construction/ During operation	Contractor(s)		✓	✓	Implemented	DEVB TC(W) No. 8/2010, Enhanced Specification for Site Cleanliness and Tidiness.
S8.5	Appropriate measures to reduce windblown litter and dust transportation of waste by either covering trucks or by transporting wastes in enclosed containers.	All area/ During construction	Contractor(s)		✓		Implemented	DEVB TC(W) No. 8/2010, Enhanced Specification for Site Cleanliness and Tidiness.
S8.5	A waste management plan (WMP) as stated in the "*ETWB TC(W) No. 19/2005, Environmental Management on Construction Sites*" for the amount of waste generated, recycled and disposed of (including the disposal sites) will be established and implemented during the construction phase as part of the Environmental Management Plan (EMP). The Contractor will be required to prepare the EMP and submits it to the Architect/ Engineer under the Contract for approval prior to implementation.	All area/ During construction	Contractor(s)		✓		Implemented	ETWB TC(W) No. 19/2005, Environmental Management on Construction Sites
S8.5	Separation of chemical wastes for special handling and appropriate treatment at the Chemical Waste Treatment Centre at Tsing Yi.	All area/ During construction	Contractor(s)		✓		Implemented, reminder issued.	Chapters 2 & 3 Code of Practice on the Packaging, Labelling & Storage of Chemical Wastes published under the Waste Disposal Ordinance (Cap 354), Section 35
S8.5	Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors.	Land site/ During construction	Contractor(s)		✓		Implemented, Reminder Issued.	Waste Disposal Ordinance (Cap 354)

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation Status	Relevant Legislation & Guidelines
				D	C	O		
S8.5	A recording system for the amount of wastes generated/ recycled and disposal sites. The trip- ticket system will be included as one of the contractual requirements and implemented by the contractor(s).	Land site/ During construction	Contractor(s)		✓		Implemented	DEVB TC(W) No. 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials
S8.5	Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of material and their proper disposal.	Land site/ During construction/ During operation	Contractor(s)		✓		Implemented, reminder issued.	WBTC 32/92, The Use of Tropical Hard Wood on Construction Site
S8.5	Encourage collection of aluminium cans and waste paper by individual collectors during construction with separate labelled bins provided to segregate these wastes from other general refuse by the workforce.	Land site/ During construction	Contractor(s)		✓		Implemented	ETWB TCW No. 33/2002, Management of Construction and Demolition Material Including Rock
S8.5	Any unused chemicals and those with remaining functional capacity will be recycled as far as possible.	Land site/ During construction	Contractor(s)		✓		N/A	-
S8.5	Use of reusable non-timber formwork to reduce the amount of C&D materials.	All areas/ During construction	Contractor(s)		✓		Implemented	WBTC 32/92, The Use of Tropical Hard Wood on Construction Site
S8.5	Prior to disposal of construction waste, wood, steel and other metals will be separated to the extent practical, for re-use and/or recycling to reduce the quantity of waste to be disposed of to landfill.	All areas/ During construction	Contractor(s)		✓		Implemented	DEVB TC(W) No. 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials
S8.5	Proper storage and site practices to reduce the potential for damage or contamination of construction materials.	All areas/ During construction	Contractor(s)		✓		Implemented, reminder issued.	-
S8.5	Plan and stock construction materials carefully to reduce amount of waste generated and avoid unnecessary generation of waste.	All areas/ During construction	Contractor(s)		✓		Implemented	-
S8.5	A Sediment Quality Report (SQR) for sampling and chemical testing of the sediment will be prepared and submitted to the EPD for approval. The approved detailed sampling and chemical testing will be carried out prior to the commencement of the dredging activities to confirm the sediment disposal method.	Marine works/ During construction	Contractor(s)		✓		N/A	ETWB TC(W) No. 34/2002 and Dumping at Sea Ordinance (DASO)
S8.5	The management of dredged/ excavated sediment management requirement from *ETWB TC(W) No. 34/2002* will be incorporated in the Specification of the Contract Documents.	Marine works/ During construction	WSD/ Contractor(s)		✓		Implemented	ETWB TC(W) No. 34/2002 and Dumping at Sea Ordinance (DASO)
S8.5	The contractor will open a billing account with EPD in accordance with the Waste Disposal (Charges for Disposal of Construction Waste) Regulation for the	Contract mobilisation/ During construction	Contractor(s)		✓		Implemented	Cap 354N Waste Disposal (Charges for Disposal of

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation Status	Relevant Legislation & Guidelines
				D	C	O		
	payment of disposal charges.							Construction Waste) Regulation
S8.5	A trip-ticket system will be established in accordance with DEVB TC(W) No. 6/2010 to monitor the reuse of surplus excavated materials off-site and disposal of construction waste and general refuse at transfer facilities/ landfills, and to control fly-tipping.	Contract mobilisation/ During construction	Contractor(s)		✓		Implemented	DEVB TC(W) No. 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials
S8.5	The project proponent will also conduct regular inspection of the waste management measures implemented on site as described in the Waste Management Plan.	All area/ During construction	Contractor(s)/ Environmental Team (ET) & Independent Environmental Checker (IEC)		✓		Implemented	ETWB TC(W) No. 19/2005, Environmental Management on Construction Sites
S8.5	A recording system (similar to summary table as shown in Annex 5 and Annex 6 of Appendix G of ETWB TC(W) No. 19/2005) for the amount of waste generated, recycled and disposed of (including the disposal sites) will be established during the construction phase.	All area/ During construction	Contractor(s)		✓		Implemented	Annex 5 and Annex 6 of Appendix G of ETWB TC(W) No. 19/2005
S8.5	Inert C&D materials (public fill) will be reused within the Project as far as practicable.	All area/ During construction	Contractor(s)		✓		Implemented	-
S8.5	Public fill and construction waste shall be segregated and stored in different containers or skips to facilitate reuse or recycling of materials and their proper disposal.	All area/ During construction	Contractor(s)		✓		Implemented	-
S8.5	Specific areas of the work site will be designated for such segregation and storage if immediate use is not practicable.	All area/ During construction	Contractor(s)		✓		Implemented	-
S8.5	To reduce the potential dust and water quality impacts of site formation works, C&D materials will be wetted as quickly as possible to the extent practice after filling.	All area/ During construction	Contractor(s)		✓		Implemented	Air Pollution Control (Construction Dust) Regulation (Cap 311R); WPCO (Cap 358)
S8.5	Open stockpiles of excavated/ fill materials or construction wastes on-site should be covered with tarpaulin or similar fabric.	Land site/ During Construction, particularly dry season	Contractor(s)		✓		Implemented	Air Pollution Control (Construction Dust) Regulation (Cap 311R)
S8.5	Chemical waste container shall be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Implemented	Waste Disposal (Chemical Waste) (General) Regulation; Code of

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation Status	Relevant Legislation & Guidelines
				D	C	O		
								Practice on the Packaging, Handling and Storage of Chemical Wastes
S8.5	Chemical waste container shall have a capacity of less than 450 L unless the specifications have been approved by the EPD.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Implemented	Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Handling and Storage of Chemical Wastes
S8.5	A label in English and Chinese shall be displayed on the chemical container in accordance with instructions prescribed in Schedule 2 of the Regulations.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Implemented	Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Handling and Storage of Chemical Wastes
S8.5	Storage areas for chemical waste shall be enclosed on at least 3 sides.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Implemented	Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Handling and Storage of Chemical Wastes
S8.5	Storage areas for chemical waste shall have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Implemented	Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Handling and Storage of Chemical Wastes
S8.5	Storage areas for chemical waste shall have adequate ventilation.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Implemented	Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Handling and Storage of Chemical Wastes
S8.5	Storage areas for chemical waste shall be covered to prevent rainfall entering (water collected within the bund must be tested and disposed of as chemical waste, if necessary).	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Implemented	Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Handling and Storage of Chemical Wastes
S8.5	Storage areas for chemical waste shall be arranged so	All area/ During construction/	Contractor(s)/		✓	✓	Implemented	Waste Disposal (Chemical

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation Status	Relevant Legislation & Guidelines
				D	C	O		
	that incompatible materials are appropriately separated.	During operation	WSD					Waste) (General) Regulation; Code of Practice on the Packaging, Handling and Storage of Chemical Wastes
S8.5	General refuse will be stored in enclosed bins or compaction units separately from construction and chemical wastes.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Implemented, reminder issued.	Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Handling and Storage of Chemical Wastes
S8.5	Adequate number of waste containers will be provided to avoid over-spillage of waste.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Implemented	DEVB TC(W) No. 8/2010 Enhanced Specification for Site Cleanliness and Tidiness.
S8.5	A reputable waste collector will be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimise odour, pest and litter impacts.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Implemented	-
S8.5	Recycling bins will be provided at strategic locations within the Site to facilitate recovery of recyclable materials (including aluminium can, waste paper, glass bottles and plastic bottles) from the Site. Materials recovered will be sold for recycling.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Implemented	-
S8.5	To avoid any odour and litter impact, accurate number of portable toilets will be provided for workers on-site.	All area/ During construction	Contractor(s)		✓		Implemented	-
S8.5	The burning of refuse on construction sites is prohibited by law.	All area/ During construction	Contractor(s)		✓		Implemented	Air Pollution Control Ordinance (Cap 311)
S8.7	To facilitate monitoring and control over the contractors' performance on waste management, a waste inspection and audit programme will be implemented throughout the construction phase.	All facilities/ During construction	ET/ IEC		✓		Implemented	-

Note: D – Design stage C – Construction O – Operation

	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation Status	Relevant Legislation & Guidelines
				D	C	O		
	Ecology							
S9.7	For slope mitigation works within the Clear Water Bay Country Park, to avoid tree felling and damages to trees, the exact locations of the flexible barrier foundation plates, soil nails and rock dowels can be adjusted during detailed design, and a setback distance from existing trees is recommended to be maintained as far as practical. A detailed specification describing the exact locations of the flexible barrier foundation plates, soil nails and rock dowels will be prepared to illustrate how the setback distance from existing trees would be implemented for tree avoidance.	Slope mitigation works area/ During detailed design/ During construction	Contractor(s)	✓	✓		Implemented	-
S9.7	Pruning of tree canopies along the alignment of the flexible barriers shall be limited to a minimum.	Slope mitigation works area/ During construction	Contractor(s)		✓		Implemented	
S9.7	The alignment of flexible barriers shall be optimized to preserve all species of conservation interest and minimize the impact to the existing vegetation as far as practicable. All individuals of *Marsdenia lachnostoma* within the slope mitigation areas shall be retained *in-situ*, by positioning the alignment of flexible barrier at a minimum 1.5m in a radius away from these individuals.	Slope mitigation works area/ During detailed design/ During construction	Contractor(s)	✓	✓		Implemented	-
S9.7 and 9.10	At the detailed design stage prior to the commencement of the slope mitigation works, a vegetation survey shall be carried out at the slope mitigation areas within the Clear Water Bay Country Park to assess the condition and identify the location of each individual of *Marsdenia lachnostoma* and other flora species of conservation interest that may be directly affected by the construction works.	Slope mitigation works area/ During detailed design/ During construction	Contractor(s)	✓	✓		Implemented	-
S9.7	Temporary fencing will be installed to fence off the concerned species either in groups of individually within the works area and in the close proximity to prevent from being damaged and disturbed during construction. A sign identifying the site shall be attached to the fence and flagging tape shall be attached to the individuals to visualize their locations.	Slope mitigation works area/ During construction	Contractor(s)		✓		Implemented	-
S9.7 and S9.10	A specification for fencing and demarcating individuals of *Marsdenai lachnostoma* (or other flora species of conservation interest, if found) adjacent to the	Slope mitigation works area/ During construction	Contractor(s)		✓		Implemented	-

	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation Status	Relevant Legislation & Guidelines
				D	C	O		
	proposed alignment of the flexible barriers will be prepared to protect the species.							
S9.7	Induction training shall also be provided to all site personnel in order to brief them on this flora of conservation interest including the locations and their importance.	Slope mitigation works area/ During construction	Contractor(s)		✓		Implemented	-
S9.7	The resident site supervisory staff will closely monitor the conditions of concerned individuals during construction of flexible barriers in the close proximity.	Slope mitigation works area/ During construction	Contractor(s)		✓		Implemented	-
S9.7	Erect fences along the boundary of the works area before the commencement of works to prevent vehicle movements and encroachment of personnel onto adjacent areas.	All area/ During construction	Contractor(s)		✓		Implemented	-
S9.7	Regularly check the work site boundaries to ensure that they are not breached and that damage does not occur to surrounding areas.	All area/ During construction	Contractor(s)/ Environmental Team (ET)		✓		Implemented.	-
S9.7	Avoid any damage and disturbance, particularly those caused by filling and illegal dumping, to the surrounding habitats through proper management of waste disposal.	All area/ During construction	Contractor(s)		✓		Implemented	-
S9.7	Reinstate temporarily affected areas, particularly the habitats of plantation and shrubland-grassland immediately after completion of construction works, through on-site tree/shrub planting. The tree/shrub species will be chosen with reference to those in the surrounding area.	All area/ During construction	Contractor(s)		✓		N/A	-
S9.7	Affected habitats within the Clear Water Bay Country Bay shall be reinstated by hydro-seeding and planting of climbers and native shrub seedlings where practical upon completion of the slope mitigation works.	All area/ During construction	Contractor(s)		✓		N/A	-

Note: D – Design stage C – Construction O – Operation

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation Status	Relevant Legislation & Guidelines
				D	C	O		
	Landscape & Visual							
S11.10 & 11.11	The construction area and area allowed for temporary structures, such as the contractor's office, will be minimized to a practical minimum. (MM1)	All area/ Detailed design/ During construction/ During operation	WSD/ Contractor(s)	✓	✓	✓	Implemented	-
S11.10 & 11.11	At the detailed design stage, the design team will seek to minimize the landscape footprint of the Project and above ground facilities, while satisfying all other requirements. (MM2)	All area/ Detailed design/ During construction/ During operation	WSD/ Contractor(s)	✓	✓	✓	Implemented	-
S11.10 & 11.11	Design principles will be adopted to take into account the surrounding area, particularly Clear Water Bay Country Park behind and the nearby waterfront, with due consideration given to: - green roofs where practical (ie without equipment on the roof); - roadside planting; - aesthetic treatment of all structures; - vertical greening; - screen planting along application site; and - landscape enhancement with amenity planting where practical including planting along the edge (site boundary) fence with native shrubs where feasible, to reduce their visual impact and blend them into the surrounding landscape. (MM3)	All area/ Detailed design/ During construction/ During operation	WSD/ Contractor(s)	✓	✓	✓	Implemented	-
S11.10 & 11.11	All trees within the Project Site or the potential slope mitigation works area will be carefully protected during construction according to DEVB TCW No. 10/2013 – Tree Preservation (MM4)	All area/ Detailed design/ During construction/ During operation	WSD/ Contractor(s)	✓	✓	✓	Implemented	ETWB TCW No. 3/2006 - Tree Preservation.
S11.10 & 11.11	No tree within the Country Park will be felled. Trees within the Site unavoidably affected by the works will be transplanted where necessary and practical. For trees that need to be felled, compensatory planting will be provided to the satisfaction of relevant Government departments. A compensatory tree planting proposal including locations of tree compensation will be submitted to seek relevant government department's approval, in accordance with DEVB TC(W) No. 10/2013. (MM5)	All area/ Detailed design/ During construction/ During operation	WSD/ Contractor(s)	✓	✓	✓	Implemented	DEVB TC(W) No. 10/2013
S11.10 & 11.11	Any slope mitigation works necessary to address natural terrain hazards, will be minimized to minimize any potential environmental impact to the Country Park e.g. soil nailing and rock stabilization will aim to avoid existing trees e.g. should any restoration of vegetation be	All area/ Detailed design/ During construction/ During operation	WSD/ Contractor(s)	✓	✓	✓	N/A	

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation Status	Relevant Legislation & Guidelines
				D	C	O		
	necessary, the best planting matrix with native species will be established, with the aim of resembling the existing vegetation. (MM6)							
S11.10 & 11.11	Dredging works for the installation of intake structures and outfall diffusers should be minimized to avoid or reduce any potential environmental impacts to as low as reasonably practicable (ALARP). The intake and outfall structures (e.g. intake openings and diffuser heads) will be prefabricated and transferred to site for installation. (MM7)	All area/ Detailed design/ During construction/ During operation	WSD/ Contractor(s)	✓	✓	✓	Implemented	
S11.10 & 11.11	All night-time lighting will be reduced to a practical minimum both in terms of number of level and will be hooded and directional. (MM8) units and lux level and will be hooded and directional. (MM8)	All area/ Detailed design/ During construction/ During operation	WSD/ Contractor(s)	✓	✓	✓	Implemented	-

Note: D – Design stage C – Construction O – Operation

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation Status	Relevant Legislation & Guidelines
				D	C	O		
	Landfill Gas Hazard							
S12.7	During all works, safety procedures should be implemented to minimise the risks of fires and explosions, asphyxiation of workers and toxicity effects resulting from contact with contaminated soil and groundwater.	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	Implemented	-
S12.7	During trenching and excavation as well as creation of confined spaces at near to or below ground level, precautions should be clearly laid down and rigidly Gas detection equipment and appropriate breathing apparatus should be available and used when entering confined spaces or trenches deeper than 1 metre.	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	Implemented	
S12.7	The Contractor should make the workers are aware of potential hazards of working in confined spaces (any chamber, manhole or culvert which is large enough to permit access to personnel). Such work in confined spaces is controlled by the Factories and Industrial Undertakings (Confined Spaces) Regulations of the Factories and Industrial Undertakings Ordinance. Following the Safety Guide to Working in Confined Spaces ensures compliance with the above regulations.	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	Implemented	
S12.7	Safety officers, specifically trained with regard to landfill gas and leachate related hazards and the appropriate actions to take in adverse circumstances, should be present on the site throughout the works, in particular, when works are undertaken below grade.	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	Implemented	
S12.7	All personnel who work on site and all visitors to the site should be made aware of the possibility of ignition of gas in the vicinity of the works, the possible presence of contaminated water and the need to avoid physical contact with it.	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	Implemented	
S12.7	Monitoring for landfill gas should be undertaken in all excavations, manholes, chambers (particularly during pipe jacking) and any confined spaces through the use of an intrinsically safe portable instrument, appropriately calibrated and capable of measuring the concentrations of methane. carbon dioxide and oxygen.	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	Implemented	
S12.7	Monitoring frequency and areas to be monitored should be specified prior to commencement of groundwork, either by the Safety Officer, or by an appropriately qualified person. All measurements should be recorded and documented.	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	Implemented	

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation Status	Relevant Legislation & Guidelines
				D	C	O		
S12.7	Proceed drilling with adequate care and precautions against the potential hazards which may be encountered.	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	Implemented	
S12.7	Prior to the commencement of the site works, the drilling contractor should devise a 'method-of- working' statement covering all normal and emergency procedures (including but not limited to number of operatives, experience and special skills of operatives, normal method of operations, emergency procedures, supervisors responsibilities, storage and use of safety equipment, safety procedures and signs, barriers and guarding). The site supervisor and all operatives must be familiar with this statement.	All area/ During construction/ During operation	Contractor(s)	✓	✓	✓	Implemented	
S12.7	Where below ground service entries are necessary to the Incoming Switchgear Room, 132 kV Substation and Chlorine Store (I) and (II), the entry point should be sealed to prevent gas entry. In addition, any below grade cable trenches entering the Incoming Switchgear Room and 132 kV Substation can become the pathway for landfill gas and hence grilled metal covers should be used.	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	N/A	
S12.7	It is recommended regular landfill gas monitoring should be carried out at the Incoming Switchgear Room, 132 kV Substation and Chlorine Store (I) and (II). The monitoring frequency will be monthly for the first year of operation. If the monitoring results show no sign of landfill gas migration, reduce the monitoring frequency to once every six months.	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	N/A	
S12.7	The manholes and utility pits within the Project Site and along the fresh water mains. Each manhole/ utility pit should be monitored with two measurements (at mid depth and base). Each measurement should be monitored for a minimum of 10 minutes. A steady reading and peak reading should be recorded at each manhole/ utility pit and for each measurement. The need for venting the manhole/ utility pit and further monitoring will be reviewed after the initial monitoring.	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	Implemented	
S12.7	All construction, operation and maintenance personnel working on-site as well as visitors should be made aware of the hazards of landfill gas and its possible presence on-site. This should be achieved through a combination of posting warning signs in prominent places and also by access to detailed information on landfill gas hazards and the designs and procedural means by which these hazards are being minimized on-site.	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	Implemented	

Note: D – Design stage C – Construction O – Operation

Appendix D

Impact Monitoring Schedule of the Reporting Month

Contract No. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant
EM&A Water Quality Monitoring Schedule

Jan

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
						Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 09:19-13:00 Flood Tide: 13:00-19:39 Monitoring Time: Mid-ebb: 09:24-12:54 Mid-flood: 14:34-18:04
2	3	4	5	6	7	8
		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 11:55-15:07 Flood Tide: 04:43-11:55 Monitoring Time: Mid-ebb: 11:46-15:16 Mid-flood: 08:00-10:04*$#		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 13:27-17:00 Flood Tide: 06:14-13:27 Monitoring Time: Mid-ebb: 13:28-16:58 Mid-flood: 08:05-11:35		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 15:00-19:00 Flood Tide: 07:32-15:00 Monitoring Time: Mid-ebb: 15:15-18:45 Mid-flood: 09:31-13:01
9	10	11	12	13	14	15
		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 09:14-17:38 Flood Tide: 17:38-23:00 Monitoring Time: Mid-ebb: 11:41-15:11 Mid-flood: 17:40-19:00&$#		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 07:31-10:16 Flood Tide: 10:16-18:49 Monitoring Time: Mid-ebb: 08:00-10:38*$# Mid-flood: 12:47-16:17		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 10:00-12:00 Flood Tide: 12:00-19:40 Monitoring Time: Mid-ebb: 09:15-12:45 Mid-flood: 14:05-17:35
16	17	18	19	20	21	22
		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 11:06-14:00 Flood Tide: 04:18-11:06 Monitoring Time: Mid-ebb: 10:48-14:18 Mid-flood:08:00-10:45*$#		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 12:02-15:24 Flood Tide: 05:19-12:02 Monitoring Time: Mid-ebb: 11:58-15:28 Mid-flood: 08:00-10:25*$#		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 13:13-17:05 Flood Tide: 06:21-13:13 Monitoring Time: Mid-ebb: 13:24-16:54 Mid-flood: 08:02-11:32
23	24	25	26	27	28	29
		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 15:28-20:28 Flood Tide: 08:00-15:28 Monitoring Time: Mid-ebb: 15:43-19:00&$# Mid-flood:09:59-13:29		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 05:21-09:25 Flood Tide: 09:25-16:58 Monitoring Time: Mid-ebb:08:00-09:12*$# Mid-flood:11:26-14:56		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 08:38-11:20 Flood Tide: 11:20-18:31 Monitoring Time: Mid-ebb: 08:14-11:44 Mid-flood: 13:10-16:40
30	31					
	Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 10:17-13:25 Flood Tide: 13:25-20:20 Monitoring Time: Mid-ebb: 10:06-13:36 Mid-flood: 15:07-18:37					

Remarks:
Monitoring Parameters: Dissolved oxygen, Temperature, pH, Turbidity, Salinity, Suspended Solids

Note:
* - Due to safety concern of vessel transportation earlier than 0700, Water Quality Monitoring would start at 0800.
$ - Since predicted tide is shorter than 3.5 hours, method of 90% tidal period as monitoring time is adopted.
& - Due to safety concern for sampling event in night-time, method of 90% tidal period as monitoring time is approached and end at 1900.
# - Prioritized routing: Mid-Ebb: CE→WSR16→WSR37→WSR36→WSR33→Remaining stations and Mid-Flood: CF→WSR1→WSR2→WSR3→WSR4→Remaining stations

Appendix E

Event/Action Plan for Noise Exceedance

Event and Action Plan for Construction Noise Monitoring

Event	Action			
	ET	**IEC**	**ER**	**Contractor**
Action Level	1. Carry out investigation to identify the source and cause of the complaint/ exceedance(s) 2. Notify IEC, ER, and Contractor and report the results of investigation to the Contractor, ER and the IEC 3. Discuss with the Contractor and IEC for remedial measures required 4. If the complaint is related to the Project, conduct additional monitoring for checking mitigation effectiveness and report the findings and results to the IEC, ER and the Contractor	1. Review the analyzed results submitted by the ET 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly 3. Supervise the implementation of remedial measures	1. Confirm receipt of Notification of Exceedance in writing 2. Require Contractor to propose remedial measures for the analysed noise problem 3. Ensure remedial measures are properly implemented	1. Submit noise mitigation proposals, if required, to the IEC and ER 2. Implement noise mitigation proposals.
Limit Level	1. Notify IEC, ER, EPD and Contractor 2. Identify the source(s) of impact by reviewing all the relevant monitoring data and the corresponding construction activities. Exceedances should also be confirmed by immediate verification in the field as far as practical. 3. Repeat measurement to confirm findings 4. Increase monitoring frequency 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented. 6. inform IEC, ER and EPD the cause & actions taken for the exceedances 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions 2. Review Contractor's remedial actions to assure their effectiveness and advise the ER &ET accordingly 3.Supervise the implementation of the remedial measures	1. Confirm receipt of notification of exceedance in writing 2. Notify Contractor 3. Require Contractor to propose remedial measures for the analyzed noise problem 4. Ensure remedial measures are properly implemented 5. If exceedance continuous, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is aborted	1. Take immediate action to avoid further exceedance 2. Identify practicable measures to minimize the noise impact. Submit proposals for remedial actions to ER within three working days of notification 3. Implement the agreed proposals 4. Resubmit proposal if problem still not under control 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated

Appendix F

Noise Monitoring Equipment Calibration Certificate (BLANK)

(BLANK)

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

Waste Flow Table

Contract No. 13/WSD/17
Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant
BEAM Plus Monthly Report

Appendix H – MA11 Construction Waste Reduction

Monthly Summary Waste Flow Table

Month	Total Quantity Generated (a1)	Total Quantity Generated (Excluded Excavated Material) (a2)	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
			Excavated Material	Non-excavated Material									
			Total Quantity Generated (b)	Reused in the Contract (c)	Reused in other Projects (d)	Disposed as Public Fill (e)	Disposed in sorting facility (f)	Broken Concrete of construction waste collected by recycling company (g)	Metals (h)	Paper/ cardboard packaging (i)	Plastics (j)	Chemical Waste (k)	Others, e.g. general refuse (l)
	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)
Jan-2020	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb-2020	-	-	-	-	-	-	-	-	-	-	-	-	-
Mar-2020	0.420	0.420	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.420
Apr-2020	2.400	2.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.400
May-2020	18.470	18.470	0.000	0.000	0.000	0.000	0.000	0.000	5.900	0.000	0.000	0.000	12.570
Jun-2020	1116.110	1116.110	0.000	0.000	0.000	0.000	1081.950	0.000	0.000	0.000	0.000	0.000	34.160
Jul-2020	758.120	758.120	0.000	0.000	0.000	0.000	724.360	0.000	0.000	0.000	0.000	0.000	33.760
Aug-2020	203.150	203.150	0.000	0.000	0.000	0.000	161.080	0.000	0.000	0.000	0.000	0.000	42.070
Sep-2020	105.926	105.926	0.000	0.000	0.000	0.000	0.000	0.000	22.766	0.000	0.010	0.000	83.150
Oct-2020	46.320	46.320	0.000	0.000	0.000	0.000	0.000	0.000	7.050	0.040	0.020	0.000	39.210
Nov-2020	71.815	71.815	0.000	0.000	0.000	0.000	0.000	0.000	5.351	0.030	0.014	0.000	66.420
Dec-2020	12934.194	12934.194	0.000	0.000	12860.314	0.000	0.000	0.000	9.912	0.030	0.018	0.000	63.920
Total	15256.925	15256.925	0.000	0.000	12860.314	0.000	1967.390	0.000	50.979	0.100	0.062	0.000	378.080

Total C&D waste generated	15256.925	Tonnes	(ie: a1 = b+c+d+e+f+g+h+i+j+k+l)
Total C&D waste generated (excluded excavated materials)	15256.925	Tonne	(ie: a2 = c+d+e+f+g+h+i+j+k+l)
Total Recycled C&D Waste	12911.455	Tonne	(ie: a3 = c+d+g+h+i+j)
% of recycled C&D Waste for BEAM Plus MA 11	84.63%		(ie: a3/a2 x 100%)

Notes:

(1) metal, paper & plastic were collected by recycler
(2) The performance target of waste recycling are specified in the Contract.
(3) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
(4) Plastics refer to plastic bottles/ containers, plastic/ foam from packaging material.
(5) Broken concrete for recycling into aggregates
(6) Excavated materials/waste will NOT be considered as part of construction waste. It should be excluded in the calculation
(7) Disposal of inert waste to public fill or sorting facilities will NOT be considered as recycled waste.

Contract No. 13/WSD/17
Environmental Management Plan for Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Appendix H – MA11 Construction Waste Reduction

Name of Department: WSD Contract No.: 13/WSD/17

Monthly Summary Waste Flow Table for 2021 (year)

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	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)
Jan	11823.060	0.000	0.000	11816.130	6.930	0.000	0.000	0.000	0.000	0.000	73.960
Feb	434.090	0.000	0.000	434.090	0.000	0.000	14.767	0.123	0.008	0.000	45.080
Mar	91.710	0.000	0.000	0.000	91.710	0.000	0.002	0.155	0.010	0.000	122.940
Apr	0.000	0.000	0.000	0.000	0.000	0.000	28.931	0.057	0.002	0.000	89.450
May	1557.500	0.000	0.000	0.000	1557.500	0.000	0.005	0.108	0.009	0.000	70.750
Jun	4278.380	0.000	0.000	0.000	4278.380	0.000	0.001	0.088	0.005	0.000	91.540
Sub-total	18184.740	0.000	0.000	12250.220	5934.520	0.000	43.706	0.530	0.034	0.000	493.720
Jul	365.150	0.000	0.000	0.000	365.150	0.000	0.003	0.120	0.005	0.000	65.770
Aug	42.340	0.000	0.000	0.000	42.340	0.000	0.000	0.001	0.006	0.000	74.070
Sep	66.690	0.000	0.000	0.000	66.690	0.000	0.004	0.002	0.003	0.000	75.880
Oct	578.870	0.000	0.000	0.000	578.870	0.000	0.006	0.510	0.018	0.000	88.390
Nov	470.660	0.000	0.000	0.000	470.660	0.000	0.000	0.000	0.000	0.000	162.500
Dec	457.090	0.000	0.000	0.000	457.090	0.000	0.000	0.130	0.030	0.000	131.270
Total	20165.540	0.000	0.000	12250.220	7915.320	0.000	43.718	1.293	0.096	0.000	1091.600

Notes:
(1) The performance targets are given in Section 1.69 of Specification B
(2) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
(3) Plastics refer to plastic bottles/containers, plastic sheets/ foam from packaging material

Contract No. 13/WSD/17
Environmental Management Plan for Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Appendix H – MA11 Construction Waste Reduction

Name of Department: WSD Contract No.: 13/WSD/17

Monthly Summary Waste Flow Table for 2022 (year)

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	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)
Jan	233.850	0.000	0.000	0.000	233.850	0.000	0.000	0.069	0.005	0.000	109.020
Feb											
Mar											
Apr											
May											
Jun											
Sub-total	233.850	0.000	0.000	0.000	233.850	0.000	0.000	0.069	0.005	0.000	109.020
Jul											
Aug											
Sep											
Oct											
Nov											
Dec											
Total	233.850	0.000	0.000	0.000	233.850	0.000	0.000	0.069	0.005	0.000	109.020

Notes:
(1) The performance targets are given in Section 1.69 of Specification B
(2) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
(3) Plastics refer to plastic bottles/containers, plastic sheets/ foam from packaging material

Appendix I

Site Inspection Proforma

Acuity Sustainability Consulting Limited
Unit C, 11/F., Ford Glory Plaza, No. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon
T: 2333-6823 | F: 2333-1316 | E: genera@acuityhk.com | www.acuityhk.com

Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

WEEKLY ENVIRONMENTAL INSPECTION CHECKLIST

Inspection Date: 04/01/2022 **Inspected by:** ET: Charlene Lai / Jacky Leung SO: Derek Lai WSD: N/A
Contractor: Brian Kam IEC: Louis Kwan
Inspection Time: 14:35-17:00

Weather							
Condition	☑ Sunny	☐ Fine	☐ Overcast	☐ Drizzle	☐ Rain	☐ Storm	☐ Hazy
Temperature	22 °C		**Humidity**	☐ High	☑ Moderate	☐ Low	
Wind	☑ Calm	☐ Light	☐ Breeze	☐ Strong			

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
0.00		**General**				
0.01		Is the current Environmental Permit displayed conspicuously at all vehicle site entrances/exits for public's information at any time?	☐	☑	☐	
0.02		Is ET Leader's log-book kept readily available for inspections?	☐	☑	☐	
1.00		**Construction Dust**				
1.01	S4.8.1	Are dusty materials, such as excavated materials, building debris and construction materials, and exposed earth surface properly covered to prevent dust emission?	☑	☐	☐	The exposed dusty materials will be cover for backfill within the same day
1.02	S4.8.1	Are screenings, enclosures, water spraying or vacuum cleaning devices provided to dusty construction works for dust suppression?	☑	☐	☐	No dusty operation observed on reporting day.
1.03	S4.8.1	Are fumes or smoke emitting plants or construction activities shielded by a screen?	☑	☐	☐	No fume/smoke emitting plant/ construction activity observed.
1.04	S4.8.1	Are wheel-washing facilities with high-pressure water jets provided at all site exits?	☐	☑	☐	
1.05	S4.8.1	Is wheel-washing provided to all vehicles leaving the site?	☐	☑	☐	
1.06	S4.8.1	Are road section near the site exit free from dusty material?	☐	☑	☐	
1.07	S4.8.1	Are all main haul roads inside the site paved or sprayed with water to minimize dust emission during vehicle movement?	☐	☑	☐	paved
1.08	S4.8.1	Are water spraying provided immediately prior to any loading or transfer of dusty materials?	☑	☐	☐	No dusty operation observed on the reporting day.
1.09	S4.8.1	Are covers provided to all dump trucks carrying dusty materials when entering and leaving the site?	☐	☑	☐	
1.10	S4.8.1	Are the working areas for uprooting of trees, shrubs, or vegetation or the removal of boulders, poles, pillars sprayed with water to maintain the entire surface wet?	☑	☐	☐	
1.11	S4.8.1	Is exposed earth properly treated within six months after the last construction activity on site?	☐	☑	☐	
1.12	S4.8.1	Does the operation of plants on site free form dark smoke emission?	☐	☑	☐	✓ NRMM label

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Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
1.13	S4.8.1	Are vehicles travelling at speed not exceeding 15km/hr within the site?	☐	☑	☐	
1.14	S4.8.1	Are stock of more than 20 bags of cement or day PFA covered or sheltered on top and 3 sides?	☑	☐	☐	
1.15	S4.8.1	Are de-bagging, batching and mixing processes of bagged cement carried out in sheltered areas?	☑	☐	☐	
1.16	S4.8.1	Are hoarding of at least 2.4m high provided along the site boundary adjoining areas accessible by the public?	☐	☑	☐	
1.17	S4.8.1	Is open burning prohibited?	☐	☑	☐	
2.00		**Construction Noise (Airborne)**				
2.01	S5.7	Are quiet plants adopted on site?	☐	☑	☐	hand-held breaker <10kg / noise label
2.02	S5.7	Are the PMEs operating on site well-maintained to minimize the generation of excessive niose?	☐	☑	☐	(regular inspection.
2.03	S5.7	Are plants throttled down or turned off when not in use?	☐	☑	☐	
2.04	S5.7	Are the plants known to emit noise strongly in one direction oriented to face away from NSRs?	☑	☐	☐	} no nearby NSR.
2.05	S5.7	Are moveable barriers provided to screen NSRs from plant or noisy operations?	☑	☐	☐	
2.06	S5.7	Are silencers, mufflers and enclosures provided to plants?	☑	☐	☐	
2.07	S5.7	Are the hoods, cover panels and inspection hatches of PMEs closed during operation?	☐	☑	☐	
2.08	S5.7	Are purposely-built site hoarding construction with appropriate materials provided along the site boundary?	☐	☑	☐	
2.09	S5.7	Are noisy operation properly scheduled to minimize exposure and cumulative impacts to nearby sensitive receivers?	☐	☑	☐	
2.10	S5.7	Are valid noise emission label(s) affixed to all hand-held breakers operating on site?	☑	☐	☐	hand-held breakers 10kg
2.11	S5.7	Are valid noise emission label(s) affixed to all air compressors operating on site?	☑	☐	☐	
2.12	S5.7	Are all construction noise permit(s) applied for percussive piling work?	☑	☐	☐	
2.13	S5.7	Are construction noise permit(s) applied for general construction works during restricted hours?	☐	☑	☐	
2.14	S5.7	Are valid construction noise permit(s) displayed at all vehicular exits?	☐	☑	☐	
3.00		**Water Quality**				
3.01	S6.9	Is effluent discharge license obtained for wastewater discharge from site?	☐	☑	☐	
3.02	S6.9	Is effluent discharged according to the effluent discharge license?	☐	☑	☐	
3.03	S6.9	Is wastewater discharge from site properly treated prior to discharge?	☐	☑	☐	

04/01

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Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
3.04	S6.9	Are perimeter channels provided to intercept storm runoff from outside the site?	☐	☑	☐	
3.05	S6.9	Are sand/silt removal facilities such as sand/silt traps and sediment basins provided to remove sand/silt particles from runoff?	☐	☑	☐	
3.06	S6.9	Is surface runoff diverted to sedimentation facilities?	☐	☑	☐	
3.07	S6.9	Is the drainage system properly maintained?	☐	☑	☐	reminder(1)
3.08	S6.9	Are construction works carefully programmed to minimize soil excavation works during rainy seasons?	☐	☑	☐	
3.09	S6.9	Are exposed soil surface protected by paving as soon as possible to reduce the potential of soil erosion?	☐	☑	☐	
3.10	S6.9	Are temporary access roads protected by crushed gravel?	☐	☑	☐	
3.11	S6.9	Are exposed slope surface properly protected?	☐	☑	☐	(manual seeding
3.12	S6.9	Is trench excavation avoided in the wet season as far as practicable, or if necessary, backfilled in short sections after excavation?	☐	☑	☐	
3.13	S6.9	Are open stockpiles of construction materials on site covered by tarpaulin or similar fabric during construction?	☐	☑	☐	
3.14	S6.9	Is runoff from wheel-washing facilities avoided?	☐	☑	☐	
3.15	S6.9	Is oil leakage or spillage prevented?	☐	☑	☐	✓ drip tray, reminder(1)
3.16	S6.9	Are there any measures to prevent the release of oil and grease into the storm drainage system?	☐	☑	☐	✓ drip tray reminder(1)
3.17	S6.9	Are the oil interceptors/ grease traps properly maintained?	☑	☐	☐	
3.18	S6.9	Are debris and rubbish generated on site collected, handled and disposed of properly to avoid them entering the streams?	☐	☑	☐	reminder(1)
3.19	S6.9	Are all fuel tanks and storage areas provided with locks and be sited on sealed areas, within bunds of capacity equal to 110% of the storage capacity of the largest tank?	☐	☑	☐	
3.20	S6.9	Are tanks, containers, storage area bunded and the locations locked as far as possible from the sensitive watercourse and stormwater drains?	☐	☑	☐	
3.21	S6.9	Are sufficient chemical toilets provided on site to handle sewage from construction work force?	☐	☑	☐	
3.22	S6.9	Are sewage disposal and toilet maintenance of the portable chemical toilets provided by the licensed contractors?	☐	☑	☐	
3.23	S6.9	Is concrete washing water properly collected and treated prior to discharge?	☐	☑	☐	
3.24	S6.9	Is suitable type of silt curtains deployed during dredging to reduce the elevation of suspended solids to nearby sensitive receivers?	☐	☑	☐	
3.25	S6.9	Is closed grab dredger used to reduce the potential leakage of sediments?	☑	☐	☐	No dredging observed on reporting day

04/01

Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
3.26	S6.9	Is closed grab dredger of 3 to 6 m^3 used for dredging at seawater intake?	☑	☐	☐	-/
3.27	S6.9	Is specific work staff assigned the responsibility for monitoring the number of grab dredged per hour? Is number of cycle limited to 20-21 grab per hour for 3m^3 closed grab, 10-11 grab per hour for 6m^3 closed grab?	☑	☐	☐	-/
3.28	S6.9	Is the grab operated in slow and controlled manner such that the impact to seabed by the grab when being lowered could be minimized? Is the operator ensured the grab be properly closed before lifting the grab?	☑	☐	☐	-/
3.29	S6.9	Is the maximum allowed dredging rate at the seawater intake limited to 750 m^3/day while the maximum allowed dredging rate at the submarine outfall is 3,500 m^3/day?	☑	☐	☐	-/
3.30	S6.9	Is dredged marine sediment disposed of in a gazetted marine disposal area in accordance with marine dumping permit conditions of the Dumping at Sea Ordinance (DASO)?	☑	☐	☐	No marine dumping observed on reporting day
3.31	S6.9	Are disposal vessels fitted with tight bottom seals in order to prevent leakage of material during transport?	☑	☐	☐	-/
3.32	S6.9	Are barges filled to a level which ensures that material does not spill over during transport to the disposal site and that adequate freeboard is maintained to ensure that the decks are not washed by wave action?	☑	☐	☐	-/
3.33	S6.9	Are excess materials cleaned from decks and exposed fittings before the vessel is moved from the dredging area after dredging?	☑	☐	☐	-/
3.34	S6.9	Are the contractor(s) confirmed that the works cause no visible foam, oil, grease, litter or other objectionable matter to be present in the water within and adjacent to the dredging site?	☐	☑	☐	
3.35	S6.9	When the dredged material has been unloaded at the disposal areas, is any material accumulated on the deck or other exposed parts of the vessel removed and placed in the hold or a hopper?	☑	☐	☐	-/
3.36	S6.9	Is dredger maintained adequate clearance between vessels and the seabed at all states of the tide and reduce operations speed to ensure that excessive turbidity is not generated by turbulence from vessel movement or propeller wash?	☐	☑	☐	
3.37	S6.9	Is the contractor shall regularly inspect the silt curtains and check that they are moored and marked to avoid danger to marine traffic? Is regular inspection on the integrity of the silt curtain carried out by the contractor and any damage to the silt curtain shall be repaired by the contractor promptly?	☐	☑	☐	
3.38	S6.9	Are all vessels have a clean ballast system?	☐	☑	☐	
3.39	S6.9	Are all vessels well maintained and inspected before use to limit any potential discharges to the marine environment?	☐	☑	☐	
3.40	S6.9	Is any discharge of sewage/grey wastewater? Is wastewater from potentially contaminated area on working vessels should be minimized and collected?	☑	☐	☐	
3.41	S6.9	Is any soil waste disposed overboard?	☑	☐	☐	

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Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
4.00		**Waste Management**				
4.01	S8.5	Is a trip-ticket system implemented to monitor the disposal of C&D and solid wastes at public filling facilities and landfills?	☐	☑	☐	
4.02	S8.5	Is a recording system implemented to record the amount of wastes generated, recycled and disposed of?	☐	☑	☐	
4.03	S8.5	IS the Contractor registered as a chemical waste producer?	☐	☑	☐	
4.04	S8.5	Are chemical waste separated from other waste and collected by a licensed chemical waste collector?	☑	☐	☐	
4.05	S8.5	Are trip tickets for chemical waste disposal available for inspection?	☑	☐	☐	
4.06	S8.5	Is chemical waste reused and recycled on site as far as practicable?	☑	☐	☐	
4.07	S8.5	Are all containers for chemical waste properly labelled?	☐	☑	☐	
4.08	S8.5	Is chemical waste storage area used solely for storage of chemical waste and properly labelled?	☐	☑	☐	
4.09	S8.5	Are incompatible chemical wastes stored in different areas?	☑	☐	☐	
4.10	S8.5	Is the chemical waste storage area enclosed on at least 3 sides and adequately ventilated?	☐	☑	☐	
4.11	S8.5	Is an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or of 20% by volume of the chemical waste stored in that area, whichever is the greatest, provide?	☐	☑	☐	
4.12	S8.5	Are a routine cleaning and maintenance programme implemented for drainage systems, sump pits, and oil interceptors?	☐	☑	☐	reminder (1)
4.13	S8.5	Are sufficient general refuse disposal/collection points provided on site?	☐	☑	☐	
4.14	S8.5	Is general refuse disposed of properly and regularly?	☐	☑	☐	
4.15	S8.5	Are appropriate measures adopted to minimize windblown litter and dust during transportation of waste?	☐	☑	☐	
4.16	S8.5	Are individual collectors for aluminum cans, plastic bottles and packaging material and office paper provided to encourage waste segregation?	☐	☑	☐	
4.17	S8.5	Are C&D wastes sorted on site?	☐	☑	☐	
4.18	S8.5	Are C&D waste disposed of properly?	☐	☑	☐	
4.19	S8.5	Are unused C&D materials or chemicals recycled or reused to reduce the quantity of waste?	☑	☐	☐	
4.20	S8.5	Are public fill and C&D waste reuse on site as far as practicable to avoid disposal off-site?	☐	☑	☐	metal.

04/09

Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
4.21	S8.5	Are the construction materials stored properly to minimize the potential for damage or contamination?	☐	☑	☐	
4.22	S8.5	Is a dumping license obtained to deliver public fill to public filling areas?	☐	☑	☐	
5.00		**Landscape and Visual**				
5.01	S11.10 & 11.11	Are Is site hoarding provided?	☑	☐	☐	
5.02	S11.10 & 11.11	Are vegetation disturbance minimized or soil protected to reduce potential soil erosion?	☐	☑	☐	
5.03	S11.10 & 11.11	Is construction light oriented away from the sensitive receivers?	☑	☐	☐	
5.04	S11.10 & 11.11	Is grass hydroseeding provided to slopes as soon as the completion of works?	☐	☑	☐	manual seeding
5.05	S11.10 & 11.11	Are damages to trees outside site boundary due construction works avoided?	☐	☑	☐	
5.06	S11.10 & 11.11	Is excavation works carried out manually instead of machinery operation within 2.5m vicinity of any preserved trees?	☑	☐	☐	
5.07	S11.10 & 11.11	Are the retained and transplanted tree(s) properly protected and in good conditions?	☑	☐	☐	
5.08	S11.10 & 11.11	Are surgery works carried out for damaged trees?	☑	☐	☐	
6.00		**Ecology**				
6.01	S9.7	Is site runoff properly treated to prevent any silly runoff?	☐	☑	☐	
6.02	S9.7	Are silt trap installed and well-maintained?	☐	☑	☐	
6.03	S9.7	Are stockpiles properly covered to avoid generating silty runoff?	☑	☐	☐	exposed dusty materials will be used for backfill within the same day
6.04	S9.7	Are construction works restricted to works area which are clearly defined?	☐	☑	☐	
6.05	S9.7	For slope mitigation works within the Clear Water Bay Country Park, are tree felling and damages to trees, the exact locations of the flexible barrier foundation plates, soil nails and rock dowels adjusted during detailed design, and a setback distance from existing trees is recommended to be maintained as far as practical?	☐	☑	☐	
6.06	S9.7	Are pruning of tree canopies along the alignment of the flexible barriers limited to a minimum?	☐	☑	☐	
6.07	S9.7	Are the alignment of flexible barriers optimized to preserve all species of conservation interest and minimize the impact to the existing vegetation as far as practicable? Are the alignment of flexible barriers positioned at mininmum 1.5 m in a radius away from these individuals?	☐	☑	☐	
6.08	S9.7	At the detailed design stage prior to the commencement of the slope mitigation works, is vegetation survey carried out at the slope mitigation areas within the Clear Water Bay	☐	☑	☐	

24/01

Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
		Country Park to assess the condition and identify the location of each individual of Marsdenia lachnostoma and other flora species of conservation interest that may be directly affected by the construction works?				
6.09	S9.7	Is temporary fencing installed to fence off the concerned species either in groups of individually within the works area and in the close proximity to prevent from being damaged and disturbed during construction? Is a sign identifying the site attached to the fence and flagging tape shall be attached to the individuals to visualize their locations?	☐	☑	☐	
6.10	S9.7	Is a specification for fencing and demarcating individuals of Marsdenai lachnostoma (or other flora species of conservation interest, if found) adjacent to the proposed alignment of the flexible barriers prepared to protect the species?	☐	☑	☐	
6.11	S9.7	Is any induction training provided to all site personnel in order to brief them on this flora of conservation interest including the locations and their importance?	☐	☑	☐	
6.12	S9.7	Is the resident site supervisory staff closely monitor the conditions of concerned individuals during construction of flexible barriers in the close proximity?	☐	☑	☐	
6.13	S9.7	Are fences erected along the boundary of the works area before the commencement of works to prevent vehicle movements and encroachment of personnel onto adjacent areas?	☐	☑	☐	
6.14	S9.7	Is regular check of the work site boundaries performed to ensure that they are not breached and that damage does not occur to surrounding areas?	☐	☑	☐	
6.15	S9.7	Is any damage and disturbance avoided, particularly those caused by filling and illegal dumping, to the surrounding habitats through proper management of waste disposal?	☐	☑	☐	
6.16	S9.7	Are temporarily affected areas reinstated, particularly the habitats of plantation and shrubland-grassland immediately after completion of construction works, through on-site tree/shrub planting?	☑	☐	☐	
6.15	S9.7	Are affected habitats within the Clear Water Bay Country Bay reinstated by hydro-seeding and planting of climbers and native shrub seedlings where practical upon completion of the slope mitigation works?	☑	☐	☐	
7.00		**Landfill Gas Hazard**				
7.01	S12.7	Are the safety procedures implemented to minimise the risks of fires and explosions, asphyxiation of works and toxicity effects during all works?	☐	☑	☐	
7.02	S12.7	Are the gas detection equipment and precautions being used during trenching and excavation as well as creation of confined spaces?	☐	☑	☐	
7.03	S12.7	Are the training with regard to the awareness of potential hazards of working in confined spaces provided from the Contractor to the workers?	☐	☑	☐	
7.04	S12.7	Are the safety officers trained with regard to landfill gas and leachate related hazards and presented on the site throughout the works undertaken below grade?	☐	☑	☐	
7.05	S12.7	Are the all personnel working on site and all visitor made aware of the possibility of ignition of gas, the possible presence of contaminated water and the need to avoid physical contact?	☐	☑	☐	

04101

Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
7.06	S12.7	Is the monitoring of landfill gas being undertaken in all excavations, manholes, chambers and any confined spaces?	☐	☑	☐	
7.07	S12.7	Are the monitoring frequency and areas being specified by the safety officers or appropriately qualified person? Are the all measurements being recorded and documented?	☐	☑	☐	
7.08	S12.7	Is the drilling proceeded with adequate care and precautions against the potential hazards?	☐	☑	☐	
7.09	S12.7	Is the method statement covering all normal and emergency procedures provided by the drilling contractor prior to the commencement of the site works?	☐	☑	☐	
7.10	S12.7	Are the below ground services entries being sealed to prevent gas entry? Are the grilled metal covers being used for below grade cable trenches?	☑	☐	☐	
7.11	S12.7	Is each manhole or utility pit monitored with two measurements (at mid-depth and base) for minimum of 10 minutes? Is the steady reading and peak reading recorded at each manhole or utility pit?	☐	☑	☐	
7.12	S12.7	Are the warning signs of the hazards of landfill gas and its possible presence on site posted in prominent places?	☐	☑	☐	
8.00 8.01		**Overall** Is the EM&A properly implemented in general?	☐	☑	☐	

04/01

Acuity Sustainability Consulting Limited
Unit C, 11/F., Ford Glory Plaza, No. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon
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Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Remark / Follow up of Observation(s) and Non-compliance(s) of Last Weekly Site Inspection:

Observation(s)

Nil

Reminder(s)

(1) Housekeeping was reminded at ACTIPAFF Area, hullah near to ACTIPAFF Area & Product water storage Area near to CEDD ~~Loss~~ Fill bank.

Signatures:

ET Representative	Contractor's Representative	Supervising Officer's Representative	IEC's Representative	WSD's Representative
(Name: Charlene Lai)	(Name: Brian Kan)	(Name: Derek Lai)	(Name: Louis Kwan)	(Name: N/A)

04/01

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Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

WEEKLY ENVIRONMENTAL INSPECTION CHECKLIST

Raymond Kok

Inspection Date: 11/01/2022 **Inspected by:** ET: Charlene Lai / Jacky Leung SO: Derek Lai WSD: N/A
Contractor: Brian Kam IEC: Louis Kwan

Inspection Time: 14:38 - 17:00

Weather							
Condition	☑ Sunny	☐ Fine	☐ Overcast	☐ Drizzle	☐ Rain	☐ Storm	☐ Hazy
Temperature	18 °C		**Humidity**	☐ High	☑ Moderate	☐ Low	
Wind	☐ Calm	☐ Light	☑ Breeze	☐ Strong			

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
0.00		**General**				
0.01		Is the current Environmental Permit displayed conspicuously at all vehicle site entrances/exits for public's information at any time?	☐	☑	☐	
0.02		Is ET Leader's log-book kept readily available for inspections?	☐	☑	☐	
1.00		**Construction Dust**				
1.01	S4.8.1	Are dusty materials, such as excavated materials, building debris and construction materials, and exposed earth surface properly covered to prevent dust emission?	☑	☐	☐	Regular water spraying to limit dust emission was conducted.
1.02	S4.8.1	Are screenings, enclosures, water spraying or vacuum cleaning devices provided to dusty construction works for dust suppression?	☐	☑	☐	//
1.03	S4.8.1	Are fumes or smoke emitting plants or construction activities shielded by a screen?	☑	☐	☐	No fume/smoke emitting plant/ construction activity was observed.
1.04	S4.8.1	Are wheel-washing facilities with high-pressure water jets provided at all site exits?	☐	☑	☐	
1.05	S4.8.1	Is wheel-washing provided to all vehicles leaving the site?	☐	☑	☐	
1.06	S4.8.1	Are road section near the site exit free from dusty material?	☐	☑	☐	
1.07	S4.8.1	Are all main haul roads inside the site paved or sprayed with water to minimize dust emission during vehicle movement?	☐	☑	☐	paved
1.08	S4.8.1	Are water spraying provided immediately prior to any loading or transfer of dusty materials?	☐	☑	☐	regular water spraying was conducted to limit dust emission.
1.09	S4.8.1	Are covers provided to all dump trucks carrying dusty materials when entering and leaving the site?	☐	☑	☐	
1.10	S4.8.1	Are the working areas for uprooting of trees, shrubs, or vegetation or the removal of boulders, poles, pillars sprayed with water to maintain the entire surface wet?	☑	☐	☐	
1.11	S4.8.1	Is exposed earth properly treated within six months after the last construction activity on site?	☐	☑	☐	
1.12	S4.8.1	Does the operation of plants on site free form dark smoke emission?	☐	☑	☐	NRMM label

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Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
1.13	S4.8.1	Are vehicles travelling at speed not exceeding 15km/hr within the site?	☐	☑	☐	
1.14	S4.8.1	Are stock of more than 20 bags of cement or day PFA covered or sheltered on top and 3 sides?	☐	☑	☐	
1.15	S4.8.1	Are de-bagging, batching and mixing processes of bagged cement carried out in sheltered areas?	☑	☐	☐	
1.16	S4.8.1	Are hoarding of at least 2.4m high provided along the site boundary adjoining areas accessible by the public?	☐	☑	☐	
1.17	S4.8.1	Is open burning prohibited?	☐	☑	☐	
2.00		**Construction Noise (Airborne)**				
2.01	S5.7	Are quiet plants adopted on site?	☐	☑	☐	QPME label
2.02	S5.7	Are the PMEs operating on site well-maintained to minimize the generation of excessive niose?	☐	☑	☐	regular inspection
2.03	S5.7	Are plants throttled down or turned off when not in use?	☐	☑	☐	
2.04	S5.7	Are the plants known to emit noise strongly in one direction oriented to face away from NSRs?	☑	☐	☐	no nearby NSR.
2.05	S5.7	Are moveable barriers provided to screen NSRs from plant or noisy operations?	☑	☐	☐	
2.06	S5.7	Are silencers, mufflers and enclosures provided to plants?	☑	☐	☐	
2.07	S5.7	Are the hoods, cover panels and inspection hatches of PMEs closed during operation?	☐	☑	☐	
2.08	S5.7	Are purposely-built site hoarding construction with appropriate materials provided along the site boundary?	☐	☑	☐	
2.09	S5.7	Are noisy operation properly scheduled to minimize exposure and cumulative impacts to nearby sensitive receivers?	☐	☑	☐	
2.10	S5.7	Are valid noise emission label(s) affixed to all hand-held breakers operating on site?	☑	☐	☐	
2.11	S5.7	Are valid noise emission label(s) affixed to all air compressors operating on site?	☑	☐	☐	
2.12	S5.7	Are all construction noise permit(s) applied for percussive piling work?	☑	☐	☐	
2.13	S5.7	Are construction noise permit(s) applied for general construction works during restricted hours?	☐	☑	☐	
2.14	S5.7	Are valid construction noise permit(s) displayed at all vehicular exits?	☐	☑	☐	
3.00		**Water Quality**				
3.01	S6.9	Is effluent discharge license obtained for wastewater discharge from site?	☐	☑	☐	
3.02	S6.9	Is effluent discharged according to the effluent discharge license?	☐	☑	☐	
3.03	S6.9	Is wastewater discharge from site properly treated prior to discharge?	☐	☑	☐	site observations (1)

11/01

Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
3.04	S6.9	Are perimeter channels provided to intercept storm runoff from outside the site?	☐	☑	☐	
3.05	S6.9	Are sand/silt removal facilities such as sand/silt traps and sediment basins provided to remove sand/silt particles from runoff?	☐	☑	☐	
3.06	S6.9	Is surface runoff diverted to sedimentation facilities?	☐	☑	☐	
3.07	S6.9	Is the drainage system properly maintained?	☐	☑	☐	regular cleaning
3.08	S6.9	Are construction works carefully programmed to minimize soil excavation works during rainy seasons?	☐	☑	☐	
3.09	S6.9	Are exposed soil surface protected by paving as soon as possible to reduce the potential of soil erosion?	☐	☑	☐	
3.10	S6.9	Are temporary access roads protected by crushed gravel?	☐	☑	☐	
3.11	S6.9	Are exposed slope surface properly protected?	☐	☑	☐	manual seeding
3.12	S6.9	Is trench excavation avoided in the wet season as far as practicable, or if necessary, backfilled in short sections after excavation?	☐	☑	☐	
3.13	S6.9	Are open stockpiles of construction materials on site covered by tarpaulin or similar fabric during construction?	☐	☑	☐	
3.14	S6.9	Is runoff from wheel-washing facilities avoided?	☐	☑	☐	
3.15	S6.9	Is oil leakage or spillage prevented?	☐	☑	☐	drip tray
3.16	S6.9	Are there any measures to prevent the release of oil and grease into the storm drainage system?	☐	☑	☐	drip tray
3.17	S6.9	Are the oil interceptors/ grease traps properly maintained?	☑	☐	☐	
3.18	S6.9	Are debris and rubbish generated on site collected, handled and disposed of properly to avoid them entering the streams?	☐	☑	☐	
3.19	S6.9	Are all fuel tanks and storage areas provided with locks and be sited on sealed areas, within bunds of capacity equal to 110% of the storage capacity of the largest tank?	☐	☑	☐	
3.20	S6.9	Are tanks, containers, storage area bunded and the locations locked as far as possible from the sensitive watercourse and stormwater drains?	☐	☑	☐	
3.21	S6.9	Are sufficient chemical toilets provided on site to handle sewage from construction work force?	☐	☑	☐	
3.22	S6.9	Are sewage disposal and toilet maintenance of the portable chemical toilets provided by the licensed contractors?	☐	☑	☐	
3.23	S6.9	Is concrete washing water properly collected and treated prior to discharge?	☐	☑	☐	
3.24	S6.9	Is suitable type of silt curtains deployed during dredging to reduce the elevation of suspended solids to nearby sensitive receivers?	☐	☑	☐	
3.25	S6.9	Is closed grab dredger used to reduce the potential leakage of sediments?	☐	☑	☐	

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Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
3.26	S6.9	Is closed grab dredger of 3 to 6 m^3 used for dredging at seawater intake?	☐	☑	☐	
3.27	S6.9	Is specific work staff assigned the responsibility for monitoring the number of grab dredged per hour? Is number of cycle limited to 20-21 grab per hour for 3m^3 closed grab, 10-11 grab per hour for 6m^3 closed grab?	☑	☐	☐	No marine dredging in operation observed marine area site visit on reporting day.
3.28	S6.9	Is the grab operated in slow and controlled manner such that the impact to seabed by the grab when being lowered could be minimized? Is the operator ensured the grab be properly closed before lifting the grab?	☑	☐	☐	✓
3.29	S6.9	Is the maximum allowed dredging rate at the seawater intake limited to 750 m^3/day while the maximum allowed dredging rate at the submarine outfall is 3,500 m^3/day?	☑	☐	☐	✓
3.30	S6.9	Is dredged marine sediment disposed of in a gazetted marine disposal area in accordance with marine dumping permit conditions of the Dumping at Sea Ordinance (DASO)?	☑	☐	☐	no marine dredging observed & no marine dumping observed
3.31	S6.9	Are disposal vessels fitted with tight bottom seals in order to prevent leakage of material during transport?	☑	☐	☐	✓
3.32	S6.9	Are barges filled to a level which ensures that material does not spill over during transport to the disposal site and that adequate freeboard is maintained to ensure that the decks are not washed by wave action?	☑	☐	☐	✓
3.33	S6.9	Are excess materials cleaned from decks and exposed fittings before the vessel is moved from the dredging area after dredging?	☑	☐	☐	✓
3.34	S6.9	Are the contractor(s) confirmed that the works cause no visible foam, oil, grease, litter or other objectionable matter to be present in the water within and adjacent to the dredging site?	☐	☑	☐	
3.35	S6.9	When the dredged material has been unloaded at the disposal areas, is any material accumulated on the deck or other exposed parts of the vessel removed and placed in the hold or a hopper?	☑	☐	☐	✓
3.36	S6.9	Is dredger maintained adequate clearance between vessels and the seabed at all states of the tide and reduce operations speed to ensure that excessive turbidity is not generated by turbulence from vessel movement or propeller wash?	☐	☑	☐	
3.37	S6.9	Is the contractor shall regularly inspect the silt curtains and check that they are moored and marked to avoid danger to marine traffic? Is regular inspection on the integrity of the silt curtain carried out by the contractor and any damage to the silt curtain shall be repaired by the contractor promptly?	☐	☑	☐	
3.38	S6.9	Are all vessels have a clean ballast system?	☐	☑	☐	
3.39	S6.9	Are all vessels well maintained and inspected before use to limit any potential discharges to the marine environment?	☐	☑	☐	
3.40	S6.9	Is any discharge of sewage/grey wastewater? Is wastewater from potentially contaminated area on working vessels should be minimized and collected?	☑	☐	☐	site observation during site inspection (1)
3.41	S6.9	Is any soil waste disposed overboard?	☑	☐	☐	

11/01

Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
4.00		**Waste Management**				
4.01	S8.5	Is a trip-ticket system implemented to monitor the disposal of C&D and solid wastes at public filling facilities and landfills?	☐	☑	☐	
4.02	S8.5	Is a recording system implemented to record the amount of wastes generated, recycled and disposed of?	☐	☑	☐	
4.03	S8.5	IS the Contractor registered as a chemical waste producer?	☐	☑	☐	
4.04	S8.5	Are chemical waste separated from other waste and collected by a licensed chemical waste collector?	☐	☑	☐	
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4.06	S8.5	Is chemical waste reused and recycled on site as far as practicable?	☑	☐	☐	
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4.10	S8.5	Is the chemical waste storage area enclosed on at least 3 sides and adequately ventilated?	☐	☑	☐	
4.11	S8.5	Is an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or of 20% by volume of the chemical waste stored in that area, whichever is the greatest, provide?	☐	☑	☐	
4.12	S8.5	Are a routine cleaning and maintenance programme implemented for drainage systems, sump pits, and oil interceptors?	☐	☑	☐	
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4.14	S8.5	Is general refuse disposed of properly and regularly?	☐	☑	☐	
4.15	S8.5	Are appropriate measures adopted to minimize windblown litter and dust during transportation of waste?	☐	☑	☐	
4.16	S8.5	Are individual collectors for aluminum cans, plastic bottles and packaging material and office paper provided to encourage waste segregation?	☐	☑	☐	
4.17	S8.5	Are C&D wastes sorted on site?	☐	☑	☐	
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4.19	S8.5	Are unused C&D materials or chemicals recycled or reused to reduce the quantity of waste?	☑	☐	☐	
4.20	S8.5	Are public fill and C&D waste reuse on site as far as practicable to avoid disposal off-site?	☐	☑	☐	

11/01

Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
4.21	S8.5	Are the construction materials stored properly to minimize the potential for damage or contamination?	☐	☑	☐	
4.22	S8.5	Is a dumping license obtained to deliver public fill to public filling areas?	☐	☑	☐	
5.00		**Landscape and Visual**				
5.01	S11.10 & 11.11	Are Is site hoarding provided?	☑	☐	☐	
5.02	S11.10 & 11.11	Are vegetation disturbance minimized or soil protected to reduce potential soil erosion?	☐	☑	☐	
5.03	S11.10 & 11.11	Is construction light oriented away from the sensitive receivers?	☑	☐	☐	
5.04	S11.10 & 11.11	Is grass hydroseeding provided to slopes as soon as the completion of works?	☐	☑	☐	manual seeding
5.05	S11.10 & 11.11	Are damages to trees outside site boundary due construction works avoided?	☐	☑	☐	
5.06	S11.10 & 11.11	Is excavation works carried out manually instead of machinery operation within 2.5m vicinity of any preserved trees?	☑	☐	☐	
5.07	S11.10 & 11.11	Are the retained and transplanted tree(s) properly protected and in good conditions?	☑	☐	☐	
5.08	S11.10 & 11.11	Are surgery works carried out for damaged trees?	☑	☐	☐	
6.00		**Ecology**				
6.01	S9.7	Is site runoff properly treated to prevent any silly runoff?	☐	☑	☐	
6.02	S9.7	Are silt trap installed and well-maintained?	☐	☑	☐	
6.03	S9.7	Are stockpiles properly covered to avoid generating silty runoff?	☐	☑	☐	
6.04	S9.7	Are construction works restricted to works area which are clearly defined?	☐	☑	☐	
6.05	S9.7	For slope mitigation works within the Clear Water Bay Country Park, are tree felling and damages to trees, the exact locations of the flexible barrier foundation plates, soil nails and rock dowels adjusted during detailed design, and a setback distance from existing trees is recommended to be maintained as far as practical?	☐	☑	☐	
6.06	S9.7	Are pruning of tree canopies along the alignment of the flexible barriers limited to a minimum?	☐	☑	☐	
6.07	S9.7	Are the alignment of flexible barriers optimized to preserve all species of conservation interest and minimize the impact to the existing vegetation as far as practicable? Are the alignment of flexible barriers positioned at mininmum 1.5 m in a radius away from these individuals?	☐	☑	☐	
6.08	S9.7	At the detailed design stage prior to the commencement of the slope mitigation works, is vegetation survey carried out at the slope mitigation areas within the Clear Water Bay	☐	☑	☐	

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Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
		Country Park to assess the condition and identify the location of each individual of Marsdenia lachnostoma and other flora species of conservation interest that may be directly affected by the construction works?				
6.09	S9.7	Is temporary fencing installed to fence off the concerned species either in groups of individually within the works area and in the close proximity to prevent from being damaged and disturbed during construction? Is a sign identifying the site attached to the fence and flagging tape shall be attached to the individuals to visualize their locations?	☐	☑	☐	
6.10	S9.7	Is a specification for fencing and demarcating individuals of Marsdenai lachnostoma (or other flora species of conservation interest, if found) adjacent to the proposed alignment of the flexible barriers prepared to protect the species?	☐	☑	☐	
6.11	S9.7	Is any induction training provided to all site personnel in order to brief them on this flora of conservation interest including the locations and their importance?	☐	☑	☐	
6.12	S9.7	Is the resident site supervisory staff closely monitor the conditions of concerned individuals during construction of flexible barriers in the close proximity?	☐	☑	☐	
6.13	S9.7	Are fences erected along the boundary of the works area before the commencement of works to prevent vehicle movements and encroachment of personnel onto adjacent areas?	☐	☑	☐	
6.14	S9.7	Is regular check of the work site boundaries performed to ensure that they are not breached and that damage does not occur to surrounding areas?	☐	☑	☐	
6.15	S9.7	Is any damage and disturbance avoided, particularly those caused by filling and illegal dumping, to the surrounding habitats through proper management of waste disposal?	☐	☑	☐	
6.16	S9.7	Are temporarily affected areas reinstated, particularly the habitats of plantation and shrubland-grassland immediately after completion of construction works, through on-site tree/shrub planting?	☑	☐	☐	
6.15	S9.7	Are affected habitats within the Clear Water Bay Country Bay reinstated by hydro-seeding and planting of climbers and native shrub seedlings where practical upon completion of the slope mitigation works?	☑	☐	☐	
7.00		**Landfill Gas Hazard**				
7.01	S12.7	Are the safety procedures implemented to minimise the risks of fires and explosions, asphyxiation of works and toxicity effects during all works?	☐	☑	☐	
7.02	S12.7	Are the gas detection equipment and precautions being used during trenching and excavation as well as creation of confined spaces?	☐	☑	☐	
7.03	S12.7	Are the training with regard to the awareness of potential hazards of working in confined spaces provided from the Contractor to the workers?	☐	☑	☐	
7.04	S12.7	Are the safety officers trained with regard to landfill gas and leachate related hazards and presented on the site throughout the works undertaken below grade?	☐	☑	☐	
7.05	S12.7	Are the all personnel working on site and all visitor made aware of the possibility of ignition of gas, the possible presence of contaminated water and the need to avoid physical contact?	☐	☑	☐	

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Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
7.06	S12.7	Is the monitoring of landfill gas being undertaken in all excavations, manholes, chambers and any confined spaces?	☑	☐	☐	No visit to open channel portion on reporting day
7.07	S12.7	Are the monitoring frequency and areas being specified by the safety officers or appropriately qualified person? Are the all measurements being recorded and documented?	☑	☐	☐	//
7.08	S12.7	Is the drilling proceeded with adequate care and precautions against the potential hazards?	☑	☐	☐	
7.09	S12.7	Is the method statement covering all normal and emergency procedures provided by the drilling contractor prior to the commencement of the site works?	☐	☑	☐	
7.10	S12.7	Are the below ground services entries being sealed to prevent gas entry? Are the grilled metal covers being used for below grade cable trenches?	☑	☐	☐	//
7.11	S12.7	Is each manhole or utility pit monitored with two measurements (at mid-depth and base) for minimum of 10 minutes? Is the steady reading and peak reading recorded at each manhole or utility pit?	☑	☐	☐	//
7.12	S12.7	Are the warning signs of the hazards of landfill gas and its possible presence on site posted in prominent places?	☐	☑	☐	
8.00 8.01		**Overall** Is the EM&A properly implemented in general?	☐	☑	☐	

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Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Remark / Follow up of Observation(s) and Non-compliance(s) of Last Weekly Site Inspection:

Observation(s)

Nil.

Reminder(s)

(1) A Tarpaulin sheet should be placed between the marine dredger / derrick ~~at~~ barge & the dredging area to prevent accidental escape of dredged materials to the open sea during material transfer

Site observation during site inspection on 11/01/2022

As observed by ET and IEC during the site inspection on 11-01-2022, marine water by-pass from the underground pipe to an underground storage tank was observed. The marine water was pumped and by-passed through a silt curtain to open water afterwards. Main contractor confirmed it is an ~~uncontaminated~~ unpolluted isolated by-pass system and proposed continuous self monitoring of water quality in the water pipe.

