



H2H Express Submarine Cable



1st Weekly Impact Water Quality Monitoring Report (Zone A)

23 April 2021

Project No.: 0586211

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23 April 2021

H2H Express Submarine Cable

1st Weekly Impact Water Quality Monitoring Report (Zone A)



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**Environmental Permit No. EP-575/2020
H2H Express (H2HE) Submarine Cable**

**Environmental Team Leader Certification &
Independent Environmental Checker Verification**

Reference Document/Plan

Document/Plan:	1 st Weekly Water Quality Monitoring Report (Zone A)
Date of Report:	23 April 2021
Certified by ET:	ERM-Hong Kong Ltd.
Verified by IEC:	Ecosystems Ltd.

Reference EP Requirement

EP Condition:	Conditions No. 3.2 – 3.3
Content:	<i>Water Quality Monitoring</i>
<p>3.2 Samples, measurements and necessary remedial actions shall be taken in accordance with the EM&A requirements described in the Project Profile (Register No.: PP-599/2020) by:</p> <ul style="list-style-type: none"> (a) conducting baseline environmental monitoring; (b) conducting impact monitoring; (c) conducting post project monitoring; and (d) carrying out remedial actions described in the Event/Action Plans, or as agreed by the Director, in case where specified criteria are exceeded. <p>3.3 The Permit Holder shall submit to the Director three hard copies and one electronic copy of the following reports as defined in the EM&A requirements described in the Project Profile (Register No.: PP-599/2020):</p> <ul style="list-style-type: none"> (a) Baseline Monitoring Report on water quality at least 2 weeks before the commencement of cable installation works; (b) Weekly EM&A Report within five days after the relevant monitoring data are collected and audited by IEC; and (c) Post Project Monitoring Report within one month after completion of the marine works. 	

ET Certification

I hereby certify that the above referenced document/plan complies with the above referenced condition of EP-575/2020.



Mandy To, Environmental Team
Leader

Date: 22 April 2021

IEC Verification

I hereby verify that the above referenced document/plan complies with the above referenced condition of EP-575/2020.



Dr Vincent Lai, Independent
Environmental Checker:

Date: 23 April 2021

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EXECUTIVE SUMMARY

The cable installation works for the **H2H Express (H2HE) Submarine Cable** (the 'Project') have been scheduled to be carried out in phases:

- **Phase 1** Land & Shore-End Cable Installation and Submarine Cable Installation up to end of Zone A – completed on 17 April 2021; and
- **Phase 2** Remaining Submarine Cable Installation (from end of Zone A to the eastern boundary of HKSAR waters; including Zone B) – tentatively scheduled to commence around late May 2021.

Phase 1 of the Project commenced with land works at Sha Shek Tan (SST), Chung Hom Kok (CHK) on 8 April 2021 (note: no water jetting work and no water quality [WQ] impact monitoring requirements). Land works were completed on 9 April 2021. Nearshore marine diver jetting works also started on 8 April 2021, and were completed on 17 April 2021.

This is the *1st Weekly Impact Water Quality Monitoring Report (Zone A)*, presenting the water quality impact monitoring conducted during the period between 8 to 14 April 2021, in accordance with the EM&A Manual.

Summary of Construction Works undertaken during the Reporting Period

During the reporting week, preparation work (i.e. diver inspection of cable burial route with no jetting) and onshore construction works were conducted from 8 April 2021. Diver hand jetting operations (i.e. simultaneous jetting and burial of cable) were carried out between 8 to 14 April 2021 inclusive. All works were within Zone A.

Water Quality

Monitoring events were conducted for the installation period between 8 to 14 April 2021 in Zone A at CHK. The monitoring was carried out three (3) days per week, at mid-flood and mid-ebb tides, at three (3) depths (surface, middle and bottom). The intervals between two (2) sets of monitoring were not less than 36 hours. All monitoring events at the four (4) designated monitoring stations in Zone A (including one [1] Sensitive Receiver Station, one [1] Gradient Station and two [2] Control Stations) were performed on schedule, i.e. on 9, 11, and 13 April 2021.

Recorded levels of dissolved oxygen, albeit frequently recorded as being below the corresponding Action and Limit Levels, were deemed to be due to natural fluctuations and were quite high and stable, with dissolved oxygen saturation levels of >95% throughout the period. Fluctuation in turbidity and suspended solids levels was observed during some monitoring days, again deemed to be due to natural seasonal variation.

Environmental Non-conformance

No non-conformance was recorded; results of detailed investigations indicated none of the exceedances recorded were attributed to the Project construction works:

- Three (3) Notification of Exceedances (NOEs) with detailed investigation reports were issued to EPD during the reporting period for recording daily exceedances of Action and Limit Levels for dissolved oxygen, both bottom layer (on all monitoring days) as well as surface and middle (also on all monitoring days). Also, there were exceedances of turbidity and suspended solids.
- The Contractors have been requested by the Environmental Team (ET) to be aware that exceedances have recently occurred and take care to ensure all necessary procedures are followed to avoid the Project impacting the water environment.

Two (2) complaints were received during the reporting week, dated 8 and 11 April 2021:

- **8 April 2021:** A complaint from a resident was made to the Environmental Protection Department (EPD) about noise and strong lighting from working barge / vessels at the sea area near Chung Hom Kok for a duration until midnight.
- **11 April 2021:** A complaint referral from the Hong Kong Police Force (HKPF) was made to EPD concerning noise from marine works at the sea area near 88 Wong Ma Kok Road, Regalia Bay between 1300 and 1800.

Two (2) complaints were received during the reporting week, dated 8 and 11 April 2021. As such, two (2) Complaint Interim Reports were subsequently issued to EPD within seven (7) working days since receipt of the complaints. The reports detailed that none of the noise-related concerns raised were attributed to the Project construction works, and that the Contractors have been requested by the ET to reduce the amount of lighting used on the cable installation barge, to avoid further complaints.

Future Key Issues

There are no key issues identified.

Over the next monitoring period (i.e. 15 April 2021 and 17 April 2021), continued diver hand jetting works were ongoing for *Phase 1 Land & Shore-End Cable Installation and Submarine Cable Installation up to end of Zone A*.

The water quality impact monitoring work continued during all installation work-days while *Phase 1 Land & Shore-End Cable Installation and Submarine Cable Installation up to end of Zone A* was ongoing.

1. INTRODUCTION

1.1 Background

ERM-Hong Kong, Limited (ERM) was appointed by Huawei Marine Networks Co., Ltd (HMN) as the Environmental Team (ET) to implement the Environmental Monitoring and Audit (EM&A) programme for the H2H Express Submarine Cable (hereafter known as 'H2HE' and / or the 'Project').

The proposed submarine cable is a section of the H2HE optical fibre cable system, which is over 680 kilometers long in total. The system will further boost the external telecommunications capacity of Hong Kong, reinforcing Hong Kong as a key communication hub in Asia.

The cable will connect to Chung Hom Kok (CHK) within the HKSAR. **China Mobile International (CMI)** is providing the cable landing point and the associated cable landing services in Hong Kong.

The route of the proposed H2HE submarine cable system within Hong Kong SAR is depicted in **Figure 1.1**. The proposed cable would land at an existing Beach Manhole (BMH) location at Sha Shek Tan (SST), CHK, and connect to an existing Cable Landing Station (CLS).

It should be noted that CHK is currently the landing site for a number of submarine cables (i.e. New T&T domestic cable route, C2C Cable network; and SJC). The existing BMH is connected to the CLS on the hill above the landing beach and existing conduits connect the BMH and CLS.

The cable will travel from SST of CHK southward, exiting Stanley Bay, running south-east, passing the Stanley Peninsular, turning east near the south of Po Toi Island, to the eastern boundary of HKSAR waters, where it will enter the South China Sea.

The Project Profile (PP-599/2020) which includes an assessment of the potential environmental impacts associated with the installation of the submarine telecommunications cable system within HKSAR (including connection to land at CHK) was prepared and submitted to the Environmental Protection Department (EPD) under section 5(1)(b) and 5(11) of the *Environmental Impact Assessment Ordinance* (EIAO) for the application for Permission to apply directly for Environmental Permit (EP). On 17 April 2020, EPD issued a letter to CMI permitting direct application for an environmental permit and following an application, EPD subsequently issued an Environmental Permit (EP-575/2020) on 21 May 2020.

Pursuant to *Condition 3.1* of the EP, an Environmental Monitoring and Audit (EM&A) programme, as set out in the Project Profile (PP) is required for this Project. As per *Condition 3.2* of the EP regarding Water Quality Monitoring, there is a requirement to conduct water quality baseline monitoring and impact monitoring. The corresponding Action and Limit Levels will be derived from the baseline data.

The H2HE cable installation is scheduled to be carried out in two (2) phases, with Phase 1 covering land & shore-end works and up to end of Zone A, and Phase 2 covering the remaining marine works of the submarine cable installation. The phasing of the cable installation works is shown in **Figure 1.2** to **Figure 1.4**, and the current schedule and works carried out to date for each Phase is as follows:

- 1) **Phase 1 Land & Shore-End Cable Installation and Submarine Cable Installation up to end of Zone A:** Shore-end cable installation to the BMH at SST, CHK, involving land trench excavation and shore-end cable installation of the H2HE submarine cable (i.e. from seaward edge of the beach to approximately 300 m out from the BMH) using diver jetting. Installation of the H2HE submarine cable from shore-end to the end of Zone A (i.e. HK Grid coordinate 838858.620E 806852.911N / at 1.933 km from the landing point), using injector burial tools / sledge tools for simultaneous lay and burial operations.
 - a. Baseline data for Zone A was collected prior to the start of Phase 1 cable installation works (i.e. between 17 February and 15 March 2021) and Action and Limit Levels derived from these data, as presented in the final *Baseline Water Quality Monitoring Report (Zone A)*.

- b. Land trenching commenced 8 April 2021. Following issue of Marine Department Notice on 25 February 2021, land trenching completed on 9 April 2021.
 - c. Nearshore marine diver jetting works commenced on 8 April 2021, and was completed on 17 April 2021.
- 2) **Phase 2 Remaining Submarine Cable Installation:** Installation of the H2HE submarine cable from the end of Zone A (i.e. HK Grid coordinate 838858.620E 806852.911N / at 1.933 km from the landing point), to HKSAR marine eastern boundary, using injector burial tools/ sledge tools for simultaneous lay and burial operations, and potential diver jetting in specific areas (e.g. HK Electric Pipeline crossing).
- a. Remaining marine installation works from end of Zone A to the HKSAR marine eastern boundary using jetting technique tentatively scheduled in late May 2021.

Given the commencement dates for Phase 1 and Phase 2 cable installation and jetting works were originally scheduled to start at least two (2) months apart, the baseline data (and corresponding Action and Limit Levels) were subsequently presented in separate reports for each Phase.

This report covers the Project's *Phase 1 Land & Shore-End Cable Installation and Submarine Cable Installation up to end of Zone A* (as show in **Figure 1.3**) and refers to the *Baseline Water Quality Monitoring Report (Zone A)* for Action and Limit Levels.

1.2 Purpose of this Report

This is the 1st Weekly Water Quality Impact Monitoring Report in Zone A for Phase 1 of the Project (Land & Shore-End Cable Installation and Submarine Cable Installation up to end of Zone A), and summarises the water quality impact monitoring results during the reporting period from 8 to 14 April 2021.

Under the requirement of *Condition 3.3(b)* of the EP, weekly impact monitoring reports on water quality shall be prepared and submitted to the EPD within five (5) days after the relevant monitoring data are collected and audited by the Independent Environmental Checker (IEC).

This impact monitoring EM&A exercise covers only Zone A as stipulated in *Table G2.1* of the approved PP. A separate EM&A exercise will be conducted for Phase 2 cable installation, covering Zone B before the commencement of the Phase 2 cable installation.

1.3 Structure of this Report

The remainder of the report is structured as follows:

Section 1: Introduction

Provide details of the background, purpose and structure of the report, and scope of the Project.

Section 2: Project Information

Summarises the construction works undertaken and the status of Environmental Permits/Licenses during the reporting period.

Section 3: Water Quality Monitoring Requirements

Summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations, Action and Limit Levels, and Event / Action Plans.

Section 4: Monitoring Results

Summarises the monitoring results obtained in the reporting period.

Section 5: Environmental Non-conformance

Summarises any monitoring exceedance, environmental complaints and environmental summons within the reporting period.

Section 6: Future Key Issues

Summarises the monitoring schedule for the next week.

Section 7: Conclusions

Presents the key findings of the impact monitoring results.

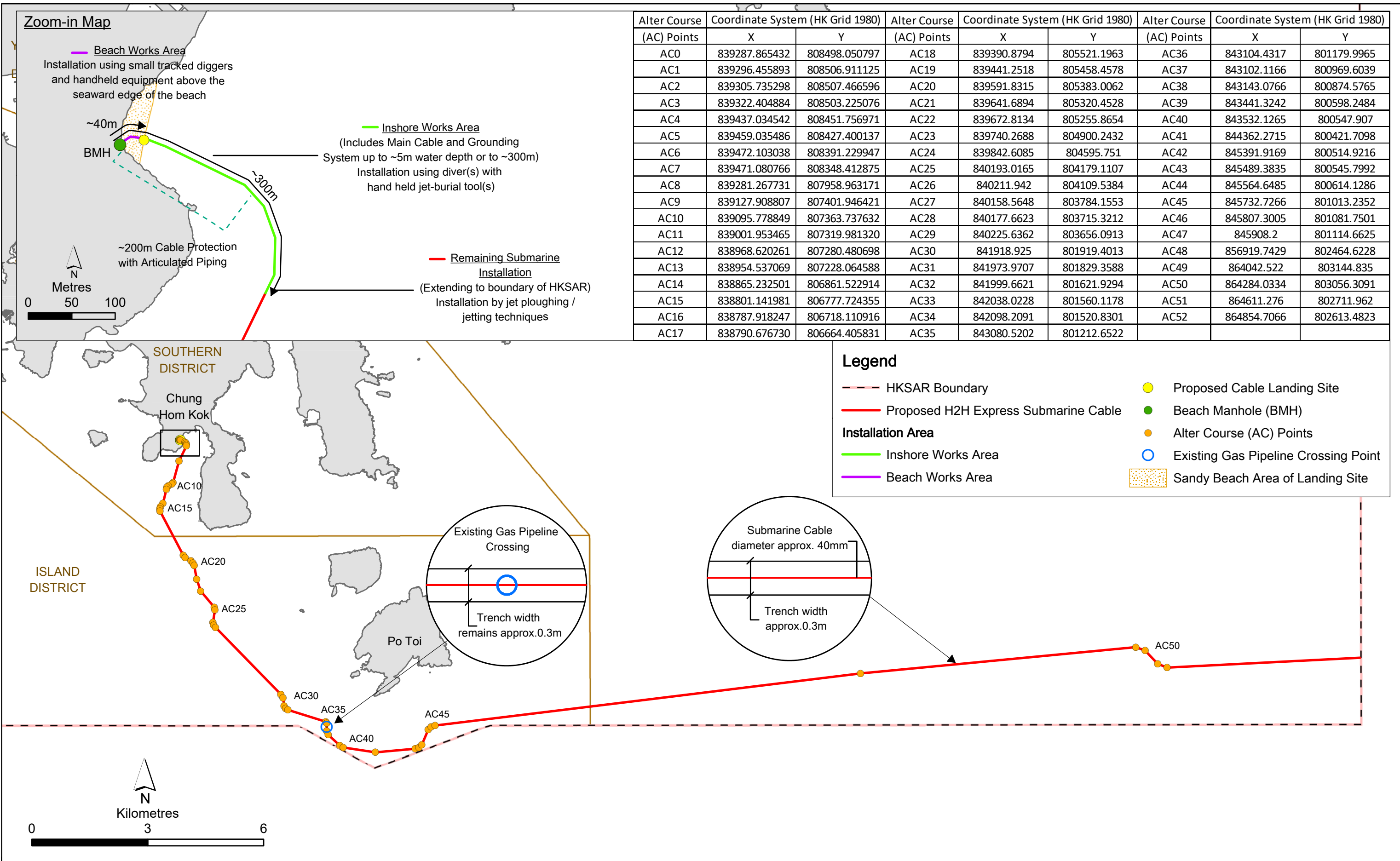


Figure 1.1

Proposed H2H Express Submarine Cable

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Date: 18/3/2021

Environmental
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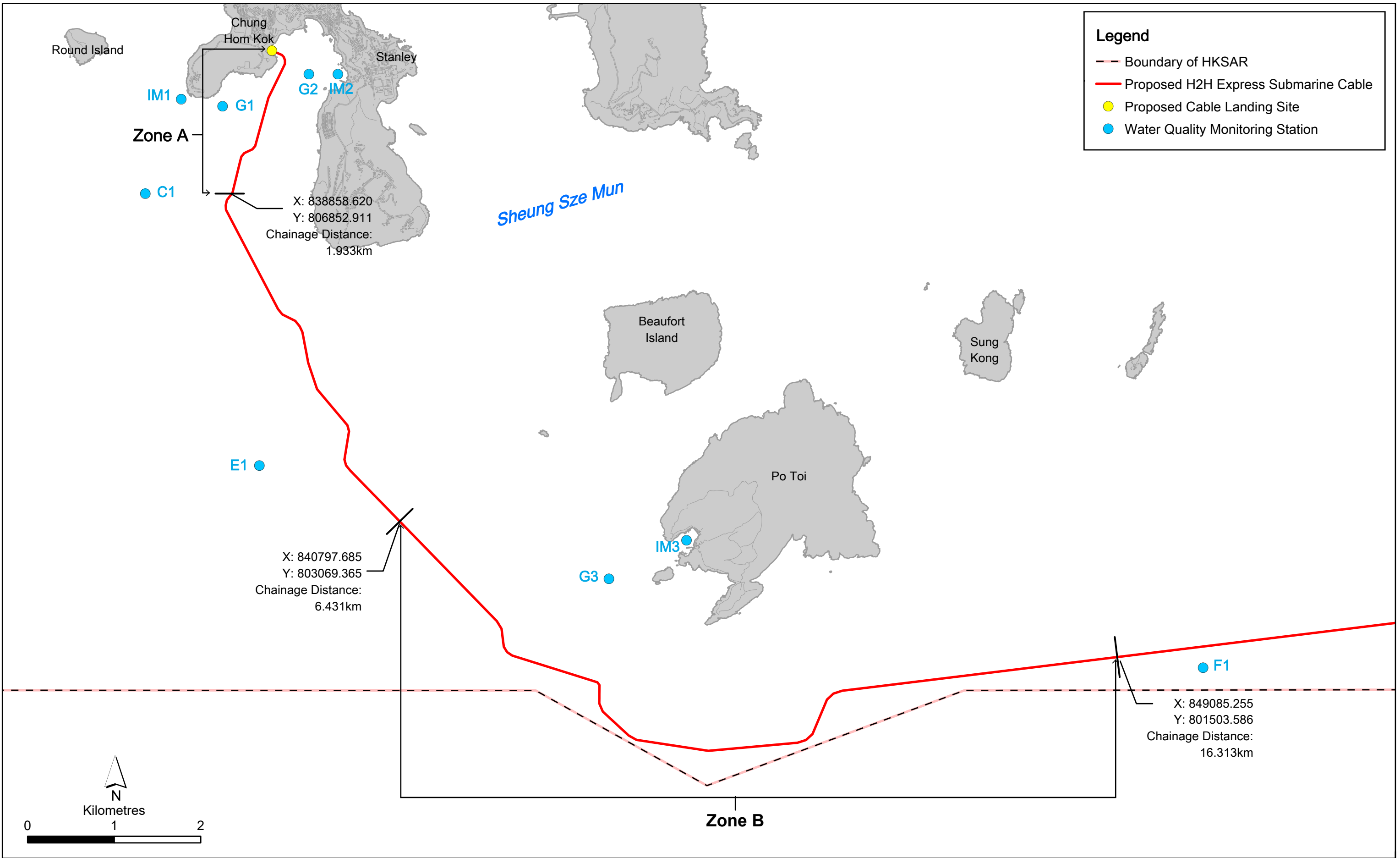


