

JOB NO.: TCS00874/16

CEDD CONTRACT NO. CV/2012/05 Development of a Bathing Beach at Lung Mei, Tai Po

MONTHLY ENVIRONMENTAL MONITORING AND AUDIT REPORT (JULY 2018)

PREPARED FOR WELCOME CONSTRUCTION CO., LTD

DateReference No.Prepared ByCertified By12 August 2018TCS00874/16/600/R0257v2MMAMMA

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Nicola Hon (Environmental Consultant) T.W. Tam (Environmental Team Leader)

Version	Date	Remarks
1	8 August 2018	First Submission
2	12 August 2018	Amended according to the IEC's comments on 10 August 2018





Environmental Permit No. EP-388/2010

Development of a Bathing Beach at Lung Mei, Tai Po

Independent Environmental Checker Verification

Reference Document/Plan

Document/ Plan to be -Certified / Verified:	Monthly Environmental Monitoring and Audit Report (July 2018)
Date of Report:	12 August 2018
Date received by IEC:	12 August 2018

Reference EP Condition / Updated EM&A Manual Requirement

Environmental Permit Condition / Updated EM&A Manual Reference Condition 4.4

Three hard copies and one electronic copy of monthly EM&A Report shall be submitted to the Director within 2 weeks after the end of the reporting month. The EM&A Reports shall include a summary of all non-compliance (exceedances) of the environmental quality performance limits (Action and Limit Levels). The submissions shall be certified by the ET Leader and verified by the IEC. Additional copies of the submission shall be provided to the Director upon request by the Director.

IEC Verification

I hereby verify that the above referenced document/plan complies with the above referenced condition of EP-388/2010.

Mr Terence Fong

Independent Environmental Checker

Date:

14 August 2018

Our ref: P:\Projects\0206709 IEC for Lung Mei EM&A\07_ET Submission\23_Monthly EM&A Report\08_July 2018\20180813 v2

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EXECUTIVE SUMMARY

- ES.01 Civil Engineering and Development Department (hereafter referred as "CEDD") is the Project Proponent and the Permit Holder of *Agreement No. CE 59/2005 (EP) Development of a Bathing Beach at Lung Mei, Tai Po* (hereinafter referred as "the Project"), which is a Designated Project to be implemented under Environmental Permit number EP-388/2010 (hereinafter referred as "the EP-388/2010" or "the EP").
- ES.02 Action-United Environmental Services & Consulting (hereinafter referred as "AUES") has been commissioned as the Environmental Team for the Project (hereinafter referred as "the ET") to perform relevant Environmental Monitoring and Audit (EM&A) programme, including baseline and impact environmental monitoring in accordance with the EM&A Manual approved under the Environmental Impact Assessment Ordinance (EIAO).
- ES.03 According to the Approved Environmental Monitoring and Audit (EM&A) Manual [November 2007] (hereinafter referred as 'the EM&A Manual'), air quality, construction noise and water quality monitoring should be required to be monitored for baseline and during the construction phase of the Project. In January 2018, an updated EM&A Manual (AUES Ref.: TCS00874/16/300/L0085 dated 11 January 2018) was prepared to update of noise and air sensitive receivers and recent site condition for the EM&A Programme and it was submitted and approved by EPD in January 2018.
- ES.04 This is the 8th monthly EM&A report presenting the monitoring results and inspection findings for the reporting period from 1 to 31 July 2018 (hereinafter 'the Reporting Period'). In the Reporting Period, the impact monitoring covered air quality, construction noise and water quality.

ENVIRONMENTAL MONITORING AND AUDIT ACTIVITIES

ES.05 Environmental monitoring activities under the EM&A program in the Reporting Period are summarized in the following table.

Issues	Environmental Monitoring Parameters / Inspection	Sessions Note 1
Air Quality	1-hour TSP	5
Air Quality	24-hour TSP	5 (#)
Construction Noise	Construction Noise L _{Aeq(30min)} Daytime	
Water Quality		
	ET Regular Environmental Site Inspection	2
Inspection / Audit	Independent Environmental Checker (IEC) Monthly Environmental Site Audit	1

Note: 1.) *Total sessions are counted by monitoring days.*

(#) 2 sessions of 24-hour TSP monitoring were performed at Station A4 due to power supply issue.

(*) Monitoring on both tides on 5 and 13 July 2018 and mid-ebb on 3 July 2018 as well as mid-flood on 19 and 23 July 2018 were canceled due to adverse weather and thunderstorm warning issued by the Hong Kong Observatory.

BREACH OF ACTION AND LIMIT (A/L) LEVELS

ES.06 No exceedance of air quality and construction noise monitoring were recorded in this Reporting Period. For water quality monitoring, a total of 92 Action/Limit Level exceedances were recorded for parameters of Turbidity, Suspended Solids and Chlorophyll-a. NOEs were issued to relevant parties upon confirmation of the monitoring result and investigation for the causes of exceedances were carried out by ET subsequently. The statistics of environmental exceedance, NOE issued and investigation of exceedance are summarized in the following table.

		Exceedance		Event & Action		
Environmental Issues	Monitoring Parameters	Action Level	Limit Level	No. of NOE Issued	Investigation	Corrective Actions
Air Quality	1-hour TSP	0	0	0	-	-
An Quanty	24-hour TSP	0	0	0	-	-



		Exceedance		Event & Action		
Environmental Issues	Monitoring Parameters	Action Level	Limit Level	No. of NOE Issued	Investigation	Corrective Actions
Construction Noise	L _{Aeq(30min)}	0	0	0	-	-
	DO	0	0	0	-	-
Water Quality	Turbidity	6	8	3		
Water Quality	SS	9	67	6	Refer to ES.07	
	Chlorophyll-a	2	0	1		

Note: NOE – *Notification of Exceedance*

ES.07 As advised by the Contractor and confirmed by Site Resident Engineers (SRE), there were no marine works carried out on 2 to 9 July 2018 while rock filling work at west groyne using land-based excavator was carried out on 10 to 30 July 2018. As water quality mitigation measures, silt curtains were properly implemented and maintained at locations in accordance with EP's condition. Site inspection was carried out to assess the implementation of water quality mitigation measures and environmental performance of the construction site and there were no adverse water quality impact was observed. Having reviewed environmental performance of the project site and the monitoring results of the reference stations, impact stations as well as the sensitive receiver stations and the weather condition during the monitoring days, it is considered that all the exceedances were not caused by the works under the Project. Nevertheless, the Contractor was reminded to strictly implement the water quality mitigation measures as recommended implementation schedule for environmental mitigation measures in the EM&A Manual and EP's condition.

ENVIRONMENTAL COMPLAINT

ES.08 No environmental complaint was recorded or received in this Reporting Period. The statistics of environmental complaint are summarized in the following table.

Donorting Dariad	Environmental Complaint Statistics				
Reporting Period	Frequency	Cumulative	Complaint Nature		
1 – 31 July 2018	0	0	N/A		

NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

ES.09 No environmental summons or successful prosecutions were recorded in this Reporting Period. The statistics of environmental complaint are summarized in the following tables.

Donorting Dariad	Environmental Summons Statistics				
Reporting Period	Frequency	Cumulative	Complaint Nature		
1 – 31 July 2018	0	0	N/A		

Donorting Doriod	Environmental Prosecution Statistics			
Reporting Period	Frequency	Cumulative	Complaint Nature	
1 – 31 July 2018	0	0	N/A	

REPORTING CHANGE

ES.10 There was no reporting change in the EM&A programme in this Reporting Period.

SITE INSPECTION

ES.11 In the Reporting Period, joint site inspection by CEDD, ET and the Contractor was performed on 13 and 30 July 2018. During the two occasions of site inspection, no non-compliance was noted.

FUTURE KEY ISSUES

ES.12 The construction activities in August 2018 include site formation, construction of retaining wall, construction of groynes and construction of eastern and western box culvert. The potential

environmental impacts arising from the forthcoming construction activities include construction waste, air quality, construction noise and water quality.

- ES.13 In regards to the marine works, special attention should be paid on the groynes construction (Eastern and Western) in which water quality mitigation measures such as erection of silt curtain should be properly implemented and maintained.
- ES.14 During the wet and rainy season, the Contractor is reminded prevent surface runoff entering the sea or public area such as cover the exposed slope by impervious sheets and maintain the temporary drain and wastewater treatment system effectively.
- ES.15 Furthermore, mitigation measures should be fully implemented to minimize construction dust and noise impact to nearby sensitive receivers as appropriate. Moreover, all vehicles leaving the Site should be thoroughly washed by wheel washing facilities and dump/highway trucks should be covered with mechanical covers.



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1. INTRODUCTION

1.1 PROJECT BACKGROUND

- 1.1.1 Civil Engineering and Development Department (hereafter referred as "CEDD") is the Project Proponent and the Permit Holder of *Agreement No. CE 59/2005 (EP) Development of a Bathing Beach at Lung Mei, Tai Po* (hereinafter referred as "the Project"), which is a Designated Project to be implemented under Environmental Permit number EP-388/2010 (hereinafter referred as "the EP-388/2010" or "the EP").
- 1.1.2 The major construction activities of the Project comprise construction of 200-metre long bathing beach with a groyne at each end, a shark prevention net; a public car park; retaining walls; and the associated roadworks, drainage and sewerage works. Layout plan of the Project is shown in *Appendix A*. Designated works of the Project under the EP shall include:
 - (i) Construction of a 200m long beach with a groyne at each end of the beach which includes dredging and sandfilling works;
 - (ii) Construction of one culvert at the eastern side of the beach and another small section of culvert and open drainage channel with gabion embankments at the western end, both to collect and divert surface runoff from upstream locations; and
 - (iii) Construction of a beach building with associated beach building facilities, kiosk and a carpark and associated road improvement works adjoining the facility.
- 1.1.3 CEDD is Site Resident Engineers (hereinafter referred as "SRE") responsible for the Project management; Welcome Construction CO., Ltd is a Main Contractor (hereinafter referred as "Contractor") responsible for construction of the Project; and Action-United Environmental Services & Consulting (hereinafter referred as "AUES") has been commissioned as an Independent Environmental Team (hereinafter referred as "the ET") to implement the relevant EM&A program in accordance with the approved EM&A Manual, as well as the associated duties. Moreover, Environmental Resources Management is Independent Environmental Checker (hereinafter referred as "IEC") of the Project.
- 1.1.4 As part of the EM&A program, baseline monitoring to determine the ambient environmental conditions including air quality, noise and water quality were undertaken between 7 June 2017 and 21 October 2017. After completed baseline monitoring, Baseline Monitoring Report for Air Quality and Noise (AUES Ref.: TCS00874/16/600/R0022v3) and Baseline Monitoring Report for Water Quality (AUES Ref.: TCS00874/16/600/R0036v2) were verified by IEC and submitted to EPD for endorsement. These Baseline Monitoring Reports have summarized the key findings of baseline condition and determined a set of Action and Limit Levels (A/L Levels) based on the baseline data. The A/L Levels will serve as the yardsticks for assessing the acceptability of the environmental impact during construction phase of the Project Works impact monitoring.
- 1.1.5 The construction phase of the Project commenced on 1st December 2017. Accordingly, the impact monitoring of the EM&A programme commenced on the same date
- 1.1.6 This is the 8th monthly EM&A report presenting the monitoring results and inspection findings for the reporting period from 1 to 31 July 2018.

1.2 REPORT STRUCTURE

- 1.2.1 The Monthly Environmental Monitoring and Audit (EM&A) Report is structured into the following sections:-
 - Section 1 Introduction
 - Section 2 Project Organization and Construction progress
 - *Section 3* Summary of Impact Monitoring Requirements
 - *Section 4* Air Quality Monitoring
 - Section 5 Construction Noise Monitoring
 - Section 6 Water Quality Monitoring
 - *Section* 7 Waste Management

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Section 8	Ecology
Section 9	Site Inspection
Section 10	Environmental Complaint and non-compliance
Section 11	Implementation Status of Mitigation Measures
Section 12	Conclusion and Recommendation

2. PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS

2.1 PROJECT ORGANIZATION AND MANAGEMENT STRUCTURE

2.1.1 Organization structure and contact details of relevant parties with respect to on-site environmental management are shown in *Appendix B*. The responsibilities of respective parties are:

Engineer or Engineers Representative (ER)

- 2.1.2 The ER is responsible for overseeing the construction works and for ensuring that the works are undertaken by the Contractor in accordance with the specification and contract requirements. The duties and responsibilities of the ER with respect to EM&A are:
 - monitor the Contractor's compliance with contract specifications, including the effective implementation and operation of environmental mitigation measures and other aspects of the EM&A programme;
 - instruct the Contractor to follow the agreed protocols or those in the Contract Specifications in the event of exceedances or complaints;
 - comply with the agreed Event and Action Plans in the event of any exceedance;
 - liaise with the IEC and assist as necessary in the implementation of the EM&A program; and
 - participate in joint site inspection undertaken by the ET and IEC.