Signatures:

ET Representative	Contractor's Representative	Supervising Officer's Representative	IEC's Representative	WSD's Representative
(Name: Charlene Cai)	(Name: Brian Kan)	(Name: Carla Lai)	(Name: Louis Kuan)	(Name: N/A)

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Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

WEEKLY ENVIRONMENTAL INSPECTION CHECKLIST

Inspection Date: 18/01/2022 **Inspected by:** ET: Charlene Lai / Sally Leung SO: Raymond Kan / Derek Lai WSD: N/A
Inspection Time: 14:30 - 17:15 Contractor: Brian Lam / Tiffany Tsang IEC: Louis Kwan

Weather

Condition	☐ Sunny	☐ Fine	☑ Overcast	☐ Drizzle	☐ Rain	☐ Storm	☐ Hazy
Temperature	18 °C	**Humidity**	☐ High	☑ Moderate	☐ Low		
Wind	☐ Calm	☑ Light	☐ Breeze	☐ Strong			

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
0.00		**General**				
0.01		Is the current Environmental Permit displayed conspicuously at all vehicle site entrances/exits for public's information at any time?	☐	☑	☐	
0.02		Is ET Leader's log-book kept readily available for inspections?	☐	☑	☐	
1.00		**Construction Dust**				
1.01	S4.8.1	Are dusty materials, such as excavated materials, building debris and construction materials, and exposed earth surface properly covered to prevent dust emission?	☑	☐	☐	No visit to land areas on the reporting day
1.02	S4.8.1	Are screenings, enclosures, water spraying or vacuum cleaning devices provided to dusty construction works for dust suppression?	☑	☐	☐	
1.03	S4.8.1	Are fumes or smoke emitting plants or construction activities shielded by a screen?	☑	☐	☐	No fumes/smoke emitting plant/construction activities observed.
1.04	S4.8.1	Are wheel-washing facilities with high-pressure water jets provided at all site exits?	☐	☑	☐	
1.05	S4.8.1	Is wheel-washing provided to all vehicles leaving the site?	☐	☑	☐	
1.06	S4.8.1	Are road section near the site exit free from dusty material?	☐	☑	☐	
1.07	S4.8.1	Are all main haul roads inside the site paved or sprayed with water to minimize dust emission during vehicle movement?	☐	☑	☐	paved.
1.08	S4.8.1	Are water spraying provided immediately prior to any loading or transfer of dusty materials?	☑	☐	☐	No transfer/loading of dusty materials
1.09	S4.8.1	Are covers provided to all dump trucks carrying dusty materials when entering and leaving the site?	☑	☐	☐	No dump trucks observed.
1.10	S4.8.1	Are the working areas for uprooting of trees, shrubs, or vegetation or the removal of boulders, poles, pillars sprayed with water to maintain the entire surface wet?	☑	☐	☐	
1.11	S4.8.1	Is exposed earth properly treated within six months after the last construction activity on site?	☐	☑	☐	
1.12	S4.8.1	Does the operation of plants on site free form dark smoke emission?	☐	☑	☐	/ NRMM label on the generator

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Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
1.13	S4.8.1	Are vehicles travelling at speed not exceeding 15km/hr within the site?	☐	☑	☐	
1.14	S4.8.1	Are stock of more than 20 bags of cement or day PFA covered or sheltered on top and 3 sides?	☑	☐	☐	
1.15	S4.8.1	Are de-bagging, batching and mixing processes of bagged cement carried out in sheltered areas?	☑	☐	☐	
1.16	S4.8.1	Are hoarding of at least 2.4m high provided along the site boundary adjoining areas accessible by the public?	☐	☑	☐	
1.17	S4.8.1	Is open burning prohibited?	☐	☑	☐	
2.00		**Construction Noise (Airborne)**				
2.01	S5.7	Are quiet plants adopted on site?	☐	☑	☐	✓QPME label
2.02	S5.7	Are the PMEs operating on site well-maintained to minimize the generation of excessive niose?	☐	☑	☐	✓Regular maintenance
2.03	S5.7	Are plants throttled down or turned off when not in use?	☐	☑	☐	
2.04	S5.7	Are the plants known to emit noise strongly in one direction oriented to face away from NSRs?	☑	☐	☐	No nearby NSR
2.05	S5.7	Are moveable barriers provided to screen NSRs from plant or noisy operations?	☑	☐	☐	
2.06	S5.7	Are silencers, mufflers and enclosures provided to plants?	☑	☑	☐	
2.07	S5.7	Are the hoods, cover panels and inspection hatches of PMEs closed during operation?	☐	☑	☐	
2.08	S5.7	Are purposely-built site hoarding construction with appropriate materials provided along the site boundary?	☐	☑	☐	
2.09	S5.7	Are noisy operation properly scheduled to minimize exposure and cumulative impacts to nearby sensitive receivers?	☐	☑	☐	
2.10	S5.7	Are valid noise emission label(s) affixed to all hand-held breakers operating on site?	☑	☐	☐	
2.11	S5.7	Are valid noise emission label(s) affixed to all air compressors operating on site?	☑	☐	☐	
2.12	S5.7	Are all construction noise permit(s) applied for percussive piling work?	☑	☐	☐	
2.13	S5.7	Are construction noise permit(s) applied for general construction works during restricted hours?	☐	☑	☐	
2.14	S5.7	Are valid construction noise permit(s) displayed at all vehicular exits?	☐	☑	☐	
3.00		**Water Quality**				
3.01	S6.9	Is effluent discharge license obtained for wastewater discharge from site?	☐	☑	☐	
3.02	S6.9	Is effluent discharged according to the effluent discharge license?	☐	☐	☐	Obs L17
3.03	S6.9	Is wastewater discharge from site properly treated prior to discharge?	☐	☐	☐	Obs L17

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Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
3.04	S6.9	Are perimeter channels provided to intercept storm runoff from outside the site?	☐	☑	☐	
3.05	S6.9	Are sand/silt removal facilities such as sand/silt traps and sediment basins provided to remove sand/silt particles from runoff?	☐	☑	☐	
3.06	S6.9	Is surface runoff diverted to sedimentation facilities?	☐	☑	☐	~~closed~~
3.07	S6.9	Is the drainage system properly maintained?	☑	☐	☐	No visit to land areas on reporting day
3.08	S6.9	Are construction works carefully programmed to minimize soil excavation works during rainy seasons?	☐	☑	☐	
3.09	S6.9	Are exposed soil surface protected by paving as soon as possible to reduce the potential of soil erosion?	☑	☐	☐	~~Y~~
3.10	S6.9	Are temporary access roads protected by crushed gravel?	☐	☑	☐	
3.11	S6.9	Are exposed slope surface properly protected?	☑	☑	☐	/ manual seeding
3.12	S6.9	Is trench excavation avoided in the wet season as far as practicable, or if necessary, backfilled in short sections after excavation?	☑	☐	☐	~~Y~~
3.13	S6.9	Are open stockpiles of construction materials on site covered by tarpaulin or similar fabric during construction?	☐	☑	☐	
3.14	S6.9	Is runoff from wheel-washing facilities avoided?	☐	☑	☐	
3.15	S6.9	Is oil leakage or spillage prevented?	☐	☐	☐	reminder (2)
3.16	S6.9	Are there any measures to prevent the release of oil and grease into the storm drainage system?	☐	☐	☐	reminder (2)
3.17	S6.9	Are the oil interceptors/ grease traps properly maintained?	☑	☐	☐	
3.18	S6.9	Are debris and rubbish generated on site collected, handled and disposed of properly to avoid them entering the streams?	☐	☑	☐	
3.19	S6.9	Are all fuel tanks and storage areas provided with locks and be sited on sealed areas, within bunds of capacity equal to 110% of the storage capacity of the largest tank?	☐	☑	☐	
3.20	S6.9	Are tanks, containers, storage area bunded and the locations locked as far as possible from the sensitive watercourse and stormwater drains?	☐	☐	☐	reminder (2)
3.21	S6.9	Are sufficient chemical toilets provided on site to handle sewage from construction work force?	☐	☑	☐	
3.22	S6.9	Are sewage disposal and toilet maintenance of the portable chemical toilets provided by the licensed contractors?	☐	☑	☐	
3.23	S6.9	Is concrete washing water properly collected and treated prior to discharge?	☑	☐	☐	
3.24	S6.9	Is suitable type of silt curtains deployed during dredging to reduce the elevation of suspended solids to nearby sensitive receivers?	☑	☐	☐	No dredging was observed during site inspection
3.25	S6.9	Is closed grab dredger used to reduce the potential leakage of sediments?	☑	☐	☐	~~Y~~

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Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
3.26	S6.9	Is closed grab dredger of 3 to 6 m^3 used for dredging at seawater intake?	☑	☐	☐	"
3.27	S6.9	Is specific work staff assigned the responsibility for monitoring the number of grab dredged per hour? Is number of cycle limited to 20-21 grab per hour for 3m^3 closed grab, 10-11 grab per hour for 6m^3 closed grab?	☑	☐	☐	"
3.28	S6.9	Is the grab operated in slow and controlled manner such that the impact to seabed by the grab when being lowered could be minimized? Is the operator ensured the grab be properly closed before lifting the grab?	☑	☐	☐	"
3.29	S6.9	Is the maximum allowed dredging rate at the seawater intake limited to 750 m^3/day while the maximum allowed dredging rate at the submarine outfall is 3,500 m^3/day?	☑	☐	☐	"
3.30	S6.9	Is dredged marine sediment disposed of in a gazetted marine disposal area in accordance with marine dumping permit conditions of the Dumping at Sea Ordinance (DASO)?	☑	☐	☐	No marine disposal reported on reporting day
3.31	S6.9	Are disposal vessels fitted with tight bottom seals in order to prevent leakage of material during transport?	☑	☐	☐	"
3.32	S6.9	Are barges filled to a level which ensures that material does not spill over during transport to the disposal site and that adequate freeboard is maintained to ensure that the decks are not washed by wave action?	☑	☐	☐	"
3.33	S6.9	Are excess materials cleaned from decks and exposed fittings before the vessel is moved from the dredging area after dredging?	☑	☐	☐	"
3.34	S6.9	Are the contractor(s) confirmed that the works cause no visible foam, oil, grease, litter or other objectionable matter to be present in the water within and adjacent to the dredging site?	☑	☑	☐	
3.35	S6.9	When the dredged material has been unloaded at the disposal areas, is any material accumulated on the deck or other exposed parts of the vessel removed and placed in the hold or a hopper?	☑	☐	☐	"
3.36	S6.9	Is dredger maintained adequate clearance between vessels and the seabed at all states of the tide and reduce operations speed to ensure that excessive turbidity is not generated by turbulence from vessel movement or propeller wash?	☐	☑	☐	
3.37	S6.9	Is the contractor shall regularly inspect the silt curtains and check that they are moored and marked to avoid danger to marine traffic? Is regular inspection on the integrity of the silt curtain carried out by the contractor and any damage to the silt curtain shall be repaired by the contractor promptly?	☐	☑	☐	reminder (1)
3.38	S6.9	Are all vessels have a clean ballast system?	☐	☑	☐	
3.39	S6.9	Are all vessels well maintained and inspected before use to limit any potential discharges to the marine environment?	☐	☑	☐	
3.40	S6.9	Is any discharge of sewage/grey wastewater? Is wastewater from potentially contaminated area on working vessels should be minimized and collected?	☐	☐	☐	Obs (1)
3.41	S6.9	Is any soil waste disposed overboard?	☑	☐	☐	

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Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
4.00		**Waste Management**				
4.01	S8.5	Is a trip-ticket system implemented to monitor the disposal of C&D and solid wastes at public filling facilities and landfills?	☐	☑	☐	
4.02	S8.5	Is a recording system implemented to record the amount of wastes generated, recycled and disposed of?	☐	☑	☐	
4.03	S8.5	IS the Contractor registered as a chemical waste producer?	☐	☑	☐	
4.04	S8.5	Are chemical waste separated from other waste and collected by a licensed chemical waste collector?	☑	☐	☐	
4.05	S8.5	Are trip tickets for chemical waste disposal available for inspection?	☑	☐	☐	
4.06	S8.5	Is chemical waste reused and recycled on site as far as practicable?	☑	☐	☐	
4.07	S8.5	Are all containers for chemical waste properly labelled?	☐	☑	☐	
4.08	S8.5	Is chemical waste storage area used solely for storage of chemical waste and properly labelled?	☐	☑	☐	
4.09	S8.5	Are incompatible chemical wastes stored in different areas?	☑	☐	☐	
4.10	S8.5	Is the chemical waste storage area enclosed on at least 3 sides and adequately ventilated?	☐	☑	☐	
4.11	S8.5	Is an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or of 20% by volume of the chemical waste stored in that area, whichever is the greatest, provide?	☐	☑	☐	
4.12	S8.5	Are a routine cleaning and maintenance programme implemented for drainage systems, sump pits, and oil interceptors?	☑	☐	☐	No visit to and areas on reporting day
4.13	S8.5	Are sufficient general refuse disposal/collection points provided on site?	☐	☑	☐	
4.14	S8.5	Is general refuse disposed of properly and regularly?	☐	☑	☐	
4.15	S8.5	Are appropriate measures adopted to minimize windblown litter and dust during transportation of waste?	☐	☑	☐	
4.16	S8.5	Are individual collectors for aluminum cans, plastic bottles and packaging material and office paper provided to encourage waste segregation?	☐	☑	☐	
4.17	S8.5	Are C&D wastes sorted on site?	☐	☑	☐	
4.18	S8.5	Are C&D waste disposed of properly?	☐	☑	☐	
4.19	S8.5	Are unused C&D materials or chemicals recycled or reused to reduce the quantity of waste?	☐	☑	☐	
4.20	S8.5	Are public fill and C&D waste reuse on site as far as practicable to avoid disposal off-site?	☐	☑	☐	

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Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
4.21	S8.5	Are the construction materials stored properly to minimize the potential for damage or contamination?	☐	☐	☐	reminder (3)
4.22	S8.5	Is a dumping license obtained to deliver public fill to public filling areas?	☐	☑	☐	
5.00		**Landscape and Visual**				
5.01	S11.10 & 11.11	Are Is site hoarding provided?	☑	☐	☐	
5.02	S11.10 & 11.11	Are vegetation disturbance minimized or soil protected to reduce potential soil erosion?	☑	☐	☐	No visit to land areas on reporting day
5.03	S11.10 & 11.11	Is construction light oriented away from the sensitive receivers?	☑	☐	☐	
5.04	S11.10 & 11.11	Is grass hydroseeding provided to slopes as soon as the completion of works?	☐	☑	☐	manual seeding
5.05	S11.10 & 11.11	Are damages to trees outside site boundary due construction works avoided?	☑	☐	☐	No visit to land portions on reporting day
5.06	S11.10 & 11.11	Is excavation works carried out manually instead of machinery operation within 2.5m vicinity of any preserved trees?	☑	☐	☐	
5.07	S11.10 & 11.11	Are the retained and transplanted tree(s) properly protected and in good conditions?	☑	☐	☐	
5.08	S11.10 & 11.11	Are surgery works carried out for damaged trees?	☑	☐	☐	
6.00		**Ecology**				
6.01	S9.7	Is site runoff properly treated to prevent any silly runoff?	☐	☐	☐	Obs(1)
6.02	S9.7	Are silt trap installed and well-maintained?	☐	☑	☐	reminder (4)
6.03	S9.7	Are stockpiles properly covered to avoid generating silty runoff?	☑	☐	☐	
6.04	S9.7	Are construction works restricted to works area which are clearly defined?	☐	☑	☐	
6.05	S9.7	For slope mitigation works within the Clear Water Bay Country Park, are tree felling and damages to trees, the exact locations of the flexible barrier foundation plates, soil nails and rock dowels adjusted during detailed design, and a setback distance from existing trees is recommended to be maintained as far as practical?	☐	☑	☐	
6.06	S9.7	Are pruning of tree canopies along the alignment of the flexible barriers limited to a minimum?	☐	☑	☐	
6.07	S9.7	Are the alignment of flexible barriers optimized to preserve all species of conservation interest and minimize the impact to the existing vegetation as far as practicable? Are the alignment of flexible barriers positioned at mininmum 1.5 m in a radius away from these individuals?	☐	☑	☐	
6.08	S9.7	At the detailed design stage prior to the commencement of the slope mitigation works, is vegetation survey carried out at the slope mitigation areas within the Clear Water Bay	☐	☑	☐	

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Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
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6.09	S9.7	Is temporary fencing installed to fence off the concerned species either in groups of individually within the works area and in the close proximity to prevent from being damaged and disturbed during construction? Is a sign identifying the site attached to the fence and flagging tape shall be attached to the individuals to visualize their locations?	☐	☑	☐	
6.10	S9.7	Is a specification for fencing and demarcating individuals of Marsdenai lachnostoma (or other flora species of conservation interest, if found) adjacent to the proposed alignment of the flexible barriers prepared to protect the species?	☐	☑	☐	
6.11	S9.7	Is any induction training provided to all site personnel in order to brief them on this flora of conservation interest including the locations and their importance?	☐	☑	☐	
6.12	S9.7	Is the resident site supervisory staff closely monitor the conditions of concerned individuals during construction of flexible barriers in the close proximity?	☐	☑	☐	
6.13	S9.7	Are fences erected along the boundary of the works area before the commencement of works to prevent vehicle movements and encroachment of personnel onto adjacent areas?	☐	☑	☐	
6.14	S9.7	Is regular check of the work site boundaries performed to ensure that they are not breached and that damage does not occur to surrounding areas?	☐	☑	☐	
6.15	S9.7	Is any damage and disturbance avoided, particularly those caused by filling and illegal dumping, to the surrounding habitats through proper management of waste disposal?	☐	☑	☐	
6.16	S9.7	Are temporarily affected areas reinstated, particularly the habitats of plantation and shrubland-grassland immediately after completion of construction works, through on-site tree/shrub planting?	☑	☐	☐	
6.15	S9.7	Are affected habitats within the Clear Water Bay Country Bay reinstated by hydro-seeding and planting of climbers and native shrub seedlings where practical upon completion of the slope mitigation works?	☑	☐	☐	
7.00		**Landfill Gas Hazard**				
7.01	S12.7	Are the safety procedures implemented to minimise the risks of fires and explosions, asphyxiation of works and toxicity effects during all works?	☐	☑	☐	
7.02	S12.7	Are the gas detection equipment and precautions being used during trenching and excavation as well as creation of confined spaces?	☐	☑	☐	
7.03	S12.7	Are the training with regard to the awareness of potential hazards of working in confined spaces provided from the Contractor to the workers?	☐	☑	☐	
7.04	S12.7	Are the safety officers trained with regard to landfill gas and leachate related hazards and presented on the site throughout the works undertaken below grade?	☐	☑	☐	
7.05	S12.7	Are the all personnel working on site and all visitor made aware of the possibility of ignition of gas, the possible presence of contaminated water and the need to avoid physical contact?	☐	☑	☐	

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Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
7.06	S12.7	Is the monitoring of landfill gas being undertaken in all excavations, manholes, chambers and any confined spaces?	☐	☑	☐	
7.07	S12.7	Are the monitoring frequency and areas being specified by the safety officers or appropriately qualified person? Are the all measurements being recorded and documented?	☐	☑	☐	
7.08	S12.7	Is the drilling proceeded with adequate care and precautions against the potential hazards?	☐	☑	☐	
7.09	S12.7	Is the method statement covering all normal and emergency procedures provided by the drilling contractor prior to the commencement of the site works?	☐	☑	☐	
7.10	S12.7	Are the below ground services entries being sealed to prevent gas entry? Are the grilled metal covers being used for below grade cable trenches?	☑	☐	☐	
7.11	S12.7	Is each manhole or utility pit monitored with two measurements (at mid-depth and base) for minimum of 10 minutes? Is the steady reading and peak reading recorded at each manhole or utility pit?	☐	☑	☐	
7.12	S12.7	Are the warning signs of the hazards of landfill gas and its possible presence on site posted in prominent places?	☐	☑	☐	
8.00 8.01		**Overall** Is the EM&A properly implemented in general?	☐	☑	☐	

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Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Remark / Follow up of Observation(s) and Non-compliance(s) of Last Weekly Site Inspection:

Observation (s)

(1) It has been observed during the site inspection on 18.01.2022 that there is a new source of underground seepage marine water in the outfall shaft caisson that was not by-passed through an uncontaminated isolated system. The Main Contractor was urged to take remediate actions to ensure the seepage marine water should be contained in an immediate isolate system before by-passes through or silt curtain.

Reminder(s)

(1) The Main Contractor was reminded to take remediate actions to ensure the connections of the silt curtain to be intact at outfall shaft Area. (當日確認)

(2) The Main Contractor was reminded that chemicals should be stored in chemical drip trays at outfall shaft Area. (derrick barge at 當日確認)

Signatures:

ET Representative	Contractor's Representative	Supervising Officer's Representative	IEC's Representative	WSD's Representative
				N/A
(Name: Charlene Lai)	(Name: Tilly Tsui)	(Name: Raymond Lok)	(Name: Louis Kwan)	(Name: N/A.)

18/01

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Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

WEEKLY ENVIRONMENTAL INSPECTION CHECKLIST

Derek Lai

Inspection Date: 26/01/2022 **Inspected by:** ET: Tudeyleung / Howard chan / Charlene Lai / SO: Raymond Kok / WSD: Yip chi keung

Inspection Time: 9:00 - 12:30 Contractor: Brian Kam / Tiffany Tang IEC: Louis Kwan

Weather							
Condition	☐ Sunny	☐ Fine	☑ Overcast	☐ Drizzle	☐ Rain	☐ Storm	☐ Hazy
Temperature	20 °C		**Humidity**	☐ High	☑ Moderate	☐ Low	
Wind	☑ Calm	☐ Light	☐ Breeze	☐ Strong			

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
0.00		**General**				
0.01		Is the current Environmental Permit displayed conspicuously at all vehicle site entrances/exits for public's information at any time?	☐	☑	☐	
0.02		Is ET Leader's log-book kept readily available for inspections?	☐	☑	☐	
1.00		**Construction Dust**				
1.01	S4.8.1	Are dusty materials, such as excavated materials, building debris and construction materials, and exposed earth surface properly covered to prevent dust emission?	☑	☐	☐	Regular water spraying was conducted to limit dust emission.
1.02	S4.8.1	Are screenings, enclosures, water spraying or vacuum cleaning devices provided to dusty construction works for dust suppression?	☐	☑	☐	water spraying was conducted regularly.
1.03	S4.8.1	Are fumes or smoke emitting plants or construction activities shielded by a screen?	☑	☐	☐	No fume/smoke emitting plant / construction activity
1.04	S4.8.1	Are wheel-washing facilities with high-pressure water jets provided at all site exits?	☐	☑	☐	
1.05	S4.8.1	Is wheel-washing provided to all vehicles leaving the site?	☐	☑	☐	
1.06	S4.8.1	Are road section near the site exit free from dusty material?	☐	☑	☐	
1.07	S4.8.1	Are all main haul roads inside the site paved or sprayed with water to minimize dust emission during vehicle movement?	☐	☑	☐	paved.
1.08	S4.8.1	Are water spraying provided immediately prior to any loading or transfer of dusty materials?	☐	☑	☐	
1.09	S4.8.1	Are covers provided to all dump trucks carrying dusty materials when entering and leaving the site?	☐	☑	☐	
1.10	S4.8.1	Are the working areas for uprooting of trees, shrubs, or vegetation or the removal of boulders, poles, pillars sprayed with water to maintain the entire surface wet?	☑	☐	☐	
1.11	S4.8.1	Is exposed earth properly treated within six months after the last construction activity on site?	☐	☑	☐	
1.12	S4.8.1	Does the operation of plants on site free form dark smoke emission?	☐	☑	☐	(NRMM label

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Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
1.13	S4.8.1	Are vehicles travelling at speed not exceeding 15km/hr within the site?	☐	☑	☐	
1.14	S4.8.1	Are stock of more than 20 bags of cement or day PFA covered or sheltered on top and 3 sides?	☐	☑	☐	
1.15	S4.8.1	Are de-bagging, batching and mixing processes of bagged cement carried out in sheltered areas?	☑	☐	☐	
1.16	S4.8.1	Are hoarding of at least 2.4m high provided along the site boundary adjoining areas accessible by the public?	☐	☑	☐	
1.17	S4.8.1	Is open burning prohibited?	☐	☑	☐	
2.00		**Construction Noise (Airborne)**				
2.01	S5.7	Are quiet plants adopted on site?	☐	☑	☐	Drill Rig
2.02	S5.7	Are the PMEs operating on site well-maintained to minimize the generation of excessive niose?	☐	☑	☐	regular inspection
2.03	S5.7	Are plants throttled down or turned off when not in use?	☐	☑	☐	
2.04	S5.7	Are the plants known to emit noise strongly in one direction oriented to face away from NSRs?	☑	☐	☐	No nearby NSR.
2.05	S5.7	Are moveable barriers provided to screen NSRs from plant or noisy operations?	☑	☐	☐	
2.06	S5.7	Are silencers, mufflers and enclosures provided to plants?	☑	☐	☐	
2.07	S5.7	Are the hoods, cover panels and inspection hatches of PMEs closed during operation?	☐	☑	☐	
2.08	S5.7	Are purposely-built site hoarding construction with appropriate materials provided along the site boundary?	☐	☑	☐	
2.09	S5.7	Are noisy operation properly scheduled to minimize exposure and cumulative impacts to nearby sensitive receivers?	☐	☑	☐	
2.10	S5.7	Are valid noise emission label(s) affixed to all hand-held breakers operating on site?	☑	☐	☐	
2.11	S5.7	Are valid noise emission label(s) affixed to all air compressors operating on site?	☑	☐	☐	
2.12	S5.7	Are all construction noise permit(s) applied for percussive piling work?	☑	☐	☐	
2.13	S5.7	Are construction noise permit(s) applied for general construction works during restricted hours?	☐	☑	☐	
2.14	S5.7	Are valid construction noise permit(s) displayed at all vehicular exits?	☐	☑	☐	
3.00		**Water Quality**				
3.01	S6.9	Is effluent discharge license obtained for wastewater discharge from site?	☐	☑	☐	
3.02	S6.9	Is effluent discharged according to the effluent discharge license?	☐	☑	☐	
3.03	S6.9	Is wastewater discharge from site properly treated prior to discharge?	☐	☑	☐	

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Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
3.04	S6.9	Are perimeter channels provided to intercept storm runoff from outside the site?	☐	☑	☐	
3.05	S6.9	Are sand/silt removal facilities such as sand/silt traps and sediment basins provided to remove sand/silt particles from runoff?	☐	☑	☐	
3.06	S6.9	Is surface runoff diverted to sedimentation facilities?	☐	☑	☐	
3.07	S6.9	Is the drainage system properly maintained?	☐	☑	☐	
3.08	S6.9	Are construction works carefully programmed to minimize soil excavation works during rainy seasons?	☐	☑	☐	
3.09	S6.9	Are exposed soil surface protected by paving as soon as possible to reduce the potential of soil erosion?	☐	☑	☐	
3.10	S6.9	Are temporary access roads protected by crushed gravel?	☐	☑	☐	
3.11	S6.9	Are exposed slope surface properly protected?	☐	☑	☐	Manual seeding
3.12	S6.9	Is trench excavation avoided in the wet season as far as practicable, or if necessary, backfilled in short sections after excavation?	☐	☑	☐	
3.13	S6.9	Are open stockpiles of construction materials on site covered by tarpaulin or similar fabric during construction?	☐	☑	☐	
3.14	S6.9	Is runoff from wheel-washing facilities avoided?	☐	☑	☐	
3.15	S6.9	Is oil leakage or spillage prevented?	☐	☐	☐	obs(1)
3.16	S6.9	Are there any measures to prevent the release of oil and grease into the storm drainage system?	☐	☐	☐	obs(1)
3.17	S6.9	Are the oil interceptors/ grease traps properly maintained?	☑	☐	☐	
3.18	S6.9	Are debris and rubbish generated on site collected, handled and disposed of properly to avoid them entering the streams?	☐	☑	☐	
3.19	S6.9	Are all fuel tanks and storage areas provided with locks and be sited on sealed areas, within bunds of capacity equal to 110% of the storage capacity of the largest tank?	☐	☐	☐	obs(1)
3.20	S6.9	Are tanks, containers, storage area bunded and the locations locked as far as possible from the sensitive watercourse and stormwater drains?	☐	☐	☐	obs(1)
3.21	S6.9	Are sufficient chemical toilets provided on site to handle sewage from construction work force?	☐	☑	☐	
3.22	S6.9	Are sewage disposal and toilet maintenance of the portable chemical toilets provided by the licensed contractors?	☐	☑	☐	
3.23	S6.9	Is concrete washing water properly collected and treated prior to discharge?	☐	☑	☐	
3.24	S6.9	Is suitable type of silt curtains deployed during dredging to reduce the elevation of suspended solids to nearby sensitive receivers?	☑	☐	☐	No visit to marine areas on reporting day
3.25	S6.9	Is closed grab dredger used to reduce the potential leakage of sediments?	☑	☐	☐	

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Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
3.26	S6.9	Is closed grab dredger of 3 to 6 m^3 used for dredging at seawater intake?	☑	☐	☐	
3.27	S6.9	Is specific work staff assigned the responsibility for monitoring the number of grab dredged per hour? Is number of cycle limited to 20-21 grab per hour for 3m^3 closed grab, 10-11 grab per hour for 6m^3 closed grab?	☑	☐	☐	
3.28	S6.9	Is the grab operated in slow and controlled manner such that the impact to seabed by the grab when being lowered could be minimized? Is the operator ensured the grab be properly closed before lifting the grab?	☑	☐	☐	
3.29	S6.9	Is the maximum allowed dredging rate at the seawater intake limited to 750 m^3/day while the maximum allowed dredging rate at the submarine outfall is 3,500 m^3/day?	☑	☐	☐	
3.30	S6.9	Is dredged marine sediment disposed of in a gazetted marine disposal area in accordance with marine dumping permit conditions of the Dumping at Sea Ordinance (DASO)?	☑	☐	☐	
3.31	S6.9	Are disposal vessels fitted with tight bottom seals in order to prevent leakage of material during transport?	☑	☐	☐	
3.32	S6.9	Are barges filled to a level which ensures that material does not spill over during transport to the disposal site and that adequate freeboard is maintained to ensure that the decks are not washed by wave action?	☑	☐	☐	
3.33	S6.9	Are excess materials cleaned from decks and exposed fittings before the vessel is moved from the dredging area after dredging?	☑	☐	☐	
3.34	S6.9	Are the contractor(s) confirmed that the works cause no visible foam, oil, grease, litter or other objectionable matter to be present in the water within and adjacent to the dredging site?	☐	☑	☐	
3.35	S6.9	When the dredged material has been unloaded at the disposal areas, is any material accumulated on the deck or other exposed parts of the vessel removed and placed in the hold or a hopper?	☑	☐	☐	
3.36	S6.9	Is dredger maintained adequate clearance between vessels and the seabed at all states of the tide and reduce operations speed to ensure that excessive turbidity is not generated by turbulence from vessel movement or propeller wash?	☑	☐	☐	
3.37	S6.9	Is the contractor shall regularly inspect the silt curtains and check that they are moored and marked to avoid danger to marine traffic? Is regular inspection on the integrity of the silt curtain carried out by the contractor and any damage to the silt curtain shall be repaired by the contractor promptly?	☐	☑	☐	
3.38	S6.9	Are all vessels have a clean ballast system?	☑	☐	☐	
3.39	S6.9	Are all vessels well maintained and inspected before use to limit any potential discharges to the marine environment?	☑	☐	☐	
3.40	S6.9	Is any discharge of sewage/grey wastewater? Is wastewater from potentially contaminated area on working vessels should be minimized and collected?	☑	☐	☐	
3.41	S6.9	Is any soil waste disposed overboard?	☑	☐	☐	

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Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
4.00		**Waste Management**				
4.01	S8.5	Is a trip-ticket system implemented to monitor the disposal of C&D and solid wastes at public filling facilities and landfills?	☐	☑	☐	
4.02	S8.5	Is a recording system implemented to record the amount of wastes generated, recycled and disposed of?	☐	☑	☐	
4.03	S8.5	IS the Contractor registered as a chemical waste producer?	☐	☑	☐	
4.04	S8.5	Are chemical waste separated from other waste and collected by a licensed chemical waste collector?	☑	☐	☐	26/01
4.05	S8.5	Are trip tickets for chemical waste disposal available for inspection?	☑	☐	☐	
4.06	S8.5	Is chemical waste reused and recycled on site as far as practicable?	☑	☐	☐	
4.07	S8.5	Are all containers for chemical waste properly labelled?	☐	☑	☐	
4.08	S8.5	Is chemical waste storage area used solely for storage of chemical waste and properly labelled?	☐	☑	☐	
4.09	S8.5	Are incompatible chemical wastes stored in different areas?	☑	☐	☐	
4.10	S8.5	Is the chemical waste storage area enclosed on at least 3 sides and adequately ventilated?	☐	☑	☐	
4.11	S8.5	Is an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or of 20% by volume of the chemical waste stored in that area, whichever is the greatest, provide?	☐	☑	☐	
4.12	S8.5	Are a routine cleaning and maintenance programme implemented for drainage systems, sump pits, and oil interceptors?	☐	☑	☐	
4.13	S8.5	Are sufficient general refuse disposal/collection points provided on site?	☐	☑	☐	
4.14	S8.5	Is general refuse disposed of properly and regularly?	☐	☑	☐	
4.15	S8.5	Are appropriate measures adopted to minimize windblown litter and dust during transportation of waste?	☐	☑	☐	
4.16	S8.5	Are individual collectors for aluminum cans, plastic bottles and packaging material and office paper provided to encourage waste segregation?	☐	☑	☐	
4.17	S8.5	Are C&D wastes sorted on site?	☐	☑	☐	
4.18	S8.5	Are C&D waste disposed of properly?	☐	☑	☐	
4.19	S8.5	Are unused C&D materials or chemicals recycled or reused to reduce the quantity of waste?	☑	☐	☐	
4.20	S8.5	Are public fill and C&D waste reuse on site as far as practicable to avoid disposal off-site?	☐	☑	☐	

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Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
4.21	S8.5	Are the construction materials stored properly to minimize the potential for damage or contamination?	☐	☐	☐	obs (4)
4.22	S8.5	Is a dumping license obtained to deliver public fill to public filling areas?	☐	☑	☐	
5.00		**Landscape and Visual**				
5.01	S11.10 & 11.11	Are Is site hoarding provided?	☑	☐	☐	
5.02	S11.10 & 11.11	Are vegetation disturbance minimized or soil protected to reduce potential soil erosion?	☐	☑	☐	
5.03	S11.10 & 11.11	Is construction light oriented away from the sensitive receivers?	☑	☐	☐	
5.04	S11.10 & 11.11	Is grass hydroseeding provided to slopes as soon as the completion of works?	☐	☑	☐	manual seeding
5.05	S11.10 & 11.11	Are damages to trees outside site boundary due construction works avoided?	☐	☑	☐	
5.06	S11.10 & 11.11	Is excavation works carried out manually instead of machinery operation within 2.5m vicinity of any preserved trees?	☑	☐	☐	
5.07	S11.10 & 11.11	Are the retained and transplanted tree(s) properly protected and in good conditions?	☑	☐	☐	
5.08	S11.10 & 11.11	Are surgery works carried out for damaged trees?	☑	☐	☐	
6.00		**Ecology**				
6.01	S9.7	Is site runoff properly treated to prevent any silly runoff?	☐	☑	☐	
6.02	S9.7	Are silt trap installed and well-maintained?	☐	☑	☐	
6.03	S9.7	Are stockpiles properly covered to avoid generating silty runoff?	☐	☑	☐	
6.04	S9.7	Are construction works restricted to works area which are clearly defined?	☐	☑	☐	
6.05	S9.7	For slope mitigation works within the Clear Water Bay Country Park, are tree felling and damages to trees, the exact locations of the flexible barrier foundation plates, soil nails and rock dowels adjusted during detailed design, and a setback distance from existing trees is recommended to be maintained as far as practical?	☐	☑	☐	
6.06	S9.7	Are pruning of tree canopies along the alignment of the flexible barriers limited to a minimum?	☐	☑	☐	
6.07	S9.7	Are the alignment of flexible barriers optimized to preserve all species of conservation interest and minimize the impact to the existing vegetation as far as practicable? Are the alignment of flexible barriers positioned at mininmum 1.5 m in a radius away from these individuals?	☐	☑	☐	
6.08	S9.7	At the detailed design stage prior to the commencement of the slope mitigation works, is vegetation survey carried out at the slope mitigation areas within the Clear Water Bay	☐	☑	☐	

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Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
		Country Park to assess the condition and identify the location of each individual of Marsdenia lachnostoma and other flora species of conservation interest that may be directly affected by the construction works?				
6.09	S9.7	Is temporary fencing installed to fence off the concerned species either in groups of individually within the works area and in the close proximity to prevent from being damaged and disturbed during construction? Is a sign identifying the site attached to the fence and flagging tape shall be attached to the individuals to visualize their locations?	☐	☑	☐	
6.10	S9.7	Is a specification for fencing and demarcating individuals of Marsdenai lachnostoma (or other flora species of conservation interest, if found) adjacent to the proposed alignment of the flexible barriers prepared to protect the species?	☐	☑	☐	
6.11	S9.7	Is any induction training provided to all site personnel in order to brief them on this flora of conservation interest including the locations and their importance?	☐	☑	☐	
6.12	S9.7	Is the resident site supervisory staff closely monitor the conditions of concerned individuals during construction of flexible barriers in the close proximity?	☐	☑	☐	
6.13	S9.7	Are fences erected along the boundary of the works area before the commencement of works to prevent vehicle movements and encroachment of personnel onto adjacent areas?	☐	☑	☐	
6.14	S9.7	Is regular check of the work site boundaries performed to ensure that they are not breached and that damage does not occur to surrounding areas?	☐	☑	☐	
6.15	S9.7	Is any damage and disturbance avoided, particularly those caused by filling and illegal dumping, to the surrounding habitats through proper management of waste disposal?	☐	☑	☐	
6.16	S9.7	Are temporarily affected areas reinstated, particularly the habitats of plantation and shrubland-grassland immediately after completion of construction works, through on-site tree/shrub planting?	☑	☐	☐	
6.15	S9.7	Are affected habitats within the Clear Water Bay Country Bay reinstated by hydro-seeding and planting of climbers and native shrub seedlings where practical upon completion of the slope mitigation works?	☑	☐	☐	
7.00		**Landfill Gas Hazard**				
7.01	S12.7	Are the safety procedures implemented to minimise the risks of fires and explosions, asphyxiation of works and toxicity effects during all works?	☐	☑	☐	
7.02	S12.7	Are the gas detection equipment and precautions being used during trenching and excavation as well as creation of confined spaces?	☐	☑	☐	
7.03	S12.7	Are the training with regard to the awareness of potential hazards of working in confined spaces provided from the Contractor to the workers?	☐	☑	☐	
7.04	S12.7	Are the safety officers trained with regard to landfill gas and leachate related hazards and presented on the site throughout the works undertaken below grade?	☐	☑	☐	
7.05	S12.7	Are the all personnel working on site and all visitor made aware of the possibility of ignition of gas, the possible presence of contaminated water and the need to avoid physical contact?	☐	☑	☐	

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Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
7.06	S12.7	Is the monitoring of landfill gas being undertaken in all excavations, manholes, chambers and any confined spaces?	☐	☑	☐	
7.07	S12.7	Are the monitoring frequency and areas being specified by the safety officers or appropriately qualified person? Are the all measurements being recorded and documented?	☐	☑	☐	
7.08	S12.7	Is the drilling proceeded with adequate care and precautions against the potential hazards?	☐	☑	☐	
7.09	S12.7	Is the method statement covering all normal and emergency procedures provided by the drilling contractor prior to the commencement of the site works?	☐	☑	☐	
7.10	S12.7	Are the below ground services entries being sealed to prevent gas entry? Are the grilled metal covers being used for below grade cable trenches?	☑	☐	☐	
7.11	S12.7	Is each manhole or utility pit monitored with two measurements (at mid-depth and base) for minimum of 10 minutes? Is the steady reading and peak reading recorded at each manhole or utility pit?	☐	☑	☐	
7.12	S12.7	Are the warning signs of the hazards of landfill gas and its possible presence on site posted in prominent places?	☐	☑	☐	
8.00 8.01		**Overall** Is the EM&A properly implemented in general?	☐	☑	☐	

26/01

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Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Remark / Follow up of Observation(s) and Non-compliance(s) of Last Weekly Site Inspection:

observation(s)

(1) The Main Contractor was reminded that all chemical containers should be placed in drip trays (VTEC Area, Product water storage Area & Reverse Osmosis Area) & chemical wastes should be stored in appropriate chemical waste container. at Reverse Osmosis Area.

reminder(s)

N/A.

Signatures:

ET Representative	Contractor's Representative	Supervising Officer's Representative	IEC's Representative	WSD's Representative
(Name: Jacky Leung/ Charlene Lai)	(Name: Brian Kan)	(Name: Raymond Kok)	(Name: Louis Kwan)	(Name:)

26/01

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Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

WEEKLY ENVIRONMENTAL INSPECTION CHECKLIST

Inspection Date: 31/01/2022 **Inspected by:** ET: Jacky Leung Contractor: Brian Kam / Tiffany Tsang SO: ~~Eric~~ Raymond Kok WSD: N/A IEC: Louis Kwan

Inspection Time: 09:30 - 10:38

Weather							
Condition	☐ Sunny	☐ Fine	☑ Overcast	☐ Drizzle	☐ Rain	☐ Storm	☐ Hazy
Temperature	18 °C		**Humidity**	☐ High	☑ Moderate	☐ Low	
Wind	☑ Calm	☐ Light	☐ Breeze	☐ Strong			

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
0.00		**General**				
0.01		Is the current Environmental Permit displayed conspicuously at all vehicle site entrances/exits for public's information at any time?	☐	☑	☐	
0.02		Is ET Leader's log-book kept readily available for inspections?	☐	☑	☐	
1.00		**Construction Dust**				
1.01	S4.8.1	Are dusty materials, such as excavated materials, building debris and construction materials, and exposed earth surface properly covered to prevent dust emission?	☑	☐	☐	Regular water spraying was conducted
1.02	S4.8.1	Are screenings, enclosures, water spraying or vacuum cleaning devices provided to dusty construction works for dust suppression?	☑	☐	☐	No dusty construction works observed.
1.03	S4.8.1	Are fumes or smoke emitting plants or construction activities shielded by a screen?	☑	☐	☐	No fume/smoke construction activities observed.
1.04	S4.8.1	Are wheel-washing facilities with high-pressure water jets provided at all site exits?	☐	☑	☐	
1.05	S4.8.1	Is wheel-washing provided to all vehicles leaving the site?	☐	☑	☐	
1.06	S4.8.1	Are road section near the site exit free from dusty material?	☐	☑	☐	
1.07	S4.8.1	Are all main haul roads inside the site paved or sprayed with water to minimize dust emission during vehicle movement?	☐	☑	☐	paved.
1.08	S4.8.1	Are water spraying provided immediately prior to any loading or transfer of dusty materials?	☑	☐	☐	No (loading) transfer of dusty materials
1.09	S4.8.1	Are covers provided to all dump trucks carrying dusty materials when entering and leaving the site?	☑	☐	☐	No dump trucks observed
1.10	S4.8.1	Are the working areas for uprooting of trees, shrubs, or vegetation or the removal of boulders, poles, pillars sprayed with water to maintain the entire surface wet?	☑	☐	☐	
1.11	S4.8.1	Is exposed earth properly treated within six months after the last construction activity on site?	☐	☑	☐	
1.12	S4.8.1	Does the operation of plants on site free form dark smoke emission?	☐	☑	☐	✓ NRMM label

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Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
1.13	S4.8.1	Are vehicles travelling at speed not exceeding 15km/hr within the site?	☐	☑	☐	
1.14	S4.8.1	Are stock of more than 20 bags of cement or day PFA covered or sheltered on top and 3 sides?	☑	☐	☐	
1.15	S4.8.1	Are de-bagging, batching and mixing processes of bagged cement carried out in sheltered areas?	☑	☐	☐	
1.16	S4.8.1	Are hoarding of at least 2.4m high provided along the site boundary adjoining areas accessible by the public?	☐	☑	☐	
1.17	S4.8.1	Is open burning prohibited?	☐	☑	☐	
2.00		**Construction Noise (Airborne)**				
2.01	S5.7	Are quiet plants adopted on site?	☐	☑	☐	
2.02	S5.7	Are the PMEs operating on site well-maintained to minimize the generation of excessive niose?	☐	☑	☐	
2.03	S5.7	Are plants throttled down or turned off when not in use?	☐	☑	☐	
2.04	S5.7	Are the plants known to emit noise strongly in one direction oriented to face away from NSRs?	☑	☐	☐	no nearby NSR
2.05	S5.7	Are moveable barriers provided to screen NSRs from plant or noisy operations?	☑	☐	☐	
2.06	S5.7	Are silencers, mufflers and enclosures provided to plants?	☑	☐	☐	
2.07	S5.7	Are the hoods, cover panels and inspection hatches of PMEs closed during operation?	☐	☑	☐	
2.08	S5.7	Are purposely-built site hoarding construction with appropriate materials provided along the site boundary?	☐	☑	☐	
2.09	S5.7	Are noisy operation properly scheduled to minimize exposure and cumulative impacts to nearby sensitive receivers?	☐	☑	☐	
2.10	S5.7	Are valid noise emission label(s) affixed to all hand-held breakers operating on site?	☑	☐	☐	
2.11	S5.7	Are valid noise emission label(s) affixed to all air compressors operating on site?	☑	☐	☐	
2.12	S5.7	Are all construction noise permit(s) applied for percussive piling work?	☑	☐	☐	
2.13	S5.7	Are construction noise permit(s) applied for general construction works during restricted hours?	☐	☑	☐	
2.14	S5.7	Are valid construction noise permit(s) displayed at all vehicular exits?	☐	☑	☐	
3.00		**Water Quality**				
3.01	S6.9	Is effluent discharge license obtained for wastewater discharge from site?	☐	☑	☐	
3.02	S6.9	Is effluent discharged according to the effluent discharge license?	☐	☑	☐	
3.03	S6.9	Is wastewater discharge from site properly treated prior to discharge?	☐	☑	☐	

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Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
3.04	S6.9	Are perimeter channels provided to intercept storm runoff from outside the site?	☐	☑	☐	
3.05	S6.9	Are sand/silt removal facilities such as sand/silt traps and sediment basins provided to remove sand/silt particles from runoff?	☐	☑	☐	
3.06	S6.9	Is surface runoff diverted to sedimentation facilities?	☐	☑	☐	
3.07	S6.9	Is the drainage system properly maintained?	☐	☑	☐	
3.08	S6.9	Are construction works carefully programmed to minimize soil excavation works during rainy seasons?	☐	☑	☐	
3.09	S6.9	Are exposed soil surface protected by paving as soon as possible to reduce the potential of soil erosion?	☐	☑	☐	
3.10	S6.9	Are temporary access roads protected by crushed gravel?	☐	☑	☐	
3.11	S6.9	Are exposed slope surface properly protected?	☐	☑	☐	/ manual seeding
3.12	S6.9	Is trench excavation avoided in the wet season as far as practicable, or if necessary, backfilled in short sections after excavation?	☐	☑	☐	
3.13	S6.9	Are open stockpiles of construction materials on site covered by tarpaulin or similar fabric during construction?	☐	☑	☐	
3.14	S6.9	Is runoff from wheel-washing facilities avoided?	☐	☑	☐	
3.15	S6.9	Is oil leakage or spillage prevented?	☐	☑	☐	recommendation (1)
3.16	S6.9	Are there any measures to prevent the release of oil and grease into the storm drainage system?	☐	☑	☐	recommendation (1)
3.17	S6.9	Are the oil interceptors/ grease traps properly maintained?	☑	☐	☐	
3.18	S6.9	Are debris and rubbish generated on site collected, handled and disposed of properly to avoid them entering the streams?	☐	☑	☐	
3.19	S6.9	Are all fuel tanks and storage areas provided with locks and be sited on sealed areas, within bunds of capacity equal to 110% of the storage capacity of the largest tank?	☐	☑	☐	
3.20	S6.9	Are tanks, containers, storage area bunded and the locations locked as far as possible from the sensitive watercourse and stormwater drains?	☐	☑	☐	
3.21	S6.9	Are sufficient chemical toilets provided on site to handle sewage from construction work force?	☐	☑	☐	
3.22	S6.9	Are sewage disposal and toilet maintenance of the portable chemical toilets provided by the licensed contractors?	☐	☑	☐	
3.23	S6.9	Is concrete washing water properly collected and treated prior to discharge?	☑	☐	☐	
3.24	S6.9	Is suitable type of silt curtains deployed during dredging to reduce the elevation of suspended solids to nearby sensitive receivers?	☑	☐	☐	NO visit to Marine area on reporting day
3.25	S6.9	Is closed grab dredger used to reduce the potential leakage of sediments?	☑	☐	☐	1,

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Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
3.26	S6.9	Is closed grab dredger of 3 to 6 m^3 used for dredging at seawater intake?	☑	☐	☐	4
3.27	S6.9	Is specific work staff assigned the responsibility for monitoring the number of grab dredged per hour? Is number of cycle limited to 20-21 grab per hour for 3m^3 closed grab, 10-11 grab per hour for 6m^3 closed grab?	☑	☐	☐	9
3.28	S6.9	Is the grab operated in slow and controlled manner such that the impact to seabed by the grab when being lowered could be minimized? Is the operator ensured the grab be properly closed before lifting the grab?	☑	☐	☐	11
3.29	S6.9	Is the maximum allowed dredging rate at the seawater intake limited to 750 m^3/day while the maximum allowed dredging rate at the submarine outfall is 3,500 m^3/day?	☑	☐	☐	11
3.30	S6.9	Is dredged marine sediment disposed of in a gazetted marine disposal area in accordance with marine dumping permit conditions of the Dumping at Sea Ordinance (DASO)?	☑	☐	☐	11
3.31	S6.9	Are disposal vessels fitted with tight bottom seals in order to prevent leakage of material during transport?	☑	☐	☐	11
3.32	S6.9	Are barges filled to a level which ensures that material does not spill over during transport to the disposal site and that adequate freeboard is maintained to ensure that the decks are not washed by wave action?	☑	☐	☐	11
3.33	S6.9	Are excess materials cleaned from decks and exposed fittings before the vessel is moved from the dredging area after dredging?	☑	☐	☐	11
3.34	S6.9	Are the contractor(s) confirmed that the works cause no visible foam, oil, grease, litter or other objectionable matter to be present in the water within and adjacent to the dredging site?	☐	☑	☐	
3.35	S6.9	When the dredged material has been unloaded at the disposal areas, is any material accumulated on the deck or other exposed parts of the vessel removed and placed in the hold or a hopper?	☑	☐	☐	12
3.36	S6.9	Is dredger maintained adequate clearance between vessels and the seabed at all states of the tide and reduce operations speed to ensure that excessive turbidity is not generated by turbulence from vessel movement or propeller wash?	☐	☑	☐	
3.37	S6.9	Is the contractor shall regularly inspect the silt curtains and check that they are moored and marked to avoid danger to marine traffic? Is regular inspection on the integrity of the silt curtain carried out by the contractor and any damage to the silt curtain shall be repaired by the contractor promptly?	☐	☑	☐	
3.38	S6.9	Are all vessels have a clean ballast system?	☐	☑	☐	
3.39	S6.9	Are all vessels well maintained and inspected before use to limit any potential discharges to the marine environment?	☐	☑	☐	
3.40	S6.9	Is any discharge of sewage/grey wastewater? Is wastewater from potentially contaminated area on working vessels should be minimized and collected?	☑	☐	☐	
3.41	S6.9	Is any soil waste disposed overboard?	☑	☐	☐	

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Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
4.00		**Waste Management**				
4.01	S8.5	Is a trip-ticket system implemented to monitor the disposal of C&D and solid wastes at public filling facilities and landfills?	☐	☑	☐	
4.02	S8.5	Is a recording system implemented to record the amount of wastes generated, recycled and disposed of?	☐	☑	☐	
4.03	S8.5	IS the Contractor registered as a chemical waste producer?	☐	☑	☐	
4.04	S8.5	Are chemical waste separated from other waste and collected by a licensed chemical waste collector?	☑	☐	☐	recommendation (1)
4.05	S8.5	Are trip tickets for chemical waste disposal available for inspection?	☑	☐	☐	
4.06	S8.5	Is chemical waste reused and recycled on site as far as practicable?	☑	☐	☐	
4.07	S8.5	Are all containers for chemical waste properly labelled?	☐	☑	☐	
4.08	S8.5	Is chemical waste storage area used solely for storage of chemical waste and properly labelled?	☐	☑	☐	
4.09	S8.5	Are incompatible chemical wastes stored in different areas?	☑	☐	☐	
4.10	S8.5	Is the chemical waste storage area enclosed on at least 3 sides and adequately ventilated?	☐	☑	☐	
4.11	S8.5	Is an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or of 20% by volume of the chemical waste stored in that area, whichever is the greatest, provide?	☐	☑	☐	
4.12	S8.5	Are a routine cleaning and maintenance programme implemented for drainage systems, sump pits, and oil interceptors?	☐	☑	☐	
4.13	S8.5	Are sufficient general refuse disposal/collection points provided on site?	☐	☑	☐	
4.14	S8.5	Is general refuse disposed of properly and regularly?	☐	☑	☐	reminder (1)
4.15	S8.5	Are appropriate measures adopted to minimize windblown litter and dust during transportation of waste?	☐	☑	☐	
4.16	S8.5	Are individual collectors for aluminum cans, plastic bottles and packaging material and office paper provided to encourage waste segregation?	☐	☑	☐	
4.17	S8.5	Are C&D wastes sorted on site?	☐	☑	☐	
4.18	S8.5	Are C&D waste disposed of properly?	☐	☑	☐	
4.19	S8.5	Are unused C&D materials or chemicals recycled or reused to reduce the quantity of waste?	☑	☐	☐	
4.20	S8.5	Are public fill and C&D waste reuse on site as far as practicable to avoid disposal off-site?	☐	☑	☐	

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Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
4.21	S8.5	Are the construction materials stored properly to minimize the potential for damage or contamination?	☐	☐	☐	recommendation (1)
4.22	S8.5	Is a dumping license obtained to deliver public fill to public filling areas?	☐	☑	☐	
5.00		**Landscape and Visual**				
5.01	S11.10 & 11.11	Are Is site hoarding provided?	☑	☐	☐	
5.02	S11.10 & 11.11	Are vegetation disturbance minimized or soil protected to reduce potential soil erosion?	☐	☑	☐	
5.03	S11.10 & 11.11	Is construction light oriented away from the sensitive receivers?	☑	☐	☐	
5.04	S11.10 & 11.11	Is grass hydroseeding provided to slopes as soon as the completion of works?	☐	☑	☐	manual seeding
5.05	S11.10 & 11.11	Are damages to trees outside site boundary due construction works avoided?	☐	☑	☐	
5.06	S11.10 & 11.11	Is excavation works carried out manually instead of machinery operation within 2.5m vicinity of any preserved trees?	☑	☐	☐	
5.07	S11.10 & 11.11	Are the retained and transplanted tree(s) properly protected and in good conditions?	☑	☐	☐	
5.08	S11.10 & 11.11	Are surgery works carried out for damaged trees?	☑	☐	☐	
6.00		**Ecology**				
6.01	S9.7	Is site runoff properly treated to prevent any silly runoff?	☐	☑	☐	
6.02	S9.7	Are silt trap installed and well-maintained?	☐	☑	☐	
6.03	S9.7	Are stockpiles properly covered to avoid generating silty runoff?	☐	☑	☐	
6.04	S9.7	Are construction works restricted to works area which are clearly defined?	☐	☑	☐	
6.05	S9.7	For slope mitigation works within the Clear Water Bay Country Park, are tree felling and damages to trees, the exact locations of the flexible barrier foundation plates, soil nails and rock dowels adjusted during detailed design, and a setback distance from existing trees is recommended to be maintained as far as practical?	☐	☑	☐	
6.06	S9.7	Are pruning of tree canopies along the alignment of the flexible barriers limited to a minimum?	☐	☑	☐	
6.07	S9.7	Are the alignment of flexible barriers optimized to preserve all species of conservation interest and minimize the impact to the existing vegetation as far as practicable? Are the alignment of flexible barriers positioned at mininmum 1.5 m in a radius away from these individuals?	☐	☑	☐	
6.08	S9.7	At the detailed design stage prior to the commencement of the slope mitigation works, is vegetation survey carried out at the slope mitigation areas within the Clear Water Bay	☐	☑	☐	

3/10/

Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
		Country Park to assess the condition and identify the location of each individual of Marsdenia lachnostoma and other flora species of conservation interest that may be directly affected by the construction works?				
6.09	S9.7	Is temporary fencing installed to fence off the concerned species either in groups of individually within the works area and in the close proximity to prevent from being damaged and disturbed during construction? Is a sign identifying the site attached to the fence and flagging tape shall be attached to the individuals to visualize their locations?	☐	☑	☐	
6.10	S9.7	Is a specification for fencing and demarcating individuals of Marsdenai lachnostoma (or other flora species of conservation interest, if found) adjacent to the proposed alignment of the flexible barriers prepared to protect the species?	☐	☑	☐	
6.11	S9.7	Is any induction training provided to all site personnel in order to brief them on this flora of conservation interest including the locations and their importance?	☐	☑	☐	
6.12	S9.7	Is the resident site supervisory staff closely monitor the conditions of concerned individuals during construction of flexible barriers in the close proximity?	☐	☑	☐	
6.13	S9.7	Are fences erected along the boundary of the works area before the commencement of works to prevent vehicle movements and encroachment of personnel onto adjacent areas?	☐	☑	☐	
6.14	S9.7	Is regular check of the work site boundaries performed to ensure that they are not breached and that damage does not occur to surrounding areas?	☐	☑	☐	
6.15	S9.7	Is any damage and disturbance avoided, particularly those caused by filling and illegal dumping, to the surrounding habitats through proper management of waste disposal?	☐	☑	☐	
6.16	S9.7	Are temporarily affected areas reinstated, particularly the habitats of plantation and shrubland-grassland immediately after completion of construction works, through on-site tree/shrub planting?	☑	☐	☐	
6.15	S9.7	Are affected habitats within the Clear Water Bay Country Bay reinstated by hydro-seeding and planting of climbers and native shrub seedlings where practical upon completion of the slope mitigation works?	☑	☐	☐	
7.00		**Landfill Gas Hazard**				
7.01	S12.7	Are the safety procedures implemented to minimise the risks of fires and explosions, asphyxiation of works and toxicity effects during all works?	☐	☑	☐	
7.02	S12.7	Are the gas detection equipment and precautions being used during trenching and excavation as well as creation of confined spaces?	☐	☑	☐	
7.03	S12.7	Are the training with regard to the awareness of potential hazards of working in confined spaces provided from the Contractor to the workers?	☐	☑	☐	
7.04	S12.7	Are the safety officers trained with regard to landfill gas and leachate related hazards and presented on the site throughout the works undertaken below grade?	☐	☑	☐	
7.05	S12.7	Are the all personnel working on site and all visitor made aware of the possibility of ignition of gas, the possible presence of contaminated water and the need to avoid physical contact?	☐	☑	☐	

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Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
7.06	S12.7	Is the monitoring of landfill gas being undertaken in all excavations, manholes, chambers and any confined spaces?	☑	☐	☐	
7.07	S12.7	Are the monitoring frequency and areas being specified by the safety officers or appropriately qualified person? Are the all measurements being recorded and documented?	☑	☐	☐	
7.08	S12.7	Is the drilling proceeded with adequate care and precautions against the potential hazards?	☑	☐	☐	
7.09	S12.7	Is the method statement covering all normal and emergency procedures provided by the drilling contractor prior to the commencement of the site works?	☐	☑	☐	
7.10	S12.7	Are the below ground services entries being sealed to prevent gas entry? Are the grilled metal covers being used for below grade cable trenches?	☑	☐	☐	
7.11	S12.7	Is each manhole or utility pit monitored with two measurements (at mid-depth and base) for minimum of 10 minutes? Is the steady reading and peak reading recorded at each manhole or utility pit?	☑	☐	☐	
7.12	S12.7	Are the warning signs of the hazards of landfill gas and its possible presence on site posted in prominent places?	☐	☑	☐	
8.00 8.01		**Overall** Is the EM&A properly implemented in general?	☐	☑	☐	

31/01

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Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Remark / Follow up of Observation(s) and Non-compliance(s) of Last Weekly Site Inspection:

Recommendation (s)

(1) the main Contractor was reminded to designate appropriate chemical waste storage area for collecting unused chemical waste containers. at TBM Area.

Reminder(s)

(1) Housekeepy was reminded at TBM

Signatures:

ET Representative	Contractor's Representative	Supervising Officer's Representative	IEC's Representative	WSD's Representative
(Name:)	(Name: Brian Kan)	(Name: Raymond Lee)	(Name: Louis Kwan)	(Name: N/A)
31/01		31.1.22		

Appendix J

Complaint Log

Statistical Summary of Environmental Complaints

Reporting Period	Environmental Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
1 – 31 January 2022	0	0	N/A

Statistical Summary of Environmental Summons

Reporting Period	Environmental Summons Statistics		
	Frequency	Cumulative	Details
1 – 31 January 2022	0	0	N/A

Statistical Summary of Environmental Prosecution

Reporting Period	Environmental Prosecution Statistics		
	Frequency	Cumulative	Details
1 – 31 January 2022	0	0	N/A

Appendix K

Impact Monitoring Schedule of Next Reporting Month

Contract No. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant
EM&A Water Quality Monitoring Schedule

Feb

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
					Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 13:00-17:00 Flood Tide: 05:38-13:00 Monitoring Time: Mid-ebb: 13:15-16:45 Mid-flood: 08:00-11:04*$	
6	7	8	9	10	11	12
		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 15:32-20:49 Flood Tide: 07:23-15:32 Monitoring Time: Mid-ebb: 15:47-19:00&#$ Mid-flood: 09:42-13:12		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 17:00-23:59 Flood Tide: 08:00-17:00 Monitoring Time: Mid-ebb: 17:20-19:00#&$ Mid-flood: 10:45-14:15		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 18:00-23:59 Flood Tide: 01:55-18:00 Monitoring Time: Mid-ebb:18:17-19:00$#& Mid-flood:08:12-11:42
13	14	15	16	17	18	19
		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 10:00-13:19 Flood Tide: 13:19-20:20 Monitoring Time: Mid-ebb: 10:09-13:09 Mid-flood: 15:04-18:34		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 10:52-15:00 Flood Tide: 15:00-21:51 Monitoring Time: Mid-ebb: 11:11-14:41 Mid-flood: 15:20-18:50		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 11:42-16:29 Flood Tide: 05:12-11:42 Monitoring Time: Mid-ebb: 12:20-15:50 Mid-flood: 08:00-10:12*
20	21	22	23	24	25	26
		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 13:31-19:04 Flood Tide: 06:36-13:31 Monitoring Time: Mid-ebb: 14:32-18:02 Mid-flood:08:18-11:48		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 15:07-22:00 Flood Tide: 08:00-15:07 Monitoring Time: Mid-ebb: 15:27-18:57& Mid-flood: 09:48-13:18		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 17:12-23:59 Flood Tide: 00:36-17:12 Monitoring Time: Mid-ebb: 17:32-19:00$&# Mid-flood: 08:00-10:39&*
27	28					

Remarks:
Monitoring Parameters: Dissolved oxygen, Temperature, pH, Turbidity, Salinity, Suspended Solids

Note:
* - Due to safety concern of vessel transportation earlier than 0700, Water Quality Monitoring would start at 0800.
$ - Since predicted tide is shorter than 3.5 hours, method of 90% tidal period as monitoring time is adopted.
& - Due to safety concern for sampling event in night-time, method of 90% tidal period as monitoring time is approached and end at 1900.
# - Prioritized routing: Mid-Ebb: CE→WSR16→WSR37→WSR36→WSR33→Remaining stations and Mid-Flood: CF→WSR1→WSR2→WSR3→WSR4→Remaining stations

Appendix L

Water Quality and Landfill Gas Monitoring Data

Landfill Gas Monitoring - Field Measurement Recording Sheet

Contract Title Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant
Contract No. : 13/WSD/17

Serial No.	Monitoring Equipment	Last Calibration
254928	GMI - PS500	29/9/2021

Monitoring Location	Date (dd/mm/yyyy)	Time (hh:mm)	Weather Condition	Landfill Gas Parameters				Physical Parameters	Trench Depth (m)	Measured by	
			Sunny/ Fine/ Overcast/ Drizzle/ Rain/ Storm/ Hazy	Methane (%LEL)	Oxygen (%)	Carbon Dioxide (%)	Balance Gas (%) (e.g. H2S)	Temp (°C) / Pressure mBar		Name	Signature
Ch1+360 - Ch1+513	4/1/22	8:30	Drizzle	0	20.9	0.04	0	18.1 / 1019.6	2	Peter Au	
Ch1+360 - Ch1+513	4/1/22	13:30	Drizzle	0	20.9	0.04	0	21.2 / 1019.6	2	"	
Ch1+360 - Ch1+513	5/1/22	8:30	Fine	0	20.9	0.04	0	19.1 / 1017.3	2	"	
Ch1+360 - Ch1+513	5/1/2022	13:30	Fine	0	20.9	0.04	0	21.4 / 1017.3	2	"	
Ch1+360 - Ch1+513	6/1/22	8:30	Sunny	0	20.9	0.04	0	19.7 / 1019.2	2	"	
Ch1+360 - Ch1+513	6/1/22	13:30	Sunny	0	20.9	0.04	0	22.3 / 1019.2	2	"	
Ch1+360 - Ch1+513	7/1/22	8:30	Fine	0	20.9	0.04	0	18.4 / 1021.6	2	"	
Ch1+360 - Ch1+513	7/1/22	13:30	Fine	0	20.9	0.04	0	20.8 / 1021.6	2	"	
Ch1+360 - Ch1+513	8/1/22	8:30	Sunny	0	20.9	0.04	0	16.5 / 1020.5	2	"	
Ch1+360 - Ch1+513	8/1/22	13:30	Sunny	0	20.9	0.04	0	19.5 / 1020.5	2	"	
Ch1+360 - Ch1+513		8:30						/			
Ch1+360 - Ch1+513		13:30						/			
Ch1+360 - Ch1+513		8:30						/			
Ch1+360 - Ch1+513		13:30						/			

Checked by : NX

Date 8/1/22

Landfill Gas Monitoring - Field Measurement Recording Sheet

Contract Title Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant
Contract No. : 13/WSD/17

Serial No.	Monitoring Equipment	Last Calibration
254928	GMI - PS500	29/9/2021

Monitoring Location	Date (dd/mm/yyyy)	Time (hh:mm)	Weather Condition	Landfill Gas Parameters				Physical Parameters	Trench Depth (m)	Measured by	
			Sunny/ Fine/ Overcast/ Drizzle/ Rain/ Storm/ Hazy	Methane (%LEL)	Oxygen (%)	Carbon Dioxide (%)	Balance Gas (%) (e.g. H2S)	Temp (°C) / Pressure mBar		Name	Signature
Ch1+360 - Ch1+513	10/1/22	8:30	Fine	0	20.9	0.04	0	16.8 / 1017.5	2	Peter Au	
Ch1+360 - Ch1+513	10/1/22	13:30	Fine	0	20.9	0.04	0	20.3 / 1017.5	2	〃	
Ch1+360 - Ch1+513	11/1/22	8:30	Drizzle	0	20.9	0.04	0	14.1 / 1020.2	2	〃	
Ch1+360 - Ch1+513	11/1/22	13:30	Drizzle	0	20.9	0.04	0	18.5 / 1020.2	2	〃	
Ch1+360 - Ch1+513	12/1/22	8:30	Fine	0	20.9	0.04	0	14.9 / 1020.9	2	〃	
Ch1+360 - Ch1+513	12/1/22	13:30	Fine	0	20.9	0.04	0	17.8 / 1020.9	2	〃	
Ch1+360 - Ch1+513	13/1/22	8:30	Drizzle	0	20.9	0.04	0	15.9 / 1021.5	2	〃	
Ch1+360 - Ch1+513	13/1/22	13:30	Drizzle	0	20.9	0.04	0	18.5 / 1021.5	2	〃	
Ch1+360 - Ch1+513	14/1/22	8:30	Fine	0	20.9	0.04	0	17.1 / 1020.7	2	〃	
Ch1+360 - Ch1+513	14/1/22	13:30	Fine	0	20.9	0.04	0	17.2 / 1020.7	2	〃	
Ch1+360 - Ch1+513	15/1/22	8:30	Fine	0	20.9	0.04	0	17.3 / 1020.1	2	〃	
Ch1+360 - Ch1+513	15/1/22	13:30	Fine	0	20.9	0.04	0	19.5 / 1020.1	2	〃	
Ch1+360 - Ch1+513		8:30						/			
Ch1+360 - Ch1+513		13:30						/			

Checked by : NK

Date 15/1/22

Landfill Gas Monitoring - Field Measurement Recording Sheet

Contract Title Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant
Contract No. : 13/WSD/17

Serial No.	Monitoring Equipment	Last Calibration
254928	GM2-DS500	29/9/2021

Monitoring Location	Date (dd/mm/yyyy)	Time (hh:mm)	Weather Condition	Landfill Gas Parameters				Physical Parameters	Trench Depth (m)	Measured by	
			Sunny/ Fine/ Overcast/ Drizzle/ Rain/ Storm/ Hazy	Methane (%LEL)	Oxygen (%)	Carbon Dioxide (%)	Balance Gas (%) (e.g. H2S)	Temp (°C) / Pressure mBar		Name	Signature
Ch1+360 - Ch1+513	17/1/22	8:30	Fine	0	20.9	0.04	0	15.5 / 1020.7	2		
Ch1+360 - Ch1+513	17/1/22	13:30	Fine	0	20.9	0.04	0	17.9 / 1020.7	2		
Ch1+360 - Ch1+513	18/1/22	8:30	Drizzle	0	20.9	0.04	0	14.7 / 1020.9	2		
Ch1+360 - Ch1+513	18/1/22	13:30	Drizzle	0	20.9	0.04	0	17.8 / 1020.9	2		
Ch1+360 - Ch1+513	19/1/22	8:30	Fine	0	20.9	0.04	0	12.1 / 1019.3	2		
Ch1+360 - Ch1+513	19/1/22	13:30	Fine	0	20.9	0.04	0	20.1 / 1019.3	2		
Ch1+360 - Ch1+513	20/1/22	8:30	Fine	0	20.9	0.04	0	13.1 / 1018.4	2		
Ch1+360 - Ch1+513	20/1/22	13:30	Fine	0	20.9	0.04	0	20.2 / 1018.4	2		
Ch1+360 - Ch1+513	21/1/22	8:30	Fine	0	20.9	0.04	0	14.5 / 1017.6	2		
Ch1+360 - Ch1+513	21/1/22	13:30	Fine	0	20.9	0.04	0	19.2 / 1017.6	2		
Ch1+360 - Ch1+513	22/1/22	8:30	Drizzle	0	20.9	0.04	0	16.1 / 1014.3	2		
Ch1+360 - Ch1+513	22/1/22	13:30	Drizzle	0	20.9	0.04	0	17.5 / 1014.3	2		
Ch1+360 - Ch1+513		8:30						/			
Ch1+360 - Ch1+513		13:30						/			

Checked by : NG

Date 22/1/22

Landfill Gas Monitoring - Field Measurement Recording Sheet

Contract Title Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant
Contract No. : 13/WSD/17

Serial No.	Monitoring Equipment	Last Calibration
254928	GMI - PS500	29/9/2021

Monitoring Location	Date (dd/mm/yyyy)	Time (hh:mm)	Weather Condition	Landfill Gas Parameters				Physical Parameters	Trench Depth (m)	Measured by	
			Sunny/ Fine/ Overcast/ Drizzle/ Rain/ Storm/ Hazy	Methane (%LEL)	Oxygen (%)	Carbon Dioxide (%)	Balance Gas (%) (e.g. H2S)	Temp (°C) / Pressure mBar		Name	Signature
Ch1+360 - Ch1+513	24/1/22	8:30	Sunny	0	20.9	0.04	0	17.9 / 1014.3	2	[illegible]	[signature]
Ch1+360 - Ch1+513	24/1/22	13:30	Sunny	0	20.9	0.04	0	19.8 / 1014.3	2	〃	〃
Ch1+360 - Ch1+513	25/1/22	8:30	Sunny	0	20.9	0.04	0	18.4 / 1016.7	2	〃	〃
Ch1+360 - Ch1+513	25/1/22	13:30	Sunny	0	20.9	0.04	0	20.5 / 1016.7	2	〃	〃
Ch1+360 - Ch1+513	26/1/22	8:30	Sunny	0	20.9	0.04	0	17.9 / 1017.1	2	〃	〃
Ch1+360 - Ch1+513	26/1/22	13:30	Sunny	0	20.9	0.04	0	20.9 / 1017.1	2	〃	〃
Ch1+360 - Ch1+513	27/1/22	8:30	Sunny	0	20.9	0.04	0	18.7 / 1016.8	2	〃	〃
Ch1+360 - Ch1+513	27/1/22	13:30	Sunny	0	20.9	0.04	0	21.7 / 1016.8	2	〃	〃
Ch1+360 - Ch1+513	28/1/22	8:30	Sunny	0	20.9	0.04	0	18.3 / 1016.7	2	〃	〃
Ch1+360 - Ch1+513	28/1/22	13:30	Sunny	0	20.9	0.04	0	19.3 / 1016.3	2	〃	〃
Ch1+360 - Ch1+513	29/1/22	8:30	Fine	0	20.9	0.04	0	16.5 / 1014.4	2	〃	〃
Ch1+360 - Ch1+513	29/1/22	13:30	Fine	0	20.9	0.04	0	19.7 / 1014.4	2	〃	〃
Ch1+360 - Ch1+513	31/1/22	8:30	Fine	0	20.9	0.04	0	15.3 / 1015.2	2	〃	〃
Ch1+360 - Ch1+513		13:30						/			

Checked by : [signature]

Date 31/1/22

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	H	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
CE	20220101	Cloudy	Moderate	Mid-Flood	S	1	17:03	8.92	8.19	31.15	22.44	2.9	4
CE	20220101	Cloudy	Moderate	Mid-Flood	S	1	17:03	8.94	8.2	31.17	22.35	3.15	6
CE	20220101	Cloudy	Moderate	Mid-Flood	M	11.1	17:02	8.73	8.25	31.12	22.37	2.8	4
CE	20220101	Cloudy	Moderate	Mid-Flood	M	11.1	17:02	8.97	8.2	31.02	22.42	2.91	4
CE	20220101	Cloudy	Moderate	Mid-Flood	B	21.2	17:01	8.72	8.25	31.1	22.43	3.29	4
CE	20220101	Cloudy	Moderate	Mid-Flood	B	21.2	17:01	8.74	8.22	31.01	22.31	3.3	4
CE	20220104	Sunny	Moderate	Mid-Flood	S	1	10:29	8.08	8.22	30.85	22.17	2.65	3
CE	20220104	Sunny	Moderate	Mid-Flood	S	1	10:29	8.15	8.27	30.76	21.98	2.68	4
CE	20220104	Sunny	Moderate	Mid-Flood	M	12.05	10:28	8.19	8.23	30.82	22.12	2.3	3
CE	20220104	Sunny	Moderate	Mid-Flood	M	12.05	10:28	8.13	8.22	30.85	22.14	2.34	4
CE	20220104	Sunny	Moderate	Mid-Flood	B	23.1	10:27	8.11	8.27	30.87	22.09	2.39	4
CE	20220104	Sunny	Moderate	Mid-Flood	B	23.1	10:27	8.15	8.27	30.83	22.07	2.39	8
CE	20220106	Sunny	Moderate	Mid-Flood	S	1	10:44	8.54	8.2	32.93	22.95	3.95	2.5
CE	20220106	Sunny	Moderate	Mid-Flood	S	1	10:44	8.6	8.22	32.89	23.1	3.53	2.5
CE	20220106	Sunny	Moderate	Mid-Flood	M	10.4	10:43	8.5	8.16	32.93	22.94	3.64	2.5
CE	20220106	Sunny	Moderate	Mid-Flood	M	10.4	10:43	8.5	8.17	32.94	23.1	3.55	3
CE	20220106	Sunny	Moderate	Mid-Flood	B	19.8	10:42	8.6	8.19	32.95	22.82	3.64	2.5
CE	20220106	Sunny	Moderate	Mid-Flood	B	19.8	10:42	8.65	8.2	32.9	22.83	3.51	2.5
CE	20220108	Sunny	Moderate	Mid-Flood	S	1	12:02	8.49	8.46	34.76	21.49	2.88	4
CE	20220108	Sunny	Moderate	Mid-Flood	S	1	12:02	8.57	8.48	34.74	21.48	3.2	5
CE	20220108	Sunny	Moderate	Mid-Flood	M	11.5	12:01	8.5	8.51	34.68	21.44	2.71	4
CE	20220108	Sunny	Moderate	Mid-Flood	M	11.5	12:01	8.48	8.47	34.71	21.49	2.61	4
CE	20220108	Sunny	Moderate	Mid-Flood	B	22	12:00	8.53	8.47	34.76	21.53	2.36	4
CE	20220108	Sunny	Moderate	Mid-Flood	B	22	12:00	8.57	8.5	34.75	21.54	2.28	5
CE	20220111	Sunny	Moderate	Mid-Flood	S	1	20:00	9.38	8.3	35.04	19.89	2.77	4
CE	20220111	Sunny	Moderate	Mid-Flood	S	1	20:00	9.4	8.22	35.01	19.85	3.15	4

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	H	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
CE	20220111	Sunny	Moderate	Mid-Flood	M	11.25	19:59	9.37	8.3	34.96	19.83	2.87	3
CE	20220111	Sunny	Moderate	Mid-Flood	M	11.25	19:59	9.58	8.28	34.9	19.8	2.96	3
CE	20220111	Sunny	Moderate	Mid-Flood	B	21.5	19:58	9.24	8.22	35.03	19.8	3.01	5
CE	20220111	Sunny	Moderate	Mid-Flood	B	21.5	19:58	9.37	8.21	35.08	19.9	3.14	3
CE	20220113	Cloudy	Moderate	Mid-Flood	S	1	15:27	8.76	8.34	32.93	20.53	3.93	3
CE	20220113	Cloudy	Moderate	Mid-Flood	S	1	15:27	8.23	8.37	32.84	20.49	3.59	3
CE	20220113	Cloudy	Moderate	Mid-Flood	M	11	15:26	8.94	8.37	32.91	20.65	3.76	2.5
CE	20220113	Cloudy	Moderate	Mid-Flood	M	11	15:26	8.81	8.35	32.94	20.7	3.47	2.5
CE	20220113	Cloudy	Moderate	Mid-Flood	B	21	15:25	9.16	8.35	32.86	20.65	3.83	3
CE	20220113	Cloudy	Moderate	Mid-Flood	B	21	15:25	8.22	8.35	32.92	20.54	3.51	3
CE	20220115	Cloudy	Moderate	Mid-Flood	S	1	16:50	8.9	8.31	34.53	20.86	3.18	3
CE	20220115	Cloudy	Moderate	Mid-Flood	S	1	16:50	8.85	8.32	34.53	20.93	3.33	2.5
CE	20220115	Cloudy	Moderate	Mid-Flood	M	11.6	16:49	8.82	8.34	34.5	21	2.95	2.5
CE	20220115	Cloudy	Moderate	Mid-Flood	M	11.6	16:49	8.83	8.3	34.59	21.01	3.18	4
CE	20220115	Cloudy	Moderate	Mid-Flood	B	22.2	16:48	8.88	8.27	34.49	20.94	3.88	2.5
CE	20220115	Cloudy	Moderate	Mid-Flood	B	22.2	16:48	8.95	8.29	34.6	20.95	3.64	4
CE	20220118	Cloudy	Moderate	Mid-Flood	S	1	17:56	9.05	8.2	33.92	20.63	3.2	6
CE	20220118	Cloudy	Moderate	Mid-Flood	S	1	17:56	9.16	8.13	33.96	20.82	3.59	6
CE	20220118	Cloudy	Moderate	Mid-Flood	M	10.45	17:55	9.15	8.21	33.94	20.72	3.66	3
CE	20220118	Cloudy	Moderate	Mid-Flood	M	10.45	17:55	9.06	8.12	33.89	20.67	3.3	4
CE	20220118	Cloudy	Moderate	Mid-Flood	B	19.9	17:54	9.18	8.15	33.9	20.7	3.03	11
CE	20220118	Cloudy	Moderate	Mid-Flood	B	19.9	17:54	9.15	8.16	33.99	20.75	2.84	12
CE	20220120	Sunny	Moderate	Mid-Flood	S	1	10:24	8.58	8.33	33.94	20.77	3.53	4
CE	20220120	Sunny	Moderate	Mid-Flood	S	1	10:24	8.5	8.34	33.86	20.81	3.38	5
CE	20220120	Sunny	Moderate	Mid-Flood	M	10.2	10:23	8.69	8.29	33.81	20.76	4.32	3
CE	20220120	Sunny	Moderate	Mid-Flood	M	10.2	10:23	8.54	8.28	33.91	20.78	3.97	4

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	H	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
CE	20220120	Sunny	Moderate	Mid-Flood	B	19.4	10:22	8.62	8.23	34.02	20.73	4.24	4
CE	20220120	Sunny	Moderate	Mid-Flood	B	19.4	10:22	8.57	8.26	33.82	20.78	3.8	4
CE	20220122	Cloudy	Moderate	Mid-Flood	S	1	10:26	8.73	8.23	33.03	21.52	4.08	6
CE	20220122	Cloudy	Moderate	Mid-Flood	S	1	10:26	8.76	8.24	33.03	21.48	3.77	6
CE	20220122	Cloudy	Moderate	Mid-Flood	M	11.8	10:25	8.76	8.26	33.03	21.52	3.76	6
CE	20220122	Cloudy	Moderate	Mid-Flood	M	11.8	10:25	8.68	8.23	32.92	21.51	3.94	5
CE	20220122	Cloudy	Moderate	Mid-Flood	B	22.6	10:24	8.71	8.22	32.94	21.44	4.13	6
CE	20220122	Cloudy	Moderate	Mid-Flood	B	22.6	10:24	8.7	8.2	32.88	21.53	3.58	7
CE	20220125	Cloudy	Moderate	Mid-Flood	S	1	12:23	8.4	8.29	30.28	21.09	3.73	3
CE	20220125	Cloudy	Moderate	Mid-Flood	S	1	12:23	8.46	8.26	30.21	21.16	3.61	5
CE	20220125	Cloudy	Moderate	Mid-Flood	M	10.4	12:22	8.49	8.19	30.09	21.12	3.17	4
CE	20220125	Cloudy	Moderate	Mid-Flood	M	10.4	12:22	8.37	8.25	30.26	21.21	3.19	5
CE	20220125	Cloudy	Moderate	Mid-Flood	B	19.8	12:21	8.41	8.3	30.16	21.2	3.55	3
CE	20220125	Cloudy	Moderate	Mid-Flood	B	19.8	12:21	8.32	8.26	30.23	21.17	3.3	3
CE	20220127	Cloudy	Moderate	Mid-Flood	S	1	14:03	8.57	8.04	31.28	21.18	2.88	4
CE	20220127	Cloudy	Moderate	Mid-Flood	S	1	14:03	8.57	8.12	31.24	21.23	3.15	2.5
CE	20220127	Cloudy	Moderate	Mid-Flood	M	12	14:02	8.51	8.07	31.26	21.24	3.09	6
CE	20220127	Cloudy	Moderate	Mid-Flood	M	12	14:02	8.56	8.06	31.41	21.15	3.31	6
CE	20220127	Cloudy	Moderate	Mid-Flood	B	23	14:01	8.54	8.05	31.42	21.14	3.79	3
CE	20220127	Cloudy	Moderate	Mid-Flood	B	23	14:01	8.49	8.13	31.31	21.28	3.61	2.5
CE	20220129	Cloudy	Moderate	Mid-Flood	S	1	15:50	9.59	8.19	31.18	20.65	2.81	2.5
CE	20220129	Cloudy	Moderate	Mid-Flood	S	1	15:50	9.54	8.14	31.08	20.52	3.06	2.5
CE	20220129	Cloudy	Moderate	Mid-Flood	M	12.15	15:49	9.51	8.14	31.19	20.51	3.28	5
CE	20220129	Cloudy	Moderate	Mid-Flood	M	12.15	15:49	9.58	8.12	31.1	20.6	3.4	5
CE	20220129	Cloudy	Moderate	Mid-Flood	B	23.3	15:48	9.46	8.15	31.17	20.55	3.54	4
CE	20220129	Cloudy	Moderate	Mid-Flood	B	23.3	15:48	9.55	8.15	31.04	20.66	3.11	4

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	H	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
CE	20220131	Cloudy	Moderate	Mid-Flood	S	1	17:42	8.3	8.18	33.67	19.74	3.26	3
CE	20220131	Cloudy	Moderate	Mid-Flood	S	1	17:42	8.2	8.2	33.76	19.78	3.24	4
CE	20220131	Cloudy	Moderate	Mid-Flood	M	12.35	17:41	8.16	8.14	33.8	19.71	2.8	4
CE	20220131	Cloudy	Moderate	Mid-Flood	M	12.35	17:41	8.26	8.23	33.77	19.73	3.14	5
CE	20220131	Cloudy	Moderate	Mid-Flood	B	23.7	17:40	8.18	8.18	33.59	19.72	3.5	4
CE	20220131	Cloudy	Moderate	Mid-Flood	B	23.7	17:40	8.19	8.21	33.79	19.72	3.19	4
CF	20220101	Cloudy	Moderate	Mid-Flood	S	1	14:36	8.95	8.38	31.75	22.16	3.43	4
CF	20220101	Cloudy	Moderate	Mid-Flood	S	1	14:36	8.97	8.42	31.67	22.24	3.55	5
CF	20220101	Cloudy	Moderate	Mid-Flood	M	9.6	14:35	8.95	8.41	31.62	22.17	2.98	4
CF	20220101	Cloudy	Moderate	Mid-Flood	M	9.6	14:35	9.04	8.4	31.76	22.17	3.25	4
CF	20220101	Cloudy	Moderate	Mid-Flood	B	18.2	14:34	8.8	8.43	31.7	22.21	3.24	6
CF	20220101	Cloudy	Moderate	Mid-Flood	B	18.2	14:34	8.91	8.47	31.75	22.09	3	6
CF	20220104	Sunny	Moderate	Mid-Flood	S	1	8:02	8.57	8.36	30.73	22.25	2.48	4
CF	20220104	Sunny	Moderate	Mid-Flood	S	1	8:02	8.53	8.38	30.84	22.44	2.55	3
CF	20220104	Sunny	Moderate	Mid-Flood	M	10.45	8:01	8.42	8.34	30.75	22.37	2.18	3
CF	20220104	Sunny	Moderate	Mid-Flood	M	10.45	8:01	8.45	8.31	30.74	22.33	2.42	4
CF	20220104	Sunny	Moderate	Mid-Flood	B	19.9	8:00	8.35	8.37	30.74	22.36	2.62	3
CF	20220104	Sunny	Moderate	Mid-Flood	B	19.9	8:00	8.5	8.33	30.77	22.26	2.48	3
CF	20220106	Sunny	Moderate	Mid-Flood	S	1	8:13	8.31	8.4	33.09	22.58	5.67	9
CF	20220106	Sunny	Moderate	Mid-Flood	S	1	8:13	8.47	8.42	33.08	22.86	5.19	9
CF	20220106	Sunny	Moderate	Mid-Flood	M	10.85	8:12	8.32	8.47	33.17	22.84	3.97	6
CF	20220106	Sunny	Moderate	Mid-Flood	M	10.85	8:12	8.32	8.45	32.97	22.87	4.12	6
CF	20220106	Sunny	Moderate	Mid-Flood	B	20.7	8:11	8.42	8.44	33.13	22.55	4.41	3
CF	20220106	Sunny	Moderate	Mid-Flood	B	20.7	8:11	8.41	8.47	33.04	22.73	3.69	3
CF	20220108	Sunny	Moderate	Mid-Flood	S	1	9:33	8.61	8.43	34.76	21.95	3.53	3
CF	20220108	Sunny	Moderate	Mid-Flood	S	1	9:33	8.63	8.44	34.85	22.01	3	4

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	H	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
CF	20220108	Sunny	Moderate	Mid-Flood	M	10.7	9:32	8.54	8.41	34.81	21.9	2.92	5
CF	20220108	Sunny	Moderate	Mid-Flood	M	10.7	9:32	8.62	8.49	34.79	21.93	3.16	5
CF	20220108	Sunny	Moderate	Mid-Flood	B	20.4	9:31	8.58	8.46	34.77	21.89	3.29	7
CF	20220108	Sunny	Moderate	Mid-Flood	B	20.4	9:31	8.54	8.44	34.83	21.92	3.35	7
CF	20220111	Sunny	Moderate	Mid-Flood	S	1	17:42	9.03	8.28	34.22	20.2	2.89	4
CF	20220111	Sunny	Moderate	Mid-Flood	S	1	17:42	8.98	8.24	34.25	20.15	3.33	4
CF	20220111	Sunny	Moderate	Mid-Flood	M	9.65	17:41	8.89	8.21	34.22	20.17	3.47	4
CF	20220111	Sunny	Moderate	Mid-Flood	M	9.65	17:41	8.86	8.21	34.16	20.13	3.66	2.5
CF	20220111	Sunny	Moderate	Mid-Flood	B	18.3	17:40	9.01	8.28	34.1	20.21	3.57	10
CF	20220111	Sunny	Moderate	Mid-Flood	B	18.3	17:40	9.12	8.25	34.31	20.27	3.9	10
CF	20220113	Cloudy	Moderate	Mid-Flood	S	1	12:51	8.81	8.29	32.95	20.64	5.41	8
CF	20220113	Cloudy	Moderate	Mid-Flood	S	1	12:51	8.87	8.35	32.89	20.59	5.08	8
CF	20220113	Cloudy	Moderate	Mid-Flood	M	10.55	12:50	8.84	8.3	32.99	20.73	4.4	4
CF	20220113	Cloudy	Moderate	Mid-Flood	M	10.55	12:50	8.9	8.37	33.01	20.74	4.67	3
CF	20220113	Cloudy	Moderate	Mid-Flood	B	20.1	12:49	8.79	8.29	32.97	20.72	4.4	5
CF	20220113	Cloudy	Moderate	Mid-Flood	B	20.1	12:49	8.9	8.37	32.95	20.72	4.73	5
CF	20220115	Cloudy	Moderate	Mid-Flood	S	1	14:07	8.8	8.31	34.22	20.75	3.83	2.5
CF	20220115	Cloudy	Moderate	Mid-Flood	S	1	14:07	8.79	8.28	34.31	20.72	3.71	3
CF	20220115	Cloudy	Moderate	Mid-Flood	M	10.5	14:06	8.76	8.26	34.32	20.78	3.7	2.5
CF	20220115	Cloudy	Moderate	Mid-Flood	M	10.5	14:06	8.77	8.28	34.26	20.7	3.5	2.5
CF	20220115	Cloudy	Moderate	Mid-Flood	B	20	14:05	8.82	8.28	34.35	20.68	4.19	5
CF	20220115	Cloudy	Moderate	Mid-Flood	B	20	14:05	8.81	8.3	34.36	20.76	3.68	5
CF	20220118	Cloudy	Moderate	Mid-Flood	S	1	15:42	8.17	8.16	33.9	20.88	3.72	11
CF	20220118	Cloudy	Moderate	Mid-Flood	S	1	15:42	8.16	8.18	33.94	20.82	3.46	11
CF	20220118	Cloudy	Moderate	Mid-Flood	M	10.75	15:41	8.29	8.16	33.98	21.02	3.29	7
CF	20220118	Cloudy	Moderate	Mid-Flood	M	10.75	15:41	8.15	8.12	33.9	20.89	3.66	7