Figure 1.2

Water Quality Monitoring Stations

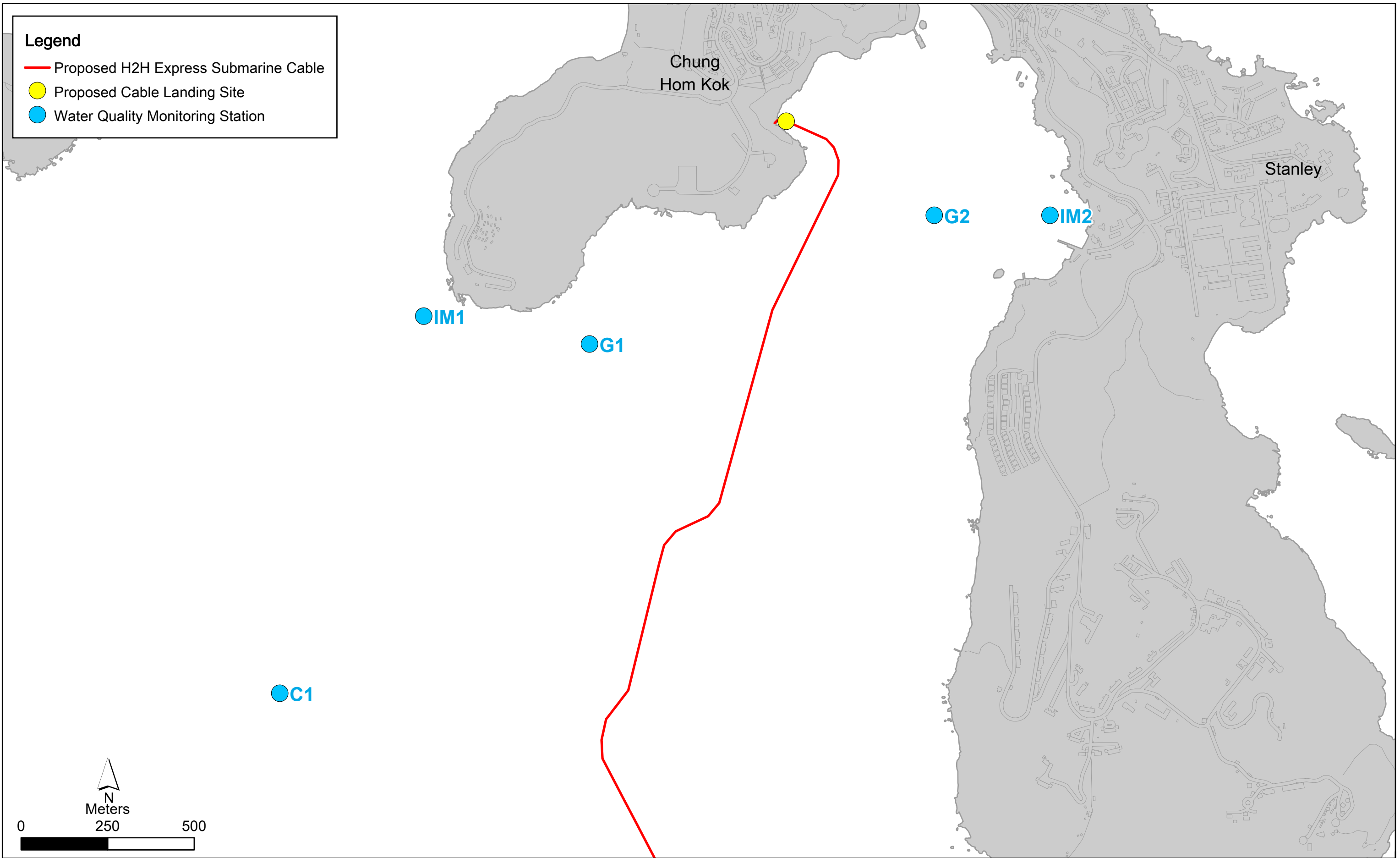


Figure 1.3

Water Quality Monitoring Stations - Zone A

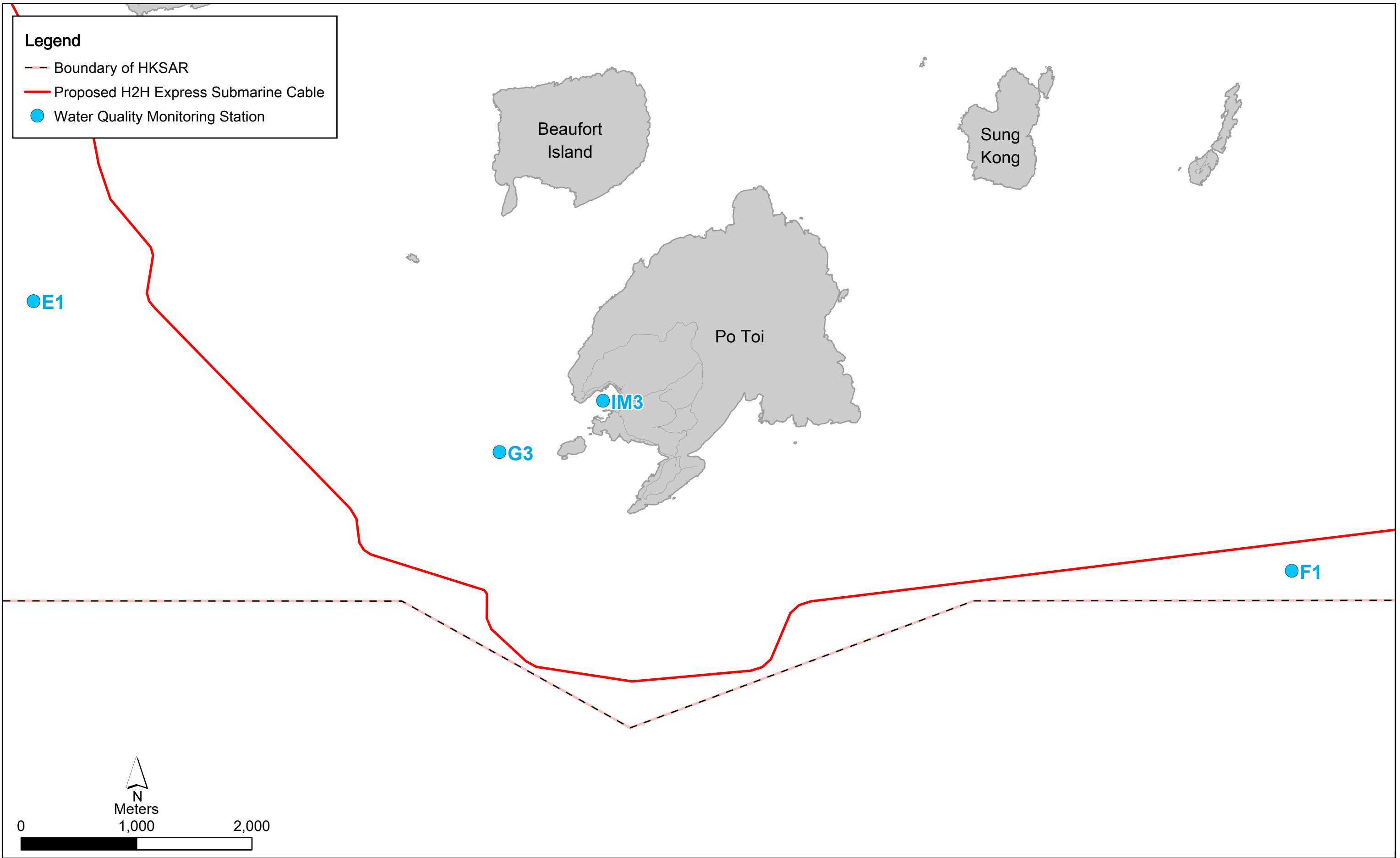


Figure 1.4

Water Quality Monitoring Stations - Zone B

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2. PROJECT INFORMATION

2.1 Marine Construction Works Undertaken during Reporting Week

A summary of the key works undertaken during the reporting week is shown in **Table 3.1**:

Table 2.1 Summary of Marine Works Undertaken During the Reporting Week

Date	Works Area	Activity
Thu 8 April 2021	Phase 1 of Zone A	Beach trenching and diver hand jetting and burial of cable simultaneously.
Fri 9 April 2021	Phase 1 of Zone A	Beach trenching; completion of beach works. Diver hand jetting and burial of cable simultaneously.
Sat 10 April 2021	Phase 1 of Zone A	Diver hand jetting and burial of cable simultaneously.
Sun 11 April 2021	Phase 1 of Zone A	Diver hand jetting and burial of cable simultaneously.
Mon 12 April 2021	Phase 1 of Zone A	Diver hand jetting and burial of cable simultaneously.
Tue 13 April 2021	Phase 1 of Zone A	Diver hand jetting and burial of cable simultaneously.
Wed 14 April 2021	Phase 1 of Zone A	Diver hand jetting and burial of cable simultaneously.

2.2 Status of Environmental Approval Documents

A summary of the relevant permits, licences, notifications and/or reports on environmental protection for this Project is presented in **Table 2.2**:

Table 2.2 Summary of Environmental Licensing, Notification, Permit and Reporting Status

Permit / Licence / Notification / Report	Reference	Validity Period	Remarks
Environmental Permit	(EP-575/2020) Available at https://www.epd.gov.hk/eia/register/permit/latest/ep5752020.htm	Throughout construction & operation period	Granted on 21 May 2020
EM&A Manual	(PP-599/2020) As part of the Project Profile; available at: https://www.epd.gov.hk/eia/english/alpha/aspd_764.html	Throughout construction & operation period	Approved by EPD on 17 April 2020
Marine Department Notice	(No. 45/2021) Available at: https://www.mardep.gov.hk/en/notices/pdf/mdn21045.pdf	Throughout construction & operation period	Issued by the Marine Department on 25 February 2021
<i>Baseline Water Quality Monitoring Report (Zone A) and Pre-Installation Coral Survey Report</i>	Available at: https://www.epd.gov.hk/eia/english/register/aep/ep5752020_content.html	Throughout construction period for Phase 1 works in Zone A	Approved by EPD as of 23 April 2021

3. WATER QUALITY MONITORING

3.1 Monitoring Location

In accordance with the *Appendix G* of approved PP, during the installation of H2HE in Zone A, water quality sampling was undertaken at stations situated around the cable laying works at CHK in Zone A. The locations of the sampling stations within Zone A are listed in **Table 3.1** and shown in **Figure 1.2** and **Figure 1.3**.

Table 3.1 Water Quality Monitoring Stations

Station	Nature	Approx. Geodesic Distance ⁽¹⁾ to Proposed Cable Alignment (m)	Easting	Northing
Zone A: The waters near Stanley Bay Covers the cable alignment between Chainage 0 and 1.933 km.				
IM1	Coral sites along the coast of Chung Hom Kok	960	838275	807941
IM2	Saint Stephen's Beach	620	840083	808232
G1	Gradient Stations (Between Coral sites along the coast of Chung Hom Kok and cable alignment)	480	838753	807861
G2	Gradient Stations (Between Saint Stephen's Beach and cable alignment)	300	839749	808232
C1 ⁽²⁾	Control Station for Zone A	940	837859	806853

Note:

- (1) Geodesic distance refers to the shortest straight line distance between two locations, without regard on the physical obstacles in between.
(2) This station will also serve as monitoring stations for Spawning Ground of Commercial Fisheries Resources.

3.2 Sampling and Testing Methodology

The impact water quality monitoring was conducted in accordance with the requirements stated in the *Appendix G* of approved PP. These are presented below.

3.2.1 Parameters Measured

The parameters measured *in situ* were:

- dissolved oxygen (DO) (% saturation and mgL⁻¹)
- temperature (°C)
- turbidity (NTU)
- salinity (‰ or ppt)

The only parameter to be measured in the laboratory was:

- suspended solids (SS) (mgL⁻¹)

In addition to the water quality parameters, other relevant data had also been measured and recorded in field logs, including the location of the sampling stations and cable vessel/ burial machine at the time of sampling, water depth, time, weather conditions, sea conditions, tidal state, current direction and speed, special phenomena and work activities undertaken around the monitoring and works area that may influence the monitoring results.

3.2.2 Equipment

Table 3.2 summaries the equipment used for the impact water quality monitoring.

Table 3.2 Equipment used during Impact Water Quality Monitoring (Zone A)

Equipment	Model
Global Positioning Device	Garmin etrex 20x
Water Depth Gauge	Sontek Riversurveyor
Water Sampling Equipment	Aquatic Research Instruments horizontal / vertical types 2.2L
Salinity, DO, Temperature Measuring Meter	YSI ProDSS (Multi-Parameter)
Current Velocity and Direction	Sontek Riversurveyor
Turbidity Meter	YSI ProDSS (Multi-Parameter)

3.2.3 Monitoring Frequency and Timing

Impact Monitoring at all monitoring stations within Zone A (i.e. IM1, IM2, G1, G2, and C1) took place when the cable installation works were undertaken within Zone A as shown in **Figure 1.3**. The sampling works ceased when no cable installation works were conducted inside Zone A.

All Phase 1 construction works were undertaken during normal working hours (i.e. 07:00 - 19:00; excluding Sundays and public holidays). A total of six (6) monitoring rounds were conducted during the 12-hour work period on each work-day from 07:00 to 19:00. The interval between two (2) sets of impact monitoring (i.e. including the collection of *In-situ* and SS data) during the cable installation works was no less than 36 hours and samples were taken twice during a 4 hour window of 2 hours before and 2 hours after a mid-flood and mid-ebb tidal state on each sampling occasion.

Reference was made to the predicted tides at Waglan Island, which is the tidal station nearest to the Project Site, published on the website of the Hong Kong Observatory ⁽¹⁾. Based on the predicted tidal levels at Waglan Island, the impact water quality monitoring was conducted between 9 and 17 April 2021, following the schedule presented in **Appendix A**.

3.2.4 Sampling / Testing Protocols

All *in situ* monitoring instruments were checked, calibrated and certified by a laboratory accredited under HOKLAS (Quality Pro Test-Consult Limited) before use (see calibration reports in **Appendix B**), and will subsequently be re-calibrated at-monthly intervals throughout all stages of the water quality monitoring. Responses of sensors and electrodes were checked with certified standard solutions before each use.

For the on-site calibration of field equipment, the *BS 1427: 1993, Guide to Field and On-Site Test Methods for the Analysis of Waters* were observed. Sufficient stocks of spare parts shall be maintained for replacements when necessary. Backup monitoring equipment were made available so that monitoring could proceed uninterrupted even when equipment is under maintenance, calibration etc.

Water samples for SS measurements were collected in high density polythene bottles, packed in ice (cooled to 4°C without being frozen), and delivered to a HOKLAS laboratory as soon as possible after collection.

⁽¹⁾ Hong Kong Observatory (2021) <http://www.hko.gov.hk/tide/predtide.htm?s=WAG> [Accessed in February 2021]

At least two (2) replicate samples were collected from each of the monitoring events for *in situ* measurement and lab analysis.

3.2.5 Laboratory Analysis

All laboratory work was carried out in a HOKLAS accredited laboratory (ALS Technichem (HK) Pty Ltd). Water samples of about 1,000 mL were collected at the monitoring, gradient and control stations for carrying out the laboratory determinations. The determination work shall start within the next working day after collection of the water samples. The SS laboratory measurements were provided within five (5) days of the sampling event. The analyses followed the standard methods as described in *APHA Standard Methods for the Examination of Water and Wastewater, 19th Edition*, unless otherwise specified (APHA 2540D for SS).

The submitted information included 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 were in accordance with requirements of HOKLAS or another internationally accredited scheme (**Appendix C**).

3.2.6 Sampling Depths

At each station, measurements and water samples were taken at three (3) depths, namely 1 m below water surface, mid-depth and 1 m above seabed. For stations that are less than 3 m in depth, only the mid-depth sample was taken. For stations that are less than 6 m in depth, only the surface and seabed sample was taken.

3.2.7 Action and Limit Levels

The Action and Limit levels for Zone A, which were established based on the results of *Baseline Water Quality Monitoring (Zone A)*, are presented in **Table 3.3**.

Table 3.3 Action and Limit Level for Water Quality

Parameter	Action Level	Limit Level
SS in mgL ⁻¹ (Depth-averaged)	95%-ile of baseline data (4.1 mg L ⁻¹), or 20% exceedance of value at any impact station compared with corresponding data from control station, whichever monitoring result is higher	99%-ile of baseline data (4.9 mg L ⁻¹), or 30% exceedance of value at any impact station compared with corresponding data from control station, whichever monitoring result is higher
DO in mgL ⁻¹	<u>Surface and Middle</u> 5%-ile of baseline data for surface or middle layer (6.98 mg L ⁻¹) <u>Bottom</u> 5%-ile of baseline data for bottom layers (6.89 mg L ⁻¹)	<u>Surface and Middle</u> 4mg/L or 1%-ile of baseline for surface and middle layer, whichever is lower (4 mg L ⁻¹) <u>Bottom</u> 2mg/L or 1%-ile of baseline data for bottom layer whichever is lower (2 mg L ⁻¹)
Turbidity in NTU (Depth-averaged)	95%-ile of baseline data (3.6 NTU), or 20% exceedance of value at any impact station compared with corresponding data from control station, whichever monitoring result is higher	99%-ile of baseline data (5.0 NTU), or 30% exceedance of value at any impact station compared with corresponding data from control station, whichever monitoring result is higher

Parameter	Action Level	Limit Level
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Notes:

- a. For DO, non-compliance of the water quality limits occurs when the monitoring result is lower than the limits.
 - b. "Depth-averaged" is calculated by taking the arithmetic means of reading of all sampled depths.
 - c. For SS and turbidity, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
 - d. Limit level for DO was derived from the Water Quality Objectives (WQO) for Southern, Eastern Buffer, and Mirs Bay Water Control Zones under the Water Pollution Control Ordinance (WPCO) Chapters 358L, 358Y, and 358I respectively.
-

4. IMPACT MONITORING RESULTS

A total of three (3) monitoring events were carried out between 8 and 14 April 2021 at Zone A, three days in the period of the 1st week of impact monitoring reporting. All monitoring events at all designated monitoring stations within Zone A were performed on schedule, i.e. on 9, 11, and 13 April 2021.