The Contractor

- 2.1.3 The duties and responsibilities of the Contractor are:
 - work within the scope of the construction contract and other tender conditions;
 - provide assistance to the ET in carrying out monitoring;
 - Submit proposals on mitigation measures in case of exceedances of Action and Limit levels in accordance with the Event and Action Plans;
 - implement measures to reduce impact where Action and Limit levels are exceeded;
 - implement the corrective actions instructed by ER/ET/IEC;
 - participate in the site inspections undertaken by the ET and the IEC, as required, and undertake any corrective actions instructed by ER/ET/IEC; and
 - adhere to the procedures for carrying out complaint investigation.

Environmental Team (ET)

- 2.1.4 The ET will be led and managed by the ET Leader. The ET leader will have relevant education, training, knowledge, experience and professional qualifications and the appointment will be subject to the approval of the Director of Environmental Protection and ER. Suitably qualified staff will be included in the ET, and the ET should not be in any way an associated body of the Contractor or the Independent Environmental Checker (IEC) for the Project.
- 2.1.5 The duties and responsibilities of the ET are:
 - monitor various environmental parameters as required in this EM&A Manual;
 - assess the EM&A data and review the success of the EM&A programme determining the adequacy of the mitigation measures implemented and the validity of the EIA predictions as well as identify any adverse environmental impacts before they arise;
 - carry out regular site inspection to investigate and audit the Contractor's site practice, equipment and work methodologies with respect to pollution control and environmental mitigation, and effect proactive action to pre-empt issues;
 - review the Contractor's working programme and methodology, and comment as necessary;
 - review and prepare reports on the environmental monitoring data, site environmental conditions and audits;
 - report on the environmental monitoring and audit results and conditions to the IEC, Contractor, EPD and ER;
 - recommend suitable mitigation measures to the Contractor in the case of exceedance of Action and Limit levels in accordance with the Event and Action Plans;



- adhere to the procedures for carrying out complaint investigation; and,
- the ET Leader will keep a contemporaneous log-book and record each and every instance or circumstance or change of circumstances which may affect the environmental impact assessment and every non-conformance with the recommendations of the EIA Reports or the EPs.

Independent Environmental Checker (IEC)

- 2.1.6 The duties and responsibilities of the IEC are:
 - review and monitor the implementation of the EM&A programme and the overall level of environmental performance being achieved;
 - arrange and conduct monthly independent site inspections/audits of the works;
 - validate and confirm the accuracy of monitoring results, monitoring equipment, monitoring stations, monitoring procedures and locations of sensitive receivers;
 - carry out random sample check and audit on monitoring data and sampling procedures, etc;
 - audit the EIA recommendations and requirements against the status of implementation of environmental protection measures on site;
 - on needed basis, audit the Contractor's construction methodology and agree the appropriate, reduced impact alternative in consultation with ER, the ET and the Contractor;
 - provide specialist advice to ER and the Contractor on environmental matters;
 - check complaint cases and the effectiveness of corrective measures;
 - check that the necessary mitigation measures recommended in the EIA, EP and Contract documents, or as subsequently required, are effectively implemented;
 - review EM&A report submitted by the ET leader and feedback audit results to ET by signing off relevant EM&A proformas;
 - report the findings of site inspections/ audits and other environmental performance reviews to ER, ET, EPD and the Contractor;

2.2 CONSTRUCTION PROGRESS

- 2.2.1 The 3-month rolling construction program is enclosed in *Appendix C* and the major construction activities undertaken in the Reporting Period are listed below:-
 - Site formation
 - Construction of Western Open Channel / Box Culvert
 - Dredging and Construction of Groynes (East and West)

2.3 SUMMARY OF ENVIRONMENTAL SUBMISSIONS

2.3.1 Summary of currently relevant permits, licenses, and/or notifications on environmental protection for this Project in this Reporting Period is presented in *Table 2-1*.

Table 2-1	Status of Environmental Licenses and Permits

		mit Status	5	
Item	Description	Permit no./Account no./ Ref. no.	From	То
1	Air pollution Control (Construction Dust) Regulation	Ref. Number: 418137	N/A	N/A
2	Chemical Waste Producer Registration	Waste Producers Number (WPN): PN5213-728-W3437-01	21 August 2017	End of Project
3	Water Pollution Control Ordinance	License No.: WT00028905-2017	24 October 2017	31 October 2022
4	for Disposal of	Billing Account for Disposal of Construction Waste: Account No. 7017686	3 July 2013	End of Project



2.3.2 The submission status as under the EP requirement is presented in *Table 2-2*.

 Table 2-2
 Submission Status as under the EP Stipulation

Item	EP condition	Description	Status
1	2.3	Management Organization of the	The updated version was submitted
		Main Construction Companies	in May 2018
2	2.4	Report for Capture and Relocation of	Approved by EPD on 15 Sep 2017
		Common Rat Snake	(EPD ref.: (15) in EP2/N5/C/46
			Pt.6 dated 15 Sep 2017)
3	2.5	Landscape Plan	Submitted to EPD on 28 June 2017
4	3.12	Mangrove Seedling Planting Proposal Not yet submitted	
5	3.13	Detailed Landscape As-built	Not yet submitted
		Drawing(s)	
6	4.3	Baseline Monitoring Report for Air	Approved by EPD on 8 Jan 2018
		Quality and Noise (AUES Ref.:	(EPD ref.: (36) in EP2/N5/C/46
		TCS00874/16/600/R0022v3)	Pt.6 dated 8 Jan 2018)
7		Baseline Monitoring Report for Water	Approved by EPD on 10 Jan 2018
		Quality(AUES Ref.:	(EPD ref.: (37) in EP2/N5/C/46
		TCS00874/16/600/R0036v2)	Pt.6 dated 10 Jan 2018)

3. SUMMARY OF IMPACT MONITORING REQUIREMENTS

3.1 GENERAL

3.1.1 The Environmental Monitoring and Audit requirements are set out in the EM&A manual. Environmental issues such as air quality, construction noise and water quality were identified as the key issues during the construction phase of the Project. A summary of the EM&A requirements for air quality, noise monitoring and water quality are presented in the sub-sections below.

3.2 MONITORING PARAMETERS

- 3.2.1 According to the Project EM&A Manual, the Impact monitoring program covers the following environmental issues:
 - Air Quality;
 - Construction Noise; and
 - Water Quality
- 3.2.2 A summary of the monitoring parameters is presented in *Table 3-1* below.

Table 3-1	Summary of EM&A I	Impact Monitoring Require	ements
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Environmental Issue	Parameters
Air Quality	1-hour TSP24-hour TSP
Noise	• Leq (30min) in six consecutive Leq(5 min) between 07:00-19:00 on normal weekdays
Water Qaulity	 In-situ Measurements Dissolved Oxygen Concentration (mg/L); Dissolved Oxygen Saturation (%); Salinity (mg/L); Temperature (°C); Turbidity (NTU); pH unit; Current direction (degree); Current speed (m/s); and Water depth (m) Laboratory Analysis Suspended Solids (mg/L); and Chlorophyll-a (µg/L)

3.3 MONITORING LOCATIONS

<u>Air Quality</u>

3.3.1 There are air quality monitoring locations (A4 and A6) recommended in Section 3.1 of the EM&A Manual. During liaison with the landlord of A6, he refused to provide access and location for installation of High Volume Air Sampler (HVAS). Therefore, alternative location (A7) was proposed by ET in accordance with Section 3.4 of the EM&A Manual. The proposed alternative locations are considered capable of effectively representing the baseline conditions at the impact monitoring locations. The proposal (*ref no.: TCS00874/16/300/L0016b*) for alternative monitoring locations was verified by IEC and it has been submitted to EPD for approval on 8 May 2017. The air quality monitoring locations are in *Table 3-2* and illustrated in *Appendix D*.

Table 3-2Location of Air Quality Monitoring

Station ID	Location
A4	No. 101 Lung Mei Tsuen
A7	Hong Kong Eco-Farm

Construction Noise

3.3.2 According to Section 4.1 of the EM&A Manual, four designated noise sensitive receivers (N1, N2, N3 and N4) were recommended and they are listed in *Table 3-3* and illustrated in *Appendix D*.

Table 2.2	Design at ad Maira	Manifaning Station	according to the EMP	A Manual
Table 3-3	Designated Noise	Monitoring Station	according to the EM&	A Manual

NSR	Location	
N1	Village house - No. 165A Lung Mei	
N2*	Village house - No. 103 Lung Mei	
N3	Village house - No. 70 Lo Tsz Tin	
N4	Village house - No. 79 Lo Tsz Tin	

Remarks: (*)*Noise monitoring should be conducted at N2a (i.e House No. 101 Lung Mei) if it is changed to residential use during construction phase.*

- 3.3.3 As confirmed on the first day of baseline monitoring, N2a (House no. 101 Lung Mei) has been changed to residential use. Therefore, the noise monitoring is conducted at N2a and to replace N2. Moreover, due to the lack of accessibility of noise monitoring at N3 (Village house No. 70 Lo Tsz Tin), alternative location was proposed to replace N3 to carry out the noise monitoring. Having reviewed the surrounding condition, N3a (Village house No. 66C Lo Tsz Tin) was proposed with the rationales summarized in below.
 - 1) The distance between N3 and N3a is about 18 meter apart and N3a locates at close proximity of the project site and major site activities which are likely to have noise impacts;
 - 2) N3a is a village type residential house and it is a noise sensitive receiver (NSR);
 - 3) Accessibility for noise monitoring work at N3a is available; and
 - 4) Minimal disturbance would be only caused to the proposed monitoring location N3a.
- 3.3.4 The proposal (*ref no.: TCS00874/16/300/L0016b*) for alternative monitoring locations was verified by IEC and it has been submitted to EPD for approval on 8 May 2017. The noise monitoring stations under the EM&A programme are listed in *Table 3-4* and illustrated in *Appendix D*.

Station ID	Address	
N1	Village house No. 165A of Lung Mei	
N2a	Village house No. 101 of Lung Mei	
N3a	Village house No. 66C of Lo Tsz Tin	
N4	Village house No. 79 of Lo Tsz Tin	

Table 3-4Noise Monitoring Stations of the EM&A Programme

Water Quality

3.3.5 According to *Section 5.1.2 of the Approved EM&A Manual*, two Reference Stations (R1 and R2), three impact stations (I1, I2 and I3), three sensitive receivers (FCZ1, W1 and M1) and one Gradient station (G1), were identified to perform water quality monitoring. Detailed and co-ordnance of water quality monitoring stations is described in *Table 3-5* and the graphical is shown in *Appendix D*.

Table 3-5Location of Marine Water Quality Monitoring Station

Station	Coordinates		Description
Station	Easting	Northing	Description
G1	841483.9	835936.1	Gradient Station - to assist in the identification of the source of any impact.
R1	842307.4	835718.4	Reference Station - for the background water quality for Tolo Harbour as it is at the channel where the water exchange between the enclosed Plover Cove and Tolo Harbour take place. It is located at south of the Project dredging/sandfilling area.
R2	840739.4	836212.4	Reference Station - for the background water quality in the Plover Cove region. It is located at southwest of the Project dredging/sandfilling area.

Station	Coordinates		Description	
Station	Easting	Northing	Description	
I1	841338.5	836588.5	Impact Station - located outside the mixing zone of dredging/sandfilling works of the Project.	
12	841590.3	836601.2	Impact Station - located outside the mixing zone of dredging/sandfilling works of the Project.	
13	841807.0	836680.9	Impact Station - located outside the mixing zone of dredging/sandfilling works of the Project.	
W1	841858.9	836571.0	Sensitive Receiver - located at the Water Sport Centre, which is about 0.25 km distance to the southeast of the dredging/sandfilling area.	
M1	840822.2	836416.4	Sensitive Receiver - located at the Ting Kok SSSI, which is about 0.8 km distance to the west of the dredging/sandfilling area.	
FCZ1	841180.6	835230.8	Sensitive Receiver - located at the Yim Tin Tsai East Fish Culture Zone, which is about 1.5 km distance to the southwest of the dredging/sandfilling area.	