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	H	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
CF	20220118	Cloudy	Moderate	Mid-Flood	B	20.5	15:40	8.21	8.17	33.89	21.02	4.63	7
CF	20220118	Cloudy	Moderate	Mid-Flood	B	20.5	15:40	8.17	8.18	33.86	20.93	4.17	7
CF	20220120	Sunny	Moderate	Mid-Flood	S	1	8:02	8.4	8.2	33.59	20.71	4.97	5
CF	20220120	Sunny	Moderate	Mid-Flood	S	1	8:02	8.5	8.23	33.63	20.72	4.91	5
CF	20220120	Sunny	Moderate	Mid-Flood	M	10.35	8:01	8.35	8.22	33.68	20.66	5.27	5
CF	20220120	Sunny	Moderate	Mid-Flood	M	10.35	8:01	8.4	8.21	33.57	20.69	5	4
CF	20220120	Sunny	Moderate	Mid-Flood	B	19.7	8:00	8.42	8.2	33.56	20.75	5.11	4
CF	20220120	Sunny	Moderate	Mid-Flood	B	19.7	8:00	8.37	8.21	33.71	20.72	5.32	4
CF	20220122	Cloudy	Moderate	Mid-Flood	S	1	8:04	8.9	8.26	33.11	20.94	4.55	3
CF	20220122	Cloudy	Moderate	Mid-Flood	S	1	8:04	8.92	8.24	32.99	20.99	4.06	3
CF	20220122	Cloudy	Moderate	Mid-Flood	M	9.95	8:03	9.01	8.29	33.05	20.9	4.23	5
CF	20220122	Cloudy	Moderate	Mid-Flood	M	9.95	8:03	8.95	8.24	33.03	20.83	4.08	5
CF	20220122	Cloudy	Moderate	Mid-Flood	B	18.9	8:02	8.99	8.24	33.11	20.87	4.15	5
CF	20220122	Cloudy	Moderate	Mid-Flood	B	18.9	8:02	8.97	8.29	33.19	20.95	4.04	4
CF	20220125	Cloudy	Moderate	Mid-Flood	S	1	10:01	8.41	8.17	30.63	21.08	4.17	3
CF	20220125	Cloudy	Moderate	Mid-Flood	S	1	10:01	8.36	8.17	30.71	21.07	3.85	3
CF	20220125	Cloudy	Moderate	Mid-Flood	M	10.2	10:00	8.41	8.2	30.53	21.01	4.26	3
CF	20220125	Cloudy	Moderate	Mid-Flood	M	10.2	10:00	8.26	8.18	30.6	21.08	4.23	5
CF	20220125	Cloudy	Moderate	Mid-Flood	B	19.4	9:59	8.41	8.18	30.53	21.02	3.97	5
CF	20220125	Cloudy	Moderate	Mid-Flood	B	19.4	9:59	8.26	8.26	30.73	21.15	4.23	3
CF	20220127	Cloudy	Moderate	Mid-Flood	S	1	11:28	8.6	8.04	31.54	21.07	3.7	22
CF	20220127	Cloudy	Moderate	Mid-Flood	S	1	11:28	8.6	8.14	31.43	20.99	3.49	22
CF	20220127	Cloudy	Moderate	Mid-Flood	M	10.7	11:27	8.74	8.07	31.54	21.07	3.43	2.5
CF	20220127	Cloudy	Moderate	Mid-Flood	M	10.7	11:27	8.72	8.08	31.51	20.98	3.65	3
CF	20220127	Cloudy	Moderate	Mid-Flood	B	20.4	11:26	8.72	8.15	31.44	21.06	3.88	5
CF	20220127	Cloudy	Moderate	Mid-Flood	B	20.4	11:26	8.6	8.06	31.55	20.94	3.9	4

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	H	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
CF	20220129	Cloudy	Moderate	Mid-Flood	S	1	13:12	8.81	8.2	30.32	20.48	3.59	15
CF	20220129	Cloudy	Moderate	Mid-Flood	S	1	13:12	8.81	8.18	30.36	20.57	3.53	15
CF	20220129	Cloudy	Moderate	Mid-Flood	M	10.35	13:11	8.8	8.13	30.26	20.57	3.48	2.5
CF	20220129	Cloudy	Moderate	Mid-Flood	M	10.35	13:11	8.82	8.18	30.31	20.54	3.41	3
CF	20220129	Cloudy	Moderate	Mid-Flood	B	19.7	13:10	8.85	8.15	30.42	20.44	4.03	4
CF	20220129	Cloudy	Moderate	Mid-Flood	B	19.7	13:10	8.84	8.14	30.47	20.42	4.15	4
CF	20220131	Cloudy	Moderate	Mid-Flood	S	1	15:09	8.74	8.19	33.89	20.25	4.19	3
CF	20220131	Cloudy	Moderate	Mid-Flood	S	1	15:09	8.82	8.22	33.89	20.23	4.28	4
CF	20220131	Cloudy	Moderate	Mid-Flood	M	10.35	15:08	8.78	8.16	33.93	20.28	3.65	4
CF	20220131	Cloudy	Moderate	Mid-Flood	M	10.35	15:08	8.67	8.15	33.88	20.28	3.87	3
CF	20220131	Cloudy	Moderate	Mid-Flood	B	19.7	15:07	8.67	8.17	34.02	20.25	4.28	2.5
CF	20220131	Cloudy	Moderate	Mid-Flood	B	19.7	15:07	8.81	8.15	33.95	20.21	4.15	4
WSR01	20220101	Cloudy	Moderate	Mid-Flood	S	1	14:59	8.67	8.46	31.45	22.31	2.22	5
WSR01	20220101	Cloudy	Moderate	Mid-Flood	S	1	14:59	8.8	8.39	31.59	22.2	2.21	5
WSR01	20220101	Cloudy	Moderate	Mid-Flood	M	4.35	14:58	8.62	8.43	31.56	22.32	2.1	4
WSR01	20220101	Cloudy	Moderate	Mid-Flood	M	4.35	14:58	8.79	8.4	31.42	22.3	2	4
WSR01	20220101	Cloudy	Moderate	Mid-Flood	B	7.7	14:57	8.89	8.39	31.5	22.17	1.6	5
WSR01	20220101	Cloudy	Moderate	Mid-Flood	B	7.7	14:57	8.62	8.38	31.44	22.32	1.73	4
WSR01	20220104	Sunny	Moderate	Mid-Flood	S	1	8:23	8.59	8.34	31.62	22.62	2.47	5
WSR01	20220104	Sunny	Moderate	Mid-Flood	S	1	8:23	8.4	8.31	31.62	22.42	2.28	4
WSR01	20220104	Sunny	Moderate	Mid-Flood	M	4.5	8:22	8.55	8.27	31.68	22.42	2.17	6
WSR01	20220104	Sunny	Moderate	Mid-Flood	M	4.5	8:22	8.39	8.26	31.64	22.43	1.96	7
WSR01	20220104	Sunny	Moderate	Mid-Flood	B	8	8:21	8.47	8.27	31.66	22.65	2.15	5
WSR01	20220104	Sunny	Moderate	Mid-Flood	B	8	8:21	8.33	8.28	31.62	22.59	2.09	5
WSR01	20220106	Sunny	Moderate	Mid-Flood	S	1	8:34	8.19	8.23	32.7	22.34	3.81	3
WSR01	20220106	Sunny	Moderate	Mid-Flood	S	1	8:34	8.19	8.26	32.73	22.27	4.02	3

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	H	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR01	20220106	Sunny	Moderate	Mid-Flood	M	4.75	8:33	8.13	8.25	32.87	22.48	3.67	3
WSR01	20220106	Sunny	Moderate	Mid-Flood	M	4.75	8:33	8.22	8.23	32.82	22.29	3.55	5
WSR01	20220106	Sunny	Moderate	Mid-Flood	B	8.5	8:32	8.19	8.21	32.89	22.38	3.37	4
WSR01	20220106	Sunny	Moderate	Mid-Flood	B	8.5	8:32	8.2	8.2	32.84	22.22	3.27	2.5
WSR01	20220108	Sunny	Moderate	Mid-Flood	S	1	9:56	8.85	8.41	34.38	21.83	2.78	2.5
WSR01	20220108	Sunny	Moderate	Mid-Flood	S	1	9:56	8.82	8.41	34.45	21.9	2.89	2.5
WSR01	20220108	Sunny	Moderate	Mid-Flood	M	4.5	9:55	8.8	8.39	34.4	21.87	2.62	6
WSR01	20220108	Sunny	Moderate	Mid-Flood	M	4.5	9:55	8.78	8.38	34.33	21.93	2.49	7
WSR01	20220108	Sunny	Moderate	Mid-Flood	B	8	9:54	8.79	8.41	34.38	21.96	2.57	7
WSR01	20220108	Sunny	Moderate	Mid-Flood	B	8	9:54	8.77	8.47	34.37	21.88	2.41	4
WSR01	20220111	Sunny	Moderate	Mid-Flood	S	1	18:02	9.29	8.29	34.81	19.86	2.79	3
WSR01	20220111	Sunny	Moderate	Mid-Flood	S	1	18:02	9.36	8.26	34.97	19.79	2.55	2.5
WSR01	20220111	Sunny	Moderate	Mid-Flood	M	4.2	18:01	9.53	8.29	34.84	19.87	2.23	5
WSR01	20220111	Sunny	Moderate	Mid-Flood	M	4.2	18:01	9.46	8.24	34.93	19.71	2.59	3
WSR01	20220111	Sunny	Moderate	Mid-Flood	B	7.4	18:00	9.38	8.25	34.85	19.76	2.38	5
WSR01	20220111	Sunny	Moderate	Mid-Flood	B	7.4	18:00	9.4	8.29	34.84	19.7	2.01	4
WSR01	20220113	Cloudy	Moderate	Mid-Flood	S	1	13:26	9.04	8.31	32.25	20.52	3.59	2.5
WSR01	20220113	Cloudy	Moderate	Mid-Flood	S	1	13:26	9.11	8.29	32.28	20.62	3.6	2.5
WSR01	20220113	Cloudy	Moderate	Mid-Flood	M	4.4	13:25	8.94	8.23	32.24	20.55	3.19	3
WSR01	20220113	Cloudy	Moderate	Mid-Flood	M	4.4	13:25	9.06	8.28	32.18	20.57	3.49	3
WSR01	20220113	Cloudy	Moderate	Mid-Flood	B	7.8	13:24	8.88	8.28	32.21	20.5	3.06	2.5
WSR01	20220113	Cloudy	Moderate	Mid-Flood	B	7.8	13:24	8.22	8.26	32.18	20.54	3.11	2.5
WSR01	20220115	Cloudy	Moderate	Mid-Flood	S	1	14:33	8.49	8.17	34.38	21.2	3.13	3
WSR01	20220115	Cloudy	Moderate	Mid-Flood	S	1	14:33	8.42	8.15	34.36	21.21	3.19	3
WSR01	20220115	Cloudy	Moderate	Mid-Flood	M	4.4	14:32	8.45	8.17	34.47	21.18	2.34	6
WSR01	20220115	Cloudy	Moderate	Mid-Flood	M	4.4	14:32	8.48	8.17	34.33	21.27	2.33	8

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	H	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR01	20220115	Cloudy	Moderate	Mid-Flood	B	7.8	14:31	8.51	8.2	34.48	21.23	2.58	3
WSR01	20220115	Cloudy	Moderate	Mid-Flood	B	7.8	14:31	8.46	8.18	34.43	21.18	2.5	3
WSR01	20220118	Cloudy	Moderate	Mid-Flood	S	1	16:02	8.29	8.37	34.32	20.65	3.45	8
WSR01	20220118	Cloudy	Moderate	Mid-Flood	S	1	16:02	8.26	8.34	34.35	20.75	3.44	8
WSR01	20220118	Cloudy	Moderate	Mid-Flood	M	4.6	16:01	8.25	8.35	34.29	20.8	2.64	4
WSR01	20220118	Cloudy	Moderate	Mid-Flood	M	4.6	16:01	8.26	8.35	34.39	20.81	2.88	5
WSR01	20220118	Cloudy	Moderate	Mid-Flood	B	8.2	16:00	8.34	8.33	34.34	20.73	2.9	8
WSR01	20220118	Cloudy	Moderate	Mid-Flood	B	8.2	16:00	8.22	8.34	34.32	20.67	3.04	8
WSR01	20220120	Sunny	Moderate	Mid-Flood	S	1	8:22	8.31	8.3	33.5	20.91	3.21	5
WSR01	20220120	Sunny	Moderate	Mid-Flood	S	1	8:22	8.26	8.31	33.48	20.95	3.23	5
WSR01	20220120	Sunny	Moderate	Mid-Flood	M	4.75	8:21	8.21	8.24	33.27	20.89	2.81	5
WSR01	20220120	Sunny	Moderate	Mid-Flood	M	4.75	8:21	8.32	8.23	33.46	20.87	2.68	5
WSR01	20220120	Sunny	Moderate	Mid-Flood	B	8.5	8:20	8.2	8.28	33.38	20.88	3.09	5
WSR01	20220120	Sunny	Moderate	Mid-Flood	B	8.5	8:20	8.25	8.23	33.39	20.93	2.58	5
WSR01	20220122	Cloudy	Moderate	Mid-Flood	S	1	8:26	8.59	8.27	33.08	21.21	2.51	4
WSR01	20220122	Cloudy	Moderate	Mid-Flood	S	1	8:26	8.61	8.26	33.07	21.29	2.79	4
WSR01	20220122	Cloudy	Moderate	Mid-Flood	M	4.6	8:25	8.52	8.29	33.07	21.31	2.94	4
WSR01	20220122	Cloudy	Moderate	Mid-Flood	M	4.6	8:25	8.5	8.27	33.07	21.16	2.83	4
WSR01	20220122	Cloudy	Moderate	Mid-Flood	B	8.2	8:24	8.61	8.31	33.03	21.15	2.52	4
WSR01	20220122	Cloudy	Moderate	Mid-Flood	B	8.2	8:24	8.52	8.28	32.93	21.17	2.58	3
WSR01	20220125	Cloudy	Moderate	Mid-Flood	S	1	10:23	8.23	8.2	30.31	21.03	3.46	8
WSR01	20220125	Cloudy	Moderate	Mid-Flood	S	1	10:23	8.38	8.12	30.4	21.15	3.64	6
WSR01	20220125	Cloudy	Moderate	Mid-Flood	M	4.25	10:22	8.32	8.12	30.42	21.13	3.38	3
WSR01	20220125	Cloudy	Moderate	Mid-Flood	M	4.25	10:22	8.23	8.18	30.38	21.09	3.57	3
WSR01	20220125	Cloudy	Moderate	Mid-Flood	B	7.5	10:21	8.34	8.14	30.31	21.07	3.2	3
WSR01	20220125	Cloudy	Moderate	Mid-Flood	B	7.5	10:21	8.25	8.24	30.32	21.13	3.21	3

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	H	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR01	20220127	Cloudy	Moderate	Mid-Flood	S	1	11:52	8.84	8.21	31.21	21.07	2.39	5
WSR01	20220127	Cloudy	Moderate	Mid-Flood	S	1	11:52	8.69	8.18	31.24	21.02	2.59	4
WSR01	20220127	Cloudy	Moderate	Mid-Flood	M	4.4	11:51	8.73	8.2	31.27	21.03	2.22	4
WSR01	20220127	Cloudy	Moderate	Mid-Flood	M	4.4	11:51	8.7	8.17	31.28	21.08	2.12	3
WSR01	20220127	Cloudy	Moderate	Mid-Flood	B	7.8	11:50	8.73	8.19	31.13	21.01	2.14	4
WSR01	20220127	Cloudy	Moderate	Mid-Flood	B	7.8	11:50	8.74	8.21	31.22	20.96	2.5	3
WSR01	20220129	Cloudy	Moderate	Mid-Flood	S	1	13:36	9.18	8.18	31.31	20.45	2.77	3
WSR01	20220129	Cloudy	Moderate	Mid-Flood	S	1	13:36	9.23	8.19	31.22	20.42	3.14	4
WSR01	20220129	Cloudy	Moderate	Mid-Flood	M	4.65	13:35	9.17	8.17	31.27	20.36	2.71	3
WSR01	20220129	Cloudy	Moderate	Mid-Flood	M	4.65	13:35	9.1	8.18	31.27	20.42	2.69	6
WSR01	20220129	Cloudy	Moderate	Mid-Flood	B	8.3	13:34	9.2	8.17	31.24	20.5	2.25	4
WSR01	20220129	Cloudy	Moderate	Mid-Flood	B	8.3	13:34	9.11	8.19	31.15	20.37	2	4
WSR01	20220131	Cloudy	Moderate	Mid-Flood	S	1	15:32	8.65	7.98	33.78	19.58	2.45	7
WSR01	20220131	Cloudy	Moderate	Mid-Flood	S	1	15:32	8.73	7.97	33.67	19.59	2.34	7
WSR01	20220131	Cloudy	Moderate	Mid-Flood	M	4.65	15:31	8.7	7.97	33.7	19.6	2.19	6
WSR01	20220131	Cloudy	Moderate	Mid-Flood	M	4.65	15:31	8.64	8.04	33.7	19.62	2.06	6
WSR01	20220131	Cloudy	Moderate	Mid-Flood	B	8.3	15:30	8.73	8.05	33.86	19.65	2	2.5
WSR01	20220131	Cloudy	Moderate	Mid-Flood	B	8.3	15:30	8.64	8.02	33.75	19.65	1.95	3
WSR02	20220101	Cloudy	Moderate	Mid-Flood	S	1	15:16	8.46	8.44	31.4	22.06	2.03	4
WSR02	20220101	Cloudy	Moderate	Mid-Flood	S	1	15:16	8.3	8.47	31.44	22.01	2.15	4
WSR02	20220101	Cloudy	Moderate	Mid-Flood	M	4.85	15:15	8.42	8.45	31.29	21.91	2.53	5
WSR02	20220101	Cloudy	Moderate	Mid-Flood	M	4.85	15:15	8.39	8.39	31.27	21.98	2.39	7
WSR02	20220101	Cloudy	Moderate	Mid-Flood	B	8.7	15:14	8.44	8.36	31.45	22.09	1.83	6
WSR02	20220101	Cloudy	Moderate	Mid-Flood	B	8.7	15:14	8.36	8.46	31.33	22.08	2.08	8
WSR02	20220104	Sunny	Moderate	Mid-Flood	S	1	8:40	9.03	8.37	31.95	22.13	2.29	7
WSR02	20220104	Sunny	Moderate	Mid-Flood	S	1	8:40	9.04	8.31	31.89	22.2	1.93	7

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	H	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR02	20220104	Sunny	Moderate	Mid-Flood	M	4.55	8:39	9.09	8.39	31.83	22.08	2.21	4
WSR02	20220104	Sunny	Moderate	Mid-Flood	M	4.55	8:39	8.9	8.32	31.81	22.26	2.07	3
WSR02	20220104	Sunny	Moderate	Mid-Flood	B	8.1	8:38	8.75	8.31	31.83	22.1	1.93	2.5
WSR02	20220104	Sunny	Moderate	Mid-Flood	B	8.1	8:38	8.98	8.33	31.91	22.12	2.26	3
WSR02	20220106	Sunny	Moderate	Mid-Flood	S	1	8:53	9.09	8.42	32.92	23.05	3.24	3
WSR02	20220106	Sunny	Moderate	Mid-Flood	S	1	8:53	9.17	8.36	32.79	23.12	3.26	3
WSR02	20220106	Sunny	Moderate	Mid-Flood	M	4.5	8:52	9.05	8.37	32.86	22.86	3.2	2.5
WSR02	20220106	Sunny	Moderate	Mid-Flood	M	4.5	8:52	9.22	8.4	32.82	23.03	3.35	3
WSR02	20220106	Sunny	Moderate	Mid-Flood	B	8	8:51	9.21	8.4	32.78	23.17	2.49	4
WSR02	20220106	Sunny	Moderate	Mid-Flood	B	8	8:51	9.08	8.38	32.88	23.09	2.42	4
WSR02	20220108	Sunny	Moderate	Mid-Flood	S	1	10:13	8.7	8.37	34.66	21.93	2.56	8
WSR02	20220108	Sunny	Moderate	Mid-Flood	S	1	10:13	8.68	8.3	34.62	21.94	2.41	8
WSR02	20220108	Sunny	Moderate	Mid-Flood	M	4.75	10:12	8.63	8.3	34.74	21.97	2.18	12
WSR02	20220108	Sunny	Moderate	Mid-Flood	M	4.75	10:12	8.69	8.37	34.66	21.94	2.37	12
WSR02	20220108	Sunny	Moderate	Mid-Flood	B	8.5	10:11	8.67	8.39	34.68	21.9	1.98	21
WSR02	20220108	Sunny	Moderate	Mid-Flood	B	8.5	10:11	8.7	8.32	34.7	21.91	2.14	21
WSR02	20220111	Sunny	Moderate	Mid-Flood	S	1	18:17	9.84	8.26	34.93	19.7	1.73	2.5
WSR02	20220111	Sunny	Moderate	Mid-Flood	S	1	18:17	9.63	8.27	34.98	19.74	1.78	4
WSR02	20220111	Sunny	Moderate	Mid-Flood	M	4.55	18:16	9.82	8.29	34.93	19.79	2.35	2.5
WSR02	20220111	Sunny	Moderate	Mid-Flood	M	4.55	18:16	9.65	8.26	34.8	19.69	2.14	3
WSR02	20220111	Sunny	Moderate	Mid-Flood	B	8.1	18:15	9.85	8.27	34.94	19.69	2.11	6
WSR02	20220111	Sunny	Moderate	Mid-Flood	B	8.1	18:15	9.74	8.21	34.85	19.74	2.4	6
WSR02	20220113	Cloudy	Moderate	Mid-Flood	S	1	13:43	8.63	8.31	32.68	20.45	2.51	2.5
WSR02	20220113	Cloudy	Moderate	Mid-Flood	S	1	13:43	8.69	8.35	32.59	20.43	2.67	3
WSR02	20220113	Cloudy	Moderate	Mid-Flood	M	4.85	13:42	8.71	8.33	32.64	20.58	2.4	2.5
WSR02	20220113	Cloudy	Moderate	Mid-Flood	M	4.85	13:42	8.66	8.32	32.61	20.57	2.27	2.5

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	H	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR02	20220113	Cloudy	Moderate	Mid-Flood	B	8.7	13:41	8.58	8.31	32.67	20.37	2.05	6
WSR02	20220113	Cloudy	Moderate	Mid-Flood	B	8.7	13:41	8.53	8.35	32.67	20.43	2.1	6
WSR02	20220115	Cloudy	Moderate	Mid-Flood	S	1	14:52	8.92	8.29	33.5	21.32	2.29	4
WSR02	20220115	Cloudy	Moderate	Mid-Flood	S	1	14:52	9	8.28	33.43	21.4	2.36	3
WSR02	20220115	Cloudy	Moderate	Mid-Flood	M	4.75	14:51	8.94	8.25	33.48	21.37	2.55	2.5
WSR02	20220115	Cloudy	Moderate	Mid-Flood	M	4.75	14:51	8.93	8.25	33.48	21.26	2.28	2.5
WSR02	20220115	Cloudy	Moderate	Mid-Flood	B	8.5	14:50	8.95	8.22	33.56	21.39	2.18	2.5
WSR02	20220115	Cloudy	Moderate	Mid-Flood	B	8.5	14:50	8.91	8.22	33.5	21.32	2.32	2.5
WSR02	20220118	Cloudy	Moderate	Mid-Flood	S	1	16:17	8.53	8.32	34.05	20.86	2.34	7
WSR02	20220118	Cloudy	Moderate	Mid-Flood	S	1	16:17	8.49	8.27	33.93	20.96	2.2	7
WSR02	20220118	Cloudy	Moderate	Mid-Flood	M	4.55	16:16	8.46	8.27	33.99	20.81	1.88	2.5
WSR02	20220118	Cloudy	Moderate	Mid-Flood	M	4.55	16:16	8.52	8.26	34.07	20.87	1.78	4
WSR02	20220118	Cloudy	Moderate	Mid-Flood	B	8.1	16:15	8.64	8.21	34.03	20.89	2.71	8
WSR02	20220118	Cloudy	Moderate	Mid-Flood	B	8.1	16:15	8.53	8.29	33.93	20.76	2.41	7
WSR02	20220120	Sunny	Moderate	Mid-Flood	S	1	8:37	9	8.12	34.17	20.7	3.18	5
WSR02	20220120	Sunny	Moderate	Mid-Flood	S	1	8:37	8.97	8.11	34.17	20.8	3.35	3
WSR02	20220120	Sunny	Moderate	Mid-Flood	M	4.5	8:36	8.92	8.11	34.13	20.73	3.4	4
WSR02	20220120	Sunny	Moderate	Mid-Flood	M	4.5	8:36	8.95	8.14	34.05	20.68	3.43	5
WSR02	20220120	Sunny	Moderate	Mid-Flood	B	8	8:35	8.97	8.15	34.24	20.74	3.02	5
WSR02	20220120	Sunny	Moderate	Mid-Flood	B	8	8:35	8.89	8.19	34.2	20.79	2.8	5
WSR02	20220122	Cloudy	Moderate	Mid-Flood	S	1	8:42	8.79	8.32	33.53	20.75	3.03	4
WSR02	20220122	Cloudy	Moderate	Mid-Flood	S	1	8:42	8.8	8.34	33.35	20.84	3.35	3
WSR02	20220122	Cloudy	Moderate	Mid-Flood	M	4.6	8:41	8.73	8.28	33.52	20.8	2.75	5
WSR02	20220122	Cloudy	Moderate	Mid-Flood	M	4.6	8:41	8.72	8.33	33.36	20.79	2.74	4
WSR02	20220122	Cloudy	Moderate	Mid-Flood	B	8.2	8:40	8.7	8.35	33.4	20.69	2.49	3
WSR02	20220122	Cloudy	Moderate	Mid-Flood	B	8.2	8:40	8.78	8.28	33.48	20.84	2.49	3

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	H	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR02	20220125	Cloudy	Moderate	Mid-Flood	S	1	10:40	8.86	8.27	31.16	20.89	2.16	4
WSR02	20220125	Cloudy	Moderate	Mid-Flood	S	1	10:40	8.94	8.21	31.15	20.95	2.33	3
WSR02	20220125	Cloudy	Moderate	Mid-Flood	M	4.95	10:39	8.91	8.24	31.05	20.97	2.56	2.5
WSR02	20220125	Cloudy	Moderate	Mid-Flood	M	4.95	10:39	8.99	8.23	31.26	20.89	2.14	3
WSR02	20220125	Cloudy	Moderate	Mid-Flood	B	8.9	10:38	9.02	8.23	31.19	21.03	2.56	6
WSR02	20220125	Cloudy	Moderate	Mid-Flood	B	8.9	10:38	8.84	8.19	31.26	20.91	2.55	8
WSR02	20220127	Cloudy	Moderate	Mid-Flood	S	1	12:11	9.19	8.07	31.75	21.31	2.15	2.5
WSR02	20220127	Cloudy	Moderate	Mid-Flood	S	1	12:11	9.22	8.11	31.74	21.24	1.85	2.5
WSR02	20220127	Cloudy	Moderate	Mid-Flood	M	4.6	12:10	9.13	8.14	31.68	21.29	1.89	4
WSR02	20220127	Cloudy	Moderate	Mid-Flood	M	4.6	12:10	9.13	8.17	31.78	21.22	2.14	7
WSR02	20220127	Cloudy	Moderate	Mid-Flood	B	8.2	12:09	9.17	8.17	31.62	21.26	1.51	6
WSR02	20220127	Cloudy	Moderate	Mid-Flood	B	8.2	12:09	9.1	8.1	31.66	21.29	1.68	6
WSR02	20220129	Cloudy	Moderate	Mid-Flood	S	1	13:56	9.74	8.23	31.2	20.58	2.3	4
WSR02	20220129	Cloudy	Moderate	Mid-Flood	S	1	13:56	9.63	8.29	31.21	20.63	2.52	5
WSR02	20220129	Cloudy	Moderate	Mid-Flood	M	4.5	13:55	9.68	8.28	31.21	20.6	2.06	5
WSR02	20220129	Cloudy	Moderate	Mid-Flood	M	4.5	13:55	9.73	8.29	31.29	20.55	2.26	5
WSR02	20220129	Cloudy	Moderate	Mid-Flood	B	8	13:54	9.63	8.28	31.32	20.58	1.91	5
WSR02	20220129	Cloudy	Moderate	Mid-Flood	B	8	13:54	9.63	8.28	31.24	20.64	2.13	4
WSR02	20220131	Cloudy	Moderate	Mid-Flood	S	1	15:50	8.87	8.01	34.01	20.32	2.06	4
WSR02	20220131	Cloudy	Moderate	Mid-Flood	S	1	15:50	8.75	8.08	33.95	20.26	1.95	2.5
WSR02	20220131	Cloudy	Moderate	Mid-Flood	M	4.8	15:49	8.7	8.05	33.9	20.28	2.07	5
WSR02	20220131	Cloudy	Moderate	Mid-Flood	M	4.8	15:49	8.71	8.03	34.04	20.32	1.73	4
WSR02	20220131	Cloudy	Moderate	Mid-Flood	B	8.6	15:48	8.88	8.01	33.98	20.29	1.77	4
WSR02	20220131	Cloudy	Moderate	Mid-Flood	B	8.6	15:48	8.73	8.02	34.11	20.31	1.84	5
WSR03	20220101	Cloudy	Moderate	Mid-Flood	S	1	15:27	8.81	8.14	31.65	21.98	2.28	5
WSR03	20220101	Cloudy	Moderate	Mid-Flood	S	1	15:27	8.97	8.24	31.75	22.08	2.3	5

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	H	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR03	20220101	Cloudy	Moderate	Mid-Flood	M	4.15	15:26	8.9	8.17	31.73	21.94	1.89	15
WSR03	20220101	Cloudy	Moderate	Mid-Flood	M	4.15	15:26	8.84	8.15	31.73	22.08	2.19	15
WSR03	20220101	Cloudy	Moderate	Mid-Flood	B	7.3	15:25	8.68	8.18	31.68	22.05	2.19	4
WSR03	20220101	Cloudy	Moderate	Mid-Flood	B	7.3	15:25	8.92	8.15	31.73	22	1.84	6
WSR03	20220104	Sunny	Moderate	Mid-Flood	S	1	8:52	8.17	8.31	30.82	22.7	2.01	5
WSR03	20220104	Sunny	Moderate	Mid-Flood	S	1	8:52	8.38	8.33	30.87	22.61	2.01	4
WSR03	20220104	Sunny	Moderate	Mid-Flood	M	3.75	8:51	8.22	8.33	30.86	22.64	2.51	3
WSR03	20220104	Sunny	Moderate	Mid-Flood	M	3.75	8:51	8.45	8.32	30.78	22.66	2.13	4
WSR03	20220104	Sunny	Moderate	Mid-Flood	B	6.5	8:50	8.19	8.29	30.89	22.55	2.04	2.5
WSR03	20220104	Sunny	Moderate	Mid-Flood	B	6.5	8:50	8.32	8.32	30.82	22.75	2.12	3
WSR03	20220106	Sunny	Moderate	Mid-Flood	S	1	9:06	8.22	8.24	32.34	22.92	3.81	4
WSR03	20220106	Sunny	Moderate	Mid-Flood	S	1	9:06	8.28	8.25	32.32	22.99	3.94	3
WSR03	20220106	Sunny	Moderate	Mid-Flood	M	4.2	9:05	8.33	8.25	32.24	23.04	3.91	4
WSR03	20220106	Sunny	Moderate	Mid-Flood	M	4.2	9:05	8.29	8.3	32.37	22.82	3.34	2.5
WSR03	20220106	Sunny	Moderate	Mid-Flood	B	7.4	9:04	8.17	8.23	32.39	22.78	3.47	3
WSR03	20220106	Sunny	Moderate	Mid-Flood	B	7.4	9:04	8.19	8.26	32.31	22.75	3.66	3
WSR03	20220108	Sunny	Moderate	Mid-Flood	S	1	10:25	8.86	8.25	34.04	21.93	2.75	18
WSR03	20220108	Sunny	Moderate	Mid-Flood	S	1	10:25	8.85	8.28	34.05	21.97	2.5	21
WSR03	20220108	Sunny	Moderate	Mid-Flood	M	4.1	10:24	8.8	8.29	34.06	21.89	2.17	20
WSR03	20220108	Sunny	Moderate	Mid-Flood	M	4.1	10:24	8.77	8.32	33.98	21.99	2.54	20
WSR03	20220108	Sunny	Moderate	Mid-Flood	B	7.2	10:23	8.77	8.31	34.04	21.88	3.03	13
WSR03	20220108	Sunny	Moderate	Mid-Flood	B	7.2	10:23	8.8	8.26	33.91	21.93	2.6	13
WSR03	20220111	Sunny	Moderate	Mid-Flood	S	1	18:27	8.91	8.38	34.39	20.23	2.88	4
WSR03	20220111	Sunny	Moderate	Mid-Flood	S	1	18:27	8.91	8.32	34.16	20.21	3.25	6
WSR03	20220111	Sunny	Moderate	Mid-Flood	M	3.75	18:26	8.71	8.34	34.39	20.29	2.83	3
WSR03	20220111	Sunny	Moderate	Mid-Flood	M	3.75	18:26	8.87	8.34	34.24	20.32	2.82	4

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	H	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR03	20220111	Sunny	Moderate	Mid-Flood	B	6.5	18:25	8.81	8.34	34.15	20.28	2.24	13
WSR03	20220111	Sunny	Moderate	Mid-Flood	B	6.5	18:25	9.02	8.39	34.22	20.22	2.6	13
WSR03	20220113	Cloudy	Moderate	Mid-Flood	S	1	13:54	8.5	8.3	32.46	20.77	3.5	4
WSR03	20220113	Cloudy	Moderate	Mid-Flood	S	1	13:54	8.53	8.33	32.34	20.63	3.6	3
WSR03	20220113	Cloudy	Moderate	Mid-Flood	M	3.8	13:53	8.53	8.21	32.43	20.63	3.2	7
WSR03	20220113	Cloudy	Moderate	Mid-Flood	M	3.8	13:53	8.63	8.36	32.44	20.66	3.68	7
WSR03	20220113	Cloudy	Moderate	Mid-Flood	B	6.6	13:52	8.62	8.37	32.34	20.72	2.68	3
WSR03	20220113	Cloudy	Moderate	Mid-Flood	B	6.6	13:52	8.64	8.34	32.43	20.66	3.02	3
WSR03	20220115	Cloudy	Moderate	Mid-Flood	S	1	15:06	8.96	8.21	34.58	21.27	2.97	2.5
WSR03	20220115	Cloudy	Moderate	Mid-Flood	S	1	15:06	9.01	8.2	34.59	21.28	3.33	2.5
WSR03	20220115	Cloudy	Moderate	Mid-Flood	M	3.8	15:05	8.95	8.16	34.6	21.29	3.26	5
WSR03	20220115	Cloudy	Moderate	Mid-Flood	M	3.8	15:05	8.99	8.19	34.59	21.17	3.31	5
WSR03	20220115	Cloudy	Moderate	Mid-Flood	B	6.6	15:04	8.94	8.19	34.55	21.23	3.28	2.5
WSR03	20220115	Cloudy	Moderate	Mid-Flood	B	6.6	15:04	8.94	8.18	34.6	21.14	2.8	2.5
WSR03	20220118	Cloudy	Moderate	Mid-Flood	S	1	16:26	8.09	8.16	33.09	20.6	3	7
WSR03	20220118	Cloudy	Moderate	Mid-Flood	S	1	16:26	8.13	8.06	33.21	20.57	3.03	7
WSR03	20220118	Cloudy	Moderate	Mid-Flood	M	4.25	16:25	8.07	8.08	33.17	20.57	2.8	5
WSR03	20220118	Cloudy	Moderate	Mid-Flood	M	4.25	16:25	8.09	8.09	33.17	20.55	2.86	8
WSR03	20220118	Cloudy	Moderate	Mid-Flood	B	7.5	16:24	8.16	8.05	33.2	20.64	2.51	5
WSR03	20220118	Cloudy	Moderate	Mid-Flood	B	7.5	16:24	8.09	8.09	33.18	20.61	2.68	7
WSR03	20220120	Sunny	Moderate	Mid-Flood	S	1	8:48	8.45	8.23	34.42	20.94	3.54	4
WSR03	20220120	Sunny	Moderate	Mid-Flood	S	1	8:48	8.34	8.27	34.17	20.83	3.4	3
WSR03	20220120	Sunny	Moderate	Mid-Flood	M	3.85	8:47	8.51	8.25	34.42	20.86	3.15	5
WSR03	20220120	Sunny	Moderate	Mid-Flood	M	3.85	8:47	8.35	8.24	34.24	20.89	3.67	6
WSR03	20220120	Sunny	Moderate	Mid-Flood	B	6.7	8:46	8.48	8.28	34.29	20.84	3.48	4
WSR03	20220120	Sunny	Moderate	Mid-Flood	B	6.7	8:46	8.53	8.25	34.17	20.88	3.16	5

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	H	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR03	20220122	Cloudy	Moderate	Mid-Flood	S	1	8:53	8.8	8.36	33.48	21.23	3.32	3
WSR03	20220122	Cloudy	Moderate	Mid-Flood	S	1	8:53	8.79	8.35	33.53	21.1	2.99	3
WSR03	20220122	Cloudy	Moderate	Mid-Flood	M	3.95	8:52	8.88	8.34	33.49	21.2	3.11	5
WSR03	20220122	Cloudy	Moderate	Mid-Flood	M	3.95	8:52	8.83	8.34	33.53	21.19	2.7	5
WSR03	20220122	Cloudy	Moderate	Mid-Flood	B	6.9	8:51	8.87	8.33	33.56	21.07	2.63	4
WSR03	20220122	Cloudy	Moderate	Mid-Flood	B	6.9	8:51	8.86	8.33	33.51	21.08	2.89	4
WSR03	20220125	Cloudy	Moderate	Mid-Flood	S	1	10:51	8.94	8.26	31.09	21.05	3.63	5
WSR03	20220125	Cloudy	Moderate	Mid-Flood	S	1	10:51	8.98	8.16	31.18	21.09	3.78	4
WSR03	20220125	Cloudy	Moderate	Mid-Flood	M	3.8	10:50	8.89	8.22	31.23	21.02	3.45	6
WSR03	20220125	Cloudy	Moderate	Mid-Flood	M	3.8	10:50	9.02	8.26	31.25	21.02	3.02	5
WSR03	20220125	Cloudy	Moderate	Mid-Flood	B	6.6	10:49	8.9	8.16	31.21	21.03	3.2	4
WSR03	20220125	Cloudy	Moderate	Mid-Flood	B	6.6	10:49	9.03	8.24	31.09	21.11	3.18	3
WSR03	20220127	Cloudy	Moderate	Mid-Flood	S	1	12:23	8.8	8.22	31.32	20.8	2	5
WSR03	20220127	Cloudy	Moderate	Mid-Flood	S	1	12:23	8.84	8.24	31.4	20.7	2.28	4
WSR03	20220127	Cloudy	Moderate	Mid-Flood	M	3.7	12:22	8.85	8.17	31.31	20.76	2.55	6
WSR03	20220127	Cloudy	Moderate	Mid-Flood	M	3.7	12:22	8.78	8.22	31.35	20.71	2.26	3
WSR03	20220127	Cloudy	Moderate	Mid-Flood	B	6.4	12:21	8.76	8.18	31.32	20.74	2.27	3
WSR03	20220127	Cloudy	Moderate	Mid-Flood	B	6.4	12:21	8.8	8.15	31.38	20.84	2.65	4
WSR03	20220129	Cloudy	Moderate	Mid-Flood	S	1	14:10	9.25	8.08	31.41	20.31	2.88	6
WSR03	20220129	Cloudy	Moderate	Mid-Flood	S	1	14:10	9.33	8.06	31.53	20.47	2.43	4
WSR03	20220129	Cloudy	Moderate	Mid-Flood	M	4.25	14:09	9.23	8.06	31.49	20.3	2.21	5
WSR03	20220129	Cloudy	Moderate	Mid-Flood	M	4.25	14:09	9.24	8.05	31.48	20.45	2.27	5
WSR03	20220129	Cloudy	Moderate	Mid-Flood	B	7.5	14:08	9.32	8.16	31.42	20.36	1.68	5
WSR03	20220129	Cloudy	Moderate	Mid-Flood	B	7.5	14:08	9.29	8.11	31.48	20.47	1.68	3
WSR03	20220131	Cloudy	Moderate	Mid-Flood	S	1	16:03	8.85	7.94	33.71	19.96	2.89	21
WSR03	20220131	Cloudy	Moderate	Mid-Flood	S	1	16:03	8.89	7.99	33.65	19.92	2.48	22

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	H	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR03	20220131	Cloudy	Moderate	Mid-Flood	M	3.8	16:02	8.82	8.01	33.65	19.93	2.25	9
WSR03	20220131	Cloudy	Moderate	Mid-Flood	M	3.8	16:02	8.85	8	33.7	19.94	2.37	9
WSR03	20220131	Cloudy	Moderate	Mid-Flood	B	6.6	16:01	8.85	7.95	33.67	19.94	2.31	4
WSR03	20220131	Cloudy	Moderate	Mid-Flood	B	6.6	16:01	8.82	7.99	33.71	19.97	1.93	3
WSR04	20220101	Cloudy	Moderate	Mid-Flood	S	1	15:40	8.51	8.36	31.5	22.35	2.87	9
WSR04	20220101	Cloudy	Moderate	Mid-Flood	S	1	15:40	8.65	8.28	31.48	22.34	2.87	7
WSR04	20220101	Cloudy	Moderate	Mid-Flood	M	3.8	15:39	8.62	8.35	31.56	22.45	2.19	5
WSR04	20220101	Cloudy	Moderate	Mid-Flood	M	3.8	15:39	8.49	8.3	31.39	22.33	2.57	6
WSR04	20220101	Cloudy	Moderate	Mid-Flood	B	6.6	15:38	8.51	8.28	31.5	22.35	1.81	5
WSR04	20220101	Cloudy	Moderate	Mid-Flood	B	6.6	15:38	8.51	8.29	31.5	22.39	1.79	5
WSR04	20220104	Sunny	Moderate	Mid-Flood	S	1	9:04	8.26	8.24	31.8	22.4	1.95	7
WSR04	20220104	Sunny	Moderate	Mid-Flood	S	1	9:04	8.34	8.32	31.77	22.33	1.87	7
WSR04	20220104	Sunny	Moderate	Mid-Flood	M	3.6	9:03	8.03	8.28	31.89	22.32	1.94	3
WSR04	20220104	Sunny	Moderate	Mid-Flood	M	3.6	9:03	7.98	8.25	31.77	22.21	2.16	4
WSR04	20220104	Sunny	Moderate	Mid-Flood	B	6.2	9:02	7.98	8.31	31.83	22.31	2.33	3
WSR04	20220104	Sunny	Moderate	Mid-Flood	B	6.2	9:02	8.18	8.3	31.82	22.18	2.21	3
WSR04	20220106	Sunny	Moderate	Mid-Flood	S	1	9:18	8.99	8.3	32.12	22.37	3.44	2.5
WSR04	20220106	Sunny	Moderate	Mid-Flood	S	1	9:18	8.91	8.32	32.08	22.48	3.58	3
WSR04	20220106	Sunny	Moderate	Mid-Flood	M	3.35	9:17	8.91	8.33	32.11	22.28	2.92	3
WSR04	20220106	Sunny	Moderate	Mid-Flood	M	3.35	9:17	8.98	8.32	31.96	22.39	3.07	3
WSR04	20220106	Sunny	Moderate	Mid-Flood	B	5.7	9:16	8.96	8.35	32.07	22.26	2.71	4
WSR04	20220106	Sunny	Moderate	Mid-Flood	B	5.7	9:16	8.97	8.31	31.99	22.27	2.64	7
WSR04	20220108	Sunny	Moderate	Mid-Flood	S	1	10:38	9	8.29	34.91	21.9	2.95	19
WSR04	20220108	Sunny	Moderate	Mid-Flood	S	1	10:38	9	8.3	34.87	21.97	2.59	19
WSR04	20220108	Sunny	Moderate	Mid-Flood	M	3.85	10:37	9.04	8.33	34.87	21.89	2.25	4
WSR04	20220108	Sunny	Moderate	Mid-Flood	M	3.85	10:37	9.06	8.28	34.86	21.97	2.41	4

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	H	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR04	20220108	Sunny	Moderate	Mid-Flood	B	6.7	10:36	9.06	8.37	34.8	22	3.04	36
WSR04	20220108	Sunny	Moderate	Mid-Flood	B	6.7	10:36	9.05	8.32	34.89	21.9	3.21	36
WSR04	20220111	Sunny	Moderate	Mid-Flood	S	1	18:38	9.51	8.34	35.32	20.4	2.99	4
WSR04	20220111	Sunny	Moderate	Mid-Flood	S	1	18:38	9.4	8.29	35.32	20.45	3.08	5
WSR04	20220111	Sunny	Moderate	Mid-Flood	M	3.65	18:37	9.36	8.35	35.13	20.45	2.8	3
WSR04	20220111	Sunny	Moderate	Mid-Flood	M	3.65	18:37	9.32	8.31	35.21	20.44	3.14	4
WSR04	20220111	Sunny	Moderate	Mid-Flood	B	6.3	18:36	9.51	8.32	35.28	20.39	2.46	7
WSR04	20220111	Sunny	Moderate	Mid-Flood	B	6.3	18:36	9.53	8.3	35.15	20.38	2.33	5
WSR04	20220113	Cloudy	Moderate	Mid-Flood	S	1	14:08	9.04	8.32	32.33	20.59	3.08	3
WSR04	20220113	Cloudy	Moderate	Mid-Flood	S	1	14:08	8.36	8.35	32.31	20.54	3.08	3
WSR04	20220113	Cloudy	Moderate	Mid-Flood	M	3.45	14:07	8.78	8.3	32.3	20.5	2.75	3
WSR04	20220113	Cloudy	Moderate	Mid-Flood	M	3.45	14:07	8.99	8.3	32.27	20.58	2.83	2.5
WSR04	20220113	Cloudy	Moderate	Mid-Flood	B	5.9	14:06	8.54	8.36	32.21	20.52	2.58	3
WSR04	20220113	Cloudy	Moderate	Mid-Flood	B	5.9	14:06	8.66	8.33	32.24	20.47	2.89	3
WSR04	20220115	Cloudy	Moderate	Mid-Flood	S	1	15:20	8.52	8.12	33.45	21.16	2.83	2.5
WSR04	20220115	Cloudy	Moderate	Mid-Flood	S	1	15:20	8.55	8.12	33.52	21.11	2.92	2.5
WSR04	20220115	Cloudy	Moderate	Mid-Flood	M	3.75	15:19	8.49	8.18	33.5	21.16	2.28	3
WSR04	20220115	Cloudy	Moderate	Mid-Flood	M	3.75	15:19	8.61	8.17	33.54	21.06	2.36	2.5
WSR04	20220115	Cloudy	Moderate	Mid-Flood	B	6.5	15:18	8.54	8.12	33.51	21.01	2.43	3
WSR04	20220115	Cloudy	Moderate	Mid-Flood	B	6.5	15:18	8.62	8.17	33.6	21.11	2.84	2.5
WSR04	20220118	Cloudy	Moderate	Mid-Flood	S	1	16:37	8.67	8.29	33.23	20.59	2.69	16
WSR04	20220118	Cloudy	Moderate	Mid-Flood	S	1	16:37	8.72	8.27	33.14	20.71	2.87	15
WSR04	20220118	Cloudy	Moderate	Mid-Flood	M	3.9	16:36	8.63	8.29	33.1	20.81	3.02	5
WSR04	20220118	Cloudy	Moderate	Mid-Flood	M	3.9	16:36	8.65	8.21	33.23	20.78	3.04	5
WSR04	20220118	Cloudy	Moderate	Mid-Flood	B	6.8	16:35	8.62	8.3	33.21	20.66	2.27	7
WSR04	20220118	Cloudy	Moderate	Mid-Flood	B	6.8	16:35	8.68	8.19	33.11	20.79	2.56	5

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	H	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR04	20220120	Sunny	Moderate	Mid-Flood	S	1	8:59	8.36	8.11	33.31	20.86	3.39	5
WSR04	20220120	Sunny	Moderate	Mid-Flood	S	1	8:59	8.29	8.1	33.15	20.86	3.1	5
WSR04	20220120	Sunny	Moderate	Mid-Flood	M	3.5	8:58	8.3	8.11	33.17	20.83	2.66	5
WSR04	20220120	Sunny	Moderate	Mid-Flood	M	3.5	8:58	8.32	8.15	33.13	20.83	3.04	6
WSR04	20220120	Sunny	Moderate	Mid-Flood	B	6	8:57	8.2	8.06	33.34	20.8	3.13	5
WSR04	20220120	Sunny	Moderate	Mid-Flood	B	6	8:57	8.26	8.08	33.16	20.85	2.68	5
WSR04	20220122	Cloudy	Moderate	Mid-Flood	S	1	9:04	8.73	8.15	33.71	21.37	2.91	8
WSR04	20220122	Cloudy	Moderate	Mid-Flood	S	1	9:04	8.67	8.14	33.71	21.27	3.36	7
WSR04	20220122	Cloudy	Moderate	Mid-Flood	M	3.75	9:03	8.69	8.16	33.65	21.25	2.95	12
WSR04	20220122	Cloudy	Moderate	Mid-Flood	M	3.75	9:03	8.75	8.15	33.87	21.3	2.99	14
WSR04	20220122	Cloudy	Moderate	Mid-Flood	B	6.5	9:02	8.73	8.2	33.7	21.23	2.4	13
WSR04	20220122	Cloudy	Moderate	Mid-Flood	B	6.5	9:02	8.7	8.19	33.76	21.37	2.84	10
WSR04	20220125	Cloudy	Moderate	Mid-Flood	S	1	11:02	8.74	8.12	31.14	21.05	3.44	5
WSR04	20220125	Cloudy	Moderate	Mid-Flood	S	1	11:02	8.7	8.16	31.01	21.07	3.82	5
WSR04	20220125	Cloudy	Moderate	Mid-Flood	M	3.4	11:01	8.74	8.13	30.95	20.92	3.56	3
WSR04	20220125	Cloudy	Moderate	Mid-Flood	M	3.4	11:01	8.74	8.25	31.15	21	3.59	3
WSR04	20220125	Cloudy	Moderate	Mid-Flood	B	5.8	11:00	8.78	8.12	31.02	21.04	3.52	4
WSR04	20220125	Cloudy	Moderate	Mid-Flood	B	5.8	11:00	8.76	8.2	31.04	20.95	3.46	4
WSR04	20220127	Cloudy	Moderate	Mid-Flood	S	1	12:36	8.82	8.06	30.86	21.06	2.71	4
WSR04	20220127	Cloudy	Moderate	Mid-Flood	S	1	12:36	8.86	8	30.94	21.11	2.45	5
WSR04	20220127	Cloudy	Moderate	Mid-Flood	M	3.7	12:35	8.82	8	30.94	20.99	2.42	6
WSR04	20220127	Cloudy	Moderate	Mid-Flood	M	3.7	12:35	8.87	8	30.89	21.07	2.7	6
WSR04	20220127	Cloudy	Moderate	Mid-Flood	B	6.4	12:34	8.84	7.99	30.87	21.04	2.26	4
WSR04	20220127	Cloudy	Moderate	Mid-Flood	B	6.4	12:34	8.79	7.99	30.93	21	2.61	6
WSR04	20220129	Cloudy	Moderate	Mid-Flood	S	1	14:22	9.51	8.2	30.66	20.36	2.46	5
WSR04	20220129	Cloudy	Moderate	Mid-Flood	S	1	14:22	9.62	8.27	30.6	20.39	2.73	4

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	H	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR04	20220129	Cloudy	Moderate	Mid-Flood	M	3.4	14:21	9.6	8.24	30.65	20.42	2.45	6
WSR04	20220129	Cloudy	Moderate	Mid-Flood	M	3.4	14:21	9.54	8.29	30.73	20.41	2.9	6
WSR04	20220129	Cloudy	Moderate	Mid-Flood	B	5.8	14:20	9.6	8.2	30.58	20.27	2.54	4
WSR04	20220129	Cloudy	Moderate	Mid-Flood	B	5.8	14:20	9.49	8.25	30.59	20.31	2.83	5
WSR04	20220131	Cloudy	Moderate	Mid-Flood	S	1	16:16	8.72	7.98	33.51	20.03	2.59	12
WSR04	20220131	Cloudy	Moderate	Mid-Flood	S	1	16:16	8.82	8.06	33.55	20.05	2.88	12
WSR04	20220131	Cloudy	Moderate	Mid-Flood	M	3.4	16:15	8.69	8.02	33.65	20.02	2.87	3
WSR04	20220131	Cloudy	Moderate	Mid-Flood	M	3.4	16:15	8.65	8.01	33.46	20.05	2.95	4
WSR04	20220131	Cloudy	Moderate	Mid-Flood	B	5.8	16:14	8.82	8.04	33.52	20.06	2.04	3
WSR04	20220131	Cloudy	Moderate	Mid-Flood	B	5.8	16:14	8.73	8.04	33.62	20.03	2.15	3
WSR16	20220101	Cloudy	Moderate	Mid-Flood	S	1	16:42	9	8.21	31.29	22.49	2.31	14
WSR16	20220101	Cloudy	Moderate	Mid-Flood	S	1	16:42	8.88	8.25	31.32	22.51	2.47	14
WSR16	20220101	Cloudy	Moderate	Mid-Flood	M	8.55	16:41	9.01	8.24	31.24	22.42	2.12	9
WSR16	20220101	Cloudy	Moderate	Mid-Flood	M	8.55	16:41	9	8.27	31.21	22.39	1.89	5
WSR16	20220101	Cloudy	Moderate	Mid-Flood	B	16.1	16:40	8.95	8.17	31.3	22.41	1.67	4
WSR16	20220101	Cloudy	Moderate	Mid-Flood	B	16.1	16:40	8.87	8.17	31.32	22.35	1.68	4
WSR16	20220104	Sunny	Moderate	Mid-Flood	S	1	10:07	8.43	8.32	31.84	22.33	2.16	3
WSR16	20220104	Sunny	Moderate	Mid-Flood	S	1	10:07	8.55	8.31	31.81	22.42	2.38	3
WSR16	20220104	Sunny	Moderate	Mid-Flood	M	7.75	10:06	8.46	8.36	31.88	22.34	2.73	4
WSR16	20220104	Sunny	Moderate	Mid-Flood	M	7.75	10:06	8.44	8.38	31.79	22.49	2.38	8
WSR16	20220104	Sunny	Moderate	Mid-Flood	B	14.5	10:05	8.63	8.34	31.83	22.46	2.5	5
WSR16	20220104	Sunny	Moderate	Mid-Flood	B	14.5	10:05	8.58	8.37	31.91	22.34	2.12	6
WSR16	20220106	Sunny	Moderate	Mid-Flood	S	1	10:23	8.81	8.42	32.46	22.73	2.79	4
WSR16	20220106	Sunny	Moderate	Mid-Flood	S	1	10:23	8.88	8.44	32.3	22.67	2.84	3
WSR16	20220106	Sunny	Moderate	Mid-Flood	M	8.15	10:22	8.92	8.46	32.26	22.77	3.05	4
WSR16	20220106	Sunny	Moderate	Mid-Flood	M	8.15	10:22	8.86	8.41	32.35	22.89	2.78	3

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	H	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR16	20220106	Sunny	Moderate	Mid-Flood	B	15.3	10:21	8.79	8.45	32.27	22.92	2.75	3
WSR16	20220106	Sunny	Moderate	Mid-Flood	B	15.3	10:21	8.81	8.41	32.4	22.63	2.7	3
WSR16	20220108	Sunny	Moderate	Mid-Flood	S	1	11:39	8.32	8.34	33.96	22.08	2.84	3
WSR16	20220108	Sunny	Moderate	Mid-Flood	S	1	11:39	8.27	8.33	33.99	22.02	3	4
WSR16	20220108	Sunny	Moderate	Mid-Flood	M	7.7	11:38	8.3	8.38	34.08	22.06	2.83	18
WSR16	20220108	Sunny	Moderate	Mid-Flood	M	7.7	11:38	8.24	8.34	34	22.08	2.37	18
WSR16	20220108	Sunny	Moderate	Mid-Flood	B	14.4	11:37	8.29	8.38	34.04	22.09	1.99	5
WSR16	20220108	Sunny	Moderate	Mid-Flood	B	14.4	11:37	8.3	8.33	34.03	22.02	2.32	6
WSR16	20220111	Sunny	Moderate	Mid-Flood	S	1	19:41	9.77	8.28	34.41	20.31	2.19	5
WSR16	20220111	Sunny	Moderate	Mid-Flood	S	1	19:41	9.73	8.25	34.31	20.44	2.36	5
WSR16	20220111	Sunny	Moderate	Mid-Flood	M	8.15	19:40	9.59	8.29	34.41	20.29	2.59	5
WSR16	20220111	Sunny	Moderate	Mid-Flood	M	8.15	19:40	9.53	8.29	34.47	20.27	2.35	8
WSR16	20220111	Sunny	Moderate	Mid-Flood	B	15.3	19:39	9.83	8.21	34.29	20.44	1.79	6
WSR16	20220111	Sunny	Moderate	Mid-Flood	B	15.3	19:39	9.56	8.29	34.3	20.42	1.68	6
WSR16	20220113	Cloudy	Moderate	Mid-Flood	S	1	15:09	8.96	8.29	32.44	20.61	4.12	8
WSR16	20220113	Cloudy	Moderate	Mid-Flood	S	1	15:09	8.85	8.25	32.52	20.74	3.87	8
WSR16	20220113	Cloudy	Moderate	Mid-Flood	M	8.4	15:08	8.85	8.32	32.45	20.75	3.85	3
WSR16	20220113	Cloudy	Moderate	Mid-Flood	M	8.4	15:08	8.79	8.3	32.54	20.66	3.71	3
WSR16	20220113	Cloudy	Moderate	Mid-Flood	B	15.8	15:07	8.79	8.35	32.46	20.59	3.4	2.5
WSR16	20220113	Cloudy	Moderate	Mid-Flood	B	15.8	15:07	8.83	8.33	32.53	20.63	2.98	3
WSR16	20220115	Cloudy	Moderate	Mid-Flood	S	1	16:27	8.32	8.26	33.6	20.97	3.77	3
WSR16	20220115	Cloudy	Moderate	Mid-Flood	S	1	16:27	8.3	8.26	33.54	20.94	3.79	2.5
WSR16	20220115	Cloudy	Moderate	Mid-Flood	M	8.25	16:26	8.33	8.25	33.48	21.06	3.39	4
WSR16	20220115	Cloudy	Moderate	Mid-Flood	M	8.25	16:26	8.38	8.25	33.5	21.07	2.87	2.5
WSR16	20220115	Cloudy	Moderate	Mid-Flood	B	15.5	16:25	8.34	8.27	33.52	20.96	3.06	2.5
WSR16	20220115	Cloudy	Moderate	Mid-Flood	B	15.5	16:25	8.37	8.24	33.52	21.01	2.57	2.5

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	H	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR16	20220118	Cloudy	Moderate	Mid-Flood	S	1	17:35	8.66	8.24	34.08	21.03	2.59	5
WSR16	20220118	Cloudy	Moderate	Mid-Flood	S	1	17:35	8.7	8.24	34.03	20.52	2.56	7
WSR16	20220118	Cloudy	Moderate	Mid-Flood	M	8.55	17:34	8.56	8.22	34.09	21.14	2.32	12
WSR16	20220118	Cloudy	Moderate	Mid-Flood	M	8.55	17:34	8.56	8.2	34.04	21.06	2.69	12
WSR16	20220118	Cloudy	Moderate	Mid-Flood	B	16.1	17:33	8.56	8.18	34.08	20.52	2.25	7
WSR16	20220118	Cloudy	Moderate	Mid-Flood	B	16.1	17:33	8.63	8.16	34	21.04	2.19	7
WSR16	20220120	Sunny	Moderate	Mid-Flood	S	1	10:02	8.35	8.31	33.99	20.65	3.43	4
WSR16	20220120	Sunny	Moderate	Mid-Flood	S	1	10:02	8.4	8.29	33.86	20.78	3.47	5
WSR16	20220120	Sunny	Moderate	Mid-Flood	M	7.95	10:01	8.33	8.29	33.83	20.71	3.43	6
WSR16	20220120	Sunny	Moderate	Mid-Flood	M	7.95	10:01	8.41	8.29	33.8	20.7	3.7	7
WSR16	20220120	Sunny	Moderate	Mid-Flood	B	14.9	10:00	8.29	8.25	33.99	20.68	2.8	6
WSR16	20220120	Sunny	Moderate	Mid-Flood	B	14.9	10:00	8.34	8.3	33.92	20.71	2.98	5
WSR16	20220122	Cloudy	Moderate	Mid-Flood	S	1	10:04	8.63	8.3	33.32	20.76	3	4
WSR16	20220122	Cloudy	Moderate	Mid-Flood	S	1	10:04	8.62	8.3	33.44	20.7	2.88	4
WSR16	20220122	Cloudy	Moderate	Mid-Flood	M	7.95	10:03	8.62	8.31	33.4	20.79	2.87	3
WSR16	20220122	Cloudy	Moderate	Mid-Flood	M	7.95	10:03	8.64	8.25	33.35	20.78	2.64	4
WSR16	20220122	Cloudy	Moderate	Mid-Flood	B	14.9	10:02	8.68	8.3	33.35	20.78	2.39	4
WSR16	20220122	Cloudy	Moderate	Mid-Flood	B	14.9	10:02	8.72	8.29	33.34	20.81	2.31	6
WSR16	20220125	Cloudy	Moderate	Mid-Flood	S	1	12:02	8.81	8.12	30.56	21.04	3.36	3
WSR16	20220125	Cloudy	Moderate	Mid-Flood	S	1	12:02	8.79	8.14	30.58	21.06	3.45	3
WSR16	20220125	Cloudy	Moderate	Mid-Flood	M	8.5	12:01	8.91	8.09	30.47	21	3.07	3
WSR16	20220125	Cloudy	Moderate	Mid-Flood	M	8.5	12:01	8.84	8.06	30.56	21.11	3.29	3
WSR16	20220125	Cloudy	Moderate	Mid-Flood	B	16	12:00	8.88	8.11	30.6	21.09	3.45	2.5
WSR16	20220125	Cloudy	Moderate	Mid-Flood	B	16	12:00	8.9	8.18	30.57	21.15	3.03	3
WSR16	20220127	Cloudy	Moderate	Mid-Flood	S	1	13:40	8.62	8.09	31.82	21.31	2.92	3
WSR16	20220127	Cloudy	Moderate	Mid-Flood	S	1	13:40	8.58	8.07	31.78	21.25	2.93	3

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	H	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR16	20220127	Cloudy	Moderate	Mid-Flood	M	7.7	13:39	8.53	8.12	31.75	21.22	2.29	5
WSR16	20220127	Cloudy	Moderate	Mid-Flood	M	7.7	13:39	8.66	8.14	31.74	21.21	2.35	7
WSR16	20220127	Cloudy	Moderate	Mid-Flood	B	14.4	13:38	8.62	8.06	31.74	21.3	2.28	4
WSR16	20220127	Cloudy	Moderate	Mid-Flood	B	14.4	13:38	8.57	8.12	31.82	21.18	2.31	5
WSR16	20220129	Cloudy	Moderate	Mid-Flood	S	1	15:26	9.37	8.27	31.17	20.42	2.81	4
WSR16	20220129	Cloudy	Moderate	Mid-Flood	S	1	15:26	9.43	8.28	31.16	20.5	2.79	3
WSR16	20220129	Cloudy	Moderate	Mid-Flood	M	8	15:25	9.36	8.24	31.19	20.45	2.89	4
WSR16	20220129	Cloudy	Moderate	Mid-Flood	M	8	15:25	9.29	8.24	31.18	20.55	2.9	5
WSR16	20220129	Cloudy	Moderate	Mid-Flood	B	15	15:24	9.41	8.24	31.19	20.44	1.9	3
WSR16	20220129	Cloudy	Moderate	Mid-Flood	B	15	15:24	9.29	8.21	31.37	20.47	2.11	4
WSR16	20220131	Cloudy	Moderate	Mid-Flood	S	1	17:20	8.04	8.09	33.15	19.89	2.67	11
WSR16	20220131	Cloudy	Moderate	Mid-Flood	S	1	17:20	8.1	8.06	33.28	19.88	2.84	11
WSR16	20220131	Cloudy	Moderate	Mid-Flood	M	7.6	17:19	8.09	8.11	33.31	19.86	2.43	4
WSR16	20220131	Cloudy	Moderate	Mid-Flood	M	7.6	17:19	8.07	8.13	33.3	19.85	2.63	5
WSR16	20220131	Cloudy	Moderate	Mid-Flood	B	14.2	17:18	8.05	8.1	33.28	19.92	2.41	3
WSR16	20220131	Cloudy	Moderate	Mid-Flood	B	14.2	17:18	8	8.1	33.12	19.85	2.43	2.5
WSR33	20220101	Cloudy	Moderate	Mid-Flood	S	1	15:53	8.72	8.18	31.1	22.2	2.29	4
WSR33	20220101	Cloudy	Moderate	Mid-Flood	S	1	15:53	8.7	8.21	30.98	22.12	1.95	4
WSR33	20220101	Cloudy	Moderate	Mid-Flood	M	3.8	15:52	8.66	8.26	31.06	22.25	2.3	3
WSR33	20220101	Cloudy	Moderate	Mid-Flood	M	3.8	15:52	8.87	8.23	31.04	22.12	2.6	4
WSR33	20220101	Cloudy	Moderate	Mid-Flood	B	6.6	15:51	8.79	8.17	31.1	22.15	2.3	5
WSR33	20220101	Cloudy	Moderate	Mid-Flood	B	6.6	15:51	8.78	8.21	31.03	22.07	1.99	4
WSR33	20220104	Sunny	Moderate	Mid-Flood	S	1	9:18	9	8.39	31.88	22.57	2.46	5
WSR33	20220104	Sunny	Moderate	Mid-Flood	S	1	9:18	8.96	8.4	31.78	22.47	2.09	4
WSR33	20220104	Sunny	Moderate	Mid-Flood	M	3.7	9:17	8.86	8.44	31.84	22.51	1.96	7
WSR33	20220104	Sunny	Moderate	Mid-Flood	M	3.7	9:17	8.83	8.4	31.82	22.38	2.26	6

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	H	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR33	20220104	Sunny	Moderate	Mid-Flood	B	6.4	9:16	8.81	8.44	31.91	22.48	2.08	8
WSR33	20220104	Sunny	Moderate	Mid-Flood	B	6.4	9:16	8.72	8.37	31.91	22.55	2.36	8
WSR33	20220106	Sunny	Moderate	Mid-Flood	S	1	9:32	8.52	8.29	32.02	22.5	3.53	3
WSR33	20220106	Sunny	Moderate	Mid-Flood	S	1	9:32	8.36	8.31	32.22	22.46	3.88	3
WSR33	20220106	Sunny	Moderate	Mid-Flood	M	3.65	9:31	8.53	8.25	32.13	22.37	3.88	2.5
WSR33	20220106	Sunny	Moderate	Mid-Flood	M	3.65	9:31	8.44	8.24	32.13	22.32	3.73	3
WSR33	20220106	Sunny	Moderate	Mid-Flood	B	6.3	9:30	8.4	8.27	32.07	22.46	3.78	3
WSR33	20220106	Sunny	Moderate	Mid-Flood	B	6.3	9:30	8.51	8.31	32.23	22.26	3.79	3
WSR33	20220108	Sunny	Moderate	Mid-Flood	S	1	10:52	8.23	8.47	34.24	21.81	3.25	5
WSR33	20220108	Sunny	Moderate	Mid-Flood	S	1	10:52	8.24	8.47	34.23	21.75	2.73	6
WSR33	20220108	Sunny	Moderate	Mid-Flood	M	3.6	10:51	8.27	8.44	34.17	21.8	2.44	6
WSR33	20220108	Sunny	Moderate	Mid-Flood	M	3.6	10:51	8.3	8.43	34.26	21.82	2.84	5
WSR33	20220108	Sunny	Moderate	Mid-Flood	B	6.2	10:50	8.26	8.46	34.17	21.81	2.4	5
WSR33	20220108	Sunny	Moderate	Mid-Flood	B	6.2	10:50	8.28	8.47	34.25	21.78	2.22	5
WSR33	20220111	Sunny	Moderate	Mid-Flood	S	1	18:52	8.74	8.39	34.19	20.14	2.95	5
WSR33	20220111	Sunny	Moderate	Mid-Flood	S	1	18:52	8.91	8.31	34.25	20.22	2.92	8
WSR33	20220111	Sunny	Moderate	Mid-Flood	M	3.75	18:51	8.89	8.38	34.32	20.24	2.17	4
WSR33	20220111	Sunny	Moderate	Mid-Flood	M	3.75	18:51	8.89	8.34	34.32	20.23	2.33	5
WSR33	20220111	Sunny	Moderate	Mid-Flood	B	6.5	18:50	8.78	8.39	34.33	20.21	2.42	5
WSR33	20220111	Sunny	Moderate	Mid-Flood	B	6.5	18:50	8.97	8.33	34.1	20.24	2.44	5
WSR33	20220113	Cloudy	Moderate	Mid-Flood	S	1	14:22	8.38	8.29	32.22	20.54	4.25	2.5
WSR33	20220113	Cloudy	Moderate	Mid-Flood	S	1	14:22	8.41	8.29	32.24	20.55	4.11	2.5
WSR33	20220113	Cloudy	Moderate	Mid-Flood	M	3.65	14:21	8.24	8.38	32.31	20.56	3.44	2.5
WSR33	20220113	Cloudy	Moderate	Mid-Flood	M	3.65	14:21	8.32	8.36	32.32	20.57	4.1	3
WSR33	20220113	Cloudy	Moderate	Mid-Flood	B	6.3	14:20	8.41	8.3	32.21	20.55	3.35	3
WSR33	20220113	Cloudy	Moderate	Mid-Flood	B	6.3	14:20	8.34	8.3	32.32	20.46	3.83	3

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	H	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR33	20220115	Cloudy	Moderate	Mid-Flood	S	1	15:35	8.35	8.32	33.79	20.85	3.56	2.5
WSR33	20220115	Cloudy	Moderate	Mid-Flood	S	1	15:35	8.24	8.29	33.73	20.96	3.62	3
WSR33	20220115	Cloudy	Moderate	Mid-Flood	M	3.65	15:34	8.33	8.32	33.85	20.88	3.29	4
WSR33	20220115	Cloudy	Moderate	Mid-Flood	M	3.65	15:34	8.29	8.28	33.85	20.99	3.29	3
WSR33	20220115	Cloudy	Moderate	Mid-Flood	B	6.3	15:33	8.27	8.28	33.89	20.94	2.88	3
WSR33	20220115	Cloudy	Moderate	Mid-Flood	B	6.3	15:33	8.31	8.26	33.89	20.95	3.11	3
WSR33	20220118	Cloudy	Moderate	Mid-Flood	S	1	16:50	8.84	8.11	33.4	20.7	2.64	7
WSR33	20220118	Cloudy	Moderate	Mid-Flood	S	1	16:50	8.89	8.11	33.39	20.75	2.89	7
WSR33	20220118	Cloudy	Moderate	Mid-Flood	M	3.7	16:49	8.91	8.09	33.35	20.77	2.87	2.5
WSR33	20220118	Cloudy	Moderate	Mid-Flood	M	3.7	16:49	8.84	8.08	33.4	20.6	2.86	3
WSR33	20220118	Cloudy	Moderate	Mid-Flood	B	6.4	16:48	9	8.06	33.47	20.71	2.01	6
WSR33	20220118	Cloudy	Moderate	Mid-Flood	B	6.4	16:48	8.94	8.02	33.38	20.73	1.9	6
WSR33	20220120	Sunny	Moderate	Mid-Flood	S	1	9:13	8.04	8.34	33.73	20.91	3.79	5
WSR33	20220120	Sunny	Moderate	Mid-Flood	S	1	9:13	8.01	8.25	33.67	20.88	3.52	5
WSR33	20220120	Sunny	Moderate	Mid-Flood	M	3.75	9:12	8.2	8.34	33.66	20.91	3.66	4
WSR33	20220120	Sunny	Moderate	Mid-Flood	M	3.75	9:12	8.19	8.32	33.73	20.84	3.14	5
WSR33	20220120	Sunny	Moderate	Mid-Flood	B	6.5	9:11	8.02	8.24	33.75	20.89	3.13	5
WSR33	20220120	Sunny	Moderate	Mid-Flood	B	6.5	9:11	8.05	8.34	33.78	20.95	3.16	5
WSR33	20220122	Cloudy	Moderate	Mid-Flood	S	1	9:17	8.4	8.13	33.69	21.26	3.3	6
WSR33	20220122	Cloudy	Moderate	Mid-Flood	S	1	9:17	8.43	8.12	33.53	21.2	3.17	5
WSR33	20220122	Cloudy	Moderate	Mid-Flood	M	3.5	9:16	8.4	8.12	33.55	21.26	3.01	5
WSR33	20220122	Cloudy	Moderate	Mid-Flood	M	3.5	9:16	8.36	8.17	33.54	21.18	3.35	5
WSR33	20220122	Cloudy	Moderate	Mid-Flood	B	6	9:15	8.38	8.18	33.62	21.24	3	5
WSR33	20220122	Cloudy	Moderate	Mid-Flood	B	6	9:15	8.4	8.18	33.61	21.24	3.09	6
WSR33	20220125	Cloudy	Moderate	Mid-Flood	S	1	11:14	8.43	8.18	31.04	20.94	3.45	3
WSR33	20220125	Cloudy	Moderate	Mid-Flood	S	1	11:14	8.54	8.3	31.1	20.95	3.62	3

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	H	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR33	20220125	Cloudy	Moderate	Mid-Flood	M	3.55	11:13	8.54	8.19	31.02	20.88	2.97	2.5
WSR33	20220125	Cloudy	Moderate	Mid-Flood	M	3.55	11:13	8.53	8.21	31.01	20.92	3.02	2.5
WSR33	20220125	Cloudy	Moderate	Mid-Flood	B	6.1	11:12	8.48	8.2	30.96	20.96	2.86	2.5
WSR33	20220125	Cloudy	Moderate	Mid-Flood	B	6.1	11:12	8.35	8.19	30.92	20.86	3	3
WSR33	20220127	Cloudy	Moderate	Mid-Flood	S	1	12:50	8.54	8.17	31.65	20.74	2.61	5
WSR33	20220127	Cloudy	Moderate	Mid-Flood	S	1	12:50	8.43	8.16	31.75	20.63	3.05	4
WSR33	20220127	Cloudy	Moderate	Mid-Flood	M	3.8	12:49	8.52	8.23	31.68	20.71	2.62	3
WSR33	20220127	Cloudy	Moderate	Mid-Flood	M	3.8	12:49	8.53	8.11	31.65	20.65	2.37	5
WSR33	20220127	Cloudy	Moderate	Mid-Flood	B	6.6	12:48	8.48	8.11	31.76	20.75	1.77	3
WSR33	20220127	Cloudy	Moderate	Mid-Flood	B	6.6	12:48	8.53	8.24	31.83	20.76	1.93	4
WSR33	20220129	Cloudy	Moderate	Mid-Flood	S	1	14:37	8.93	8.15	30.59	20.72	3.08	4
WSR33	20220129	Cloudy	Moderate	Mid-Flood	S	1	14:37	8.79	8.14	30.59	20.69	3.55	5
WSR33	20220129	Cloudy	Moderate	Mid-Flood	M	3.75	14:36	8.89	8.25	30.55	20.68	2.8	5
WSR33	20220129	Cloudy	Moderate	Mid-Flood	M	3.75	14:36	8.79	8.17	30.61	20.62	3.24	6
WSR33	20220129	Cloudy	Moderate	Mid-Flood	B	6.5	14:35	8.79	8.24	30.6	20.65	2.31	5
WSR33	20220129	Cloudy	Moderate	Mid-Flood	B	6.5	14:35	8.81	8.14	30.55	20.71	2.35	6
WSR33	20220131	Cloudy	Moderate	Mid-Flood	S	1	16:30	9.03	8.09	34.15	19.94	2.72	2.5
WSR33	20220131	Cloudy	Moderate	Mid-Flood	S	1	16:30	9	8.1	34.13	19.94	3.14	3
WSR33	20220131	Cloudy	Moderate	Mid-Flood	M	3.5	16:29	9.01	8.15	34.33	19.99	2.71	2.5
WSR33	20220131	Cloudy	Moderate	Mid-Flood	M	3.5	16:29	8.93	8.09	34.15	19.97	2.32	3
WSR33	20220131	Cloudy	Moderate	Mid-Flood	B	6	16:28	9.07	8.16	34.12	19.95	2.06	2.5
WSR33	20220131	Cloudy	Moderate	Mid-Flood	B	6	16:28	8.91	8.1	34.19	19.92	1.97	5
WSR36	20220101	Cloudy	Moderate	Mid-Flood	S	1	16:07	9.07	8.49	30.9	22.18	1.46	3
WSR36	20220101	Cloudy	Moderate	Mid-Flood	S	1	16:07	9.11	8.38	31.07	22.12	1.33	5
WSR36	20220101	Cloudy	Moderate	Mid-Flood	M	3.8	16:07	8.94	8.45	30.92	22.13	1.86	5
WSR36	20220101	Cloudy	Moderate	Mid-Flood	M	3.8	16:07	8.99	8.44	30.91	22.04	1.94	4

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	H	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR36	20220101	Cloudy	Moderate	Mid-Flood	B	6.6	16:06	8.95	8.48	31	22.13	1.91	4
WSR36	20220101	Cloudy	Moderate	Mid-Flood	B	6.6	16:06	9.16	8.39	31.02	22.15	2.14	7
WSR36	20220104	Sunny	Moderate	Mid-Flood	S	1	9:31	8.89	8.26	31.78	22.27	2.15	6
WSR36	20220104	Sunny	Moderate	Mid-Flood	S	1	9:31	9.01	8.29	31.77	22.28	2.24	4
WSR36	20220104	Sunny	Moderate	Mid-Flood	M	3.75	9:31	9.05	8.28	31.7	22.1	2.1	8
WSR36	20220104	Sunny	Moderate	Mid-Flood	M	3.75	9:31	8.92	8.32	31.74	22.18	2.3	4
WSR36	20220104	Sunny	Moderate	Mid-Flood	B	6.5	9:30	8.98	8.33	31.77	22.13	1.82	6
WSR36	20220104	Sunny	Moderate	Mid-Flood	B	6.5	9:30	8.83	8.25	31.8	22.18	1.97	6
WSR36	20220106	Sunny	Moderate	Mid-Flood	S	1	10:47	8.28	8.4	32.07	22.49	3.28	3
WSR36	20220106	Sunny	Moderate	Mid-Flood	S	1	10:47	8.27	8.43	32.05	22.62	2.99	4
WSR36	20220106	Sunny	Moderate	Mid-Flood	M	3.6	10:47	8.23	8.44	32.04	22.59	2.56	3
WSR36	20220106	Sunny	Moderate	Mid-Flood	M	3.6	10:47	8.19	8.42	31.93	22.43	2.6	3
WSR36	20220106	Sunny	Moderate	Mid-Flood	B	6.2	10:46	8.22	8.42	31.91	22.58	3.04	8
WSR36	20220106	Sunny	Moderate	Mid-Flood	B	6.2	10:46	8.33	8.37	31.96	22.64	3.01	8
WSR36	20220108	Sunny	Moderate	Mid-Flood	S	1	11:04	8.51	8.22	33.86	21.53	2.97	3
WSR36	20220108	Sunny	Moderate	Mid-Flood	S	1	11:04	8.51	8.26	33.91	21.54	2.68	7
WSR36	20220108	Sunny	Moderate	Mid-Flood	M	3.35	11:04	8.5	8.22	33.85	21.58	2.35	10
WSR36	20220108	Sunny	Moderate	Mid-Flood	M	3.35	11:04	8.42	8.21	33.84	21.63	2.61	10
WSR36	20220108	Sunny	Moderate	Mid-Flood	B	5.7	11:03	8.48	8.19	33.84	21.66	3.14	6
WSR36	20220108	Sunny	Moderate	Mid-Flood	B	5.7	11:03	8.44	8.2	33.93	21.53	3.22	6
WSR36	20220111	Sunny	Moderate	Mid-Flood	S	1	19:02	9.46	8.35	35.14	20.05	3.03	8
WSR36	20220111	Sunny	Moderate	Mid-Flood	S	1	19:02	9.13	8.27	34.94	20.06	2.6	7
WSR36	20220111	Sunny	Moderate	Mid-Flood	M	3.7	19:02	9.42	8.27	35.15	19.98	2.46	7
WSR36	20220111	Sunny	Moderate	Mid-Flood	M	3.7	19:02	9.24	8.29	35.07	19.94	2.46	7
WSR36	20220111	Sunny	Moderate	Mid-Flood	B	6.4	19:01	9.21	8.35	35.1	19.93	2.06	7
WSR36	20220111	Sunny	Moderate	Mid-Flood	B	6.4	19:01	9.42	8.35	35.09	19.99	1.9	7