No major Project activities that influenced the water quality within Zone A were identified between 8 and 14 April 2021.

4.1 Data Collected

The impact monitoring data taken for this 1st weekly impact monitoring report within Zone A are presented in **Appendix D**. In general, the Zone A water quality parameters were stable throughout each sampling day (i.e. 9, 11, and 13 April 2021). Recorded levels of dissolved oxygen, albeit frequently recorded as being below the corresponding Action and Limit Levels, were deemed to be due to natural fluctuations and were quite high and stable, with dissolved oxygen saturation levels of >95% throughout the period.

Fluctuation in turbidity and suspended solids levels was observed during some monitoring days, again deemed to be due to natural seasonal variation.

5. ENVIRONMENTAL NON-CONFORMANCES

5.1 Summary of Environmental Exceedance

Exceedances were recorded during the monitoring period (i.e. 8 to 14 April 2021) for dissolved oxygen, turbidity and suspended solids at the monitoring stations. None of the exceedances recorded were attributed to the Project construction works as detailed below.

Three (3) Notification of Exceedances (NOEs) with detailed investigation reports were issued to EPD during the reporting period for recording exceedances of Action and Limit Levels for dissolved oxygen, both bottom layer as well as surface and middle (both on 11 and 13 April 2021), and for turbidity and suspended solids (both on all monitoring days).

The exceedances were examined against the Project works in the NOEs. Exceedance of dissolved oxygen, turbidity and suspended were recorded on period before the commencement of cable installation (9 April 2021) or when there was no work the entire day (11 and 13 April 2021). Also dissolved oxygen saturation level remained high (95% or above). The recorded exceedances were therefore deemed to be due to natural fluctuations or other sources.

The Contractors have been requested by the ET to be aware that exceedances have recently occurred and take care to ensure all necessary procedures are followed to avoid the Project impacting the water environment.

5.2 Summary of Environmental Non-compliance

No non-compliance events were recorded during the reporting period due to the Project.

5.3 Summary of Environmental Complaint

Two (2) complaints were received during the reporting week, dated 8 and 11 April 2021:

- **8 April 2021:** A complaint from a resident was made to EPD about noise and strong lighting from working barge / vessels at the sea area near Chung Hom Kok for a duration until midnight.
- **11 April 2021:** A complaint referral from the Hong Kong Police Force (HKPF) was made to EPD concerning noise from marine works at the sea area near 88 Wong Ma Kok Road, Regalia Bay between 1300 and 1800.

Two (2) complaints were received during the reporting week, dated 8 and 11 April 2021. As such, an investigation was launched to evaluate the validity of the complaints in connection to the Project, in accordance with the procedures set out in the approved PP, *Section 5* and *Figure G.4*. Two (2) Complaint Interim Reports were subsequently issued to EPD within seven (7) working days since receipt of the complaints (**Appendix E**). The reports provided a description of the complaint issued to EPD, the possible reasons for the complaint, summary of work details that may have been of concern to the complaint, actions taken, and potential mitigation measures.

The two (2) reports detailed that none of the noise-related concerns raised were attributed to the Project construction works, and that the Contractors have been requested by the ET to reduce the amount of lighting used on the cable installation barge, to avoid further complaints.

5.4 Summary of Environmental Summons and Prosecution

No summons or prosecution on environmental matters were received during the reporting period.

6. FUTURE KEY ISSUES

6.1 Key Issues for the Coming Week

There is no key issue identified.

Over the next monitoring period (i.e. 15 April 2021 and 17 April 2021), *Phase 1 Land & Shore-End Cable Installation and Submarine Cable Installation up to end of Zone A* is expected to be ongoing within Zone A only.

6.2 Monitoring Schedule for the Coming Weeks

The impact water quality monitoring for Zone A will continue on the scheduled dates until completion of cable installation within Zone A.

7. CONCLUSION

This 1st Weekly Impact Monitoring Report presents the EM&A work undertaken during the period from 8 to 14 April 2021 in accordance with the *Appendix G* of the approved Project Profile (PP) and the requirements under EP-575/2020.

No non-compliance events were recorded during the reporting week due to the Project.

There were exceedances of Action and Limit Levels for dissolved oxygen, both bottom layer as well as surface and middle layer (on all monitoring days), and for turbidity and suspended solids (also on all monitoring days).

The exceedances were examined against the Project works in the NOEs. Exceedance of dissolved oxygen, turbidity and suspended were recorded on period before the commencement of cable installation (9 April 2021) or when there was no work the entire day (11 and 13 April 2021). Also dissolved oxygen saturation level remained high (95% or above). Results of detailed investigations indicated none of the exceedances recorded were attributed to the Project construction works, and that they were deemed to be due to natural fluctuations or other sources.

The Contractors have been requested by the Environmental Team (ET) to be aware that exceedances have recently occurred and take care to ensure all necessary procedures are followed to avoid the Project impacting the water environment.

Two (2) complaints were received during the reporting week, dated 8 and 11 April 2021. As such, two (2) Complaint Interim Reports were subsequently issued to EPD within seven (7) working days since receipt of the complaints. The reports detailed that none of the noise-related concerns raised were attributed to the Project construction works, and that the Contractors have been requested by the ET to reduce the amount of lighting used on the cable installation barge, to avoid further complaints.

The ET will keep track of the EM&A programme to verify compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

**APPENDIX A IMPACT WATER QUALITY MONITORING SCHEDULE
(ZONE A)**

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
				ebb tide 9:15 - 13:15 flood tide 14:44 - 18:44		ebb tide 10:17 - 14:17 flood tide 16:13 - 20:13
		07-Apr	08-Apr	<i>Zone A impact</i> 09-Apr	10-Apr	<i>Zone A impact</i> 11-Apr
	ebb tide 11:14 - 15:14 flood tide 17:29 - 21:29		ebb tide 12:14 - 16:14 flood tide 5:37 - 9:37		ebb tide 12:38 - 16:38 flood tide 5:19 - 9:19	
12-Apr	<i>Zone A impact</i> 13-Apr	14-Apr	<i>Zone A impact</i> 15-Apr	16-Apr	<i>Zone A impact</i> 17-Apr	18-Apr
					Appendix A H2HE Impact Monitoring Schedule (Zone A)	
19-Apr	20-Apr	21-Apr	22-Apr	23-Apr		

**APPENDIX B CERTIFICATES OF CALIBRATION FOR *IN SITU*
MONITORING INSTRUMENTS**



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

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REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : BA030094
Date of Issue : 26 March 2021
Page No. : 1 of 2

PART A – CUSTOMER INFORMATION

Enovative Environmental Service Ltd.
Flat 2207, Yu Fun House,
Yu Chui Court, Shatin
New Territories, Hong Kong
Attn: Mr. Thomas WONG

PART B – DESCRIPTION

Name of Equipment : YSI ProDSS (Multi-Parameters)
Manufacturer : YSI (a xylem brand)
Serial Number : 15M100005
Date of Received : Mar 25, 2021
Date of Calibration : Mar 25, 2021
Date of Next Calibration^(a) : Jun 24, 2021

PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

<u>Parameter</u>	<u>Reference Method</u>
pH at 25°C	APHA 21e 4500-H ⁺ B
Dissolved Oxygen	APHA 21e 4500-O G
Conductivity at 25°C	APHA 21e 2510 B
Salinity	APHA 21e 2520 B
Turbidity	APHA 21e 2130 B
Temperature	Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

PART D – CALIBRATION RESULTS^(b,c)

(1) pH at 25°C

Target (pH unit)	Displayed Reading ^(d) (pH Unit)	Tolerance ^(e) (pH Unit)	Results
4.00	4.02	0.02	Satisfactory
7.42	7.38	-0.04	Satisfactory
10.01	10.30	0.29	Satisfactory

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

(2) Temperature


Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
10	10.4	0.4	Satisfactory
20	20.1	0.1	Satisfactory
48	48.3	0.3	Satisfactory

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

~ CONTINUED ON NEXT PAGE ~

Remark(s): -

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


LEE Chun-ning, Desmond
Senior Chemist



專業化驗有限公司

QUALITY PRO TEST-CONSULT LIMITED

Unit 10, 14/F, Wah Wai Centre, 38-40 Au Pui Wan St., Fotan, Hong Kong

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REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : BA030094
Date of Issue : 26 March 2021
Page No. : 2 of 2

PART D – CALIBRATION RESULTS (Cont'd)

(3) Dissolved Oxygen

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
0.36	0.28	-0.08	Satisfactory
2.81	2.58	-0.23	Satisfactory
5.45	5.72	0.27	Satisfactory
8.40	8.64	0.24	Satisfactory

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

(4) Conductivity at 25°C

Conc. of KCl (M)	Expected Reading ($\mu\text{S/cm}$)	Displayed Reading ($\mu\text{S/cm}$)	Tolerance (%)	Results
0.001	146.9	152.1	3.54	Satisfactory
0.01	1412	1278	-9.49	Satisfactory
0.1	12890	12810	-0.62	Satisfactory
0.5	58670	59234	0.96	Satisfactory
1.0	111900	114225	2.08	Satisfactory

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

(5) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	9.8	-2.00	Satisfactory
20	20.5	2.50	Satisfactory
30	29.8	-0.67	Satisfactory

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

(6) Turbidity

Expected Reading (NTU)	Displayed Reading ⁽¹⁾ (NTU)	Tolerance ⁽²⁾ (%)	Results
0	0.05	--	Satisfactory
10	9.8	-1.6	Satisfactory
20	18.9	-5.7	Satisfactory
100	96.4	-3.6	Satisfactory
800	822	2.8	Satisfactory

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

~ END OF REPORT ~

Remark(s): -

⁽¹⁾ "Displayed Reading" presents the figures shown on item under calibration/ checking regardless of equipment precision or significant figures.

⁽²⁾ The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted from relevant international standards.

APPENDIX C QA/ QC RESULTS FOR SUSPENDED SOLIDS TESTING

QA/QC Results of Laboratory Analysis of Total Suspended Solids				
Sampling Date	Sample Duplicate		Method Blank * (mg/L)	Laboratory Control Spike % Recovery **
	Sample ID	% Error		
09-Apr-21	IM1-E-S-1	25.0	<0.5	94.0
	G1-E-S-1	8.0		
	G2-E-B-1	5.6	<0.5	99.0
	IM1-F-M-1	28.6		
	G1-F-M-1	10.0	<0.5	94.0
	C1-F-S-1	4.8		
11-Apr-21	IM1-E-S-1	40.0	<0.5	96.5
	G1-E-S-1	11.1		
	G2-E-B-1	6.9	<0.5	94.5
	IM1-F-M-1	4.7		
	G1-F-M-1	18.6	<0.5	102.0
	C1-F-S-1	12.2		
13-Apr-21	IM1-E-S-1	3.1	<0.5	102.0
	G1-E-S-1	22.2		
	G2-E-B-1	15.8	<0.5	110.0
	IM1-F-M-1	9.1		
	G1-F-M-1	4.2	<0.5	104.0
	C1-F-S-1	6.3		

Note: (*) Reporting limit of SS is 0.5 mg/L.
(**) % Recovery of laboratory control spike should be between 85% to 115%.




CERTIFICATE OF ANALYSIS

<i>Client</i>	: ENOVATIVE ENVIRONMENTAL SERVICE LTD	<i>Laboratory</i>	: ALS Technichem (HK) Pty Ltd	<i>Page</i>	: 1 of 5
<i>Contact</i>	: MR THOMAS WONG	<i>Contact</i>	: Richard Fung	<i>Work Order</i>	: HK2112788
<i>Address</i>	: FLAT 2207, YU FUN HSE, YU CHUI COURT, SHATIN, N.T. HONG KONG	<i>Address</i>	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
<i>E-mail</i>	: thomas.wong@eno.com.hk	<i>E-mail</i>	: richard.fung@alsglobal.com		
<i>Telephone</i>	: ----	<i>Telephone</i>	: +852 2610 1044	<i>Date received</i>	: 09-Apr-2021
<i>Facsimile</i>	: ----	<i>Facsimile</i>	: +852 2610 2021	<i>Date of issue</i>	: 14-Apr-2021
<i>Project</i>	: H2H EXPRESS SUBMARINE CABLE			<i>No. of samples</i>	- Received : 56
<i>Order number</i>	: —	<i>Quote number</i>	: HKE/1236/2021		- Analysed : 56
<i>C-O-C number</i>	: —				
<i>Site</i>	: —				

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This document has been signed by those names that appear on this report and are the authorised signatories.

<i>Signatory</i>	<i>Position</i>	<i>Authorised results for:</i>
 Fung Lim Chee, Richard	Managing Director	Inorganics



General Comments

This report supersedes any previous report(s) with this reference. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. Testing period is from 09-Apr-2021 to 14-Apr-2021.

Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific Comments for Work Order HK2112788 :

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.



Analytical Results

Sub-Matrix: MARINE WATER			Compound	EA025: Suspended Solids (SS)	---	---	---	---
			LOR Unit	0.5 mg/L	---	---	---	---
Sample ID	Sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties	---	---	---	---	---
IM1-E-S-1	09-Apr-2021	HK2112788-001	2.0	---	---	---	---	---
IM1-E-S-2	09-Apr-2021	HK2112788-002	1.9	---	---	---	---	---
IM1-E-M-1	09-Apr-2021	HK2112788-003	2.1	---	---	---	---	---
IM1-E-M-2	09-Apr-2021	HK2112788-004	1.8	---	---	---	---	---
IM1-E-B-1	09-Apr-2021	HK2112788-005	1.6	---	---	---	---	---
IM1-E-B-2	09-Apr-2021	HK2112788-006	1.5	---	---	---	---	---
IM2-E-S-1	09-Apr-2021	HK2112788-007	2.4	---	---	---	---	---
IM2-E-S-2	09-Apr-2021	HK2112788-008	2.3	---	---	---	---	---
IM2-E-B-1	09-Apr-2021	HK2112788-011	3.0	---	---	---	---	---
IM2-E-B-2	09-Apr-2021	HK2112788-012	2.2	---	---	---	---	---
G1-E-S-1	09-Apr-2021	HK2112788-013	2.5	---	---	---	---	---
G1-E-S-2	09-Apr-2021	HK2112788-014	2.2	---	---	---	---	---
G1-E-M-1	09-Apr-2021	HK2112788-015	2.0	---	---	---	---	---
G1-E-M-2	09-Apr-2021	HK2112788-016	1.8	---	---	---	---	---
G1-E-B-1	09-Apr-2021	HK2112788-017	2.1	---	---	---	---	---
G1-E-B-2	09-Apr-2021	HK2112788-018	1.9	---	---	---	---	---
G2-E-S-1	09-Apr-2021	HK2112788-019	1.4	---	---	---	---	---
G2-E-S-2	09-Apr-2021	HK2112788-020	1.4	---	---	---	---	---
G2-E-M-1	09-Apr-2021	HK2112788-021	1.7	---	---	---	---	---
G2-E-M-2	09-Apr-2021	HK2112788-022	1.8	---	---	---	---	---
G2-E-B-1	09-Apr-2021	HK2112788-023	1.8	---	---	---	---	---
G2-E-B-2	09-Apr-2021	HK2112788-024	1.6	---	---	---	---	---
C1-E-S-1	09-Apr-2021	HK2112788-025	1.5	---	---	---	---	---
C1-E-S-2	09-Apr-2021	HK2112788-026	1.2	---	---	---	---	---
C1-E-M-1	09-Apr-2021	HK2112788-027	1.4	---	---	---	---	---
C1-E-M-2	09-Apr-2021	HK2112788-028	1.0	---	---	---	---	---
C1-E-B-1	09-Apr-2021	HK2112788-029	1.5	---	---	---	---	---
C1-E-B-2	09-Apr-2021	HK2112788-030	2.0	---	---	---	---	---
IM1-F-S-1	09-Apr-2021	HK2112788-031	0.6	---	---	---	---	---
IM1-F-S-2	09-Apr-2021	HK2112788-032	1.1	---	---	---	---	---
IM1-F-M-1	09-Apr-2021	HK2112788-033	0.7	---	---	---	---	---



Sub-Matrix: MARINE WATER

			<i>Compound</i>	EA025: Suspended Solids (SS)	----	----	----	----
			<i>LOR Unit</i>	0.5 mg/L	----	----	----	----
<i>Sample ID</i>	<i>Sampling date / time</i>	<i>Laboratory sample ID</i>	EA/ED: Physical and Aggregate Properties	----	----	----	----	----
IM1-F-M-2	09-Apr-2021	HK2112788-034	1.5	----	----	----	----	----
IM1-F-B-1	09-Apr-2021	HK2112788-035	1.0	----	----	----	----	----
IM1-F-B-2	09-Apr-2021	HK2112788-036	1.6	----	----	----	----	----
IM2-F-S-1	09-Apr-2021	HK2112788-037	0.8	----	----	----	----	----
IM2-F-S-2	09-Apr-2021	HK2112788-038	0.6	----	----	----	----	----
IM2-F-B-1	09-Apr-2021	HK2112788-041	1.0	----	----	----	----	----
IM2-F-B-2	09-Apr-2021	HK2112788-042	1.7	----	----	----	----	----
G1-F-S-1	09-Apr-2021	HK2112788-043	1.5	----	----	----	----	----
G1-F-S-2	09-Apr-2021	HK2112788-044	1.4	----	----	----	----	----
G1-F-M-1	09-Apr-2021	HK2112788-045	1.0	----	----	----	----	----
G1-F-M-2	09-Apr-2021	HK2112788-046	1.7	----	----	----	----	----
G1-F-B-1	09-Apr-2021	HK2112788-047	1.3	----	----	----	----	----
G1-F-B-2	09-Apr-2021	HK2112788-048	1.6	----	----	----	----	----
G2-F-S-1	09-Apr-2021	HK2112788-049	1.7	----	----	----	----	----
G2-F-S-2	09-Apr-2021	HK2112788-050	1.6	----	----	----	----	----
G2-F-M-1	09-Apr-2021	HK2112788-051	1.7	----	----	----	----	----
G2-F-M-2	09-Apr-2021	HK2112788-052	1.5	----	----	----	----	----
G2-F-B-1	09-Apr-2021	HK2112788-053	1.6	----	----	----	----	----
G2-F-B-2	09-Apr-2021	HK2112788-054	1.5	----	----	----	----	----
C1-F-S-1	09-Apr-2021	HK2112788-055	2.1	----	----	----	----	----
C1-F-S-2	09-Apr-2021	HK2112788-056	1.8	----	----	----	----	----
C1-F-M-1	09-Apr-2021	HK2112788-057	1.6	----	----	----	----	----
C1-F-M-2	09-Apr-2021	HK2112788-058	1.8	----	----	----	----	----
C1-F-B-1	09-Apr-2021	HK2112788-059	1.6	----	----	----	----	----
C1-F-B-2	09-Apr-2021	HK2112788-060	1.5	----	----	----	----	----



Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 3615355)								
HK2112788-001	IM1-E-S-1	EA025: Suspended Solids (SS)	----	0.5	mg/L	2.0	2.5	20.0
HK2112788-013	G1-E-S-1	EA025: Suspended Solids (SS)	----	0.5	mg/L	2.5	2.7	6.70
EA/ED: Physical and Aggregate Properties (QC Lot: 3615356)								
HK2112788-023	G2-E-B-1	EA025: Suspended Solids (SS)	----	0.5	mg/L	1.8	1.7	5.80
HK2112788-033	IM1-F-M-1	EA025: Suspended Solids (SS)	----	0.5	mg/L	0.7	0.9	22.2
EA/ED: Physical and Aggregate Properties (QC Lot: 3615357)								
HK2112788-045	G1-F-M-1	EA025: Suspended Solids (SS)	----	0.5	mg/L	1.0	1.1	0.00
HK2112788-055	C1-F-S-1	EA025: Suspended Solids (SS)	----	0.5	mg/L	2.1	2.2	0.00

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QCLot: 3615355)											
EA025: Suspended Solids (SS)	----	0.5	mg/L	<0.5	20 mg/L	94.0	----	85.9	117	----	----
EA/ED: Physical and Aggregate Properties (QCLot: 3615356)											
EA025: Suspended Solids (SS)	----	0.5	mg/L	<0.5	20 mg/L	99.0	----	85.9	117	----	----
EA/ED: Physical and Aggregate Properties (QCLot: 3615357)											
EA025: Suspended Solids (SS)	----	0.5	mg/L	<0.5	20 mg/L	94.0	----	85.9	117	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.