3.4 MONITORING FREQUENCY AND PERIOD

3.4.1 The frequency and the duration for impact monitoring are summarized below.

Air Quality Monitoring

- <u>Parameters:</u> 1-hour TSP and 24-hour TSP
- Frequency: 3 times every six days for 1-hour TSP and once every 6 days for 24-hour TSP
- Duration: Throughout the construction period

Noise Monitoring

- <u>Parameters:</u> $L_{Aeq(30min)}$ and statistical results L_{10} & L_{90}
- Frequency: Leq (30min) in 6 consecutive Leq(5min) for once a week during 07:00-19:00 on normal weekdays
- Duration: Throughout the construction period

Water Quality (Marine) Monitoring

- <u>Parameters:</u> In-situ measurements including water depth, Dissolved Oxygen (DO) concentration (mg/L) & saturation (%), Salinity (mg/L), Temperature (°C) and Turbidity (NTU); and Suspended Solids (mg/L) and Chlorophyll-*a* (μg/L) are analyzed by HOKLAS-accredited laboratory.
- Frequency: Three days a week, at mid ebb and mid flood tides. The interval between 2 sets of monitoring will be more than 36 hours.
- Sampling 1) Three depths: 1m below water surface, 1m above sea bottom and at mid-depth when the water depth exceeds 6m;
 - 2) If the water depth is between 3m and 6m, two depths: 1m below water surface and 1m above sea bottom; and
 - 3) If the water depth is less than 3m, 1 sample at mid-depth is taken
 - Duration: During marine works proceeding such as the dredging and sand filling
- 3.4.2 In addition to the water quality parameters, other relevant data will also be to measure and record, which are included the location of the sampling stations, water depth, time, weather conditions, sea conditions, tidal stage, current water flow direction and speed, special phenomena and work activities undertaken around the monitoring and works area that may influence the monitoring results. Observations on any special phenomena and work underway at the Project site during the time of sampling will also be to record.

3.5 MONITORING INSTRUMENT

Air Quality Monitoring

- 3.5.1 The 24-hour and 1-hour TSP levels shall be measured by following the standard high volume sampling method as set out in the *Title 40 of the Code of Federal Regulations, Chapter 1 (Part 50), Appendix B.* If the ET proposes to use a direct reading dust meter to measure 1-hour TSP levels, it shall submit sufficient information to the IEC to prove that the instrument is capable of achieving a comparable results to the HVS. The instrument should be calibrated regularly, and the 1-hour sampling shall be determined on yearly basis by the HVS to check the validity and accuracy of the results measured by direct reading method. The filter paper of 24-hour TSP measurement shall be determined by HOKLAS accredited laboratory.
- 3.5.2 All equipment to be used for air quality monitoring is listed in *Table 3-6*.

Equipment	Model			
24-Hour TSP				
High Volume Air Sampler	TISCH High Volume Air Sampler, HVS Model TE-5170			
Calibration Kit	TISCH Calibration Kit Mode TE-5025A			
1-Hour TSP				
Portable Dust Meter	Sibata LD-3B Laser Dust Meter			

Table 3-6Air Quality Monitoring Equipment

Noise Monitoring

- 3.5.3 Sound level meter in compliance with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications shall be used for carrying out the noise monitoring. The sound level meter shall be checked using an acoustic calibrator. The wind speed shall be checked with a portable wind speed meter capable of measuring the wind speed in ms⁻¹ for reference.
- 3.5.4 Monitoring equipment to be used for construction noise measurement is listed in *Table 3-7*.

Table 3-7Construction Noise Monitoring Equipment

Equipment	Model
Integrating Sound Level Meter	Rion NL-31 or Rion NL-52 or Brüel & Kjær 2238
Acoustic Calibrator	Rion NC-74 or Rion NC-73 or Bröel & Kjær 4231
Portable Wind Speed Indicator (#)	Anemometer AZ Instrument 8908

(#) Wind speed is reference data only and there is no calibration certificate for portable wind speed indicator.

Water Quality Monitoring

- 3.5.5 For water quality monitoring, the used equipment should be fulfill the requirements under *the Approved EM&A Manual Section 5.1.1.* Requirement of instruments is described in the following sections.
- 3.5.6 Instruments to be used for Water quality monitoring is listed in *Table 3-8*.

Table 3-8Instrument of Water Quality Monitoring

Equipment	Model	
A Digital Global Positioning System	GPS12 Garmin	
Water Depth Detector	Eagle Sonar CUDA 300	
Water Sampler	A 2-litre transparent PVC cylinder with latex cups at both ends or teflon/stainless steel bailer or self-made sampler	
Thermometer & DO meter		
pH meter	YSI Professional Plus Multifunctional Meter	
Turbidimeter		



Equipment	Model				
Salinometer					
Current Meter	Valeport Ltd – Model 106 Self Recording/Direct Reading Current Meter				
Storage Container	'Willow' 33-litre plastic cool box with Ice pad				

3.6 MONITORING PROCEDURES

<u>Air Quality</u>

1-hour TSP

- 3.6.1 Operation of the 1-hour TSP meter will follow manufacturer's Operation and Service Manual.
- 3.6.2 The 1-hour TSP monitor, brand named "Sibata LD-3B Laser Dust Meter" is a portable, battery-operated laser photometer. The 1-hour TSP meter provides a real time 1-hour TSP measurement based on 90° light scattering. The 1-hour TSP monitor consists of the following:
 - a. A pump to draw sample aerosol through the optic chamber where TSP is measured;
 - b. A sheath air system to isolate the aerosol in the chamber to keep the optics clean for maximum reliability; and
 - c. A built-in data logger compatible with Windows based program to facilitate data collection, analysis and reporting.
- 3.6.3 The 1-hour TSP meter to be used will be within the valid period, calibrated by the manufacturer prior to purchasing. Zero response of the instrument will be checked before and after each monitoring event. Annually calibration with the High Volume Sampler (HVS) in same condition would be undertaken by the Laboratory.

24-hour TSP

- 3.6.4 The equipment used for 24-hour TSP measurement is the High Volume Sampler (hereinafter the "HVS") brand named TISCH, Model TE-5170 TSP High Volume Air Sampler, which complied with *EPA Code of Federal Regulation, Appendix B to Part 50.* The HVS consists of the following:
 - a. An anodized aluminum shelter;
 - b. A 8"x10" stainless steel filter holder;
 - c. A blower motor assembly;
 - d. A continuous flow/pressure recorder;
 - e. A motor speed-voltage control/elapsed time indicator;
 - f. A 7-day mechanical timer, and
 - g. A power supply of 220v/50 hz
- 3.6.5 For HVS for 24-hour TSP monitoring, the HVS is mounted in a metallic cage with a top for protection and also it is sat on the existing ground or the roof of building. The flow rate of the HVS between 0.6m³/min and 1.7m³/min will be properly set in accordance with the manufacturer's instruction to within the range recommended in *EPA Code of Federal Regulation*, *Appendix B to Part 50*. Glass Fiber Filter 8" x 10" of TE-653 will be used for 24-Hour TSP monitoring and would be supplied by laboratory. The general procedures of sampling are described as below:-
 - A horizontal platform with appropriate support to secure the samples against gusty wind should be provided;
 - No two samplers should be placed less than 2 meters apart;
 - The distance between the sampler and an obstacle, such as building, must be at least twice the height that the obstacle protrudes above the sample;
 - A minimum of 2 meters of separation from any supporting structure, measured horizontally is required;
 - Before placing any filter media at the HVS, the power supply will be checked to ensure the sampler work properly;

- The filter paper will be set to align on the screen of HVS to ensure that the gasket formed an air tight seal on the outer edges of the filter. Then filter holder frame will be tightened to the filter hold with swing bolts. The holding pressure should be sufficient to avoid air leakage at the edge.
- The mechanical timer will be set for a sampling period of 24 hours (00:00 mid-night to 00:00 mid-night next day). Information will be recorded on the field data sheet, which would be included the sampling data, starting time, the weather condition at current and the filter paper ID with the initial weight;
- After sampling, the filter paper will be collected and transfer from the filter holder of the HVS to a sealed envelope and sent to a local HOKLAS accredited laboratory for quantifying.
- 3.6.6 All the sampled 24-hour TSP filters will be collected and put into the filter envelope provided by the laboratory. The sample will be kept in normal air conditioned room conditions, i.e. 70% HR (Relative Humidity) and 25°C and delivery to the office within 48 hours and sent to laboratory for analysis. The sampled filter will be kept in the laboratory for six months prior to disposal.
- 3.6.7 The HVS used for 24-hour TSP monitoring will be calibrated before the commencement for sampling, and after in two months interval for 1 point checking of maintenance and six months interval for five points calibrate in accordance with the manufacturer's instruction using the NIST-certified standard calibrator (TISCH Calibration Kit Model TE-5025A) to establish a relationship between the follow recorder meter reading in cfm (cubic feet per minute) and the standard flow rate, Qstd, in m³/min. Motor brushes of HVS will be regularly replaced of about five hundred hours per time.

Construction Noise

- 3.6.8 As referred to in the Technical Memorandum (TM) issued under the NCO, sound level meters in compliance with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804:1985 (Type 1) specifications shall be used for carrying out the noise monitoring. Immediately prior to and following each noise measurement the accuracy of the sound level meter shall be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements may be accepted as valid only if the calibration levels from before and after the noise measurement agree to within 1.0 dB.
- 3.6.9 All noise measurements will be performed with the meter set to FAST response and on the A-weighted equivalent continuous sound pressure level (Leq). $Leq_{(30 min)}$ in six consecutive $Leq_{(5 min)}$ measurements will be used as the monitoring parameter for the time period between 07:00-19:00 hours on weekdays.
- 3.6.10 The sound level meter will be mounted on a tripod at a height of 1.2 m and placed at the assessment point and oriented such that the microphone is pointed to the site with the microphone facing perpendicular to the line of sight. The windshield will be fitted for all measurements. Where a measurement is to be carried out at a building, the assessment point would normally be at a position 1 m from the exterior of the building façade. Where a measurement is to be made for noise being received at a place other than a building, the assessment point would be at a position 1.2 m above the ground in a free-field situation, i.e. at least 3.5 m away from reflective surfaces such as adjacent buildings or walls.
- 3.6.11 Immediately prior to and following each noise measurement the accuracy of the sound level meter will be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements will be accepted as valid only if the calibration level from before and after the noise measurement agrees to within 1.0 dB.
- 3.6.12 Noise measurements will not be made in fog, rain, wind with a steady speed exceeding 5m/s or wind with gusts exceeding 10m/s. The wind speed will be checked with a portable wind speed meter capable of measuring the wind speed in m/s.

Water Quality (Marine) Monitoring

- 3.6.13 Marine water quality monitoring will be conducted at the designated locations in accordance with EM&A Manual. The operating and analytical of sampling procedures are described as below:
 - A Global Positioning System (GPS) will be used to ensure that the correct location was selected prior to sample collection. A portable, battery-operated echo sounder will be used for the determination of water depth at each designated monitoring station.
 - The marine water sampler will be lowered into the water body at a predetermined depth. The trigger system of the sampler is activated with a messenger and opening ends of the sampler are closed accordingly then the sample of water is collected.
 - During the sampling, the sampling container will be rinsed to use a portion of the marine water sample before the water sample is transferred to the container. Upon sampling completion, the container is sealed with a screw cap.
 - Before the sampling process, general information such as the date and time of sampling, weather condition and tidal condition as well as the personnel responsible for the monitoring will be recorded on the monitoring field data sheet.
 - In-situ measurement including water temperature, turbidity, dissolved oxygen, salinity, pH and water depth undertake at the identified monitoring point. At each station, marine water samples are collected at three depths: 1m below water surface, 1m above sea bottom and at mid-depth when the water depth exceeds 6m. Samples at 1m below water surface and 1m above sea bottom are collected when the water depth is between 3m and 6m. Only 1 sample at mid-depth is taken when the water depth is below 3m.
 - For the in-situ measurement, two consecutive measurements of sampling depth, temperature, dissolved oxygen, salinity, turbidity and pH concentration will be measured at the sea. The YSI ProDSS Multifunctional Meter is retrieved out of the water after the first measurement and then re-deployed for the second measurement. Where the difference in the value between the first and second readings of each set is more than 25% of the value of the first reading, the reading is discarded and further readings is taken.
 - Water sample would be collected by a water sampler and then filled in high-density polythene bottles. Before the water sample storage, the sampling bottles will be pre-rinsed with the same water sample. The sample bottles then is packed in cool-boxes (cooled at 4^oC without being frozen), and delivered to HOKLAS accredited laboratory for the chemical analysis as followed APHA Standard Methods.
 - The laboratory has been comprehensive quality assurance and quality control programmes. For QA/QC procedures, one duplicate samples of every batch of 20 samples is analyzed as followed the HOKLAS accredited requirement.
- 3.6.14 During marine water sampling period, all in-situ measurement equipment will be calibrated at three months interval accordingly. Except for the Current Velocity and Direction water flow meter will be calibrated every two years as recommended by the manufactory. Available calibration certificates will be issued to ensure the performance of equipment to use for in-situ measurement.
- 3.6.15 Before each round of monitoring, the dissolved oxygen probe will be calibrated by wet bulb method; a zero check in distilled water will be performed with the turbidity and salinity probes; 4 and 10 values of the standard solution will be undertaken to check the accuracy of pH value.
- 3.6.16 Valid calibration certificates of monitoring equipment of air quality, construction noise and water quality are shown in *Appendix E*.