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	H	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR36	20220113	Cloudy	Moderate	Mid-Flood	S	1	14:35	8.96	8.36	32.45	20.6	3.4	3
WSR36	20220113	Cloudy	Moderate	Mid-Flood	S	1	14:35	8.98	8.34	32.42	20.69	3.39	2.5
WSR36	20220113	Cloudy	Moderate	Mid-Flood	M	3.7	14:36	9.02	8.35	32.35	20.64	3.24	8
WSR36	20220113	Cloudy	Moderate	Mid-Flood	M	3.7	14:36	8.96	8.33	32.39	20.75	3.34	8
WSR36	20220113	Cloudy	Moderate	Mid-Flood	B	6.4	14:34	9.02	8.33	32.44	20.76	3.28	2.5
WSR36	20220113	Cloudy	Moderate	Mid-Flood	B	6.4	14:34	8.98	8.29	32.46	20.72	2.77	2.5
WSR36	20220115	Cloudy	Moderate	Mid-Flood	S	1	15:50	8.35	8.19	33.86	20.75	2.8	2.5
WSR36	20220115	Cloudy	Moderate	Mid-Flood	S	1	15:50	8.35	8.26	33.92	20.86	3.25	3
WSR36	20220115	Cloudy	Moderate	Mid-Flood	M	3.35	15:50	8.36	8.19	33.86	20.72	3.13	3
WSR36	20220115	Cloudy	Moderate	Mid-Flood	M	3.35	15:50	8.38	8.18	33.92	20.72	2.72	3
WSR36	20220115	Cloudy	Moderate	Mid-Flood	B	5.7	15:49	8.4	8.19	33.84	20.82	2.77	3
WSR36	20220115	Cloudy	Moderate	Mid-Flood	B	5.7	15:49	8.36	8.19	33.99	20.76	2.4	4
WSR36	20220118	Cloudy	Moderate	Mid-Flood	S	1	17:01	8.89	8.22	33.25	20.75	3.4	3
WSR36	20220118	Cloudy	Moderate	Mid-Flood	S	1	17:01	8.84	8.2	33.38	20.82	3.3	4
WSR36	20220118	Cloudy	Moderate	Mid-Flood	M	3.85	17:01	8.8	8.17	33.3	20.9	2.72	5
WSR36	20220118	Cloudy	Moderate	Mid-Flood	M	3.85	17:01	8.89	8.15	33.34	20.89	2.79	5
WSR36	20220118	Cloudy	Moderate	Mid-Flood	B	6.7	17:00	8.94	8.12	33.3	20.79	2.57	8
WSR36	20220118	Cloudy	Moderate	Mid-Flood	B	6.7	17:00	8.86	8.12	33.38	20.85	2.71	8
WSR36	20220120	Sunny	Moderate	Mid-Flood	S	1	9:26	8.65	8.25	33.7	20.74	3.65	13
WSR36	20220120	Sunny	Moderate	Mid-Flood	S	1	9:26	8.7	8.34	33.85	20.86	3.78	9
WSR36	20220120	Sunny	Moderate	Mid-Flood	M	3.15	9:26	8.61	8.31	33.78	20.82	4.04	5
WSR36	20220120	Sunny	Moderate	Mid-Flood	M	3.15	9:26	8.55	8.27	33.88	20.81	4.03	5
WSR36	20220120	Sunny	Moderate	Mid-Flood	B	5.3	9:25	8.58	8.27	33.84	20.77	3.1	5
WSR36	20220120	Sunny	Moderate	Mid-Flood	B	5.3	9:25	8.66	8.27	33.92	20.78	3.58	5
WSR36	20220122	Cloudy	Moderate	Mid-Flood	S	1	9:29	9.36	8.35	33.89	21.54	2.39	3
WSR36	20220122	Cloudy	Moderate	Mid-Flood	S	1	9:29	9.36	8.35	34.09	21.4	2.62	4

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	H	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR36	20220122	Cloudy	Moderate	Mid-Flood	M	3.45	9:29	9.34	8.3	34.08	21.43	2.3	6
WSR36	20220122	Cloudy	Moderate	Mid-Flood	M	3.45	9:29	9.35	8.3	34.08	21.45	2.51	5
WSR36	20220122	Cloudy	Moderate	Mid-Flood	B	5.9	9:28	9.35	8.32	34.09	21.46	2.25	4
WSR36	20220122	Cloudy	Moderate	Mid-Flood	B	5.9	9:28	9.37	8.33	34.11	21.46	1.9	3
WSR36	20220125	Cloudy	Moderate	Mid-Flood	S	1	11:26	8.71	8.28	30.91	20.82	3.08	2.5
WSR36	20220125	Cloudy	Moderate	Mid-Flood	S	1	11:26	8.51	8.28	30.87	20.9	3.21	2.5
WSR36	20220125	Cloudy	Moderate	Mid-Flood	M	3.65	11:26	8.53	8.19	31.02	20.91	3.3	3
WSR36	20220125	Cloudy	Moderate	Mid-Flood	M	3.65	11:26	8.68	8.2	30.98	20.9	2.84	2.5
WSR36	20220125	Cloudy	Moderate	Mid-Flood	B	6.3	11:25	8.62	8.16	31.05	20.94	2.59	3
WSR36	20220125	Cloudy	Moderate	Mid-Flood	B	6.3	11:25	8.57	8.28	31.05	20.91	2.48	3
WSR36	20220127	Cloudy	Moderate	Mid-Flood	S	1	13:03	8.4	8.17	31.35	20.99	3.17	3
WSR36	20220127	Cloudy	Moderate	Mid-Flood	S	1	13:03	8.38	8.15	31.23	20.91	3.04	5
WSR36	20220127	Cloudy	Moderate	Mid-Flood	M	3.55	13:03	8.32	8.09	31.34	20.89	3.19	6
WSR36	20220127	Cloudy	Moderate	Mid-Flood	M	3.55	13:03	8.4	8.08	31.24	20.99	3.04	6
WSR36	20220127	Cloudy	Moderate	Mid-Flood	B	6.1	13:02	8.35	8.19	31.23	20.95	2.95	3
WSR36	20220127	Cloudy	Moderate	Mid-Flood	B	6.1	13:02	8.27	8.22	31.31	20.93	2.47	3
WSR36	20220129	Cloudy	Moderate	Mid-Flood	S	1	14:49	9.68	8.15	31	20.36	2.73	4
WSR36	20220129	Cloudy	Moderate	Mid-Flood	S	1	14:49	9.71	8.25	30.94	20.51	2.96	3
WSR36	20220129	Cloudy	Moderate	Mid-Flood	M	3.85	14:49	9.68	8.23	31.01	20.41	2.32	4
WSR36	20220129	Cloudy	Moderate	Mid-Flood	M	3.85	14:49	9.72	8.23	31.01	20.41	2.45	6
WSR36	20220129	Cloudy	Moderate	Mid-Flood	B	6.7	14:48	9.74	8.24	30.96	20.43	2.69	7
WSR36	20220129	Cloudy	Moderate	Mid-Flood	B	6.7	14:48	9.75	8.16	31.12	20.37	2.63	5
WSR36	20220131	Cloudy	Moderate	Mid-Flood	S	1	16:43	8.93	8.12	33.34	20.19	2.29	4
WSR36	20220131	Cloudy	Moderate	Mid-Flood	S	1	16:43	8.92	8.1	33.42	20.21	1.98	3
WSR36	20220131	Cloudy	Moderate	Mid-Flood	M	3.7	16:43	8.94	8.13	33.45	20.17	2.43	4
WSR36	20220131	Cloudy	Moderate	Mid-Flood	M	3.7	16:43	8.95	8.05	33.26	20.2	2.19	3

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	H	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR36	20220131	Cloudy	Moderate	Mid-Flood	B	6.4	16:42	8.94	8.07	33.37	20.15	2.19	4
WSR36	20220131	Cloudy	Moderate	Mid-Flood	B	6.4	16:42	8.93	8.14	33.38	20.15	2.39	4
WSR37	20220101	Cloudy	Moderate	Mid-Flood	S	1	16:21	8.64	8.41	31.55	22.15	2.1	11
WSR37	20220101	Cloudy	Moderate	Mid-Flood	S	1	16:21	8.69	8.34	31.4	22.06	2.41	11
WSR37	20220101	Cloudy	Moderate	Mid-Flood	M	4.1	16:20	8.71	8.4	31.46	22.03	1.83	4
WSR37	20220101	Cloudy	Moderate	Mid-Flood	M	4.1	16:20	8.75	8.31	31.45	22.02	2.04	3
WSR37	20220101	Cloudy	Moderate	Mid-Flood	B	7.2	16:19	8.61	8.41	31.45	22.17	1.79	4
WSR37	20220101	Cloudy	Moderate	Mid-Flood	B	7.2	16:19	8.5	8.37	31.47	22.03	1.84	6
WSR37	20220104	Sunny	Moderate	Mid-Flood	S	1	9:45	8.58	8.25	30.73	22.04	2.06	7
WSR37	20220104	Sunny	Moderate	Mid-Flood	S	1	9:45	8.49	8.24	30.78	22.05	1.84	7
WSR37	20220104	Sunny	Moderate	Mid-Flood	M	3.85	9:44	8.67	8.26	30.81	22.16	2.13	6
WSR37	20220104	Sunny	Moderate	Mid-Flood	M	3.85	9:44	8.56	8.21	30.72	22.09	2.08	8
WSR37	20220104	Sunny	Moderate	Mid-Flood	B	6.7	9:43	8.7	8.19	30.69	22.22	2.1	23
WSR37	20220104	Sunny	Moderate	Mid-Flood	B	6.7	9:43	8.7	8.25	30.68	22.23	1.82	23
WSR37	20220106	Sunny	Moderate	Mid-Flood	S	1	10:02	8.84	8.48	32.28	22.73	3.15	6
WSR37	20220106	Sunny	Moderate	Mid-Flood	S	1	10:02	8.75	8.47	32.39	22.61	3.53	6
WSR37	20220106	Sunny	Moderate	Mid-Flood	M	4.25	10:01	8.74	8.41	32.3	22.81	2.78	3
WSR37	20220106	Sunny	Moderate	Mid-Flood	M	4.25	10:01	8.83	8.48	32.22	22.65	2.79	2.5
WSR37	20220106	Sunny	Moderate	Mid-Flood	B	7.5	10:00	8.74	8.47	32.34	22.68	3.33	2.5
WSR37	20220106	Sunny	Moderate	Mid-Flood	B	7.5	10:00	8.87	8.43	32.35	22.77	3.3	3
WSR37	20220108	Sunny	Moderate	Mid-Flood	S	1	11:18	9.09	8.4	35.16	21.81	2.37	6
WSR37	20220108	Sunny	Moderate	Mid-Flood	S	1	11:18	9.1	8.39	35.13	21.74	2.6	7
WSR37	20220108	Sunny	Moderate	Mid-Flood	M	4.15	11:17	9.13	8.4	35.07	21.8	2.23	6
WSR37	20220108	Sunny	Moderate	Mid-Flood	M	4.15	11:17	9.14	8.34	35.03	21.85	2.15	5
WSR37	20220108	Sunny	Moderate	Mid-Flood	B	7.3	11:16	9.09	8.37	35.01	21.77	2.28	6
WSR37	20220108	Sunny	Moderate	Mid-Flood	B	7.3	11:16	9.11	8.35	35.11	21.8	2.69	8

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	H	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR37	20220111	Sunny	Moderate	Mid-Flood	S	1	19:15	9.68	8.35	34.94	19.95	2.85	3
WSR37	20220111	Sunny	Moderate	Mid-Flood	S	1	19:15	9.79	8.36	34.92	19.95	2.48	4
WSR37	20220111	Sunny	Moderate	Mid-Flood	M	4.35	19:14	9.61	8.38	34.93	19.83	2.87	8
WSR37	20220111	Sunny	Moderate	Mid-Flood	M	4.35	19:14	9.48	8.33	34.99	19.9	2.45	8
WSR37	20220111	Sunny	Moderate	Mid-Flood	B	7.7	19:13	9.68	8.31	34.86	19.87	2.99	5
WSR37	20220111	Sunny	Moderate	Mid-Flood	B	7.7	19:13	9.69	8.36	35.07	19.92	2.66	7
WSR37	20220113	Cloudy	Moderate	Mid-Flood	S	1	14:52	8.59	8.35	32.95	20.38	3.38	2.5
WSR37	20220113	Cloudy	Moderate	Mid-Flood	S	1	14:52	8.72	8.36	33.02	20.39	3.74	2.5
WSR37	20220113	Cloudy	Moderate	Mid-Flood	M	4.15	14:51	8.64	8.27	33	20.59	3.11	2.5
WSR37	20220113	Cloudy	Moderate	Mid-Flood	M	4.15	14:51	8.72	8.38	33	20.42	3.38	4
WSR37	20220113	Cloudy	Moderate	Mid-Flood	B	7.3	14:50	8.62	8.34	32.94	20.58	3.65	2.5
WSR37	20220113	Cloudy	Moderate	Mid-Flood	B	7.3	14:50	8.72	8.32	33.01	20.42	3.33	4
WSR37	20220115	Cloudy	Moderate	Mid-Flood	S	1	16:04	8.37	8.14	33.84	21.14	3.24	5
WSR37	20220115	Cloudy	Moderate	Mid-Flood	S	1	16:04	8.38	8.09	33.83	21.04	3.53	5
WSR37	20220115	Cloudy	Moderate	Mid-Flood	M	4	16:03	8.37	8.15	33.87	21	2.84	3
WSR37	20220115	Cloudy	Moderate	Mid-Flood	M	4	16:03	8.44	8.14	33.76	21.09	2.89	2.5
WSR37	20220115	Cloudy	Moderate	Mid-Flood	B	7	16:02	8.36	8.12	33.78	21.02	3.06	2.5
WSR37	20220115	Cloudy	Moderate	Mid-Flood	B	7	16:02	8.36	8.16	33.87	21.01	3.26	2.5
WSR37	20220118	Cloudy	Moderate	Mid-Flood	S	1	17:14	8.95	8.04	33.98	21.02	3.07	7
WSR37	20220118	Cloudy	Moderate	Mid-Flood	S	1	17:14	8.95	8.07	33.95	20.98	3.37	7
WSR37	20220118	Cloudy	Moderate	Mid-Flood	M	3.95	17:13	8.95	8.03	33.99	20.99	3.01	4
WSR37	20220118	Cloudy	Moderate	Mid-Flood	M	3.95	17:13	8.92	8.06	33.98	21.01	3.4	5
WSR37	20220118	Cloudy	Moderate	Mid-Flood	B	6.9	17:12	8.93	8.04	33.97	20.85	3.3	7
WSR37	20220118	Cloudy	Moderate	Mid-Flood	B	6.9	17:12	8.97	8.05	33.92	20.9	2.83	7
WSR37	20220120	Sunny	Moderate	Mid-Flood	S	1	9:40	8.67	8.19	34.14	20.63	3.77	5
WSR37	20220120	Sunny	Moderate	Mid-Flood	S	1	9:40	8.6	8.18	34.36	20.6	4.37	4
WSR37	20220120	Sunny	Moderate	Mid-Flood	M	4.25	9:39	8.75	8.22	34.28	20.62	3.46	5
WSR37	20220120	Sunny	Moderate	Mid-Flood	M	4.25	9:39	8.77	8.24	34.15	20.6	3.75	5
WSR37	20220120	Sunny	Moderate	Mid-Flood	B	7.5	9:38	8.77	8.16	34.11	20.68	3.42	6
WSR37	20220120	Sunny	Moderate	Mid-Flood	B	7.5	9:38	8.58	8.16	34.18	20.66	3.54	8

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	H	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR37	20220122	Cloudy	Moderate	Mid-Flood	S	1	9:43	9.29	8.4	33.68	20.97	2.75	6
WSR37	20220122	Cloudy	Moderate	Mid-Flood	S	1	9:43	9.18	8.44	33.75	21.05	3.05	6
WSR37	20220122	Cloudy	Moderate	Mid-Flood	M	3.9	9:42	9.19	8.37	33.7	21.06	2.49	4
WSR37	20220122	Cloudy	Moderate	Mid-Flood	M	3.9	9:42	9.26	8.39	33.84	20.99	2.26	3
WSR37	20220122	Cloudy	Moderate	Mid-Flood	B	6.8	9:41	9.19	8.38	33.87	20.94	2.44	7
WSR37	20220122	Cloudy	Moderate	Mid-Flood	B	6.8	9:41	9.23	8.44	33.82	21.07	2.35	8
WSR37	20220125	Cloudy	Moderate	Mid-Flood	S	1	11:40	8.28	8.29	31.27	21.04	3.64	3
WSR37	20220125	Cloudy	Moderate	Mid-Flood	S	1	11:40	8.29	8.19	31.2	21.15	3.41	3
WSR37	20220125	Cloudy	Moderate	Mid-Flood	M	3.95	11:39	8.23	8.28	31.15	21.08	3.39	3
WSR37	20220125	Cloudy	Moderate	Mid-Flood	M	3.95	11:39	8.23	8.2	31.11	21.15	2.86	2.5
WSR37	20220125	Cloudy	Moderate	Mid-Flood	B	6.9	11:38	8.39	8.3	31.12	21.05	3.33	3
WSR37	20220125	Cloudy	Moderate	Mid-Flood	B	6.9	11:38	8.37	8.17	31.18	21.16	3.04	3
WSR37	20220127	Cloudy	Moderate	Mid-Flood	S	1	13:18	9.08	8.22	30.91	21	2.74	4
WSR37	20220127	Cloudy	Moderate	Mid-Flood	S	1	13:18	9.21	8.2	30.87	21.02	3.25	6
WSR37	20220127	Cloudy	Moderate	Mid-Flood	M	4.4	13:17	9.14	8.13	30.82	21	2.72	4
WSR37	20220127	Cloudy	Moderate	Mid-Flood	M	4.4	13:17	9.12	8.2	30.98	20.97	2.67	4
WSR37	20220127	Cloudy	Moderate	Mid-Flood	B	7.8	13:16	9.2	8.2	30.87	20.97	2.79	3
WSR37	20220127	Cloudy	Moderate	Mid-Flood	B	7.8	13:16	9.17	8.2	30.96	21.09	2.48	4
WSR37	20220129	Cloudy	Moderate	Mid-Flood	S	1	15:04	9.22	8.1	30.63	20.28	2.65	3
WSR37	20220129	Cloudy	Moderate	Mid-Flood	S	1	15:04	9.25	8.2	30.72	20.28	2.51	5
WSR37	20220129	Cloudy	Moderate	Mid-Flood	M	4.1	15:03	9.19	8.12	30.6	20.29	2.37	4
WSR37	20220129	Cloudy	Moderate	Mid-Flood	M	4.1	15:03	9.16	8.12	30.79	20.29	2.14	4
WSR37	20220129	Cloudy	Moderate	Mid-Flood	B	7.2	15:02	9.15	8.14	30.66	20.27	2.46	6
WSR37	20220129	Cloudy	Moderate	Mid-Flood	B	7.2	15:02	9.27	8.19	30.75	20.19	2.12	3
WSR37	20220131	Cloudy	Moderate	Mid-Flood	S	1	16:59	8.42	8.19	33.59	19.87	2.51	3
WSR37	20220131	Cloudy	Moderate	Mid-Flood	S	1	16:59	8.25	8.17	33.67	19.85	2.5	4
WSR37	20220131	Cloudy	Moderate	Mid-Flood	M	4.4	16:58	8.29	8.11	33.63	19.87	2.6	4
WSR37	20220131	Cloudy	Moderate	Mid-Flood	M	4.4	16:58	8.38	8.19	33.49	19.92	2.27	4
WSR37	20220131	Cloudy	Moderate	Mid-Flood	B	7.8	16:57	8.3	8.15	33.53	19.92	2.28	4
WSR37	20220131	Cloudy	Moderate	Mid-Flood	B	7.8	16:57	8.25	8.18	33.54	19.87	2.16	4

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
CE	20220101	Cloudy	Moderate	Mid-Ebb	S	1	9:26	8.7	8.33	32.53	22.24	4.61	5
CE	20220101	Cloudy	Moderate	Mid-Ebb	S	1	9:26	8.77	8.35	32.72	22.23	4.33	7
CE	20220101	Cloudy	Moderate	Mid-Ebb	M	11.45	9:25	8.66	8.32	32.54	22.1	4.18	3
CE	20220101	Cloudy	Moderate	Mid-Ebb	M	11.45	9:25	8.77	8.33	32.59	22.24	4.67	5
CE	20220101	Cloudy	Moderate	Mid-Ebb	B	21.9	9:24	8.6	8.34	32.59	22.19	3.93	5
CE	20220101	Cloudy	Moderate	Mid-Ebb	B	21.9	9:24	8.7	8.37	32.59	22.18	3.97	6
CE	20220104	Sunny	Moderate	Mid-Ebb	S	1	11:48	8.65	8.36	31.86	22.64	3.94	8
CE	20220104	Sunny	Moderate	Mid-Ebb	S	1	11:48	8.61	8.38	31.68	22.55	4.03	8
CE	20220104	Sunny	Moderate	Mid-Ebb	M	12.05	11:47	8.53	8.36	31.68	22.52	3.38	5
CE	20220104	Sunny	Moderate	Mid-Ebb	M	12.05	11:47	8.59	8.34	31.95	22.67	3.65	5
CE	20220104	Sunny	Moderate	Mid-Ebb	B	23.1	11:46	8.43	8.4	31.86	22.58	3.96	4
CE	20220104	Sunny	Moderate	Mid-Ebb	B	23.1	11:46	8.44	8.4	31.72	22.64	3.68	3
CE	20220106	Sunny	Moderate	Mid-Ebb	S	1	13:31	8.33	8.23	32.4	22.84	4.03	4
CE	20220106	Sunny	Moderate	Mid-Ebb	S	1	13:31	8.37	8.23	32.54	22.75	3.58	3
CE	20220106	Sunny	Moderate	Mid-Ebb	M	11.85	13:30	8.36	8.18	32.49	22.8	5.01	3
CE	20220106	Sunny	Moderate	Mid-Ebb	M	11.85	13:30	8.5	8.22	32.46	22.84	4.69	3
CE	20220106	Sunny	Moderate	Mid-Ebb	B	22.7	13:29	8.46	8.21	32.54	22.82	4.97	4
CE	20220106	Sunny	Moderate	Mid-Ebb	B	22.7	13:29	8.36	8.17	32.44	22.82	4.52	4
CE	20220108	Sunny	Moderate	Mid-Ebb	S	1	15:17	8.97	8.26	34.21	22.11	3.16	3
CE	20220108	Sunny	Moderate	Mid-Ebb	S	1	15:17	8.89	8.33	34.19	22.15	3.17	4
CE	20220108	Sunny	Moderate	Mid-Ebb	M	10.5	15:16	8.89	8.3	34.24	22.13	2.89	4
CE	20220108	Sunny	Moderate	Mid-Ebb	M	10.5	15:16	9.03	8.3	34.21	22.15	2.9	4
CE	20220108	Sunny	Moderate	Mid-Ebb	B	20	15:15	8.93	8.28	34.28	22.11	3.17	4
CE	20220108	Sunny	Moderate	Mid-Ebb	B	20	15:15	9.04	8.3	34.23	22.1	2.83	6
CE	20220111	Sunny	Moderate	Mid-Ebb	S	1	11:43	8.91	8.36	34.79	20.46	3.8	3
CE	20220111	Sunny	Moderate	Mid-Ebb	S	1	11:43	8.82	8.31	34.79	20.45	3.57	4

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
CE	20220111	Sunny	Moderate	Mid-Ebb	M	10.35	11:42	8.71	8.32	34.69	20.45	3.29	3
CE	20220111	Sunny	Moderate	Mid-Ebb	M	10.35	11:42	9	8.31	34.79	20.49	3.43	4
CE	20220111	Sunny	Moderate	Mid-Ebb	B	19.7	11:41	8.86	8.37	34.63	20.65	3.44	3
CE	20220111	Sunny	Moderate	Mid-Ebb	B	19.7	11:41	9.02	8.36	34.71	20.71	2.97	3
CE	20220113	Cloudy	Moderate	Mid-Ebb	S	1	8:02	8.09	8.13	32.77	20.36	3.72	2.5
CE	20220113	Cloudy	Moderate	Mid-Ebb	S	1	8:02	8.36	8.18	32.82	20.48	4.12	2.5
CE	20220113	Cloudy	Moderate	Mid-Ebb	M	11.6	8:01	8.02	8.2	32.78	20.53	4.05	4
CE	20220113	Cloudy	Moderate	Mid-Ebb	M	11.6	8:01	8.08	8.18	32.89	20.48	3.87	5
CE	20220113	Cloudy	Moderate	Mid-Ebb	B	22.2	8:00	8.14	8.17	32.88	20.45	3.34	4
CE	20220113	Cloudy	Moderate	Mid-Ebb	B	22.2	8:00	8.06	8.15	32.76	20.53	3.55	3
CE	20220115	Cloudy	Moderate	Mid-Ebb	S	1	10:08	9.23	8.23	32.82	20.88	3.92	4
CE	20220115	Cloudy	Moderate	Mid-Ebb	S	1	10:08	9.27	8.18	32.85	20.88	3.33	6
CE	20220115	Cloudy	Moderate	Mid-Ebb	M	11.3	10:07	9.26	8.23	32.9	20.82	3.93	5
CE	20220115	Cloudy	Moderate	Mid-Ebb	M	11.3	10:07	9.23	8.2	32.8	20.88	3.38	7
CE	20220115	Cloudy	Moderate	Mid-Ebb	B	21.6	10:06	9.23	8.22	32.93	20.82	4.04	5
CE	20220115	Cloudy	Moderate	Mid-Ebb	B	21.6	10:06	9.23	8.22	32.9	20.85	4.24	6
CE	20220118	Cloudy	Moderate	Mid-Ebb	S	1	9:46	9.13	8.31	33.91	20.96	4.32	4
CE	20220118	Cloudy	Moderate	Mid-Ebb	S	1	9:46	9.09	8.33	33.89	21.09	4.37	6
CE	20220118	Cloudy	Moderate	Mid-Ebb	M	11.2	9:45	9.08	8.33	33.83	21.11	4.61	5
CE	20220118	Cloudy	Moderate	Mid-Ebb	M	11.2	9:45	9.2	8.29	33.89	21.04	5.12	5
CE	20220118	Cloudy	Moderate	Mid-Ebb	B	21.4	9:44	9.11	8.28	33.99	21.03	4.66	11
CE	20220118	Cloudy	Moderate	Mid-Ebb	B	21.4	9:44	9.2	8.31	33.91	21.03	4.35	11
CE	20220120	Sunny	Moderate	Mid-Ebb	S	1	12:00	7.91	8.28	33.61	21.04	4.37	5
CE	20220120	Sunny	Moderate	Mid-Ebb	S	1	12:00	7.99	8.25	33.46	21.06	4.87	6
CE	20220120	Sunny	Moderate	Mid-Ebb	M	11.9	11:59	7.91	8.24	33.6	21.11	4.49	6
CE	20220120	Sunny	Moderate	Mid-Ebb	M	11.9	11:59	7.93	8.29	33.81	21.04	4.3	4

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
CE	20220120	Sunny	Moderate	Mid-Ebb	B	22.8	11:58	8.02	8.24	33.78	21.04	4.56	5
CE	20220120	Sunny	Moderate	Mid-Ebb	B	22.8	11:58	8.02	8.27	33.45	21.04	4.13	4
CE	20220122	Cloudy	Moderate	Mid-Ebb	S	1	13:26	8.77	8.23	33.56	21.4	3.85	3
CE	20220122	Cloudy	Moderate	Mid-Ebb	S	1	13:26	8.7	8.3	33.74	21.3	3.78	5
CE	20220122	Cloudy	Moderate	Mid-Ebb	M	11.05	13:25	8.76	8.28	33.52	21.31	4.19	5
CE	20220122	Cloudy	Moderate	Mid-Ebb	M	11.05	13:25	8.66	8.22	33.61	21.42	3.97	3
CE	20220122	Cloudy	Moderate	Mid-Ebb	B	21.1	13:24	8.7	8.31	33.66	21.32	3.48	4
CE	20220122	Cloudy	Moderate	Mid-Ebb	B	21.1	13:24	8.7	8.23	33.69	21.42	3.88	5
CE	20220125	Cloudy	Moderate	Mid-Ebb	S	1	15:45	8.94	8.14	30.89	20.89	3.46	2.5
CE	20220125	Cloudy	Moderate	Mid-Ebb	S	1	15:45	8.96	8.12	30.85	20.93	3.65	2.5
CE	20220125	Cloudy	Moderate	Mid-Ebb	M	11.35	15:44	8.93	8.19	30.9	20.96	3.56	3
CE	20220125	Cloudy	Moderate	Mid-Ebb	M	11.35	15:44	8.96	8.07	30.93	20.98	3.92	3
CE	20220125	Cloudy	Moderate	Mid-Ebb	B	21.7	15:43	8.9	8.09	30.87	21	4.12	3
CE	20220125	Cloudy	Moderate	Mid-Ebb	B	21.7	15:43	8.99	8.11	30.94	20.92	3.68	3
CE	20220127	Cloudy	Moderate	Mid-Ebb	S	1	8:02	8.53	8.19	31.4	20.82	3.45	6
CE	20220127	Cloudy	Moderate	Mid-Ebb	S	1	8:02	8.6	8.15	31.52	20.98	3.42	6
CE	20220127	Cloudy	Moderate	Mid-Ebb	M	11.5	8:01	8.53	8.17	31.52	20.94	3.78	10
CE	20220127	Cloudy	Moderate	Mid-Ebb	M	11.5	8:01	8.6	8.19	31.47	20.83	3.48	10
CE	20220127	Cloudy	Moderate	Mid-Ebb	B	22	8:00	8.74	8.18	31.49	20.87	3.24	5
CE	20220127	Cloudy	Moderate	Mid-Ebb	B	22	8:00	8.53	8.2	31.37	20.84	3.66	5
CE	20220129	Cloudy	Moderate	Mid-Ebb	S	1	8:16	9.73	8.14	31.17	20.39	4.87	6
CE	20220129	Cloudy	Moderate	Mid-Ebb	S	1	8:16	9.75	8.18	30.92	20.35	4.6	4
CE	20220129	Cloudy	Moderate	Mid-Ebb	M	10.95	8:15	9.75	8.07	31.06	20.39	4.46	7
CE	20220129	Cloudy	Moderate	Mid-Ebb	M	10.95	8:15	9.69	8.06	31.11	20.33	5.15	7
CE	20220129	Cloudy	Moderate	Mid-Ebb	B	20.9	8:14	9.71	8.09	31.15	20.35	4.08	4
CE	20220129	Cloudy	Moderate	Mid-Ebb	B	20.9	8:14	9.69	8.18	31.14	20.4	4.75	6

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
CE	20220131	Cloudy	Moderate	Mid-Ebb	S	1	10:08	7.88	8.1	33.48	19.83	2.97	4
CE	20220131	Cloudy	Moderate	Mid-Ebb	S	1	10:08	8.04	8.16	33.57	19.84	3.33	3
CE	20220131	Cloudy	Moderate	Mid-Ebb	M	11.85	10:07	7.89	8.16	33.61	19.91	3.77	3
CE	20220131	Cloudy	Moderate	Mid-Ebb	M	11.85	10:07	7.92	8.12	33.6	19.93	3.27	3
CE	20220131	Cloudy	Moderate	Mid-Ebb	B	22.7	10:06	7.9	8.09	33.42	19.92	3.57	4
CE	20220131	Cloudy	Moderate	Mid-Ebb	B	22.7	10:06	8.05	8.13	33.53	19.92	3.24	3
CF	20220101	Cloudy	Moderate	Mid-Ebb	S	1	11:52	8.25	8.5	32.56	21.9	3.38	6
CF	20220101	Cloudy	Moderate	Mid-Ebb	S	1	11:52	8.31	8.48	32.51	21.96	3.63	5
CF	20220101	Cloudy	Moderate	Mid-Ebb	M	9.9	11:51	8.34	8.44	32.65	22.03	3.61	6
CF	20220101	Cloudy	Moderate	Mid-Ebb	M	9.9	11:51	8.35	8.46	32.56	22.11	3.61	6
CF	20220101	Cloudy	Moderate	Mid-Ebb	B	18.8	11:50	8.28	8.47	32.59	21.96	3.1	8
CF	20220101	Cloudy	Moderate	Mid-Ebb	B	18.8	11:50	8.4	8.46	32.52	22	3.59	8
CF	20220104	Sunny	Moderate	Mid-Ebb	S	1	14:14	8.47	8.31	31.5	22.92	3.03	3
CF	20220104	Sunny	Moderate	Mid-Ebb	S	1	14:14	8.47	8.28	31.54	22.81	2.89	5
CF	20220104	Sunny	Moderate	Mid-Ebb	M	10.8	14:13	8.59	8.3	31.5	22.89	2.93	7
CF	20220104	Sunny	Moderate	Mid-Ebb	M	10.8	14:13	8.45	8.3	31.44	22.78	3.01	4
CF	20220104	Sunny	Moderate	Mid-Ebb	B	20.6	14:12	8.45	8.28	31.45	22.91	3.16	12
CF	20220104	Sunny	Moderate	Mid-Ebb	B	20.6	14:12	8.49	8.29	31.38	22.78	2.8	12
CF	20220106	Sunny	Moderate	Mid-Ebb	S	1	16:01	8.79	8.16	32.72	22.81	3.07	4
CF	20220106	Sunny	Moderate	Mid-Ebb	S	1	16:01	8.62	8.13	32.68	22.73	3.01	3
CF	20220106	Sunny	Moderate	Mid-Ebb	M	10.55	16:00	8.63	8.13	32.68	22.79	3.12	4
CF	20220106	Sunny	Moderate	Mid-Ebb	M	10.55	16:00	8.75	8.15	32.67	22.83	3.24	3
CF	20220106	Sunny	Moderate	Mid-Ebb	B	20.1	15:59	8.82	8.16	32.72	22.82	3.22	8
CF	20220106	Sunny	Moderate	Mid-Ebb	B	20.1	15:59	8.69	8.11	32.73	22.85	3.62	8
CF	20220108	Sunny	Moderate	Mid-Ebb	S	1	17:44	7.92	8.44	33.76	21.43	2.43	8
CF	20220108	Sunny	Moderate	Mid-Ebb	S	1	17:44	7.92	8.46	33.7	21.47	2.56	5

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
CF	20220108	Sunny	Moderate	Mid-Ebb	M	10.15	17:43	8.01	8.38	33.71	21.52	2.9	4
CF	20220108	Sunny	Moderate	Mid-Ebb	M	10.15	17:43	8	8.4	33.69	21.49	2.54	4
CF	20220108	Sunny	Moderate	Mid-Ebb	B	19.3	17:42	7.87	8.39	33.79	21.48	2.57	6
CF	20220108	Sunny	Moderate	Mid-Ebb	B	19.3	17:42	7.9	8.46	33.68	21.49	2.55	5
CF	20220111	Sunny	Moderate	Mid-Ebb	S	1	14:25	8.96	8.25	34.32	20.35	3.06	3
CF	20220111	Sunny	Moderate	Mid-Ebb	S	1	14:25	8.84	8.32	34.33	20.27	2.88	5
CF	20220111	Sunny	Moderate	Mid-Ebb	M	10.15	14:24	9.01	8.29	34.28	20.17	2.43	4
CF	20220111	Sunny	Moderate	Mid-Ebb	M	10.15	14:24	8.93	8.32	34.35	20.15	2.45	4
CF	20220111	Sunny	Moderate	Mid-Ebb	B	19.3	14:23	9.02	8.38	34.19	20.25	2.76	4
CF	20220111	Sunny	Moderate	Mid-Ebb	B	19.3	14:23	9.02	8.28	34.42	20.18	2.64	5
CF	20220113	Cloudy	Moderate	Mid-Ebb	S	1	10:38	8.07	8.19	32.55	20.25	3.88	3
CF	20220113	Cloudy	Moderate	Mid-Ebb	S	1	10:38	8.01	8.13	32.58	20.25	3.25	3
CF	20220113	Cloudy	Moderate	Mid-Ebb	M	10.8	10:37	8.16	8.24	32.6	20.2	3.27	3
CF	20220113	Cloudy	Moderate	Mid-Ebb	M	10.8	10:37	8.25	8.12	32.63	20.34	3.24	3
CF	20220113	Cloudy	Moderate	Mid-Ebb	B	20.6	10:36	8.39	8.21	32.64	20.3	3.41	3
CF	20220113	Cloudy	Moderate	Mid-Ebb	B	20.6	10:36	8.14	8.15	32.57	20.34	3.59	4
CF	20220115	Cloudy	Moderate	Mid-Ebb	S	1	12:38	8.42	8.32	32.69	21.13	3.51	6
CF	20220115	Cloudy	Moderate	Mid-Ebb	S	1	12:38	8.38	8.3	32.7	21.16	3.59	6
CF	20220115	Cloudy	Moderate	Mid-Ebb	M	10.1	12:37	8.4	8.34	32.74	21.18	3.55	5
CF	20220115	Cloudy	Moderate	Mid-Ebb	M	10.1	12:37	8.37	8.28	32.77	21.06	3.69	5
CF	20220115	Cloudy	Moderate	Mid-Ebb	B	19.2	12:36	8.34	8.3	32.65	21.05	3.36	3
CF	20220115	Cloudy	Moderate	Mid-Ebb	B	19.2	12:36	8.39	8.31	32.71	21.17	3.48	2.5
CF	20220118	Cloudy	Moderate	Mid-Ebb	S	1	11:57	8.6	8.2	33.47	20.6	4.16	17
CF	20220118	Cloudy	Moderate	Mid-Ebb	S	1	11:57	8.66	8.12	33.45	20.71	3.76	17
CF	20220118	Cloudy	Moderate	Mid-Ebb	M	10.55	11:56	8.61	8.2	33.37	20.74	3.76	7
CF	20220118	Cloudy	Moderate	Mid-Ebb	M	10.55	11:56	8.7	8.17	33.47	20.69	3.88	5

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
CF	20220118	Cloudy	Moderate	Mid-Ebb	B	20.1	11:55	8.69	8.13	33.46	20.64	3.28	6
CF	20220118	Cloudy	Moderate	Mid-Ebb	B	20.1	11:55	8.55	8.14	33.39	20.56	3.82	6
CF	20220120	Sunny	Moderate	Mid-Ebb	S	1	14:07	8.49	8.13	33.03	20.85	3.62	5
CF	20220120	Sunny	Moderate	Mid-Ebb	S	1	14:07	8.42	8.15	33.05	20.8	3.92	6
CF	20220120	Sunny	Moderate	Mid-Ebb	M	10	14:06	8.45	8.15	33.28	20.84	3.61	5
CF	20220120	Sunny	Moderate	Mid-Ebb	M	10	14:06	8.46	8.14	33.02	20.83	3.28	6
CF	20220120	Sunny	Moderate	Mid-Ebb	B	19	14:05	8.49	8.19	33.36	20.79	3.87	6
CF	20220120	Sunny	Moderate	Mid-Ebb	B	19	14:05	8.47	8.18	33.13	20.89	3.99	8
CF	20220122	Cloudy	Moderate	Mid-Ebb	S	1	15:43	8.02	8.3	32.97	21.11	3.18	6
CF	20220122	Cloudy	Moderate	Mid-Ebb	S	1	15:43	8.01	8.34	32.84	21.02	2.95	5
CF	20220122	Cloudy	Moderate	Mid-Ebb	M	10.45	15:42	7.99	8.31	32.85	21.17	3.36	7
CF	20220122	Cloudy	Moderate	Mid-Ebb	M	10.45	15:42	8.05	8.32	32.92	21.09	3.92	5
CF	20220122	Cloudy	Moderate	Mid-Ebb	B	19.9	15:41	8	8.29	32.83	21.11	3.03	4
CF	20220122	Cloudy	Moderate	Mid-Ebb	B	19.9	15:41	8.07	8.27	32.85	21.08	3.22	3
CF	20220125	Cloudy	Moderate	Mid-Ebb	S	1	18:04	9.26	8.19	31.83	20.96	3.3	2.5
CF	20220125	Cloudy	Moderate	Mid-Ebb	S	1	18:04	9.35	8.26	31.82	20.99	3.17	2.5
CF	20220125	Cloudy	Moderate	Mid-Ebb	M	10.55	18:03	9.32	8.26	31.77	20.96	3.27	3
CF	20220125	Cloudy	Moderate	Mid-Ebb	M	10.55	18:03	9.39	8.27	31.78	20.92	3.19	3
CF	20220125	Cloudy	Moderate	Mid-Ebb	B	20.1	18:02	9.37	8.25	31.76	20.93	2.98	3
CF	20220125	Cloudy	Moderate	Mid-Ebb	B	20.1	18:02	9.34	8.24	31.81	20.94	3.4	3
CF	20220127	Cloudy	Moderate	Mid-Ebb	S	1	10:27	8.77	8.12	31.1	21.01	3.93	8
CF	20220127	Cloudy	Moderate	Mid-Ebb	S	1	10:27	8.73	8.2	31.27	21.17	3.8	8
CF	20220127	Cloudy	Moderate	Mid-Ebb	M	9.85	10:26	8.71	8.1	31.07	21.01	4.1	3
CF	20220127	Cloudy	Moderate	Mid-Ebb	M	9.85	10:26	8.78	8.2	31.12	21.17	3.84	4
CF	20220127	Cloudy	Moderate	Mid-Ebb	B	18.7	10:25	8.75	8.11	31.06	21.09	4.12	6
CF	20220127	Cloudy	Moderate	Mid-Ebb	B	18.7	10:25	8.63	8.1	31.2	21.12	3.66	6

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
CF	20220129	Cloudy	Moderate	Mid-Ebb	S	1	10:50	9.13	8.22	30.6	20.61	4.44	5
CF	20220129	Cloudy	Moderate	Mid-Ebb	S	1	10:50	9.12	8.13	30.67	20.59	4.09	5
CF	20220129	Cloudy	Moderate	Mid-Ebb	M	10.45	10:49	9.09	8.19	30.55	20.62	4.69	4
CF	20220129	Cloudy	Moderate	Mid-Ebb	M	10.45	10:49	9.14	8.24	30.57	20.55	4.1	4
CF	20220129	Cloudy	Moderate	Mid-Ebb	B	19.9	10:48	9.12	8.16	30.62	20.65	3.83	4
CF	20220129	Cloudy	Moderate	Mid-Ebb	B	19.9	10:48	9.08	8.22	30.63	20.52	4.07	2.5
CF	20220131	Cloudy	Moderate	Mid-Ebb	S	1	12:46	8.92	8.07	33.24	20.26	2.41	5
CF	20220131	Cloudy	Moderate	Mid-Ebb	S	1	12:46	8.89	8.12	33.16	20.22	2.6	4
CF	20220131	Cloudy	Moderate	Mid-Ebb	M	9.85	12:45	8.99	8.03	33.27	20.25	2.76	3
CF	20220131	Cloudy	Moderate	Mid-Ebb	M	9.85	12:45	8.94	8.08	33.17	20.27	2.34	4
CF	20220131	Cloudy	Moderate	Mid-Ebb	B	18.7	12:44	8.89	8.11	33.13	20.23	2.8	3
CF	20220131	Cloudy	Moderate	Mid-Ebb	B	18.7	12:44	8.9	8.13	33.11	20.28	2.77	3
WSR01	20220101	Cloudy	Moderate	Mid-Ebb	S	1	11:30	8.52	8.28	32.73	22.25	2.42	3
WSR01	20220101	Cloudy	Moderate	Mid-Ebb	S	1	11:30	8.66	8.28	32.72	22.18	2.46	5
WSR01	20220101	Cloudy	Moderate	Mid-Ebb	M	4.35	11:29	8.7	8.34	32.86	22.23	2.19	5
WSR01	20220101	Cloudy	Moderate	Mid-Ebb	M	4.35	11:29	8.71	8.29	32.87	22.11	2.22	9
WSR01	20220101	Cloudy	Moderate	Mid-Ebb	B	7.7	11:28	8.51	8.33	32.78	22.09	1.82	7
WSR01	20220101	Cloudy	Moderate	Mid-Ebb	B	7.7	11:28	8.75	8.33	32.75	22.08	1.6	9
WSR01	20220104	Sunny	Moderate	Mid-Ebb	S	1	13:51	8.83	8.28	32.05	22.46	2.34	7
WSR01	20220104	Sunny	Moderate	Mid-Ebb	S	1	13:51	8.83	8.34	32.19	22.38	2.65	5
WSR01	20220104	Sunny	Moderate	Mid-Ebb	M	4.3	13:50	8.89	8.28	32.26	22.47	2.28	5
WSR01	20220104	Sunny	Moderate	Mid-Ebb	M	4.3	13:50	8.91	8.33	32.31	22.46	2.06	5
WSR01	20220104	Sunny	Moderate	Mid-Ebb	B	7.6	13:49	8.71	8.33	32.28	22.35	1.94	6
WSR01	20220104	Sunny	Moderate	Mid-Ebb	B	7.6	13:49	8.8	8.29	32.24	22.42	2.32	5
WSR01	20220106	Sunny	Moderate	Mid-Ebb	S	1	15:37	8.1	8.36	32.85	22.94	3.93	5
WSR01	20220106	Sunny	Moderate	Mid-Ebb	S	1	15:37	8.13	8.41	32.9	22.89	4.01	3

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR01	20220106	Sunny	Moderate	Mid-Ebb	M	4.5	15:36	8.11	8.35	32.97	22.93	3.88	5
WSR01	20220106	Sunny	Moderate	Mid-Ebb	M	4.5	15:36	8.04	8.37	32.88	22.91	3.53	5
WSR01	20220106	Sunny	Moderate	Mid-Ebb	B	8	15:35	8.17	8.36	32.81	22.91	3.27	7
WSR01	20220106	Sunny	Moderate	Mid-Ebb	B	8	15:35	8.23	8.39	32.89	22.97	3.28	7
WSR01	20220108	Sunny	Moderate	Mid-Ebb	S	1	17:22	8.24	8.25	33.89	21.74	2.48	6
WSR01	20220108	Sunny	Moderate	Mid-Ebb	S	1	17:22	8.26	8.23	33.91	21.78	2.76	5
WSR01	20220108	Sunny	Moderate	Mid-Ebb	M	4.35	17:21	8.27	8.26	33.89	21.77	2.66	5
WSR01	20220108	Sunny	Moderate	Mid-Ebb	M	4.35	17:21	8.31	8.27	33.94	21.8	2.29	6
WSR01	20220108	Sunny	Moderate	Mid-Ebb	B	7.7	17:20	8.15	8.23	33.97	21.75	2.56	5
WSR01	20220108	Sunny	Moderate	Mid-Ebb	B	7.7	17:20	8.27	8.29	34.03	21.81	2.34	6
WSR01	20220111	Sunny	Moderate	Mid-Ebb	S	1	13:57	9.11	8.37	34.96	19.93	2.25	6
WSR01	20220111	Sunny	Moderate	Mid-Ebb	S	1	13:57	9.22	8.38	34.9	20.03	1.95	4
WSR01	20220111	Sunny	Moderate	Mid-Ebb	M	4.55	13:56	9.29	8.35	35.14	19.95	2.27	3
WSR01	20220111	Sunny	Moderate	Mid-Ebb	M	4.55	13:56	9.3	8.35	35.13	19.81	2.54	4
WSR01	20220111	Sunny	Moderate	Mid-Ebb	B	8.1	13:55	9.03	8.33	35.13	19.89	2.48	3
WSR01	20220111	Sunny	Moderate	Mid-Ebb	B	8.1	13:55	9.26	8.36	34.95	19.82	2.76	4
WSR01	20220113	Cloudy	Moderate	Mid-Ebb	S	1	10:05	8.58	8.14	32.81	20.35	3.14	3
WSR01	20220113	Cloudy	Moderate	Mid-Ebb	S	1	10:05	8.56	8.15	32.79	20.3	2.87	3
WSR01	20220113	Cloudy	Moderate	Mid-Ebb	M	4.7	10:04	8.53	8.26	32.79	20.3	2.59	4
WSR01	20220113	Cloudy	Moderate	Mid-Ebb	M	4.7	10:04	8.56	8.2	32.72	20.5	2.99	2.5
WSR01	20220113	Cloudy	Moderate	Mid-Ebb	B	8.4	10:03	8.58	8.2	32.74	20.38	2.93	4
WSR01	20220113	Cloudy	Moderate	Mid-Ebb	B	8.4	10:03	8.52	8.2	32.7	20.32	2.82	4
WSR01	20220115	Cloudy	Moderate	Mid-Ebb	S	1	12:15	8.2	8.28	33.13	21.23	2.99	2.5
WSR01	20220115	Cloudy	Moderate	Mid-Ebb	S	1	12:15	8.31	8.24	33.18	21.24	3.07	2.5
WSR01	20220115	Cloudy	Moderate	Mid-Ebb	M	4.25	12:14	8.25	8.2	33.11	21.1	2.75	6
WSR01	20220115	Cloudy	Moderate	Mid-Ebb	M	4.25	12:14	8.36	8.2	33.21	21.17	2.58	6

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR01	20220115	Cloudy	Moderate	Mid-Ebb	B	7.5	12:13	8.33	8.24	33.2	21.14	2.66	7
WSR01	20220115	Cloudy	Moderate	Mid-Ebb	B	7.5	12:13	8.21	8.2	33.11	21.21	2.71	6
WSR01	20220118	Cloudy	Moderate	Mid-Ebb	S	1	11:37	8.49	8.35	33.71	21	3.79	7
WSR01	20220118	Cloudy	Moderate	Mid-Ebb	S	1	11:37	8.5	8.29	33.73	20.97	3.69	4
WSR01	20220118	Cloudy	Moderate	Mid-Ebb	M	4.55	11:36	8.4	8.28	33.58	21.06	3.96	13
WSR01	20220118	Cloudy	Moderate	Mid-Ebb	M	4.55	11:36	8.41	8.29	33.66	20.96	3.53	13
WSR01	20220118	Cloudy	Moderate	Mid-Ebb	B	8.1	11:35	8.49	8.31	33.67	20.89	3.94	6
WSR01	20220118	Cloudy	Moderate	Mid-Ebb	B	8.1	11:35	8.39	8.26	33.7	21	3.54	8
WSR01	20220120	Sunny	Moderate	Mid-Ebb	S	1	13:47	8.18	8.23	33.04	21	4.08	6
WSR01	20220120	Sunny	Moderate	Mid-Ebb	S	1	13:47	8.17	8.3	33.07	21.01	3.85	5
WSR01	20220120	Sunny	Moderate	Mid-Ebb	M	4.6	13:46	8.22	8.23	33.02	21.01	3.13	5
WSR01	20220120	Sunny	Moderate	Mid-Ebb	M	4.6	13:46	8.16	8.28	33.04	20.97	3.64	6
WSR01	20220120	Sunny	Moderate	Mid-Ebb	B	8.2	13:45	8.21	8.31	33.07	20.94	2.97	5
WSR01	20220120	Sunny	Moderate	Mid-Ebb	B	8.2	13:45	8.27	8.24	32.81	20.94	3.01	6
WSR01	20220122	Cloudy	Moderate	Mid-Ebb	S	1	15:23	8.62	8.42	32.88	21.65	2.67	7
WSR01	20220122	Cloudy	Moderate	Mid-Ebb	S	1	15:23	8.61	8.35	32.76	21.68	2.92	8
WSR01	20220122	Cloudy	Moderate	Mid-Ebb	M	4.55	15:22	8.67	8.41	32.87	21.56	2.04	3
WSR01	20220122	Cloudy	Moderate	Mid-Ebb	M	4.55	15:22	8.64	8.33	32.72	21.57	2.38	3
WSR01	20220122	Cloudy	Moderate	Mid-Ebb	B	8.1	15:21	8.7	8.36	32.77	21.73	1.81	4
WSR01	20220122	Cloudy	Moderate	Mid-Ebb	B	8.1	15:21	8.62	8.41	32.7	21.73	2.03	4
WSR01	20220125	Cloudy	Moderate	Mid-Ebb	S	1	17:43	9.17	8.19	31.71	21.1	2.84	3
WSR01	20220125	Cloudy	Moderate	Mid-Ebb	S	1	17:43	9.07	8.26	31.73	20.97	2.99	2.5
WSR01	20220125	Cloudy	Moderate	Mid-Ebb	M	4.45	17:42	9.05	8.28	31.64	21.09	3.3	2.5
WSR01	20220125	Cloudy	Moderate	Mid-Ebb	M	4.45	17:42	9.15	8.17	31.59	21.03	2.89	2.5
WSR01	20220125	Cloudy	Moderate	Mid-Ebb	B	7.9	17:41	9.18	8.24	31.77	21.08	2.55	2.5
WSR01	20220125	Cloudy	Moderate	Mid-Ebb	B	7.9	17:41	9.06	8.24	31.66	21.01	2.99	3

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR01	20220127	Cloudy	Moderate	Mid-Ebb	S	1	10:06	8.83	8.13	31.61	20.39	2.64	11
WSR01	20220127	Cloudy	Moderate	Mid-Ebb	S	1	10:06	8.81	8.15	31.65	20.38	2.84	11
WSR01	20220127	Cloudy	Moderate	Mid-Ebb	M	4.4	10:05	8.69	8.07	31.79	20.43	2.61	8
WSR01	20220127	Cloudy	Moderate	Mid-Ebb	M	4.4	10:05	8.87	8.1	31.64	20.51	2.77	8
WSR01	20220127	Cloudy	Moderate	Mid-Ebb	B	7.8	10:04	8.81	8.1	31.78	20.38	2.28	12
WSR01	20220127	Cloudy	Moderate	Mid-Ebb	B	7.8	10:04	8.88	8.09	31.79	20.35	2.47	12
WSR01	20220129	Cloudy	Moderate	Mid-Ebb	S	1	10:27	9.31	8.07	30.3	20.68	3.49	5
WSR01	20220129	Cloudy	Moderate	Mid-Ebb	S	1	10:27	9.32	8.12	30.38	20.62	3.2	4
WSR01	20220129	Cloudy	Moderate	Mid-Ebb	M	4.25	10:26	9.2	8.11	30.32	20.6	2.78	5
WSR01	20220129	Cloudy	Moderate	Mid-Ebb	M	4.25	10:26	9.32	8.11	30.14	20.66	2.66	4
WSR01	20220129	Cloudy	Moderate	Mid-Ebb	B	7.5	10:25	9.25	8.09	30.29	20.75	3.06	4
WSR01	20220129	Cloudy	Moderate	Mid-Ebb	B	7.5	10:25	9.29	8.11	30.33	20.67	2.86	2.5
WSR01	20220131	Cloudy	Moderate	Mid-Ebb	S	1	12:23	8.18	7.94	34.04	20.36	2.95	4
WSR01	20220131	Cloudy	Moderate	Mid-Ebb	S	1	12:23	8.18	7.93	33.99	20.42	2.77	5
WSR01	20220131	Cloudy	Moderate	Mid-Ebb	M	4.3	12:22	8.12	7.95	34.05	20.3	2.46	4
WSR01	20220131	Cloudy	Moderate	Mid-Ebb	M	4.3	12:22	8.25	7.98	34.07	20.34	2.88	4
WSR01	20220131	Cloudy	Moderate	Mid-Ebb	B	7.6	12:21	8.19	8.01	33.88	20.38	2.63	4
WSR01	20220131	Cloudy	Moderate	Mid-Ebb	B	7.6	12:21	8.11	7.98	33.99	20.4	2.66	4
WSR02	20220101	Cloudy	Moderate	Mid-Ebb	S	1	11:12	8.07	8.3	33.31	22.19	2.31	7
WSR02	20220101	Cloudy	Moderate	Mid-Ebb	S	1	11:12	8.26	8.31	33.29	22.27	2.68	4
WSR02	20220101	Cloudy	Moderate	Mid-Ebb	M	4.65	11:11	8.15	8.3	33.26	22.17	2.15	6
WSR02	20220101	Cloudy	Moderate	Mid-Ebb	M	4.65	11:11	8.18	8.27	33.2	22.1	2.07	6
WSR02	20220101	Cloudy	Moderate	Mid-Ebb	B	8.3	11:10	8.22	8.3	33.21	22.2	1.85	3
WSR02	20220101	Cloudy	Moderate	Mid-Ebb	B	8.3	11:10	8.07	8.3	33.22	22.25	1.99	2.5
WSR02	20220104	Sunny	Moderate	Mid-Ebb	S	1	13:33	9.15	8.42	31.74	22.5	2.16	4
WSR02	20220104	Sunny	Moderate	Mid-Ebb	S	1	13:33	9.03	8.47	31.63	22.48	2.4	3

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR02	20220104	Sunny	Moderate	Mid-Ebb	M	4.85	13:32	9.19	8.46	31.69	22.5	2.14	4
WSR02	20220104	Sunny	Moderate	Mid-Ebb	M	4.85	13:32	9.24	8.44	31.74	22.43	1.84	2.5
WSR02	20220104	Sunny	Moderate	Mid-Ebb	B	8.7	13:31	9.2	8.43	31.69	22.47	1.81	4
WSR02	20220104	Sunny	Moderate	Mid-Ebb	B	8.7	13:31	9.06	8.45	31.75	22.45	1.94	4
WSR02	20220106	Sunny	Moderate	Mid-Ebb	S	1	15:19	8.64	8.29	32.59	22.86	3.21	5
WSR02	20220106	Sunny	Moderate	Mid-Ebb	S	1	15:19	8.62	8.34	32.55	22.87	3.48	3
WSR02	20220106	Sunny	Moderate	Mid-Ebb	M	4.65	15:18	8.71	8.32	32.44	22.83	3.15	5
WSR02	20220106	Sunny	Moderate	Mid-Ebb	M	4.65	15:18	8.78	8.34	32.48	22.85	3.6	5
WSR02	20220106	Sunny	Moderate	Mid-Ebb	B	8.3	15:17	8.74	8.34	32.5	22.81	3.42	4
WSR02	20220106	Sunny	Moderate	Mid-Ebb	B	8.3	15:17	8.66	8.3	32.61	22.81	3.33	3
WSR02	20220108	Sunny	Moderate	Mid-Ebb	S	1	17:04	8.9	8.22	33.77	21.57	2.98	6
WSR02	20220108	Sunny	Moderate	Mid-Ebb	S	1	17:04	8.9	8.3	33.89	21.63	2.84	8
WSR02	20220108	Sunny	Moderate	Mid-Ebb	M	4.95	17:03	8.89	8.21	33.93	21.63	2.53	4
WSR02	20220108	Sunny	Moderate	Mid-Ebb	M	4.95	17:03	8.99	8.27	33.85	21.66	2.82	3
WSR02	20220108	Sunny	Moderate	Mid-Ebb	B	8.9	17:02	8.92	8.27	33.81	21.64	2.24	6
WSR02	20220108	Sunny	Moderate	Mid-Ebb	B	8.9	17:02	8.88	8.3	33.93	21.6	2.15	7
WSR02	20220111	Sunny	Moderate	Mid-Ebb	S	1	13:42	8.58	8.36	34.56	20.08	1.67	4
WSR02	20220111	Sunny	Moderate	Mid-Ebb	S	1	13:42	8.84	8.31	34.36	20.24	1.99	3
WSR02	20220111	Sunny	Moderate	Mid-Ebb	M	4.85	13:41	8.7	8.35	34.6	20.34	2.09	3
WSR02	20220111	Sunny	Moderate	Mid-Ebb	M	4.85	13:41	8.74	8.33	34.55	20.28	2.16	3
WSR02	20220111	Sunny	Moderate	Mid-Ebb	B	8.7	13:40	8.68	8.26	34.44	20.21	1.76	5
WSR02	20220111	Sunny	Moderate	Mid-Ebb	B	8.7	13:40	8.8	8.33	34.55	20.3	1.48	6
WSR02	20220113	Cloudy	Moderate	Mid-Ebb	S	1	9:48	8.84	8.22	33.29	20.32	3.05	2.5
WSR02	20220113	Cloudy	Moderate	Mid-Ebb	S	1	9:48	8.88	8.25	33.32	20.37	2.68	2.5
WSR02	20220113	Cloudy	Moderate	Mid-Ebb	M	4.85	9:47	8.78	8.23	33.28	20.25	2.41	8
WSR02	20220113	Cloudy	Moderate	Mid-Ebb	M	4.85	9:47	8.81	8.24	33.25	20.21	2.83	8

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR02	20220113	Cloudy	Moderate	Mid-Ebb	B	8.7	9:46	8.76	8.19	33.32	20.24	2.12	3
WSR02	20220113	Cloudy	Moderate	Mid-Ebb	B	8.7	9:46	8.83	8.21	33.29	20.27	1.98	3
WSR02	20220115	Cloudy	Moderate	Mid-Ebb	S	1	11:57	8.9	8.22	33.17	20.38	2.25	6
WSR02	20220115	Cloudy	Moderate	Mid-Ebb	S	1	11:57	8.95	8.27	33.16	20.38	2.11	4
WSR02	20220115	Cloudy	Moderate	Mid-Ebb	M	4.5	11:56	8.9	8.24	33.21	20.35	2.54	2.5
WSR02	20220115	Cloudy	Moderate	Mid-Ebb	M	4.5	11:56	8.86	8.24	33.19	20.44	2.49	2.5
WSR02	20220115	Cloudy	Moderate	Mid-Ebb	B	8	11:55	8.83	8.28	33.18	20.47	2.52	5
WSR02	20220115	Cloudy	Moderate	Mid-Ebb	B	8	11:55	8.94	8.22	33.22	20.41	2.89	5
WSR02	20220118	Cloudy	Moderate	Mid-Ebb	S	1	11:21	9.08	8.06	33.35	20.73	2.3	4
WSR02	20220118	Cloudy	Moderate	Mid-Ebb	S	1	11:21	9.12	8.09	33.35	20.73	2.41	5
WSR02	20220118	Cloudy	Moderate	Mid-Ebb	M	4.75	11:20	9.05	8.03	33.3	20.91	2.35	2.5
WSR02	20220118	Cloudy	Moderate	Mid-Ebb	M	4.75	11:20	9.05	8.04	33.33	20.91	2.22	3
WSR02	20220118	Cloudy	Moderate	Mid-Ebb	B	8.5	11:19	9.04	8.08	33.27	20.85	2.52	2.5
WSR02	20220118	Cloudy	Moderate	Mid-Ebb	B	8.5	11:19	9.14	8.12	33.41	20.87	2.17	2.5
WSR02	20220120	Sunny	Moderate	Mid-Ebb	S	1	13:32	8.09	8.3	32.97	21.01	3.21	6
WSR02	20220120	Sunny	Moderate	Mid-Ebb	S	1	13:32	8	8.29	32.98	21.01	3.79	6
WSR02	20220120	Sunny	Moderate	Mid-Ebb	M	4.6	13:31	8.04	8.32	32.91	20.98	3.51	7
WSR02	20220120	Sunny	Moderate	Mid-Ebb	M	4.6	13:31	8.04	8.26	33.19	20.91	3.14	5
WSR02	20220120	Sunny	Moderate	Mid-Ebb	B	8.2	13:30	8.11	8.28	33.1	21.01	3.42	7
WSR02	20220120	Sunny	Moderate	Mid-Ebb	B	8.2	13:30	8.1	8.32	33.16	20.94	2.87	5
WSR02	20220122	Cloudy	Moderate	Mid-Ebb	S	1	15:06	8.92	8.37	32.98	20.92	2.45	4
WSR02	20220122	Cloudy	Moderate	Mid-Ebb	S	1	15:06	8.84	8.36	33.03	21	2.77	5
WSR02	20220122	Cloudy	Moderate	Mid-Ebb	M	4.7	15:05	8.88	8.35	32.93	21.01	2.21	5
WSR02	20220122	Cloudy	Moderate	Mid-Ebb	M	4.7	15:05	8.87	8.36	32.93	20.93	2.25	7
WSR02	20220122	Cloudy	Moderate	Mid-Ebb	B	8.4	15:04	8.85	8.34	33.09	21.01	2.12	4
WSR02	20220122	Cloudy	Moderate	Mid-Ebb	B	8.4	15:04	8.89	8.4	33.03	21.04	1.85	5

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR02	20220125	Cloudy	Moderate	Mid-Ebb	S	1	17:25	8.8	8.18	31.97	21.01	2.51	4
WSR02	20220125	Cloudy	Moderate	Mid-Ebb	S	1	17:25	8.84	8.29	31.87	20.98	2.18	3
WSR02	20220125	Cloudy	Moderate	Mid-Ebb	M	4.8	17:24	8.88	8.15	31.86	21.09	2.15	3
WSR02	20220125	Cloudy	Moderate	Mid-Ebb	M	4.8	17:24	8.76	8.23	31.86	21.01	2.43	4
WSR02	20220125	Cloudy	Moderate	Mid-Ebb	B	8.6	17:23	8.9	8.23	31.97	21.07	2.06	5
WSR02	20220125	Cloudy	Moderate	Mid-Ebb	B	8.6	17:23	8.8	8.15	31.93	20.99	2.28	4
WSR02	20220127	Cloudy	Moderate	Mid-Ebb	S	1	9:50	8.17	8.13	31.33	20.69	2.51	6
WSR02	20220127	Cloudy	Moderate	Mid-Ebb	S	1	9:50	8.19	8.16	31.42	20.66	2.81	5
WSR02	20220127	Cloudy	Moderate	Mid-Ebb	M	4.7	9:49	8.2	8.19	31.41	20.81	1.8	2.5
WSR02	20220127	Cloudy	Moderate	Mid-Ebb	M	4.7	9:49	8.25	8.18	31.33	20.65	1.92	3
WSR02	20220127	Cloudy	Moderate	Mid-Ebb	B	8.4	9:48	8.23	8.17	31.48	20.66	1.88	6
WSR02	20220127	Cloudy	Moderate	Mid-Ebb	B	8.4	9:48	8.15	8.11	31.39	20.66	2.02	5
WSR02	20220129	Cloudy	Moderate	Mid-Ebb	S	1	10:08	8.86	8.24	30.64	20.43	3.4	4
WSR02	20220129	Cloudy	Moderate	Mid-Ebb	S	1	10:08	8.86	8.28	30.54	20.42	3.14	5
WSR02	20220129	Cloudy	Moderate	Mid-Ebb	M	4.8	10:07	8.94	8.21	30.64	20.39	2.82	4
WSR02	20220129	Cloudy	Moderate	Mid-Ebb	M	4.8	10:07	8.98	8.24	30.61	20.53	2.61	3
WSR02	20220129	Cloudy	Moderate	Mid-Ebb	B	8.6	10:06	8.94	8.28	30.55	20.48	2.38	6
WSR02	20220129	Cloudy	Moderate	Mid-Ebb	B	8.6	10:06	8.92	8.23	30.55	20.52	2.65	3
WSR02	20220131	Cloudy	Moderate	Mid-Ebb	S	1	12:06	8.75	8.02	33.14	20.16	1.97	4
WSR02	20220131	Cloudy	Moderate	Mid-Ebb	S	1	12:06	8.72	8.1	33.14	20.14	1.92	6
WSR02	20220131	Cloudy	Moderate	Mid-Ebb	M	4.8	12:05	8.62	8.08	33.22	19.77	1.96	5
WSR02	20220131	Cloudy	Moderate	Mid-Ebb	M	4.8	12:05	8.58	8.07	33.2	20.15	2.05	5
WSR02	20220131	Cloudy	Moderate	Mid-Ebb	B	8.6	12:04	8.62	8.1	33.22	20.22	2.38	5
WSR02	20220131	Cloudy	Moderate	Mid-Ebb	B	8.6	12:04	8.73	8.07	33.28	20.5	2.22	5
WSR03	20220101	Cloudy	Moderate	Mid-Ebb	S	1	10:57	8.28	8.23	32.56	22.17	2.63	2.5
WSR03	20220101	Cloudy	Moderate	Mid-Ebb	S	1	10:57	8.4	8.24	32.52	22.11	2.77	3

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR03	20220101	Cloudy	Moderate	Mid-Ebb	M	3.85	10:56	8.28	8.24	32.64	22.19	2.33	3
WSR03	20220101	Cloudy	Moderate	Mid-Ebb	M	3.85	10:56	8.4	8.25	32.63	22.1	2.46	4
WSR03	20220101	Cloudy	Moderate	Mid-Ebb	B	6.7	10:55	8.45	8.26	32.56	22.2	2.21	2.5
WSR03	20220101	Cloudy	Moderate	Mid-Ebb	B	6.7	10:55	8.27	8.24	32.47	22.19	1.94	4
WSR03	20220104	Sunny	Moderate	Mid-Ebb	S	1	13:18	8.66	8.22	31.97	22.7	2.45	4
WSR03	20220104	Sunny	Moderate	Mid-Ebb	S	1	13:18	8.57	8.26	31.81	22.61	2.14	4
WSR03	20220104	Sunny	Moderate	Mid-Ebb	M	4.1	13:17	8.57	8.21	31.71	22.74	2.16	3
WSR03	20220104	Sunny	Moderate	Mid-Ebb	M	4.1	13:17	8.59	8.22	31.95	22.67	2.12	3
WSR03	20220104	Sunny	Moderate	Mid-Ebb	B	7.2	13:16	8.7	8.27	31.75	22.74	2.11	6
WSR03	20220104	Sunny	Moderate	Mid-Ebb	B	7.2	13:16	8.71	8.24	31.8	22.67	2.06	3
WSR03	20220106	Sunny	Moderate	Mid-Ebb	S	1	15:04	8.47	8.37	32.15	22.82	2.9	3
WSR03	20220106	Sunny	Moderate	Mid-Ebb	S	1	15:04	8.52	8.34	32.17	22.81	3.17	6
WSR03	20220106	Sunny	Moderate	Mid-Ebb	M	4.1	15:03	8.65	8.37	32.14	22.83	3.03	4
WSR03	20220106	Sunny	Moderate	Mid-Ebb	M	4.1	15:03	8.6	8.33	32.25	22.78	2.99	3
WSR03	20220106	Sunny	Moderate	Mid-Ebb	B	7.2	15:02	8.65	8.32	32.17	22.86	2.39	4
WSR03	20220106	Sunny	Moderate	Mid-Ebb	B	7.2	15:02	8.64	8.32	32.15	22.82	2.85	6
WSR03	20220108	Sunny	Moderate	Mid-Ebb	S	1	16:50	8.34	8.29	34.3	21.67	2.07	6
WSR03	20220108	Sunny	Moderate	Mid-Ebb	S	1	16:50	8.42	8.22	34.27	21.64	2.11	9
WSR03	20220108	Sunny	Moderate	Mid-Ebb	M	3.7	16:49	8.45	8.26	34.2	21.71	2.44	6
WSR03	20220108	Sunny	Moderate	Mid-Ebb	M	3.7	16:49	8.52	8.26	34.24	21.71	2.51	5
WSR03	20220108	Sunny	Moderate	Mid-Ebb	B	6.4	16:48	8.36	8.27	34.22	21.68	2.47	7
WSR03	20220108	Sunny	Moderate	Mid-Ebb	B	6.4	16:48	8.38	8.2	34.16	21.7	2.19	5
WSR03	20220111	Sunny	Moderate	Mid-Ebb	S	1	13:27	9.61	8.38	34.38	20.44	2.08	5
WSR03	20220111	Sunny	Moderate	Mid-Ebb	S	1	13:27	9.62	8.3	34.41	20.47	2.38	5
WSR03	20220111	Sunny	Moderate	Mid-Ebb	M	4.25	13:26	9.48	8.38	34.54	20.29	1.75	3
WSR03	20220111	Sunny	Moderate	Mid-Ebb	M	4.25	13:26	9.67	8.4	34.55	20.29	1.95	4

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR03	20220111	Sunny	Moderate	Mid-Ebb	B	7.5	13:25	9.59	8.29	34.42	20.28	1.44	6
WSR03	20220111	Sunny	Moderate	Mid-Ebb	B	7.5	13:25	9.59	8.35	34.44	20.31	1.4	6
WSR03	20220113	Cloudy	Moderate	Mid-Ebb	S	1	9:38	8.19	8.35	32.8	20.5	3.28	4
WSR03	20220113	Cloudy	Moderate	Mid-Ebb	S	1	9:38	8.3	8.25	32.73	20.39	3.49	4
WSR03	20220113	Cloudy	Moderate	Mid-Ebb	M	3.75	9:37	8.35	8.34	32.76	20.52	3.12	3
WSR03	20220113	Cloudy	Moderate	Mid-Ebb	M	3.75	9:37	8.26	8.35	32.79	20.33	2.89	6
WSR03	20220113	Cloudy	Moderate	Mid-Ebb	B	6.5	9:36	8.34	8.24	32.8	20.36	2.6	5
WSR03	20220113	Cloudy	Moderate	Mid-Ebb	B	6.5	9:36	8.35	8.33	32.74	20.47	2.74	5
WSR03	20220115	Cloudy	Moderate	Mid-Ebb	S	1	11:41	9.23	8.19	32.67	20.48	3.24	6
WSR03	20220115	Cloudy	Moderate	Mid-Ebb	S	1	11:41	9.24	8.2	32.7	20.57	3.18	7
WSR03	20220115	Cloudy	Moderate	Mid-Ebb	M	3.75	11:40	9.3	8.24	32.71	20.55	3.41	12
WSR03	20220115	Cloudy	Moderate	Mid-Ebb	M	3.75	11:40	9.3	8.25	32.74	20.54	3.43	15
WSR03	20220115	Cloudy	Moderate	Mid-Ebb	B	6.5	11:39	9.28	8.16	32.68	20.43	3.38	2.5
WSR03	20220115	Cloudy	Moderate	Mid-Ebb	B	6.5	11:39	9.35	8.21	32.7	20.52	3.26	3
WSR03	20220118	Cloudy	Moderate	Mid-Ebb	S	1	11:09	8.85	8.17	34.01	20.71	3.81	4
WSR03	20220118	Cloudy	Moderate	Mid-Ebb	S	1	11:09	8.75	8.11	34.03	20.67	4.53	5
WSR03	20220118	Cloudy	Moderate	Mid-Ebb	M	3.95	11:08	8.75	8.2	33.88	20.66	3.7	5
WSR03	20220118	Cloudy	Moderate	Mid-Ebb	M	3.95	11:08	8.83	8.2	33.98	20.92	3.64	3
WSR03	20220118	Cloudy	Moderate	Mid-Ebb	B	6.9	11:07	8.8	8.2	33.98	20.82	3	3
WSR03	20220118	Cloudy	Moderate	Mid-Ebb	B	6.9	11:07	8.75	8.21	33.96	20.87	3.32	2.5
WSR03	20220120	Sunny	Moderate	Mid-Ebb	S	1	13:20	8.46	8.2	33.13	20.99	3.89	6
WSR03	20220120	Sunny	Moderate	Mid-Ebb	S	1	13:20	8.52	8.22	33.06	20.95	3.86	6
WSR03	20220120	Sunny	Moderate	Mid-Ebb	M	4.2	13:19	8.46	8.15	32.98	20.92	3.99	4
WSR03	20220120	Sunny	Moderate	Mid-Ebb	M	4.2	13:19	8.51	8.18	32.95	20.91	3.9	4
WSR03	20220120	Sunny	Moderate	Mid-Ebb	B	7.4	13:18	8.46	8.21	32.86	21.01	3.42	6
WSR03	20220120	Sunny	Moderate	Mid-Ebb	B	7.4	13:18	8.53	8.15	32.92	20.94	3.04	5

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR03	20220122	Cloudy	Moderate	Mid-Ebb	S	1	14:52	8.52	8.42	33.3	20.94	3.08	4
WSR03	20220122	Cloudy	Moderate	Mid-Ebb	S	1	14:52	8.51	8.36	33.51	21.06	3.27	5
WSR03	20220122	Cloudy	Moderate	Mid-Ebb	M	4.2	14:51	8.38	8.44	33.4	21.04	3.14	5
WSR03	20220122	Cloudy	Moderate	Mid-Ebb	M	4.2	14:51	8.51	8.39	33.48	20.97	3	6
WSR03	20220122	Cloudy	Moderate	Mid-Ebb	B	7.4	14:50	8.43	8.35	33.29	21.11	2.33	5
WSR03	20220122	Cloudy	Moderate	Mid-Ebb	B	7.4	14:50	8.53	8.41	33.39	20.98	2.59	6
WSR03	20220125	Cloudy	Moderate	Mid-Ebb	S	1	17:11	8.33	8.17	31.1	20.83	2.39	3
WSR03	20220125	Cloudy	Moderate	Mid-Ebb	S	1	17:11	8.41	8.24	31.18	20.9	2.58	3
WSR03	20220125	Cloudy	Moderate	Mid-Ebb	M	4.2	17:10	8.29	8.22	31.05	20.84	2.13	4
WSR03	20220125	Cloudy	Moderate	Mid-Ebb	M	4.2	17:10	8.38	8.16	31.2	20.83	2.25	3
WSR03	20220125	Cloudy	Moderate	Mid-Ebb	B	7.4	17:09	8.33	8.21	31.15	20.88	2.01	2.5
WSR03	20220125	Cloudy	Moderate	Mid-Ebb	B	7.4	17:09	8.34	8.23	31.2	20.76	2.03	3
WSR03	20220127	Cloudy	Moderate	Mid-Ebb	S	1	9:34	8.51	8.03	31.27	20.75	3.38	6
WSR03	20220127	Cloudy	Moderate	Mid-Ebb	S	1	9:34	8.56	8.01	31.26	20.69	3.27	6
WSR03	20220127	Cloudy	Moderate	Mid-Ebb	M	3.85	9:33	8.63	8	31.29	20.69	2.96	8
WSR03	20220127	Cloudy	Moderate	Mid-Ebb	M	3.85	9:33	8.64	7.99	31.33	20.76	2.63	8
WSR03	20220127	Cloudy	Moderate	Mid-Ebb	B	6.7	9:32	8.67	7.99	31.34	20.72	2.27	5
WSR03	20220127	Cloudy	Moderate	Mid-Ebb	B	6.7	9:32	8.56	7.97	31.28	20.7	2.63	5
WSR03	20220129	Cloudy	Moderate	Mid-Ebb	S	1	9:53	8.81	8.29	30.06	20.13	4.24	5
WSR03	20220129	Cloudy	Moderate	Mid-Ebb	S	1	9:53	8.89	8.33	29.9	20.2	4.14	5
WSR03	20220129	Cloudy	Moderate	Mid-Ebb	M	4	9:52	8.83	8.33	30.06	20.28	3.46	4
WSR03	20220129	Cloudy	Moderate	Mid-Ebb	M	4	9:52	8.84	8.36	29.98	20.1	3.21	4
WSR03	20220129	Cloudy	Moderate	Mid-Ebb	B	7	9:51	8.82	8.4	29.96	20.2	3.25	18
WSR03	20220129	Cloudy	Moderate	Mid-Ebb	B	7	9:51	8.92	8.28	30.04	20.28	3.24	20
WSR03	20220131	Cloudy	Moderate	Mid-Ebb	S	1	11:50	8.85	8.03	33.62	20.23	2.87	3
WSR03	20220131	Cloudy	Moderate	Mid-Ebb	S	1	11:50	8.92	8.02	33.57	20.41	2.65	4

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR03	20220131	Cloudy	Moderate	Mid-Ebb	M	3.9	11:49	8.92	7.99	33.45	20.36	2.33	7
WSR03	20220131	Cloudy	Moderate	Mid-Ebb	M	3.9	11:49	8.82	7.94	33.53	20.39	2.08	6
WSR03	20220131	Cloudy	Moderate	Mid-Ebb	B	6.8	11:48	8.96	8.04	33.57	20.42	2.74	4
WSR03	20220131	Cloudy	Moderate	Mid-Ebb	B	6.8	11:48	8.85	7.98	33.64	20.33	2.47	5
WSR04	20220101	Cloudy	Moderate	Mid-Ebb	S	1	10:44	8.41	8.47	33.47	22.12	2.18	3
WSR04	20220101	Cloudy	Moderate	Mid-Ebb	S	1	10:44	8.29	8.47	33.39	22.23	1.99	4
WSR04	20220101	Cloudy	Moderate	Mid-Ebb	M	3.75	10:43	8.43	8.45	33.37	22.08	1.94	3
WSR04	20220101	Cloudy	Moderate	Mid-Ebb	M	3.75	10:43	8.28	8.47	33.47	22.17	2.13	4
WSR04	20220101	Cloudy	Moderate	Mid-Ebb	B	6.5	10:42	8.22	8.51	33.38	22.24	1.56	3
WSR04	20220101	Cloudy	Moderate	Mid-Ebb	B	6.5	10:42	8.38	8.49	33.34	22.24	1.55	3
WSR04	20220104	Sunny	Moderate	Mid-Ebb	S	1	13:07	9.17	8.43	32.07	22.6	2.27	5
WSR04	20220104	Sunny	Moderate	Mid-Ebb	S	1	13:07	9.22	8.39	32.06	22.74	2.34	5
WSR04	20220104	Sunny	Moderate	Mid-Ebb	M	3.55	13:06	9.3	8.41	31.84	22.61	2.56	5
WSR04	20220104	Sunny	Moderate	Mid-Ebb	M	3.55	13:06	9.17	8.39	31.94	22.65	2.3	4
WSR04	20220104	Sunny	Moderate	Mid-Ebb	B	6.1	13:05	9.27	8.37	31.86	22.63	2.19	7
WSR04	20220104	Sunny	Moderate	Mid-Ebb	B	6.1	13:05	9.14	8.38	31.99	22.62	2.36	5
WSR04	20220106	Sunny	Moderate	Mid-Ebb	S	1	14:53	9.23	8.22	32.08	23.47	3.5	2.5
WSR04	20220106	Sunny	Moderate	Mid-Ebb	S	1	14:53	9.09	8.19	31.9	23.39	3.46	4
WSR04	20220106	Sunny	Moderate	Mid-Ebb	M	3.45	14:52	9.18	8.19	32.03	23.49	3.69	4
WSR04	20220106	Sunny	Moderate	Mid-Ebb	M	3.45	14:52	9.12	8.21	31.9	23.39	3.52	3
WSR04	20220106	Sunny	Moderate	Mid-Ebb	B	5.9	14:51	9.25	8.2	32.01	23.45	3.17	3
WSR04	20220106	Sunny	Moderate	Mid-Ebb	B	5.9	14:51	9.14	8.22	32.07	23.41	3.38	4
WSR04	20220108	Sunny	Moderate	Mid-Ebb	S	1	16:39	8.41	8.4	34.09	21.66	2.32	5
WSR04	20220108	Sunny	Moderate	Mid-Ebb	S	1	16:39	8.34	8.37	33.94	21.71	2.1	5
WSR04	20220108	Sunny	Moderate	Mid-Ebb	M	3.85	16:38	8.25	8.39	34.09	21.66	2.32	6
WSR04	20220108	Sunny	Moderate	Mid-Ebb	M	3.85	16:38	8.42	8.38	33.96	21.69	2.36	4