CERTIFICATE OF ANALYSIS

<i>Client</i>	: ENOVATIVE ENVIRONMENTAL SERVICE LTD	<i>Laboratory</i>	: ALS Technichem (HK) Pty Ltd	<i>Page</i>	: 1 of 5
<i>Contact</i>	: MR THOMAS WONG	<i>Contact</i>	: Richard Fung	<i>Work Order</i>	: HK2113421
<i>Address</i>	: FLAT 2207, YU FUN HSE, YU CHUI COURT, SHATIN, N.T. HONG KONG	<i>Address</i>	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
<i>E-mail</i>	: thomas.wong@eno.com.hk	<i>E-mail</i>	: richard.fung@alsglobal.com		
<i>Telephone</i>	: ----	<i>Telephone</i>	: +852 2610 1044	<i>Date received</i>	: 11-Apr-2021
<i>Facsimile</i>	: ----	<i>Facsimile</i>	: +852 2610 2021	<i>Date of issue</i>	: 14-Apr-2021
<i>Project</i>	: H2H EXPRESS SUBMARINE CABLE			<i>No. of samples</i>	- Received : 56
<i>Order number</i>	: —	<i>Quote number</i>	: HKE/1236/2021		- Analysed : 56
<i>C-O-C number</i>	: —				
<i>Site</i>	: —				

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This document has been signed by those names that appear on this report and are the authorised signatories.

<i>Signatory</i>	<i>Position</i>	<i>Authorised results for:</i>
 Fung Lim Chee, Richard	Managing Director	Inorganics



General Comments

This report supersedes any previous report(s) with this reference. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. Testing period is from 11-Apr-2021 to 14-Apr-2021.

Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific Comments for Work Order HK2113421 :

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.



Analytical Results

Sub-Matrix: MARINE WATER			Compound	EA025: Suspended Solids (SS)	---	---	---	---
			LOR Unit	0.5 mg/L	---	---	---	---
Sample ID	Sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties	---	---	---	---	---
IM1-E-S-1	11-Apr-2021	HK2113421-001	2.0	---	---	---	---	---
IM1-E-S-2	11-Apr-2021	HK2113421-002	2.2	---	---	---	---	---
IM1-E-M-1	11-Apr-2021	HK2113421-003	3.0	---	---	---	---	---
IM1-E-M-2	11-Apr-2021	HK2113421-004	3.4	---	---	---	---	---
IM1-E-B-1	11-Apr-2021	HK2113421-005	4.3	---	---	---	---	---
IM1-E-B-2	11-Apr-2021	HK2113421-006	3.2	---	---	---	---	---
IM2-E-S-1	11-Apr-2021	HK2113421-007	1.6	---	---	---	---	---
IM2-E-S-2	11-Apr-2021	HK2113421-008	1.6	---	---	---	---	---
IM2-E-B-1	11-Apr-2021	HK2113421-011	2.2	---	---	---	---	---
IM2-E-B-2	11-Apr-2021	HK2113421-012	2.1	---	---	---	---	---
G1-E-S-1	11-Apr-2021	HK2113421-013	3.6	---	---	---	---	---
G1-E-S-2	11-Apr-2021	HK2113421-014	3.8	---	---	---	---	---
G1-E-M-1	11-Apr-2021	HK2113421-015	4.3	---	---	---	---	---
G1-E-M-2	11-Apr-2021	HK2113421-016	4.0	---	---	---	---	---
G1-E-B-1	11-Apr-2021	HK2113421-017	5.2	---	---	---	---	---
G1-E-B-2	11-Apr-2021	HK2113421-018	4.9	---	---	---	---	---
G2-E-S-1	11-Apr-2021	HK2113421-019	1.4	---	---	---	---	---
G2-E-S-2	11-Apr-2021	HK2113421-020	2.3	---	---	---	---	---
G2-E-M-1	11-Apr-2021	HK2113421-021	2.6	---	---	---	---	---
G2-E-M-2	11-Apr-2021	HK2113421-022	2.4	---	---	---	---	---
G2-E-B-1	11-Apr-2021	HK2113421-023	2.9	---	---	---	---	---
G2-E-B-2	11-Apr-2021	HK2113421-024	2.4	---	---	---	---	---
C1-E-S-1	11-Apr-2021	HK2113421-025	4.0	---	---	---	---	---
C1-E-S-2	11-Apr-2021	HK2113421-026	3.4	---	---	---	---	---
C1-E-M-1	11-Apr-2021	HK2113421-027	4.5	---	---	---	---	---
C1-E-M-2	11-Apr-2021	HK2113421-028	4.2	---	---	---	---	---
C1-E-B-1	11-Apr-2021	HK2113421-029	5.2	---	---	---	---	---
C1-E-B-2	11-Apr-2021	HK2113421-030	4.9	---	---	---	---	---
IM1-F-S-1	11-Apr-2021	HK2113421-031	3.9	---	---	---	---	---
IM1-F-S-2	11-Apr-2021	HK2113421-032	3.9	---	---	---	---	---
IM1-F-M-1	11-Apr-2021	HK2113421-033	4.3	---	---	---	---	---



Sub-Matrix: MARINE WATER

			<i>Compound</i>	EA025: Suspended Solids (SS)	----	----	----	----
			<i>LOR Unit</i>	0.5 mg/L	----	----	----	----
<i>Sample ID</i>	<i>Sampling date / time</i>	<i>Laboratory sample ID</i>	EA/ED: Physical and Aggregate Properties	----	----	----	----	----
IM1-F-M-2	11-Apr-2021	HK2113421-034	3.8	----	----	----	----	----
IM1-F-B-1	11-Apr-2021	HK2113421-035	4.6	----	----	----	----	----
IM1-F-B-2	11-Apr-2021	HK2113421-036	3.8	----	----	----	----	----
IM2-F-S-1	11-Apr-2021	HK2113421-037	2.4	----	----	----	----	----
IM2-F-S-2	11-Apr-2021	HK2113421-038	2.3	----	----	----	----	----
IM2-F-B-1	11-Apr-2021	HK2113421-041	2.2	----	----	----	----	----
IM2-F-B-2	11-Apr-2021	HK2113421-042	1.8	----	----	----	----	----
G1-F-S-1	11-Apr-2021	HK2113421-043	5.5	----	----	----	----	----
G1-F-S-2	11-Apr-2021	HK2113421-044	4.5	----	----	----	----	----
G1-F-M-1	11-Apr-2021	HK2113421-045	4.3	----	----	----	----	----
G1-F-M-2	11-Apr-2021	HK2113421-046	5.0	----	----	----	----	----
G1-F-B-1	11-Apr-2021	HK2113421-047	4.4	----	----	----	----	----
G1-F-B-2	11-Apr-2021	HK2113421-048	4.8	----	----	----	----	----
G2-F-S-1	11-Apr-2021	HK2113421-049	3.4	----	----	----	----	----
G2-F-S-2	11-Apr-2021	HK2113421-050	2.8	----	----	----	----	----
G2-F-M-1	11-Apr-2021	HK2113421-051	3.2	----	----	----	----	----
G2-F-M-2	11-Apr-2021	HK2113421-052	2.6	----	----	----	----	----
G2-F-B-1	11-Apr-2021	HK2113421-053	2.5	----	----	----	----	----
G2-F-B-2	11-Apr-2021	HK2113421-054	2.5	----	----	----	----	----
C1-F-S-1	11-Apr-2021	HK2113421-055	4.1	----	----	----	----	----
C1-F-S-2	11-Apr-2021	HK2113421-056	4.6	----	----	----	----	----
C1-F-M-1	11-Apr-2021	HK2113421-057	5.0	----	----	----	----	----
C1-F-M-2	11-Apr-2021	HK2113421-058	4.1	----	----	----	----	----
C1-F-B-1	11-Apr-2021	HK2113421-059	4.6	----	----	----	----	----
C1-F-B-2	11-Apr-2021	HK2113421-060	5.5	----	----	----	----	----



Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 3615358)								
HK2113421-001	IM1-E-S-1	EA025: Suspended Solids (SS)	----	0.5	mg/L	2.0	2.8	31.2
HK2113421-013	G1-E-S-1	EA025: Suspended Solids (SS)	----	0.5	mg/L	3.6	4.0	9.77
EA/ED: Physical and Aggregate Properties (QC Lot: 3615359)								
HK2113421-023	G2-E-B-1	EA025: Suspended Solids (SS)	----	0.5	mg/L	2.9	2.7	8.00
HK2113421-033	IM1-F-M-1	EA025: Suspended Solids (SS)	----	0.5	mg/L	4.3	4.5	4.52
EA/ED: Physical and Aggregate Properties (QC Lot: 3615360)								
HK2113421-045	G1-F-M-1	EA025: Suspended Solids (SS)	----	0.5	mg/L	4.3	5.1	16.0
HK2113421-055	C1-F-S-1	EA025: Suspended Solids (SS)	----	0.5	mg/L	4.1	4.6	12.0

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QCLot: 3615358)											
EA025: Suspended Solids (SS)	----	0.5	mg/L	<0.5	20 mg/L	102	----	85.9	117	----	----
EA/ED: Physical and Aggregate Properties (QCLot: 3615359)											
EA025: Suspended Solids (SS)	----	0.5	mg/L	<0.5	20 mg/L	108	----	85.9	117	----	----
EA/ED: Physical and Aggregate Properties (QCLot: 3615360)											
EA025: Suspended Solids (SS)	----	0.5	mg/L	<0.5	20 mg/L	98.0	----	85.9	117	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.



CERTIFICATE OF ANALYSIS

<i>Client</i>	: ENOVATIVE ENVIRONMENTAL SERVICE LTD	<i>Laboratory</i>	: ALS Technichem (HK) Pty Ltd	<i>Page</i>	: 1 of 5
<i>Contact</i>	: MR THOMAS WONG	<i>Contact</i>	: Richard Fung	<i>Work Order</i>	: HK2113422
<i>Address</i>	: FLAT 2207, YU FUN HSE, YU CHUI COURT, SHATIN, N.T. HONG KONG	<i>Address</i>	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
<i>E-mail</i>	: thomas.wong@eno.com.hk	<i>E-mail</i>	: richard.fung@alsglobal.com		
<i>Telephone</i>	: ----	<i>Telephone</i>	: +852 2610 1044	<i>Date received</i>	: 13-Apr-2021
<i>Facsimile</i>	: ----	<i>Facsimile</i>	: +852 2610 2021	<i>Date of issue</i>	: 16-Apr-2021
<i>Project</i>	: H2H EXPRESS SUBMARINE CABLE			<i>No. of samples</i>	- Received : 56
<i>Order number</i>	: —	<i>Quote number</i>	: HKE/1236/2021		- Analysed : 56
<i>C-O-C number</i>	: —				
<i>Site</i>	: —				

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This document has been signed by those names that appear on this report and are the authorised signatories.

Signatory

Position

Authorised results for:

Fung Lim Chee, Richard

Managing Director

Inorganics



General Comments

This report supersedes any previous report(s) with this reference. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. Testing period is from 13-Apr-2021 to 16-Apr-2021.

Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific Comments for Work Order HK2113422 :

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.



Analytical Results

Sub-Matrix: MARINE WATER			Compound	EA025: Suspended Solids (SS)	---	---	---	---
			LOR Unit	0.5 mg/L	---	---	---	---
Sample ID	Sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties	---	---	---	---	---
IM1-E-S-1	13-Apr-2021	HK2113422-001	3.2	---	---	---	---	---
IM1-E-S-2	13-Apr-2021	HK2113422-002	2.9	---	---	---	---	---
IM1-E-M-1	13-Apr-2021	HK2113422-003	3.0	---	---	---	---	---
IM1-E-M-2	13-Apr-2021	HK2113422-004	2.6	---	---	---	---	---
IM1-E-B-1	13-Apr-2021	HK2113422-005	2.9	---	---	---	---	---
IM1-E-B-2	13-Apr-2021	HK2113422-006	2.7	---	---	---	---	---
IM2-E-S-1	13-Apr-2021	HK2113422-007	2.4	---	---	---	---	---
IM2-E-S-2	13-Apr-2021	HK2113422-008	2.8	---	---	---	---	---
IM2-E-B-1	13-Apr-2021	HK2113422-011	2.3	---	---	---	---	---
IM2-E-B-2	13-Apr-2021	HK2113422-012	2.0	---	---	---	---	---
G1-E-S-1	13-Apr-2021	HK2113422-013	1.8	---	---	---	---	---
G1-E-S-2	13-Apr-2021	HK2113422-014	1.8	---	---	---	---	---
G1-E-M-1	13-Apr-2021	HK2113422-015	1.3	---	---	---	---	---
G1-E-M-2	13-Apr-2021	HK2113422-016	1.3	---	---	---	---	---
G1-E-B-1	13-Apr-2021	HK2113422-017	1.4	---	---	---	---	---
G1-E-B-2	13-Apr-2021	HK2113422-018	1.2	---	---	---	---	---
G2-E-S-1	13-Apr-2021	HK2113422-019	2.6	---	---	---	---	---
G2-E-S-2	13-Apr-2021	HK2113422-020	2.1	---	---	---	---	---
G2-E-M-1	13-Apr-2021	HK2113422-021	2.1	---	---	---	---	---
G2-E-M-2	13-Apr-2021	HK2113422-022	2.0	---	---	---	---	---
G2-E-B-1	13-Apr-2021	HK2113422-023	1.9	---	---	---	---	---
G2-E-B-2	13-Apr-2021	HK2113422-024	1.8	---	---	---	---	---
C1-E-S-1	13-Apr-2021	HK2113422-025	1.6	---	---	---	---	---
C1-E-S-2	13-Apr-2021	HK2113422-026	1.8	---	---	---	---	---
C1-E-M-1	13-Apr-2021	HK2113422-027	2.2	---	---	---	---	---
C1-E-M-2	13-Apr-2021	HK2113422-028	1.8	---	---	---	---	---
C1-E-B-1	13-Apr-2021	HK2113422-029	2.6	---	---	---	---	---
C1-E-B-2	13-Apr-2021	HK2113422-030	2.7	---	---	---	---	---
IM1-F-S-1	13-Apr-2021	HK2113422-031	2.5	---	---	---	---	---
IM1-F-S-2	13-Apr-2021	HK2113422-032	2.3	---	---	---	---	---
IM1-F-M-1	13-Apr-2021	HK2113422-033	2.2	---	---	---	---	---



Sub-Matrix: MARINE WATER

			<i>Compound</i>	EA025: Suspended Solids (SS)	----	----	----	----
			<i>LOR Unit</i>	0.5 mg/L	----	----	----	----
<i>Sample ID</i>	<i>Sampling date / time</i>	<i>Laboratory sample ID</i>	EA/ED: Physical and Aggregate Properties	----	----	----	----	----
IM1-F-M-2	13-Apr-2021	HK2113422-034	2.0	----	----	----	----	----
IM1-F-B-1	13-Apr-2021	HK2113422-035	2.0	----	----	----	----	----
IM1-F-B-2	13-Apr-2021	HK2113422-036	2.3	----	----	----	----	----
IM2-F-S-1	13-Apr-2021	HK2113422-037	1.9	----	----	----	----	----
IM2-F-S-2	13-Apr-2021	HK2113422-038	1.7	----	----	----	----	----
IM2-F-B-1	13-Apr-2021	HK2113422-041	1.6	----	----	----	----	----
IM2-F-B-2	13-Apr-2021	HK2113422-042	2.6	----	----	----	----	----
G1-F-S-1	13-Apr-2021	HK2113422-043	2.4	----	----	----	----	----
G1-F-S-2	13-Apr-2021	HK2113422-044	2.0	----	----	----	----	----
G1-F-M-1	13-Apr-2021	HK2113422-045	2.4	----	----	----	----	----
G1-F-M-2	13-Apr-2021	HK2113422-046	1.9	----	----	----	----	----
G1-F-B-1	13-Apr-2021	HK2113422-047	2.3	----	----	----	----	----
G1-F-B-2	13-Apr-2021	HK2113422-048	2.0	----	----	----	----	----
G2-F-S-1	13-Apr-2021	HK2113422-049	4.7	----	----	----	----	----
G2-F-S-2	13-Apr-2021	HK2113422-050	5.6	----	----	----	----	----
G2-F-M-1	13-Apr-2021	HK2113422-051	5.2	----	----	----	----	----
G2-F-M-2	13-Apr-2021	HK2113422-052	4.9	----	----	----	----	----
G2-F-B-1	13-Apr-2021	HK2113422-053	5.0	----	----	----	----	----
G2-F-B-2	13-Apr-2021	HK2113422-054	4.2	----	----	----	----	----
C1-F-S-1	13-Apr-2021	HK2113422-055	3.2	----	----	----	----	----
C1-F-S-2	13-Apr-2021	HK2113422-056	3.2	----	----	----	----	----
C1-F-M-1	13-Apr-2021	HK2113422-057	3.2	----	----	----	----	----
C1-F-M-2	13-Apr-2021	HK2113422-058	3.3	----	----	----	----	----
C1-F-B-1	13-Apr-2021	HK2113422-059	5.4	----	----	----	----	----
C1-F-B-2	13-Apr-2021	HK2113422-060	5.2	----	----	----	----	----



Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 3620563)								
HK2113422-001	IM1-E-S-1	EA025: Suspended Solids (SS)	----	0.5	mg/L	3.2	3.1	3.98
HK2113422-013	G1-E-S-1	EA025: Suspended Solids (SS)	----	0.5	mg/L	1.8	1.4	27.2
EA/ED: Physical and Aggregate Properties (QC Lot: 3620564)								
HK2113422-023	G2-E-B-1	EA025: Suspended Solids (SS)	----	0.5	mg/L	1.9	2.2	16.0
HK2113422-033	IM1-F-M-1	EA025: Suspended Solids (SS)	----	0.5	mg/L	2.2	2.0	7.14
EA/ED: Physical and Aggregate Properties (QC Lot: 3620565)								
HK2113422-045	G1-F-M-1	EA025: Suspended Solids (SS)	----	0.5	mg/L	2.4	2.3	5.29
HK2113422-055	C1-F-S-1	EA025: Suspended Solids (SS)	----	0.5	mg/L	3.2	3.4	5.28

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QCLot: 3620563)											
EA025: Suspended Solids (SS)	----	0.5	mg/L	<0.5	20 mg/L	102	----	85.9	117	----	----
EA/ED: Physical and Aggregate Properties (QCLot: 3620564)											
EA025: Suspended Solids (SS)	----	0.5	mg/L	<0.5	20 mg/L	110	----	85.9	117	----	----
EA/ED: Physical and Aggregate Properties (QCLot: 3620565)											
EA025: Suspended Solids (SS)	----	0.5	mg/L	<0.5	20 mg/L	104	----	85.9	117	----	----

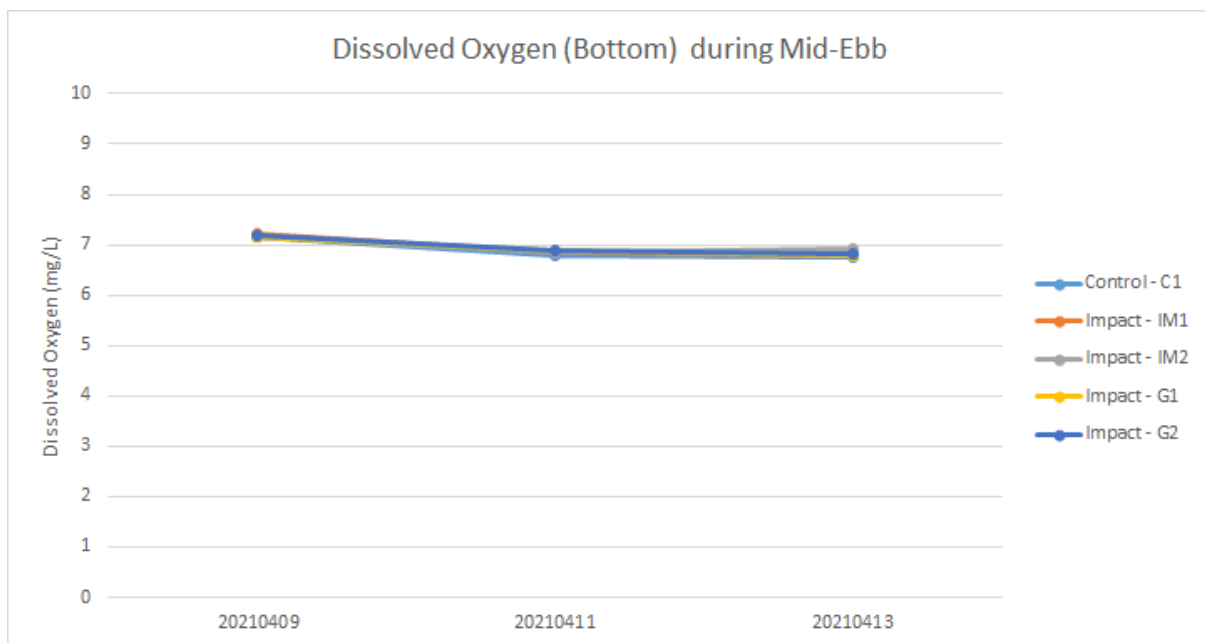
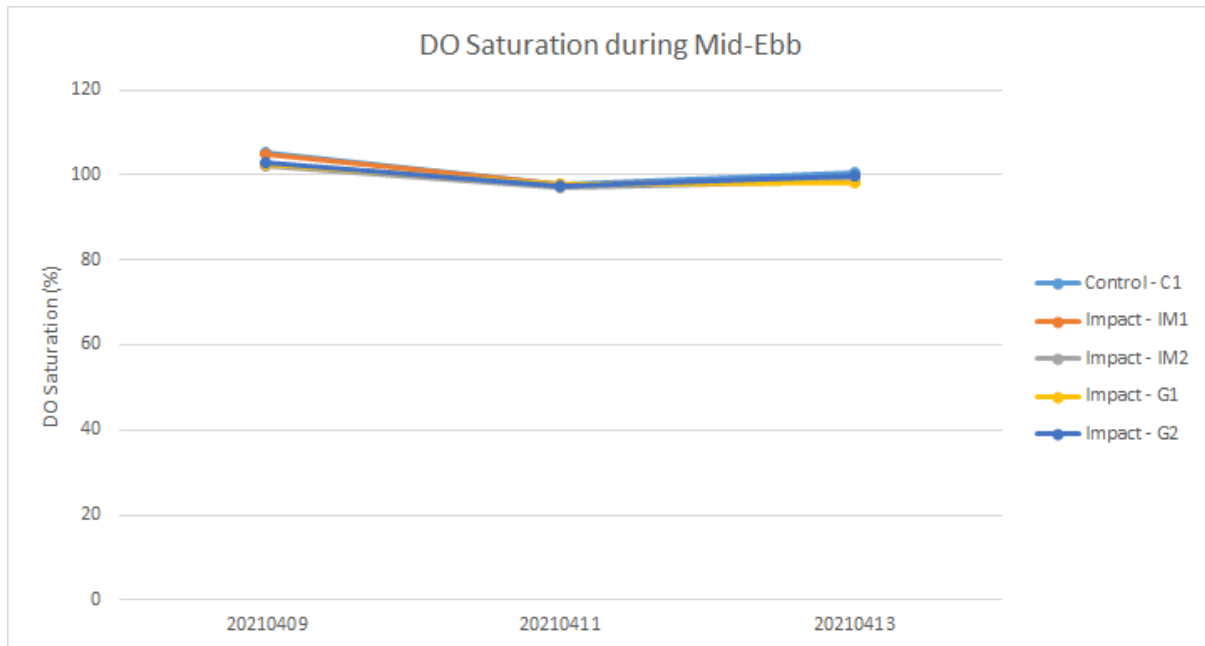
Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

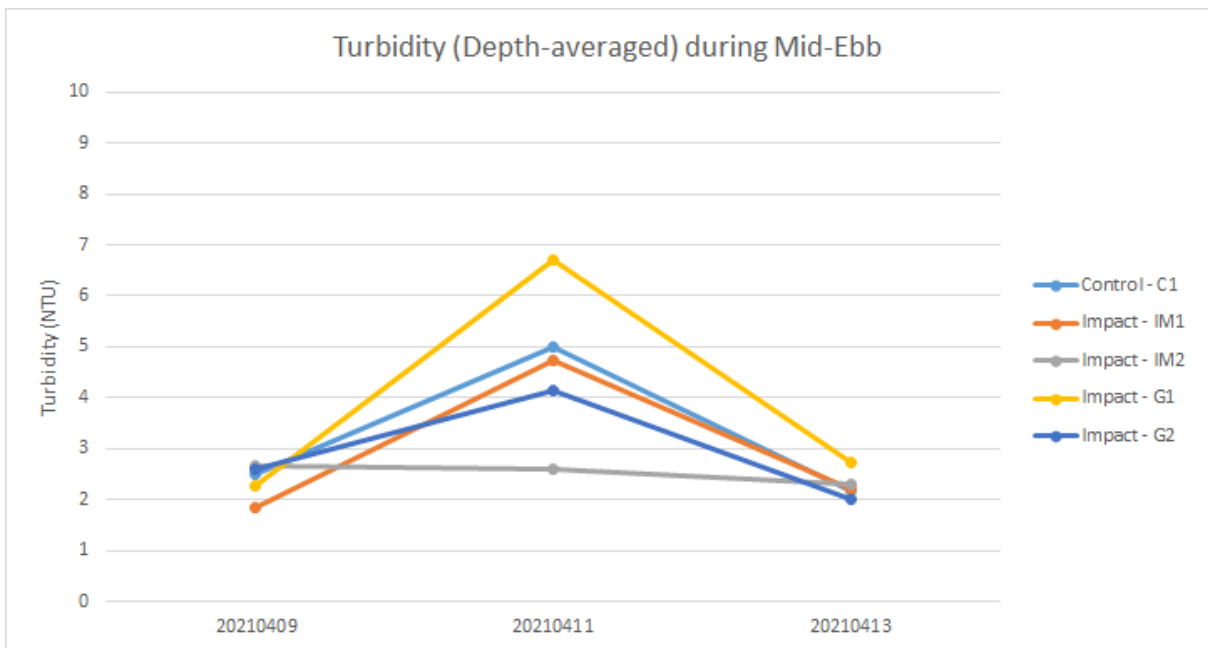
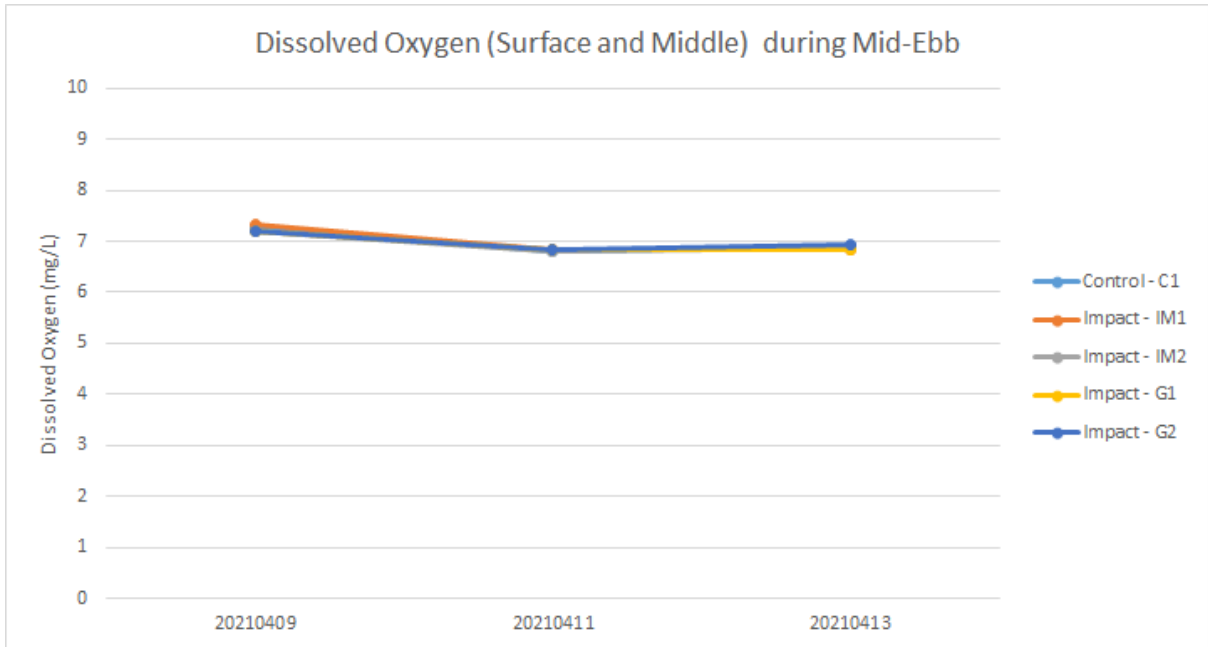
- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.

**APPENDIX D IMPACT WATER QUALITY MONITORING RESULTS (ZONE
A)**

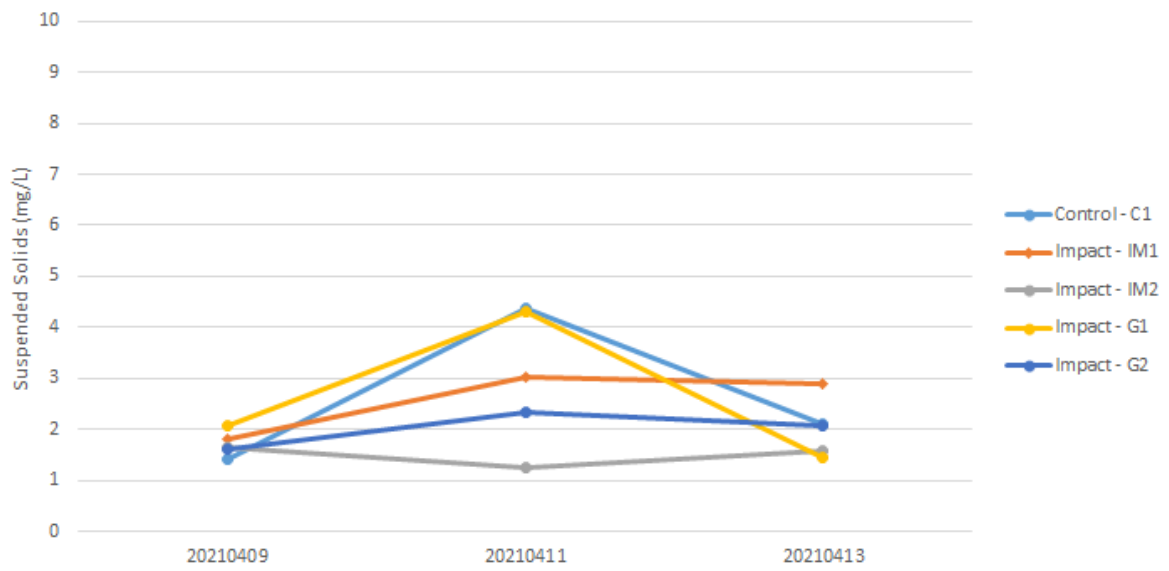
Graphical presentation of the impact monitoring (week 1) result for Zone A

During Mid-Ebb

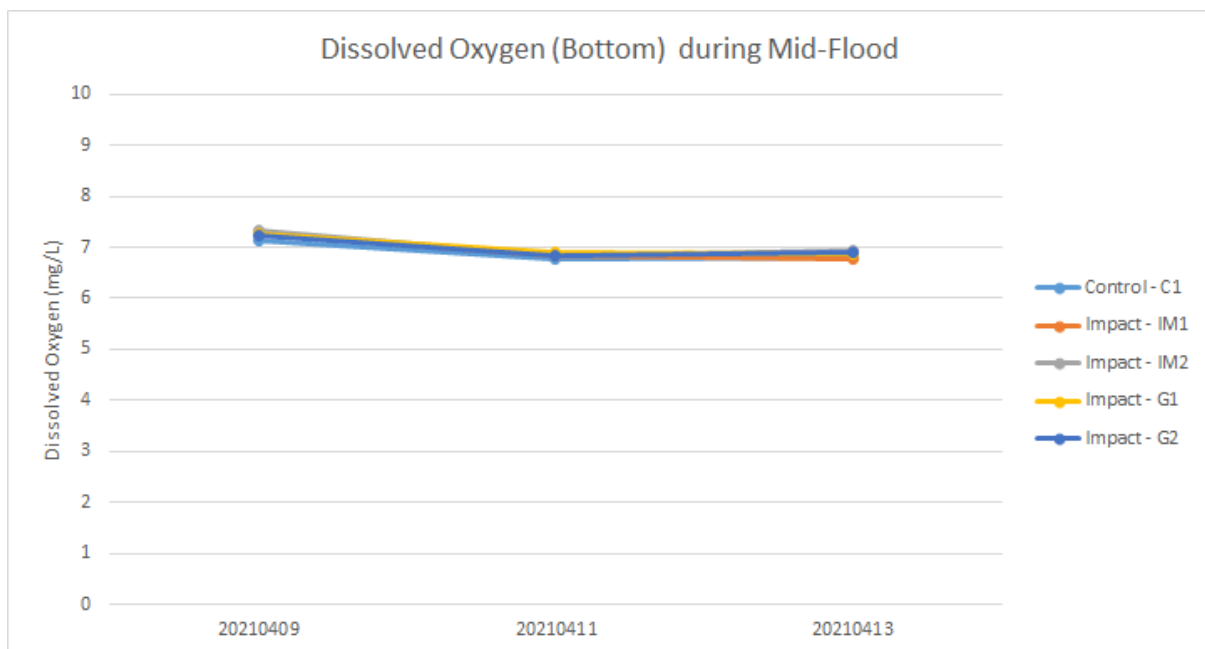
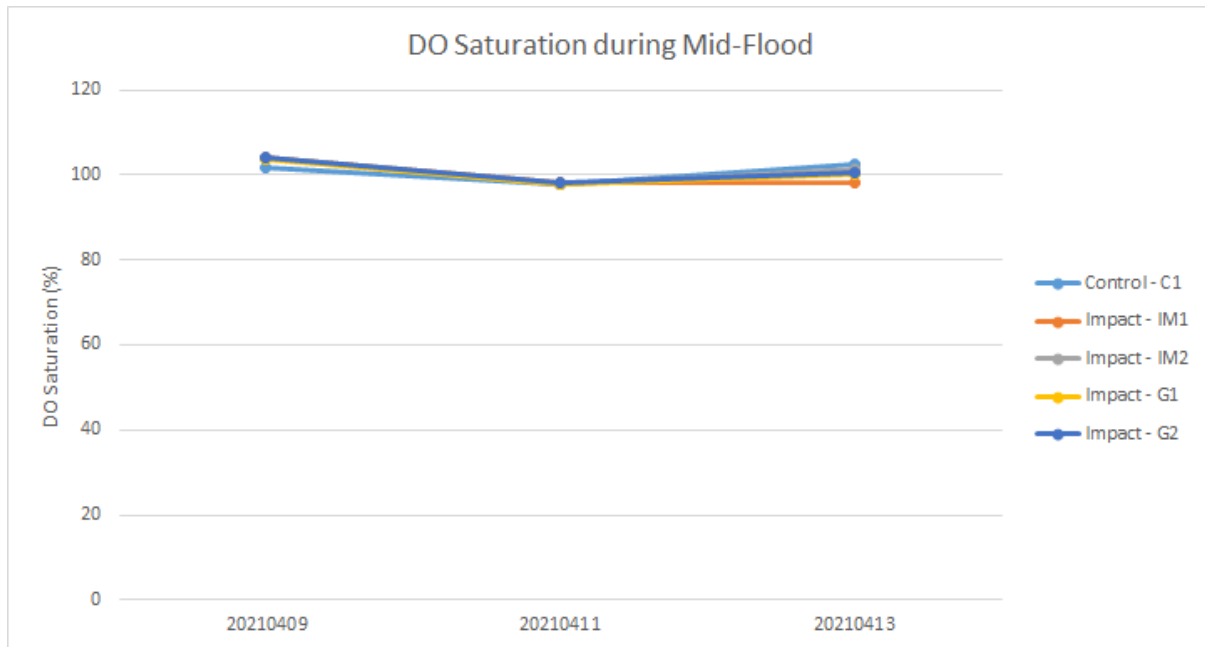