LABORATORY ANALYSIS

3.6.17 Chemical analysis will be conducted for all water samples by a HOKALS accredited laboratory - ALS Technichem (HK) Pty Ltd. The chemicals analysis method and reporting limit is shown *Table 3-9*.



Table 3-9Testing Method and Reporting Limit of the Chemical Analysis

Parameter	ALS Method Code	In-house Method Reference ¹	Reporting Limit
Total Suspended Solids	EA025	APHA 2540D	2 mg/L
Chlorophyll-a	EP008F	APHA 10200 H2&H3	0.1 μg/L

Note: The exact method shall depend on the laboratory accredited method. APHA = Standard Methods for the Examination of Water and Wastewater by the American Public Health Association.

3.7 METEOROLOGICAL INFORMATION

3.7.1 The meteorological information including wind direction, wind speed, humidity, rainfall, air pressure and temperature etc. during impact monitoring is extracted from the closest Hong Kong Observatory Station. To obtain the most appropriate meteorological information where available, Air Temperature/Pressure and Relative Humidity will be extracted from Tai Po Station and wind speed and direction will be extracted from Tai Mei Tuk Station.

3.8 DETERMINATION OF ACTION/LIMIT (A/L) LEVELS

3.8.1 The baseline results form the basis for determining the environmental acceptance criteria for the impact monitoring. A summary of the Action/Limit (A/L) Levels for air quality, construction noise and water quality are shown in *Table 3-10, 3-11* and *3-12* respectively.

Table 3-10Action and Limit Levels for Air Quality

Monitoring	Action Lev	vel ($\mu g / m^3$)	Limit Lev	rel ($\mu g/m^3$)
Station	1-hour TSP	24-hour TSP	1-hour TSP	24-hour TSP
A4	275	142	500	260
A7	274	141	500	260

Table 3-11 Action and Limit Levels for Construction Noise, dB(A)

Time Period: 0700-1900 hours on normal weekdays				
Monitoring Location Action Level Limit Level Note 1 & Note 2				
N1, N2a, N3a, and N4	When one documented complaint is received	75		

Note 1: Acceptable Noise Levels for school should be reduced to 70 dB(A) and65 dB(A) during examination period

Note 2: If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the NCA have to be followed.

Table 3-12Action and Limit Levels for Water Quality

Monitoring	Action	Level	Limit	Level	
Location	Depth Average of SS (mg/L)				
I1	7.0	OD 1200/ -f	7.5	OD 1200/ - f	
I2	7.0	OR 120% of	8.1	OR 130% of	
I3	8.3	any reference stations at the same tide of the same day	15.0	any reference stations at the	
W1	8.0		8.6	same tide of the	
M1	10.0		11.0	same day	
FCZ1	7.0	sume duy	8.0	sume duy	
		Dissolved Ox	xygen (mg/L)		
Monitoring	Depth Average		Depth Average		
Location	of Surface &	Bottom	of Surface &	Bottom	
	Mid-depth		Mid-depth		
I1	5.08	N/A	4.80	N/A	
I2	5.26	3.64	4.88	3.37	
13	5.03	4.09	4.77	3.19	
W1	4.67	2.41	4.54	2.33	
M1	4.73	N/A	4.70	N/A	
FCZ1	5.00	3.43	5.00	3.18	



Monitoring Location	Depth Average of Turbidity (NTU)				
I1	2.8		2.9		
I2	3.5	OR 120% of any reference stations at the same tide of the same day		7.7	OR 130% of
13	2.6		3.0	any reference stations at the	
W1	2.9		3.3	same tide of the	
M1	5.2		6.6	same day	
FCZ1	3.2		3.4	same day	
Monitoring Location	Surface, Middle & Bottom of Chlorophyll-a (µg/L)				
I1	11	.1	11	2.1	
I2	11	.0	1	3.1	
I3	11.3		14.5		
W1	11.3		16.1		
M1	16.9		42.4		
FCZ1	11	.8	11	2.5	

Notes:

(a) For DO, non-compliance of water quality limits occurs when monitoring result is lower than the limits

(b) For SS, chlorophyll-a and turbidity, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

(c) Both Action and Limit Levels for DO (surface and middle) in the FCZ1 are less than 5 mg/L.

Event Action Plan

3.8.2 Should non-compliance of the environmental quality criteria occurs, remedial actions will be triggered according to the Event and Action Plan which presented in *Appendix F*.

3.9 DATA MANAGEMENT AND DATA QA/QC CONTROL

- 3.9.1 The impact monitoring data were handled by the ET's in-house data recording and management system.
- 3.9.2 The monitoring data recorded in the equipment were downloaded directly from the equipment at the end of each monitoring day. The downloaded monitoring data were input into a computerized database properly maintained by the ET. The laboratory results were input directly into the computerized database and checked by personnel other than those who input the data.
- 3.9.3 For monitoring parameters that require laboratory analysis, the local laboratory shall follow the QA/QC requirements as set out under the HOKLAS scheme for the relevant laboratory tests.

4. **AIR QUALITY MONITORING**

4.1 GENERAL

4.1.1 In the Reporting Period, air quality monitoring were performed at the proposed monitoring locations A4 and A7. The air quality monitoring schedule is presented in *Appendix G* and the monitoring results are summarized in the following sub-sections.

4.2 **RESULTS OF AIR QUALITY MONITORING**

4.2.1 In the Reporting Period, **5** sessions of 1-hour TSP were performed at Stations A4 and A7. For 24-hour TSP, **5** sessions were carried out at Station A7 while only **2** sessions were performed at Station A4 due to the power supply issue. The monitoring results for air quality monitoring are summarized in *Tables 4-1 to 4-4*. The detailed 24-hour TSP monitoring data are presented in *Appendix H* and the relevant graphical plots are shown in *Appendix I*. The meteorological data during the impact monitoring period are summarized in *Appendix J*.

Power Failure Incident at Monitoring Station A4

- 4.2.2 On 4 July 2018, the power supply for HVS at Station A4 was disconnected by the landlord as the tenant removal from the village house. As confirmed by the landlord, the village house will undergo renovation and unable to provision power supply for other use. The Contractor was therefore seeking for power supply from other village houses nearby but failed. Finally, the Contractor decided to set up permanent power supply by connecting power cable from Lung Mei Site to Station A4, which expected to be completed in early August 2018.
- 4.2.3 To avoid further absence of monitoring data, having discussed and got consent by IEC, ET proposed to temporarily shift the HVS from Station A4 to the site boundary of Lung Mei Site until permanent power supply being secured at Station A4 in early August 2018. The proposed temporary location is around 75m away from Station A4. It is capable to represent the air quality impact arising from the project since it is situated at the site boundary. The 24-hour TSP monitoring has been resumed at the temporary location on 27 July 2018 and make-up of lost sample was scheduled on 30 July 2018. The collected data will be served as reference data to support the EM&A programme. As advised by the Contractor, the permanent power at Station A4 has been set up on 4 August 2018.

Power Failure Incident at Monitoring Station A7

4.2.4 The 24-hour TSP monitoring at Station A7 on 21 July 2018 was failure due to power shortage after successive rainstorm. The power supply was rectified on 27 July 2018 and make-up of lost sample was scheduled on 30 July 2018.

	24-hour	1-hour TSP (µg/m ³)				
Date	TSP (µg/m ³)	Date	Start Time	1 st reading	2 nd reading	3 rd reading
4-Jul-18	#	6-Jul-18	13:45	33	32	32
10-Jul-18	#	12-Jul-18	10:28	18	12	14
16-Jul-18	#	18-Jul-18	10:45	64	50	45
21-Jul-18	#	24-Jul-18	9:32	42	43	45
27-Jul-18	108 (*)	30-Jul-18	9:50	40	41	107
30-Jul-18	130 (*)					
Average	119	Average		41		
(Range)	(108 - 130)	(Rang	ge)	(12 – 107)		

Table 4-1Summary of 24-hour and 1-hour TSP Monitoring Results (A4)

Remark: (#) Monitoring was suspected due to power supply issue. (refer to Section 4.2.2)

(*) Monitoring was performed at temporary station of A4 (site boundary of Lung Mei Site) as reference data. (refer to Section 4.2.3)

	24-hour	1-hour TSP (µg/m ³)				
Date	TSP (µg/m ³)	Date	Start Time	1 st reading	2 nd reading	3 rd reading
4-Jul-18	31	6-Jul-18	14:16	28	31	32
10-Jul-18	34	12-Jul-18	13:36	22	12	21
16-Jul-18	31	18-Jul-18	14:15	44	43	39
21-Jul-18	#	24-Jul-18	9:26	40	42	43
27-Jul-18	27	30-Jul-18	9:41	38	41	42
30-Jul-18 (*)	93					
Average	43	Average			35	
(Range)	(27 – 93)	(Rang	ge)	(12 – 44)		

Table 4-2Summary of 24-hour and 1-hour TSP Monitoring Results (A7)

Remark: (#) Monitoring was failed due to power failure. (refer to Section 4.2.3) () Scheduled for make-up of lost sample on 21 Jul 2018.*

- 4.2.5 As shown in *Tables 4-1 to 4-2*, all the 1-hour TSP monitoring results were below the Action / Limit Level. No Notification of Exceedance (NOE) was issued in this Reporting Period.
- 4.2.6 According to the 24-hour TSP monitoring results collected at Station A7, there were no exceedances triggered in the Reporting Period. Although there were only 2 sessions of 24-hour TSP monitoring performed at Station A4 in July 2018, the justification on whether the ability of the EM&A programme to detect air quality impacts can be maintained though monitoring was suspended is presented below.
 - (a) According to the monthly weather summary extracted from the Observatory, it was cloudy and rather showery conditions for most part of the month of July 2018. Based on the rainfall record made reference to nearby weather station "Tai Mei Tuk Pumping Station", there were 18 days of rainfall record detected in July 2018 and total rainfall was ranged from 0.5mm to 109.0mm. In view of the showery and humid conditions throughout July 2018, which could be acted as nature dust suppression, it is considered that the air quality impact in July 2018 is not significant.
 - (b) The 1-hour TSP monitoring is measured *in-situ* during the construction phase and it is capable to readily detect any non-compliance of air quality. In July 2018, the 1-hour TSP monitoring results at Station A4 are ranged from $12\mu g/m^3$ to $107\mu g/m^3$ which are far below the Action/ Limit Level, it is considered non-compliance of air quality of 24-hour TSP was unlikely to triggered.
 - (c) The reference monitoring data collected at the temporary station at site boundary of Lung Mei Site did not exceed the Action/ Limit Level of Station A4, it is revealed that the air quality impact caused by the project was within an acceptable level.

5. CONSTRUCTION NOISE MONITORING

5.1 GENERAL

5.1.1 In the Reporting Period, construction noise quality monitoring were performed at the designated monitoring locations N1, N2a, N3a and N4. The noise quality monitoring schedule is presented in *Appendix G* and the monitoring results are summarized in the following sub-sections.

5.2 **RESULTS OF NOISE MONITORING**

5.2.1 In the Reporting Period, 5 sessions of noise monitoring were carried out at the designated locations. Free-field status were performed at N1 and N3a and façade correction (+3 dB(A)) has been added for the correction in according to the acoustical principles and EPD guidelines. The noise monitoring results at the designated locations are summarized in *Tables 5-1 to 5-4*. The detailed noise monitoring data are presented in *Appendix H* and the relevant graphical plots are shown in *Appendix I*.

Table 5-1Construction Noise Monitoring Results of N1, dB(A)

Date	Start Time	L _{eq30min}	*Corrected L _{eq30min}
6-Jul-18	13:44	59	62
12-Jul-18	10:03	66	69
18-Jul-18	10:54	60	63
24-Jul-18	10:13	59	62
30-Jul-18	10:27	56	59

Remark: (*) A façade correction of +3dB(A) has been added according to acoustical principles and EPD guidelines.

Table 5-2Construction Noise Monitoring Results of N2a, dB(A)

Date	Start Time	L _{eq30min}	Corrected L _{eq30min}
6-Jul-18	13:50	60	NA
12-Jul-18	10:33	60	NA
18-Jul-18	11:25	64	NA
24-Jul-18	9:42	59	NA
30-Jul-18	9:53	55	NA

Table 5-3Construction Noise Monitoring Results of N3a, dB(A)

Date	Start Time	$L_{eq30min}$	*Corrected L _{eq30min}
6-Jul-18	14:20	56	59
12-Jul-18	13:05	57	60
18-Jul-18	12.39	57	60
24-Jul-18	10:48	57	60
30-Jul-18	11:01	51	54

Remark: (*) A façade correction of +3dB(A) has been added according to acoustical principles and EPD guidelines.