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR04	20220108	Sunny	Moderate	Mid-Ebb	B	6.7	16:37	8.27	8.36	33.99	21.7	2.05	10
WSR04	20220108	Sunny	Moderate	Mid-Ebb	B	6.7	16:37	8.24	8.45	34.09	21.71	2.07	10
WSR04	20220111	Sunny	Moderate	Mid-Ebb	S	1	13:14	8.73	8.3	34.78	20.25	2.78	12
WSR04	20220111	Sunny	Moderate	Mid-Ebb	S	1	13:14	8.92	8.27	34.74	20.38	2.72	12
WSR04	20220111	Sunny	Moderate	Mid-Ebb	M	3.45	13:13	8.8	8.23	34.67	20.39	2.64	7
WSR04	20220111	Sunny	Moderate	Mid-Ebb	M	3.45	13:13	8.81	8.27	34.77	20.32	2.23	7
WSR04	20220111	Sunny	Moderate	Mid-Ebb	B	5.9	13:12	8.85	8.29	34.67	20.39	1.84	12
WSR04	20220111	Sunny	Moderate	Mid-Ebb	B	5.9	13:12	8.9	8.29	34.52	20.34	2.19	13
WSR04	20220113	Cloudy	Moderate	Mid-Ebb	S	1	9:25	8.87	8.29	33.18	20.49	3.08	2.5
WSR04	20220113	Cloudy	Moderate	Mid-Ebb	S	1	9:25	8.89	8.21	33.16	20.51	3.57	2.5
WSR04	20220113	Cloudy	Moderate	Mid-Ebb	M	3.65	9:24	8.97	8.16	33.04	20.58	3.14	3
WSR04	20220113	Cloudy	Moderate	Mid-Ebb	M	3.65	9:24	8.89	8.15	33.1	20.56	3.57	2.5
WSR04	20220113	Cloudy	Moderate	Mid-Ebb	B	6.3	9:23	8.78	8.15	33.05	20.63	3.09	2.5
WSR04	20220113	Cloudy	Moderate	Mid-Ebb	B	6.3	9:23	8.97	8.17	33.06	20.46	2.63	2.5
WSR04	20220115	Cloudy	Moderate	Mid-Ebb	S	1	11:29	8.63	8.21	33.17	20.67	3.18	3
WSR04	20220115	Cloudy	Moderate	Mid-Ebb	S	1	11:29	8.53	8.25	33.15	20.72	3.09	3
WSR04	20220115	Cloudy	Moderate	Mid-Ebb	M	3.45	11:28	8.66	8.2	33.08	20.81	3.27	2.5
WSR04	20220115	Cloudy	Moderate	Mid-Ebb	M	3.45	11:28	8.51	8.21	33.14	20.78	3.04	4
WSR04	20220115	Cloudy	Moderate	Mid-Ebb	B	5.9	11:27	8.6	8.2	33.12	20.71	3.32	3
WSR04	20220115	Cloudy	Moderate	Mid-Ebb	B	5.9	11:27	8.52	8.21	33.07	20.7	2.97	4
WSR04	20220118	Cloudy	Moderate	Mid-Ebb	S	1	11:00	9.1	8.3	33.22	20.89	4.41	5
WSR04	20220118	Cloudy	Moderate	Mid-Ebb	S	1	11:00	9.08	8.31	33.21	21.12	3.77	5
WSR04	20220118	Cloudy	Moderate	Mid-Ebb	M	3.35	10:59	9.09	8.34	33.32	20.9	3.64	2.5
WSR04	20220118	Cloudy	Moderate	Mid-Ebb	M	3.35	10:59	9.08	8.28	33.24	20.96	4.05	3
WSR04	20220118	Cloudy	Moderate	Mid-Ebb	B	5.7	10:58	9.18	8.33	33.28	21.1	3.57	2.5
WSR04	20220118	Cloudy	Moderate	Mid-Ebb	B	5.7	10:58	9.11	8.29	33.22	20.88	3.32	3

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR04	20220120	Sunny	Moderate	Mid-Ebb	S	1	13:09	8.67	8.14	33.88	21.07	3.99	5
WSR04	20220120	Sunny	Moderate	Mid-Ebb	S	1	13:09	8.68	8.19	33.82	21.08	3.81	5
WSR04	20220120	Sunny	Moderate	Mid-Ebb	M	3.9	13:08	8.64	8.18	34.07	21.08	4.04	6
WSR04	20220120	Sunny	Moderate	Mid-Ebb	M	3.9	13:08	8.61	8.2	33.98	21.08	4.14	6
WSR04	20220120	Sunny	Moderate	Mid-Ebb	B	6.8	13:07	8.62	8.14	33.88	21.07	3.78	5
WSR04	20220120	Sunny	Moderate	Mid-Ebb	B	6.8	13:07	8.71	8.14	34.08	21.02	3.5	4
WSR04	20220122	Cloudy	Moderate	Mid-Ebb	S	1	14:42	8.12	8.19	32.9	21.59	2.91	4
WSR04	20220122	Cloudy	Moderate	Mid-Ebb	S	1	14:42	8.14	8.23	32.99	21.56	3.27	5
WSR04	20220122	Cloudy	Moderate	Mid-Ebb	M	3.7	14:41	8.28	8.19	33.05	21.43	2.19	7
WSR04	20220122	Cloudy	Moderate	Mid-Ebb	M	3.7	14:41	8.22	8.2	33.01	21.4	2.28	5
WSR04	20220122	Cloudy	Moderate	Mid-Ebb	B	6.4	14:40	8.14	8.17	32.86	21.46	2.29	4
WSR04	20220122	Cloudy	Moderate	Mid-Ebb	B	6.4	14:40	8.19	8.18	32.93	21.58	2.33	5
WSR04	20220125	Cloudy	Moderate	Mid-Ebb	S	1	17:00	8.49	8.1	31.2	20.95	2.82	5
WSR04	20220125	Cloudy	Moderate	Mid-Ebb	S	1	17:00	8.55	8.17	31.06	20.95	2.43	5
WSR04	20220125	Cloudy	Moderate	Mid-Ebb	M	3.7	16:59	8.52	8.08	31.13	20.9	2.46	5
WSR04	20220125	Cloudy	Moderate	Mid-Ebb	M	3.7	16:59	8.54	8.18	31.09	20.96	2.78	4
WSR04	20220125	Cloudy	Moderate	Mid-Ebb	B	6.4	16:58	8.58	8.13	31.04	20.93	2.34	3
WSR04	20220125	Cloudy	Moderate	Mid-Ebb	B	6.4	16:58	8.55	8.11	31.04	20.93	2.21	3
WSR04	20220127	Cloudy	Moderate	Mid-Ebb	S	1	9:23	9.06	8.09	30.85	21	3.25	5
WSR04	20220127	Cloudy	Moderate	Mid-Ebb	S	1	9:23	9.19	8.03	30.82	20.99	3.04	7
WSR04	20220127	Cloudy	Moderate	Mid-Ebb	M	3.75	9:22	9.13	8.01	30.89	21.06	2.63	4
WSR04	20220127	Cloudy	Moderate	Mid-Ebb	M	3.75	9:22	9.16	8.05	30.91	21.06	3.1	4
WSR04	20220127	Cloudy	Moderate	Mid-Ebb	B	6.5	9:21	9.2	8.02	30.81	21.05	2.95	6
WSR04	20220127	Cloudy	Moderate	Mid-Ebb	B	6.5	9:21	9.07	8.06	30.87	21.02	2.82	5
WSR04	20220129	Cloudy	Moderate	Mid-Ebb	S	1	9:40	9.69	8.38	30.34	19.94	3.39	28
WSR04	20220129	Cloudy	Moderate	Mid-Ebb	S	1	9:40	9.62	8.35	30.57	19.95	3.65	28

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR04	20220129	Cloudy	Moderate	Mid-Ebb	M	3.7	9:39	9.59	8.36	30.34	20.02	2.99	11
WSR04	20220129	Cloudy	Moderate	Mid-Ebb	M	3.7	9:39	9.63	8.35	30.46	20.11	3.38	11
WSR04	20220129	Cloudy	Moderate	Mid-Ebb	B	6.4	9:38	9.67	8.39	30.44	20	2.75	18
WSR04	20220129	Cloudy	Moderate	Mid-Ebb	B	6.4	9:38	9.62	8.29	30.48	20.07	3.12	18
WSR04	20220131	Cloudy	Moderate	Mid-Ebb	S	1	11:36	8.58	8.06	33.06	20.16	2.86	4
WSR04	20220131	Cloudy	Moderate	Mid-Ebb	S	1	11:36	8.46	8	33.15	20.11	2.65	4
WSR04	20220131	Cloudy	Moderate	Mid-Ebb	M	3.4	11:35	8.45	8.02	33.07	20.16	2.54	4
WSR04	20220131	Cloudy	Moderate	Mid-Ebb	M	3.4	11:35	8.49	7.97	33.2	20.09	2.18	4
WSR04	20220131	Cloudy	Moderate	Mid-Ebb	B	5.8	11:34	8.54	7.97	33.12	20.11	1.89	4
WSR04	20220131	Cloudy	Moderate	Mid-Ebb	B	5.8	11:34	8.59	8.02	33.17	20.16	1.92	4
WSR16	20220101	Cloudy	Moderate	Mid-Ebb	S	1	9:46	8.23	8.4	33.34	22.13	2.19	5
WSR16	20220101	Cloudy	Moderate	Mid-Ebb	S	1	9:46	8.13	8.42	33.45	21.98	1.95	4
WSR16	20220101	Cloudy	Moderate	Mid-Ebb	M	7.95	9:45	8.03	8.4	33.41	22.04	1.91	4
WSR16	20220101	Cloudy	Moderate	Mid-Ebb	M	7.95	9:45	8.2	8.4	33.37	22.12	1.84	4
WSR16	20220101	Cloudy	Moderate	Mid-Ebb	B	14.9	9:44	8.12	8.4	33.31	22.14	1.9	8
WSR16	20220101	Cloudy	Moderate	Mid-Ebb	B	14.9	9:44	8.18	8.39	33.36	21.98	1.88	5
WSR16	20220104	Sunny	Moderate	Mid-Ebb	S	1	12:08	9.04	8.39	31.28	22.51	2.71	3
WSR16	20220104	Sunny	Moderate	Mid-Ebb	S	1	12:08	9.06	8.34	31.32	22.5	2.45	4
WSR16	20220104	Sunny	Moderate	Mid-Ebb	M	7.95	12:07	9.23	8.35	31.37	22.48	2.47	2.5
WSR16	20220104	Sunny	Moderate	Mid-Ebb	M	7.95	12:07	9.2	8.35	31.3	22.44	2.15	3
WSR16	20220104	Sunny	Moderate	Mid-Ebb	B	14.9	12:06	9.1	8.36	31.23	22.42	2.09	3
WSR16	20220104	Sunny	Moderate	Mid-Ebb	B	14.9	12:06	9.21	8.35	31.3	22.51	1.89	2.5
WSR16	20220106	Sunny	Moderate	Mid-Ebb	S	1	13:53	8.1	8.35	32.91	22.95	3.63	4
WSR16	20220106	Sunny	Moderate	Mid-Ebb	S	1	13:53	8.21	8.33	33	22.86	3.6	3
WSR16	20220106	Sunny	Moderate	Mid-Ebb	M	7.9	13:52	8.2	8.36	32.98	22.82	3.7	13
WSR16	20220106	Sunny	Moderate	Mid-Ebb	M	7.9	13:52	8.12	8.38	32.87	22.92	3.11	13

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR16	20220106	Sunny	Moderate	Mid-Ebb	B	14.8	13:51	8.22	8.34	33	22.89	2.86	2.5
WSR16	20220106	Sunny	Moderate	Mid-Ebb	B	14.8	13:51	8.02	8.34	32.87	22.92	3.39	3
WSR16	20220108	Sunny	Moderate	Mid-Ebb	S	1	15:38	8.42	8.31	34.7	22.18	2.93	5
WSR16	20220108	Sunny	Moderate	Mid-Ebb	S	1	15:38	8.47	8.32	34.68	22.16	2.96	4
WSR16	20220108	Sunny	Moderate	Mid-Ebb	M	8.4	15:37	8.36	8.37	34.63	22.13	2.28	5
WSR16	20220108	Sunny	Moderate	Mid-Ebb	M	8.4	15:37	8.34	8.37	34.79	22.17	2.58	8
WSR16	20220108	Sunny	Moderate	Mid-Ebb	B	15.8	15:36	8.34	8.31	34.75	22.14	2.14	5
WSR16	20220108	Sunny	Moderate	Mid-Ebb	B	15.8	15:36	8.33	8.3	34.66	22.1	2.38	6
WSR16	20220111	Sunny	Moderate	Mid-Ebb	S	1	12:01	9.25	8.4	34.33	20.37	2.54	8
WSR16	20220111	Sunny	Moderate	Mid-Ebb	S	1	12:01	9.2	8.32	34.29	20.29	2.62	8
WSR16	20220111	Sunny	Moderate	Mid-Ebb	M	8.15	12:00	9.16	8.37	34.46	20.32	2.46	5
WSR16	20220111	Sunny	Moderate	Mid-Ebb	M	8.15	12:00	9.35	8.28	34.46	20.37	2.23	5
WSR16	20220111	Sunny	Moderate	Mid-Ebb	B	15.3	11:59	9.33	8.34	34.27	20.36	2.29	3
WSR16	20220111	Sunny	Moderate	Mid-Ebb	B	15.3	11:59	9.32	8.29	34.27	20.42	2.31	4
WSR16	20220113	Cloudy	Moderate	Mid-Ebb	S	1	8:22	8.42	8.24	33.29	20.55	3.31	2.5
WSR16	20220113	Cloudy	Moderate	Mid-Ebb	S	1	8:22	8.49	8.22	33.3	20.61	2.8	4
WSR16	20220113	Cloudy	Moderate	Mid-Ebb	M	7.8	8:21	8.36	8.16	33.25	20.45	2.65	2.5
WSR16	20220113	Cloudy	Moderate	Mid-Ebb	M	7.8	8:21	8.38	8.23	33.17	20.48	2.47	4
WSR16	20220113	Cloudy	Moderate	Mid-Ebb	B	14.6	8:20	8.46	8.15	33.27	20.6	2.77	2.5
WSR16	20220113	Cloudy	Moderate	Mid-Ebb	B	14.6	8:20	8.4	8.21	33.22	20.59	2.6	6
WSR16	20220115	Cloudy	Moderate	Mid-Ebb	S	1	10:28	8.98	8.29	33.07	20.44	3.42	3
WSR16	20220115	Cloudy	Moderate	Mid-Ebb	S	1	10:28	8.93	8.28	33.11	20.55	3.22	3
WSR16	20220115	Cloudy	Moderate	Mid-Ebb	M	8.35	10:27	8.89	8.22	33.12	20.43	3.18	8
WSR16	20220115	Cloudy	Moderate	Mid-Ebb	M	8.35	10:27	8.89	8.23	33.07	20.43	3.24	8
WSR16	20220115	Cloudy	Moderate	Mid-Ebb	B	15.7	10:26	8.99	8.21	33.01	20.47	3.42	3
WSR16	20220115	Cloudy	Moderate	Mid-Ebb	B	15.7	10:26	8.92	8.24	33.12	20.48	3.18	3

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR16	20220118	Cloudy	Moderate	Mid-Ebb	S	1	10:06	9.27	8.27	33.97	20.82	3.83	3
WSR16	20220118	Cloudy	Moderate	Mid-Ebb	S	1	10:06	9.24	8.28	33.91	20.85	3.35	3
WSR16	20220118	Cloudy	Moderate	Mid-Ebb	M	8.25	10:05	9.26	8.29	33.86	20.74	3.27	2.5
WSR16	20220118	Cloudy	Moderate	Mid-Ebb	M	8.25	10:05	9.23	8.29	33.87	20.59	3.67	2.5
WSR16	20220118	Cloudy	Moderate	Mid-Ebb	B	15.5	10:04	9.32	8.24	33.95	20.76	3.59	2.5
WSR16	20220118	Cloudy	Moderate	Mid-Ebb	B	15.5	10:04	9.28	8.24	33.91	20.78	3.38	2.5
WSR16	20220120	Sunny	Moderate	Mid-Ebb	S	1	12:20	8.01	8.3	33.68	21.02	3.99	4
WSR16	20220120	Sunny	Moderate	Mid-Ebb	S	1	12:20	8.04	8.28	33.46	21.01	3.66	6
WSR16	20220120	Sunny	Moderate	Mid-Ebb	M	7.75	12:19	8.1	8.24	33.35	20.96	3.58	7
WSR16	20220120	Sunny	Moderate	Mid-Ebb	M	7.75	12:19	8.12	8.27	33.7	21.01	3.04	8
WSR16	20220120	Sunny	Moderate	Mid-Ebb	B	14.5	12:18	8.01	8.32	33.67	20.92	3.17	10
WSR16	20220120	Sunny	Moderate	Mid-Ebb	B	14.5	12:18	8.07	8.27	33.53	20.94	3.59	8
WSR16	20220122	Cloudy	Moderate	Mid-Ebb	S	1	13:45	8.39	8.36	33	20.95	2.88	7
WSR16	20220122	Cloudy	Moderate	Mid-Ebb	S	1	13:45	8.44	8.36	32.95	20.79	2.83	6
WSR16	20220122	Cloudy	Moderate	Mid-Ebb	M	8.3	13:44	8.48	8.37	32.77	20.87	2.89	6
WSR16	20220122	Cloudy	Moderate	Mid-Ebb	M	8.3	13:44	8.38	8.35	32.84	20.91	2.54	5
WSR16	20220122	Cloudy	Moderate	Mid-Ebb	B	15.6	13:43	8.46	8.33	33	20.86	2.62	2.5
WSR16	20220122	Cloudy	Moderate	Mid-Ebb	B	15.6	13:43	8.52	8.37	32.97	20.76	2.92	2.5
WSR16	20220125	Cloudy	Moderate	Mid-Ebb	S	1	16:04	8.89	8.28	32.05	20.81	2.44	5
WSR16	20220125	Cloudy	Moderate	Mid-Ebb	S	1	16:04	8.99	8.27	31.93	20.87	2.83	5
WSR16	20220125	Cloudy	Moderate	Mid-Ebb	M	8	16:03	8.95	8.17	31.99	20.72	2.29	5
WSR16	20220125	Cloudy	Moderate	Mid-Ebb	M	8	16:03	8.92	8.2	31.93	20.81	1.96	3
WSR16	20220125	Cloudy	Moderate	Mid-Ebb	B	15	16:02	8.9	8.19	32.02	20.75	2.15	4
WSR16	20220125	Cloudy	Moderate	Mid-Ebb	B	15	16:02	9	8.21	31.94	20.76	2.24	3
WSR16	20220127	Cloudy	Moderate	Mid-Ebb	S	1	8:22	8.79	8.02	31.54	20.44	3.17	4
WSR16	20220127	Cloudy	Moderate	Mid-Ebb	S	1	8:22	8.73	8.04	31.54	20.56	2.87	4

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR16	20220127	Cloudy	Moderate	Mid-Ebb	M	7.7	8:21	8.74	7.97	31.62	20.57	2.71	6
WSR16	20220127	Cloudy	Moderate	Mid-Ebb	M	7.7	8:21	8.82	8.01	31.67	20.5	3.02	5
WSR16	20220127	Cloudy	Moderate	Mid-Ebb	B	14.4	8:20	8.8	7.99	31.69	20.57	2.42	3
WSR16	20220127	Cloudy	Moderate	Mid-Ebb	B	14.4	8:20	8.83	8	31.65	20.49	2.86	6
WSR16	20220129	Cloudy	Moderate	Mid-Ebb	S	1	8:38	9.31	8.29	30.23	20.71	3.58	5
WSR16	20220129	Cloudy	Moderate	Mid-Ebb	S	1	8:38	9.36	8.26	30.26	20.8	3.12	4
WSR16	20220129	Cloudy	Moderate	Mid-Ebb	M	8.05	8:37	9.37	8.27	30.08	20.75	2.94	12
WSR16	20220129	Cloudy	Moderate	Mid-Ebb	M	8.05	8:37	9.33	8.27	30.04	20.65	3.25	12
WSR16	20220129	Cloudy	Moderate	Mid-Ebb	B	15.1	8:36	9.34	8.32	30.14	20.8	2.91	4
WSR16	20220129	Cloudy	Moderate	Mid-Ebb	B	15.1	8:36	9.3	8.29	30.18	20.69	2.63	2.5
WSR16	20220131	Cloudy	Moderate	Mid-Ebb	S	1	10:30	7.93	7.94	34.05	19.87	2.39	2.5
WSR16	20220131	Cloudy	Moderate	Mid-Ebb	S	1	10:30	7.88	7.99	33.98	19.84	2.74	6
WSR16	20220131	Cloudy	Moderate	Mid-Ebb	M	8.4	10:29	7.91	7.98	34.03	19.86	2.32	4
WSR16	20220131	Cloudy	Moderate	Mid-Ebb	M	8.4	10:29	8.01	7.99	33.95	19.91	2.02	6
WSR16	20220131	Cloudy	Moderate	Mid-Ebb	B	15.8	10:28	7.98	7.88	33.98	19.83	2.1	5
WSR16	20220131	Cloudy	Moderate	Mid-Ebb	B	15.8	10:28	8.08	7.92	34.05	19.91	1.99	4
WSR33	20220101	Cloudy	Moderate	Mid-Ebb	S	1	10:32	8.2	8.23	33.46	21.94	2.58	6
WSR33	20220101	Cloudy	Moderate	Mid-Ebb	S	1	10:32	8.09	8.28	33.44	21.97	2.88	6
WSR33	20220101	Cloudy	Moderate	Mid-Ebb	M	3.75	10:31	8.2	8.27	33.34	21.91	2.6	5
WSR33	20220101	Cloudy	Moderate	Mid-Ebb	M	3.75	10:31	8.22	8.26	33.41	21.91	2.28	4
WSR33	20220101	Cloudy	Moderate	Mid-Ebb	B	6.5	10:30	8.09	8.28	33.46	21.96	2.51	4
WSR33	20220101	Cloudy	Moderate	Mid-Ebb	B	6.5	10:30	8.15	8.22	33.45	21.84	2.14	6
WSR33	20220104	Sunny	Moderate	Mid-Ebb	S	1	12:52	8.49	8.3	32.14	22.5	2.13	2.5
WSR33	20220104	Sunny	Moderate	Mid-Ebb	S	1	12:52	8.31	8.28	32.18	22.54	2.27	2.5
WSR33	20220104	Sunny	Moderate	Mid-Ebb	M	3.7	12:51	8.4	8.32	32.28	22.6	2.43	7
WSR33	20220104	Sunny	Moderate	Mid-Ebb	M	3.7	12:51	8.43	8.34	32.19	22.6	2.42	7

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR33	20220104	Sunny	Moderate	Mid-Ebb	B	6.4	12:50	8.36	8.3	32.16	22.6	2.36	6
WSR33	20220104	Sunny	Moderate	Mid-Ebb	B	6.4	12:50	8.44	8.33	32.27	22.6	2.15	6
WSR33	20220106	Sunny	Moderate	Mid-Ebb	S	1	14:40	8.57	8.22	32.03	23.26	3.96	3
WSR33	20220106	Sunny	Moderate	Mid-Ebb	S	1	14:40	8.67	8.23	32.05	23.18	3.77	4
WSR33	20220106	Sunny	Moderate	Mid-Ebb	M	3.85	14:39	8.66	8.23	31.92	23.21	3.19	3
WSR33	20220106	Sunny	Moderate	Mid-Ebb	M	3.85	14:39	8.63	8.2	31.98	23.26	3.49	3
WSR33	20220106	Sunny	Moderate	Mid-Ebb	B	6.7	14:38	8.62	8.23	31.91	23.29	3.46	14
WSR33	20220106	Sunny	Moderate	Mid-Ebb	B	6.7	14:38	8.69	8.18	32.04	23.25	3.16	14
WSR33	20220108	Sunny	Moderate	Mid-Ebb	S	1	16:26	8.38	8.38	33.9	22.06	2.85	4
WSR33	20220108	Sunny	Moderate	Mid-Ebb	S	1	16:26	8.36	8.35	33.87	22	2.6	5
WSR33	20220108	Sunny	Moderate	Mid-Ebb	M	3.85	16:25	8.32	8.36	33.84	21.99	1.98	5
WSR33	20220108	Sunny	Moderate	Mid-Ebb	M	3.85	16:25	8.31	8.37	33.76	21.97	2.31	7
WSR33	20220108	Sunny	Moderate	Mid-Ebb	B	6.7	16:24	8.48	8.31	33.79	21.99	2.52	4
WSR33	20220108	Sunny	Moderate	Mid-Ebb	B	6.7	16:24	8.42	8.35	33.9	21.97	2.22	5
WSR33	20220111	Sunny	Moderate	Mid-Ebb	S	1	12:55	8.51	8.3	34.11	20.1	2.23	3
WSR33	20220111	Sunny	Moderate	Mid-Ebb	S	1	12:55	8.63	8.27	34.09	20.11	2.19	3
WSR33	20220111	Sunny	Moderate	Mid-Ebb	M	3.85	12:54	8.7	8.33	34.14	20.11	1.94	4
WSR33	20220111	Sunny	Moderate	Mid-Ebb	M	3.85	12:54	8.62	8.34	34.08	19.92	2.11	3
WSR33	20220111	Sunny	Moderate	Mid-Ebb	B	6.7	12:53	8.71	8.32	34.26	19.9	2.05	5
WSR33	20220111	Sunny	Moderate	Mid-Ebb	B	6.7	12:53	8.76	8.3	34.32	19.97	1.75	5
WSR33	20220113	Cloudy	Moderate	Mid-Ebb	S	1	9:10	8.07	8.11	32.57	20.46	3.27	6
WSR33	20220113	Cloudy	Moderate	Mid-Ebb	S	1	9:10	8.33	8.22	32.49	20.3	3.13	4
WSR33	20220113	Cloudy	Moderate	Mid-Ebb	M	3.8	9:09	8	8.17	32.49	20.3	3.17	5
WSR33	20220113	Cloudy	Moderate	Mid-Ebb	M	3.8	9:09	8.08	8.14	32.47	20.42	2.74	3
WSR33	20220113	Cloudy	Moderate	Mid-Ebb	B	6.6	9:08	8	8.22	32.44	20.28	2.33	5
WSR33	20220113	Cloudy	Moderate	Mid-Ebb	B	6.6	9:08	8.49	8.21	32.46	20.39	2.48	2.5

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR33	20220115	Cloudy	Moderate	Mid-Ebb	S	1	11:15	8.34	8.28	32.49	20.86	2.96	2.5
WSR33	20220115	Cloudy	Moderate	Mid-Ebb	S	1	11:15	8.42	8.25	32.48	20.91	2.85	2.5
WSR33	20220115	Cloudy	Moderate	Mid-Ebb	M	3.55	11:14	8.44	8.29	32.56	20.96	2.56	2.5
WSR33	20220115	Cloudy	Moderate	Mid-Ebb	M	3.55	11:14	8.44	8.28	32.46	20.84	2.99	2.5
WSR33	20220115	Cloudy	Moderate	Mid-Ebb	B	6.1	11:13	8.33	8.27	32.47	20.94	2.58	4
WSR33	20220115	Cloudy	Moderate	Mid-Ebb	B	6.1	11:13	8.33	8.26	32.52	20.84	2.53	4
WSR33	20220118	Cloudy	Moderate	Mid-Ebb	S	1	10:47	8.85	8.14	34.05	20.98	4.11	2.5
WSR33	20220118	Cloudy	Moderate	Mid-Ebb	S	1	10:47	8.81	8.1	33.87	20.92	3.8	3
WSR33	20220118	Cloudy	Moderate	Mid-Ebb	M	3.7	10:46	8.86	8.07	33.9	20.87	4.15	2.5
WSR33	20220118	Cloudy	Moderate	Mid-Ebb	M	3.7	10:46	8.91	8.14	33.95	20.94	4.21	3
WSR33	20220118	Cloudy	Moderate	Mid-Ebb	B	6.4	10:45	8.85	8.14	33.93	20.99	3.91	6
WSR33	20220118	Cloudy	Moderate	Mid-Ebb	B	6.4	10:45	8.85	8.04	33.89	21	3.31	6
WSR33	20220120	Sunny	Moderate	Mid-Ebb	S	1	12:57	8.61	8.28	33.95	21.01	3.3	10
WSR33	20220120	Sunny	Moderate	Mid-Ebb	S	1	12:57	8.6	8.23	34.21	20.96	3.29	11
WSR33	20220120	Sunny	Moderate	Mid-Ebb	M	3.65	12:56	8.6	8.26	34.06	21	3.17	8
WSR33	20220120	Sunny	Moderate	Mid-Ebb	M	3.65	12:56	8.66	8.24	33.92	20.92	3.57	9
WSR33	20220120	Sunny	Moderate	Mid-Ebb	B	6.3	12:55	8.65	8.31	33.95	20.97	2.48	8
WSR33	20220120	Sunny	Moderate	Mid-Ebb	B	6.3	12:55	8.57	8.31	34.08	20.95	2.8	6
WSR33	20220122	Cloudy	Moderate	Mid-Ebb	S	1	14:27	8.83	8.21	32.94	21.44	2.72	2.5
WSR33	20220122	Cloudy	Moderate	Mid-Ebb	S	1	14:27	8.87	8.27	32.97	21.55	2.8	2.5
WSR33	20220122	Cloudy	Moderate	Mid-Ebb	M	3.65	14:26	8.72	8.21	33.11	21.56	2.1	5
WSR33	20220122	Cloudy	Moderate	Mid-Ebb	M	3.65	14:26	8.84	8.26	33.02	21.56	2.2	4
WSR33	20220122	Cloudy	Moderate	Mid-Ebb	B	6.3	14:25	8.83	8.21	33.1	21.55	2.31	7
WSR33	20220122	Cloudy	Moderate	Mid-Ebb	B	6.3	14:25	8.82	8.25	33.06	21.57	2.11	8
WSR33	20220125	Cloudy	Moderate	Mid-Ebb	S	1	16:46	9	8.16	31.72	21.11	2.65	4
WSR33	20220125	Cloudy	Moderate	Mid-Ebb	S	1	16:46	9.02	8.05	31.8	21.05	2.43	3

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR33	20220125	Cloudy	Moderate	Mid-Ebb	M	3.85	16:45	8.96	8.1	31.63	21.06	2.65	2.5
WSR33	20220125	Cloudy	Moderate	Mid-Ebb	M	3.85	16:45	8.96	8.08	31.72	21.08	2.67	2.5
WSR33	20220125	Cloudy	Moderate	Mid-Ebb	B	6.7	16:44	9.06	8.12	31.68	21.01	2.12	4
WSR33	20220125	Cloudy	Moderate	Mid-Ebb	B	6.7	16:44	8.95	8.02	31.81	21.06	2.28	5
WSR33	20220127	Cloudy	Moderate	Mid-Ebb	S	1	9:09	9.03	8.12	31.21	20.45	3.18	16
WSR33	20220127	Cloudy	Moderate	Mid-Ebb	S	1	9:09	9.02	8.12	31.14	20.45	3.07	16
WSR33	20220127	Cloudy	Moderate	Mid-Ebb	M	3.7	9:08	8.92	8.11	31.16	20.51	2.33	6
WSR33	20220127	Cloudy	Moderate	Mid-Ebb	M	3.7	9:08	9.02	8.03	31.09	20.43	2.71	4
WSR33	20220127	Cloudy	Moderate	Mid-Ebb	B	6.4	9:07	8.93	8.15	31.12	20.43	2.23	10
WSR33	20220127	Cloudy	Moderate	Mid-Ebb	B	6.4	9:07	9.12	8.05	31.26	20.49	2.04	10
WSR33	20220129	Cloudy	Moderate	Mid-Ebb	S	1	9:26	9.37	8.2	30.42	20.23	3.05	3
WSR33	20220129	Cloudy	Moderate	Mid-Ebb	S	1	9:26	9.28	8.2	30.38	20.12	2.86	3
WSR33	20220129	Cloudy	Moderate	Mid-Ebb	M	3.6	9:25	9.35	8.3	30.5	20.07	3.32	5
WSR33	20220129	Cloudy	Moderate	Mid-Ebb	M	3.6	9:25	9.39	8.24	30.51	20.05	3.32	4
WSR33	20220129	Cloudy	Moderate	Mid-Ebb	B	6.2	9:24	9.27	8.26	30.56	20.1	2.69	10
WSR33	20220129	Cloudy	Moderate	Mid-Ebb	B	6.2	9:24	9.29	8.21	30.61	20.23	2.42	8
WSR33	20220131	Cloudy	Moderate	Mid-Ebb	S	1	11:20	8.72	7.95	33.41	20.15	2.66	4
WSR33	20220131	Cloudy	Moderate	Mid-Ebb	S	1	11:20	8.73	7.99	33.31	20.42	2.58	3
WSR33	20220131	Cloudy	Moderate	Mid-Ebb	M	3.65	11:19	8.62	8.02	33.4	20.22	2.06	12
WSR33	20220131	Cloudy	Moderate	Mid-Ebb	M	3.65	11:19	8.78	7.97	33.39	20.21	2.41	12
WSR33	20220131	Cloudy	Moderate	Mid-Ebb	B	6.3	11:18	8.81	7.94	33.44	20.23	2.25	5
WSR33	20220131	Cloudy	Moderate	Mid-Ebb	B	6.3	11:18	8.68	7.96	33.27	20.42	2.22	3
WSR36	20220101	Cloudy	Moderate	Mid-Ebb	S	1	10:19	8.64	8.22	33.32	22.21	3.02	5
WSR36	20220101	Cloudy	Moderate	Mid-Ebb	S	1	10:19	8.48	8.24	33.29	22.08	3.09	5
WSR36	20220101	Cloudy	Moderate	Mid-Ebb	M	3.05	10:19	8.44	8.25	33.4	22.15	2.54	5
WSR36	20220101	Cloudy	Moderate	Mid-Ebb	M	3.05	10:19	8.62	8.25	33.22	22.06	2.4	6

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR36	20220101	Cloudy	Moderate	Mid-Ebb	B	5.1	10:18	8.45	8.22	33.27	22.23	1.99	6
WSR36	20220101	Cloudy	Moderate	Mid-Ebb	B	5.1	10:18	8.65	8.24	33.25	22.09	2.31	5
WSR36	20220104	Sunny	Moderate	Mid-Ebb	S	1	12:39	8.28	8.27	32.11	22.92	2.79	4
WSR36	20220104	Sunny	Moderate	Mid-Ebb	S	1	12:39	8.21	8.21	32.02	22.88	2.41	3
WSR36	20220104	Sunny	Moderate	Mid-Ebb	M	3.4	12:39	8.21	8.26	31.93	22.8	2.16	4
WSR36	20220104	Sunny	Moderate	Mid-Ebb	M	3.4	12:39	8.37	8.27	32.11	22.82	2.04	8
WSR36	20220104	Sunny	Moderate	Mid-Ebb	B	5.8	12:38	8.26	8.21	31.92	22.87	1.9	6
WSR36	20220104	Sunny	Moderate	Mid-Ebb	B	5.8	12:38	8.36	8.23	31.98	22.78	1.83	6
WSR36	20220106	Sunny	Moderate	Mid-Ebb	S	1	14:27	8.56	8.16	31.74	23.12	4.01	3
WSR36	20220106	Sunny	Moderate	Mid-Ebb	S	1	14:27	8.36	8.13	31.75	23.04	3.71	5
WSR36	20220106	Sunny	Moderate	Mid-Ebb	M	3.05	14:27	8.4	8.13	31.86	23.07	3.53	7
WSR36	20220106	Sunny	Moderate	Mid-Ebb	M	3.05	14:27	8.5	8.14	31.75	23.02	3.25	7
WSR36	20220106	Sunny	Moderate	Mid-Ebb	B	5.1	14:26	8.37	8.1	31.78	23.11	3.02	5
WSR36	20220106	Sunny	Moderate	Mid-Ebb	B	5.1	14:26	8.45	8.16	31.86	23.12	3.49	3
WSR36	20220108	Sunny	Moderate	Mid-Ebb	S	1	16:11	8.76	8.41	34.05	22.06	2.54	4
WSR36	20220108	Sunny	Moderate	Mid-Ebb	S	1	16:11	8.79	8.41	33.9	22.03	2.72	6
WSR36	20220108	Sunny	Moderate	Mid-Ebb	M	3.55	16:11	8.83	8.38	33.92	22.04	2.63	4
WSR36	20220108	Sunny	Moderate	Mid-Ebb	M	3.55	16:11	8.71	8.41	33.96	22.11	2.21	4
WSR36	20220108	Sunny	Moderate	Mid-Ebb	B	6.1	16:10	8.74	8.38	33.96	22.11	2.54	4
WSR36	20220108	Sunny	Moderate	Mid-Ebb	B	6.1	16:10	8.69	8.37	33.98	22.04	2.21	5
WSR36	20220111	Sunny	Moderate	Mid-Ebb	S	1	12:41	8.9	8.32	34.48	20	2.44	5
WSR36	20220111	Sunny	Moderate	Mid-Ebb	S	1	12:41	8.82	8.38	34.72	19.89	2.87	4
WSR36	20220111	Sunny	Moderate	Mid-Ebb	M	3.4	12:41	8.88	8.35	34.51	19.96	2.4	3
WSR36	20220111	Sunny	Moderate	Mid-Ebb	M	3.4	12:41	8.86	8.35	34.65	19.96	2.77	4
WSR36	20220111	Sunny	Moderate	Mid-Ebb	B	5.8	12:40	8.79	8.34	34.74	19.87	2.3	4
WSR36	20220111	Sunny	Moderate	Mid-Ebb	B	5.8	12:40	8.85	8.38	34.63	19.98	2.06	3

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR36	20220113	Cloudy	Moderate	Mid-Ebb	S	1	8:54	8.51	8.16	33.04	20.36	3.2	4
WSR36	20220113	Cloudy	Moderate	Mid-Ebb	S	1	8:54	8.53	8.24	32.93	20.35	3.46	2.5
WSR36	20220113	Cloudy	Moderate	Mid-Ebb	M	3.3	8:54	8.54	8.22	32.95	20.22	2.9	2.5
WSR36	20220113	Cloudy	Moderate	Mid-Ebb	M	3.3	8:54	8.6	8.25	32.97	20.29	3.11	3
WSR36	20220113	Cloudy	Moderate	Mid-Ebb	B	5.6	8:53	8.5	8.29	33.05	20.19	2.62	4
WSR36	20220113	Cloudy	Moderate	Mid-Ebb	B	5.6	8:53	8.58	8.19	32.95	20.28	2.37	3
WSR36	20220115	Cloudy	Moderate	Mid-Ebb	S	1	11:01	8.74	8.22	32.39	21.22	3.48	2.5
WSR36	20220115	Cloudy	Moderate	Mid-Ebb	S	1	11:01	8.73	8.2	32.36	21.16	3.11	2.5
WSR36	20220115	Cloudy	Moderate	Mid-Ebb	M	3.2	11:01	8.76	8.24	32.35	21.16	3.32	3
WSR36	20220115	Cloudy	Moderate	Mid-Ebb	M	3.2	11:01	8.75	8.24	32.36	21.22	3.5	3
WSR36	20220115	Cloudy	Moderate	Mid-Ebb	B	5.4	11:00	8.84	8.21	32.43	21.22	3.11	2.5
WSR36	20220115	Cloudy	Moderate	Mid-Ebb	B	5.4	11:00	8.85	8.17	32.34	21.23	2.72	2.5
WSR36	20220118	Cloudy	Moderate	Mid-Ebb	S	1	10:34	8.37	8.22	32.98	21.05	3.47	3
WSR36	20220118	Cloudy	Moderate	Mid-Ebb	S	1	10:34	8.37	8.16	32.8	20.88	3.81	2.5
WSR36	20220118	Cloudy	Moderate	Mid-Ebb	M	3.7	10:34	8.36	8.22	32.87	20.8	3.47	6
WSR36	20220118	Cloudy	Moderate	Mid-Ebb	M	3.7	10:34	8.36	8.26	32.89	20.87	3.25	6
WSR36	20220118	Cloudy	Moderate	Mid-Ebb	B	6.4	10:33	8.42	8.24	32.88	21.03	3.18	2.5
WSR36	20220118	Cloudy	Moderate	Mid-Ebb	B	6.4	10:33	8.38	8.19	32.99	20.88	3.35	3
WSR36	20220120	Sunny	Moderate	Mid-Ebb	S	1	12:46	8.43	8.18	33.66	20.83	4.01	7
WSR36	20220120	Sunny	Moderate	Mid-Ebb	S	1	12:46	8.44	8.15	33.75	20.84	3.9	5
WSR36	20220120	Sunny	Moderate	Mid-Ebb	M	3.7	12:46	8.46	8.17	33.92	20.89	4.02	9
WSR36	20220120	Sunny	Moderate	Mid-Ebb	M	3.7	12:46	8.46	8.18	33.89	20.82	3.84	7
WSR36	20220120	Sunny	Moderate	Mid-Ebb	B	6.4	12:45	8.47	8.22	33.75	20.92	3.32	5
WSR36	20220120	Sunny	Moderate	Mid-Ebb	B	6.4	12:45	8.46	8.19	33.63	20.89	3.46	7
WSR36	20220122	Cloudy	Moderate	Mid-Ebb	S	1	14:14	8.06	8.34	32.7	21.12	3.03	3
WSR36	20220122	Cloudy	Moderate	Mid-Ebb	S	1	14:14	8.12	8.37	32.58	21.11	3.3	3

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR36	20220122	Cloudy	Moderate	Mid-Ebb	M	3.25	14:14	8.05	8.35	32.73	21.31	3.08	5
WSR36	20220122	Cloudy	Moderate	Mid-Ebb	M	3.25	14:14	8.05	8.38	32.58	21.3	3.15	5
WSR36	20220122	Cloudy	Moderate	Mid-Ebb	B	5.5	14:13	8.09	8.34	32.64	21.17	2.05	3
WSR36	20220122	Cloudy	Moderate	Mid-Ebb	B	5.5	14:13	8.06	8.34	32.67	21.32	2.37	3
WSR36	20220125	Cloudy	Moderate	Mid-Ebb	S	1	16:34	8.76	8.23	31.54	21.01	3.14	3
WSR36	20220125	Cloudy	Moderate	Mid-Ebb	S	1	16:34	8.79	8.13	31.5	21.14	3.47	4
WSR36	20220125	Cloudy	Moderate	Mid-Ebb	M	3.65	16:34	8.7	8.14	31.46	21.06	2.9	3
WSR36	20220125	Cloudy	Moderate	Mid-Ebb	M	3.65	16:34	8.78	8.12	31.57	21.03	2.85	3
WSR36	20220125	Cloudy	Moderate	Mid-Ebb	B	6.3	16:33	8.82	8.16	31.59	21.09	2.76	8
WSR36	20220125	Cloudy	Moderate	Mid-Ebb	B	6.3	16:33	8.82	8.25	31.56	21.02	2.94	7
WSR36	20220127	Cloudy	Moderate	Mid-Ebb	S	1	8:56	8.46	8.02	31.53	20.54	2.1	4
WSR36	20220127	Cloudy	Moderate	Mid-Ebb	S	1	8:56	8.33	7.94	31.49	20.5	2.49	4
WSR36	20220127	Cloudy	Moderate	Mid-Ebb	M	3.75	8:56	8.39	7.98	31.51	20.41	1.85	3
WSR36	20220127	Cloudy	Moderate	Mid-Ebb	M	3.75	8:56	8.34	7.94	31.4	20.37	1.84	4
WSR36	20220127	Cloudy	Moderate	Mid-Ebb	B	6.5	8:55	8.38	7.96	31.55	20.43	1.91	4
WSR36	20220127	Cloudy	Moderate	Mid-Ebb	B	6.5	8:55	8.33	8.04	31.45	20.37	2.03	6
WSR36	20220129	Cloudy	Moderate	Mid-Ebb	S	1	9:12	8.95	8.15	29.9	19.94	3.42	3
WSR36	20220129	Cloudy	Moderate	Mid-Ebb	S	1	9:12	9.01	8.12	30.1	19.9	3.42	5
WSR36	20220129	Cloudy	Moderate	Mid-Ebb	M	3.1	9:12	9.01	8.13	30.07	19.95	3.31	9
WSR36	20220129	Cloudy	Moderate	Mid-Ebb	M	3.1	9:12	8.93	8.2	30.06	19.85	3.32	9
WSR36	20220129	Cloudy	Moderate	Mid-Ebb	B	5.2	9:11	8.96	8.1	30.06	19.89	3.34	5
WSR36	20220129	Cloudy	Moderate	Mid-Ebb	B	5.2	9:11	8.94	8.13	30.04	19.83	2.86	4
WSR36	20220131	Cloudy	Moderate	Mid-Ebb	S	1	11:04	8.36	8.03	33.68	20.33	2.39	4
WSR36	20220131	Cloudy	Moderate	Mid-Ebb	S	1	11:04	8.38	8.01	33.83	20.36	2.6	4
WSR36	20220131	Cloudy	Moderate	Mid-Ebb	M	3.1	11:04	8.5	7.99	33.72	20.36	2.44	3
WSR36	20220131	Cloudy	Moderate	Mid-Ebb	M	3.1	11:04	8.32	7.98	33.72	20.33	2.47	5

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR36	20220131	Cloudy	Moderate	Mid-Ebb	B	5.2	11:03	8.38	7.99	33.67	20.33	2.51	5
WSR36	20220131	Cloudy	Moderate	Mid-Ebb	B	5.2	11:03	8.33	8.04	33.78	20.42	2.58	4
WSR37	20220101	Cloudy	Moderate	Mid-Ebb	S	1	10:07	8.49	8.27	32.57	22.1	3.09	15
WSR37	20220101	Cloudy	Moderate	Mid-Ebb	S	1	10:07	8.29	8.3	32.55	22.14	3.14	15
WSR37	20220101	Cloudy	Moderate	Mid-Ebb	M	4.2	10:06	8.42	8.25	32.65	22.2	2.75	7
WSR37	20220101	Cloudy	Moderate	Mid-Ebb	M	4.2	10:06	8.42	8.3	32.56	22.16	2.75	6
WSR37	20220101	Cloudy	Moderate	Mid-Ebb	B	7.4	10:05	8.47	8.24	32.61	22.21	1.95	7
WSR37	20220101	Cloudy	Moderate	Mid-Ebb	B	7.4	10:05	8.26	8.3	32.69	22.2	2.13	3
WSR37	20220104	Sunny	Moderate	Mid-Ebb	S	1	12:27	8.7	8.28	32.2	22.67	2.77	4
WSR37	20220104	Sunny	Moderate	Mid-Ebb	S	1	12:27	8.63	8.29	32.06	22.73	2.7	5
WSR37	20220104	Sunny	Moderate	Mid-Ebb	M	3.85	12:26	8.76	8.28	32.21	22.75	2.41	4
WSR37	20220104	Sunny	Moderate	Mid-Ebb	M	3.85	12:26	8.66	8.28	32.14	22.7	2.61	3
WSR37	20220104	Sunny	Moderate	Mid-Ebb	B	6.7	12:25	8.81	8.3	32.29	22.72	2.33	4
WSR37	20220104	Sunny	Moderate	Mid-Ebb	B	6.7	12:25	8.82	8.29	32.14	22.68	2.59	4
WSR37	20220106	Sunny	Moderate	Mid-Ebb	S	1	14:15	8.09	8.38	32.93	23.4	3.86	4
WSR37	20220106	Sunny	Moderate	Mid-Ebb	S	1	14:15	8.2	8.32	32.78	23.33	3.97	4
WSR37	20220106	Sunny	Moderate	Mid-Ebb	M	4.05	14:14	8.16	8.32	32.94	23.36	3.94	4
WSR37	20220106	Sunny	Moderate	Mid-Ebb	M	4.05	14:14	8.12	8.37	32.88	23.35	3.95	2.5
WSR37	20220106	Sunny	Moderate	Mid-Ebb	B	7.1	14:13	8.16	8.35	32.8	23.37	3.88	4
WSR37	20220106	Sunny	Moderate	Mid-Ebb	B	7.1	14:13	8.06	8.37	32.9	23.31	3.31	4
WSR37	20220108	Sunny	Moderate	Mid-Ebb	S	1	15:59	8.73	8.4	34.26	21.48	2.9	6
WSR37	20220108	Sunny	Moderate	Mid-Ebb	S	1	15:59	8.68	8.36	34.16	21.42	2.54	6
WSR37	20220108	Sunny	Moderate	Mid-Ebb	M	4.1	15:58	8.56	8.37	34.21	21.42	2.63	15
WSR37	20220108	Sunny	Moderate	Mid-Ebb	M	4.1	15:58	8.65	8.36	34.13	21.44	2.38	15
WSR37	20220108	Sunny	Moderate	Mid-Ebb	B	7.2	15:57	8.58	8.32	34.18	21.44	2.13	27
WSR37	20220108	Sunny	Moderate	Mid-Ebb	B	7.2	15:57	8.73	8.36	34.29	21.44	2.48	26

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR37	20220111	Sunny	Moderate	Mid-Ebb	S	1	12:21	8.85	8.25	33.91	19.95	2.64	5
WSR37	20220111	Sunny	Moderate	Mid-Ebb	S	1	12:21	8.79	8.34	33.96	20.15	2.77	3
WSR37	20220111	Sunny	Moderate	Mid-Ebb	M	3.95	12:20	8.92	8.34	33.91	19.96	2.7	3
WSR37	20220111	Sunny	Moderate	Mid-Ebb	M	3.95	12:20	8.97	8.37	33.72	20	2.6	3
WSR37	20220111	Sunny	Moderate	Mid-Ebb	B	6.9	12:19	8.85	8.27	33.93	19.96	2.48	3
WSR37	20220111	Sunny	Moderate	Mid-Ebb	B	6.9	12:19	8.92	8.28	33.73	20.14	2.53	4
WSR37	20220113	Cloudy	Moderate	Mid-Ebb	S	1	8:39	8.34	8.17	33.25	20.23	3.15	2.5
WSR37	20220113	Cloudy	Moderate	Mid-Ebb	S	1	8:39	8.28	8.2	33.28	20.39	3.07	2.5
WSR37	20220113	Cloudy	Moderate	Mid-Ebb	M	3.95	8:38	8.36	8.19	33.26	20.26	3.39	2.5
WSR37	20220113	Cloudy	Moderate	Mid-Ebb	M	3.95	8:38	8.42	8.16	33.31	20.21	3.65	3
WSR37	20220113	Cloudy	Moderate	Mid-Ebb	B	6.9	8:37	8.27	8.25	33.26	20.4	3.27	4
WSR37	20220113	Cloudy	Moderate	Mid-Ebb	B	6.9	8:37	8.29	8.18	33.35	20.33	3.36	3
WSR37	20220115	Cloudy	Moderate	Mid-Ebb	S	1	10:48	9.06	8.25	33.49	21.06	3.3	3
WSR37	20220115	Cloudy	Moderate	Mid-Ebb	S	1	10:48	9.05	8.23	33.54	21.16	3.45	3
WSR37	20220115	Cloudy	Moderate	Mid-Ebb	M	4.4	10:47	9.14	8.27	33.55	21.18	3.4	3
WSR37	20220115	Cloudy	Moderate	Mid-Ebb	M	4.4	10:47	9.12	8.24	33.49	21.2	3.68	3
WSR37	20220115	Cloudy	Moderate	Mid-Ebb	B	7.8	10:46	9.07	8.28	33.55	21.19	3.22	8
WSR37	20220115	Cloudy	Moderate	Mid-Ebb	B	7.8	10:46	9.14	8.26	33.58	21.18	2.96	8
WSR37	20220118	Cloudy	Moderate	Mid-Ebb	S	1	10:23	8.63	8.24	33.05	20.56	3.5	5
WSR37	20220118	Cloudy	Moderate	Mid-Ebb	S	1	10:23	8.65	8.14	32.99	20.4	3.71	4
WSR37	20220118	Cloudy	Moderate	Mid-Ebb	M	4.15	10:22	8.65	8.15	33.05	20.6	3.86	3
WSR37	20220118	Cloudy	Moderate	Mid-Ebb	M	4.15	10:22	8.66	8.21	33.16	20.63	3.47	4
WSR37	20220118	Cloudy	Moderate	Mid-Ebb	B	7.3	10:21	8.72	8.21	33.07	20.59	3.76	3
WSR37	20220118	Cloudy	Moderate	Mid-Ebb	B	7.3	10:21	8.72	8.16	33.01	20.58	3.61	2.5
WSR37	20220120	Sunny	Moderate	Mid-Ebb	S	1	12:37	8.58	8.3	33.63	21.01	3.57	7
WSR37	20220120	Sunny	Moderate	Mid-Ebb	S	1	12:37	8.65	8.3	33.6	21.01	3.9	9
WSR37	20220120	Sunny	Moderate	Mid-Ebb	M	3.9	12:36	8.59	8.24	33.26	21.03	3.04	4
WSR37	20220120	Sunny	Moderate	Mid-Ebb	M	3.9	12:36	8.61	8.27	33.39	20.98	3.18	6
WSR37	20220120	Sunny	Moderate	Mid-Ebb	B	6.8	12:35	8.55	8.23	33.46	21.04	2.84	10

Location	Date	Weather	Sea Conidtion	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)
WSR37	20220120	Sunny	Moderate	Mid-Ebb	B	6.8	12:35	8.54	8.28	33.34	21.04	3.27	11
WSR37	20220122	Cloudy	Moderate	Mid-Ebb	S	1	14:02	8.7	8.2	32.84	21.28	2.5	3
WSR37	20220122	Cloudy	Moderate	Mid-Ebb	S	1	14:02	8.76	8.24	32.76	21.38	2.65	2.5
WSR37	20220122	Cloudy	Moderate	Mid-Ebb	M	4.25	14:01	8.63	8.25	32.82	21.23	1.91	4
WSR37	20220122	Cloudy	Moderate	Mid-Ebb	M	4.25	14:01	8.63	8.24	32.78	21.28	1.63	4
WSR37	20220122	Cloudy	Moderate	Mid-Ebb	B	7.5	14:00	8.72	8.23	32.74	21.31	1.6	3
WSR37	20220122	Cloudy	Moderate	Mid-Ebb	B	7.5	14:00	8.71	8.17	32.72	21.44	1.88	3
WSR37	20220125	Cloudy	Moderate	Mid-Ebb	S	1	16:22	8.69	8.24	31.33	21.09	2.73	3
WSR37	20220125	Cloudy	Moderate	Mid-Ebb	S	1	16:22	8.81	8.21	31.27	20.97	2.36	4
WSR37	20220125	Cloudy	Moderate	Mid-Ebb	M	3.8	16:21	8.71	8.15	31.28	20.94	2.85	4
WSR37	20220125	Cloudy	Moderate	Mid-Ebb	M	3.8	16:21	8.72	8.21	31.33	21.03	2.71	3
WSR37	20220125	Cloudy	Moderate	Mid-Ebb	B	6.6	16:20	8.82	8.25	31.24	21.05	1.9	9
WSR37	20220125	Cloudy	Moderate	Mid-Ebb	B	6.6	16:20	8.83	8.2	31.24	21.09	1.96	10
WSR37	20220127	Cloudy	Moderate	Mid-Ebb	S	1	8:43	9.28	8.01	31.58	20.55	2.99	4
WSR37	20220127	Cloudy	Moderate	Mid-Ebb	S	1	8:43	9.23	7.94	31.64	20.6	3.46	4
WSR37	20220127	Cloudy	Moderate	Mid-Ebb	M	4.4	8:42	9.33	8.03	31.63	20.6	3.07	4
WSR37	20220127	Cloudy	Moderate	Mid-Ebb	M	4.4	8:42	9.29	8	31.64	20.57	2.73	4
WSR37	20220127	Cloudy	Moderate	Mid-Ebb	B	7.8	8:41	9.2	8.02	31.49	20.57	2.42	3
WSR37	20220127	Cloudy	Moderate	Mid-Ebb	B	7.8	8:41	9.27	7.97	31.51	20.56	2.73	4
WSR37	20220129	Cloudy	Moderate	Mid-Ebb	S	1	8:59	9.28	8.22	30.28	20.25	3.05	3
WSR37	20220129	Cloudy	Moderate	Mid-Ebb	S	1	8:59	9.23	8.26	30.25	20.3	3.07	3
WSR37	20220129	Cloudy	Moderate	Mid-Ebb	M	3.85	8:58	9.33	8.29	30.16	20.26	3.36	2.5
WSR37	20220129	Cloudy	Moderate	Mid-Ebb	M	3.85	8:58	9.26	8.17	30.2	20.25	3.22	2.5
WSR37	20220129	Cloudy	Moderate	Mid-Ebb	B	6.7	8:57	9.32	8.22	30.15	20.2	3.2	4
WSR37	20220129	Cloudy	Moderate	Mid-Ebb	B	6.7	8:57	9.27	8.18	30.12	20.19	3.03	2.5
WSR37	20220131	Cloudy	Moderate	Mid-Ebb	S	1	10:51	7.97	8.15	33.14	20.31	2.58	5
WSR37	20220131	Cloudy	Moderate	Mid-Ebb	S	1	10:51	8.11	8.21	33.19	20.27	2.51	4
WSR37	20220131	Cloudy	Moderate	Mid-Ebb	M	4.35	10:50	7.97	8.16	33.06	20.13	2.56	3
WSR37	20220131	Cloudy	Moderate	Mid-Ebb	M	4.35	10:50	7.99	8.11	33.14	20.17	2.31	5
WSR37	20220131	Cloudy	Moderate	Mid-Ebb	B	7.7	10:49	7.92	8.12	33.16	20.17	1.94	3
WSR37	20220131	Cloudy	Moderate	Mid-Ebb	B	7.7	10:49	7.91	8.17	33.13	20.17	1.8	4

Appendix M

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

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-wan, 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
本證書根據香港認可處訂立的條款及條件發出

L 001195

Appendix N

Water Quality and Landfill Gas Equipment Calibration Certificate

Equipment	Model	Serial Number	Calibration Date	Calibration Expiry Date*
Multi-Functional Meter	Horiba U-53	NEKVM2XU	15/12/2021	14/01/2022
Multi-Functional Meter	Horiba U-53	S2A98W8H	11/01/2022	10/02/2022

Remarks*: All *in situ* monitoring instruments will be checked, calibrated and certified by laboratory accredited under HOKLAS or any other international accreditation scheme before use, and subsequently re-calibrated at monthly intervals throughout the stages of water quality monitoring, as per requirements in the EM&A Manual Clause 5.1.3.

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

Test Report No. : R-BA120081
Date of Issue : 16 December 2021
Page No. : 1 of 2

PART A - CUSTOMER INFORMATION

Acuity Sustainability Consulting Limited
Unit E, 12/F, Ford Glory Plaza 37-39 Wing
Hong Street, Cheung Sha Wan
Kowloon (HK) Hong Kong
Attn :

PART B - SAMPLE INFORMATION

Name of Equipment :	HORIBA U-53
Manufacturer :	HORIBA
Serial Number :	NEKVM2XU
Date of Received :	09 December 2021
Date of Calibration :	15 December 2021
Date of Next Calibration :	14 March 2022

PART C - REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Test Parameter	Reference Method
pH value	APHA 21e 4500 H+
Temperature	Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure
Dissolved oxygen	APHA 21e 4500 O
Salinity	APHA 21e 2520B
Turbidity	APHA 21e 2130B

PART D - CALIBRATION RESULT

(1) pH value

TARGET (PH UNIT)	DISPLAY READING	TOLERANCE	RESULT
4.00	3.99	-0.01	Satisfactory
7.42	7.22	-0.20	Satisfactory
10.01	9.81	-0.20	Satisfactory

Tolerance of pH value should be less than ± 0.2 (pH unit)

(2) Temperature

READING OF REF. THERMOMETER (°C)	DISPLAY READING (°C)	TOLERANCE (°C)	RESULT
16	16.30	0.30	Satisfactory
22	22.00	0.00	Satisfactory
34	33.38	-0.62	Satisfactory

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

(3) Dissolved oxygen

EXPECTED READING (MG/L)	DISPLAY READING (MG/L)	TOLERANCE (MG/L)	RESULT
8.39	8.17	-0.22	Satisfactory
6.59	6.79	0.20	Satisfactory

--- CONTINUED ON NEXT PAGE ---

AUTHORIZED SIGNATORY:

Lee Chun-ning
Assistant Manager (Chemical Testing)

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
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Tel: (852) 3956 8717; Fax: (852) 3956 3928

REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Test Report No. : R-BA120081
Date of Issue : 16 December 2021

EXPECTED READING (MG/L)	DISPLAY READING (MG/L)	TOLERANCE (MG/L)	RESULT
5.96	6.10	0.14	Satisfactory
2.21	1.76	-0.45	Satisfactory

Tolerance of Dissolved oxygen should be less than ± 0.5 (mg/L)

(4) Salinity

EXPECTED READING (G/L)	DISPLAY READING (G/L)	TOLERANCE (%)	RESULT
10	9.69	-3.10	Satisfactory
20	20.50	2.50	Satisfactory
30	31.18	3.93	Satisfactory

Tolerance of Salinity should be less than ± 10.0 (%)

(5) Turbidity

EXPECTED READING (NTU)	DISPLAY READING (NTU)	TOLERANCE (%)	RESULT
0	0.17	--	Satisfactory
10	9.90	-1.0	Satisfactory
20	19.7	-1.5	Satisfactory
100	104	4.0	Satisfactory
800	796	-0.5	Satisfactory

Tolerance of Turbidity should be less than ± 10.0 (%)

Remark(s)

·The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted form relevant international standards.

·The results relate only to the calibrated equipment as received

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

·"Displayed Reading" denotes the figure shown on item under calibration/ checking regardless of equipment precision or significant figures.

·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.

--- END OF REPORT ---

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

Test Report No. : R-BB010050
Date of Issue : 13 January 2022

PART A - CUSTOMER INFORMATION

Acuity Sustainability Consulting Limited
Unit E, 12/F, Ford Glory Plaza 37-39 Wing
Hong Street, Cheung Sha Wan
Kowloon (HK) Hong Kong
Attn :

PART B - SAMPLE INFORMATION

Name of Equipment :	HORIBA U-53
Manufacturer :	HORIBA
Serial Number :	S2A98W8H
Date of Received :	10 January 2022
Date of Calibration :	11 January 2022
Date of Next Calibration :	10 April 2022

PART C - REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Test Parameter	Reference Method
Turbidity	APHA 21e 2130B
Dissolved oxygen	APHA 21e 4500 O
pH value	APHA 21e 4500 H+
Salinity	APHA 21e 2520B
Temperature	Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure

PART D - CALIBRATION RESULT

(1) Turbidity

EXPECTED READING (NTU)	DISPLAY READING (NTU)	TOLERANCE (%)	RESULT
0	0	--	Satisfactory
10	10.4	4.0	Satisfactory
20	20.2	1.0	Satisfactory
100	105	5.0	Satisfactory
800	798	-0.3	Satisfactory

Tolerance of Turbidity should be less than ± 10.0 (%)

(2) Dissolved oxygen

EXPECTED READING (MG/L)	DISPLAY READING (MG/L)	TOLERANCE (MG/L)	RESULT
8.87	8.84	-0.03	Satisfactory
6.05	6.43	0.38	Satisfactory
4.47	4.67	0.20	Satisfactory
2.03	2.37	0.34	Satisfactory

Tolerance of Dissolved oxygen should be less than ± 0.5 (mg/L)

(3) pH value

--- CONTINUED ON NEXT PAGE ---

AUTHORIZED SIGNATORY:

LEE Chun-ning
Assistant Manager (Chemical Testing)

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

Test Report No. : R-BB010050
Date of Issue : 13 January 2022

TARGET (PH UNIT)	DISPLAY READING (PH UNIT)	TOLERANCE	RESULT
4.00	3.96	-0.04	Satisfactory
7.42	7.24	-0.18	Satisfactory
10.01	9.87	-0.14	Satisfactory

Tolerance of pH value should be less than ± 0.2 (pH unit)

(4) Salinity

EXPECTED READING (G/L)	DISPLAY READING (G/L)	TOLERANCE (%)	RESULT
10	9.23	-7.70	Satisfactory
20	19.19	-4.05	Satisfactory
30	29.14	-2.87	Satisfactory

Tolerance of Salinity should be less than ± 10.0 (%)

(5) Temperature

READING OF REF. THERMOMETER (°C)	DISPLAY READING (°C)	TOLERANCE (°C)	RESULT
19	19.25	0.25	Satisfactory
24	23.70	-0.30	Satisfactory
33	32.84	-0.16	Satisfactory

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

Remark(s)

·The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted form relevant international standards.

·The results relate only to the calibrated equipment as received

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

·"Displayed Reading" denotes the figure shown on item under calibration/ checking regardless of equipment precision or significant figures.

·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.

--- END OF REPORT ---

Calibration Certificate

Customer Name	PROMAT (HK) LTD
Customer Details	SAN PO KONG KOWLOON HONG KONG
Order Number	21000418
Acknowledgement Number	165921
Instrument	PS500
Serial number	254928
Test Date	29 September 2021

This instrument has been manufactured in accordance with our ISO9001 approved procedures and conforms to the quality and manufacturing standards laid down in our process. This instrument has been calibrated using gases that are traceable to national standards.

CALIBRATION RESULTS

Gas Applied	Conc.	Range	After Cal
CO2	3.00 % CO2	%	3.00 %
Methane	50 % LEL	LEL	50 %
O2	Air	% VOL	20.9 %
H2S	50 PPM H2S	PPM	50 PPM
CO	500 PPM CO	PPM	499 PPM

Calibrated on behalf of GMI Ltd by: _____

TELEDYNE GAS MEASUREMENT INSTRUMENTS
Everywhereyoulook™

PROMAT

PS500

Portable 5 Gas Monitor

Designed by our customers, this robust and accurate gas detector provides unrivalled protection in confined space applications.

Auto Bump & Calibration Station

- Simple user interface
- Bump test or calibration
- Bump/calibration results storage
- Standalone, PC or Ethernet options
- Robust construction

Features

- Over 15 “plug-and-play” smart sensors
- PID sensors for VOC detection
- Flexible configuration to suit your requirements
- Audible and visual alarms
- Datalogging for calibration certificates, data management, and event logging
- Robust construction
- Internal pump (optional)
- Easy maintenance
- Low cost of ownership

PS500

Portable 5 Gas Monitor

Description

The PS500 can be configured to detect up to five gases with its electrochemical and catalytic sensors, photo ionisation detectors (PID), and infrared capabilities.

"Plug and Play" maximizes flexibility by allowing other gases to be detected, by simply inserting a new smart sensor assembly.

The PS500 is effective in noisy environments, featuring a loud (95dB) penetrating and distinctive audible alarm together with a high visibility visual alarm.

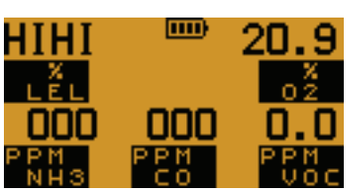
With a robust, rubberized casing guaranteeing hi-Impact resistance, the PS500 is ideal for the most demanding industrial environments.
An optional internal pump allows both pumped or diffusion measurements. If the pump is fitted, it can be easily turned on/off, depending on application. E.g. pump on to perform pre-entry measurements correctly, pump off for confined space working.

Technical Specification

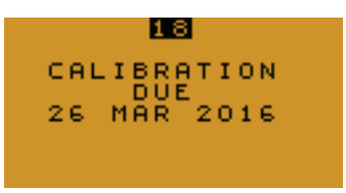
Size:	140 x 85 x 45 mm / 5.5" x 3.3" x 1.7"
Weight:	0.4 kg / 14 oz.
Humidity:	0-98% non condensing
Alarms:	Visual 360o full light bar, piercing 95db audible Low battery alarm User programmable alarms: Up to 4 alarms per toxic gas (incl. STEL / TWA) 3 alarms for O2 2 alarms for LEL
Display:	LCD backlight display
Datalogging:	Timed: 24 hours of timed logs at 1 log per minute Session: Minimum of 180 logs Calibration: 8 calibration logs
Sampling:	Maximum tubing length - 30 m / 98 ft. (Response times increase by approx. 1 second for every metre / 3 ft. of tubing used)
Battery:	NiMH rechargeable battery - 12 hr. minimum with pump Alkaline battery pack (3 AA) - 12 hr. minimum with pump
Enclosure:	High impact rubberised polycarbonate case
IP Rating:	IP65 (Dust tight and water resistant)
Approvals:	* UL 913 Class I, Div 1 Groups A,B,C,D MED (0038/YY) - Module B & E CE ATEX II 2 G EEx iad IIC T3 / T4
IECEx:	Ex iad IIC T4/T3
Warranty:	2 years

* Excludes NDIR sensor option.

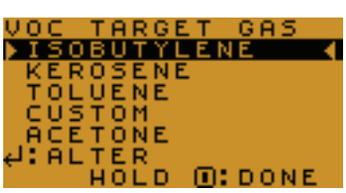
Features



Display in alarm conditions



Configurable calibration options



VOC target gas selection

PS500
Portable 5 Gas Monitor

Automatic Bump Testing and Calibration

To provide accurate performance and results, the PS500 has to be properly used and maintained. The Auto Bump & Calibration Station (ABC) provides bump testing, calibration and data management options and is compact, robust and intuitive to use. Two versions of the ABC are available allowing either a single gas cylinder or up to three cylinders to be connected. Additionally, a special three cylinder version is available for reactive gases. The ABC is fully configurable and can operate in three distinct modes of operation:

Standalone

- No PC or network connection required
- Simple setup and configuration
- Results stored on ABC
- USB access for results extraction
- Settings App for easy printing of calibration certificates

PC

- PC / laptop connected to ABC
- Setup and configuration using flexiCal Plus software
- Results stored in the PC / laptop
- Easy access to all results
- Powerful data management / calibration certificate generation

Ethernet

- Multiple ABC's can be connected to a network
- Setup and configuration using IMS Settings software
- All results stored in the IMS database
- Easy access to all results
- Powerful data management / calibration certificate generation

Auto Bump & Calibration Station Technical Station

Size:	200 x 140 x 135mm (7.9" x 5.5" x 5.3")
Weight:	Singe Gas - 1.2kg (43oz) Multi Gas - 1.35kg (48oz)
Interfaces:	Standalone /USB /Ethernet
LED Indicators:	Power (Green) /Testing (Orange) / Pass (Green) / Fail (Red)
Testing Time:	Bump Test 150 secs Calibration Test 150 secs
Data Storage:	Up to 6000 Bump & Calibration results
Power Supply:	12V dc, 2A
Operating Temperature:	-10°C to 40°C (14°F to 104°F)
Gas Ports:	Single Gas - 3 (Air, Gas & Exhaust) Multi Gas - 5 (Air, Gas x 3 & Exhaust)

PS500

Ordering information

Sensor Specification				
Gas	**Ranges**	**Resolution**	**Sensor Type**	**T90**
LEL	0 - 100% LEL	1% LEL	Cat-bead	15 sec
	0 - 100% LEL	1% LEL	NDIR	35 sec
CO_2	0 - 2.50%	0.01%	NDIR	25 sec
	2.50 - 5.00%	0.05%		
O_2	0 - 25%	0.1%	Electrochemical	10 sec
CO	0 - 1000PPM	1PPM	Electrochemical	35 sec
H_2S	0 - 100PPM	1PPM	Electrochemical	25 sec
DUAL TOX CO/H_2S	0-1000PPM(CO) 0-100PPM(H_2S)	1PPM	Electrochemical	35 sec & 25 sec
SO_2	0 - 30PPM	1PPM	Electrochemical	10 sec
	0 - 100PPM	1PPM	Electrochemical	10 sec
CL_2	0 - 10PPM	0.1PPM	Electrochemical	30 sec
NH_3	0 -100PPM	1PPM	Electrochemical	60 sec
NO	0 - 300PPM	1PPM	Electrochemical	20 sec
NO_2	0 - 20PPM	0.1PPM	Electrochemical	185 sec
PH_3	0 - 100PPM	1PPM	PID	5 sec
VOC	0 - 100PPM	0.1PPM	PID	5 sec
	0 - 1000PPM	1PPM	PID	5 sec
C_6H_6	0 - 20PPM	0.1PPM	PID	5 sec

Long duration battery pack and instrument with fast charge battery pack, charging in Fast Charger master / slave units.

Battery / Charger Accessories	
66701	Long duration rechargeable battery pack
66702	Alkaline battery pack (3 x AA batteries)
66703	Fast charge rechargeable battery pack
66140	Standard charger - c/w universal plug (for 66701)
66200	5-way charger - c/w universal plug (for 66701)
66207	10-way charger - c/w universal plug (for 66701)
66206	Car/vehicle charger 12/24V (for 66701)
66513	Fast charger - c/w universal plug
66516	10-way fast charger master unit - c/w universal plug
66514	10-way fast charger slave unit - c/w universal plug

Recommended Accessories / Spare Parts	
66485	Hydrophobic filter - external inline
66136	3m sample line (Tygon® tubing) with connector
66930	3m reactive gas tubing with connector
66028	Neck harness
66017	Probe assembly
61208	Datalogging package
61445	PS500 CAL - Calibration Package
66083	Sensor grill hydrophobic filter
66084	Sensor gas inlet filter
66108	Blank sensor plug
66190	Pump assembly kit - includes pump, tubing and fittings

Automatic Bump & Calibration	
61502	Auto Bump & Calibration Station - single gas connection (6mm fittings & incl. PSU & USB stick with Standalone software)
61504	Auto Bump & Calibration Station - multi gas connections (4mm / 6mm fittings & incl. PSU & USB stick with Standalone software)
61504R	Auto Bump & Calibration Station - multi gas connections (for reactive gases CL_2 / NH_3)
99553	flexiCal Plus software for PC
99118	Demand flow regulator
64265	Tubing with 6mm push fit connection (for 61502)
61540	600mm reactive gas tubing (for 61504R)
64443	6mm Push fit Barbed Adaptor
61536	4mm Push fit Barbed Adaptor (for 61504)

Gas Kits for Automatic Bump & Calibration Station	
99146	Combi Test Gas Cylinder (2.5% CH_4, 500ppm CO, 50ppm H_2S, 18% O_2, balance N_2)
64060	Test Gas Kit (Combi test gas 99146, demand flow regulator 99118 c/w 6mm tubing)

TELEDYNE
GAS AND FLAME DETECTION
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PROMAT (HK) Limited 寶時（香港）有限公司
: 2661 2392 : 5196 8860 : info@promat.hk : http://www.promat.hk

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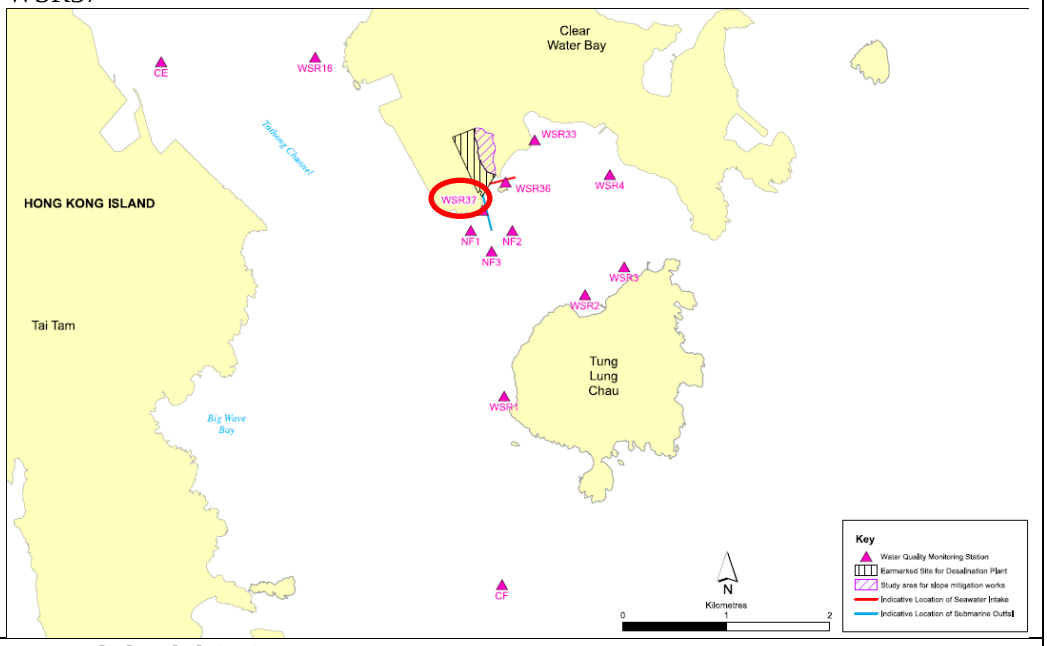
Your Solution To Testing Instrument

Appendix O

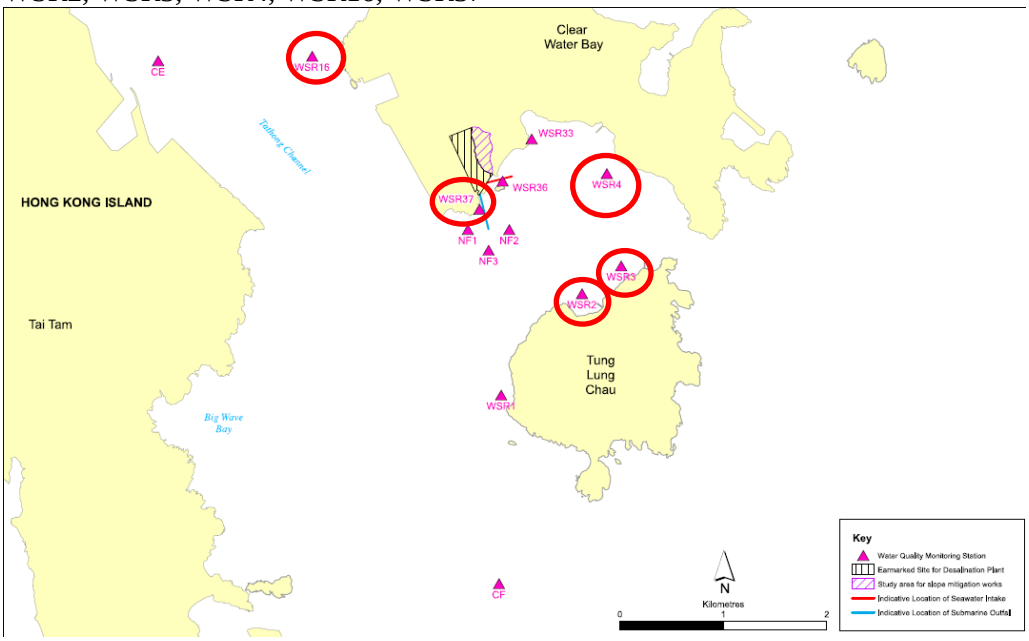
Exceedance Report(s)

Incident Report on Action Level or Limit Level Non-Compliance

Project	Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant		
Date	01 January 2022 (Lab result received on 07 January 2022)		
Time	14:34-18:04 (Mid-Flood) and 09:24-12:54 (Mid-Ebb)		
Mid-Flood			
Monitoring Location	WSR37 		
Parameter	Suspended Solid (SS)		
Action & Limit Levels	Action Level	Limit Level	
	> 7.8 mg/L	> 8.5 mg/L	
Measurement Level	Impact Station(s) of Exceedance	Control Stations	Impact Station(s) without Exceedance
	8.8 mg/L (WSR 37)	6.5 mg/L (CF) 5.2 mg/L (CE)	6.3 mg/L (WSR1) 4.8 mg/L (WSR 2) 3.2 mg/L (WSR 3) 3.3 mg/L (WSR 4) 5.0 mg/L (WSR16) 5.2 mg/L (WSR 33) 5.3 mg/L (WSR 36)
Possible reason for Action or Limit Level Non-compliance	Outfall Shaft Area: marine construction activities, namely 1) Idling all day but manned to monitor clean seepage water pumping Intake Shaft Area: marine construction activities, namely 1) Idling all day Marine construction activities with contact with water: 1) Idling all day but manned to monitor clean seepage water pumping Marine vessels on 01 January 2022: • Derrick barge x 1 (Intake Shaft) • Derrick barge x 1 (Outfall Shaft) Dominating sea current direction was found to be from Southeast to Northwest at waters to the west side of Tit Cham Chau; and from Northeast to Southwest at waters to the east side of Tit Cham Chau.		