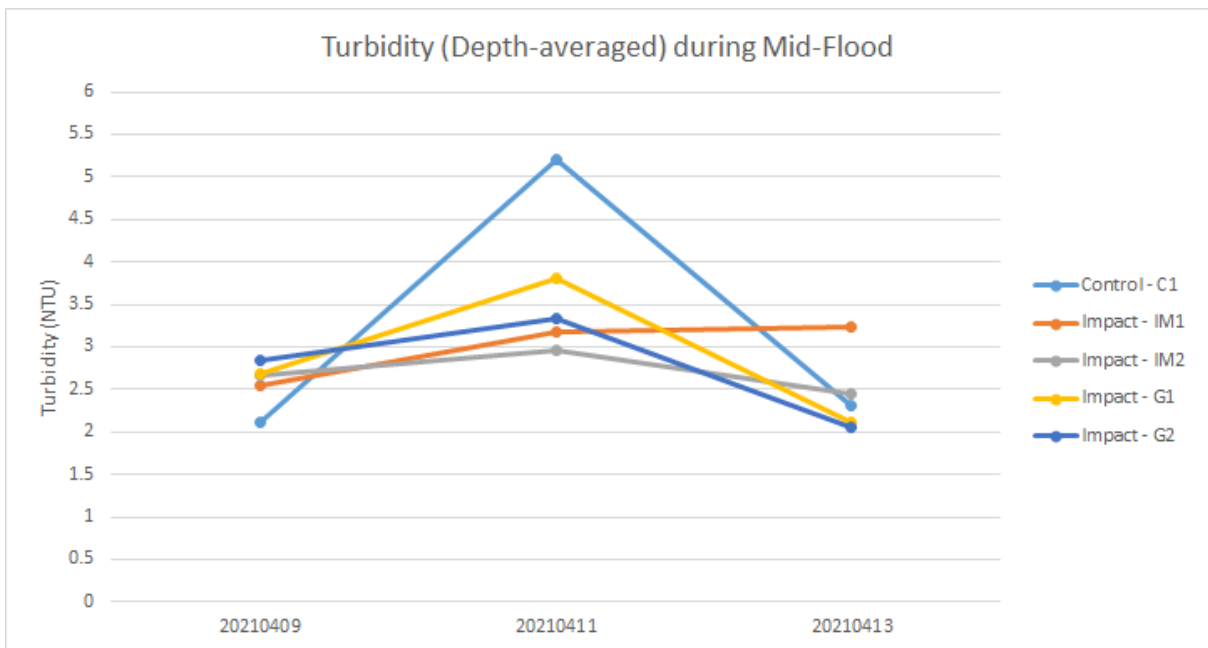
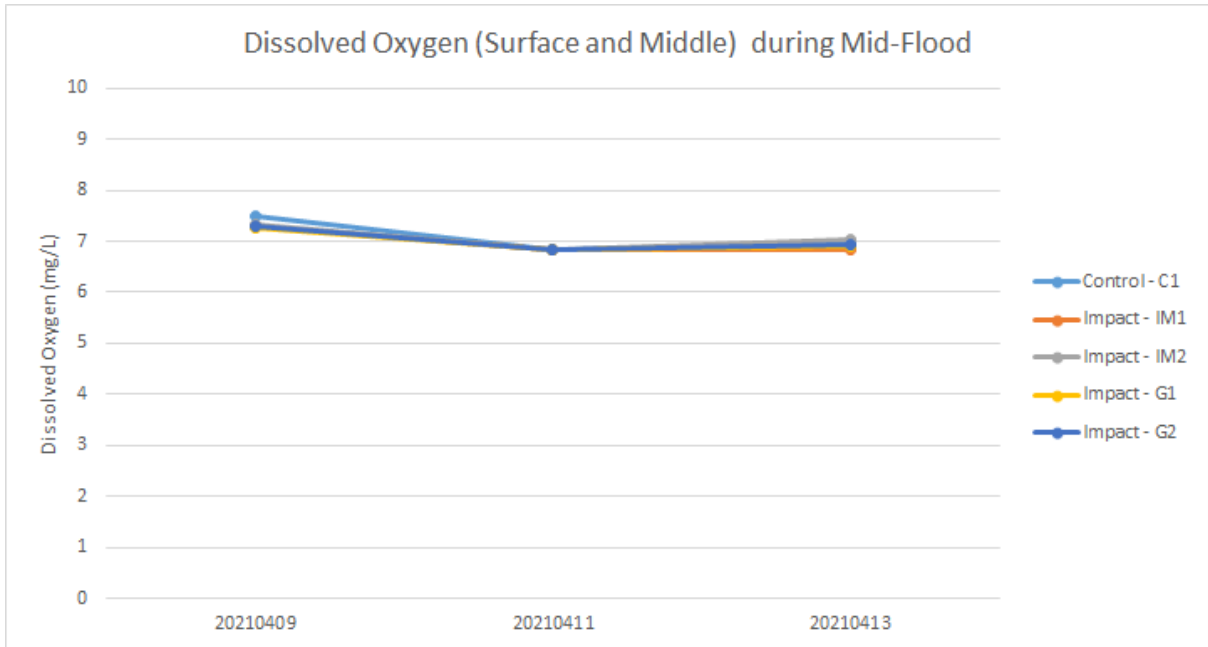


Suspended Solids (Depth-averaged) during Mid-Ebb

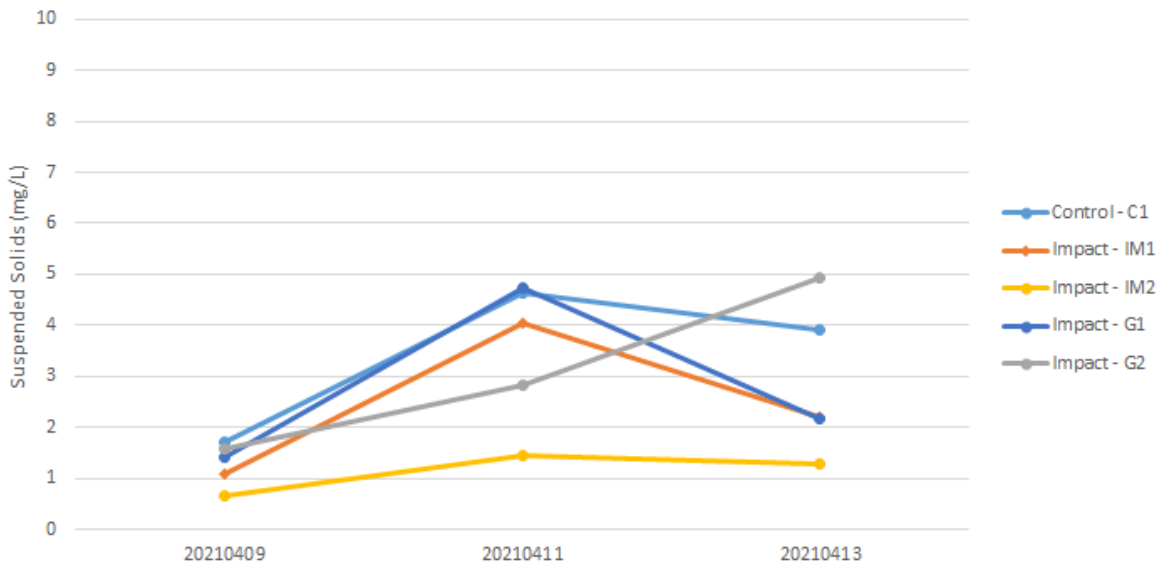


During Mid-Flood





Suspended Solids (Depth-averaged) during Mid-Flood



Water Quality Monitoring Data Log Sheet

9-Apr-2021

Tide: Mid-Ebb

Monitoring Station	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Depth Level ***	Current Velocity (m/s)	Current Direction	Temperature (°C)		Salinity (ppt)		pH		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			Suspended Solids (mg/L)				
								Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
C1	Cloudy	Rough	12:34	21.2	S	0.29	204	23.3	23.3	34.01	34.01	8.14	8.14	105.1	105.1	7.38	7.38	7.28	1.91	1.91	2.51	1.5	1.4	1.4	
						0.30	208	23.3		34.01		8.14		105.1		7.37			1.90			1.2			
					M	0.35	155	23.2	23.2	34.06	34.06	8.12	8.12	102.3	102.3	7.18	7.18		2.26	2.27		2.28	1.4		1.2
						0.36	163	23.2		34.06		8.12		102.3		7.18			2.28			1.0			
					B	0.14	154	23.2	23.2	34.07	34.07	8.10	8.10	101.9	102.0	7.16	7.16		3.40	3.35		3.30	1.5		1.8
						0.15	169	23.2		34.07		8.10		102.0		7.16			3.30			2.0			
IM1	Cloudy	Rough	12:22	20.1	S	0.30	250	23.2	23.2	34.00	34.00	8.14	8.14	104.7	104.7	7.35	7.35	7.31	1.61	1.62	1.87	2.0	2.0	1.8	
						0.32	262	23.2		34.00		8.14		104.7		7.35			1.62			1.9			
					M	0.26	166	23.2	23.2	34.00	34.00	8.13	8.13	103.6	103.6	7.28	7.28		1.79	1.80		1.81	2.1		2.0
						0.27	171	23.2		34.00		8.13		103.5		7.27			1.81			1.8			
					B	0.26	202	23.2	23.2	34.01	34.01	8.12	8.12	102.9	102.9	7.23	7.23		2.17	2.18		2.19	1.6		1.6
						0.28	212	23.2		34.01		8.12		102.9		7.23			2.19			1.5			
IM2	Cloudy	Calm	12:02	5.8	S	0.03	289	23.2	23.2	34.04	34.04	8.10	8.10	102.3	102.3	7.19	7.19	7.19	2.33	2.34	2.66	2.4	2.4	2.5	
						0.03	294	23.2		34.04		8.10		102.3		7.19			2.34			2.3			
					M	0.00	0		-		-		-		-		-			-					
						0.00	0																		
					B	0.02	90	23.2	23.2	34.04	34.04	8.09	8.09	101.8	101.9	7.16	7.17		2.95	2.99		3.02	3.0		2.6
						0.02	91	23.2		34.04		8.09		102.0		7.17			3.02			2.2			
G1	Cloudy	Moderate	12:15	17.6	S	0.38	260	23.1	23.1	34.04	34.04	8.14	8.14	102.6	102.6	7.21	7.21	7.19	2.08	2.09	2.29	2.5	2.4	2.1	
						0.42	266	23.1		34.04		8.14		102.5		7.21			2.09			2.2			
					M	0.22	247	23.1	23.1	34.04	34.04	8.13	8.13	102.0	102.0	7.17	7.17		2.16	2.18		2.19	2.0		1.9
						0.23	254	23.1		34.04		8.13		102.0		7.17			2.19			1.8			
					B	0.12	256	23.1	23.1	34.04	34.04	8.12	8.12	101.5	101.5	7.14	7.14		2.58	2.60		2.62	2.1		2.0
						0.12	263	23.1		34.04		8.12		101.5		7.14			2.62			1.9			
G2	Cloudy	Moderate	12:08	10	S	0.20	231	23.2	23.2	34.05	34.05	8.13	8.13	102.7	102.7	7.22	7.22	7.21	2.36	2.36	2.61	1.4	1.4	1.6	
						0.22	250	23.2		34.05		8.13		102.7		7.22			2.35			1.4			
					M	0.08	242	23.2	23.2	34.06	34.06	8.13	8.13	102.4	102.4	7.20	7.20		2.46	2.48		2.49	1.7		1.8
						0.08	244	23.2		34.06		8.13		102.4		7.20			2.49			1.8			
					B	0.04	277	23.1	23.1	34.06	34.06	8.12	8.12	102.2	102.2	7.19	7.19		2.93	3.00		3.06	1.8		1.7
						0.04	297	23.1		34.06		8.12		102.2		7.19			3.06			1.6			

Remark: * DA: Depth-Averaged

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Note: Exceedance of 95th / 99th-percentile of baseline data or 120% / 130% of control station results are underlined. Exceedance of 95th / 99th-percentile of baseline data at control station is not considered.

Water Quality Monitoring Data Log Sheet

9-Apr-2021

Tide: Mid-Flood

Monitoring Station	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Depth Level ***	Current Velocity (m/s)	Current Direction	Temperature (°C)		Salinity (ppt)		pH		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			Suspended Solids (mg/L)			
								Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Cloudy	Rough	15:15	23.3	S	0.21	248	23.3	23.3	33.91	33.91	8.17	8.17	101.7	101.7	7.67	7.67	7.48	1.42	1.42	2.12	2.1	2.0	1.7
						0.22	270	23.3		33.91		8.17		101.7		7.67			1.41			1.8		
					M	0.19	287	23.2	23.2	34.02	34.02	8.15	8.15	101.7	101.7	7.29	7.29		1.75	1.76		1.6	1.7	
						0.20	305	23.2		34.02		8.15		101.7		7.29			1.76					
					B	0.08	226	23.2	23.2	34.06	34.06	8.12	8.12	101.7	101.7	7.14	7.14		3.18	3.20		1.6	1.6	
						0.08	237	23.2		34.06		8.12		101.7		7.14			3.21			1.5		
IM1	Cloudy	Rough	15:05	21.3	S	0.22	279	23.2	23.2	34.05	34.05	8.14	8.14	103.9	103.9	7.30	7.30	7.28	2.10	2.11	2.55	0.6	0.9	1.1
						0.24	298	23.2		34.05		8.14		103.9		7.30			2.11			1.1		
					M	0.13	292	23.2	23.2	34.05	34.05	8.13	8.13	103.4	103.4	7.26	7.26		2.13	2.14		0.7	1.1	
						0.13	315	23.2		34.05		8.13		103.4		7.26			2.14			1.5		
					B	0.14	272	23.2	23.2	34.05	34.05	8.12	8.12	103.4	103.5	7.26	7.27		3.40	3.41		1.0	1.3	
						0.15	282	23.2		34.05		8.12		103.5		7.27			3.41			1.6		
IM2	Cloudy	Calm	14:44	5.9	S	0.03	208	23.2	23.2	34.04	34.04	8.11	8.11	104.2	104.2	7.32	7.32	7.32	2.46	2.49	2.67	0.8	0.7	1.0
						0.03	221	23.2		34.04		8.11		104.2		7.32			2.52			0.6		
					M	0.00	0		-		-		-		-		-			-			-	
						0.00	0																	
					B	0.03	128	23.2	23.2	34.05	34.05	8.11	8.11	104.3	104.4	7.33	7.34		2.88	2.84		1.0	1.4	
						0.03	133	23.2		34.05		8.11		104.4		7.34			2.80			1.7		
G1	Cloudy	Rough	14:58	17	S	0.05	287	23.2	23.2	34.05	34.05	8.12	8.12	103.7	103.6	7.28	7.28	7.25	2.27	2.30	2.68	1.5	1.5	1.4
						0.05	290	23.2		34.05		8.12		103.5		7.27			2.32			1.4		
					M	0.14	288	23.2	23.2	34.06	34.06	8.11	8.11	102.9	102.9	7.23	7.23		2.74	2.77		1.0	1.4	
						0.15	288	23.2		34.06		8.10		102.9		7.23			2.80			1.7		
					B	0.06	276	23.2	23.2	34.05	34.05	8.10	8.10	103.3	103.4	7.26	7.26		2.95	2.97		1.3	1.5	
						0.06	278	23.2		34.05		8.10		103.4		7.26			2.98			1.6		
G2	Cloudy	Moderate	14:48	10.3	S	0.16	182	23.2	23.2	34.05	34.05	8.14	8.14	104.1	104.1	7.31	7.31	7.29	2.13	2.13	2.85	1.7	1.7	1.6
						0.16	189	23.2		34.05		8.14		104.1		7.31			2.12			1.6		
					M	0.07	159	23.2	23.2	34.05	34.05	8.13	8.13	103.5	103.5	7.27	7.27		2.36	2.42		1.7	1.6	
						0.07	160	23.2		34.05		8.13		103.4		7.26			2.48			1.5		
					B	0.05	183	23.2	23.2	34.05	34.05	8.12	8.12	103.1	103.1	7.24	7.24		3.96	4.00		1.6	1.6	
						0.05	191	23.2		34.05		8.12		103.1		7.24			4.03			1.5		

Remark: * DA: Depth-Averaged

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Note: Exceedance of 95th / 99th-percentile of baseline data or 120% / 130% of control station results are underlined. Exceedance of 95th / 99th-percentile of baseline data at control station is not considered.

Water Quality Monitoring Data Log Sheet

11-Apr-2021

Tide: Mid-Ebb

Monitoring Station	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Depth Level ***	Current Velocity (m/s)	Current Direction	Temperature (°C)		Salinity (ppt)		pH		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			Suspended Solids (mg/L)				
								Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
C1	Cloudy	Rough	10:18	23.8	S	1.38	29	23.0	23.0	35.30	35.30	8.10	8.10	97.7	97.7	6.84	6.84	6.82	3.12	3.19	5.01	4.0	3.7	4.4	
						1.45	29	23.0	35.30	8.10	97.7	6.84	3.25	3.4											
					M	3.57	36	23.0	23.0	35.30	35.30	8.09	8.09	97.0	97.0	6.79	6.79		6.82	4.57		4.54	4.5		4.4
						3.90	36	23.0	35.30	8.09	97.0	6.79	4.50	4.2											
					B	3.87	39	23.0	23.0	35.28	35.28	8.09	8.09	96.9	96.9	6.78	6.78		6.82	7.58		7.31	5.2		5.1
						4.10	42	23.0	35.28	8.09	96.9	6.78	7.03	4.9											
IM1	Cloudy	Rough	10:30	20.9	S	4.15	200	23.0	23.0	35.24	35.24	8.09	8.09	97.8	97.8	6.84	6.84	6.83	2.90	2.92	4.73	2.0	2.1	3.0	
						4.24	214	23.0	35.24	8.09	97.7	6.84	2.93	2.2											
					M	4.28	199	23.0	23.0	35.28	35.28	8.07	8.07	97.3	97.3	6.81	6.81		6.83	4.68		4.77	3.0		3.2
						4.30	212	23.0	35.28	8.07	97.3	6.81	4.86	3.4											
					B	4.41	199	23.0	23.0	35.27	35.27	8.06	8.06	97.8	97.9	6.85	6.86		6.83	6.49		6.50	4.3		3.8
						4.43	209	23.0	35.27	8.06	98.0	6.86	6.51	3.2											
IM2	Cloudy	Rough	10:59	5.9	S	2.85	342	22.9	22.9	35.22	35.22	8.06	8.06	97.0	97.0	6.80	6.81	6.81	2.50	2.52	2.61	1.6	1.6	1.9	
						3.00	346	22.9	35.22	8.06	97.0	6.81	2.54	1.6											
					M	0.00	0	-	-	-	-	-	-	-	-	-	-		6.81	-		-	-		-
						0.00	0	-	-	-	-	-	-	-	-	-	-		6.81	-		-	-		-
					B	2.62	342	22.8	22.8	35.21	35.22	8.06	8.06	97.6	97.6	6.85	6.86		6.81	2.70		2.71	2.2		2.2
						2.75	314.64	22.8	35.22	8.06	97.6	6.86	2.71	2.1											
G1	Cloudy	Rough	10:40	17.8	S	2.70	25	23.0	23.0	35.28	35.28	8.07	8.07	97.7	97.7	6.84	6.84	6.83	3.48	3.50	6.72	3.6	3.7	4.3	
						2.89	25	23.0	35.28	8.07	97.7	6.84	3.52	3.8											
					M	3.01	27	23.0	23.0	35.29	35.29	8.05	8.05	97.4	97.4	6.82	6.82		6.83	6.79		6.90	4.3		4.2
						3.04	28	23.0	35.28	8.05	97.4	6.82	7.00	4.0											
					B	2.92	29	23.0	23.0	35.27	35.27	8.05	8.05	98.5	98.6	6.90	6.90		6.83	9.81		9.76	5.2		5.1
						2.94	31	23.0	35.27	8.05	98.6	6.90	9.71	4.9											
G2	Cloudy	Rough	10:52	9.4	S	2.85	176	23.0	23.0	35.25	35.25	8.04	8.04	97.4	97.4	6.82	6.82	6.82	2.93	3.01	4.13	1.4	1.9	2.3	
						2.96	190	23.0	35.25	8.04	97.4	6.82	3.09	2.3											
					M	2.81	175	23.0	23.0	35.26	35.26	8.03	8.03	97.4	97.5	6.82	6.83		6.82	4.46		4.49	2.6		2.5
						2.96	180	23.0	35.26	8.03	97.5	6.83	4.51	2.4											
					B	2.87	176	23.0	23.0	35.25	35.25	8.03	8.03	98.2	98.3	6.88	6.89		6.82	4.84		4.90	2.9		2.7
						2.91	182	23.0	35.25	8.02	98.3	6.89	4.95	2.4											

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Note: Exceedance of 95th / 99th-percentile of baseline data or 120% / 130% of control station results are underlined. Exceedance of 95th / 99th-percentile of baseline data at control station is not considered.