Table 5-4Construction Noise Monitoring Results of N4, dB(A)

Date	Start Time	L _{eq30min}	Corrected L _{eq30min}
6-Jul-18	14:27	60	NA
12-Jul-18	12:37	64	NA
18-Jul-18	13:14	60	NA
24-Jul-18	11:20	65	NA
30-Jul-18	11:41	56	NA

5.2.2 As shown in *Table 5-1 to Table 5-4*, all the designated locations measured results were below 75dB(A) of the acceptance criteria. Furthermore, no complaint on construction noise was registered, indicating no exceedance of Action Level. No non-compliance was therefore found during the Reporting Period.



6. WATER QUALITY MONITORING

6.1 GENERAL

6.1.1 The water quality monitoring schedule is presented in *Appendix G* and the monitoring results are summarized in the following sub-sections.

6.2 **RESULTS OF WATER QUALITY MONITORING**

- 6.2.1 In this Reporting Period, two events of marine water monitoring on 5 and 13 July 2018 were cancelled due to adverse weather and thunderstorm warning and eventually a total of eleven (11) sampling days were performed at the nine designated locations. Besides, monitoring at mid-ebb on 3 July 2018 as well as mid-flood on 19 and 23 July 2018 were cancelled due adverse weather condition and Thunderstorm Warning issued by the Hong Kong Observatory.
- 6.2.2 Monitoring results of 4 key parameters: dissolved oxygen (DO), turbidity, suspended solids and Chlorophyll-*a* are summarized in *Tables 6-1* to *6-5*.

Tidal	Sampling Date	G 1	R1	R2	I1	I2	I 3	W1	M1	FCZ1			
	3-Jul-18		С	ancelled	l due to d	adverse	weather	conditio	n				
	5-Jul-18		С	ancelled	l due to d	adverse	weather	conditio	n				
	6-Jul-18	8.24	7.11	7.78	8.20	7.98	7.47	6.42	7.83	7.57			
	9-Jul-18	7.59	7.23	7.10	7.66	7.48	7.44	7.23	7.21	7.52			
	11-Jul-18	8.45	7.54	7.97	7.36	7.73	7.02	7.53	7.20	7.93			
	13-Jul-18		Cancelled due to adverse weather condition										
Mid-Ebb	16-Jul-18	7.02	6.44	6.96	6.98	6.86	6.22	6.46	6.60	6.85			
	19-Jul-18	8.71	8.32	8.08	8.23	8.26	8.37	8.28	8.24	8.85			
	21-Jul-18	8.09	7.88	7.70	7.80	7.93	7.89	7.18	6.26	8.62			
	23-Jul-18	7.94	6.89	8.21	8.07	7.73	7.27	7.48	7.33	7.78			
	25-Jul-18	8.36	7.31	7.66	8.21	8.36	8.26	6.59	7.48	8.38			
	27-Jul-18	9.08	8.29	7.51	9.36	9.68	9.01	6.99	8.37	9.70			
	30-Jul-18	10.05	7.48	9.64	10.00	10.31	9.42	7.78	8.27	9.71			
	3-Jul-18	6.54	6.53	6.36	5.67	6.43	6.61	6.25	6.21	6.37			
	5-Jul-18	Cancelled due to adverse weather condition											
	6-Jul-18	7.21	7.19	7.14	6.44	6.98	7.27	6.07	7.39	6.88			
	9-Jul-18	7.77	7.63	7.57	7.76	7.73	8.16	7.93	7.36	8.03			
	11-Jul-18	8.57	8.05	8.28	7.74	7.59	8.23	8.06	7.46	8.55			
	13-Jul-18		C	ancelled	due to	adverse	weather	conditio	n				
Mid-Flood	16-Jul-18	6.42	6.15	6.28	6.26	6.07	5.86	5.94	6.32	6.42			
	19-Jul-18		C	ancelled	l due to a	adverse	weather	conditio	n				
	21-Jul-18	8.94	7.70	8.73	8.12	8.29	8.25	7.64	8.30	9.22			
	23-Jul-18		C	ancelled	due to	adverse	weather	conditio	n				
	25-Jul-18	8.90	7.58	8.61	8.90	8.53	8.90	6.73	8.49	8.27			
	27-Jul-18	9.28	8.81	9.45	9.18	9.13	8.95	8.33	8.30	9.50			
	30-Jul-18	8.32	7.80	8.22	8.47	7.84	8.22	6.57	8.23	9.06			

Table 6-1Results Summary of Depth Average (Surface & Middle Layer) of DO (mg/L)

Table 6-2

Results Summary of Bottom Depth of DO (mg/L)

Tidal	Sampling Date	G1	R1	R2	I1	I2	I 3	W1	M1	FCZ1		
	3-Jul-18		С	ancelled	due to d	adverse	weather	conditio	on			
	5-Jul-18		Cancelled due to adverse weather condition									
	6-Jul-18	5.34	4.32	6.34	N/A	6.43	6.23	3.88	N/A	6.66		
Mid-Ebb	9-Jul-18	6.87	6.94	5.11	N/A	7.62	6.89	6.58	N/A	7.10		
WIId-LOU	11-Jul-18	8.07	6.94	7.12	N/A	7.59	7.24	5.83	N/A	7.59		
	13-Jul-18		Cancelled due to adverse weather condition									
	16-Jul-18	6.92	6.30	6.90	N/A	6.35	6.10	5.69	N/A	6.46		
	19-Jul-18	8.35	5.30	8.64	N/A	8.02	8.30	5.40	N/A	8.48		

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Tidal	Sampling Date	G1	R1	R2	I1	I2	I 3	W1	M1	FCZ1			
	21-Jul-18	5.58	6.40	5.77	N/A	6.85	5.15	4.66	N/A	6.35			
	23-Jul-18	5.48	5.40	4.19	N/A	6.31	5.55	4.66	N/A	4.72			
	25-Jul-18	7.82	5.79	7.82	N/A	5.16	6.42	4.42	N/A	3.72			
	27-Jul-18	5.19	5.20	4.27	N/A	5.94	6.90	4.22	N/A	5.46			
	30-Jul-18	3.72	4.29	3.75	N/A	5.70	5.56	3.00	N/A	4.57			
	3-Jul-18	5.67	3.05	6.49	N/A	5.11	4.58	4.01	N/A	3.64			
	5-Jul-18		Cancelled due to adverse weather condition										
	6-Jul-18	4.25	4.46	4.75	N/A	4.67	5.97	3.48	N/A	5.10			
	9-Jul-18	7.16	6.36	6.97	N/A	7.90	7.43	4.63	N/A	7.22			
	11-Jul-18	7.53	6.65	7.90	N/A	8.20	8.04	3.76	N/A	7.74			
	13-Jul-18		С	ancellea	due to	adverse	weather	conditio	n				
Mid-Flood	16-Jul-18	6.28	6.02	5.82	N/A	5.82	5.60	5.26	N/A	6.34			
	19-Jul-18		С	ancelled	l due to d	adverse	weather	conditio	n				
	21-Jul-18	7.07	4.85	5.33	N/A	6.56	7.35	4.55	N/A	6.39			
	23-Jul-18		С	ancelled	l due to d	adverse	weather	conditio	n				
	25-Jul-18	5.78	4.44	9.23	N/A	5.53	5.52	4.32	N/A	8.88			
	27-Jul-18	7.08	4.00	7.29	N/A	8.51	8.86	3.74	N/A	7.22			
	30-Jul-18	6.85	3.89	4.75	N/A	4.75	4.33	3.45	N/A	4.04			

Table 6-3 Results Summary of Depth Average of Turbidity (NTU)

Tidal	Sampling Date	G1	R1	R2	I1	I2	I 3	W1	M1	FCZ1	
	3-Jul-18		С	ancelled	l due to d	adverse	weather	conditio	on		
	5-Jul-18		С	ancelled	l due to d	adverse	weather	conditio	on		
	6-Jul-18	2.0	2.4	2.6	2.5	2.5	2.2	1.9	2.8	1.9	
	9-Jul-18	2.6	3.7	3.7	2.4	2.6	1.6	2.6	2.0	1.6	
	11-Jul-18	1.3	2.7	2.5	2.6	1.6	1.6	1.8	2.8	1.5	
	13-Jul-18		C	ancelled	due to d	adverse	weather	conditio	on		
Mid-Ebb	16-Jul-18	1.7	1.9	1.9	1.6	1.6	1.9	1.5	1.6	1.6	
	19-Jul-18	4.2	4.5	4.1	4.4	4.2	4.3	4.4	4.3	4.1	
	21-Jul-18	2.7	2.7	2.7	1.9	1.9	2.2	2.3	3.2	2.3	
	23-Jul-18	1.4	1.9	2.0	1.0	1.5	1.2	1.1	2.3	1.3	
	25-Jul-18	2.5	2.1	2.9	2.4	1.5	1.6	2.3	2.4	2.3	
	27-Jul-18	1.3	1.4	1.6	1.1	1.4	1.5	1.5	1.9	1.3	
	30-Jul-18	1.8	2.0	2.0	1.6	1.8	2.0	1.7	1.3	1.7	
	3-Jul-18	1.2	1.6	2.0	1.3	1.3	1.5	1.8	1.4	1.6	
	5-Jul-18	Cancelled due to adverse weather condition									
	6-Jul-18	2.5	2.4	3.2	2.4	1.9	2.5	1.6	2.7	1.4	
	9-Jul-18	2.1	3.2	2.8	2.8	3.3	2.3	2.1	2.5	2.6	
	11-Jul-18	1.8	2.4	1.9	1.4	1.3	1.6	2.1	1.9	1.5	
	13-Jul-18		С	ancelled	l due to a	adverse	weather	conditio	on		
Mid-Flood	16-Jul-18	1.6	2.5	2.2	1.5	1.7	1.8	1.9	1.8	1.3	
	19-Jul-18		С	ancelled	l due to d	adverse	weather	conditio	on		
	21-Jul-18	2.2	3.3	3.2	2.1	3.0	2.5	2.3	2.7	2.1	
	23-Jul-18		С	ancellea	l due to a	adverse	weather	conditio	on		
	25-Jul-18	2.2	2.1	3.1	2.5	2.6	1.9	2.7	3.2	2.1	
	27-Jul-18	1.4	1.7	1.4	1.3	1.5	1.4	1.6	2.5	1.3	
	30-Jul-18	1.3	2.0	2.3	2.5	2.6	1.7	2.1	2.7	2.6	

Remark: Italic and bold value indicated Action Level exceedance Underlined and bold value indicated Limit Level exceedance



Tidal	Sampling Date	G1	R1	R2	I1	I2	I3	W1	M1	FCZ1
	3-Jul-18		С	ancelled	due to	adverse	weather	conditio	on	
	5-Jul-18		С	ancelled	due to	adverse	weather	conditio	on	
	6-Jul-18	4.5	4.0	6.3	3.5	5.8	3.5	5.5	5.0	3.3
	9-Jul-18	8.5	13.0	10.5	10.5	10.8	6.0	6.8	11.5	3.8
	11-Jul-18	5.5	8.8	8.5	7.0	7.5	8.3	8.5	7.5	11.0
	13-Jul-18		С	ancelled	due to	adverse	weather	conditio	n	
Mid-Ebb	16-Jul-18	6.8	8.7	6.3	8.5	9.3	11.5	11.0	10.5	10.5
	19-Jul-18	19.3	24.8	26.0	35.5	24.5	25.5	19.8	16.5	23.8
	21-Jul-18	6.5	6.7	5.3	9.0	14.0	10.8	8.2	11.0	12.3
	23-Jul-18	6.3	4.8	4.8	3.0	5.0	4.8	3.8	5.5	5.5
	25-Jul-18	4.5	2.8	5.3	7.5	5.3	4.0	7.3	6.0	<u>8.0</u>
	27-Jul-18	4.3	3.5	5.5	4.0	4.0	4.8	4.7	4.5	3.0
	30-Jul-18	5.3	5.7	4.3	7.5	6.5	9.5	6.2	8.5	5.8
	3-Jul-18	4.5	4.5	4.0	4.5	4.8	3.8	2.5	3.0	4.0
	5-Jul-18		С	ancelled	due to d	adverse	weather	conditio	n	
	6-Jul-18	5.3	4.2	4.3	5.5	5.8	6.5	4.2	5.5	5.5
	9-Jul-18	6.0	9.7	5.8	10.0	9.8	10.5	9.2	60.0	13.3
	11-Jul-18	13.8	7.8	8.0	12.0	5.5	5.8	11.8	61.0	11.0
	13-Jul-18		C	ancellea	due to	adverse	weather	conditio	on	
Mid-Flood	16-Jul-18	9.8	9.3	10.8	6.5	6.0	5.8	6.8	5.0	7.0
	19-Jul-18		С	ancellea	due to	adverse	weather	conditio	n	
	21-Jul-18	14.3	18.8	19.5	10.0	17.8	13.3	9.7	7.5	17.0
	23-Jul-18		C	ancellea	due to	adverse	weather	conditio	n	
	25-Jul-18	7.3	7.7	9.3	5.5	7.3	7.5	9.7	6.5	6.0
	27-Jul-18	3.5	2.5	4.3	5.0	4.5	4.0	4.7	8.0	3.8
	30-Jul-18	9.0	6.2	5.3	7.5	10.8	11.0	9.5	9.0	9.8