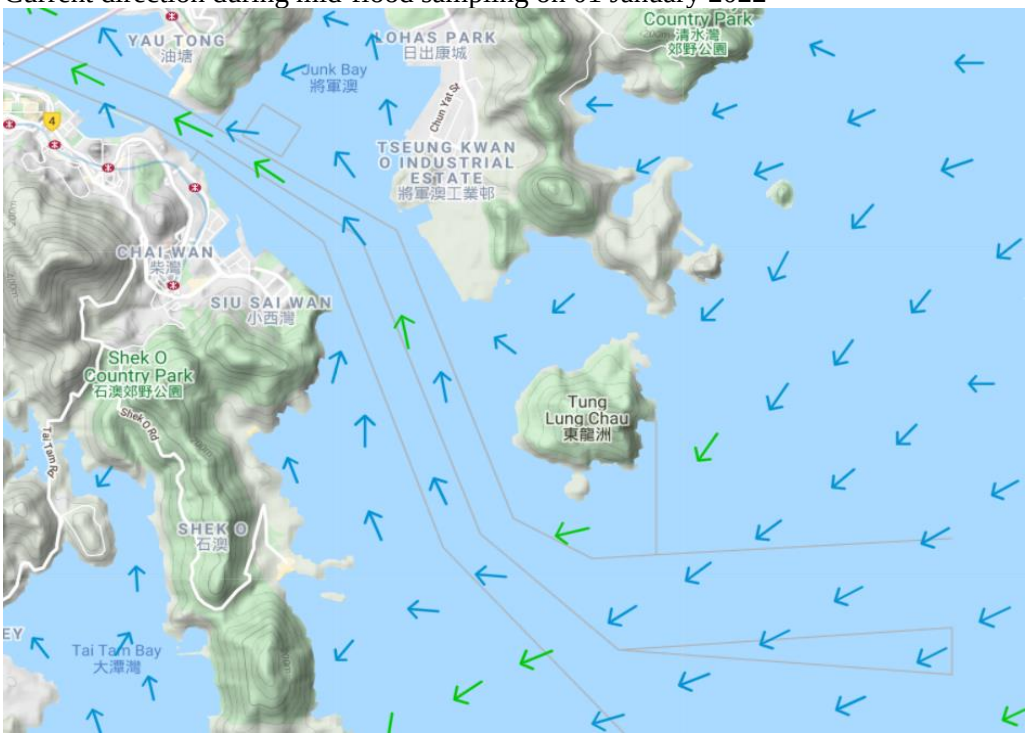
<table>
<tr><td></td><td colspan="3">It was noted that pumping of the clean seepage of marine water within the silt curtain was conducted on 01 January 2022. As advised by Main contractor, two separate pumping systems were constructed for respectively the unpolluted water ingress through the edge of the caisson and surface water/ washings from the rock drilling/ chain cutting work. For unpolluted marine water ingress, it will be piped to an isolated metal skip where appropriate-sized submersible pumps sink in to pump out the ‘clean’ water into an abandoned tremie pipe out of the caisson. The discharge point shall be enclosed by a silt curtain setup. Since the seepage marine water was unpolluted, the seepage water can be discharged to water bodies without a water discharge license. For surface water/washings, it will be directly pumped at the local low point all the way up to the water treatment facilities/water sedimentation tank in place on the derrick barge aside. The expected silty water will be treated by water treatment facilities/water sedimentation tank before being piped to discharge within silt curtain area. It was recommended that regular checking of the seepage marine water quality should be conducted.

According to the field observation by sampling team during sampling event, no silt plume was observed in the Project site on 01 January 2022.

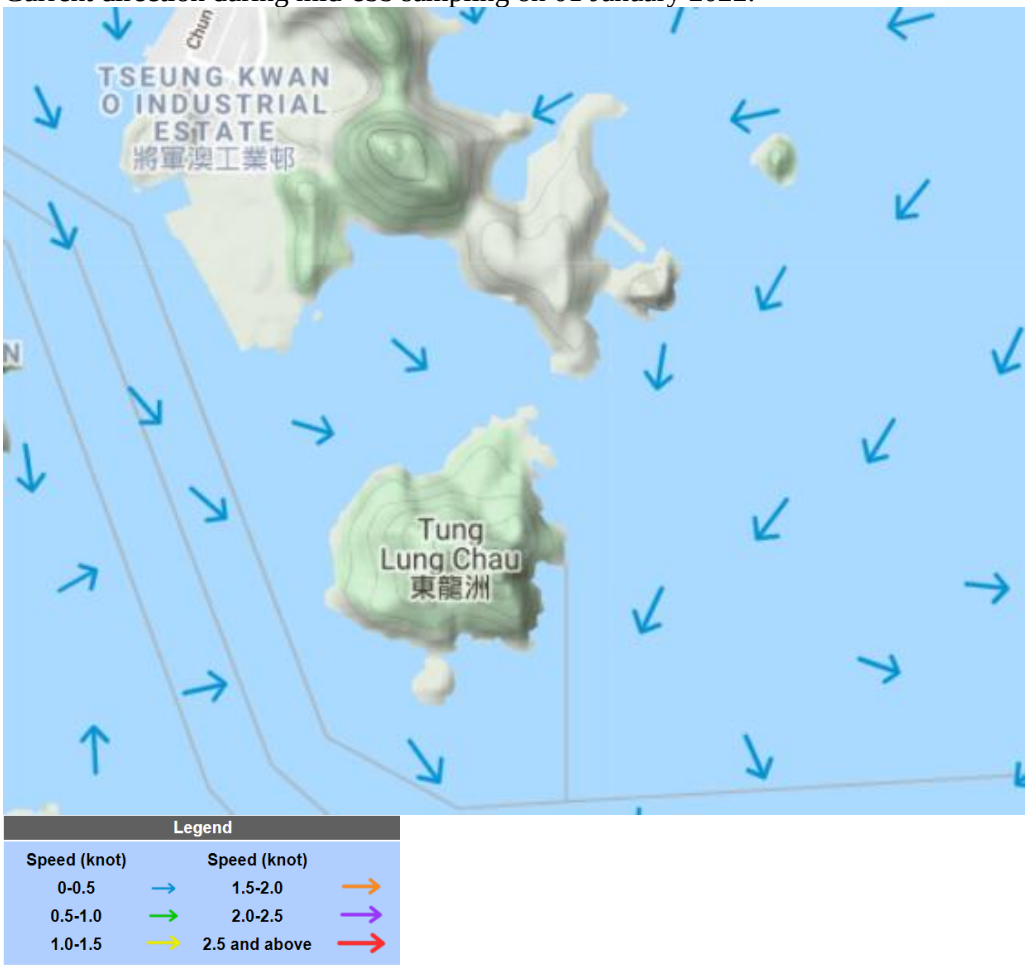
Conditions of the protective silt curtain at the inland water outfall was satisfactory on 01 January 2022.</td></tr>
<tr><td colspan="4">Mid-Ebb</td></tr>
<tr><td>Monitoring Location</td><td colspan="3">WSR2, WSR3, WSR4, WSR16, WSR37
 
</td></tr>
<tr><td>Parameter</td><td colspan="3">Suspended Solid (SS)</td></tr>
<tr><td rowspan="2">Action & Limit Levels</td><td>Action Level</td><td colspan="2">Limit Level</td></tr>
<tr><td>> 5.2 mg/L</td><td colspan="2">> 6.0 mg/L</td></tr>
<tr><td rowspan="2">Measurement Level</td><td>Impact Station(s) of Exceedance</td><td>Control Stations</td><td>Impact Station(s) without Exceedance</td></tr>
<tr><td>5.7 mg/L (WSR2)
8.3 mg/L (WSR3)
6.2 mg/L (WSR4)
8.3 mg/L (WSR16)
6.5 mg/L (WSR37)</td><td>4.3 mg/L (CE)
4.8 mg/L (CF)</td><td>4.5 mg/L (WSR1)
4.0 mg/L (WSR33)
4.7 mg/L (WSR36)</td></tr>
<tr><td>Possible reason for Action or Limit Level Non-compliance</td><td colspan="3">Outfall Shaft Area: marine construction activities, namely 1) Idling all day but manned to monitor clean seepage water pumping</td></tr>
</table>

	Intake Shaft Area: marine construction activities, namely 1) Idling all day Marine construction activities with contact with water: 1) Idling all day but manned to monitor clean seepage water pumping Marine vessels on 01 January 2022: • Derrick barge x 1 (Intake Shaft) • Derrick barge x 1 (Outfall Shaft) Dominating sea current direction was found to be from Northwest to Southeast at waters to the west side of Tit Cham Chau; and from West to East at waters to the east side of Tit Cham Chau. Stations WSR2, WSR3, WSR4 and WSR16 were located distant from the construction site and the possibility of being affected by marine construction activities was considered limited. SS exceedances were however observed at WSR2 (5.7 mg/L), WSR3 (8.3 mg/L), WSR4 (6.2 mg/L) and WSR16 (8.3 mg/L). The SS level at WSR37 (6.5 mg/L) was lower than stations that located further from the construction site (WSR3, WSR16). It was noted that pumping of the clean seepage of marine water within the silt curtain was conducted on 01 January 2022. As advised by Main contractor, two separate pumping systems were constructed for respectively the unpolluted water ingress through the edge of the caisson and surface water/ washings from the rock drilling/ chain cutting work. For unpolluted marine water ingress, it will be piped to an isolated metal skip where appropriate-sized submersible pumps sink in to pump out the 'clean' water into an abandoned tremie pipe out of the caisson. The discharge point shall be enclosed by a silt curtain setup. Since the seepage marine water was unpolluted, the seepage water can be discharged to water bodies without a water discharge license. For surface water/washings, it will be directly pumped at the local low point all the way up to the water treatment facilities/water sedimentation tank in place on the derrick barge aside. The expected silty water will be treated by water treatment facilities/water sedimentation tank before being piped to discharge within silt curtain area. It was recommended that regular checking of the seepage marine water quality should be conducted. According to the field observation by sampling team during sampling event, no silt plume was observed in the Project site on 01 January 2022. Conditions of the protective silt curtain at the inland water outfall was satisfactory on 01 January 2022.

Remarks	Current direction during mid-flood sampling on 01 January 2022

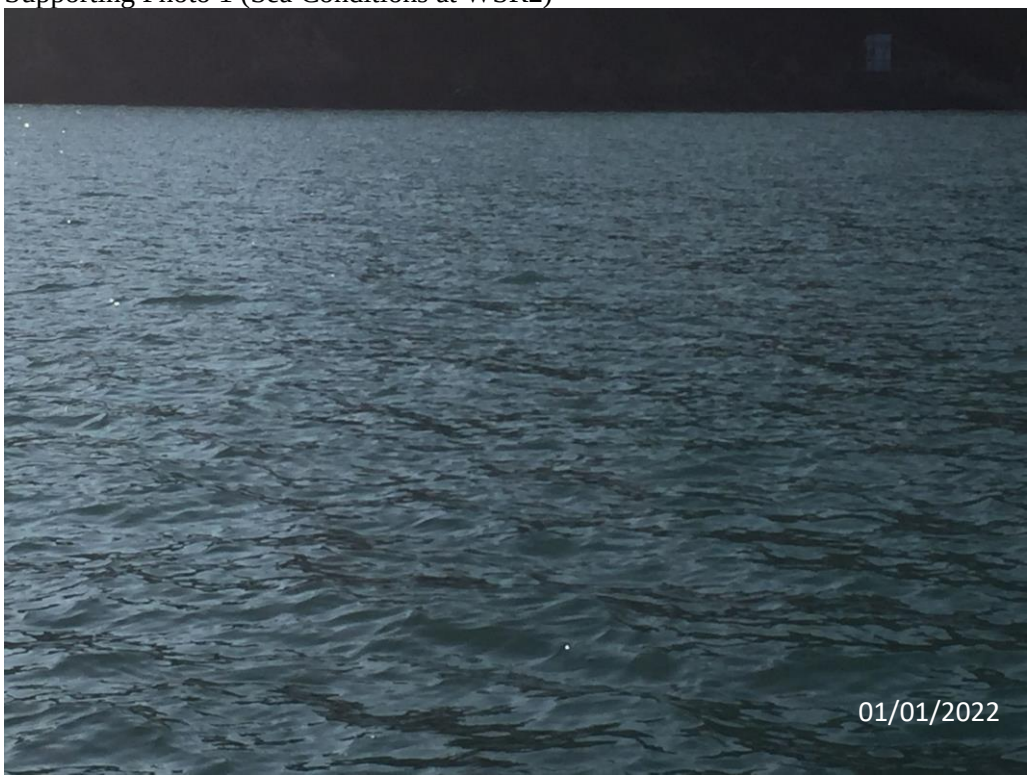


Current direction during mid-ebb sampling on 01 January 2022:

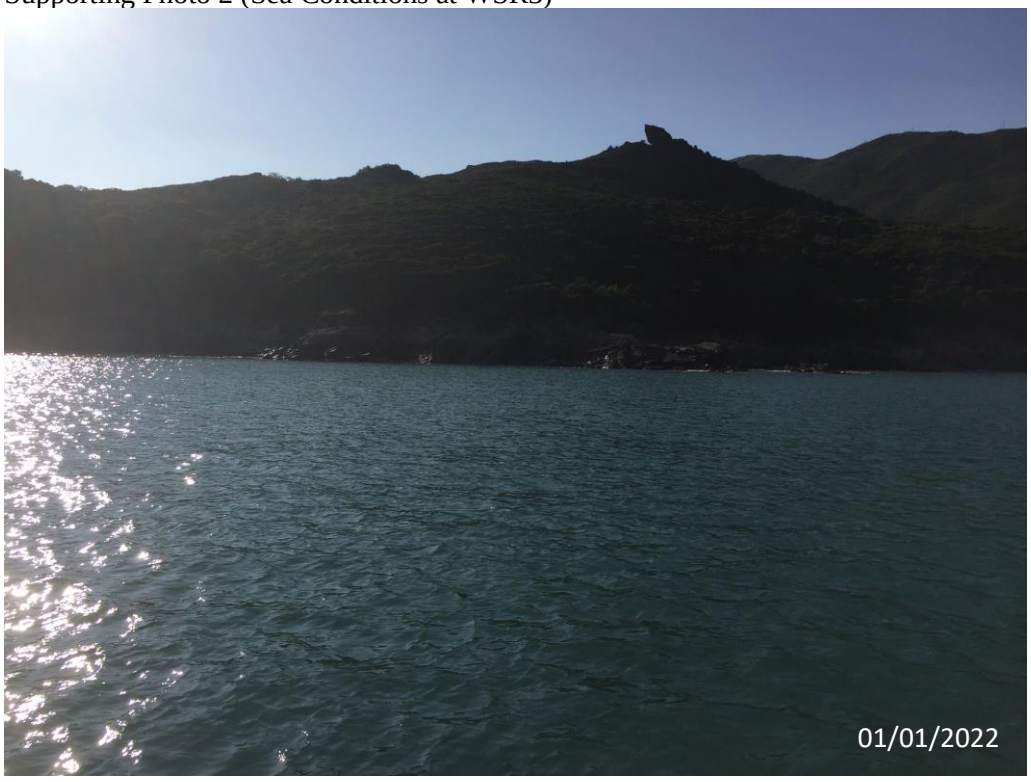


(Sourced from http://current.hydro.gov.hk/en/map.html)

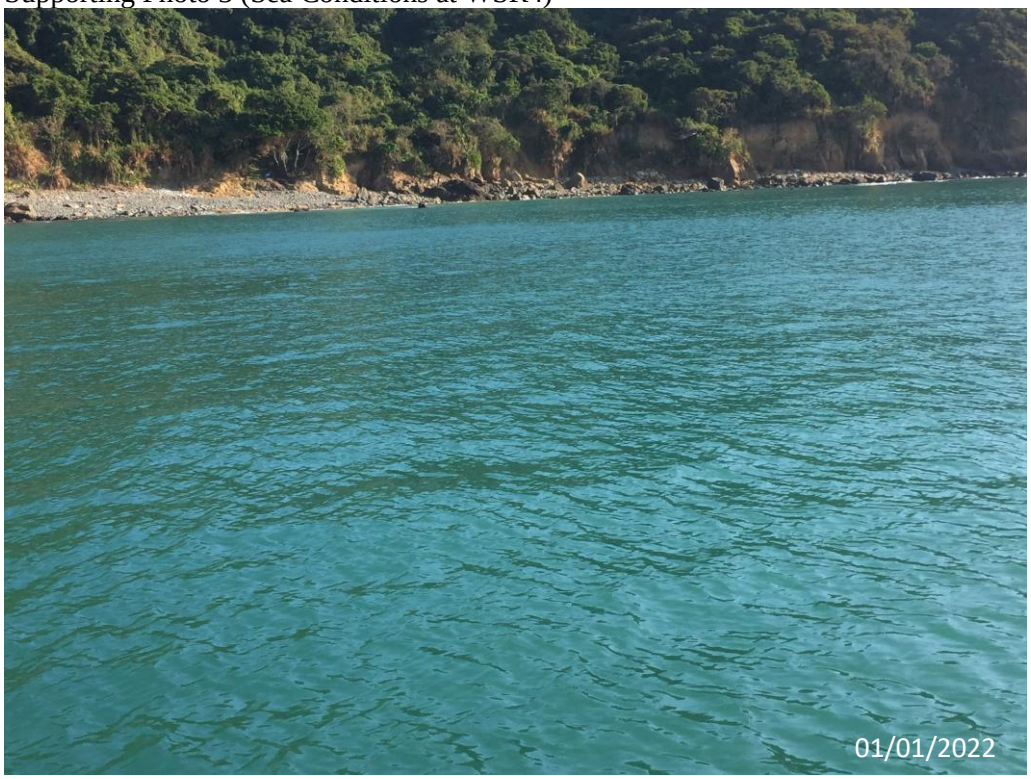
Supporting Photo 1 (Sea Conditions at WSR2)



Supporting Photo 2 (Sea Conditions at WSR3)



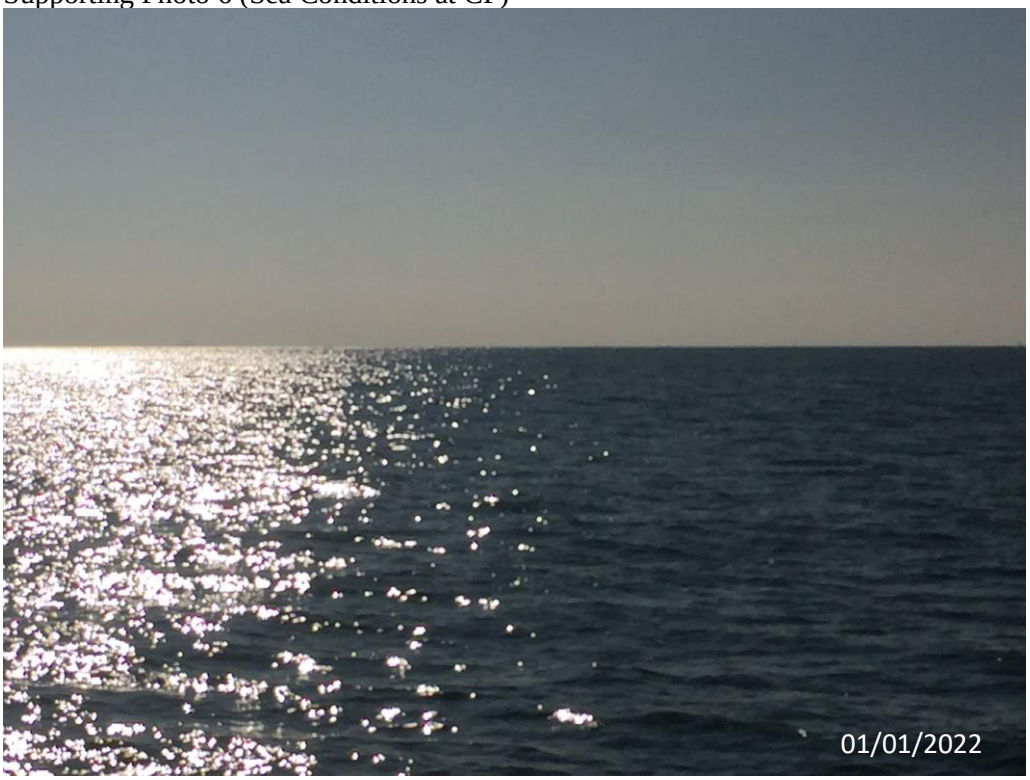
Supporting Photo 3 (Sea Conditions at WSR4)



Supporting Photo 4 (Sea Conditions at WSR16)

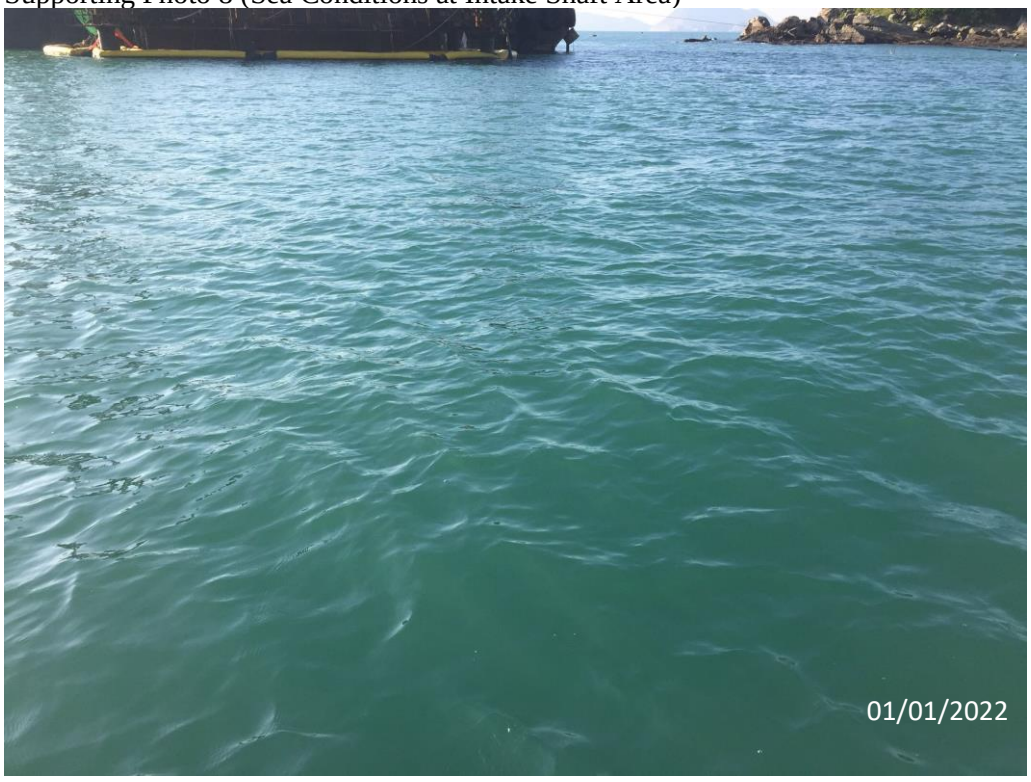
Supporting Photo 5 (Sea Conditions at WSR37)

Supporting Photo 6 (Sea Conditions at CF)

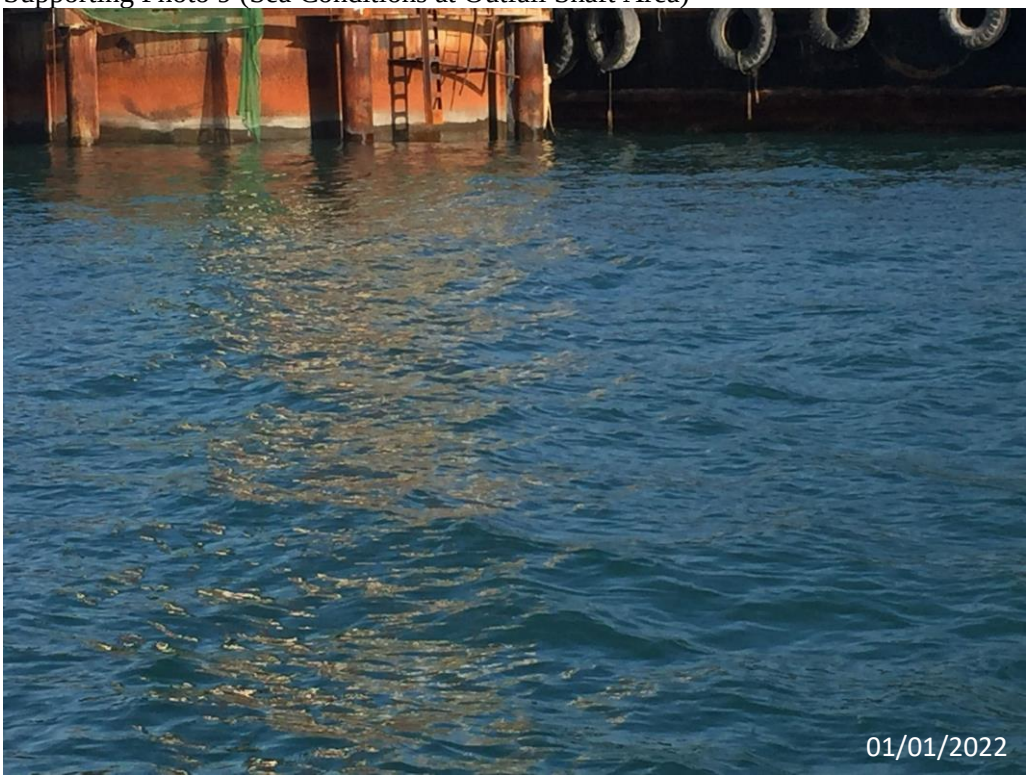


Supporting Photo 7 (Sea Conditions at CE)

Supporting Photo 8 (Sea Conditions at Intake Shaft Area)



Supporting Photo 9 (Sea Conditions at Outfall Shaft Area)



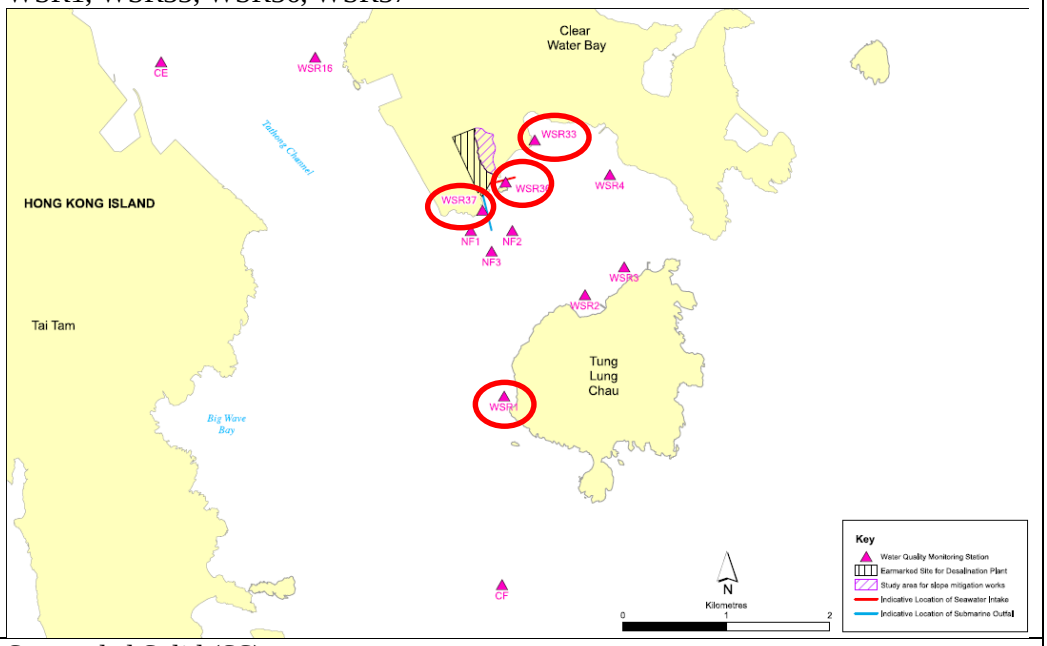
Supporting Photo 10 (Supporting Information from EPD Website about Water Discharge)

1. **Do I need a Water Pollution Control Ordinance (WPCO) Licence for construction work?**
   All kinds of effluent, whether discharged into communal sewers, storm drains, river courses or water bodies, are subject to control and should obtain a Water Pollution Control Ordinance (WPCO) licence before making discharge, with the exception of:
   a. discharges of domestic sewage into sewer; and
   b. discharges of unpolluted water into storm drains/water bodies.
   If your construction work makes a discharge not under the above exemption, a WPCO licence should be obtained.

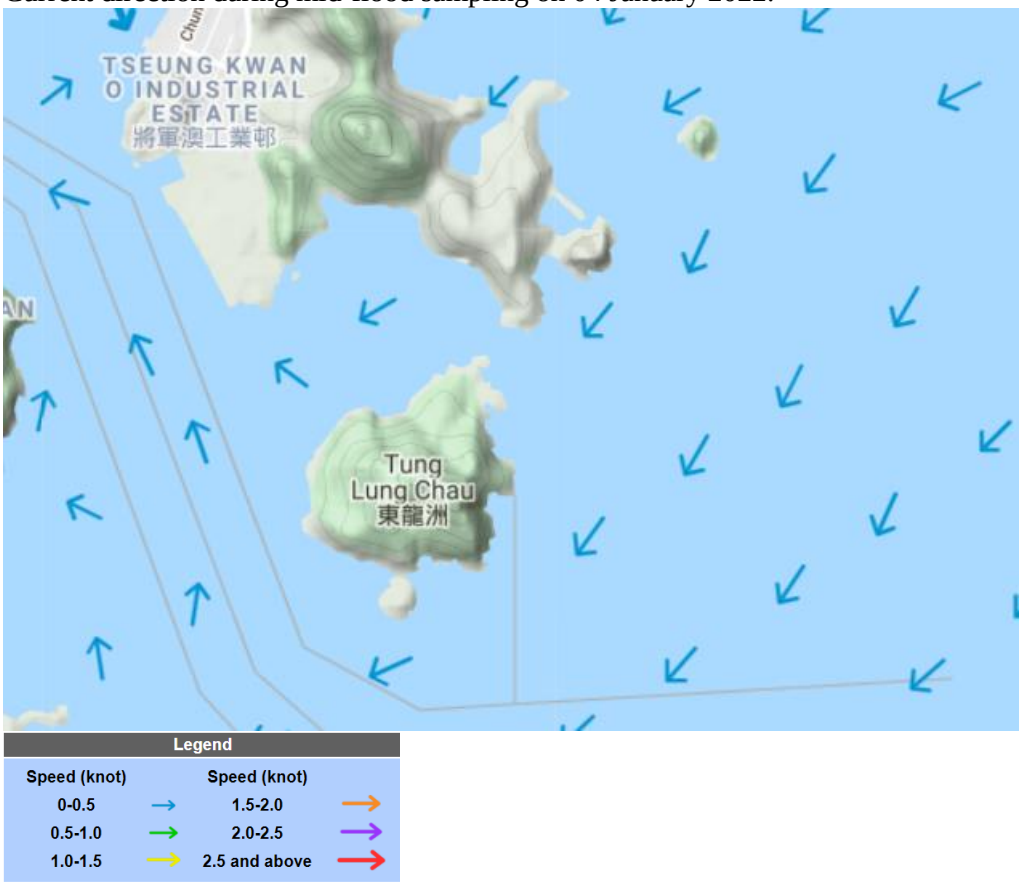
(Sourced from:
https://www.epd.gov.hk/epd/english/greenconstruction/faq/faq.html)

Prepared by	Charlene Lai
Date	12 January 2022

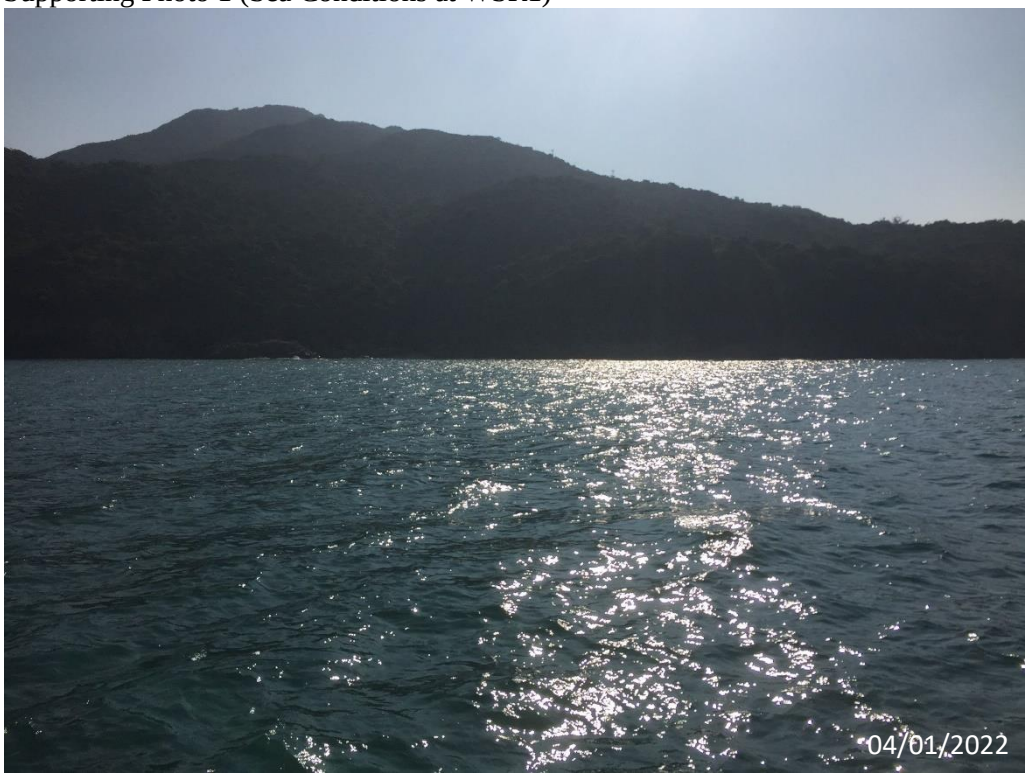
Incident Report on Action Level or Limit Level Non-Compliance

Project	Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant		
Date	04 January 2022 (Lab result received on 10 January 2022)		
Time	08:00 - 10:04 (Mid-Flood) and 11:46 - 15:16 (Mid-Ebb)		
Mid-flood			
Monitoring Location	WSR1, WSR33, WSR36, WSR37 		
Parameter	Suspended Solid (SS)		
Action & Limit Levels	Action Level	Limit Level	
	> 5.0 mg/L	> 6.0 mg/L	
Measurement Level	Impact Station(s) of Exceedance	Control Stations	Impact Station(s) without Exceedance
	5.3 mg/L (WSR1) 6.3 mg/L (WSR33) 5.7 mg/L (WSR36) 12.3 mg/L (WSR37)	4.3 mg/L (CE) 3.3 mg/L (CF)	4.4 mg/L (WSR2) 3.6 mg/L (WSR3) 4.5 mg/L (WSR4) 4.8 mg/L (WSR16)
Possible reason for Action or Limit Level Non-compliance	Outfall Shaft Area: marine construction activities, namely 1) 1st derrick barge supported material lifting for rock coring and pumping clean seepage water within silt curtain area (0800 – 2200 hrs); 2) 2nd chain-cut the bed rock inside the caisson (0800 – 1900 hrs) Intake Shaft Area: marine construction activities, namely 1) derrick barge for fitting in waling and welding inside the shaft (double silt curtain in place). (0800 – 1800 hrs) Marine construction activities with contact with water: 1) 1st derrick barge supported material lifting for rock coring and pumping clean seepage water within silt curtain area (0800 – 2200 hrs); 2) 2nd chain-cut the bed rock inside the caisson (0800 – 1900 hrs) Marine vessels on 04 January 2022: • Derrick barge x 1 (Intake Shaft) • Derrick barge x 1, chain-cutting machine x 1 inside the caisson (Outfall Shaft)		

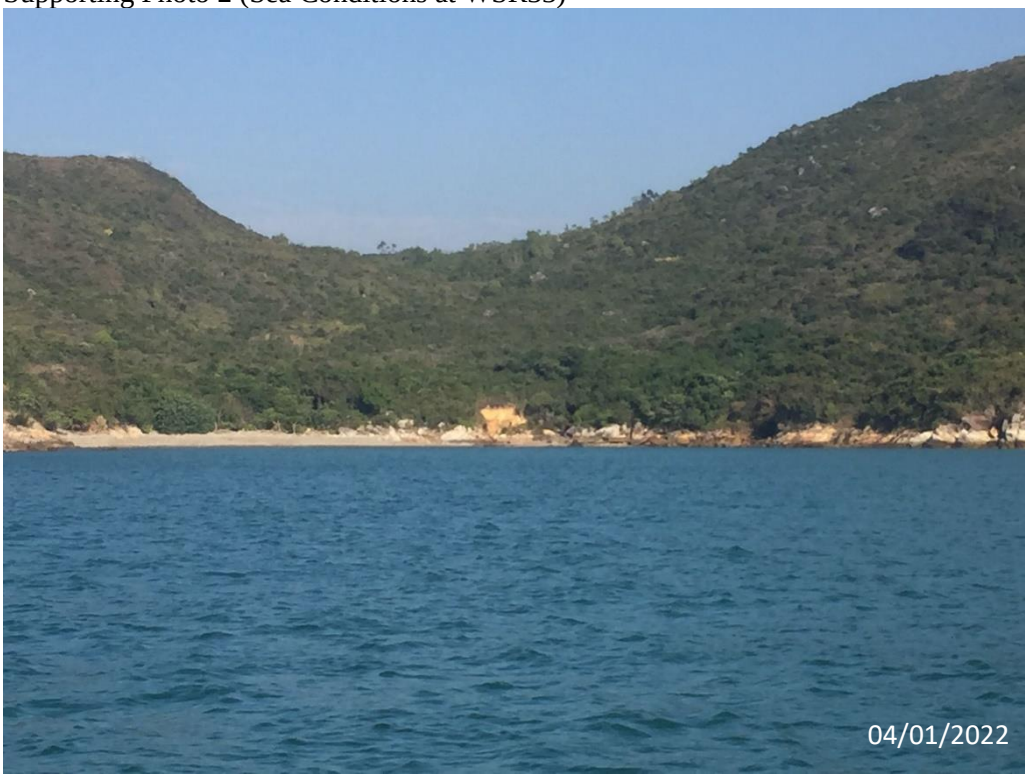
	Dominant sea current direction was found to be from Southeast to Northwest at waters to the west side of Tit Cham Chau; and from Northeast to Southwest at waters to the east side of Tit Cham Chau. Station WSR1 was located distant from the construction site and the possibility of being affected by marine construction activities was considered limited. SS exceedance was however observed at WSR1 (5.3 mg/L) and was similar to the SS level at WSR36 (5.7 mg/L). No marine construction activity with contact with water was conducted at WSR36. SS exceedance was however observed at WSR36 (5.7 mg/L). An upstream station, WSR33 (6.3 mg/L), was recorded with higher SS level than that of WSR36, where marine construction activities was conducted at WSR36. It was noted that pumping of the clean seepage of marine water within the silt curtain was conducted on 04 January 2022. As advised by Main contractor, two separate pumping systems were constructed for respectively the unpolluted water ingress through the edge of the caisson and surface water/ washings from the rock drilling/ chain cutting work. For unpolluted marine water ingress, it will be piped to an isolated metal skip where appropriate-sized submersible pumps sink in to pump out the 'clean' water into an abandoned tremie pipe out of the caisson. The discharge point shall be enclosed by a silt curtain setup. Since the seepage marine water was unpolluted, the seepage water can be discharged to water bodies without a water discharge license. For surface water/washings resulted from rock cutting activities, it will be directly pumped at the local low point all the way up to the water treatment facilities/water sedimentation tank in place on the derrick barge aside. The expected silty water will be treated by water treatment facilities/water sedimentation tank before being piped to discharge within silt curtain area. As been advised by the Main Contractor, on-site operative verified the unpolluted seepage water was visually clear on 04 January 2022. According to the field observation by sampling team during sampling event, no silt plume was observed in the Project site on 04 January 2022. Conditions of the protective silt curtain at the inland water outfall was satisfactory on 04 January 2022.

Remarks	Current direction during mid-flood sampling on 04 January 2022:  (Sourced from http://current.hydro.gov.hk/en/map.html)

Supporting Photo 1 (Sea Conditions at WSR1)



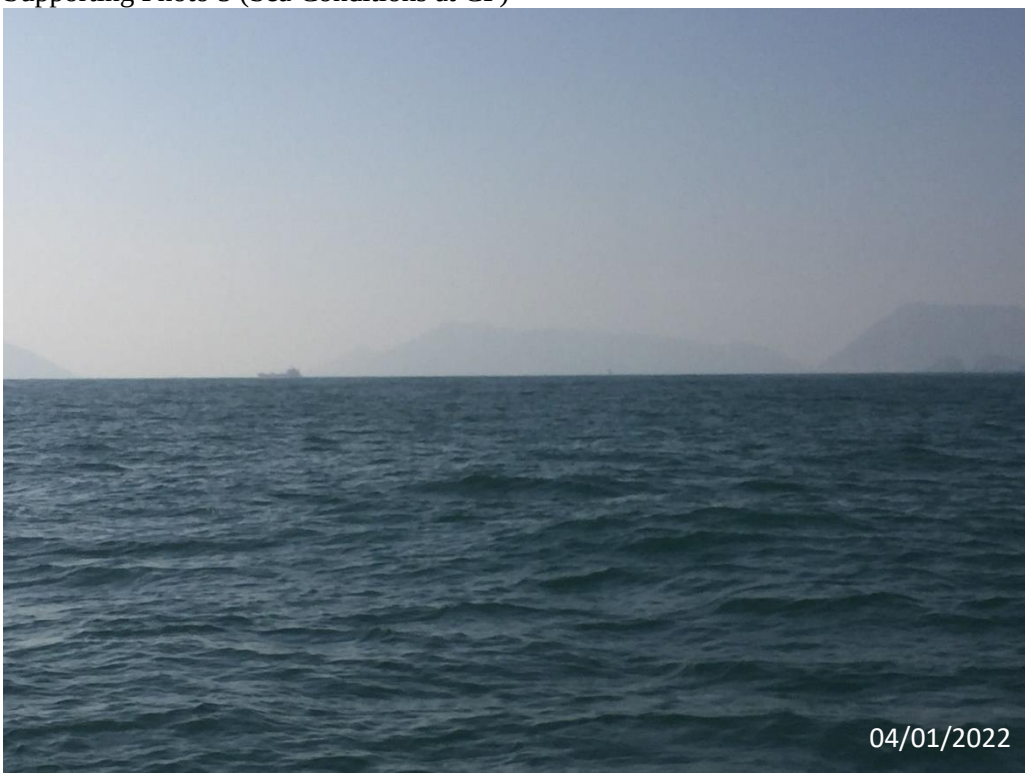
Supporting Photo 2 (Sea Conditions at WSR33)



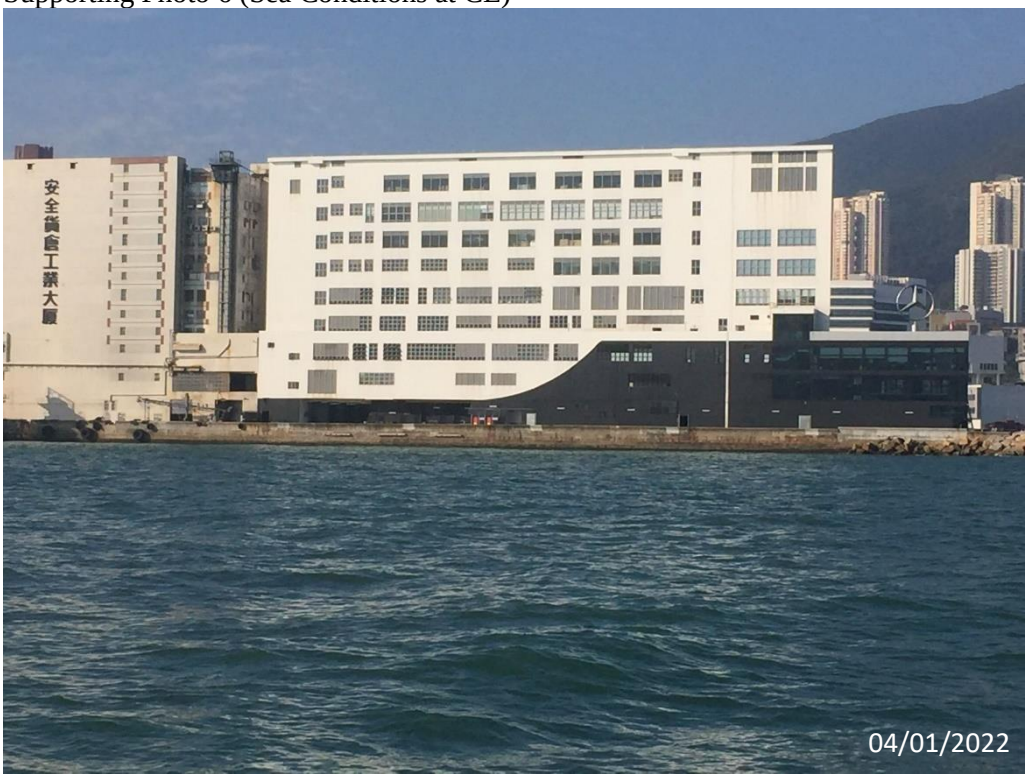
Supporting Photo 3 (Sea Conditions at WSR36)

Supporting Photo 4 (Sea Conditions at WSR37)

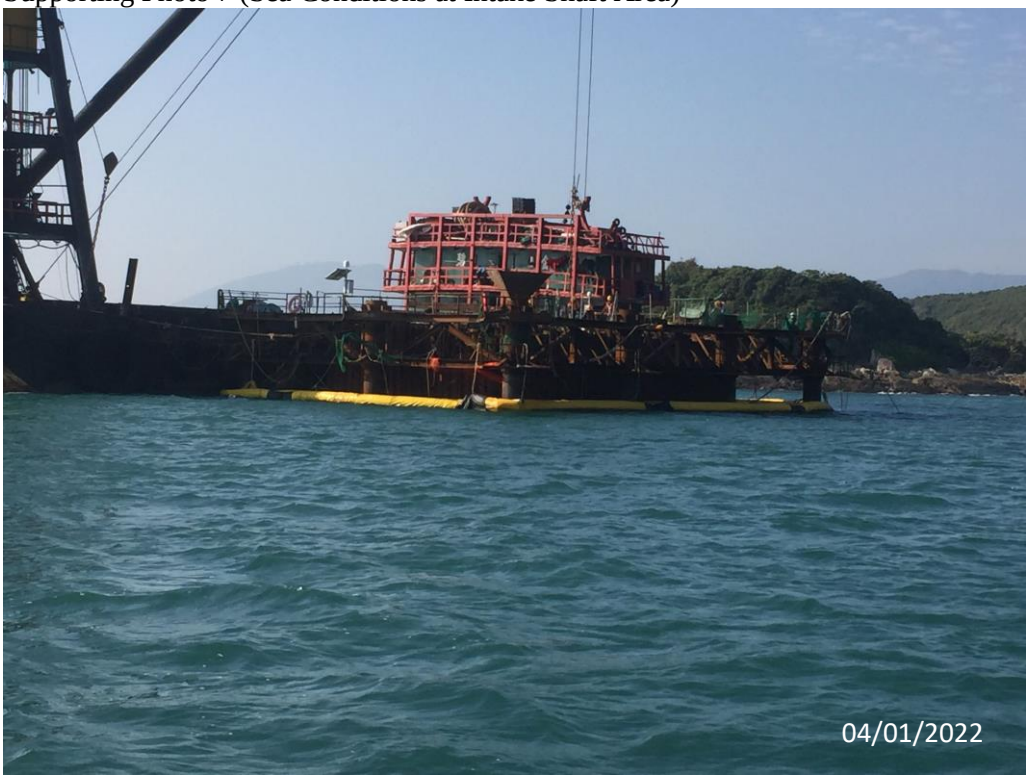
Supporting Photo 5 (Sea Conditions at CF)



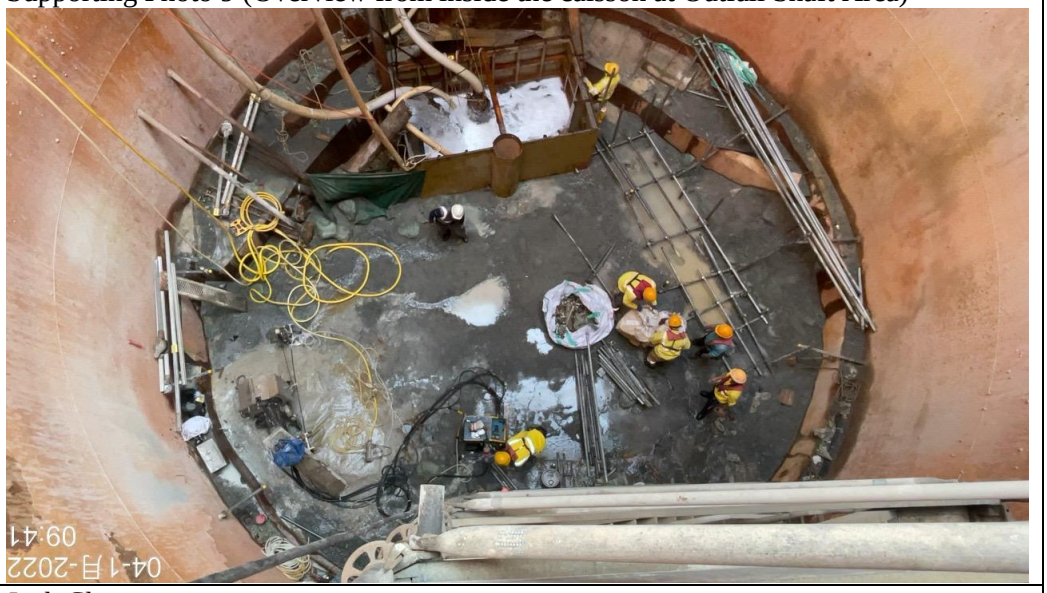
Supporting Photo 6 (Sea Conditions at CE)



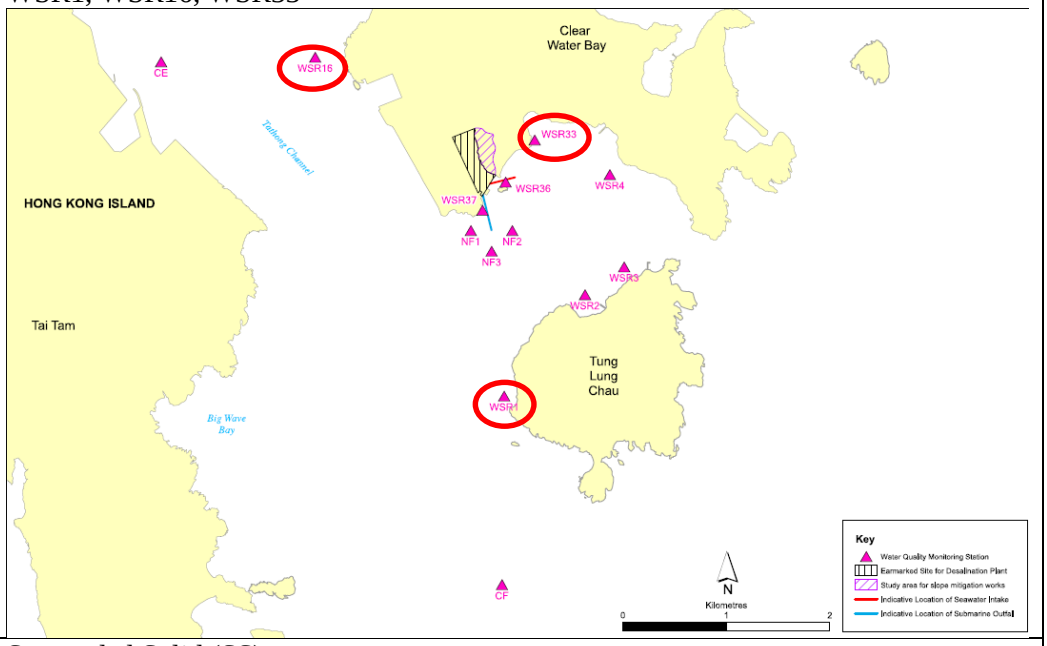
Supporting Photo 7 (Sea Conditions at Intake Shaft Area)



Supporting Photo 8 (Sea Conditions at Outfall Shaft Area)

	Supporting Photo 9 (Overview from inside the caisson at Outfall Shaft Area) 
Prepared by	Jack Chow
Date	20 January 2022

Incident Report on Action Level or Limit Level Non-Compliance

Project	Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant		
Date	06 January 2022 (Lab result received on 12 January 2022)		
Time	08:05 - 11:35 (Mid-Flood) and 13:28 - 16:58 (Mid-Ebb)		
Mid-ebb			
Monitoring Location	WSR1, WSR16, WSR33 		
Parameter	Suspended Solid (SS)		
Action & Limit Levels	Action Level	Limit Level	
	> 5.0 mg/L	> 6.0 mg/L	
Measurement Level	Impact Station(s) of Exceedance	Control Stations	Impact Station(s) without Exceedance
	5.3 mg/L (WSR1) 6.4 mg/L (WSR16) 6.8 mg/L (WSR33)	3.5 mg/L (CE) 5.0 mg/L (CF)	4.2 mg/L (WSR2) 4.3 mg/L (WSR3) 3.4 mg/L (WSR4) 5.0 mg/L (WSR36) 3.8 mg/L (WSR37)
Possible reason for Action or Limit Level Non-compliance	Outfall Shaft Area: marine construction activities, namely 1) 1st derrick barge supported material lifting for rock cutting work and pumping clean seepage water within silt curtain area. (0800 – 2200 hrs); 2) 2nd chain-cut the bed rock inside the caisson (0800 – 1900 hrs) Intake Shaft Area: marine construction activities, namely 1) derrick barge supported diver's work on welding waling brackets inside the shaft (double silt curtain in place). (0800 – 1800 hrs) Marine construction activities with contact with water: 1) 1st derrick barge supported material lifting for rock cutting work and pumping clean seepage water within silt curtain area. (0800 – 2200 hrs); 2) 2nd chain-cut the bed rock inside the caisson (0800 – 1900 hrs); 3) derrick barge supported diver's work on welding waling brackets inside the shaft (double silt curtain in place). (0800 – 1800 hrs)		

Marine vessels on 06 January 2022:

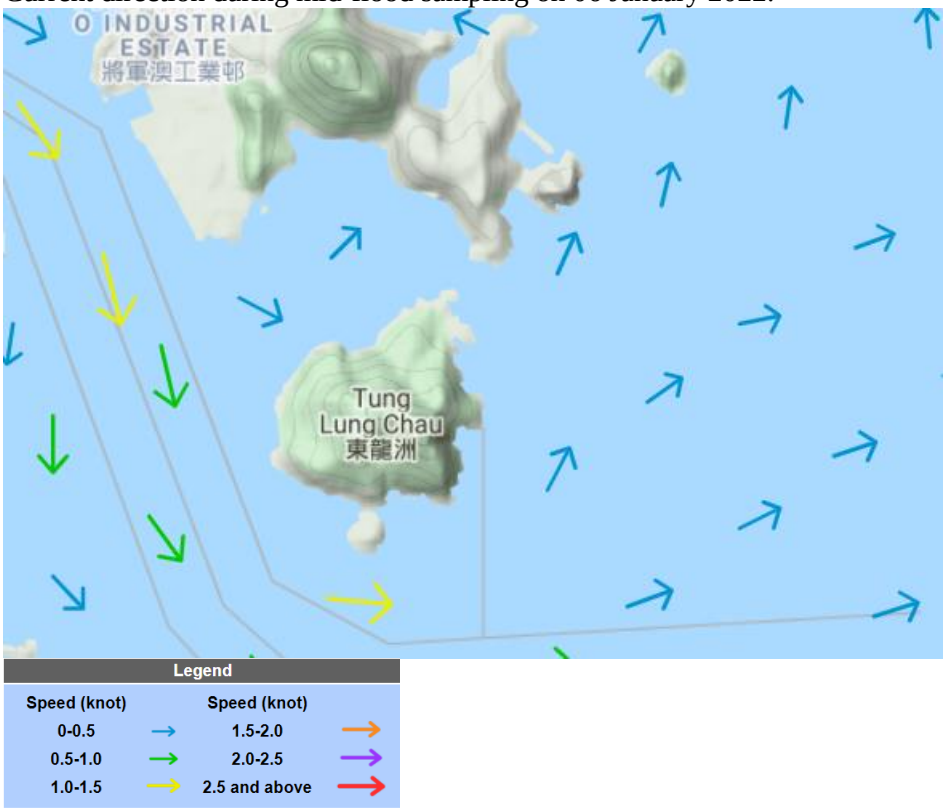
- Derrick barge x 1 (Intake Shaft)
- Derrick barge x 1, chain-cutting machine x 1 inside the caisson (Outfall Shaft)

Dominant sea current direction was found to be from Northwest to Southeast at waters to the west side of Tit Cham Chau; and from West to East at waters to the east side of Tit Cham Chau.

Station WSR1 and WSR 16 were located distant from the construction site and the possibility of being affected by marine construction activities was considered limited. SS exceedance was however observed at WSR1 (5.3 mg/L) and WSR 16 (6.4 mg/L). With reference to the construction schedule provided by the Main Contractor, marine construction activities were conducted at WSR36 and WSR37 during mid-ebb tide on 06 January 2022. No SS exceedances were observed at WSR36 (5.0 mg/L) and WSR37 (3.8 mg/L). A downstream station, WSR33 (6.8 mg/L), has a similar SS level to that of WSR16 (6.4 mg/L), where WSR16 was located further from the construction site. In view of the inverse relation between distance to marine works and SS level, the SS exceedance is concluded not project relevant.

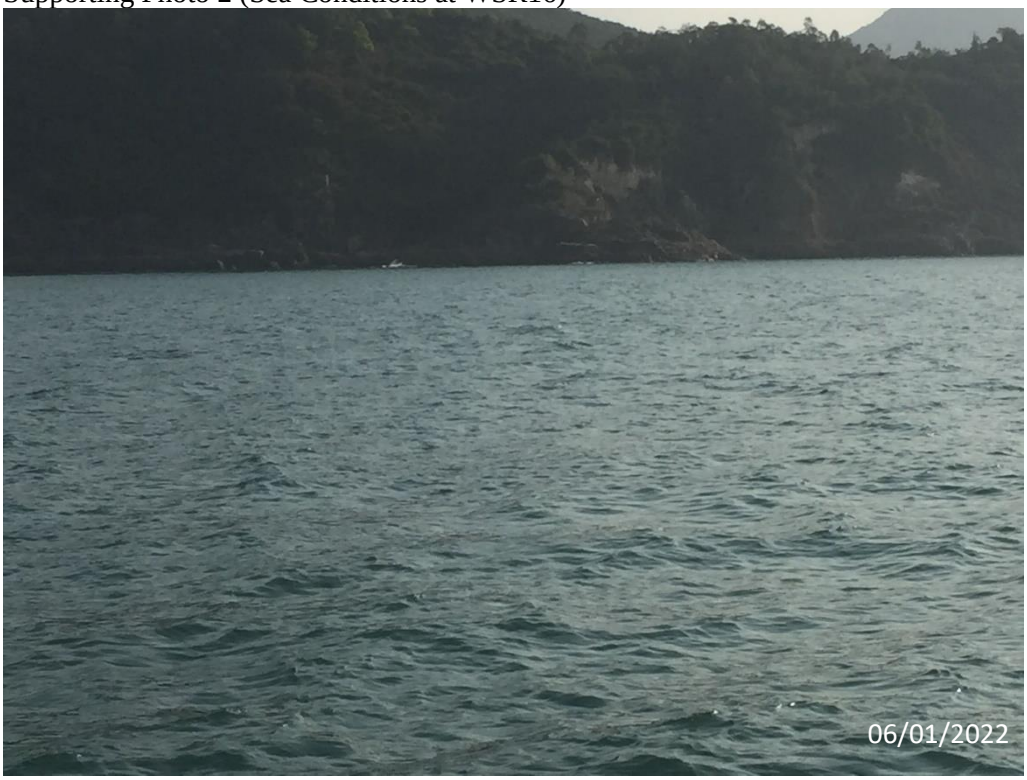
According to the field observation by sampling team during sampling event, no silt plume was observed in the Project site on 06 January 2022.

Conditions of the protective silt curtain at the inland water outfall was satisfactory on 06 January 2022.

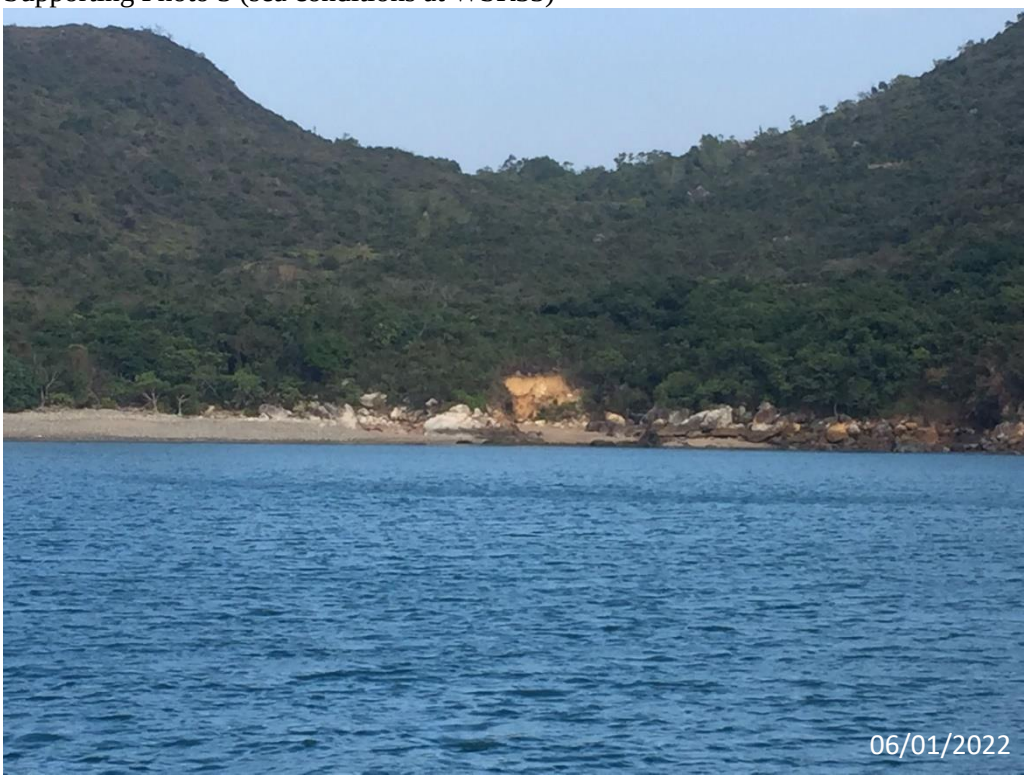
Remarks	Current direction during mid-flood sampling on 06 January 2022:  (Sourced from http://current.hydro.gov.hk/en/map.html)

Supporting Photo 1 (Sea Conditions at WSR1)

Supporting Photo 2 (Sea Conditions at WSR16)

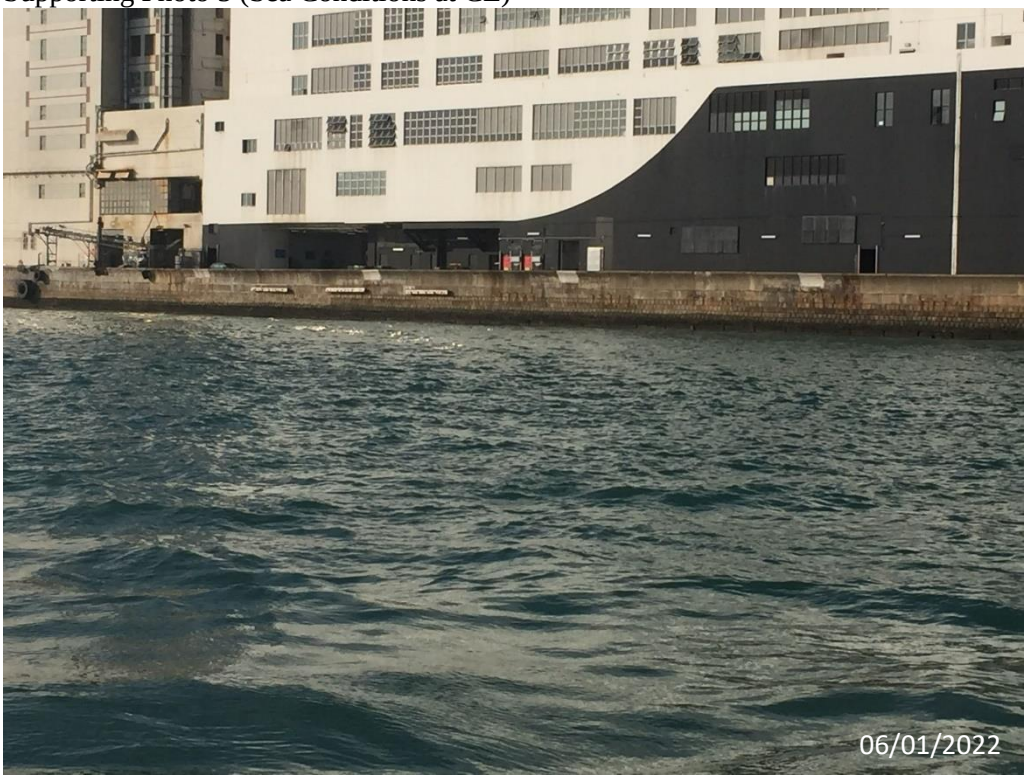


Supporting Photo 3 (sea conditions at WSR33)

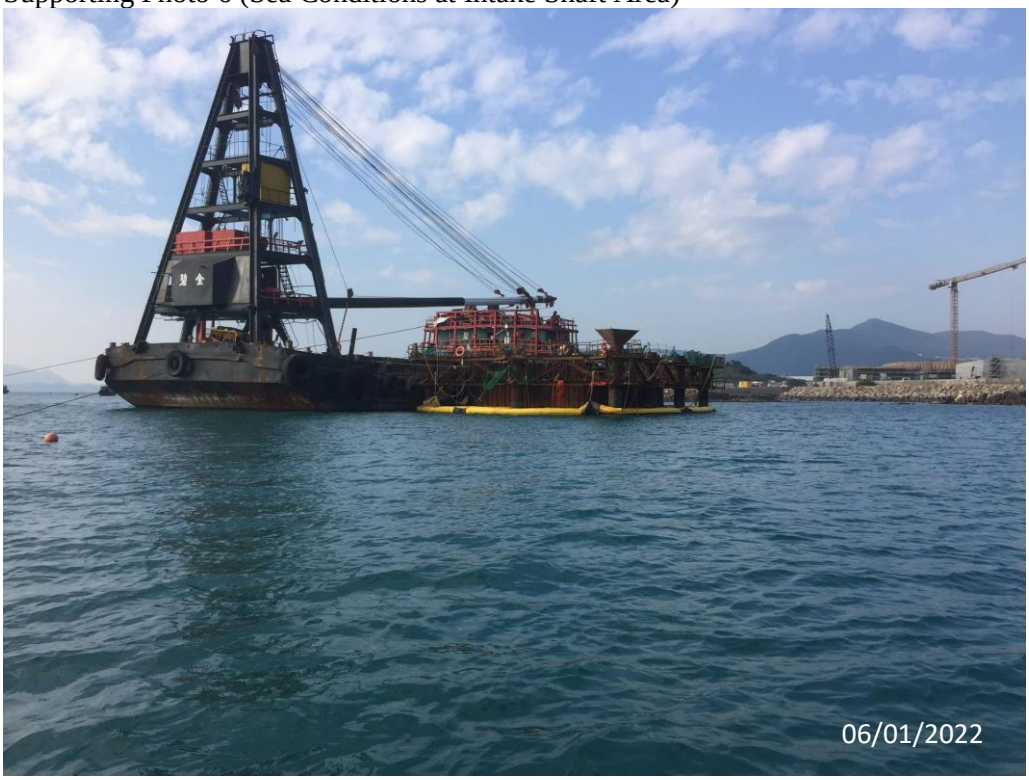


Supporting Photo 4 (Sea Conditions at CF)

Supporting Photo 5 (Sea Conditions at CE)

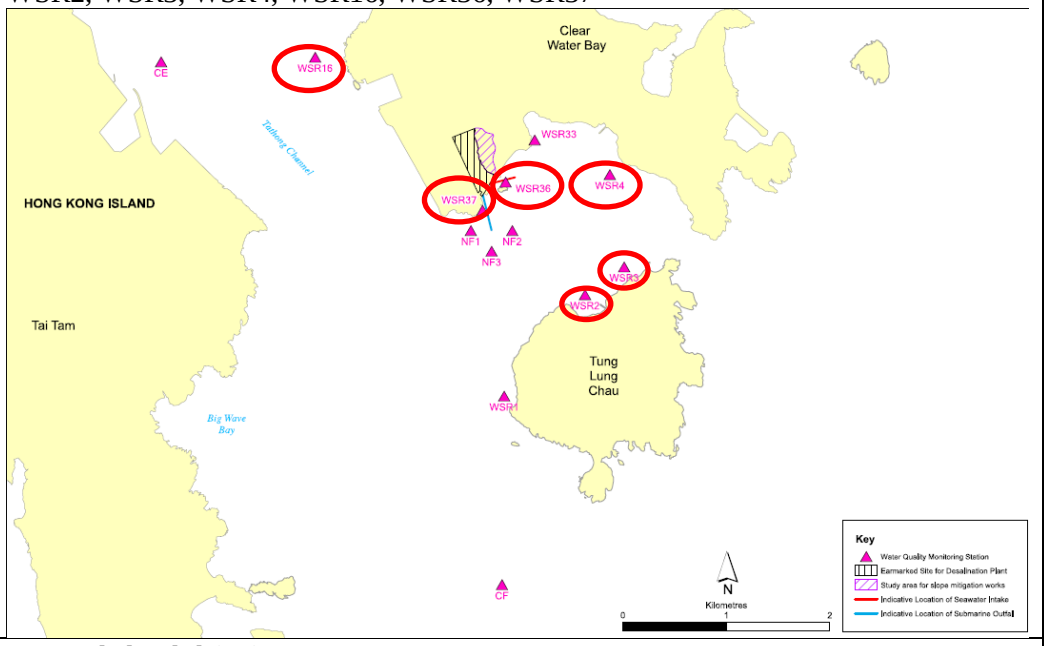


Supporting Photo 6 (Sea Conditions at Intake Shaft Area)

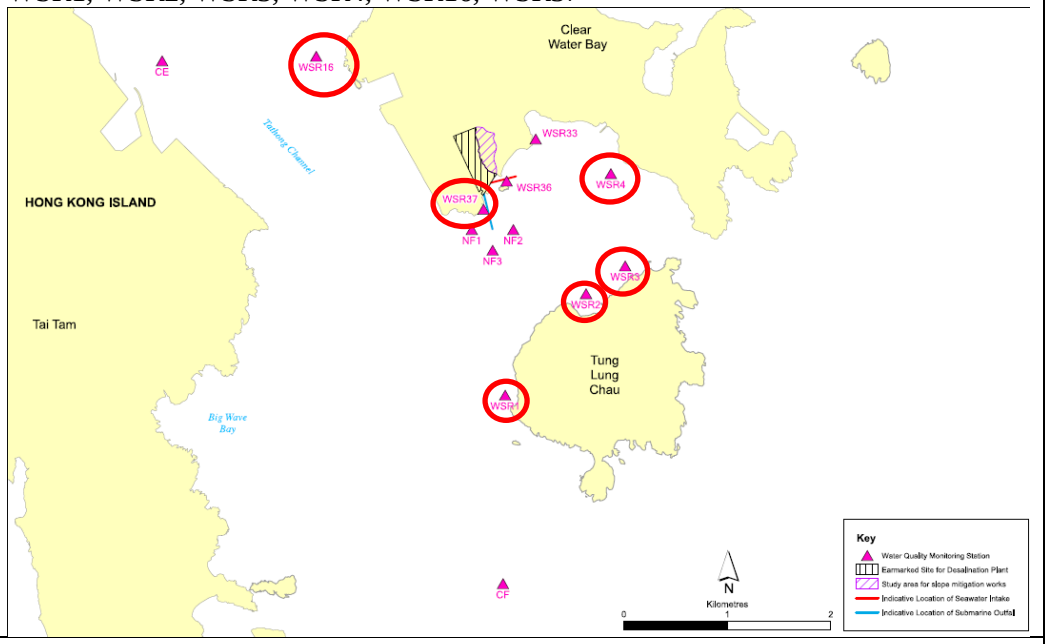


	Supporting Photo 7 (Sea Conditions at Outfall Shaft Area) 
Prepared by	Jack Chow
Date	20 January 2022

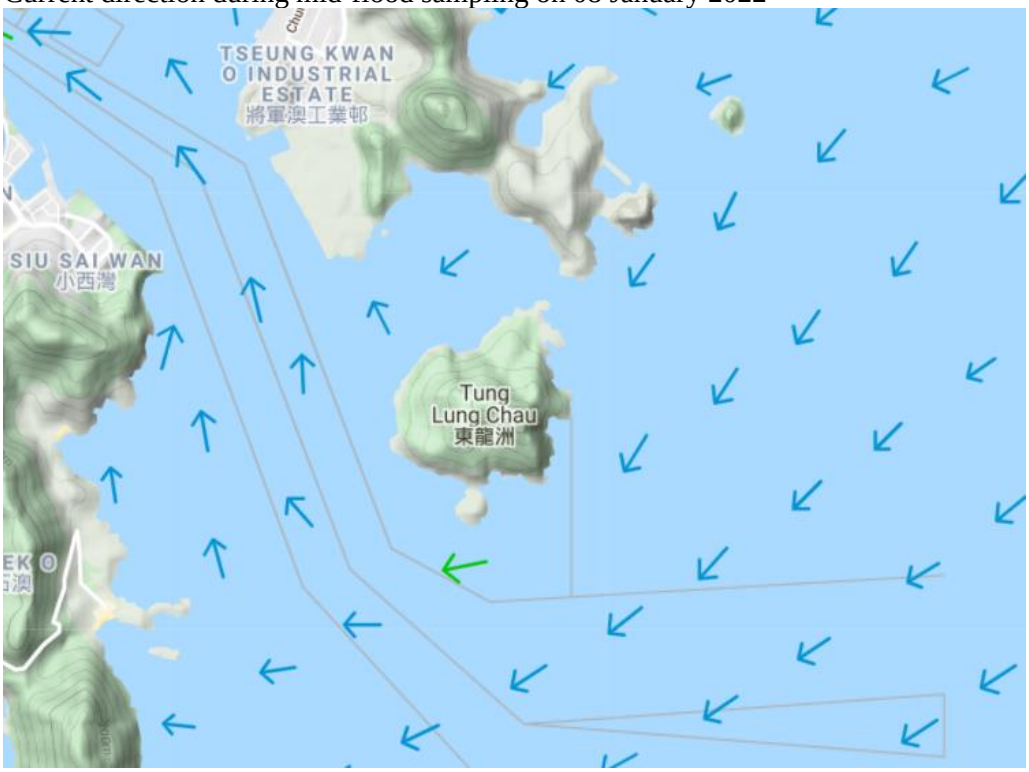
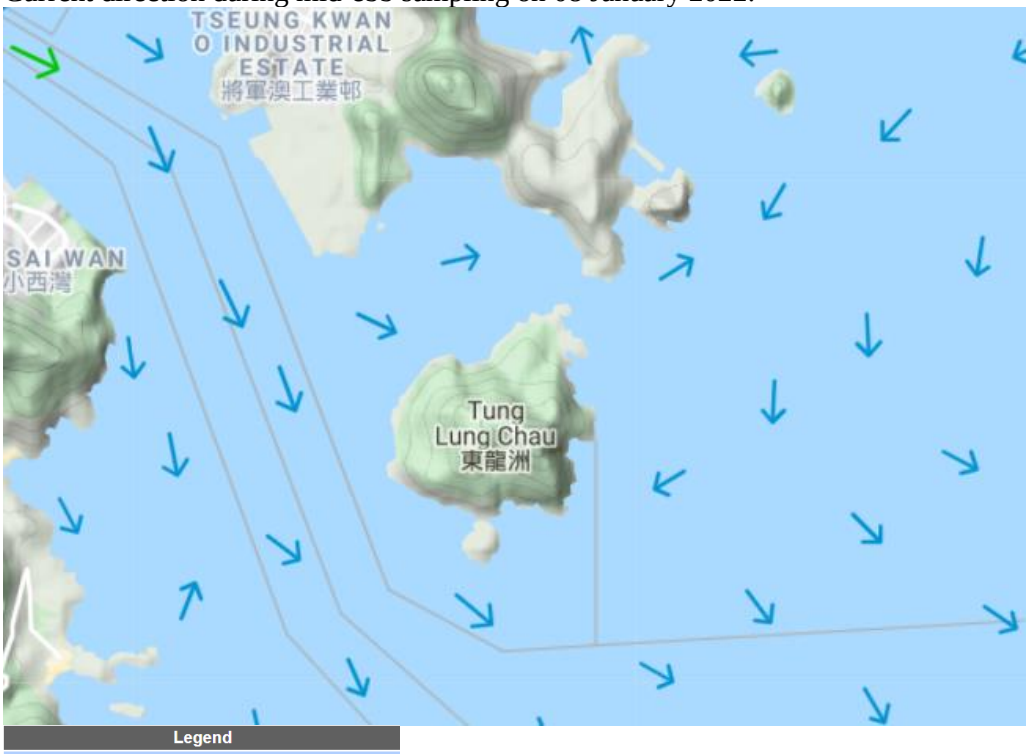
Incident Report on Action Level or Limit Level Non-Compliance

Project	Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant		
Date	08 January 2022 (Lab result received on 14 January 2022)		
Time	09:31 - 13:01 (Mid-Flood) and 15:15-18:45 (Mid-Ebb)		
Mid-Flood			
Monitoring Location	WSR2, WSR3, WSR4, WSR16, WSR36, WSR37 		
Parameter	Suspended Solid (SS)		
Action & Limit Levels	Action Level	Limit Level	
	> 6.2 mg/L	> 6.7 mg/L	
Measurement Level	Impact Station(s) of Exceedance	Control Stations	Impact Station(s) without Exceedance
	13.7 mg/L (WSR 2) 17.5 mg/L (WSR 3) 19.7 mg/L (WSR 4) 9.0 mg/L (WSR16) 7.0 mg/L (WSR 36) 6.3 mg/L (WSR 37)	4.3 mg/L (CE) 5.2 mg/L (CF)	4.8 mg/L (WSR1) 5.3 mg/L (WSR 33)
Possible reason for Action or Limit Level Non-compliance	Outfall Shaft Area: marine construction activities, namely 1) 1st derrick barge supported material lifting for rock cutting and pumping clean seepage water within silt curtain area (0800 – 2200 hrs); 2) chain-cut the bed rock inside the caisson (0800 – 1900 hrs). Intake Shaft Area: marine construction activities, namely 1) 1st derrick barge for incepting non-MD excavated from inside the shaft (double silt curtain in place) (0800 – 2000 hrs); 2) grab dredger to excavate non-MD inside the shaft and to load onto the derrick barge (double silt curtain and tarpaulin sheeting beneath the moving grab in place) (0800 – 2000 hrs). Marine construction activities with contact with water: 1) 1st derrick barge supported material lifting for rock cutting and pumping clean seepage water within silt curtain area. (0800 – 2200 hrs); 2) chain-cut the bed rock inside the caisson (0800 – 1900 hrs); 3) grab dredger to excavate non-MD inside the shaft and to load onto the derrick barge (double silt curtain and tarpaulin sheeting beneath the moving grab in place) (0800 – 2000 hrs).		

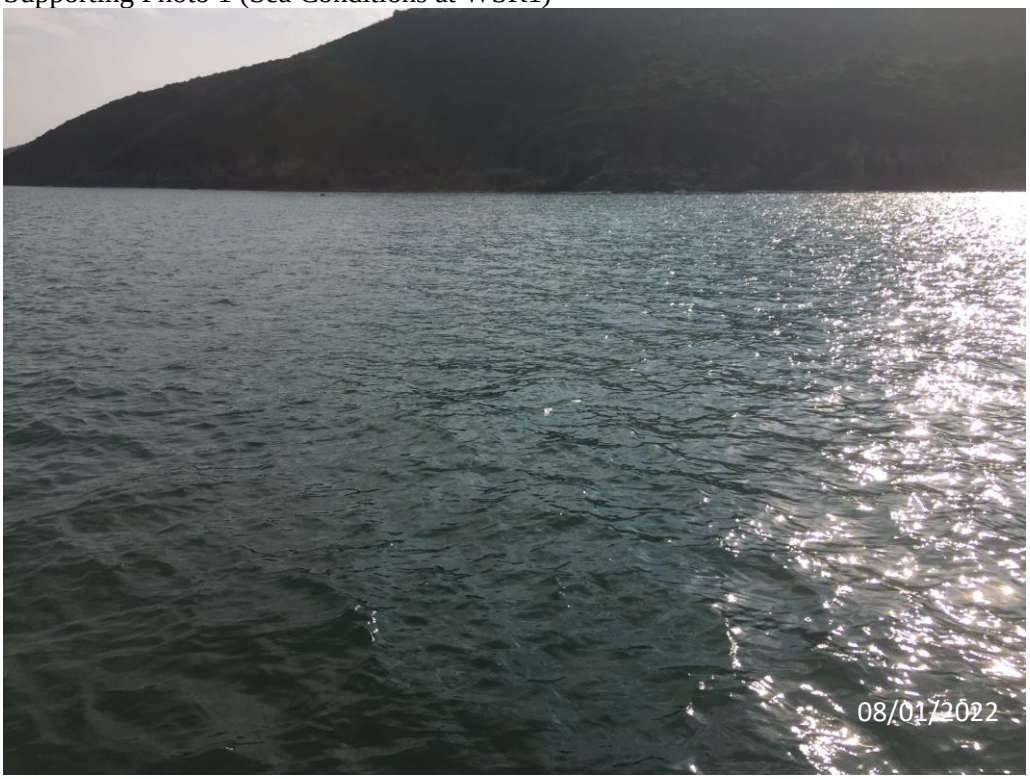
	Marine vessels on 08 January 2022: • Derrick barge x 1, grab dredger x 1 (Intake Shaft) • Derrick barge x 1, chain-cutting machine x 1 inside the caisson (Outfall Shaft) Dominating sea current direction was found to be from Southeast to Northwest at waters to the west side of Tit Cham Chau; and from Northeast to Southwest at waters to the east side of Tit Cham Chau. Stations WSR2, WSR3, WSR4 and WSR16 were located distant from the construction site and the possibility of being affected by marine construction activities was considered limited. SS exceedances were however observed at WSR2 (13.7 mg/L), WSR4 (17.5 mg/L), WSR4 (19.7 mg/L) and WSR16 (9.0 mg/L). With reference to the construction activity schedule provided by the Main Contractor, marine construction activities with contact with water were conducted at WSR36 and WSR37 on 08 January 2022. The SS levels at WSR36 (7.0 mg/L) and WSR37 (6.3 mg/L) were however lower than that of stations that located further from the construction site (WSR2, WSR3, WSR4 and WSR16). In view of the inverse relation between distance to marine works and SS level, the SS exceedance is concluded not project relevant. According to the field observation by sampling team during sampling event, no silt plume was observed in the Project site on 08 January 2022. Conditions of the protective silt curtain at the inland water outfall was satisfactory on 08 January 2022.