Water Quality Monitoring Data Log Sheet

11-Apr-2021

Tide: Mid-Flood

Monitoring Station	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Depth Level ***	Current Velocity (m/s)	Current Direction	Temperature (°C)		Salinity (ppt)		pH		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			Suspended Solids (mg/L)					
								Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*		
C1	Cloudy	Rough	16:32	23.4	S	3.52	34	23.0	23.0	<u>35.32</u>	35.32	8.11	8.11	97.9	97.9	<u>6.85</u>	6.85	6.83	3.29	3.29	5.21	4.1	4.4	4.7		
						3.82	35	23.0		<u>35.32</u>		8.11		97.9		<u>6.85</u>			3.29			4.6				
					M	4.14	38	23.0	23.0	<u>35.32</u>	35.32	8.12	8.12	97.1	97.1	<u>6.80</u>	6.80		3.80	3.88		3.80	3.88		5.0	4.6
						4.47	40	23.0		<u>35.32</u>		8.12		97.1		<u>6.80</u>			3.96			4.1				
					B	4.08	37	23.0	23.0	<u>35.32</u>	35.32	8.16	8.17	96.9	96.9	<u>6.78</u>	6.79		8.45	8.47		8.45	8.47		4.6	5.1
						4.34	39	23.0		<u>35.32</u>		8.17		96.9		<u>6.79</u>			8.48			5.5				
IM1	Cloudy	Rough	16:48	20.5	S	2.32	68	23.1	23.1	<u>35.24</u>	35.24	8.09	8.09	98.2	98.2	<u>6.87</u>	6.87	6.85	2.52	2.57	3.17	3.9	3.9	4.1		
						2.37	69	23.1		<u>35.24</u>		8.09		98.2		<u>6.87</u>			2.61			3.9				
					M	3.55	70	23.0	23.0	<u>35.27</u>	35.27	8.08	8.08	97.6	97.6	<u>6.83</u>	6.83		3.26	3.29		3.26	3.29		4.3	4.1
						3.87	74	23.0		<u>35.27</u>		8.08		97.6		<u>6.83</u>			3.32			3.8				
					B	3.47	70	23.0	23.0	<u>35.27</u>	35.27	8.07	8.07	97.5	97.6	<u>6.82</u>	6.83		3.67	3.67		3.67	3.67		4.6	4.2
						3.80	70	23.0		<u>35.27</u>		8.07		97.6		<u>6.83</u>			3.66			3.8				
IM2	Cloudy	Moderate	17:11	5.8	S	2.72	247	23.1	23.1	<u>35.25</u>	35.25	8.07	8.07	97.7	97.7	<u>6.83</u>	6.83	6.83	2.37	2.46	2.96	2.4	2.4	2.2		
						2.74	260	23.1		<u>35.25</u>		8.07		97.6		<u>6.83</u>			2.54			2.3				
					M	0.00	0		-		-		-		-		-			-			-			-
						0.00	0																			
					B	2.62	248	22.9	22.9	<u>35.23</u>	35.23	8.07	8.07	97.6	97.7	<u>6.84</u>	6.85		3.49	3.47		3.49	3.47		2.2	2.0
						2.77	248	22.9		<u>35.23</u>		8.07		97.8		<u>6.86</u>			3.44			1.8				
G1	Cloudy	Rough	16:55	17.9	S	2.49	55	23.0	23.0	<u>35.28</u>	35.28	8.08	8.08	97.8	97.8	<u>6.84</u>	6.84	6.84	3.54	3.58	3.80	5.5	5.0	4.8		
						2.73	56	23.0		<u>35.28</u>		8.08		97.8		<u>6.84</u>			3.62			4.5				
					M	2.97	56	23.0	23.0	<u>35.28</u>	35.28	8.07	8.07	97.6	97.6	<u>6.83</u>	6.83		3.91	3.91		3.91	3.91		4.3	4.7
						3.12	57	23.0		<u>35.28</u>		8.07		97.6		<u>6.83</u>			3.90			5.0				
					B	3.34	59	23.0	23.0	<u>35.27</u>	35.27	8.06	8.06	98.4	98.5	<u>6.88</u>	6.89		3.91	3.91		3.91	3.91		4.4	4.6
						3.41	61	23.0		<u>35.27</u>		8.06		98.5		<u>6.89</u>			3.91			4.8				
G2	Cloudy	Moderate	17:05	9.7	S	2.28	18	23.1	23.1	<u>35.26</u>	35.26	8.09	8.09	98.4	98.4	<u>6.88</u>	6.88	6.85	2.34	2.36	3.33	3.4	3.1	2.8		
						2.43	18	23.0		<u>35.26</u>		8.09		98.3		<u>6.87</u>			2.37			2.8				
					M	2.36	18	23.0	23.0	<u>35.27</u>	35.27	8.08	8.08	97.6	97.6	<u>6.83</u>	6.83		2.98	3.09		2.98	3.09		3.2	2.9
						2.58	18	23.0		<u>35.27</u>		8.08		97.5		<u>6.82</u>			3.20			2.6				
					B	2.23	15	23.0	23.0	<u>35.27</u>	35.27	8.08	8.08	97.4	97.5	<u>6.82</u>	6.83		4.52	4.53		4.52	4.53		2.5	2.5
						2.38	16	23.0		<u>35.27</u>		8.08		97.6		<u>6.84</u>			4.54			2.5				

Remark: * DA: Depth-Averaged

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

Note: Exceedance of 95th / 99th-percentile of baseline data or 120% / 130% of control station results are underlined. Exceedance of 95th / 99th-percentile of baseline data at control station is not considered.

Water Quality Monitoring Data Log Sheet

13-Apr-2021

Tide: Mid-Ebb

Monitoring Station	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Depth Level ***	Current Velocity (m/s)	Current Direction	Temperature (°C)		Salinity (ppt)		pH		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			Suspended Solids (mg/L)								
								Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*					
C1	Sunny	Rough	11:15	24	S	0.16	73	23.5	23.5	34.95	34.95	8.10	8.10	100.7	100.7	7.00	7.00	6.91	1.11	1.12	2.17	1.6	1.7	2.1					
						0.16	77	23.5		34.95		8.10		100.6		7.00			1.13			1.8							
					M	0.22	351	23.2	23.2	35.22	35.22	8.11	8.11	97.6	97.6	6.81	6.81		2.15	2.15		2.2	2.0		2.2	2.7	2.2	2.7	
						0.23	322.92	23.2		35.22		8.11		97.6		6.81			2.14			1.8							
					B	0.27	347	23.2	23.2	35.20	35.20	8.13	8.13	96.8	96.9	6.76	6.76		3.18	3.24		2.6	2.7		2.6	2.7	2.6	2.7	
						0.28	319.24	23.2		35.20		8.13		96.9		6.76			3.29			2.7							
IM1	Sunny	Rough	11:21	20.2	S	0.11	210	23.4	23.4	35.10	35.10	8.08	8.08	98.6	98.6	<u>6.86</u>	<u>6.86</u>	6.85	1.87	1.88	2.22	3.2	3.1	2.9					
						0.11	218	23.4		35.10		8.08		98.6		<u>6.86</u>			1.89			2.9							
					M	0.04	345	23.2	23.2	35.23	35.23	8.09	8.09	98.1	98.1	<u>6.84</u>	<u>6.84</u>		2.11	2.10		3.0	2.8		3.0	2.8	3.0	2.8	
						0.04	317.4	23.2		35.22		8.09		98.1		<u>6.84</u>			2.09			2.6							
					B	0.10	324	23.2	23.2	35.26	35.26	8.09	8.09	97.2	97.2	<u>6.78</u>	<u>6.78</u>		2.68	2.68		2.9	2.8		2.9	2.8	2.9	2.8	
						0.11	329	23.2		35.26		8.09		97.2		<u>6.78</u>			2.68			2.7							
IM2	Sunny	Calm	11:52	5.5	S	0.07	65	23.5	23.5	35.13	35.14	8.10	8.10	98.6	98.6	<u>6.85</u>	<u>6.86</u>	6.86	1.69	1.73	2.30	2.4	2.6	2.4					
						0.07	67	23.4		35.15		8.10		98.6		<u>6.86</u>			1.76			2.8							
					M	0.00	0		-		-		-		-		-			-			-			-		-	
						0.00	0																						
					B	0.03	352	23.3	23.3	35.26	35.26	8.12	8.12	99.4	99.4	6.92	6.92		2.79	2.87		2.3	2.2		2.3	2.2	2.3	2.2	
						0.03	359	23.3		35.26		8.12		99.4		6.92			2.95			2.0							
G1	Sunny	Moderate	11:29	17.2	S	0.28	81	23.3	23.3	35.22	35.22	8.08	8.08	98.3	98.3	<u>6.85</u>	<u>6.85</u>	6.83	2.25	2.27	2.74	1.8	1.8	1.5					
						0.31	82	23.3		35.22		8.08		98.3		<u>6.85</u>			2.29			1.8							
					M	0.27	71	23.2	23.2	35.24	35.24	8.08	8.08	97.7	97.7	<u>6.81</u>	<u>6.81</u>		2.67	2.65		1.3	1.3		2.67	1.3	1.3	1.3	
						0.27	73	23.2		35.24		8.08		97.7		<u>6.81</u>			2.63			1.3							
					B	0.26	70	23.2	23.2	35.25	35.25	8.08	8.08	97.3	97.3	<u>6.79</u>	<u>6.79</u>		3.42	3.31		1.4	1.3		3.42	1.3	1.4	1.3	
						0.27	71	23.2		35.25		8.08		97.3		<u>6.79</u>			3.20			1.2							
G2	Sunny	Moderate	11:59	9.1	S	0.13	351	23.5	23.5	35.13	35.13	8.10	8.10	99.8	99.9	<u>6.94</u>	<u>6.94</u>	6.92	1.77	1.77	2.00	2.6	2.4	2.1					
						0.13	322.92	23.5		35.13		8.10		99.9		<u>6.94</u>			1.76			2.1							
					M	0.05	18	23.3	23.3	35.14	35.15	8.11	8.11	99.2	99.2	<u>6.91</u>	<u>6.91</u>		1.73	1.76		2.1	2.1		1.73	1.76	2.1	2.1	
						0.05	18	23.3		35.15		8.11		99.1		<u>6.90</u>			1.78			2.0							
					B	0.04	5	23.3	23.3	35.20	35.20	8.11	8.11	98.1	98.1	<u>6.84</u>	<u>6.84</u>		2.47	2.49		1.9	1.9		2.47	2.49	1.9	1.9	
						0.04	5	23.3		35.20		8.11		98.0		<u>6.83</u>			2.51			1.8							

Remark: * DA: Depth-Averaged

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

Note: Exceedance of 95th / 99th-percentile of baseline data or 120% / 130% of control station results are underlined. Exceedance of 95th / 99th-percentile of baseline data at control station is not considered.

Water Quality Monitoring Data Log Sheet

13-Apr-2021

Tide: Mid-Flood

Monitoring Station	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Depth Level ***	Current Velocity (m/s)	Current Direction	Temperature (°C)		Salinity (ppt)		pH		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			Suspended Solids (mg/L)								
								Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*					
C1	Fine	Moderate	18:17	24	S	0.34	140	23.8	23.8	35.03	35.03	8.12	8.12	102.6	102.6	7.09	7.09	6.96	1.14	1.14	2.31	3.2	3.2	3.9					
						0.37	148	23.8		35.03		8.12		102.6		7.09			1.14			3.2							
					M	0.40	138	23.3	23.3	35.22	35.22	8.14	8.14	98.1	98.1	6.84	6.84		2.62	2.61		2.60	3.2		3.3	3.3	5.4	5.3	
						0.41	147	23.3		35.22		8.14		98.1		6.83			2.60			3.3							
					B	0.33	135	23.3	23.3	35.24	35.24	8.21	8.22	97.6	97.6	6.80	6.80		3.20	3.18		3.16	5.4		5.3	5.2			
						0.35	138	23.3		35.24		8.22		97.6		6.80			3.16			5.2							
IM1	Fine	Moderate	18:16	20	S	0.11	348	23.4	23.4	35.19	35.19	8.09	8.09	98.4	98.4	<u>6.85</u>	<u>6.85</u>	6.84	3.24	3.23	3.24	2.5	2.4	2.2					
						0.12	320.16	23.3		35.19		8.09		98.3		<u>6.85</u>			3.22			2.3							
					M	0.06	328	23.3	23.3	35.22	35.22	8.10	8.10	97.9	97.9	<u>6.82</u>	<u>6.82</u>		3.21	3.22		3.22	2.2		2.1	2.0	2.0		
						0.07	342	23.3		35.22		8.10		97.9		<u>6.82</u>			3.22			2.0							
					B	0.10	15	23.2	23.2	35.24	35.24	8.12	8.12	97.2	97.3	<u>6.78</u>	<u>6.78</u>		3.27	3.28		3.28	2.0		2.2	2.3			
						0.11	15	23.2		35.24		8.12		97.3		<u>6.78</u>			3.28			2.3							
IM2	Fine	Moderate	17:30	5.5	S	0.02	6	23.6	23.6	35.11	35.11	8.10	8.10	101.2	101.3	7.02	7.03	7.03	1.67	1.67	2.45	1.9	1.8	2.0					
						0.02	6	23.6		35.11		8.10		101.3		7.03			1.66			1.7							
					M	0.00	0		-		-		-		-		-			-									
						0.00	0																						
					B	0.03	347	23.4	23.4	35.20	35.20	8.11	8.11	99.7	99.7	6.93	6.93		3.21	3.23		3.25	1.6		2.1	2.6			
						0.03	9	23.4		35.20		8.11		99.7		6.93			3.25			2.6							
G1	Fine	Moderate	17:57	17.2	S	0.32	172	23.6	23.6	35.20	35.20	8.08	8.08	100.2	100.2	<u>6.94</u>	<u>6.94</u>	6.91	1.96	1.96	2.10	2.4	2.2	2.2					
						0.34	182	23.6		35.20		8.08		100.1		<u>6.94</u>			1.96			2.0							
					M	0.37	167	23.3	23.3	35.22	35.22	8.08	8.08	98.6	98.6	<u>6.87</u>	<u>6.87</u>		2.04	2.04		2.04	2.4		2.2	1.9	2.2		
						0.39	178	23.3		35.22		8.08		98.6		<u>6.87</u>			2.04			1.9							
					B	0.29	157	23.2	23.2	35.24	35.24	8.08	8.08	98.2	98.3	<u>6.85</u>	<u>6.86</u>		2.31	2.31		2.31	2.3		2.2	2.0			
						0.30	162	23.2		35.23		8.08		98.4		<u>6.86</u>			2.31			2.0							
G2	Fine	Moderate	17:46	8	S	0.32	172	23.8	23.8	35.12	35.14	8.10	8.10	100.8	100.6	<u>6.97</u>	<u>6.96</u>	6.94	1.59	1.59	2.06	4.7	5.2	4.9					
						0.33	175	23.7		35.15		8.10		100.4		<u>6.95</u>			1.58			5.6							
					M	0.37	167	23.4	23.4	35.20	35.21	8.11	8.11	99.4	99.4	<u>6.91</u>	<u>6.91</u>		2.00	2.05		2.10	5.2		5.1	4.9			
						0.39	174	23.4		35.21		8.11		99.4		<u>6.91</u>			2.10			4.9							
					B	0.29	157	23.4	23.4	35.24	35.24	8.12	8.12	99.4	99.4	6.91	6.91		2.55	2.53		2.51	5.0		4.6	4.2			
						0.30	171	23.4		35.24		8.12		99.4		6.91			2.51			4.2							

Remark: * DA: Depth-Averaged

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

Note: Exceedance of 95th / 99th-percentile of baseline data or 120% / 130% of control station results are underlined. Exceedance of 95th / 99th-percentile of baseline data at control station is not considered.