Table 6-4Results Summary of Depth Average of Suspended Solids (mg/L)

Remark: Italic and bold value indicated Action Level exceedance Underlined and bold value indicated Limit Level exceedance

Table 6-5Results Summary of Depth Average of Chlorophyll-a (µg/L)

Tidal	Sampling Date	G1	R1	R2	I1	I2	I3	W1	M1	FCZ1
	3-Jul-18		С	ancelled	l due to d	adverse	weather	conditio	on	
	5-Jul-18		С	ancelled	l due to d	adverse	weather	conditio	on	
	6-Jul-18	7.0	7.50	5.95	2.70	3.13	4.25	8.52	4.35	6.70
	9-Jul-18	4.4	4.40	3.38	3.70	4.93	4.08	5.03	1.95	5.25
	11-Jul-18	2.8	2.92	3.50	3.50	3.53	2.58	2.77	2.15	3.03
	13-Jul-18		С	ancelled	l due to a	adverse	weather	conditio	on	
Mid-Ebb	16-Jul-18	5.0	2.93	6.68	6.75	5.90	3.40	4.53	2.40	5.73
	19-Jul-18	8.3	8.35	7.93	7.20	7.25	7.05	8.02	8.00	7.68
	21-Jul-18	5.2	6.12	4.75	5.65	5.30	3.95	2.22	7.00	6.90
	23-Jul-18	8.8	7.55	7.13	6.55	9.33	8.45	8.60	6.20	11.40
	25-Jul-18	9.8	8.37	9.78	10.45	10.33	10.38	9.52	6.15	9.40
	27-Jul-18	4.9	4.90	4.78	5.30	5.88	6.78	4.40	3.65	4.05
	30-Jul-18	5.8	5.72	6.10	6.35	5.60	6.95	7.65	7.40	9.05
	3-Jul-18	1.68	2.03	2.13	2.40	2.73	2.38	2.53	1.70	2.15
	5-Jul-18		C	ancelled	l due to a	adverse	weather	conditio	on	
	6-Jul-18	9.50	9.45	9.40	10.30	11.38	14.18	9.47	9.85	11.25
	9-Jul-18	5.30	3.58	4.38	3.85	4.73	4.88	5.60	4.65	4.00
Mid-Flood	11-Jul-18	3.43	3.72	3.65	4.25	4.05	3.63	4.35	3.50	4.28
	13-Jul-18		C	ancelled	l due to d	adverse	weather	conditio	n	
	16-Jul-18	5.10	1.45	3.83	4.20	3.60	2.83	2.55	3.90	3.93
	19-Jul-18		С	ancelled	l due to d	adverse	weather	conditio	on	
	21-Jul-18	7.18	12.08	8.15	8.15	8.85	7.03	6.43	5.05	6.25



Tidal	Sampling Date	G1	R1	R2	I1	I2	I3	W1	M1	FCZ1
	23-Jul-18		С	ancelled	l due to d	adverse	weather	conditio	n	
	25-Jul-18	6.58	5.72	9.65	10.75	8.45	11.10	7.68	10.55	11.63
	27-Jul-18	3.80	3.90	3.78	4.35	4.03	3.73	4.05	5.05	4.15
	30-Jul-18	4.45	5.23	3.83	4.70	6.85	4.73	4.25	4.15	4.20

Remark: Italic and bold value indicated Action Level exceedance

- 6.2.3 During the Reporting Period, field measurements showed that temperatures of marine water were within 24.3°C to 33.2°C; the salinity concentrations within 24.83 to 33.99 ppt and pH values within 6.87 to 9.72.
- 6.2.4 The monitoring results including in-situ measurements and laboratory testing results are attached in *Appendix H*. The graphical plots are shown in *Appendix I*.
- 6.2.5 In this Reporting Period, there were a total ninety-two (92) exceedances recorded namely seventeen (17) Action Level (AL) and seventy-five (75) Limit level (LL). A summary of water quality monitoring exceedance is shown in *Table 6-6*.

Station	Toj	Ave of p & lepth)	(Bo	O ttom pth)	(De	oidity epth ve)	(De	S epth ve)		phyll- <i>a</i> h Ave)	Excee for	tal dance the tion
	AL	LL	AL	LL	AL	LL	AL	LL	AL	LL	AL	LL
I1	0	0	0	0	1	1	1	11	0	0	2	12
I2	0	0	0	0	3	0	2	12	1	0	6	12
I3	0	0	0	0	0	1	1	10	1	0	2	11
W1	0	0	0	0	1	1	1	13	0	0	2	14
M1	0	0	0	0	0	4	3	10	0	0	3	14
FCZ1	0	0	0	0	1	1	1	11	0	0	2	12
No of Exceedance	0	0	0	0	6	8	9	67	2	0	17	75

Table 6-6Summary of Water Quality Exceedance

- 6.2.6 The total of 92 water quality monitoring exceedances included 14 AL/LL exceedances of Turbidity, 76 AL/LL exceedances of Suspended Solids and also 2 AL exceedances of Chlorophyll-a.
- 6.2.7 For Turbidity measurement, there were 6 AL and 8 LL exceedances which detected on 19, 25, 27 and 30 July 2018. For Suspended Solids, there were 9 AL and 67 LL exceedances which involved monitoring days of 6, 9, 11, 16, 19, 21, 25, 27 and 30 July 2018. Furthermore, there were 2 AL exceedances detected on 6 July 2018 for chlorophyll-*a* measurement.

6.3 EXCEEDANCE INVESTIGATION

6.3.1 Upon confirmation of the monitoring result, Notification of Exceedances (NOEs) has had issued to relevant parties. Investigation for the cause of exceedance was carried out by ET subsequently.

Exceedances of Suspended Solids on 15, 19, 21, 25, 27 and 29 June 2018 and Chlorophyll-a on 25 June 2018 (last Reporting Period)

6.3.2 The site construction activities carried out on 15 to 29 June 2018 included rock filling work at West Groyne using land-based excavator enclosed by double silt curtain. As water quality mitigation measures, silt curtains were properly implemented and maintained at locations in accordance with EP's condition. Having reviewed environmental performance of the project site and the monitoring results of the reference stations, impact stations as well as the sensitive receiver stations, it is considered that all the exceedances were not caused by the works under the

Project. Nevertheless, the Contractor was reminded to strictly implement the water quality mitigation measures as recommended implementation schedule for environmental mitigation measures in the EM&A Manual and EP's condition.

Exceedances of Suspended Solids on 6 and 9 July 2018 and Chlorophyll-a on 6 July 2018

6.3.3 There were no marine works carried out on 6 and 9 July 2018. During the course of marine water quality monitoring, no abnormal and turbid discharge was observed made from the construction site. Having reviewed environmental performance of the project site and the monitoring results of the reference stations, impact stations as well as the sensitive receiver stations and the weather condition during the monitoring days, it is considered that all the exceedances were not caused by the works under the Project. Nevertheless, the Contractor was reminded to strictly implement the water quality mitigation measures as recommended implementation schedule for environmental mitigation measures in the EM&A Manual and EP's condition.

Exceedances of Turbidity and Suspended Solids on 11, 16, 19, 21 25, 27 and 30 July 2018

6.3.4 The construction activity carried out in July 2018 was rock filling work at west groyne using land-based excavator enclosed by double silt curtain. As water quality mitigation measures, silt curtains were properly implemented and maintained at locations in accordance with EP's condition. During the course of marine water quality monitoring, no abnormal and turbid discharge was observed made from the construction site. Having reviewed environmental performance of the project site and the monitoring results of the reference stations, impact stations as well as the sensitive receiver stations and the weather condition during the monitoring days, it is considered that all the exceedances were not caused by the works under the Project. Nevertheless, the Contractor was reminded to strictly implement the water quality mitigation measures in the EM&A Manual and EP's condition.



7. WASTE MANAGEMENT

7.1 GENERAL

7.1.1 Waste management was carried out by an on-site Environmental Officer or an Environmental Supervisor from time to time.

7.2 **RECORDS OF WASTE QUANTITIES**

- 7.2.1 All types of waste arising from the construction work are classified into the following:
 - Construction & Demolition (C&D) Material;
 - Chemical Waste;
 - General Refuse; and
 - Excavated Soil.
- 7.2.2 The quantities of waste for disposal in this Reporting Period are summarized in *Tables 7-1* and 7-2 and the Monthly Summary Waste Flow Table is shown in *Appendix K*. Whenever possible, materials were reused on-site as far as practicable.

Table 7-1Summary of Quantities of Inert C&D Materials

Types of Waste	Quantity	Disposal Location
Total C&D Materials (Inert) ('000m ³)	0	NA
Reused in this Contract (Inert) ('000m ³)	0	NA
Reused in other Projects (Inert) ('000m ³)	0	NA
Disposal as Public Fill (Inert) ('000m ³)	0	NA

Table 7-2Summary of Quantities of C&D Wastes

Types of Waste	Quantity	Disposal Location
Recycled Metal ('000kg)	0	NA
Recycled Paper / Cardboard Packing ('000kg)	0	NA
Recycled Plastic ('000kg)	0	NA
Chemical Wastes ('000kg)	0	NA
General Refuse ('000m ³)	0	NA



8. ECOLOGY

8.1 ECOLOGY MONITORING (MARINE-BASED)

Seahorse Translocation Surveys

- 8.1.1 The seahorse captured and translocation was conducted in the period of **17** to **20** January 2018. Since the two tagged seahorses were not recorded at the Ting Kok East reception site during the first 7 days Post-translocation Seahorse Survey on 21 to 27 January 2018, Option 2 of monitoring programme was therefore adopted to perform the Post-translocation Seahorse Survey in accordance with the approved method statement (Seahorses Translocation Plan (Version 1, 11 January 2018) refers). The Post-translocation Seahorse Survey should be performed in the first year for a period of one year after the completion of seahorse translocation. The proposed survey time would be at least 28 man-hours (including 14 man-hours during daytime and 14 man-hours during nighttime for each survey). The survey frequency is listed below:
 - Daily for first week
 - three times per week for the second to fourth week
 - once a week for the second to fourth month
 - once a month for the fifth to twelve month
- 8.1.2 The fifth month of Post-translocation Seahorse Survey was planned to be carried out on 14 and 15 June 2018 at Ting Kok East reception site. Due to unstable weather condition, the survey was postponed to 21 and 22 June 2018. However, since persisted unstable weather with forecasting thunderstorm warning on 21 and 22 June 2018, the survey was further postponed to 28 and 29 June 2018. As thunderstorm warning was continuously issued during the days on 25, 26 and 27 June 2018 and thunderstorm warning was forecasted again on 28 and 29 June 2018. For safety reason, the survey was postponed to be carried out in the first week of July 2018. The fifth month Post-translocation Seahorse Survey was found during the survey.
- 8.1.3 The sixth month Post-translocation Seahorse Survey was planned to be carried out on 18 and 19 July 2018 at Ting Kok East reception site. Due to the forecast tropical cyclone that may affect the weather on the planned days, to avoid further delay of the July Survey, the survey has been re-scheduled on 17 and 18 July 2018. According to the survey result, no tagged seahorse was found during the survey.



9. SITE INSPECTION

9.1 **REQUIREMENTS**

9.1.1 According to the approved EM&A Manual, the environmental site inspection shall be formulation by ET Leader. The site inspection and audits should be conducted twice per month by ET.

9.2 FINDINGS / DEFICIENCIES DURING THE REPORTING MONTH

- 9.2.1 In the Reporting Period, joint site inspection and audit to evaluate site environmental performance was carried out by the RE, ET and the Contractor on 13 and 30 July 2018. No non-compliance was noted within this reporting period.
- 9.2.2 The findings / deficiencies that observed during the weekly site inspection are listed in *Table 9-1*.

Table 9-1 S		
Date	Findings / Deficiencies	Follow-Up Status
29 June 2018 (last Reporting Period)	• Broken water-filled barrier was observed, the Contractor should replace the broken water-filled barrier to minimize the risk of mosquito breeding	• The broken water-filled barrier was sealed.
13 July 2018	• Water was observed accumulated in the drip tray under generator. The Contractor should clear the stagnant water regularly.	• Stagnant water in the drip tray was removed.
30 July 2018	• No adverse environmental issue was observed.	N/A

Table 9-1Site Observations



10. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

10.1 Environmental Complaint, Summons and Prosecution

- 10.1.1 In the Reporting Period, no environmental complaint, summons and prosecution was received.
- 10.1.2 In the Reporting Period, no summons and prosecution under the EM&A Programme was lodged for the project. The statistical summary table of environmental complaint is presented in *Tables 10-1*, *10-2* and *10-3*.