Mid-Ebb			
Monitoring Location	WSR1, WSR2, WSR3, WSR4, WSR16, WSR37 		
Parameter	Suspended Solid (SS)		
Action & Limit Levels	Action Level	Limit Level	
	> 5.0 mg/L	> 6.0 mg/L	
Measurement Level	Impact Station(s) of Exceedance	Control Stations	Impact Station(s) without Exceedance
	5.5 mg/L (WSR1) 5.7 mg/L (WSR2) 6.3 mg/L (WSR3) 6.7 mg/L (WSR4) 5.5 mg/L (WSR16) 15.8 mg/L (WSR37)	4.2 mg/L (CE) 5.3 mg/L (CF)	5.0 mg/L (WSR33) 4.5 mg/L (WSR36)

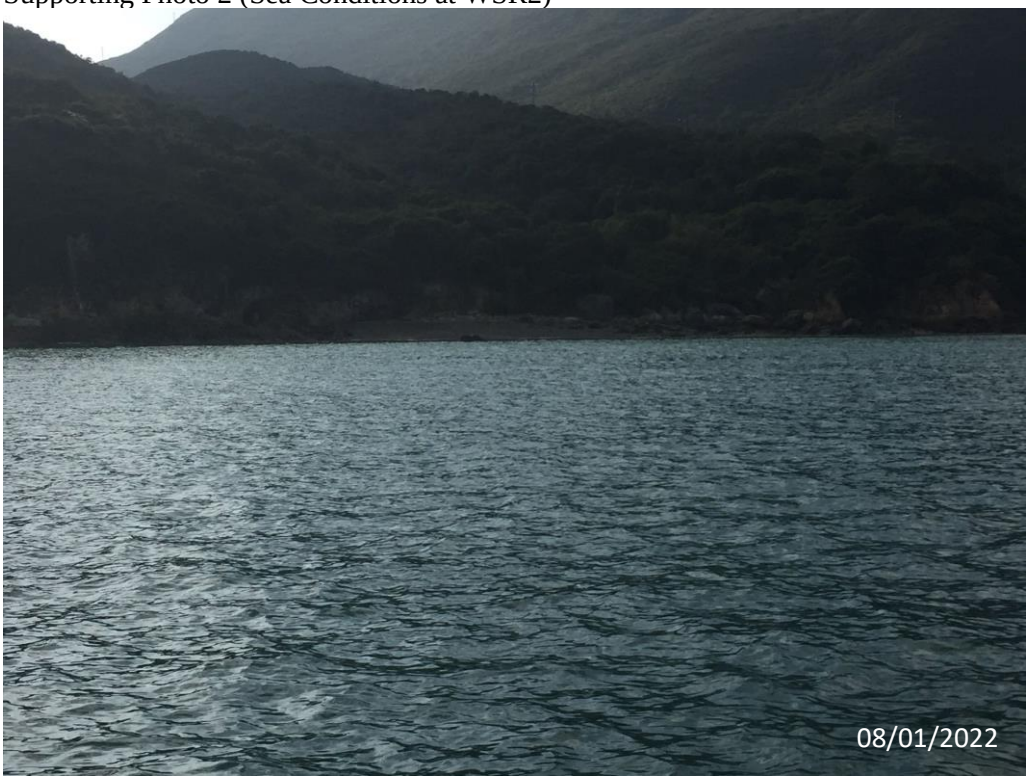
Possible reason for Action or Limit Level Non-compliance	Outfall Shaft Area: marine construction activities, namely 1) 1st derrick barge supported material lifting for rock cutting and pumping clean seepage water within silt curtain area. (0800 – 2200 hrs); 2) chain-cut the bed rock inside the caisson (0800 – 1900 hrs). Intake Shaft Area: marine construction activities, namely 1) 1st derrick barge for incepting non-MD excavated from inside the shaft (double silt curtain in place) (0800 – 2000 hrs); 2) grab dredger to excavate non-MD inside the shaft and to load onto the derrick barge (double silt curtain and tarpaulin sheeting beneath the moving grab in place) (0800 – 2000 hrs). Marine construction activities with contact with water: 1) 1st derrick barge supported material lifting for rock cutting and pumping clean seepage water within silt curtain area. (0800 – 2200 hrs); 2) chain-cut the bed rock inside the caisson (0800 – 1900 hrs); 3) grab dredger to excavate non-MD inside the shaft and to load onto the derrick barge (double silt curtain and tarpaulin sheeting beneath the moving grab in place) (0800 – 2000 hrs). Marine vessels on 08 January 2022: • Derrick barge x 1, grab dredger x 1 (Intake Shaft) • Derrick barge x 1, chain-cutting machine x 1 inside the caisson (Outfall Shaft) Dominating sea current direction was found to be from Northwest to Southeast at waters to the west side of Tit Cham Chau; and from West to East at waters to the east side of Tit Cham Chau. Stations WSR1, WSR2, WSR3, WSR4 and WSR16 were located distant from the construction site and the possibility of being affected by marine construction activities was considered limited. SS exceedances were however noted at WSR1 (5.5 mg/L), WSR2 (5.7 mg/L), WSR3 (6.3 mg/L), WSR4 (6.7 mg/L) and WSR16 (5.5 mg/L). It was noted that pumping of the clean seepage of marine water within the silt curtain was conducted on 08 January 2022 at Outfall Shaft Area. As advised by Main contractor, two separate pumping systems were constructed for respectively the unpolluted water ingress through the edge of the caisson and surface water/ washings from the rock drilling/ chain cutting work. For unpolluted marine water ingress, it will be piped to an isolated metal skip where appropriate-sized submersible pumps sink in to pump out the 'clean' water into an abandoned tremie pipe out of the caisson. The discharge point shall be enclosed by a silt curtain setup. Since the seepage marine water was unpolluted, the seepage water can be discharged to water bodies without a water discharge license. For surface water/washings, it will be directly pumped at the local low point all the way up to the water treatment facilities/water sedimentation tank in place on the derrick barge aside. The expected silty water will be treated by water treatment facilities/water sedimentation tank before being piped to discharge within silt curtain area. As been advised by the Main Contractor, on-site operative verified the unpolluted seepage water was visually clear on 08 January 2022. A downstream station, WSR36, has showed no SS exceedance (4.5 mg/L) during mid-ebb tide on 08 January 2022, where marine dredging works were conducted. In view of the isolated properties of the marine seepage water at Outfall Shaft caisson, the SS exceedance observed at WSR37 may hence be suggested to result from other natural factors, such as the accumulation of marine substance which was temporary stored in the isolated skip. According to the field observation by sampling team during sampling event, no silt plume was observed in the Project site on 08 January 2022. Conditions of the protective silt curtain at the inland water outfall was satisfactory on 08 January 2022.

Remarks	Current direction during mid-flood sampling on 08 January 2022  Current direction during mid-ebb sampling on 08 January 2022:  Legend Speed (knot) Speed (knot) 0-0.5 1.5-2.0 0.5-1.0 2.0-2.5 1.0-1.5 2.5 and above (Sourced from http://current.hydro.gov.hk/en/map.html)

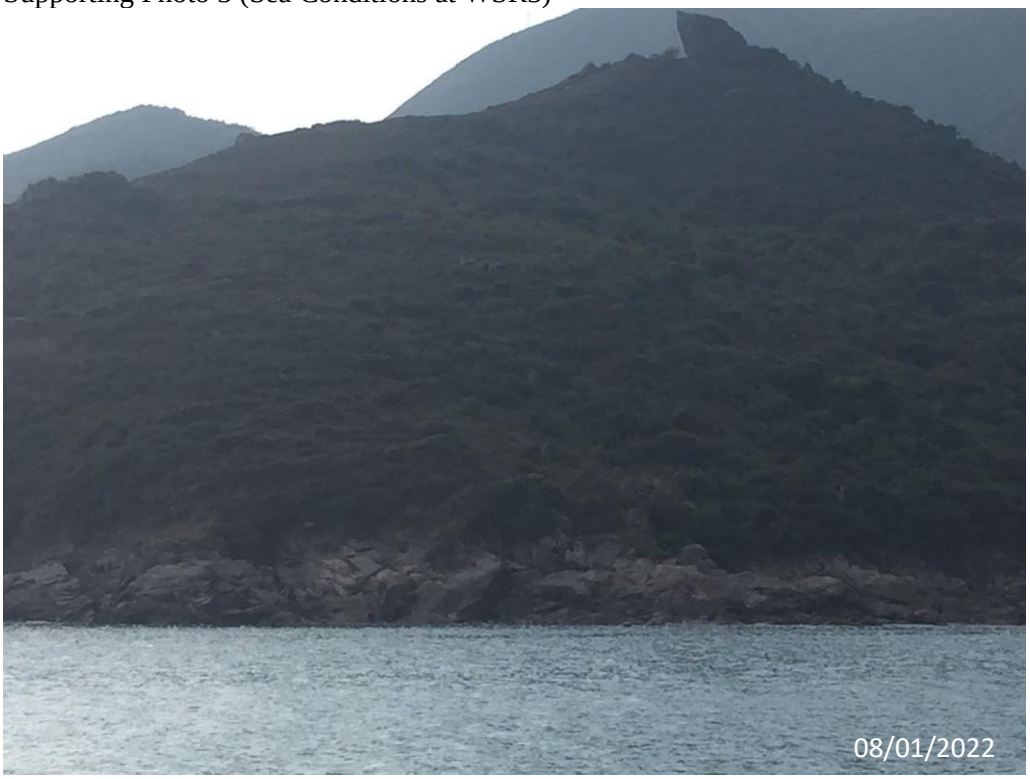
Supporting Photo 1 (Sea Conditions at WSR1)



Supporting Photo 2 (Sea Conditions at WSR2)

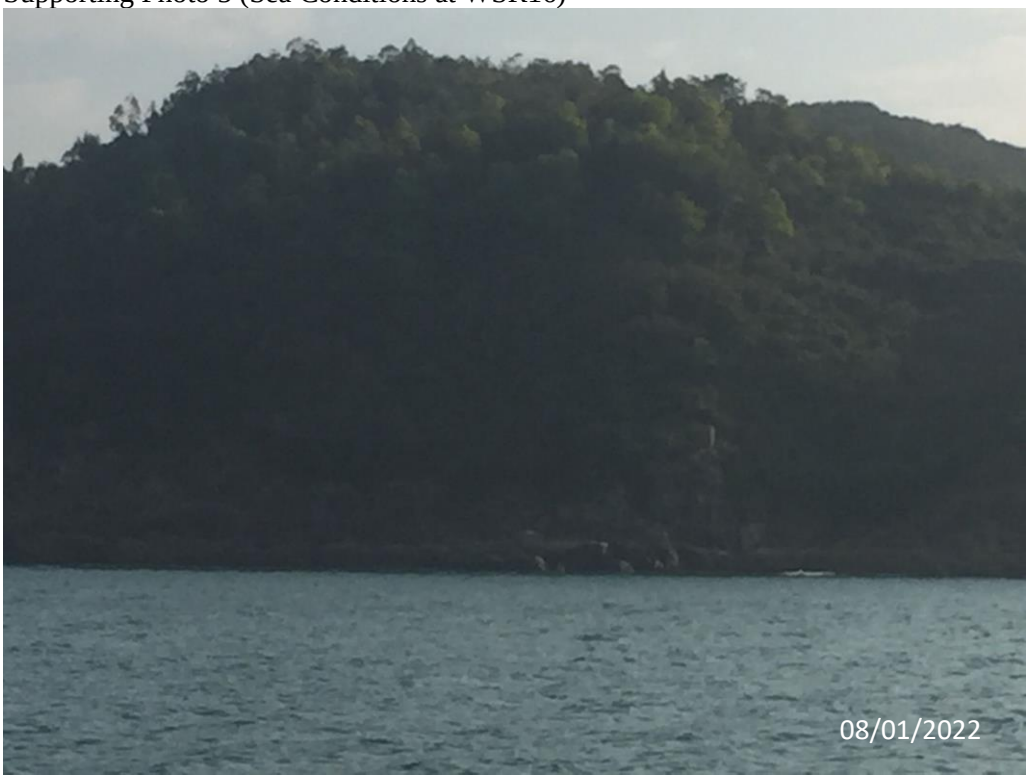


Supporting Photo 3 (Sea Conditions at WSR3)



Supporting Photo 4 (Sea Conditions at WSR4)

Supporting Photo 5 (Sea Conditions at WSR16)

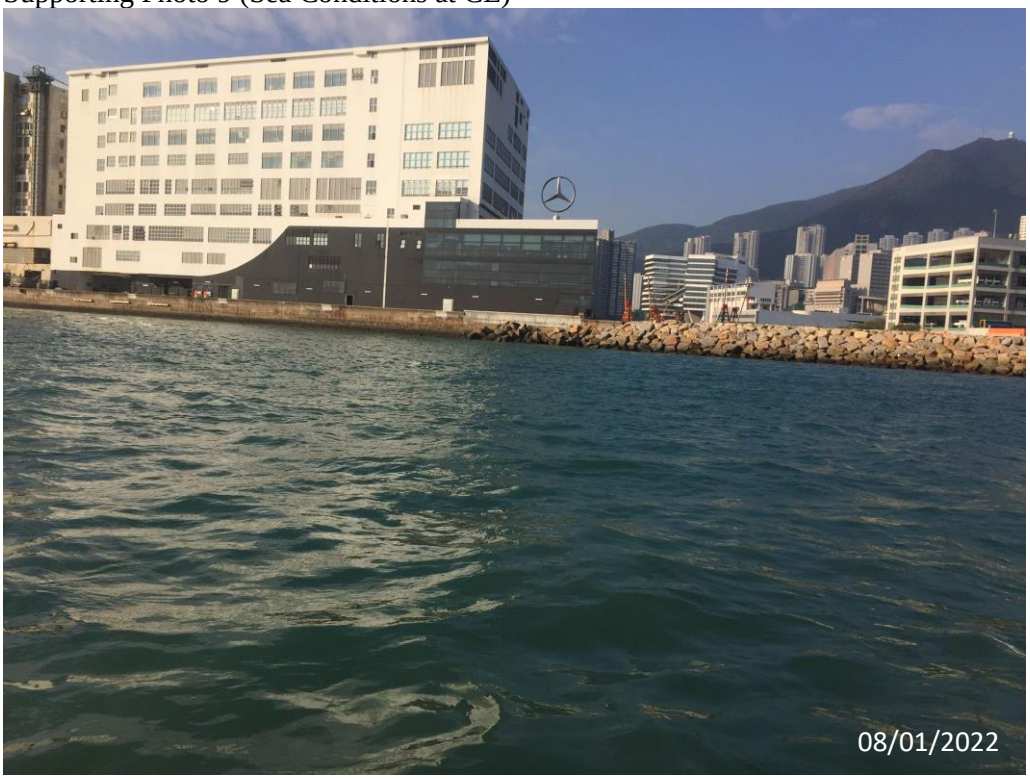


Supporting Photo 6 (Sea Conditions at WSR36)

Supporting Photo 7 (Sea Conditions at WSR37)

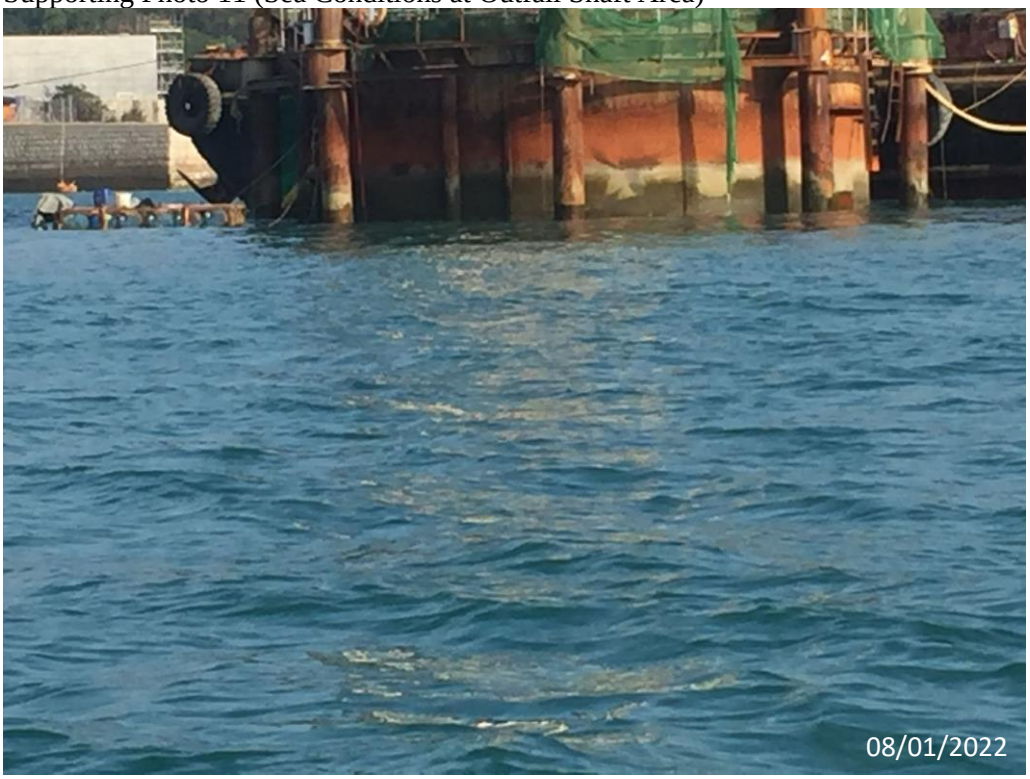
Supporting Photo 8 (Sea Conditions at CF)

Supporting Photo 9 (Sea Conditions at CE)

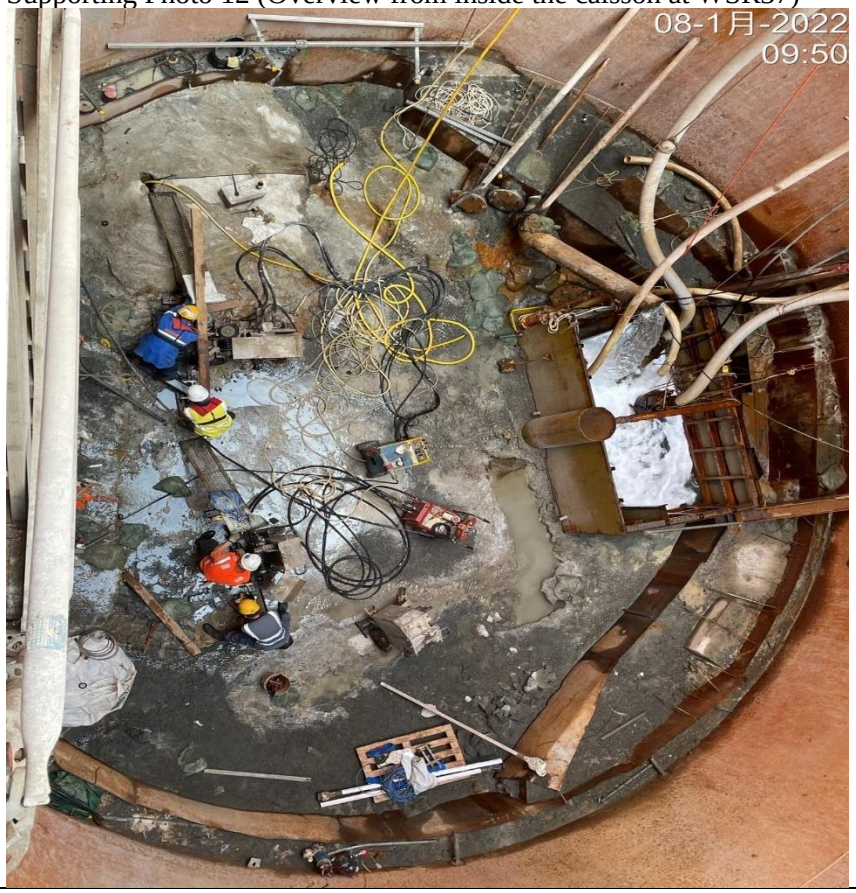


Supporting Photo 10 (Sea Conditions at Intake Shaft Area)

Supporting Photo 11 (Sea Conditions at Outfall Shaft Area)

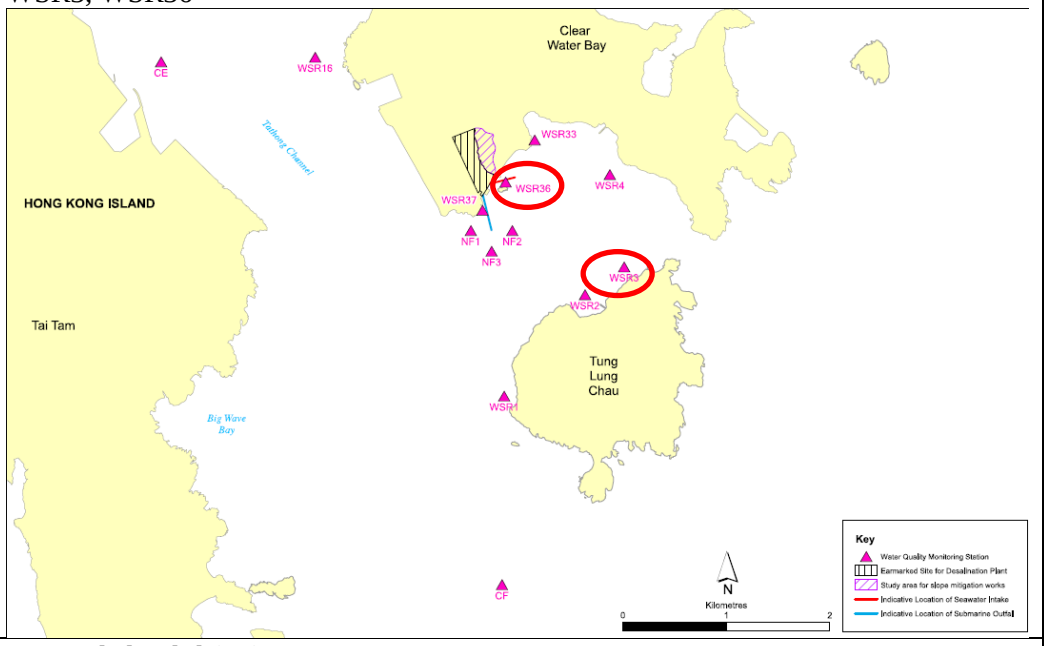


Supporting Photo 12 (Overview from inside the caisson at WSR37)



Prepared by	Jack Chow
Date	24 January 2022

Incident Report on Action Level or Limit Level Non-Compliance

Project	Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant		
Date	11 January 2022 (Lab result received on 17 January 2022)		
Time	17:40 - 19:00 (Mid-Flood) and 11:41-15:11 (Mid-Ebb)		
Mid-Flood			
Monitoring Location	WSR3, WSR36 		
Parameter	Suspended Solid (SS)		
Action & Limit Levels	Action Level	Limit Level	
	> 6.9 mg/L	> 7.5 mg/L	
Measurement Level	Impact Station(s) of Exceedance	Control Stations	Impact Station(s) without Exceedance
	7.2 mg/L (WSR 3) 7.2 mg/L (WSR 36)	3.7 mg/L (CE) 5.8 mg/L (CF)	3.8 mg/L (WSR1) 4.0 mg/L (WSR 2) 4.7 mg/L (WSR 4) 5.8 mg/L (WSR16) 5.3 mg/L (WSR 33) 5.8 mg/L (WSR 37)
Possible reason for Action or Limit Level Non-compliance	Outfall Shaft Area: marine construction activities, namely 1) derrick barge supported material lifting for rock cutting and pumping clean seepage water within silt curtain area (0800 – 2200 hrs); 2) chain-cut the bed rock inside the caisson (no contact with outside water body) (0800 – 1900 hrs) Intake Shaft Area: marine construction activities, namely 1) derrick barge for incepting non-MD excavated from inside the shaft (double silt curtain in place) (0800 – 2000 hrs); 2) grab dredger to excavate non-MD inside the shaft and to load onto the derrick barge (double silt curtain and tarpaulin sheeting beneath the moving grab in place) (0800 – 2000 hrs); 3) derrick barge and grab dredger be intermittently re-positioned by tug boat (1445 – 1900 hrs) Marine construction activities with contact with water: 1) derrick barge supported material lifting for rock cutting and pumping clean seepage water within silt curtain area (0800 – 2200 hrs); 2) chain-cut the bed rock inside the caisson (no contact with outside water body) (0800 – 1900 hrs); 3) grab dredger to excavate non-MD inside the shaft and		

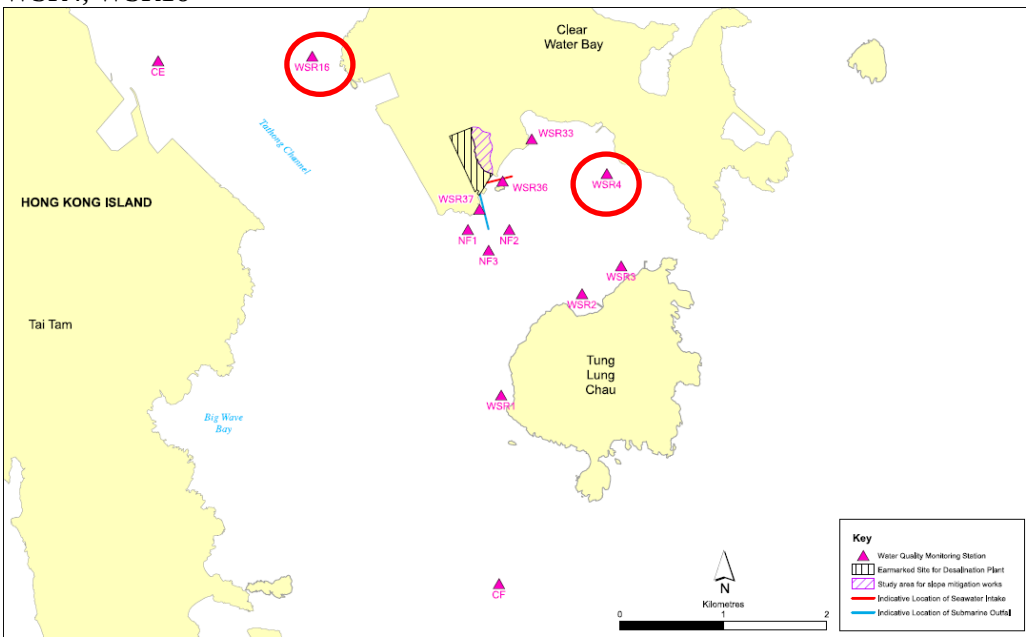
<table>
<tr><td></td><td colspan="3">to load onto the derrick barge (double silt curtain and tarpaulin sheeting beneath the moving grab in place) (0800 – 2000 hrs)

Marine vessels on 11 January 2022:
• Derrick barge x 1, grab dredger x 1, tug boat x 1 (Intake Shaft)
• Derrick barge x 1, chain-cutting machine x 1 (Outfall Shaft)

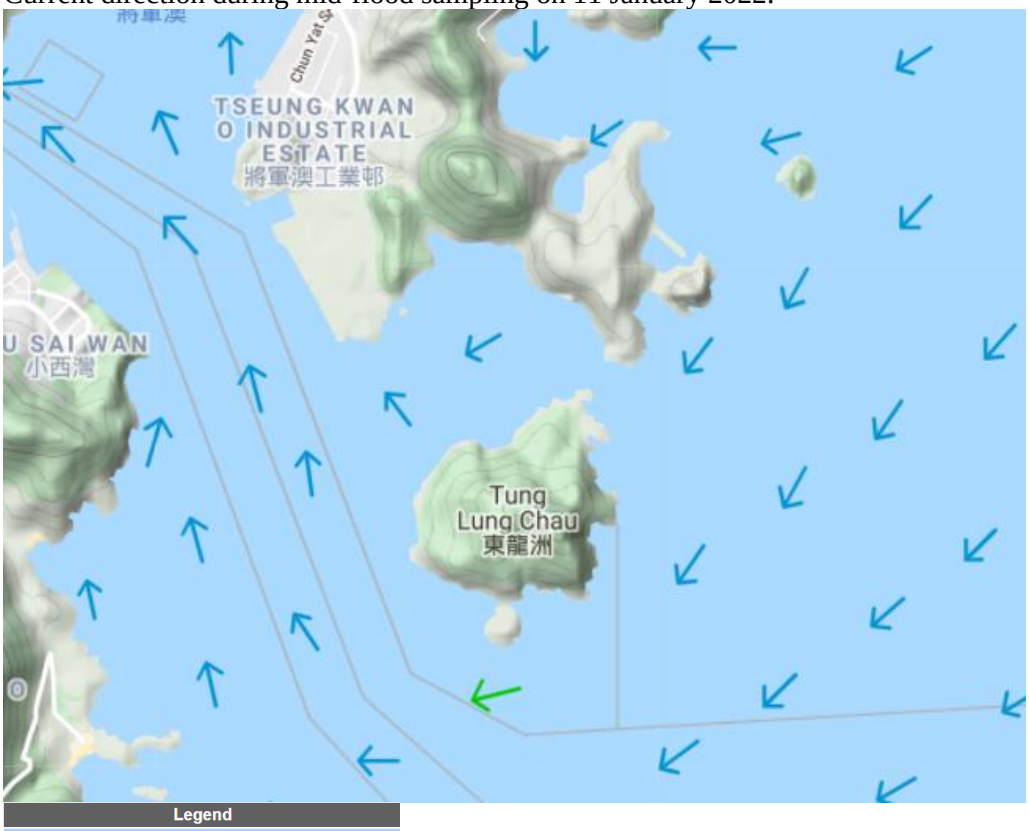
Dominating sea current direction was found to be from Southeast to Northwest at waters to the west side of Tit Cham Chau; and from Northeast to Southwest at waters to the east side of Tit Cham Chau.

Station WSR3 was located distant from the construction site and the possibility of being affected by marine construction activities was considered limited. SS exceedance was however observed at WSR3 (7.2 mg/L). With reference to the work schedule provided by the Main Contractor, marine construction works were conducted at WSR36 and WSR37 on 11 January 2022. The SS level at WSR36 (7.2 mg/L) was however the same to that at WSR3, which located further from the construction site. No SS exceedance was observed at WSR37 (5.8 mg/L), where marine construction activities were conducted. In view of the inverse relation between distance to marine works and SS level, the SS exceedance is concluded not project relevant.

According to the field observation by sampling team during sampling event, no silt plume was observed in the Project site on 11 January 2022.

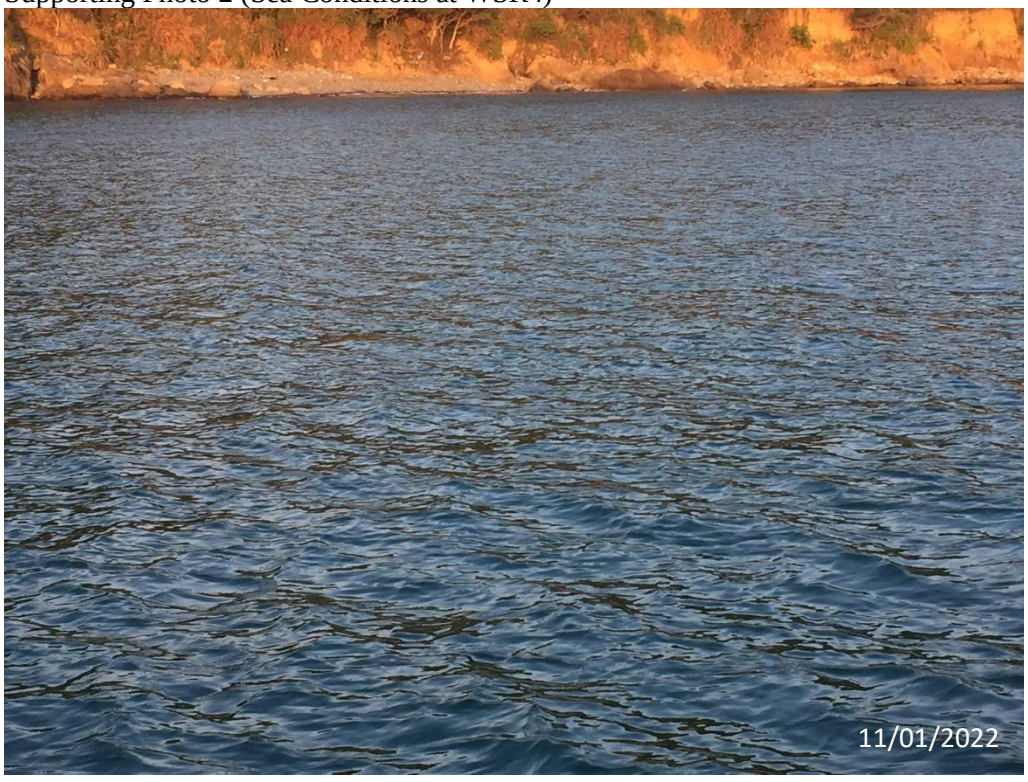
Conditions of the protective silt curtain at the inland water outfall was satisfactory on 11 January 2022.</td></tr>
<tr><td colspan="4">Mid-Ebb</td></tr>
<tr><td>Monitoring Location</td><td colspan="3">WSR4, WSR16
 
</td></tr>
<tr><td>Parameter</td><td colspan="3">Suspended Solid (SS)</td></tr>
<tr><td rowspan="2">Action & Limit Levels</td><td colspan="2">Action Level</td><td>Limit Level</td></tr>
<tr><td colspan="2">> 5.0 mg/L</td><td>> 6.0 mg/L</td></tr>
<tr><td rowspan="2">Measurement Level</td><td>Impact Station(s) of Exceedance</td><td>Control Stations</td><td>Impact Station(s) without Exceedance</td></tr>
<tr><td>10.5 mg/L (WSR4)
5.5 mg/L (WSR16)</td><td>3.3 mg/L (CE)
4.2 mg/L (CF)</td><td>4.0 mg/L (WSR1)
4.0 mg/L (WSR2)
4.8 mg/L (WSR3)</td></tr>
</table>

			3.8 mg/L (WSR33) 3.8 mg/L (WSR36) 3.5 mg/L (WSR37)
Possible reason for Action or Limit Level Non-compliance	Outfall Shaft Area: marine construction activities, namely 1) derrick barge supported material lifting for rock cutting and pumping clean seepage water within silt curtain area (0800 – 2200 hrs); 2) chain-cut the bed rock inside the caisson (no contact with outside water body) (0800 – 1900 hrs) Intake Shaft Area: marine construction activities, namely 1) derrick barge for incepting non-MD excavated from inside the shaft (double silt curtain in place) (0800 – 2000 hrs); 2) grab dredger to excavate non-MD inside the shaft and to load onto the derrick barge (double silt curtain and tarpaulin sheeting beneath the moving grab in place) (0800 – 2000 hrs); 3) derrick barge and grab dredger be intermittently re-positioned by tug boat (1445 – 1900 hrs) Marine construction activities with contact with water: 1) derrick barge supported material lifting for rock cutting and pumping clean seepage water within silt curtain area (0800 – 2200 hrs); 2) chain-cut the bed rock inside the caisson (no contact with outside water body) (0800 – 1900 hrs); 3) grab dredger to excavate non-MD inside the shaft and to load onto the derrick barge (double silt curtain and tarpaulin sheeting beneath the moving grab in place) (0800 – 2000 hrs) Marine vessels on 11 January 2022: • Derrick barge x 1, grab dredger x 1, tug boat x 1 (Intake Shaft) • Derrick barge x 1, chain-cutting machine x 1 (Outfall Shaft) Dominating sea current direction was found to be from Northwest to Southeast at waters to the west side of Tit Cham Chau; and from West to East at waters to the east side of Tit Cham Chau. Stations WSR4 and WSR16 were located distant from the construction site and the possibility of being affected by marine construction activities was considered limited. SS exceedances were however noted at WSR4 (10.5 mg/L) and WSR16 (5.5 mg/L). No SS exceedances were observed at WSR36 (3.8 mg/L) and WSR37 (3.5 mg/L), where marine construction activities were conducted. In view of the inverse relation between distance to marine works and SS level, the SS exceedance is concluded not project relevant. According to the field observation by sampling team during sampling event, no silt plume was observed in the Project site on 11 January 2022. Conditions of the protective silt curtain at the inland water outfall was satisfactory on 11 January 2022.		

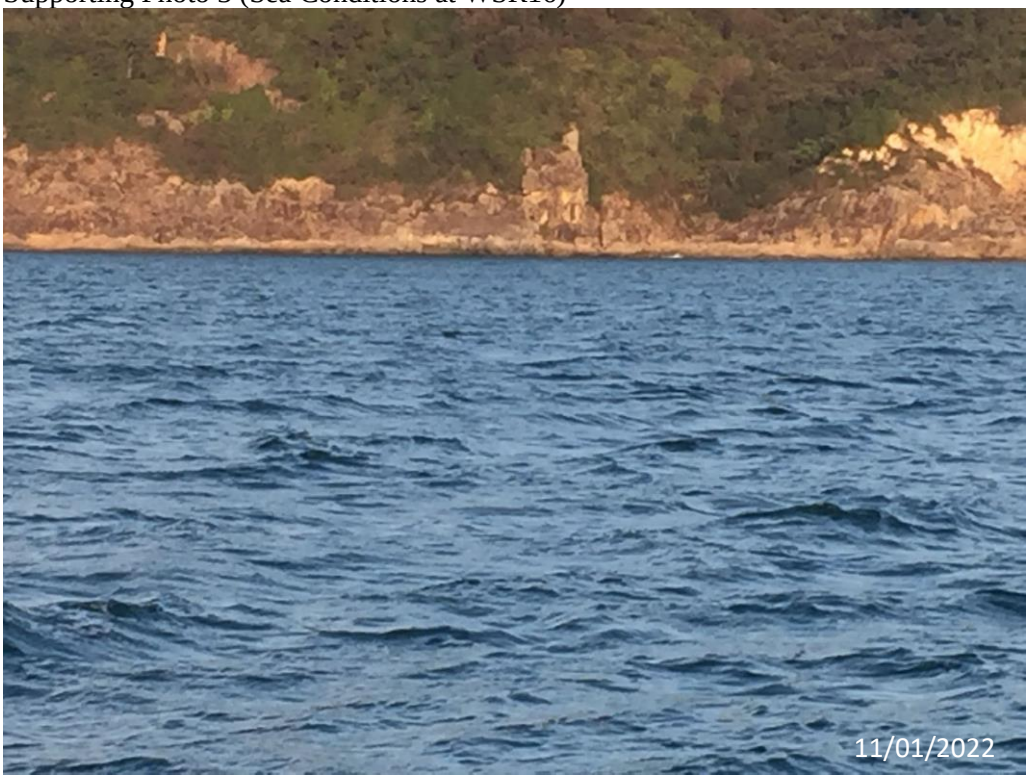
Remarks	Current direction during mid-ebb sampling on 11 January 2022:  Current direction during mid-flood sampling on 11 January 2022:   (Sourced from http://current.hydro.gov.hk/en/map.html)

Supporting Photo 1 (Sea Conditions at WSR3)

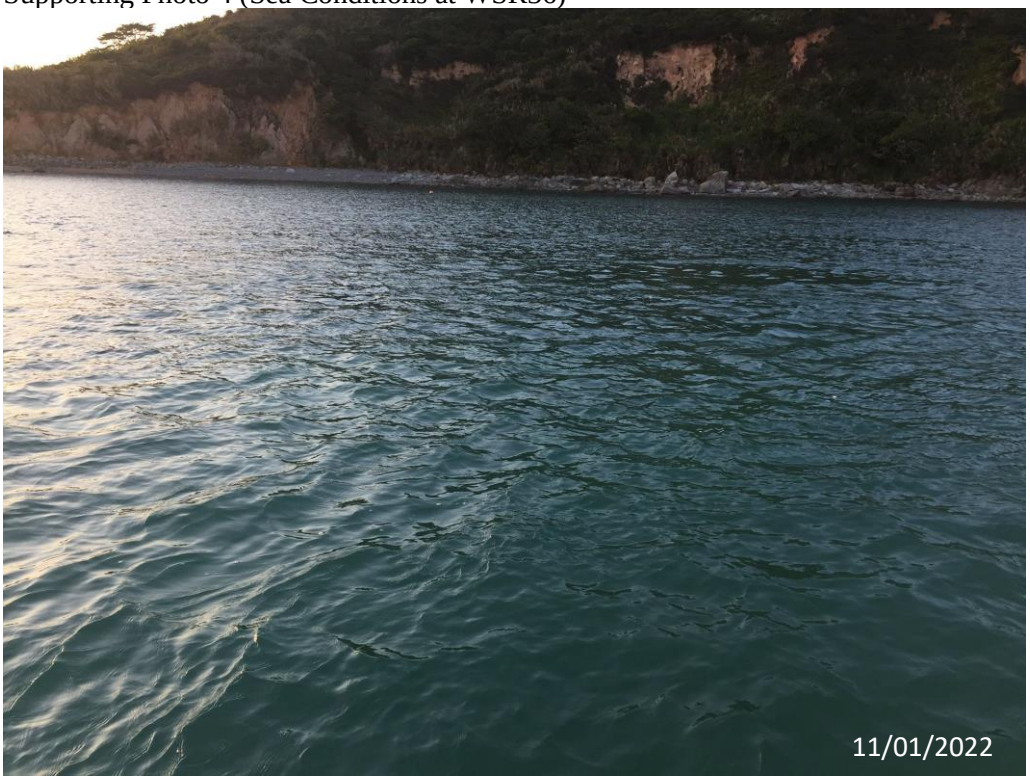
Supporting Photo 2 (Sea Conditions at WSR4)



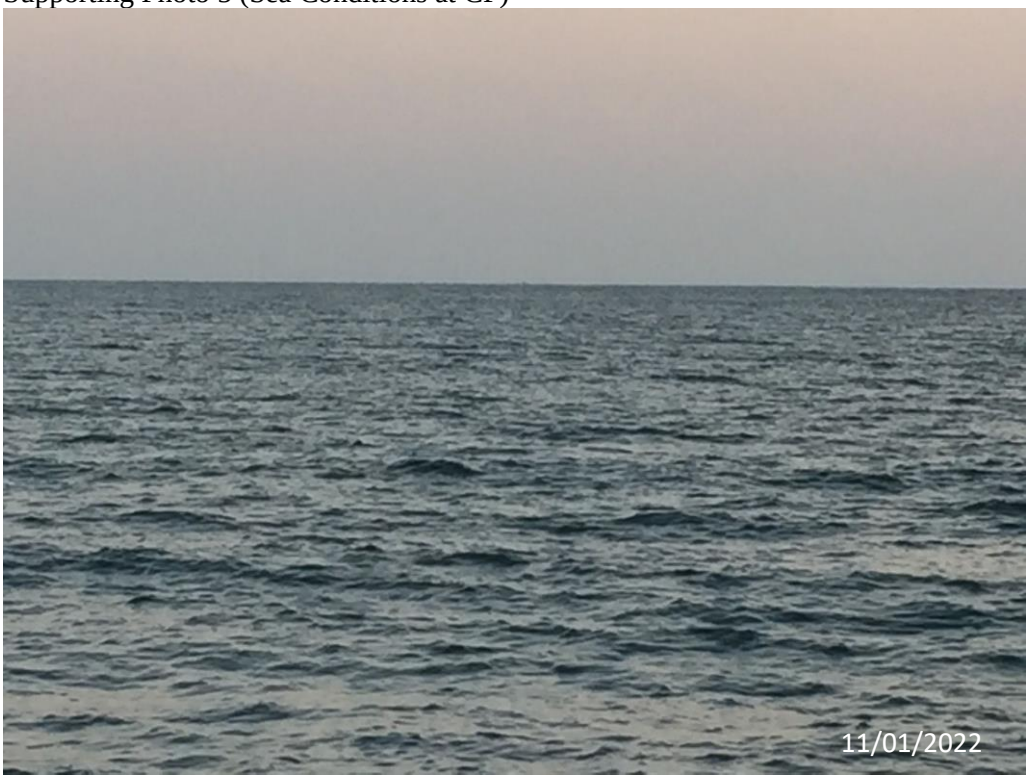
Supporting Photo 3 (Sea Conditions at WSR16)



Supporting Photo 4 (Sea Conditions at WSR36)



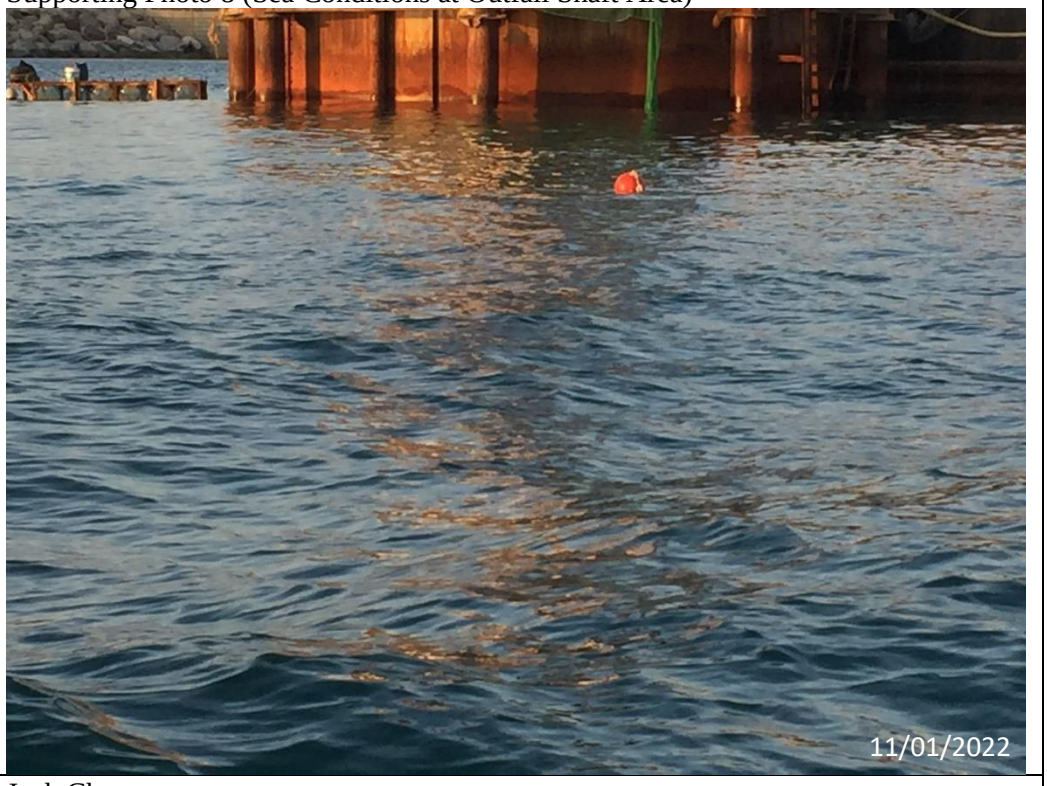
Supporting Photo 5 (Sea Conditions at CF)



Supporting Photo 6 (Sea Conditions at CE)

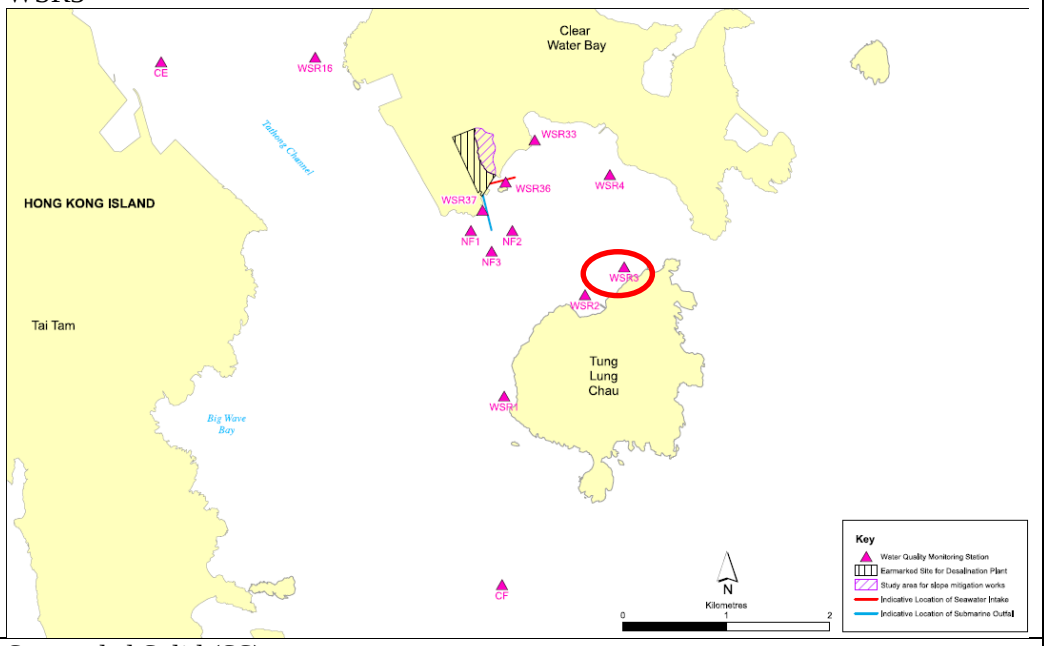
Supporting Photo 7 (Sea Conditions at Intake Shaft Area)

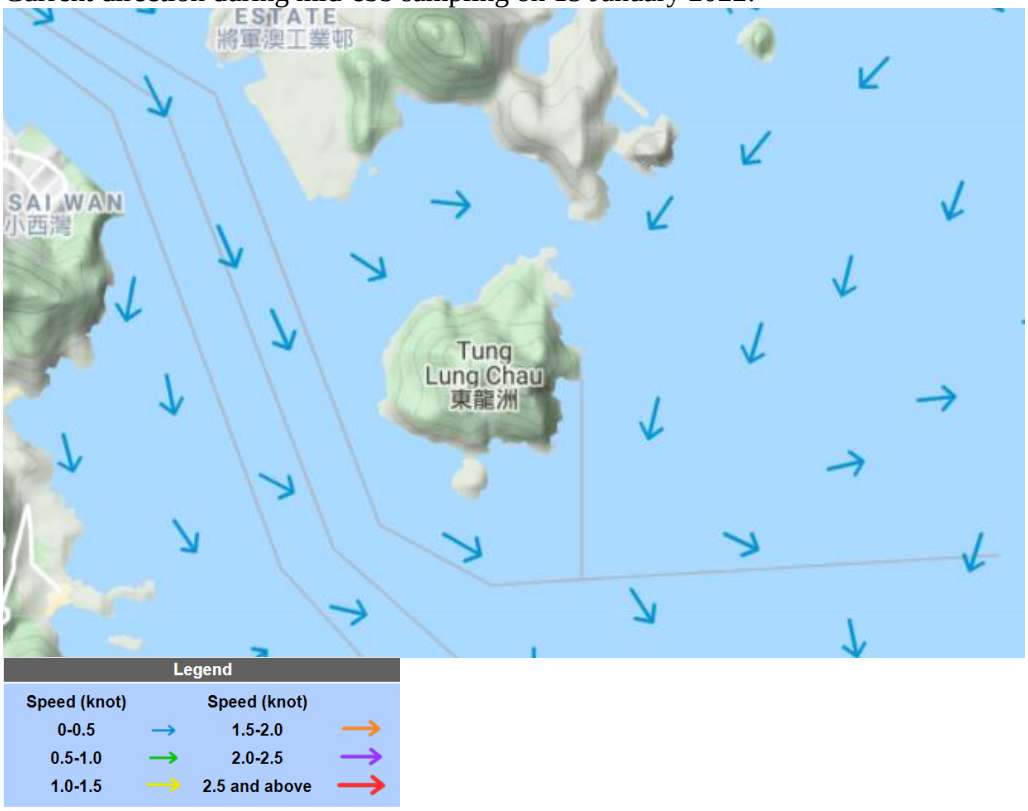
Supporting Photo 8 (Sea Conditions at Outfall Shaft Area)



Prepared by	Jack Chow
Date	21 January 2022

Incident Report on Action Level or Limit Level Non-Compliance

Project	Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant		
Date	15 January 2022 (Lab result received on 21 January 2022)		
Time	14:05-17:35 (Mid-Flood) and 09:15-12:45 (Mid-Ebb)		
Mid-Ebb			
Monitoring Location	WSR3 		
Parameter	Suspended Solid (SS)		
Action & Limit Levels	Action Level	Limit Level	
	> 6.6 mg/L	> 7.2 mg/L	
Measurement Level	Impact Station(s) of Exceedance	Control Stations	Impact Station(s) without Exceedance
	7.6 mg/L (WSR 3)	5.5 mg/L (CE) 4.6 mg/L (CF)	5.0 mg/L (WSR1) 4.2 mg/L ((WSR 2) 3.3 mg/L (WSR 4) 4.7 mg/L (WSR16) 3.0 mg/L (WSR 33) 2.7 mg/L (WSR 36) 4.7 mg/L (WSR 37)
Possible reason for Action or Limit Level Non-compliance	Outfall Shaft Area: marine construction activities, 1) derrick barge supported material lifting for rock cutting and pumping clean seepage water within silt curtain area (0800 –2200 hrs); 2) chain-cut the bed rock inside the caisson (0800 – 1900 hrs) Intake Shaft Area: marine construction activities, namely 1) derrick barge assisted material lifting for the Blinding layer concreting works inside the shaft (double silt curtain in place) (0800 – 1900 hrs); 2) 1st roro barge carrying 8 nr. concrete trucks (1st trip) for concreting Blinding layer inside the shaft (double silt curtain in place) (0800 – 1400 hrs); 3) 1st roro barge carrying next 8 nr. Concrete trucks (2nd trip) for concreting Blinding layer inside the shaft (double silt curtain in place) (1400 – 1930 hrs); 4) 2nd roro barge (no loading) moored aside to stand by. No involvement on any works (0800 – 1800 hrs); 5) tug boats and anchor boat assisted positioning of working barges (0800 – 1800 hrs)		

	Marine construction activities with contact with water: 1) derrick barge supported material lifting for rock cutting and pumping clean seepage water within silt curtain area (0800 – 2200 hrs); 2) chain-cut the bed rock inside the caisson (0800 – 1900 hrs) Marine vessels on 15 January 2022: • Derrick barge x 1; roro barge x 2; tug boat x 2; anchor boat x 1; concrete trucks on roro barge (Intake Shaft) • Derrick barge x 1, chain-cutting machine x 1 inside the caisson (Outfall Shaft) Dominating sea current direction was found to be from Northwest to Southeast at waters to the west side of Tit Cham Chau; and from West to East at waters to the east side of Tit Cham Chau. Station WSR3 was located distant from the construction site and the possibility of being affected by marine construction activities was considered limited. SS exceedance was however observed at WSR3 (7.6 mg/L). With reference to the work schedule provided by the Main Contractor, marine construction works were conducted at WSR36 (2.7 mg/L) and WSR37 (4.7 mg/L). No SS exceedances were however observed at WSR36 and WSR37. In view of the inverse relation between distance to marine works and SS level, the SS exceedance is concluded not project relevant. According to the field observation by sampling team during sampling event, no silt plume was observed in the Contract site on 15 January 2022. Conditions of the protective silt curtain at the inland water outfall was satisfactory on 15 January 2022.
Remarks	Current direction during mid-ebb sampling on 15 January 2022:  (Sourced from http://current.hydro.gov.hk/en/map.html)

Supporting Photo 1 (Sea Conditions at WSR3)

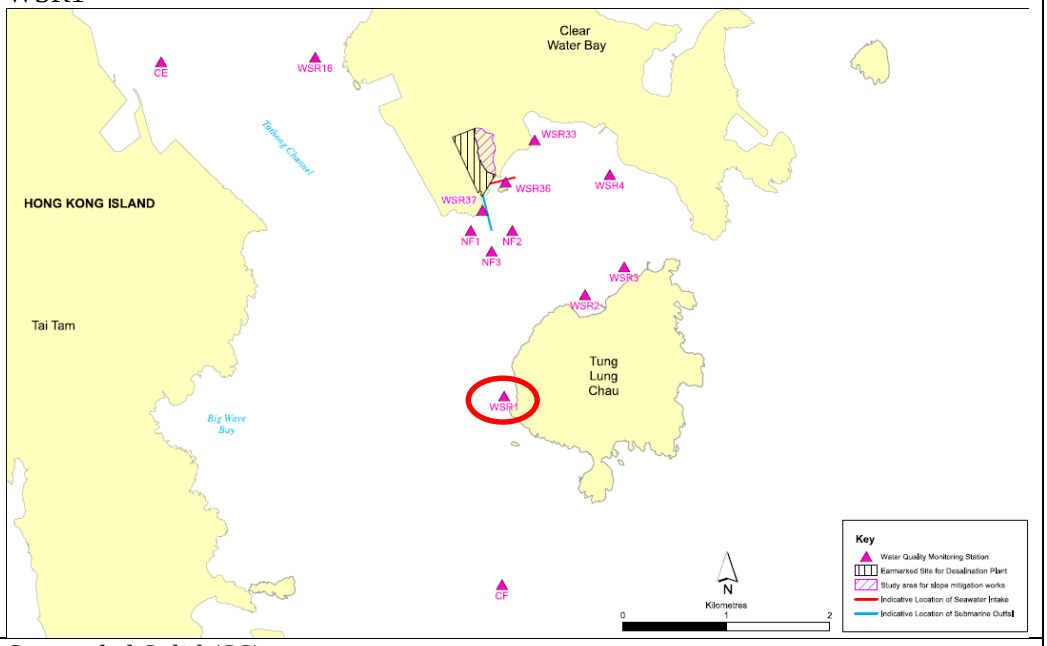
Supporting Photo 2 (Sea Conditions at CF)

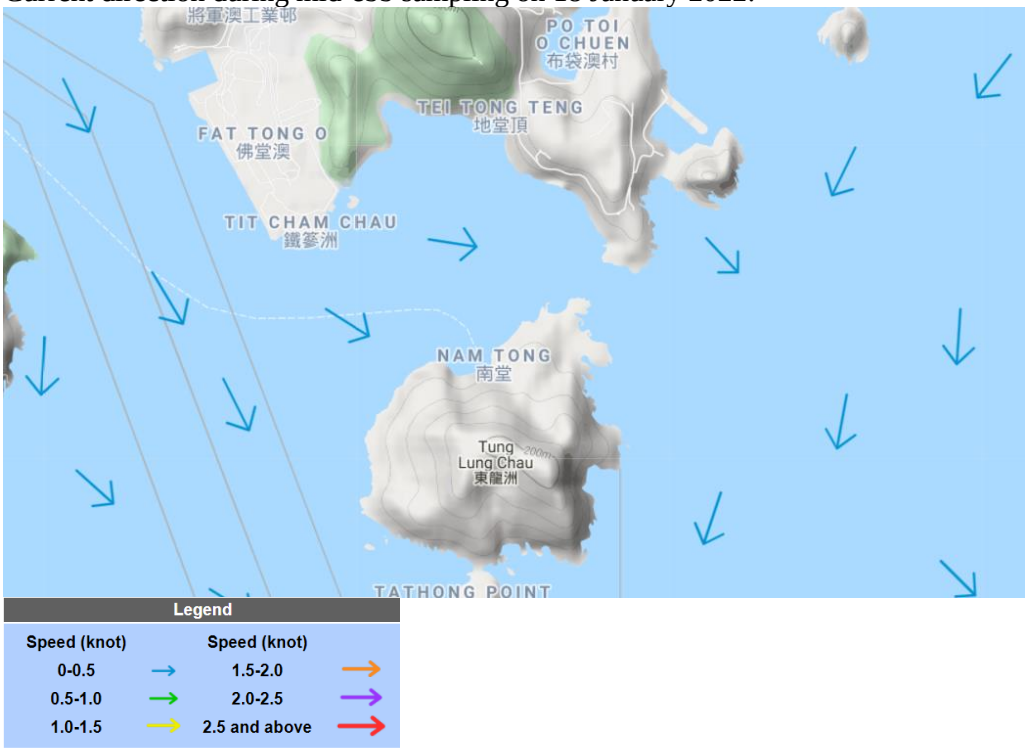
Supporting Photo 3 (Sea Conditions at CE)

Supporting Photo 4 (Sea Conditions at Intake Shaft Area)

	Supporting Photo 5 (Sea Conditions at Outfall Shaft Area) 
Prepared by	Charlene Lai
Date	08 February 2022

Incident Report on Action Level or Limit Level Non-Compliance

Project	Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant		
Date	18 January 2022 (Lab result received on 24 January 2022)		
Time	08:00:10:45 (Mid-Flood) and 10:48-14:18 (Mid-Ebb)		
Mid-Ebb			
Monitoring Location	WSR1 		
Parameter	Suspended Solid (SS)		
Action & Limit Levels	Action Level	Limit Level	
	> 8.4 mg/L	> 9.1 mg/L	
Measurement Level	Impact Station(s) of Exceedance	Control Stations	Impact Station(s) without Exceedance
	8.5 mg/L (WSR 1)	7.0 mg/L (CE) 9.7 mg/L (CF)	3.3 mg/L (WSR 2) 3.8 mg/L (WSR 3) 3.5 mg/L (WSR 4) 2.7 mg/L (WSR16) 3.8 mg/L (WSR 33) 3.8 mg/L (WSR 36) 3.6 mg/L (WSR 37)
Possible reason for Action or Limit Level Non-compliance	Outfall Shaft Area: marine construction activities, 1) derrick barge supported material lifting for rock cutting and pumping clean seepage water within silt curtain area (0800 –2200 hrs); 2) chain-cut the bed rock inside the caisson (0800 – 1900 hrs); 3) tug boat assisted to maintain the silt curtain system and material transport (0800 – 1830 hrs) Intake Shaft Area: marine construction activities, namely 1) derrick barge supported diver's work on inspecting concrete finish, integrity of waling structure and the similar inspection works inside the shaft (double silt curtain in place) (0800 – 2100 hrs) Marine construction activities with contact with water: 1) derrick barge supported material lifting for rock cutting and pumping clean seepage water within silt curtain area (0800 – 2200 hrs); 2) chain-cut the bed rock inside the caisson (0800 – 1900 hrs); 3) derrick barge supported diver's work on inspecting concrete finish, integrity of waling structure and the similar inspection works inside the shaft (double silt curtain in place) (0800 – 2100 hrs)		

	Marine vessels on 18 January 2022: • Derrick barge x 1 (Intake Shaft) • Derrick barge x 1, chain-cutting machine x 1 inside the caisson; tug boat x 1 (Outfall Shaft) Dominating sea current direction was found to be from Northwest to Southeast at waters to the west side of Tit Cham Chau; and from West to East at waters to the east side of Tit Cham Chau. Station WSR1 was located distant from the construction site and the possibility of being affected by marine construction activities were considered limited. SS exceedance was however observed at WSR1 (8.5 mg/L). With reference to the work schedule provided by the Main Contractor, marine construction works were conducted at WSR36 (3.8 mg/L) and WSR37 (3.6 mg/L). No SS exceedances were however observed at WSR36 and WSR37. In view of the inverse relation between distance to marine works and SS level, the SS exceedance is concluded not project relevant. According to the field observation by sampling team during sampling event, no silt plume was observed in the Contract site on 18 January 2022. Conditions of the protective silt curtain at the inland water outfall was satisfactory on 18 January 2022.
Remarks	Current direction during mid-ebb sampling on 18 January 2022:  (Sourced from http://current.hydro.gov.hk/en/map.html)

Supporting Photo 1 (Sea Conditions at WSR1)

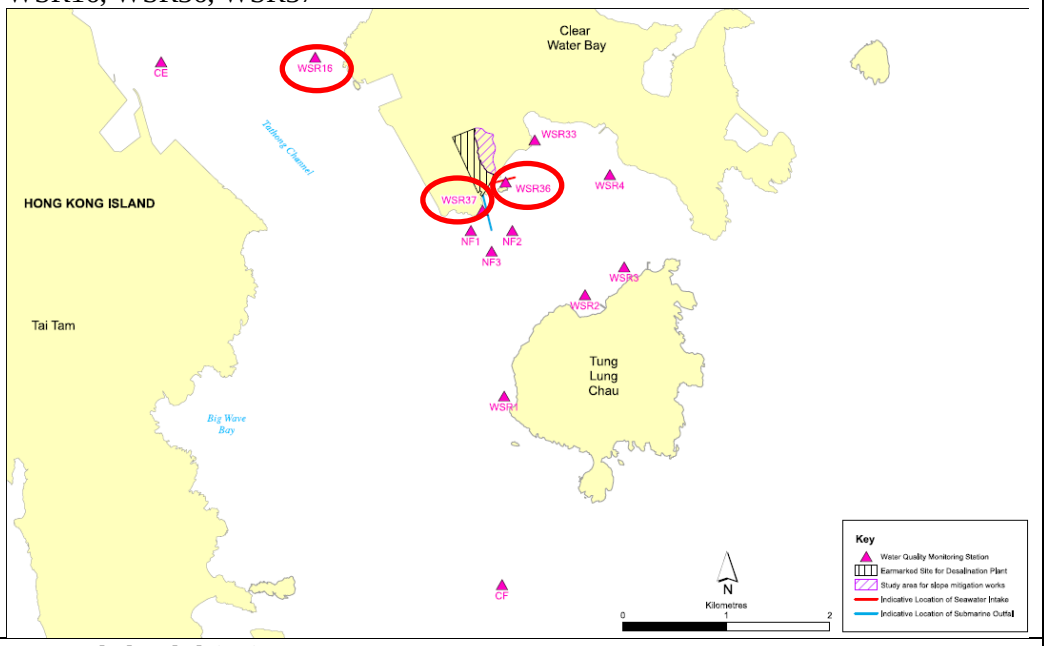
Supporting Photo 2 (Sea Conditions at CF)

Supporting Photo 3 (Sea Conditions at CE)

Supporting Photo 4 (Sea Conditions at Intake Shaft Area)

	Supporting Photo 5 (Sea Conditions at Outfall Shaft Area) 
Prepared by	Howard Chan
Date	08 February 2022

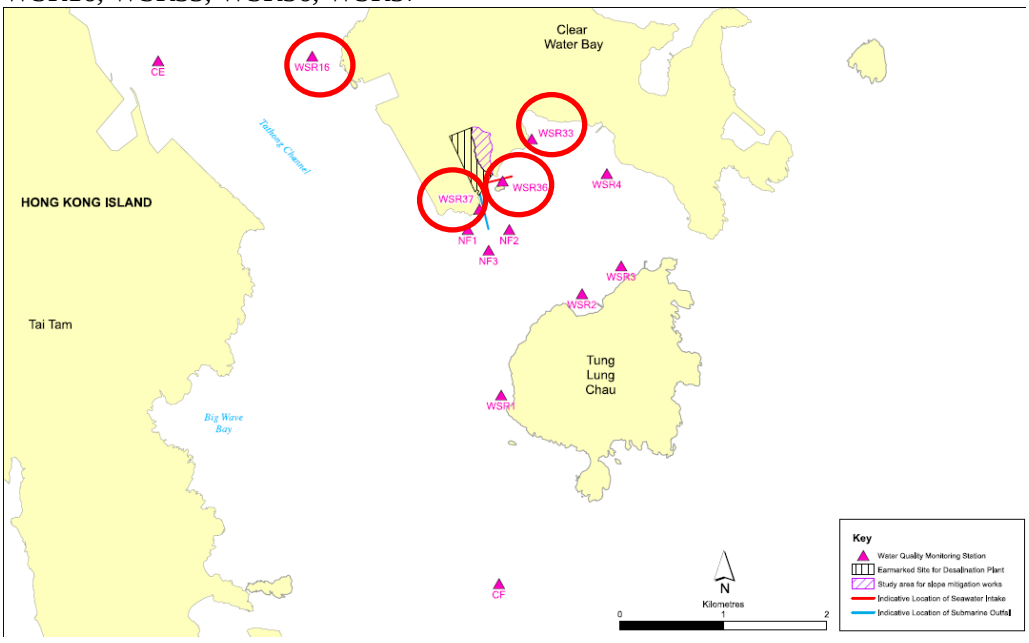
Incident Report on Action Level or Limit Level Non-Compliance

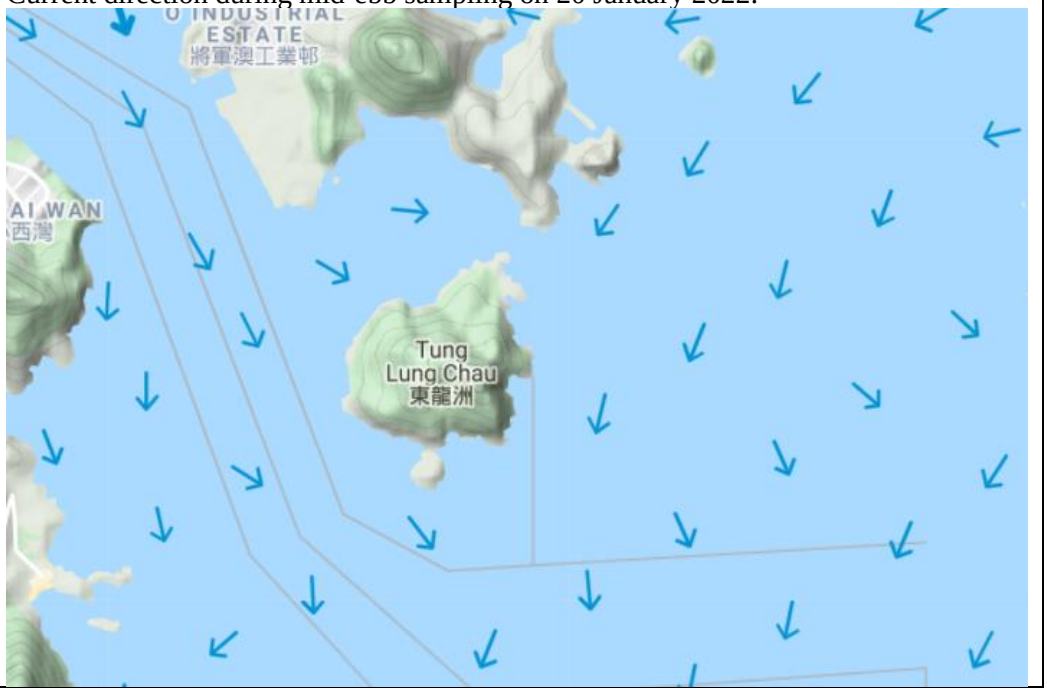
Project	Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant		
Date	20 January 2022 (Lab result received on 26 January 2022)		
Time	08:00-10:25 (Mid-Flood) and 11:58-15:28 (Mid-Ebb)		
Mid-Flood			
Monitoring Location	WSR16, WSR36, WSR37 		
Parameter	Suspended Solid (SS)		
Action & Limit Levels	Action Level	Limit Level	
	> 5.4 mg/L	> 6.0 mg/L	
Measurement Level	Impact Station(s) of Exceedance	Control Stations	Impact Station(s) without Exceedance
	5.5 mg/L (WSR 16) 7.0 mg/L (WSR 36) 5.5 mg/L (WSR 37)	4.0 mg/L (CE) 4.5 mg/L (CF)	5.0 mg/L (WSR1) 4.5 mg/L (WSR 2) 4.5 mg/L (WSR 3) 5.2 mg/L (WSR4) 4.8 mg/L (WSR 33)
Possible reason for Action or Limit Level Non-compliance	Outfall Shaft Area: marine construction activities, namely 1) derrick barge supported material lifting for rock cutting and pumping clean seepage water within silt curtain area (0800 – 2100 hrs); 2) chain-cut the bed rock inside the caisson (0800 – 1900 hrs) Intake Shaft Area: marine construction activities, namely 1) derrick barge mobilized tools & equipment to prepare for TBM retrieval and welding work inside the shaft (double silt curtain in place) (0800 – 1800 hrs) Marine construction activities with contact with water: 1) derrick barge supported material lifting for rock cutting and pumping clean seepage water within silt curtain area (0800 – 2100 hrs); 2) chain-cut the bed rock inside the caisson (0800 – 1900 hrs) Marine vessels on 20 January 2022: • Derrick barge x 1 (Intake Shaft) • Derrick barge x 1, chain-cutting machine x 1 inside the caisson (Outfall Shaft)		

<table>
<tr><td></td><td colspan="3">Dominating sea current direction was found to be from Southeast to Northwest at waters to the west side of Tit Cham Chau; and from Northeast to Southwest at waters to the east side of Tit Cham Chau.

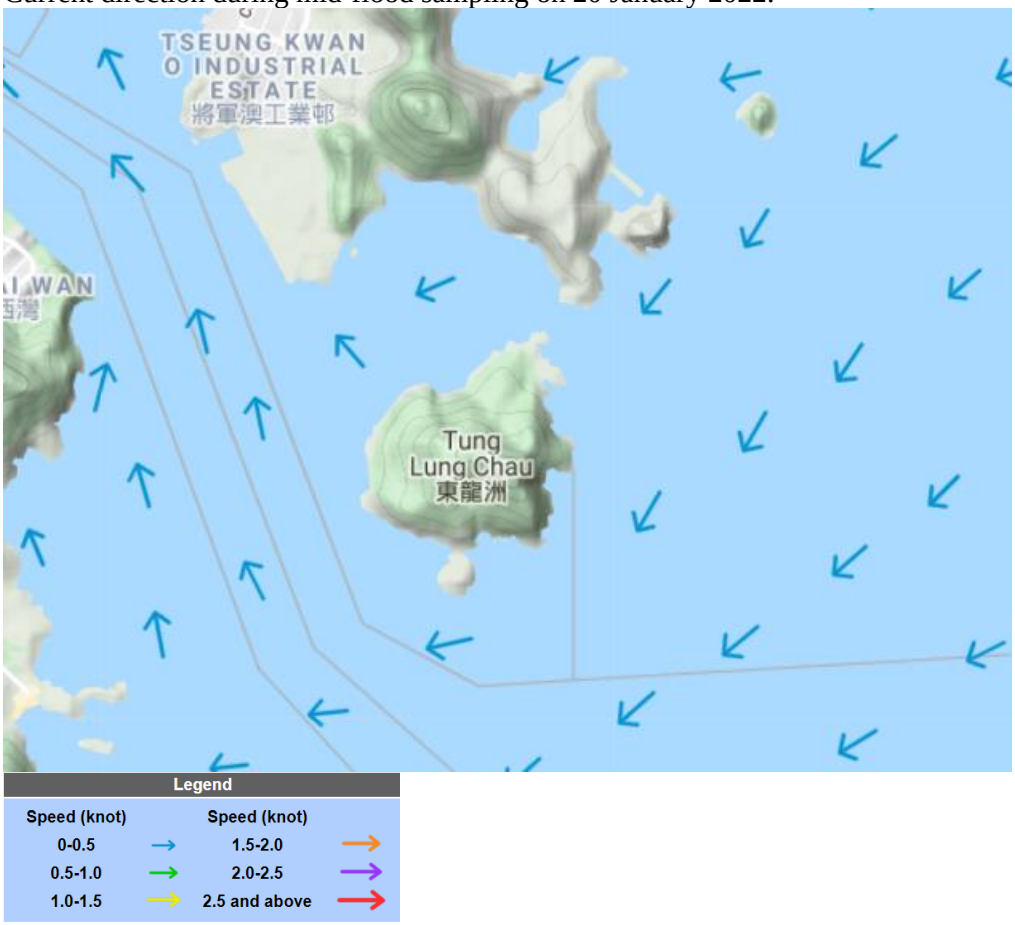
Station WSR16 was located distant from the construction site and the possibility of being affected by marine construction activities was considered limited. SS exceedance was however observed at WSR16 (5.5 mg/L). With reference to the work schedule provided by the Main Contractor, marine construction works were conducted at WSR36 and WSR37 on 20 January 2022. The SS level at WSR37 (5.5 mg/L) was however the same to that at WSR16, which located further from the construction site. Although marine constructions works were conducted at WSR36, no works were in contact with water. Hence the SS exceedance at WSR36 (7.0 mg/L) maybe caused by other natural factors.

According to the field observation by sampling team during sampling event, no silt plume was observed in the Project site on 20 January 2022.