APPENDIX E COMPLAINT INTERIM REPORTS



ERM-Hong Kong, Limited

**ENVIRONMENTAL PERMIT EP-575/2020
H2H EXPRESS SUBMARINE CABLE**

Environmental Complaint

Complaint Interim Report

Our ref: 0586211_IR001_lighting&noise complaint (for8Apr2021).DOC

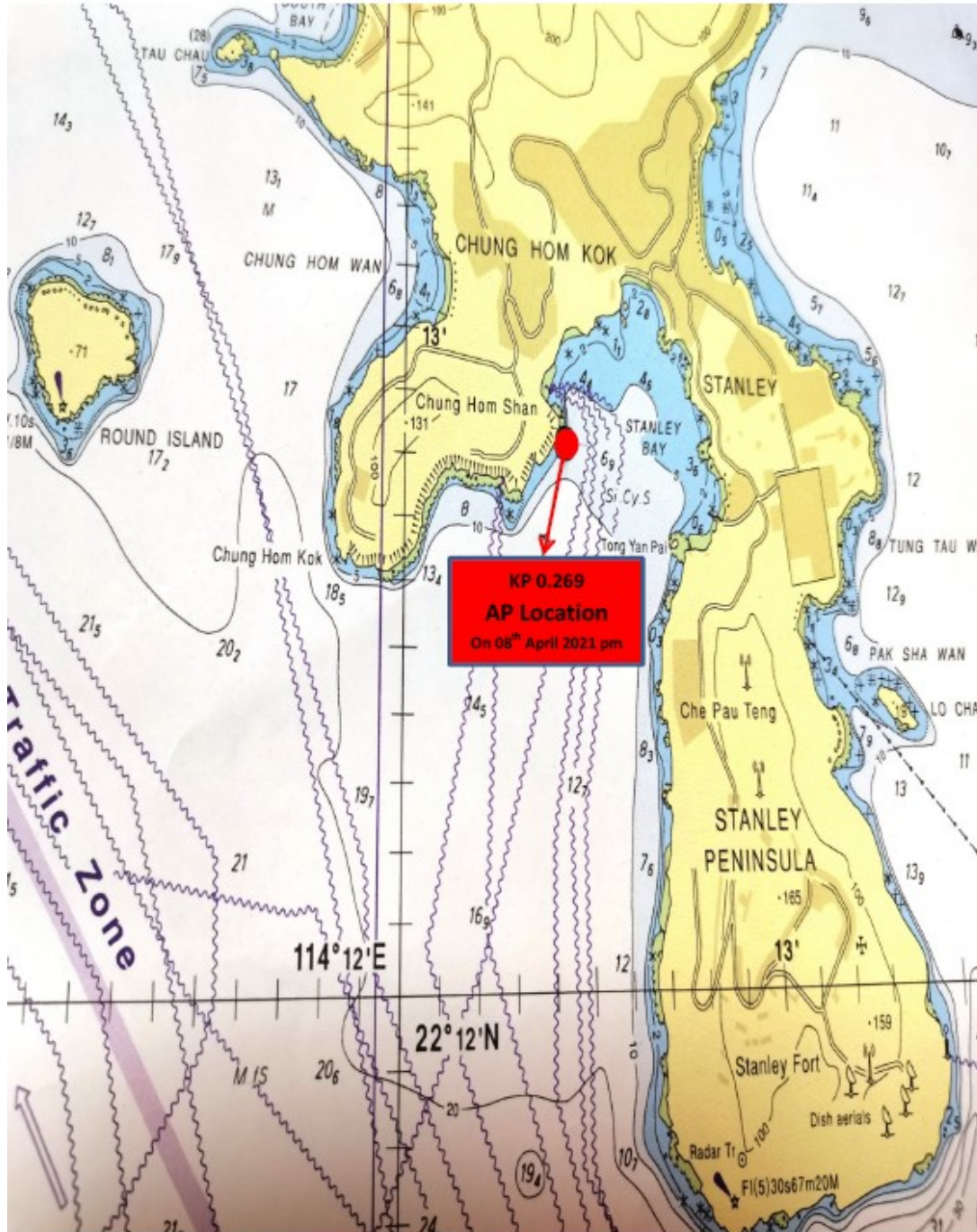
Date of Complaint	8 April 2021
Date of EPD Notification to IEC	12 April 2021
Complaint Reference	H2HE_IR001
Description of the Complaint	A complaint from a resident was made to EPD on 8 April 2021 about noise and strong lighting from working barge / vessels at the sea area near Chung Hom Kok for a duration until midnight.
Possible reason(s) for the Complaint	The resident may have been referring to the standard lighting which must be switched on when the cable barge (Asean Protector) is stationary or moving, as a safety requirement to alert other passing vessels.
Work details	<p>Potential Noise:</p> <ul style="list-style-type: none">• Preparation and installation of cable landing works on 8 Apr 2021 commenced at 0800hr; the cable vessel was stationary and stand down at 1900hr, at KP 0.269 (refer to <i>Appendix A</i>).• Preparation and beach works at landing point in Chung Hom Kok on 8 Apr. 2021 commenced at 0830hr; beach works were completed for the day at 1720hr when the team departed from the beach.• No works were carried out and no machinery in operation at the cable barge or at the beach after 1900hr.• Others: standard noise level generated in the switch room by generator for standard lighting during night-time period. <p>Lighting:</p> <ul style="list-style-type: none">• The cable barge (Asean Protector) uses standard lighting during night-time period; no extra lighting has been used by the cable barge (refer to <i>Appendix B</i>).• As a safety requirement, all the lights must be switched on throughout the night for warning to other passing vessels while it is on stationary position or moving.• The standard lighting used is the same for all working barges.
Actions Taken / To Be Taken	<ul style="list-style-type: none">• IEC and ET notified the client and contractor immediately regarding the received complaint• It is suggested that lightings on cable barge (Asean Protector) could be dimmed / reduce the amount of lighting used during night-time period as far as possible.• ET to submit a Complaint Interim Report to EPD within 7 working days• The ET to ensure EP conditions are complied with during construction and installation operations
Remarks	This report has been verified IEC on 20 April 2021.

Prepared by: Mandy TO, ET Leader

Date: 20 April 2021

APPENDIX A

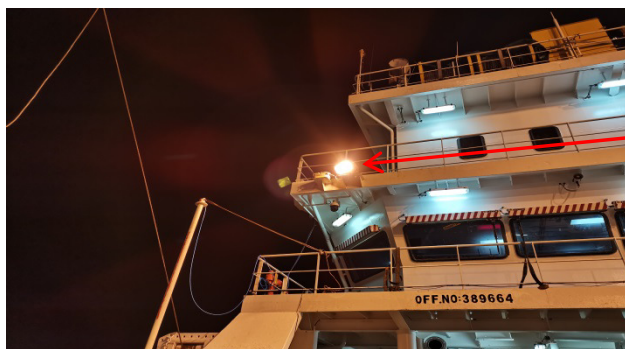
**LOCATION OF CABLE INSTALLATION BARGE AT KP0.269
AT 1900 HR ON 8 APRIL 2021**



APPENDIX B

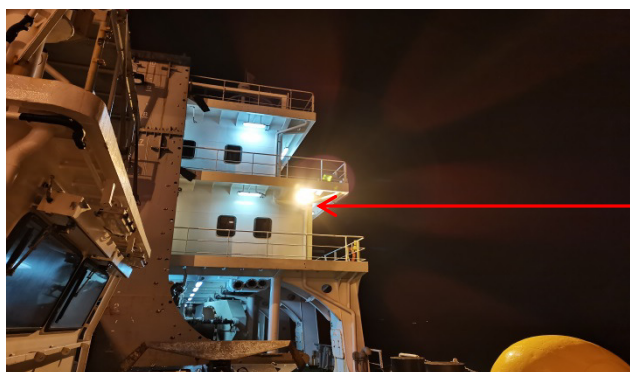
**PHOTOS AND DESCRIPTIONS OF STANDARD LIGHTING ON
THE CABLE INSTALLATION BARGE**

ASEAN PROTECTOR MAIN LIGHTING PATTERN (FLOOD LIGHTS)



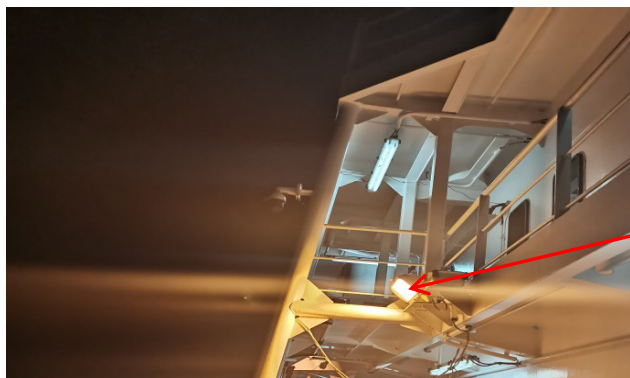
1. Starboard forward 2nd deck accommodation

1pc sodium light 400 watt facing 45 ° to starboard main deck



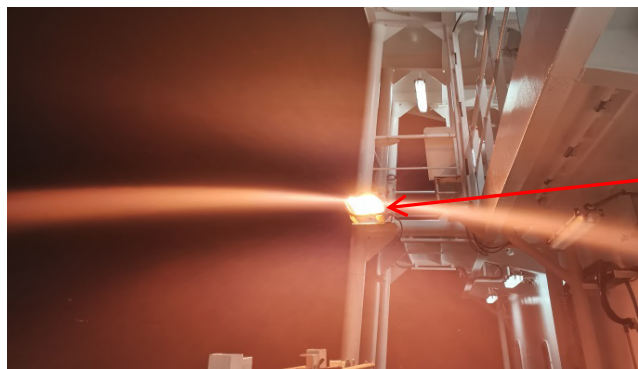
2. Port forward 2nd deck accommodation

1pc sodium light 400 watt facing 45 ° to port main deck



3. Starboard middle 2nd deck accommodation

1pc sodium light 400 watt facing 45 ° to starboard liferaft station



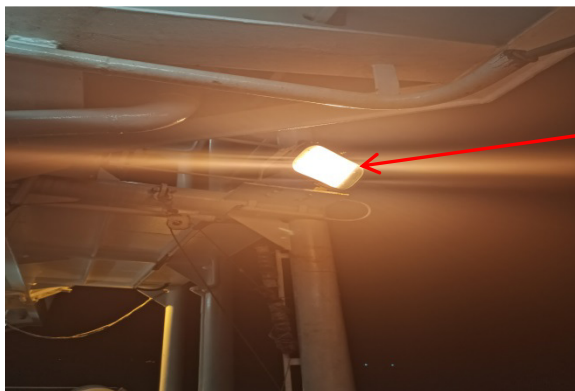
4. Starboard middle 2nd deck accommodation

1pc sodium light 400 watt facing 45 ° to starboard accommodation ladder



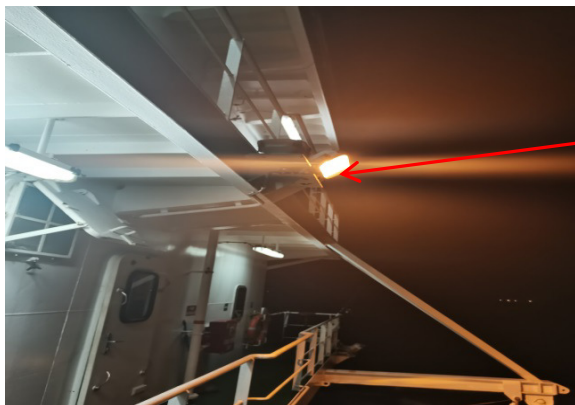
5. Port middle 2nd deck accommodation

1pc sodium light 400 watt facing 45 ° to port liferaft station



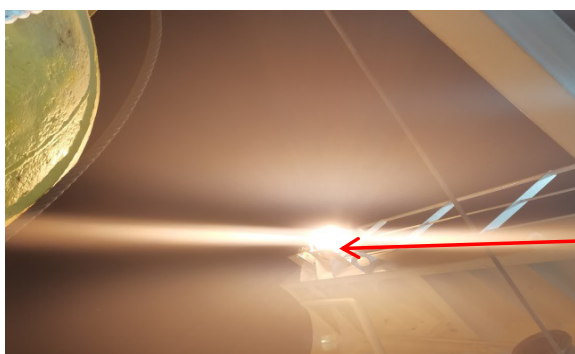
6. Port middle 2nd deck accommodation

1pc sodium light 400 watt facing 45 ° to port accommodation ladder



7. Aft middle 2nd deck accommodation

1pc sodium light type 400 watt facing 45 ° to stern of barge



8. Port Aft 1st deck accommodation

1pc sodium light type 250 watt facing 45 ° to No.4 port aft anchor station



9. Starboard Aft 1st deck accommodation

1pc sodium light type 250 watt facing 45 ° to No.3 starboard aft anchor station



10. Aft Cable Tower

2pcs sodium light type 1000 watt facing 45 ° to port main deck and aft cable tank



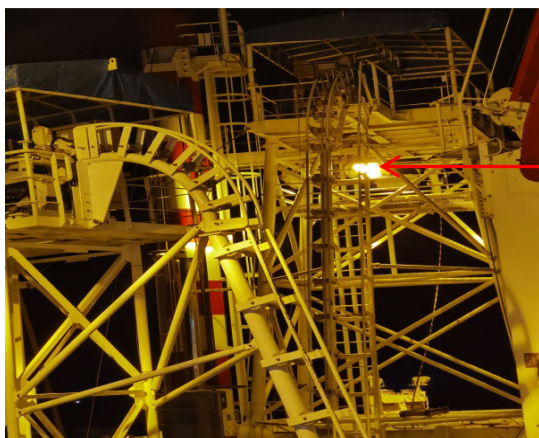
11. Aft Cable Tower

1pc sodium light type 1000 watt facing 45 ° to middle of main deck



12. Aft Cable Tower

1pc sodium light type 1000 watt and 1pc 400 watt facing 45 ° to starboard main deck



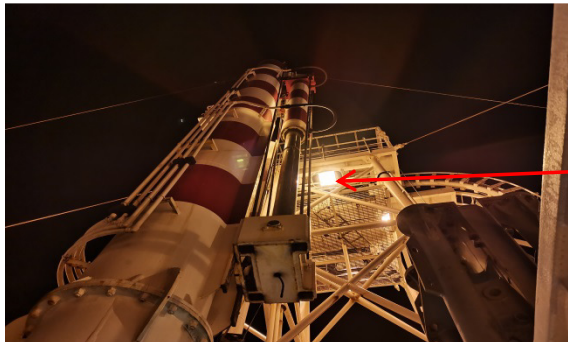
13. Forward Cable Tower

1pc sodium light type 1000 watt facing 45 ° to middle of main deck



14. Forward Cable Tower

1pc sodium light type 1000 watt facing 45 ° to forward cable tank



15. Forward Cable Tower

1pc sodium light type 1000 watt facing 45 ° to forward port main deck



16. Forward Cable Tower

1pc sodium light type 1000 watt facing 45 ° to forward starbord main deck



17. Forward Cable Tank

2pcs sodium light type 250 watt facing 45 ° to No.1 and No.2 forward anchor station



ERM-Hong Kong, Limited

**ENVIRONMENTAL PERMIT EP-575/2020
H2H EXPRESS SUBMARINE CABLE**

Environmental Complaint

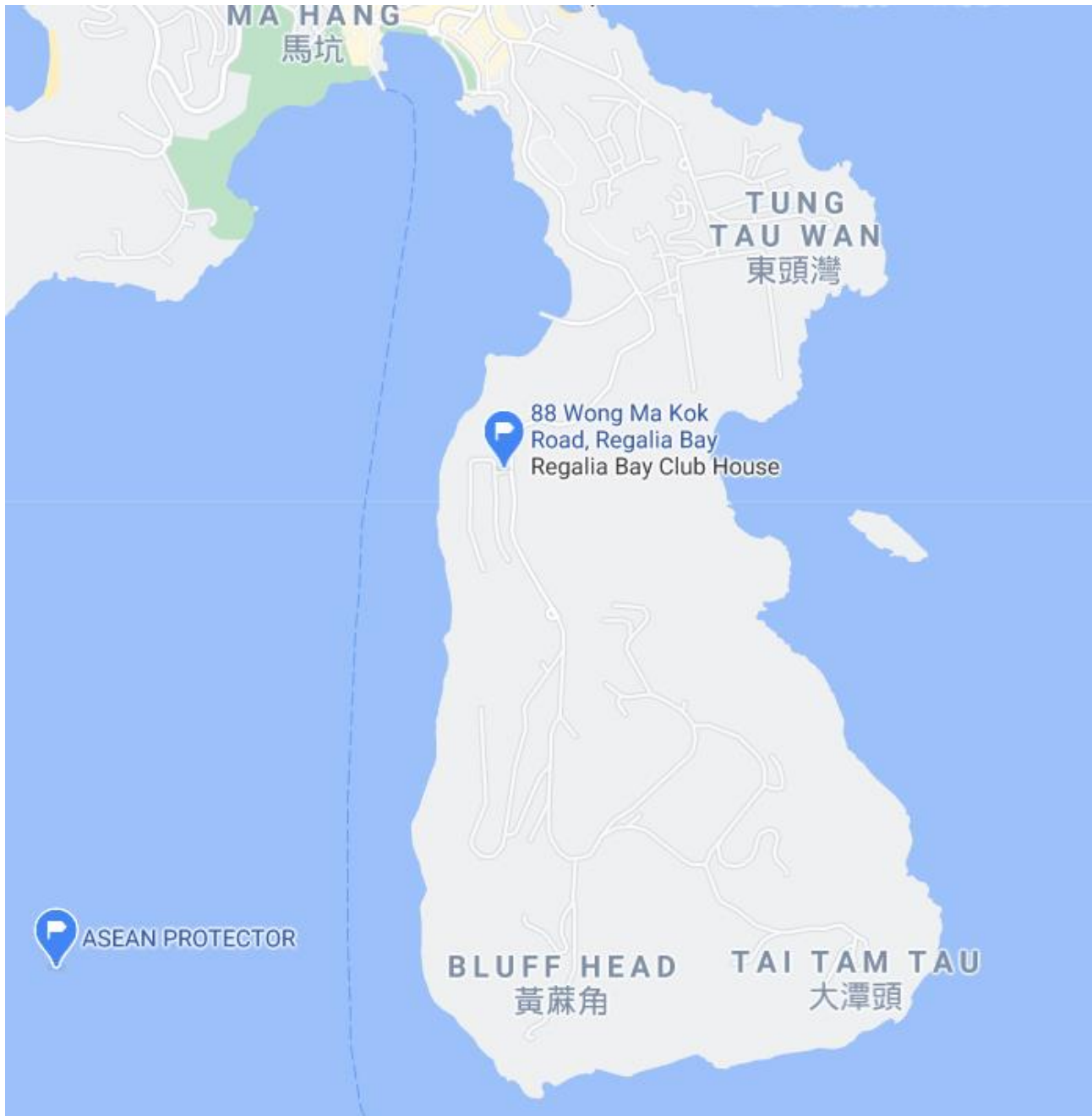
Complaint Interim Report

Our ref: 0586211_IR002_noise complaint (for 11 Apr 2021).DOC

Date of Complaint	11 April 2021
Date of EPD Notification to IEC	13 April 2021
Complaint Reference	H2HE_IR002
Description of the Complaint	A complaint referral from the HKPF was made to EPD on 12 April 2021 concerning noise from marine works at the sea area near 88 Wong Ma Kok Road, Regalia Bay, which happened from 1300-1800 on 11 April 2021.
Possible reason(s) for the Complaint	Given that there are different activities and working barges near the Chung Hom Kok area, it might not be feasible to distinguish where the noise originated from (Refer to <i>Appendix A</i> for location of cable barge [Asean Protector] in relation to 88 Wong Ma Kok Road, Regalia Bay).
Work details	<ul style="list-style-type: none">• No works were carried out by the cable barge (Asean Protector) from 1300 to 1800hrs on Sunday 11 Apr. 2021.
Actions Taken / To Be Taken	<ul style="list-style-type: none">• IEC and ET notified the client immediately regarding the received complaint• The client confirmed that no works were conducted on Sunday 11 Apr. 2021 afternoon.• ET to submit a Complaint Interim Report to EPD within 7 working days• No immediate action is considered necessary• The ET to ensure EP conditions are complied with during construction and installation operations
Remarks	This report has been verified IEC on 20 April 2021.

Prepared by: Mandy TO, ET Leader

Date: 20 April 2021



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