Table 10-1 Statistical Summary of Environmental Complaints

Departing Davied	Environmental Complaint Statistics					
Reporting Period	Frequency	Cumulative	Complaint Nature			
1 – 31 July 2018	0	0	NA			

Table 10-2 Statistical Summary of Environmental Summons

Departing Davied	Environmental Summons Statistics		
Reporting Period	Frequency	Cumulative	Summons Nature
1 – 31 July 2018	0	0	NA

Table 10-3 Statistical Summary of Environmental Prosecution

Reporting Period	Environmental Prosecution Statistics		
	Frequency	Cumulative	Prosecution Nature
1 – 31 July 2018	0	0	NA

11. IMPLEMENTATION STATUS OF MITIGATION MEASURES

11.1 GENERAL

- 11.1.1 The environmental mitigation measures that recommended in the Implementation Schedule for Environmental Mitigation Measures (ISEMM) in the approved EM&A Manual covered the issues of dust, noise, water, ecology and waste etc. and they are summarized presented in *Appendix L*.
- 11.1.2 The Contractor had been implementing the required environmental mitigation measures according to the Environmental Monitoring and Audit Manual subject to the site condition. Environmental mitigation measures generally implemented by the Contractor in this Reporting Month are summarized in *Table 11-1*.

Issues	Environmental Mitigation Measures		
Construction	• Regularly to maintain all plants, so only the good condition plants were used		
Noise	 on-site ; If possible, all mobile plants onsite operation has located far from NSRs; When machines and plants (such as trucks) were not in using, it was switched 		
	off;		
	 Wherever possible, plant was prevented oriented directly the nearby NSRs; Provided quiet powered mechanical equipment to use onsite; 		
	• Moveable noise barriers were temporary used for construction work, where		
	necessary; and		
	• Weekly noise monitoring was conducted to ensure construction noise meet the criteria.		
Air Quality	 Stockpile of dusty material was covered entirely with impervious sheeting or sprayed with water so as to maintain the entire surface wet; 		
	• The construction plants regularly maintained to avoid the emissions of black smoke;		
	• The construction plants switched off when it not in use;		
	• Water spraying on haul road and dry site area was provided regularly;		
	• Where a vehicle leaving the works site is carrying a load of dusty materials, the load has covered entirely with clean impervious sheeting; and		
	• Before any vehicle leaving the works site, wheel watering has been performed.		
Water Quality	 Impervious sheeting was provided on exposed soil surfaces to reduce the potential of soil erosion; 		
	• Debris and refuse generated on-site collected daily;		
	 Stockpiles of the cement and other construction materials were covered when not being used; 		
	 Oils and fuels were stored in designated areas with locks; 		
	• The chemical waste storage as sealed area provided with locks;		
	 Sedimentation facilities was provided to remove silt particles from groundwater; 		
	• Site hoarding with sealed foot were provided surrounding the boundary of working site to prevent wastewater or site surface water runoff get into public areas; and		
	• Portable chemical toilets were provided on-site. A licensed contractor was regularly disposal and maintenance of these facilities.		
	• Silt curtain was installed and maintained in accordance with EP condition		

 Table 11-1
 Environmental Mitigation Measures in the Reporting Month



Issues	Environmental Mitigation Measures
Waste and	• Excavated material reused on site as far as possible to minimize off-site
Chemical	disposal. Scrap metals or abandoned equipment should be recycled if
Management	possible;
	• Waste arising kept to a minimum and be handled, transported and disposed of in a suitable manner;
	• Disposal of C&D wastes to any designated public filling facility and/or landfill followed a trip ticket system; and
	• Chemical waste handled in accordance with the Code of Practice on the
	Packaging, Handling and Storage of Chemical Wastes.
General	 The site is generally kept tidy and clean.
General	 Mosquito control is performed to prevent mosquito breeding on site.

11.2 IMPACT FORECAST

- 11.2.1 Construction activities to be undertaken in August 2018 should be included below:-
 - Site formation
 - Construction of Western Open Channel / Box Culvert
 - Construction of Eastern Box Culvert
 - Dredging and Construction of Groynes (East and West)
 - Construction of Retaining Wall
- 11.2.2 Potential environmental impacts arising from the works include:
 - Construction waste
 - Air quality
 - Construction noise
 - Water quality (particularly site runoff during rainy seasons)
- 11.2.3 Environmental mitigation measures will be properly implemented and maintained as per the Mitigation Implementation Schedule in **Appendix L** to ensure site environmental performance is acceptable.



12. CONCLUSIONS AND RECOMMENTATIONS

12.1 CONCLUSIONS

- 12.1.1 This is the 8th monthly EM&A report presenting the monitoring results and inspection findings for the reporting period from 1 to 31 July 2018.
- 12.1.2 In this Reporting Period, no construction noise monitoring results that triggered the Limit Level was recorded. No NOE or the associated corrective actions were therefore issued. Moreover, no noise complaint (which is an Action Level exceedance) was received for the Project.
- 12.1.3 In this Reporting Period, no air quality monitoring exceedance was recorded. No NOE or the associated corrective actions were therefore issued.
- 12.1.4 For water quality monitoring, there have a total 17 AL and 75 LL exceedances were recorded and the exceedances comprised of 14 AL/LL exceedances of Turbidity, 76 AL/ LL exceedances of Suspended Solids and 2 AL exceedances of Chlorophyll-a. There were no marine works carried out on 2 to 9 July 2018 while rock filling work at west groyne using land-based excavator was carried out on 10 to 30 July 2018. As water quality mitigation measures, silt curtains were properly implemented and maintained at locations in accordance with EP's condition. Having reviewed environmental performance of the project site and the monitoring results of the reference stations, impact stations as well as the sensitive receiver stations and the weather condition during the monitoring days, it is considered that all the exceedances were not caused by the works under the Project. Nevertheless, the Contractor was reminded to strictly implement the water quality mitigation measures as recommended implementation schedule for environmental mitigation measures in the EM&A Manual and EP's condition
- 12.1.5 In the Reporting Period, joint site inspection and audit to evaluate site environmental performance was carried out by the CEDD, ET and the Contractor on 13 and 30 July 2018. No non-compliance was noted within this reporting period.
- 12.1.6 No environmental complaints, notification of summons or successful prosecution were received in this Reporting Period.

12.2 RECOMMENDATIONS

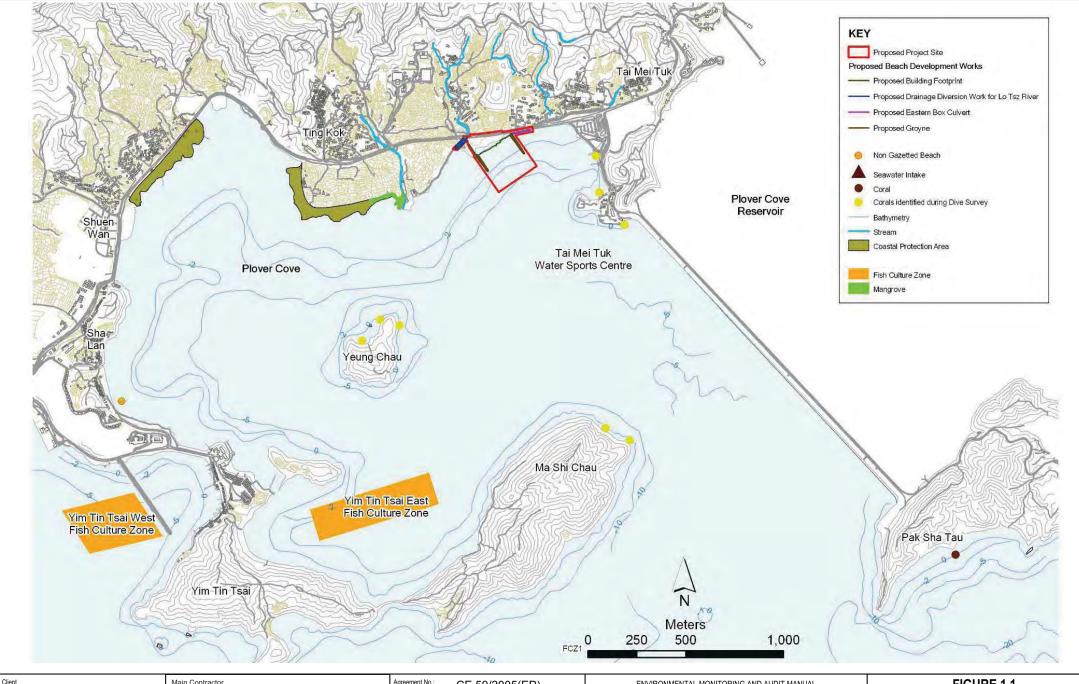
- 12.2.1 The construction activities in coming month August 2018 include site formation, dredging and construction of groynes, construction of eastern and western box culvert and open channel. Furthermore, retaining wall construction will be commenced in the coming month. The potential environmental impacts arising from the forthcoming construction activities include construction waste, air quality and construction noise and water quality.
- 12.2.2 During wet and rainy season, the Contractor is reminded prevent surface runoff entering the sea or public area such as cover the exposed slope by impervious sheets and maintain the temporary drain and wastewater treatment system effectively.
- 12.2.3 Construction noise should be a key environmental impact during the works. The noise mitigation measures such as use of quiet plants and installation of temporary noise barrier at the construction noise predominate area should be fully implemented as accordance with the EM&A requirement.
- 12.2.4 As a reminder, housekeeping of the site and site tidiness should be undertaken after every day work completion. Also, drip tray should be provided for chemical container to prevent land contamination. In addition, mosquito control should be kept to prevent mosquito breeding on site.



Appendix A

Layout plan of the Project

(The content of Appendix A is modified from the previous EM&A Manual - Development of a Bathing Beach at Lung Mei, Tai Po (Register No. AEIAR-123/2008): Environmental Monitoring and Audit (EM&A) Manual (November 2007))

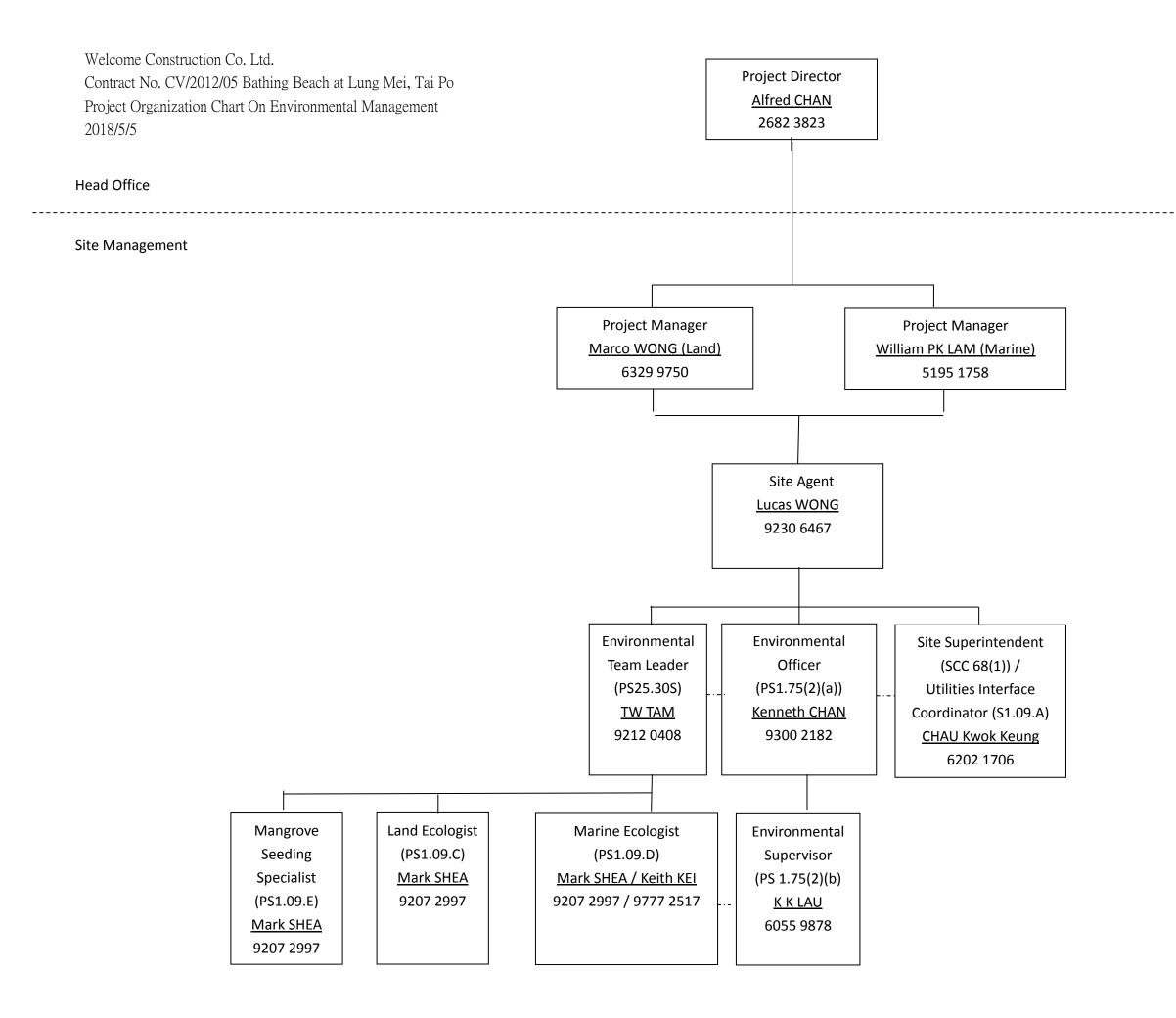


Client	Main Contractor	Agreement No.: CE 59/2005(EP)	ENVIRONMENTAL MONITORING AND AUDIT MANUAL		FIGURE 1.1	1
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	(1) 傳金建築有限公司			Checked TF	Scale AS SHOWN	Rev. 1
	Welcome Construction Co., Lid.	BEACH AT LUNG MEI, TAI PO		Designed -	Drawn AM	Date 13/03/2007