Conditions of the protective silt curtain at the inland water outfall was satisfactory on 20 January 2022.</td></tr>
<tr><td colspan="4">Mid-Ebb</td></tr>
<tr><td>Monitoring Location</td><td colspan="3">WSR16, WSR33, WSR36, WSR37
 
</td></tr>
<tr><td>Parameter</td><td colspan="3">Suspended Solid (SS)</td></tr>
<tr><td rowspan="2">Action & Limit Levels</td><td>Action Level</td><td colspan="2">Limit Level</td></tr>
<tr><td>> 6.0 mg/L</td><td colspan="2">> 6.5 mg/L</td></tr>
<tr><td rowspan="2">Measurement Level</td><td>Impact Station(s) of Exceedance</td><td>Control Stations</td><td>Impact Station(s) without Exceedance</td></tr>
<tr><td>7.2 mg/L (WSR16)
8.7 mg/L (WSR33)
6.7 mg/L (WSR36)
7.8 mg/L (WSR37)</td><td>5.0 mg/L (CE)
6.0 mg/L (CF)</td><td>5.5 mg/L (WSR1)
6.0 mg/L (WSR2)
5.2 mg/L (WSR3)
5.2 mg/L (WSR4)</td></tr>
<tr><td>Possible reason for Action or Limit Level Non-compliance</td><td colspan="3">Outfall Shaft Area: marine construction activities, namely 1) derrick barge supported material lifting for rock cutting and pumping clean seepage water within silt curtain area (0800 – 2100 hrs); 2) chain-cut the bed rock inside the caisson (0800 – 1900 hrs)</td></tr>
</table>

	Intake Shaft Area: marine construction activities, namely 1) derrick barge mobilized tools & equipment to prepare for TBM retrieval and welding work inside the shaft (double silt curtain in place) (0800 – 1800 hrs) Marine construction activities with contact with water: 1) derrick barge supported material lifting for rock cutting and pumping clean seepage water within silt curtain area (0800 – 2100 hrs); 2) chain-cut the bed rock inside the caisson (0800 – 1900 hrs) Marine vessels on 20 January 2022: • Derrick barge x 1 (Intake Shaft) • Derrick barge x 1, chain-cutting machine x 1 inside the caisson (Outfall Shaft) Dominating sea current direction was found to be from Northwest to Southeast at waters to the west side of Tit Cham Chau; and from West to East at waters to the east side of Tit Cham Chau. Station WSR16 was located distant from the construction site and the possibility of being affected by marine construction activities was considered limited. SS exceedance was however noted at WSR16 (7.2 mg/L). According to the work schedule provided by the Main Contractor, no marine construction works with contact with water was conducted at WSR36 during mid-ebb tide on 20 January 2022. SS exceedance was however observed at WSR36 (6.7 mg/L). A downstream station, WSR33 (8.7 mg/L), showed higher SS level than that of WSR36, where no marine construction activities with contact with water was conducted at WSR36. Although marine construction works with contact with water were scheduled at WSR37 during mid-ebb tide, the SS level at WSR37 (7.8 mg/L) was similar to that at WSR16. In view of the inverse relation between distance to marine works and SS level, the SS exceedance is concluded not project relevant. According to the field observation by sampling team during sampling event, no silt plume was observed in the Project site on 20 January 2022. Conditions of the protective silt curtain at the inland water outfall was satisfactory on 20 January 2022.
Remarks	Current direction during mid-ebb sampling on 20 January 2022: 

Current direction during mid-flood sampling on 20 January 2022:

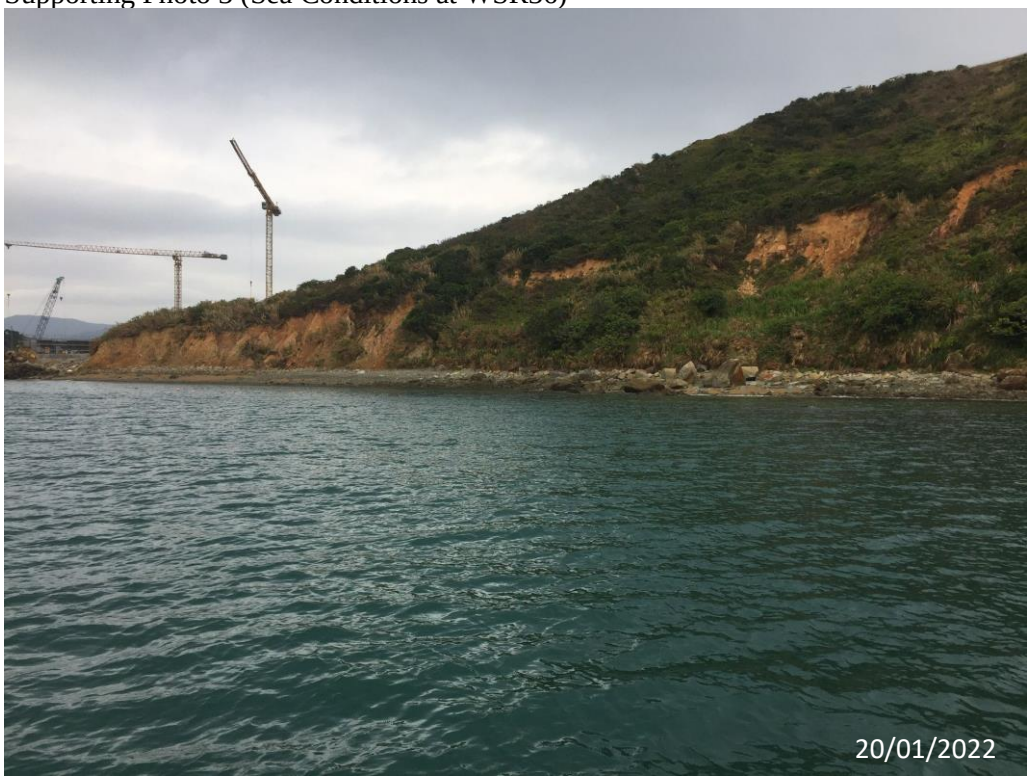


(Sourced from http://current.hydro.gov.hk/en/map.html)

Supporting Photo 1 (Sea Conditions at WSR16)

Supporting Photo 2 (Sea Conditions at WSR33)

Supporting Photo 3 (Sea Conditions at WSR36)

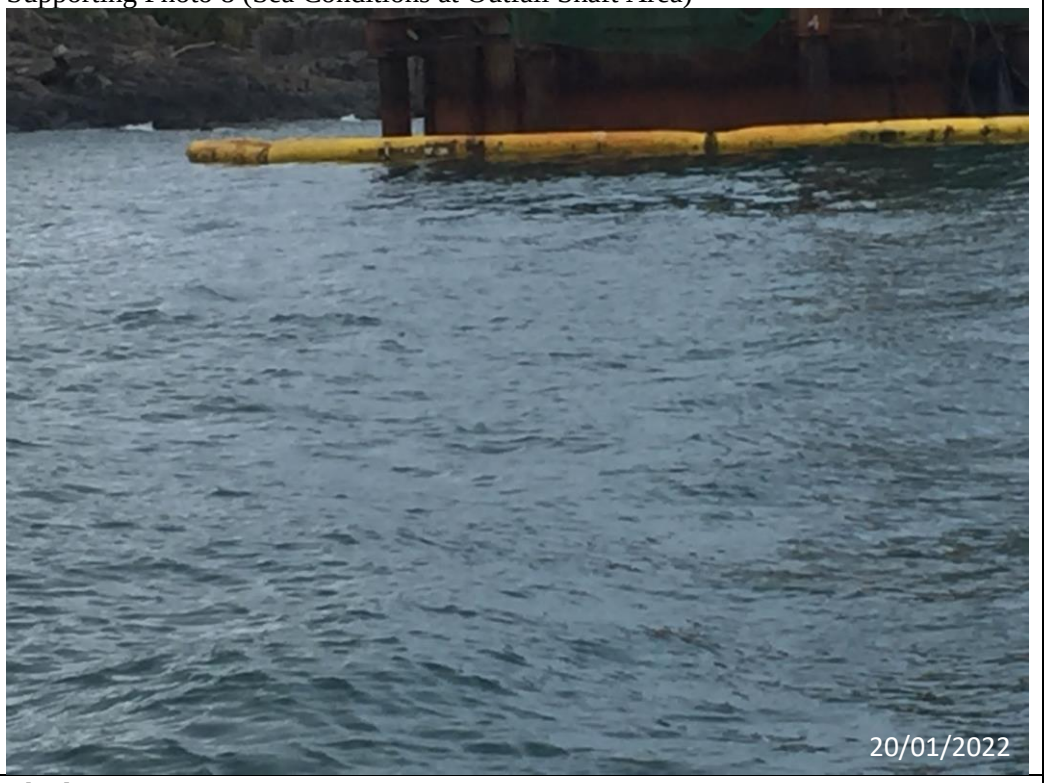


Supporting Photo 4 (Sea Conditions at WSR37)

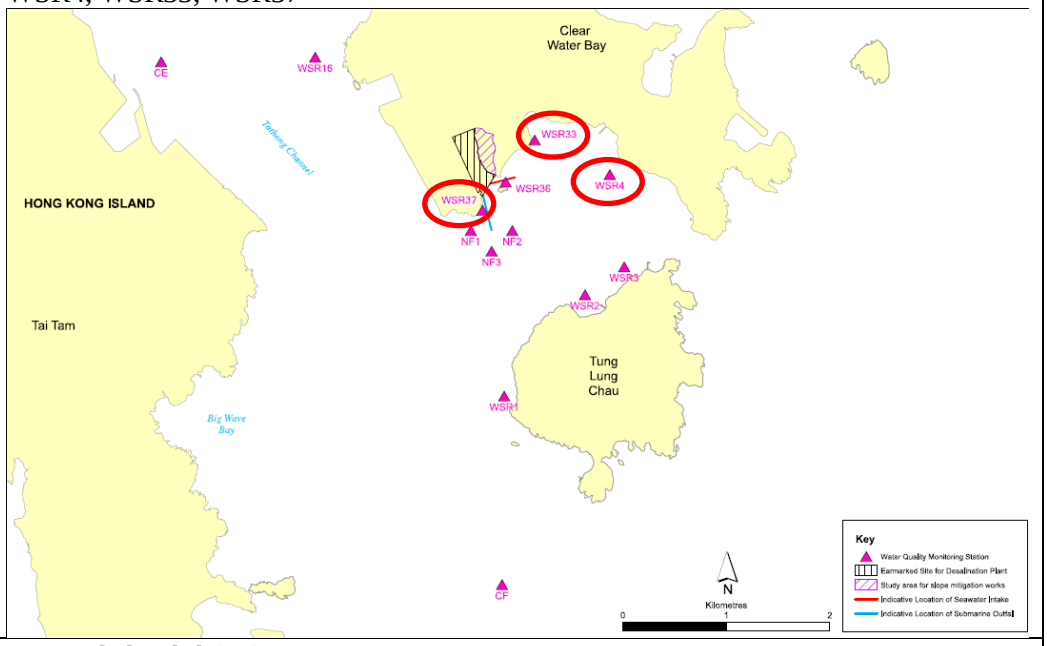
Supporting Photo 5 (Sea Conditions at CF)

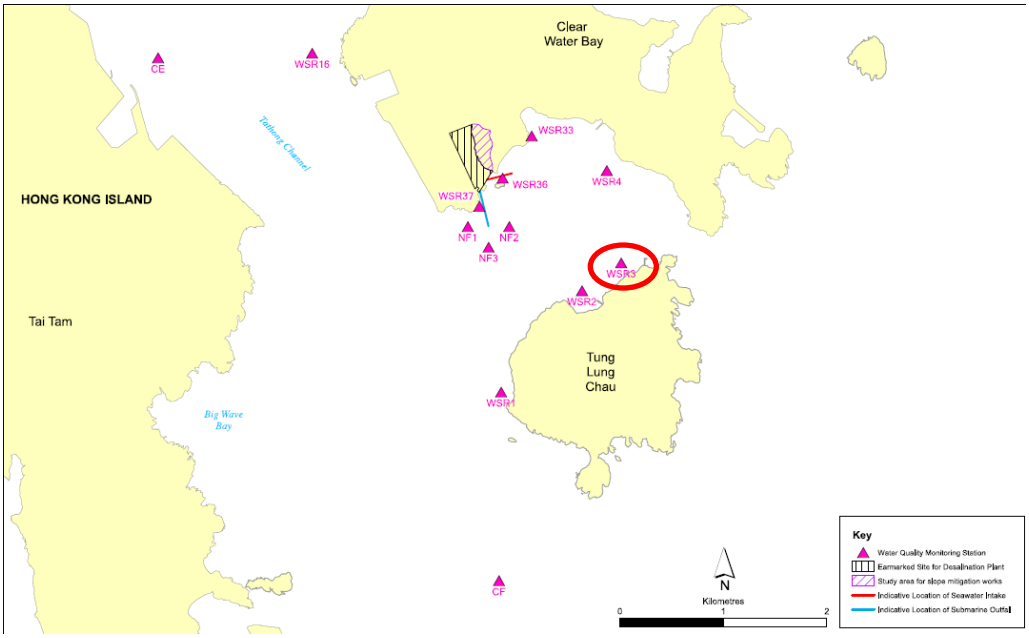
Supporting Photo 6 (Sea Conditions at CE)

Supporting Photo 7 (Sea Conditions at Intake Shaft Area)

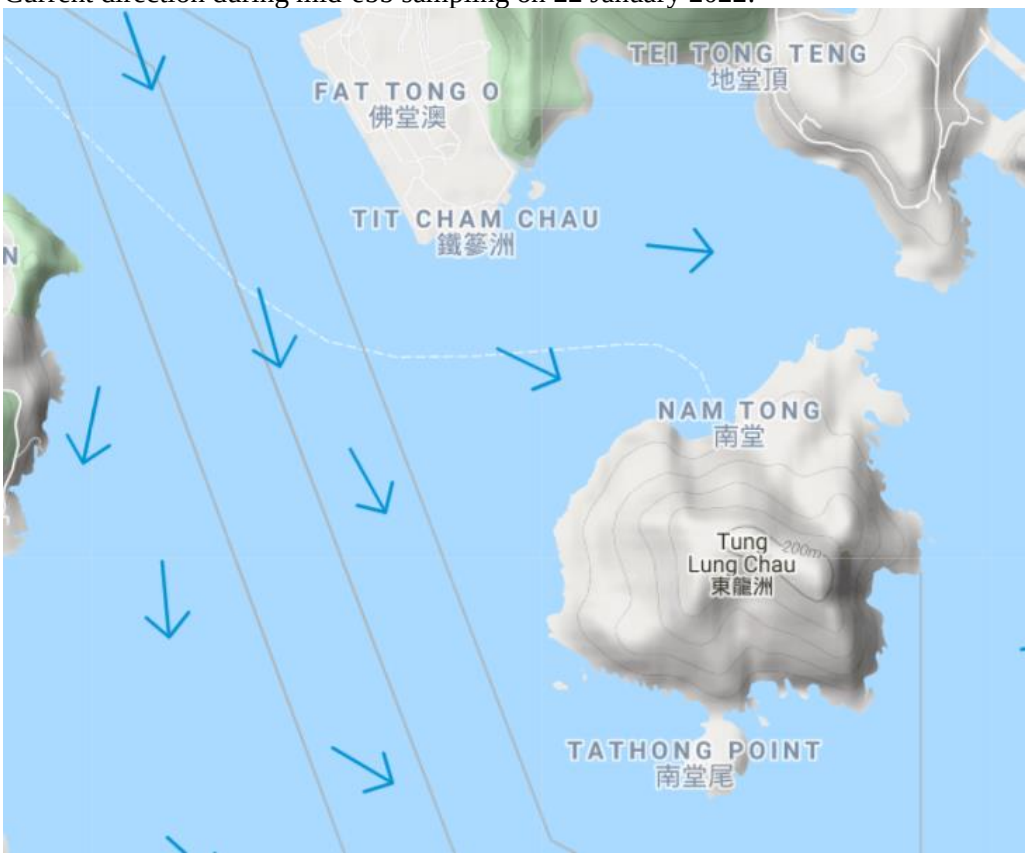
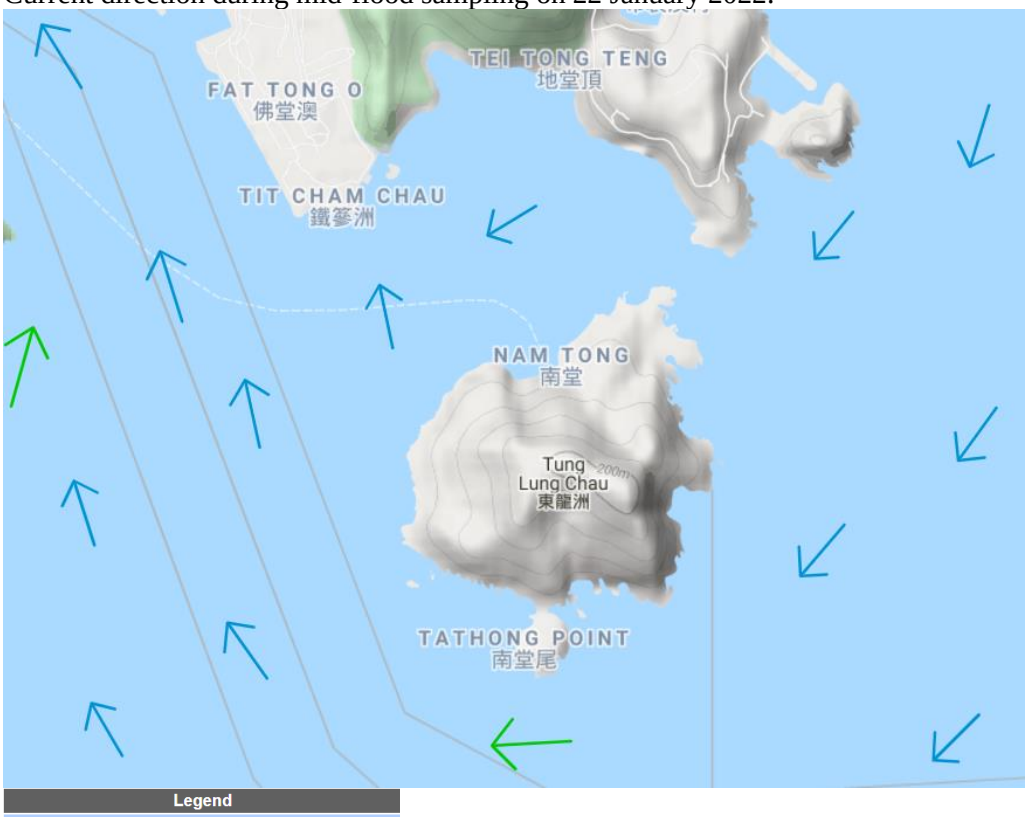
	Supporting Photo 8 (Sea Conditions at Outfall Shaft Area) 
Prepared by	Charlene Lai
Date	08 February 2022

Incident Report on Action Level or Limit Level Non-Compliance

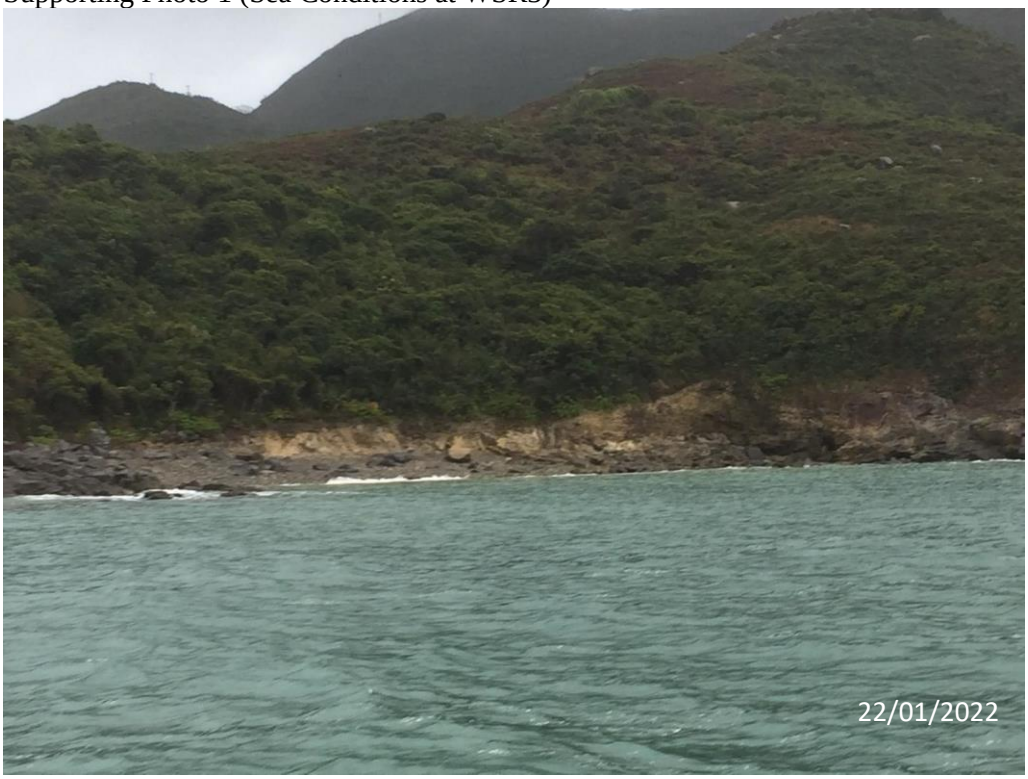
Project	Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant		
Date	22 January 2022 (Lab result received on 28 January 2022)		
Time	08:02-11:32 (Mid-Flood) and 13:24-16:54 (Mid-Ebb)		
Mid-Flood			
Monitoring Location	WSR4, WSR33, WSR37 		
Parameter	Suspended Solid (SS)		
Action & Limit Levels	Action Level	Limit Level	
	> 5.0 mg/L	> 6.0 mg/L	
Measurement Level	Impact Station(s) of Exceedance	Control Stations	Impact Station(s) without Exceedance
	10.7 mg/L (WSR 4) 5.3 mg/L (WSR 33) 5.7 mg/L (WSR 37)	6.0 mg/L (CE) 4.2 mg/L (CF)	3.8 mg/L (WSR1) 3.7 mg/L (WSR 2) 4.0 mg/L (WSR 3) 4.2 mg/L (WSR 16) 4.2 mg/L (WSR 36)
Possible reason for Action or Limit Level Non-compliance	Outfall Shaft Area: marine construction activities, namely 1) derrick barge supported material lifting for rock cutting and pumping clean seepage water within silt curtain area (0800 – 2100 hrs); 2) chain-cut the bed rock inside the caisson (0800 – 1900 hrs) Intake Shaft Area: marine construction activities, namely 1) derrick barge assisted to mobilize vibratory hammer for retrieving 7 nrs. pipe piles. All works inside the double silt curtain (0800 – 1800 hrs) Marine construction activities with contact with water: 1) derrick barge supported material lifting for rock cutting and pumping clean seepage water within silt curtain area (0800 – 2100 hrs); 2) chain-cut the bed rock inside the caisson (0800 – 1900 hrs); 3) derrick barge assisted to mobilize vibratory hammer for retrieving 7 nrs. pipe piles. All works inside the double silt curtain (0800 – 1800 hrs) Marine vessels on 22 January 2022: • Derrick barge x 1, vibratory hammer x 1 (Intake Shaft) • Derrick barge x 1, chain-cutting machine x 1 inside the caisson (Outfall Shaft)		

	Dominating sea current direction was found to be from Southeast to Northwest at waters to the west side of Tit Cham Chau; and from Northeast to Southwest at waters to the east side of Tit Cham Chau. Station WSR4 was located distant from the construction site and the possibility of being affected by marine construction activities was considered limited. SS exceedance was however observed at WSR4 (10.7 mg/L). Although marine construction activities were scheduled at WSR36 and WSR37 during mid-flood tide, the SS level at WSR36 (4.2 mg/L) and WSR37 (5.7 mg/L) were lower than stations that located further from the construction site, namely WSR4. An upstream station, WSR33, has a higher SS level (5.3 mg/L) than that of WSR36 (4.2 mg/L), and lower than stations that located further from the construction site (WSR4). Hence the SS exceedance at WSR33 maybe caused by other natural factors. In view of the inverse relation between distance to marine works and SS levels, the SS exceedance is concluded not project relevant. According to the field observation by sampling team during sampling event, no silt plume was observed in the Contract site on 22 January 2022. Conditions of the protective silt curtain at the inland water outfall was satisfactory on 22 January 2022.		
Mid-Ebb			
Monitoring Location	WSR3 		
Parameter	Suspended Solid (SS)		
Action & Limit Levels	Action Level	Limit Level	
	> 5.0 mg/L	> 6.0 mg/L	
Measurement Level	Impact Station(s) of Exceedance	Control Stations	Impact Station(s) without Exceedance
	5.2 mg/L (WSR3)	4.2 mg/L (CE) 5.0 mg/L (CF)	4.8 mg/L (WSR1) 5.0 mg/L (WSR2) 5.0 mg/L (WSR4) 4.8 mg/L (WSR16) 4.8 mg/L (WSR33) 3.7 mg/L (WSR36) 3.3 mg/L (WSR37)

Possible reason for Action or Limit Level Non-compliance	Outfall Shaft Area: marine construction activities, namely 1) derrick barge supported material lifting for rock cutting and pumping clean seepage water within silt curtain area (0800 – 2100 hrs); 2) chain-cut the bed rock inside the caisson (0800 – 1900 hrs) Intake Shaft Area: marine construction activities, namely 1) derrick barge assisted to mobilize vibratory hammer for retrieving 7 nrs. pipe piles. All works inside the double silt curtain (0800 – 1800 hrs) Marine construction activities with contact with water: 1) derrick barge supported material lifting for rock cutting and pumping clean seepage water within silt curtain area (0800 – 2100 hrs); 2) chain-cut the bed rock inside the caisson (0800 – 1900 hrs); 3) derrick barge assisted to mobilize vibratory hammer for retrieving 7 nrs. pipe piles. All works inside the double silt curtain (0800 – 1800 hrs) Marine vessels on 22 January 2022: • Derrick barge x 1, vibratory hammer x 1 (Intake Shaft) • Derrick barge x 1, chain-cutting machine x 1 inside the caisson (Outfall Shaft) Dominating sea current direction was found to be from Northwest to Southeast at waters to the west side of Tit Cham Chau; and from West to East at waters to the east side of Tit Cham Chau. Station WSR3 was located distant from the construction site and the possibility of being affected by marine construction activities was considered limited. SS exceedance was however noted at WSR3 (5.2 mg/L). With reference to the work schedule provided by the Main Contractor, marine construction works were conducted at WSR36 (3.7 mg/L) and WSR 37 (3.3 mg/L). No SS exceedances were however observed at WSR36 and WSR37. In view of the inverse relation between distance to marine works and SS level, the SS exceedance is concluded not project relevant. According to the field observation by sampling team during sampling event, no silt plume was observed in the Contract site on 22 January 2022. Conditions of the protective silt curtain at the inland water outfall was satisfactory on 22 January 2022.

Remarks	Current direction during mid-ebb sampling on 22 January 2022:  Current direction during mid-flood sampling on 22 January 2022:  (Sourced from http://current.hydro.gov.hk/en/map.html)

Supporting Photo 1 (Sea Conditions at WSR3)



Supporting Photo 2 (Sea Conditions at WSR4)

Supporting Photo 3 (Sea Conditions at WSR33)

Supporting Photo 4 (Sea Conditions at WSR37)

Supporting Photo 5 (Sea Conditions at CF)

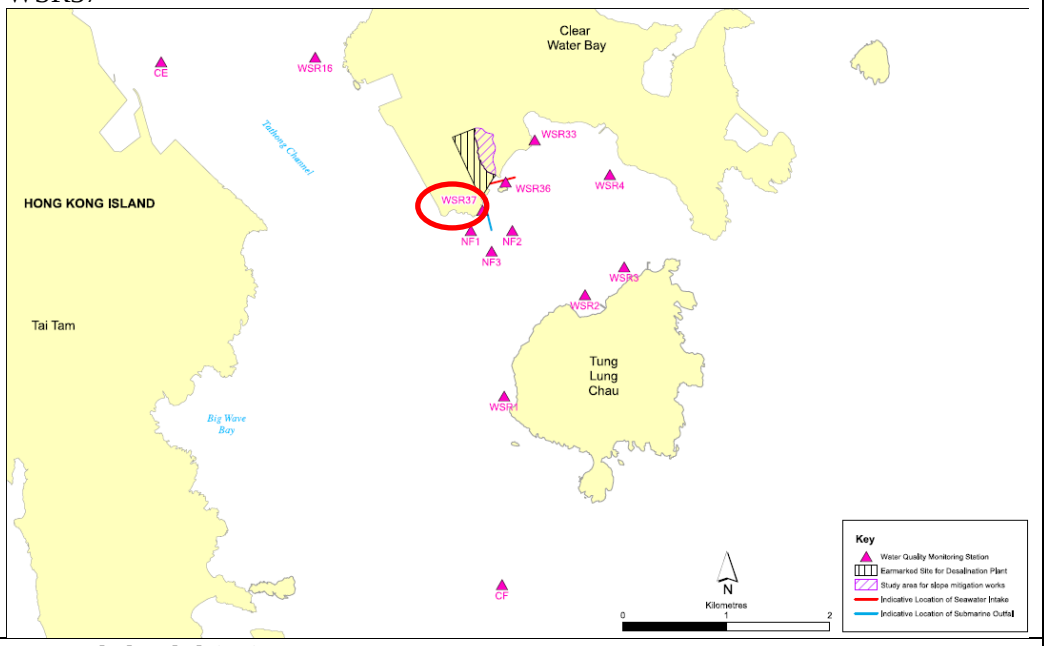
Supporting Photo 6 (Sea Conditions at CE)

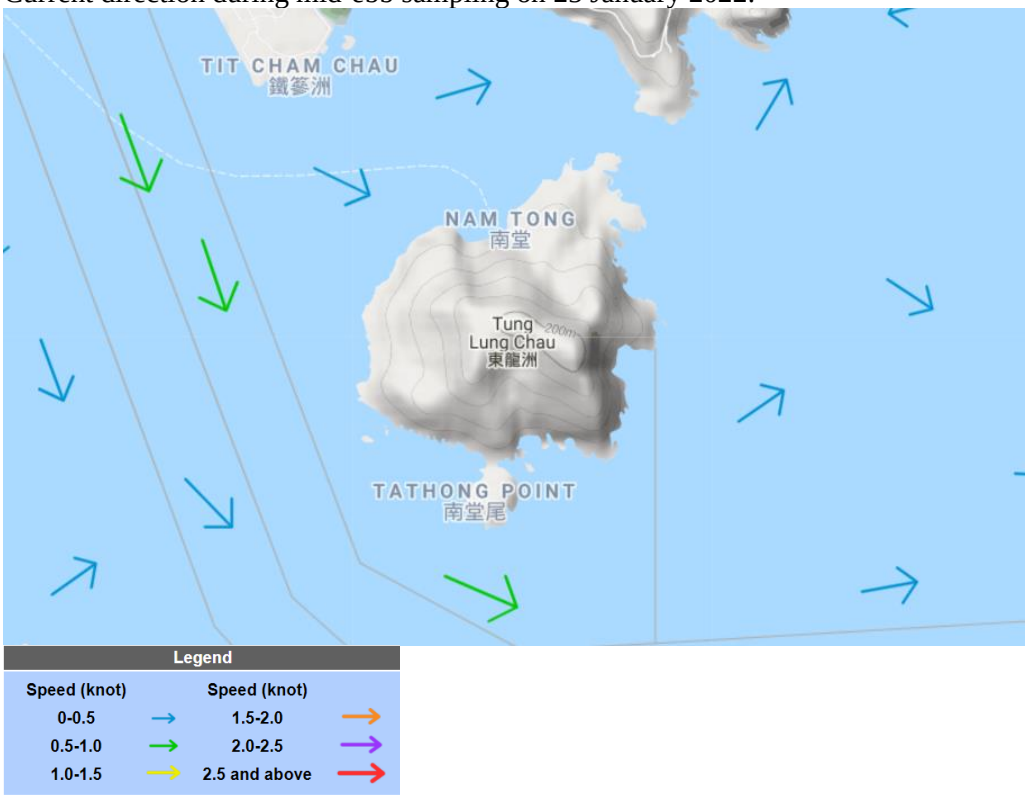
Supporting Photo 7 (Sea Conditions at Intake Shaft Area)

Supporting Photo 8 (Sea Conditions at Outfall Shaft Area)

Prepared by	Howard Chan
Date	08 February 2022

Incident Report on Action Level or Limit Level Non-Compliance

Project	Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant		
Date	25 January 2022 (Lab result received on 31 January 2022)		
Time	09:59-13:29 (Mid-Flood) and 15:43-19:00 (Mid-Ebb)		
Mid-Ebb			
Monitoring Location	WSR37 		
Parameter	Suspended Solid (SS)		
Action & Limit Levels	Action Level	Limit Level	
	> 5.0 mg/L	> 6.0 mg/L	
Measurement Level	Impact Station(s) of Exceedance	Control Stations	Impact Station(s) without Exceedance
	5.5 mg/L (WSR 37)	2.8 mg/L (CE) 2.8 mg/L (CF)	2.7 mg/L (WSR1) 3.8 mg/L (WSR 2) 3.1 mg/L (WSR 3) 4.2 mg/L (WSR 4) 4.2 mg/L (WSR16) 3.5 mg/L (WSR 33) 4.7 mg/L (WSR 36)
Possible reason for Action or Limit Level Non-compliance	Outfall Shaft Area: marine construction activities, 1) derrick barge supported material lifting for rock cutting and pumping clean seepage water within silt curtain area (0800 – 2200 hrs); 2) chain-cut the bed rock inside the caisson (0800 – 1900 hrs) Intake Shaft Area: marine construction activities, namely 1) derrick barge assisted housekeeping work inside its hopper (0800 – 1800 hrs) Marine construction activities with contact with water: 1) derrick barge supported material lifting for rock cutting and pumping clean seepage water within silt curtain area (0800 – 2200 hrs); 2) chain-cut the bed rock inside the caisson (0800 – 1900 hrs) Marine vessels on 25 January 2022: • Derrick barge x 1 (Intake Shaft) • Derrick barge x 1, chain-cutting machine x 1 inside the caisson (Outfall Shaft)		

	Dominating sea current direction was found to be from Northwest to Southeast at waters to the west side of Tit Cham Chau; and from West to East at waters to the east side of Tit Cham Chau. It was noted that pumping of the clean seepage of marine water within the silt curtain was conducted on 25 January 2022. As advised by Main contractor, two separate pumping systems were constructed for respectively the unpolluted water ingress through the edge of the caisson and surface water/ washings from the rock drilling/ chain cutting work. For unpolluted marine water ingress, it will be piped to an isolated metal skip where appropriate-sized submersible pumps sink in to pump out the 'clean' water into an abandoned tremie pipe out of the caisson. The discharge point shall be enclosed by a silt curtain setup. Since the seepage marine water was unpolluted, the seepage water can be discharged to water bodies without a water discharge license. For surface water/washings resulted from rock cutting activities, it will be directly pumped at the local low point all the way up to the water treatment facilities/water sedimentation tank in place on the derrick barge aside. The expected silty water will be treated by water treatment facilities/water sedimentation tank before being piped to discharge within silt curtain area. As been advised by the Main Contractor, on-site operative verified the unpolluted seepage water was visually clear on 25 January 2022. The SS level at WSR37 (5.5 mg/L) was similar to that at WSR36 (4.7 mg/L), which is a downstream station where no SS exceedance was observed. According to the field observation by sampling team during sampling event, no silt plume was observed in the Contract site on 25 January 2022. Conditions of the protective silt curtain at the inland water outfall was satisfactory on 25 January 2022.
Remarks	Current direction during mid-ebb sampling on 25 January 2022:  (Sourced from http://current.hydro.gov.hk/en/map.html)

Supporting Photo 1 (Sea Conditions at WSR37)

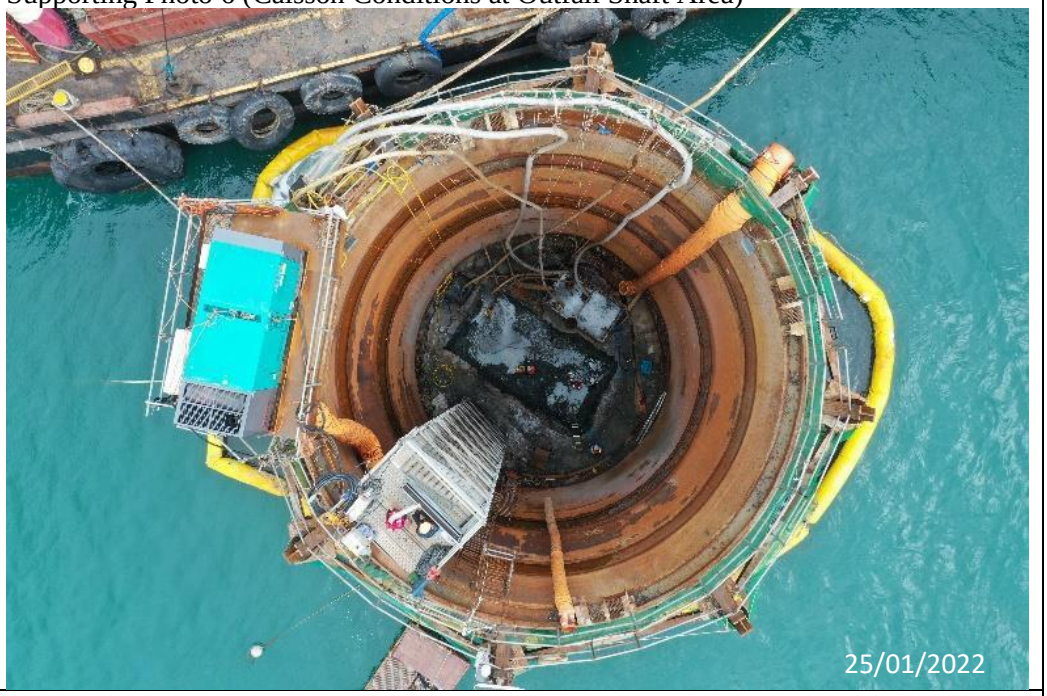
Supporting Photo 2 (Sea Conditions at CF)

Supporting Photo 3 (Sea Conditions at CE)

Supporting Photo 4 (Sea Conditions at Intake Shaft Area)

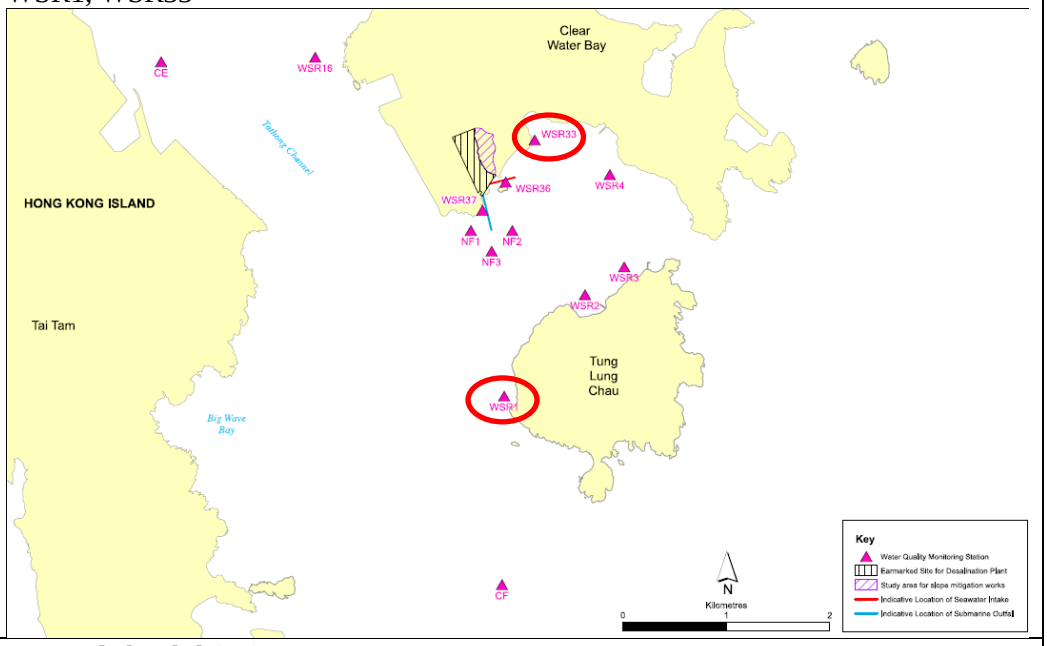
Supporting Photo 5 (Sea Conditions at Outfall Shaft Area)

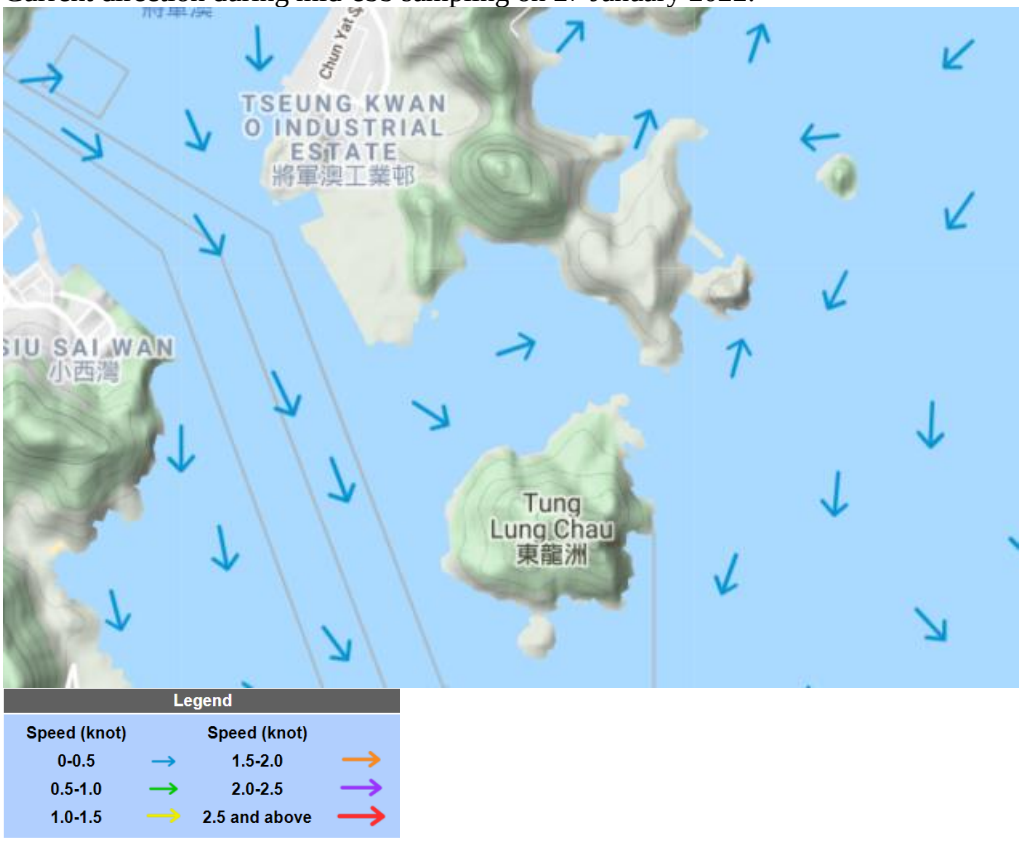
Supporting Photo 6 (Caisson Conditions at Outfall Shaft Area)



Prepared by	Charlene Lai
Date	08 February 2022

Incident Report on Action Level or Limit Level Non-Compliance

Project	Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant		
Date	27 January 2022 (Lab result received on 05 February 2022)		
Time	11:26-14:56 (Mid-Flood) and 08:00-09:12 (Mid-Ebb)		
Mid-Ebb			
Monitoring Location	WSR1, WSR33 		
Parameter	Suspended Solid (SS)		
Action & Limit Levels	Action Level	Limit Level	
	> 8.4 mg/L	> 9.1 mg/L	
Measurement Level	Impact Station(s) of Exceedance	Control Stations	Impact Station(s) without Exceedance
	10.3 mg/L (WSR 1) 10.3 mg/L (WSR 33)	7.0 mg/L (CE) 5.8 mg/L (CF)	4.6 mg/L (WSR 2) 6.3 mg/L (WSR 3) 5.2 mg/L (WSR 4) 4.7 mg/L (WSR16) 4.2 mg/L (WSR 36) 3.8 mg/L (WSR 37)
Possible reason for Action or Limit Level Non-compliance	Outfall Shaft Area: marine construction activities, 1) derrick barge supported material lifting for rock breaking and pumping clean seepage water within silt curtain area (0800 – 2100 hrs); 2) mini-backhoe broke the bed rock inside the caisson (0800 – 1900 hrs) Intake Shaft Area: marine construction activities, namely 1) derrick barge assisted to demobilize vibratory hammer and the retrieved pipe piles (0800 – 2300 hrs) Marine construction activities with contact with water: 1) derrick barge supported material lifting for rock breaking and pumping clean seepage water within silt curtain area (0800 –2100 hrs) Marine vessels on 27 January 2022: • Derrick barge x 1; vibratory hammer x 1 (Intake Shaft) • Derrick barge x 1; mini-backhoe x 1 inside the caisson (Outfall Shaft) Dominating sea current direction was found to be from Northwest to Southeast at waters to the west side of Tit Cham Chau; and from West to East at waters to the east side of Tit Cham Chau.		

	Station WSR1 was located distant from the construction site and the possibility of being affected by marine construction activities were considered limited. SS exceedance was however observed at WSR1 (10.3 mg/L). With reference to the work schedule provided by the Main Contractor, marine construction works were conducted at WSR36 (4.2 mg/L) and WSR37 (3.8 mg/L). No SS exceedances were however observed at WSR36 and WSR37. The SS level at WSR33 (10.3 mg/L) was at the same level to that located further from the site (WSR1), suggesting that the SS exceedance at WSR33 maybe caused by other natural factors. In view of the inverse relation between distance to marine works and SS level, the SS exceedance is concluded not project relevant. According to the field observation by sampling team during sampling event, no silt plume was observed in the Contract site on 27 January 2022. Conditions of the protective silt curtain at the inland water outfall was satisfactory on 27 January 2022.
Remarks	Current direction during mid-ebb sampling on 27 January 2022:  (Sourced from http://current.hydro.gov.hk/en/map.html)

Supporting Photo 1 (Sea Conditions at WSR1)

Supporting Photo 2 (Sea Conditions at WSR33)

Supporting Photo 3 (Sea Conditions at CF)

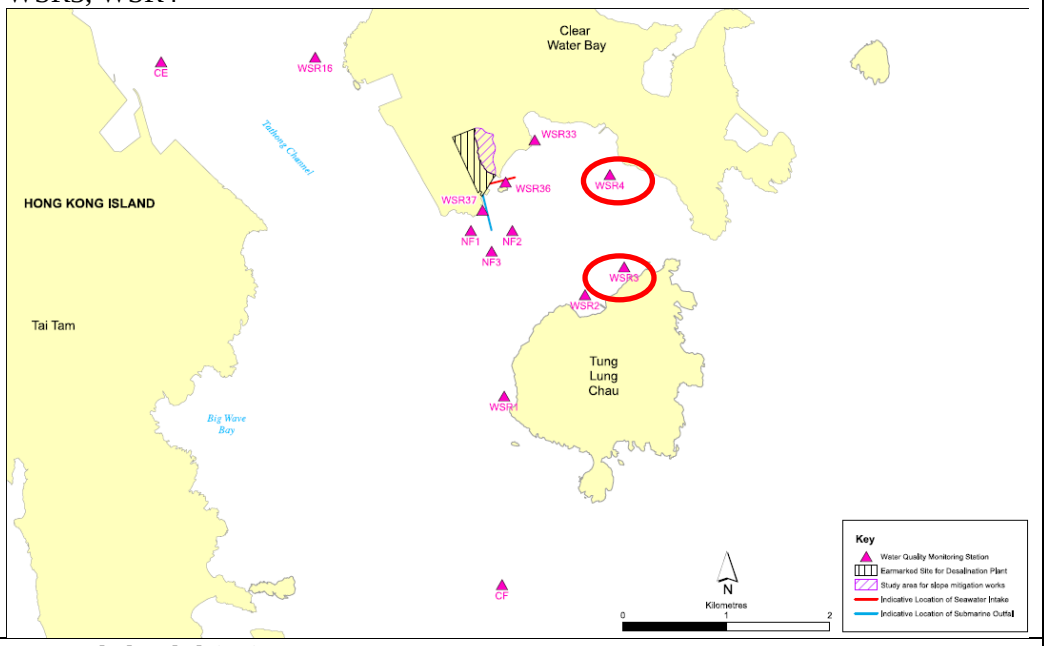
Supporting Photo 4 (Sea Conditions at CE)

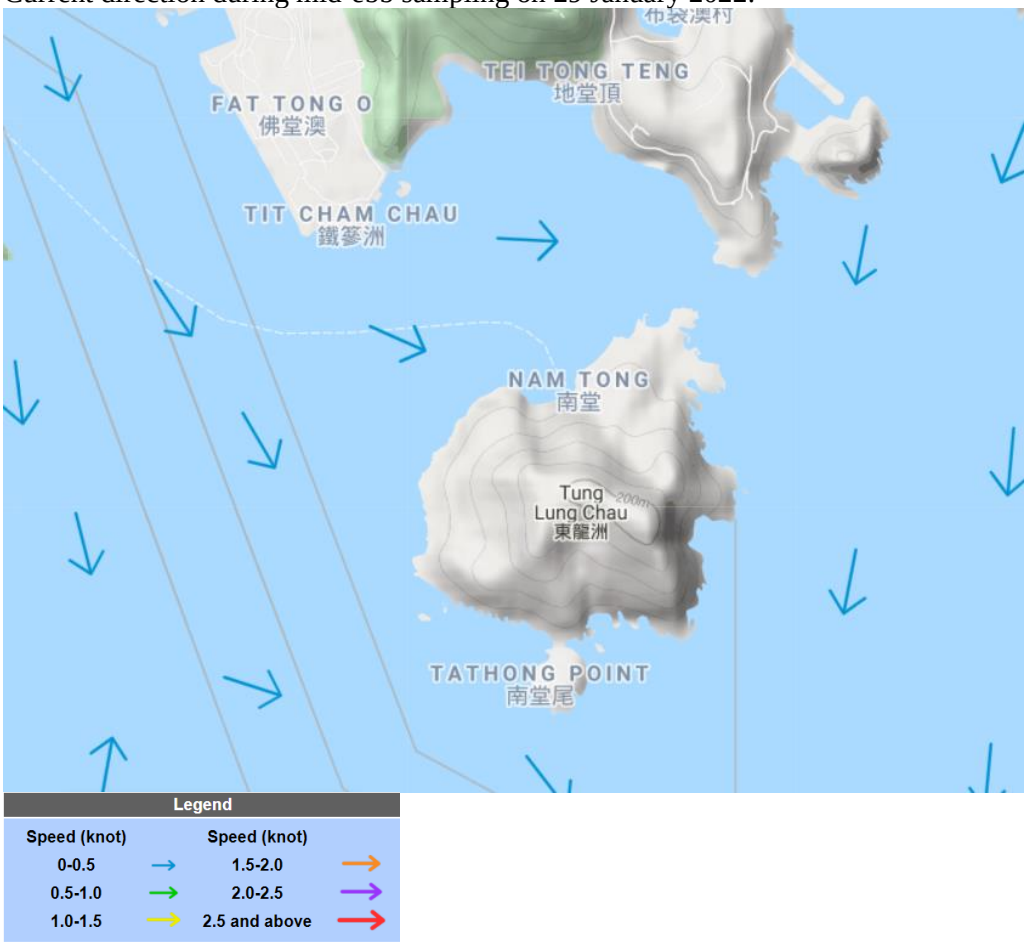
Supporting Photo 5 (Sea Conditions at Intake Shaft Area)

Supporting Photo 6 (Sea Conditions at Outfall Shaft Area)

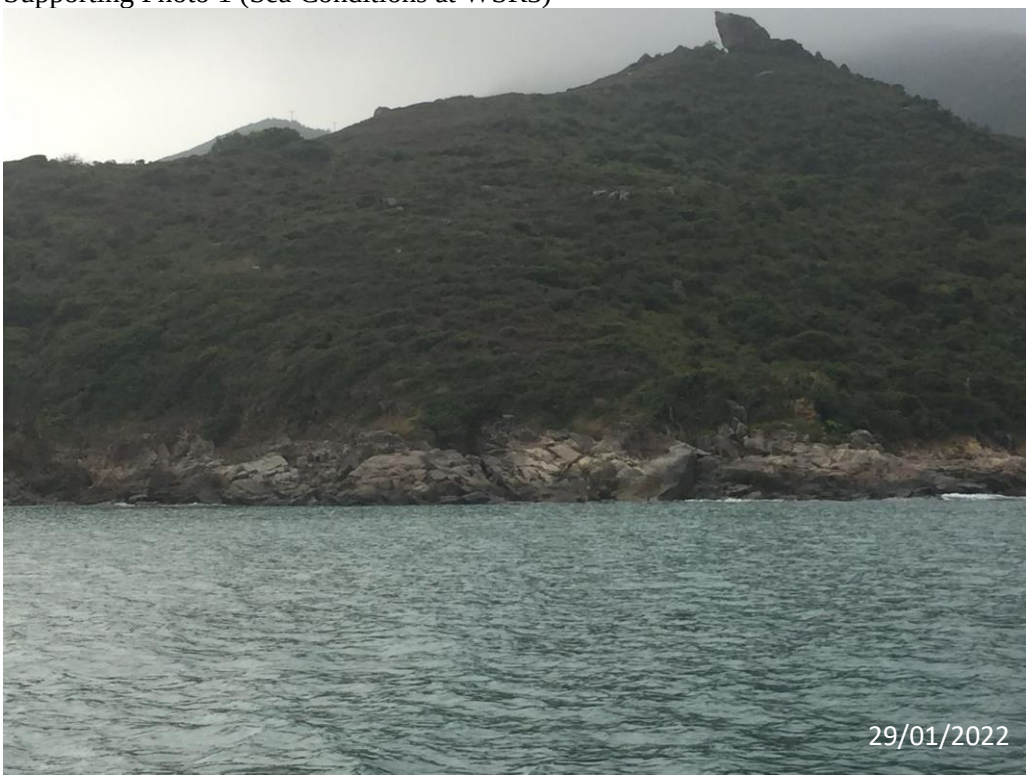
Prepared by	Charlene Lai
Date	10 February 2022

Incident Report on Action Level or Limit Level Non-Compliance

Project	Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant		
Date	29 January 2022 (Lab result received on 08 February 2022)		
Time	13:10-16:40 (Mid-Flood) and 08:14-11:44 (Mid-Ebb)		
Mid-Ebb			
Monitoring Location	WSR3, WSR4 		
Parameter	Suspended Solid (SS)		
Action & Limit Levels	Action Level	Limit Level	
	> 6.8 mg/L	> 7.4 mg/L	
Measurement Level	Impact Station(s) of Exceedance	Control Stations	Impact Station(s) without Exceedance
	9.3 mg/L (WSR 3) 19.0 mg/L (WSR 4)	5.7 mg/L (CE) 4.1 mg/L (CF)	4.1 mg/L (WSR 1) 4.2 mg/L (WSR 2) 6.6 mg/L (WSR16) 5.5 mg/L (WSR 33) 5.8 mg/L (WSR 36) 2.9 mg/L (WSR 37)
Possible reason for Action or Limit Level Non-compliance	Outfall Shaft Area: marine construction activities, 1) derrick barge supported material lifting for rock breaking and pumping clean seepage water within silt curtain area (0800 – 1300 hrs); 2) Rock breaking work ceased and mini-backhoe demobilized. The derrick barge towed out of Works site (1300 – 1900 hrs) Intake Shaft Area: marine construction activities, namely 1) N/A Marine construction activities with contact with water: 1) derrick barge supported material lifting for rock breaking and pumping clean seepage water within silt curtain area (0800 –1300 hrs) Marine vessels on 29 January 2022: • Nil (Intake Shaft) • Derrick barge x 1; tug boat x 1; mini-backhoe x 1 inside the caisson (Outfall Shaft) Dominating sea current direction was found to be from Northwest to Southeast at waters to the west side of Tit Cham Chau; and from West to East at waters to the east side of Tit Cham Chau.		

	Stations WSR3 and WSR4 were located distant from the construction site and the possibility of being affected by marine construction activities were considered limited. SS exceedances were however observed at WSR3 (9.3 mg/L) and WSR4 (19.0 mg/L). With reference to the work schedule provided by the Main Contractor, marine construction works were conducted at WSR37 (2.9 mg/L). No SS exceedances were however observed at WSR36 (5.8 mg/L) and WSR37. In view of the inverse relation between distance to marine works and SS level, the SS exceedance is concluded not project relevant. According to the field observation by sampling team during sampling event, no silt plume was observed in the Contract site on 29 January 2022. Conditions of the protective silt curtain at the inland water outfall was satisfactory on 29 January 2022.
Remarks	Current direction during mid-ebb sampling on 29 January 2022:  (Sourced from http://current.hydro.gov.hk/en/map.html)

Supporting Photo 1 (Sea Conditions at WSR3)



Supporting Photo 2 (Sea Conditions at WSR4)

Supporting Photo 3 (Sea Conditions at CF)

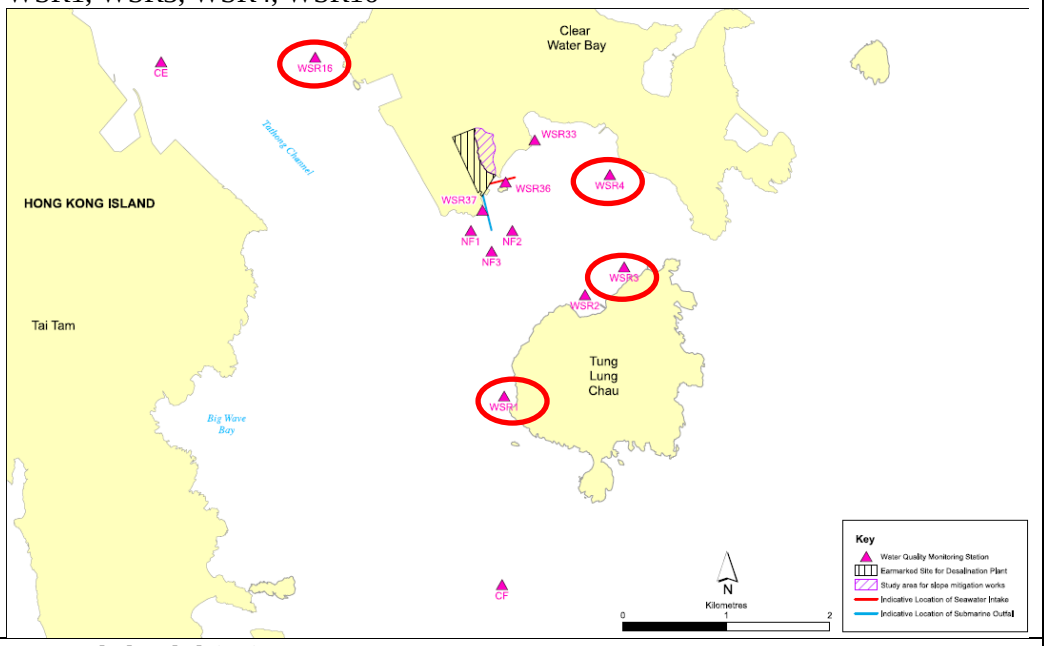
Supporting Photo 4 (Sea Conditions at CE)

Supporting Photo 5 (Sea Conditions at Intake Shaft Area)

Supporting Photo 6 (Sea Conditions at Outfall Shaft Area)

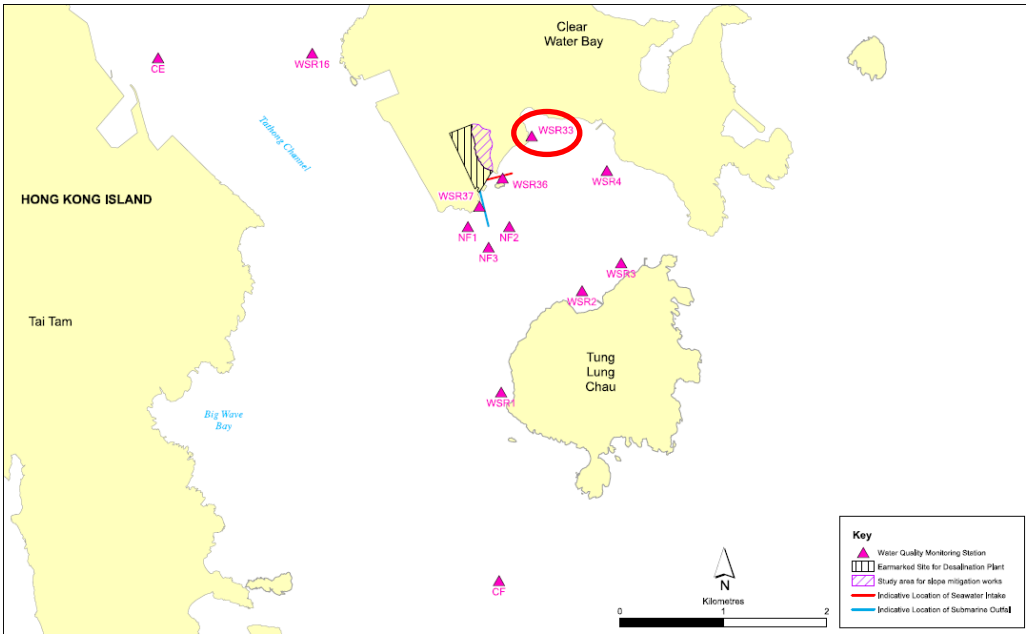
Prepared by	Charlene Lai
Date	10 February 2022

Incident Report on Action Level or Limit Level Non-Compliance

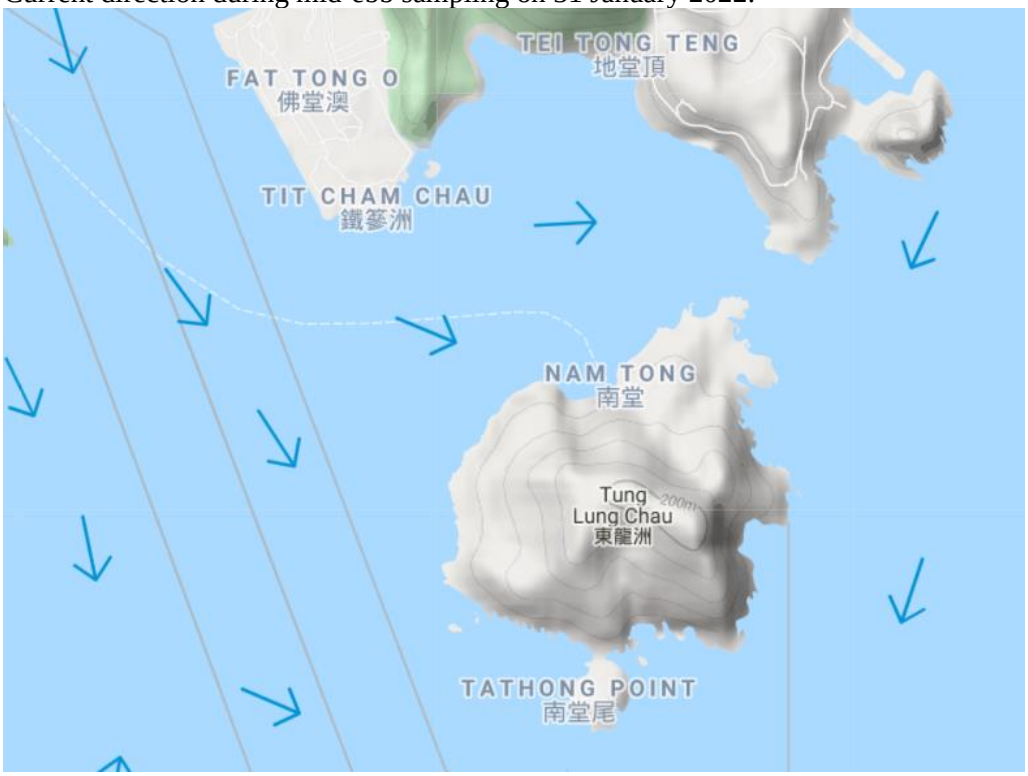
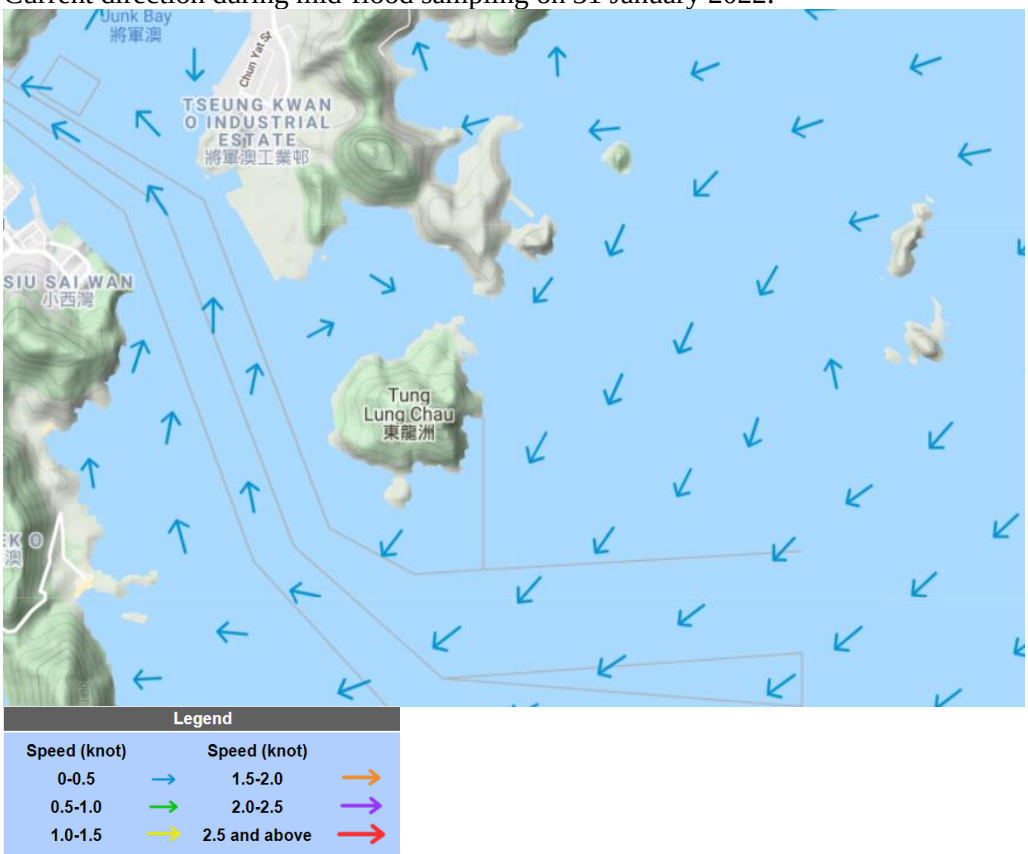
Project	Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant		
Date	31 January 2022 (Lab result received on 09 February 2022)		
Time	15:07-18:37 (Mid-Flood) and 10:06-13:36 (Mid-Ebb)		
Mid-Flood			
Monitoring Location	WSR1, WSR3, WSR4, WSR16 		
Parameter	Suspended Solid (SS)		
Action & Limit Levels	Action Level	Limit Level	
	> 5.0 mg/L	> 6.0 mg/L	
Measurement Level	Impact Station(s) of Exceedance	Control Stations	Impact Station(s) without Exceedance
	5.3 mg/L (WSR1) 11.3 mg/L (WSR 3) 6.2 mg/L (WSR 4) 6.1 mg/L (WSR 16)	4.0 mg/L (CE) 3.4 mg/L (CF)	4.1 mg/L (WSR 2) 3.1 mg/L (WSR 33) 3.7 mg/L (WSR 36) 3.8 mg/L (WSR 37)
Possible reason for Action or Limit Level Non-compliance	Outfall Shaft Area: marine construction activities, namely 1) N/A Intake Shaft Area: marine construction activities, namely 1) N/A Marine construction activities with contact with water: 1) N/A Marine vessels on 31 January 2022: • N/A (Intake Shaft) • N/A (Outfall Shaft) Dominating sea current direction was found to be from Southeast to Northwest at waters to the west side of Tit Cham Chau; and from Northeast to Southwest at waters to the east side of Tit Cham Chau. Stations WSR1, WSR3, WSR4 and WSR16 were located distant from the construction site and the possibility of being affected by marine construction activities was considered limited. SS exceedances were however observed at WSR1 (5.3 mg/L), WSR3 (11.3 mg/L), WSR4 (6.2 mg/L) and WSR16 (6.1 mg/L). According to the construction work schedule provided by Main Contractor, no marine activities were conducted at both Intake and Outfall shafts on 31 January 2022. All vessels were		

<table>
<tr><td></td><td colspan="3">demobilized & towed out of the Works area and no water pumping at Outfall on the day. Hence the SS exceedances at WSR1, WSR3, WSR4 and WSR16 maybe resulted from other natural factors.

According to the field observation by sampling team during sampling event, no silt plume was observed at the Contract site on 31 January 2022.

Conditions of the protective silt curtain at the inland water outfall was satisfactory on 31 January 2022.</td></tr>
<tr><td colspan="4">Mid-Ebb</td></tr>
<tr><td>Monitoring Location</td><td colspan="3">WSR33
 
</td></tr>
<tr><td>Parameter</td><td colspan="3">Suspended Solid (SS)</td></tr>
<tr><td rowspan="2">Action & Limit Levels</td><td>Action Level</td><td colspan="2">Limit Level</td></tr>
<tr><td>> 5.0 mg/L</td><td colspan="2">> 6.0 mg/L</td></tr>
<tr><td rowspan="2">Measurement Level</td><td>Impact Station(s) of Exceedance</td><td>Control Stations</td><td>Impact Station(s) without Exceedance</td></tr>
<tr><td>6.5 mg/L (WSR33)</td><td>3.3 mg/L (CE)
3.7 mg/L (CF)</td><td>4.2 mg/L (WSR1)
5.0 mg/L (WSR2)
4.8 mg/L (WSR3)
4.0 mg/L (WSR4)
4.6 mg/L (WSR16)
4.2 mg/L (WSR36)
4.0 mg/L (WSR37)</td></tr>
</table>

Possible reason for Action or Limit Level Non-compliance	Outfall Shaft Area: marine construction activities, namely 1) N/A Intake Shaft Area: marine construction activities, namely 1) N/A Marine construction activities with contact with water: 1) N/A Marine vessels on 31 January 2022: • N/A (Intake Shaft) • N/A (Outfall Shaft) Dominating sea current direction was found to be from Northwest to Southeast at waters to the west side of Tit Cham Chau; and from West to East at waters to the east side of Tit Cham Chau. According to the construction work schedule provided by Main Contractor, no marine activities were conducted at both Intake and Outfall shafts on 31 January 2022. All vessels were demobilized & towed out of the Works area and no water pumping at Outfall on the day. Hence the SS exceedance at WSR33 maybe resulted from other natural factors. According to the field observation by sampling team during sampling event, no silt plume was observed at the Contract site on 31 January 2022. Conditions of the protective silt curtain at the inland water outfall was satisfactory on 31 January 2022.

Remarks	Current direction during mid-ebb sampling on 31 January 2022:  Current direction during mid-flood sampling on 31 January 2022:  (Sourced from http://current.hydro.gov.hk/en/map.html)

Supporting Photo 1 (Sea Conditions at WSR1)

Supporting Photo 2 (Sea Conditions at WSR3)

Supporting Photo 3 (Sea Conditions at WSR4)

Supporting Photo 4 (Sea Conditions at WSR16)

Supporting Photo 5 (Sea Conditions at WSR33)

Supporting Photo 6 (Sea Conditions at CF)

Supporting Photo 7 (Sea Conditions at CE)

Supporting Photo 8 (Sea Conditions at Intake Shaft Area)

Supporting Photo 9 (Sea Conditions at Outfall Shaft Area)

Supporting Photo 10 (Supporting Document Provided by Main Contractor)

甘忠校 <chunghau_kam@cohl.com>
To clai@acuityhk.com 12:25 pm
Cc 'Reasonlie Cheung'; 'Binnies-Raymond Kok<RE.BIM/BEAM>';
'Binnies-Derek Lai<ARE.Env.>'; 'James Choi'; fctsang@acuityhk.com;
'BV-Shirley Cheng<RE.IT/Perm./PR>'; 曾倩兒; Wong, Wing Keung (CN - Hong Kong);
Cheung, Tony Siu Ngok (CN - Hong Kong); Shum, Hing Kwong (CN - Hong Kong);

Dear Charlene,

For your information that we did not have any marine activities at both Intake and Outfall shafts on 31 January 2022. All vessels were demobilized & towed out of the Works area and no water pumping at Outfall on the day.

Regards,
Brian

Prepared by	Charlene Lai
Date	10 February 2022

Investigation Report for the Suspect Oil Spill at the Water near Outfall Shaft

Date Received	15 January 2022 afternoon (Text Message from AJCJV's Environmental Officer)
Incident Witness	Environmental Protection Department Inspector
Nature of Event	*~~Air / Noise / Water / Waste/ Landscape and Visual/~~ Chemical Spillage

Source	*~~Telephone/Site Visit~~ / Referred from Environmental Protection Department

Details of the Incident:

AJCJV's Environmental Officer received a text message from Environmental Protection Department Inspector on 14 January 2022 afternoon claiming observations of susceptible oil spillage at the water surface nearby to Outfall Shaft during their routine drone check on 13 January 2022 (**Figure 1**). The message from EPD was relayed to the Environmental Team (ET) by AJCJV on 15 January 2022 morning.

As been reported by the AJCJV, immediate investigation has been made after the acknowledgement of the incident, whilst implementing emergency clean up measures on any residue oil spillage. The clean up action was completed COP on 14 January 2022. The follow-up site inspection at the concerned area was carried out by EPD inspector physically on the next day of the reported incident, accompanied by Supervising Officers' Representative (SOR) and AJCJV (i.e. 15 January 2022). During the site inspection, brief interview was conducted with AJCJV's section agent on the possible causes of the incident. No solid conclusion was made, and the site visit was completed before lunch time on 15 January 2022.

Abstracted from the investigation carried out by AJCJV, no physical work was conducted at the concerned area on 13 January 2022 morning due to dewatering pump failure, which the rock coring works that was originally scheduled during time of concerned was postponed to the afternoon at around 1330hrs of the same day. No lifting of diesel/chemical drums have been carried out in the meantime, and no reported observations of oil leakage was received. AJCJV reported that the concerned area which oil spillage was found was near to the south side of the derrick barge, where only the resting compartment of the barge situates. Disel storage tanks were positioned at the opposite side underneath the crane tower. Further checking with the tidal information (**Figure 2**) at the nearest Tai Miu Wan Station from Hong Kong Observatory suggested the flow direction after lunch break was from the east/northeast towards Outfall Shaft (flood tide) on 13 January 2022.

The routine weekly inspection carried out on 11 January 2022 with ET and Independent Environmental Checker (IEC) did not spot any substantial deficiencies of the concern marine works in general (**Figure 3**). This observation was confirmed by the photo records from the regular water monitoring scheduled on both 11 January 2022 and 13 January 2022 (**Figure 4** to **Figure 7**), with no irregularities and visual pollutants reported by the water sampling team of ET.

Follow-up visit was conducted with SOR, IEC and ET on 17 January 2022 (**Figure 8**) and no oil spillage or oil stain was observed on sea surface near to the Outfall Shaft Area. Further interview was conducted by ET and IEC with the site staff and it was confirmed that the statements suggested by AJCJV was valid.

The email message from EPD on 19 January 2022 also acknowledged from the fact that no lifting of diesel drums and no works at outfall shaft before 1330hrs when the incident was observed, the findings suggested the oil spillage was unlikely originated from the Outfall Shaft. The incident may therefore be considered as non-project related (**Figure 9**)

However, EPD advised further precautionary measures should be implemented with close monitoring and supervision. EPD also reminded AJCJV to strictly comply to the requirements as stipulated in the condition C6.2 of the WPCO license WT00035775-2020, that any accidental discharge, emergency bypass or overflow of untreated effluent or an operation upset which places the discharge in a temporary state of non-compliance with the license should be reported to EPD within 24 hours of the incident.

Proposed Enhancement Measures

AJCJV proposed to have the following step-up measures aiming to reinforce the incident awareness, communication, and close site work supervision/ monitoring.

1) Further briefings to site operatives increasing their further awareness of any environmental-related happening around but not just at the working zone.

2) Marine subcontractor to verify comprehensively the integrity of all storages/ installations of diesel fuel/ chemicals on board

3) On top of the on-spot inspector/ foreman direct supervision, drone checks from above the marine work areas would be carried out every working day to ensure early alert of environmental irregularities/ incidents during the course of work.

4) Should there be environmental incident (e.g. oil spills, sediment plumes, massive floating debris, etc.) if any, observed and reported by the site operatives, the EPD, SOR, ET & IEC shall be notified at once accordingly where appropriate.

MONITORING

Ad hoc Monitoring undertaken	*~~Yes~~ / No
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FOLLOW-UP SITE VISIT

Date	Status / Observation
17 January 2022	Follow-up visit was conducted with SOR, IEC and ET on 17 January 2022 and no oil spillage or oil stain was observed on sea surface near to the Outfall Shaft Area. Further interview was conducted with the site operator and it was confirmed that the statements suggested by AJCJV was valid.

Conclusion

After communications with AJCJV and on-site operators, it has been suggested that no construction works and lifting operations of the diesel drums were conducted in the time manner when the incident was observed by EPD. With reference to the information provided by the contractor and observation of our field inspection, it was considered by EPD that the findings suggested that the oil spillage was unlikely originated from the outfall shaft. The incident may therefore be considered as non-project related.

Supporting Photos

Figure 1: Suspect Oil Spill found on 13 January 2022 (Based photo provided by EPD inspector)

一月 JANUARY 2022

大廟灣 TAI MIU WAN

漲潮及退潮的時間及高度

TIMES AND HEIGHTS OF HIGH AND LOW TIDES

星期一 Mon		星期二 Tue		星期三 Wed		星期四 Thu		星期五 Fri		星期六 Sat		星期日 Sun	
時間 TIME	米 M	時間 TIME	米 M	時間 TIME	米 M	時間 TIME	米 M	時間 TIME	米 M	時間 TIME	米 M	時間 TIME	米 M
31										1		2	
0303	0.3									0208	0.6	0302	0.4
1017	1.4									0919	1.5	1017	1.5
1325	1.2									1249	1.2	1334	1.2
2020	2.5									1939	2.5	2026	2.6
3		4		5		6		7		8		9	
0353	0.3	0443	0.2	0530	0.3	0614	0.4	0654	0.5	0039	2.2	0124	1.9
1108	1.5	1155	1.5	1241	1.4	1327	1.5	1416	1.5	0732	0.7	0807	0.8
1420	1.2	1507	1.2	1554	1.2	1643	1.3	1736	1.3	1507	1.6	1601	1.6
2118	2.7	2211	2.6	2303	2.5	2352	2.4			1835	1.4	1949	1.4
10		11		12		13		14		15		16	
0214	1.7	0354	1.5	0548	1.3	0111	1.0	0158	0.8	0237	0.7	0313	0.6
0841	1.0	0914	1.1	0946	1.2	0731	1.3	1916	2.1	1940	2.2	1012	1.3
1653	1.7	1738	1.8	1817	1.9	1016	1.2					1216	1.2
2142	1.4	2354	1.2			1849	2.0					2004	2.2
17		18		19		20		21		22		23	
0347	0.5	0418	0.5	0449	0.5	0519	0.5	0549	0.5	0621	0.6	0653	0.7
1039	1.3	1106	1.3	1133	1.3	1202	1.4	1235	1.4	1313	1.5	1356	1.5
1303	1.2	1350	1.2	1436	1.2	1524	1.2	1613	1.2	1705	1.2	1802	1.2
2034	2.3	2107	2.3	2144	2.3	2223	2.3	2301	2.2	2339	2.1		
24		25		26		27		28		29		30	
0011	1.9	0200	1.7	0332	1.5	0521	1.4	0714	1.3	0121	0.7	0217	0.5
0727	0.8	0802	0.9	0841	1.0	0925	1.1	1019	1.2	0839	1.3	0934	1.4
1442	1.6	1528	1.7	1614	1.8	1658	2.0	1743	2.1	1120	1.2	1224	1.2
1907	1.2	2028	1.2	2213	1.1	2357	0.9			1831	2.3	1924	2.4

Figure 2: Tidal Information at the Nearest Tai Miu Wan Station from Hong Kong Observatory on 13 January 2022

Figure 3: Observations during Routine Weekly Inspection on 11 January 2022 near to Outfall Shaft Area

Figure 4: Photo Records from Regular Water Monitoring provided by ET 's Monitoring Team on 11 January 2022 near to Outfall Shaft Area (Mid-Ebb)

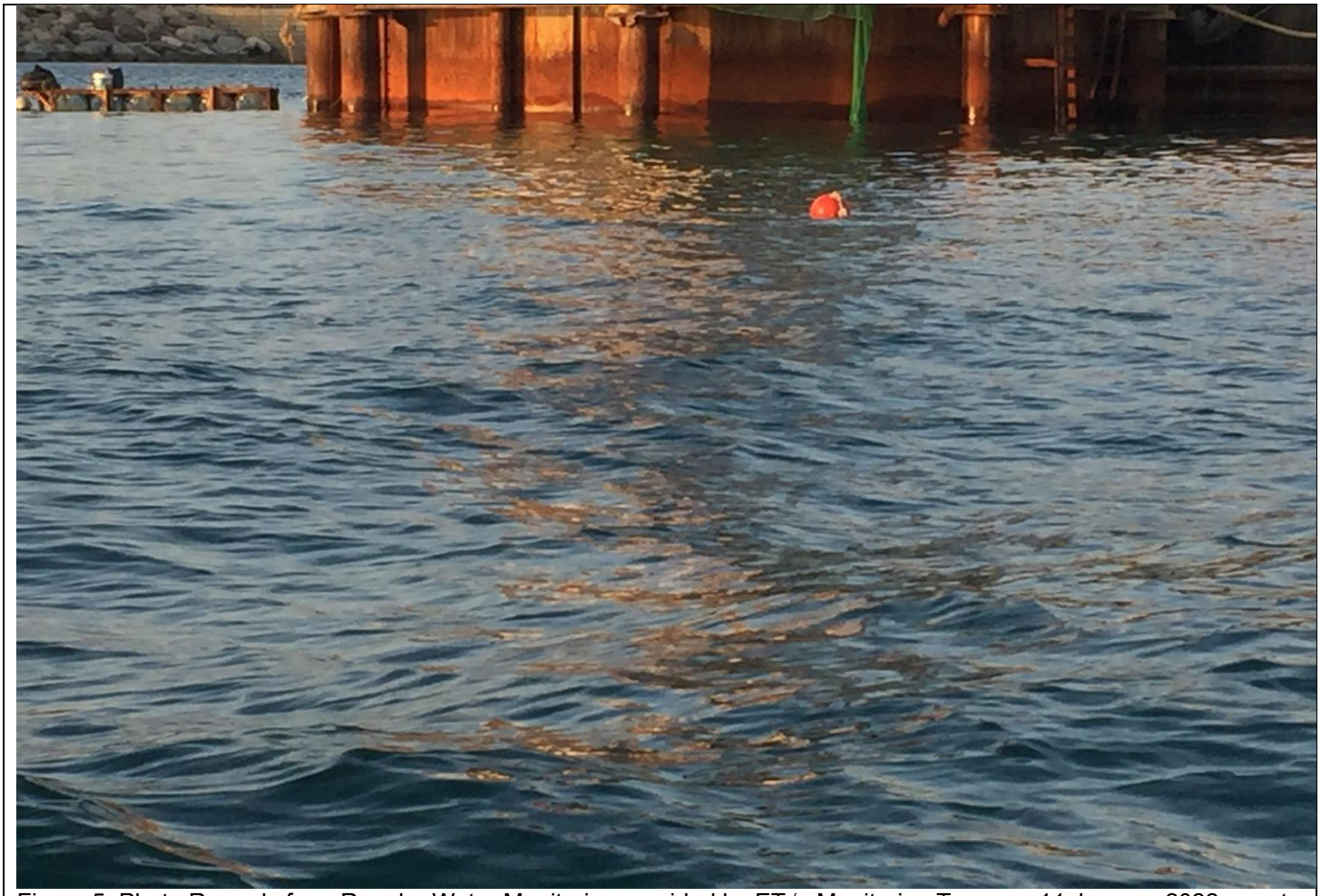

Figure 5: Photo Records from Regular Water Monitoring provided by ET 's Monitoring Team on 11 January 2022 near to Outfall Shaft Area (Mid-Flood)

Figure 6: Photo Records from Regular Water Monitoring provided by ET 's Monitoring Team on 13 January 2022 near to Outfall Shaft Area (Mid-Ebb)

Figure 7: Photo Records from Regular Water Monitoring provided by ET 's Monitoring Team on 13 January 2022 near to Outfall Shaft Area (Mid-Flood)

Figure 8: Observations during Follow-up Site Inspection on 17 January 2022 near to Outfall Shaft Area

From: pkleung@epd.gov.hk <pkleung@epd.gov.hk>
Sent: Wednesday, 19 January, 2022 2:24 PM
To: 甘忠校 <chunghau_kam@cohl.com>
Cc: benchan@epd.gov.hk; Binnies-Roger Wu<CRE> <cre@bv13wsd17.com.hk>; Jacky C H Leung <jleung@acuityhk.com>; 鍾錦輝 <kamfai_chung@cohl.com>; Louis KWAN | ANewR <lsykwan@anewr.com>; Shum, Hing Kwong (CN - Hong Kong) <michael_shum@cohl.com>; Binnies-Raymond Kok<RE.BIM/BEAM> <re3@bv13wsd17.com.hk>; Binnies-Raymond Ho<RE.Geo.Marine> <re6@bv13wsd17.com.hk>; 曾倩兒 <sinyee_tsang@cohl.com>; Binnies-Lewis Leung<SIOW.Geo.> <siow2@bv13wsd17.com.hk>; Binnies-David Wong<SRE.Gen./Mea.> <sre1@bv13wsd17.com.hk>; JEC-Stephen Yeung<Project Manager> <stephen.cw.yeung@jec.com>; Wong, Wing Keung (CN - Hong Kong) <wingkeung_wong@cohl.com>
Subject: Re: 13/WSD/17 TKO Desalination Plant - Investigation Report of Suspect Oil Spillage on 13 January 2022

Dear Brian,

Thanks for your prompt follow up.

From the information provided in the investigation report, we note that there was no lifting of diesel drums and no works at outfall shaft was conducted before 1330 hrs, when the incident was found. We also understand that the diesel storage tanks of the derrick barge is located at the opposite side of where the suspected spilled oil was found.

Although the findings suggested that the oil spillage was unlikely from the outfall shaft, you are strongly advised to step up monitoring and supervision especially on marine works. Please also be reminded that as stipulated in condition C6.2 of the WPCO licence WT00035775-2020, the licensee (AJCJV) shall notify EPD within 24 hours upon the occurrence of an accidental discharge, emergency bypass or overflow of untreated effluent or an operation upset which places the discharge in a temporary state of non-compliance with the licence.

Thank you.

Regards,
Rebecca Leung
Regional Office (East) / EPD
Tel: 2117 7523

Figure 9: Email message from EPD on 19 January 2022

Figure 10: Emergency clean up measures on any residue oil spillage

STATUS OF COMPLAINANT: *~~Follow-up~~/Closed

Prepared by : Charlene Lai

Designation : Environmental Team Member

Signature :

Date : 25 January 2022