Appendix B

Organization structure and contact details





Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
CEDD	Engineer's Representative	Mr. K F Chan	2762 5532	2714 2054
ERM	Independent Environmental Checker	Mr. Terence Fong	2271 3156	2723 5660
Welcome	Project Manager	Mr. Marco Wong	6329 9750	2682 3222
Welcome	Sub-Agent	Mr. Lucas Wong	9230 6467	2682 3222
Welcome	Environmental Officer	Mr. Kenneth Chan	9300 2182	2682 3222
Welcome	Environmental Supervisor	Mr. K K Lau	6055 9878	2682 3222
AUES	Environmental Team Leader	T. W. Tam	2959 6059	2959 6079
AUES	Environmental Consultant	Nicola Hon	2959 6059	2959 6079
AUES	Environmental Consultant	Ben Tam	2959 6059	2959 6079

Contact Details of Key Personnel – CV/2012/05

Legend:

CEDD (Engineer) – Civil Engineering and Development Department Welcome (Contractor) – Welcome Construction Company Limited ERM (IEC) – Environmental Resources Management

AUES (ET) – Action-United Environmental Services & Consulting



Appendix C

3-Month Rolling Construction Program

3-month Construction Program (July to September 2018)

Construction Work	July	August	September
	2018	2018	2018
Site Formation	\checkmark	\checkmark	\checkmark
Construction of Western Open Channel /	\checkmark	\checkmark	\checkmark
Box Culvert			
Construction of Eastern Box Culvert		\checkmark	\checkmark
Dredging and Construction of Groynes	\checkmark	\checkmark	\checkmark
(East and West)			
Construction of Retaining Wall		\checkmark	\checkmark
Construction of Seawall		\checkmark	\checkmark

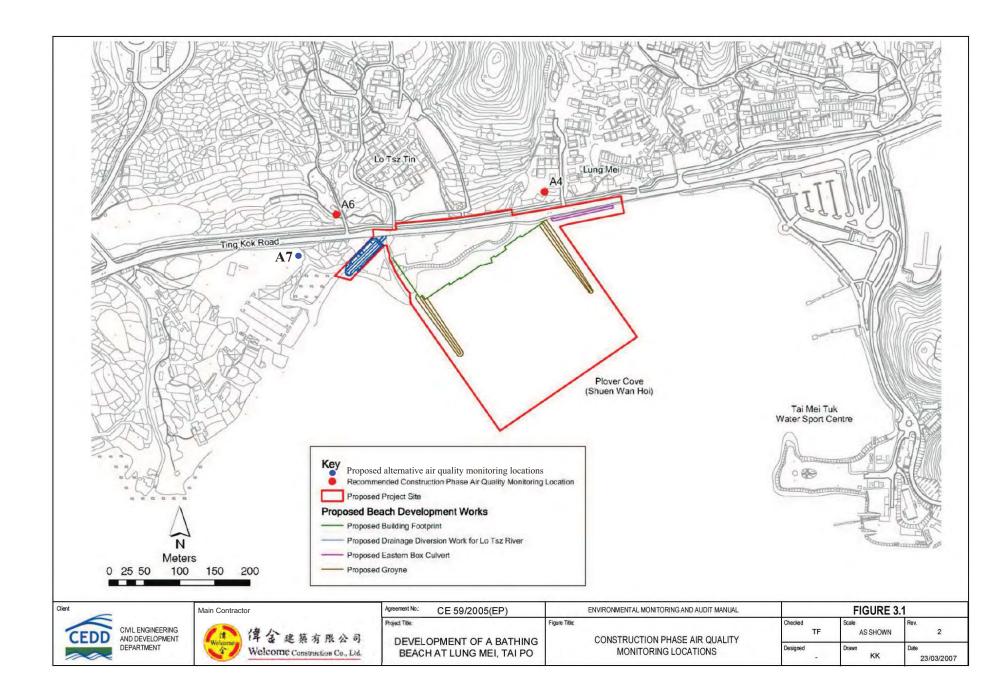


Appendix D

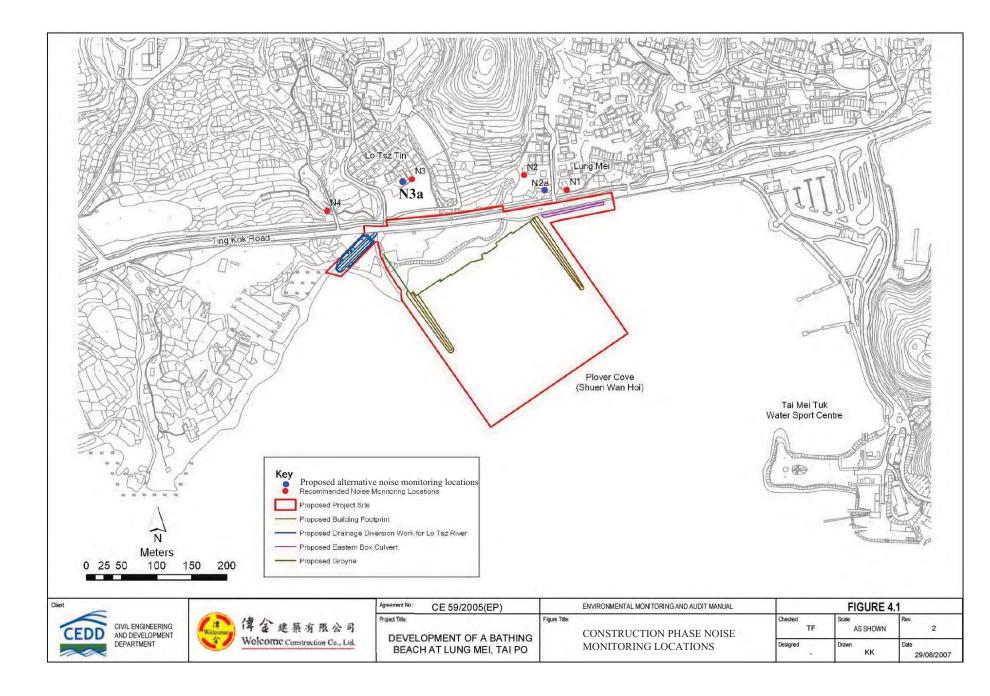
Monitoring Location

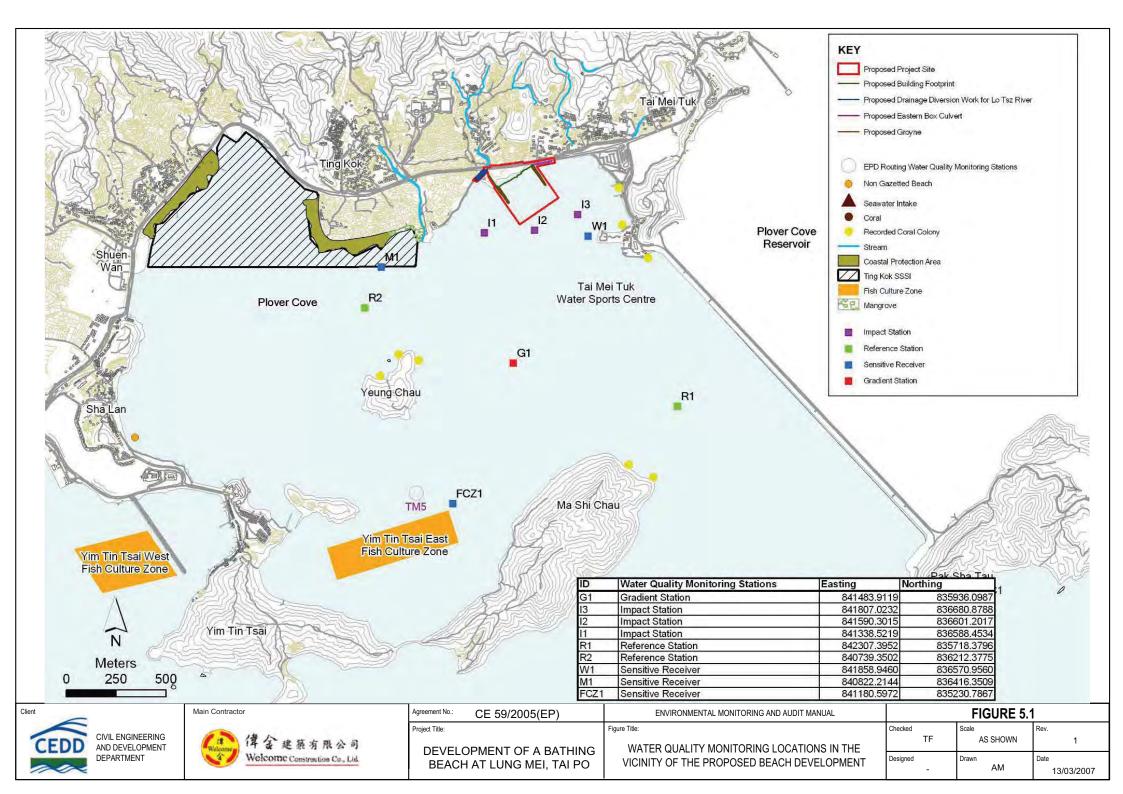
(The Figures of Appendix D are modified from the previous EM&A Manual - Development of a Bathing Beach at Lung Mei, Tai Po (Register No. AEIAR-123/2008): Environmental Monitoring and Audit (EM&A) Manual (November 2007))





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Photograph Records for Air Quality Monitoring



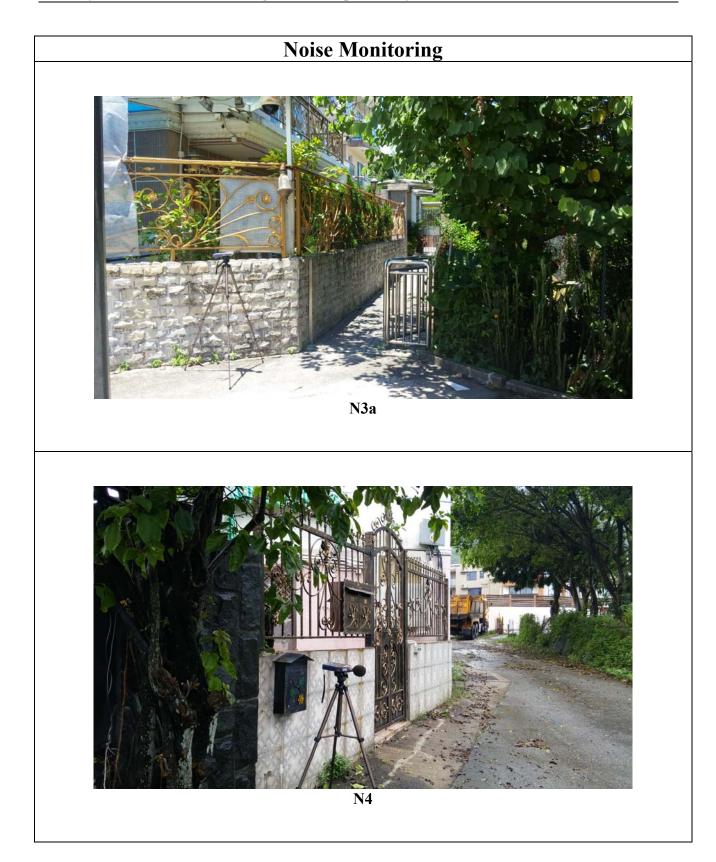


Photograph Records for Noise Monitoring



CEDD Contract No. CV/2012/05 – Development of a Bathing Beach at Lung Mei, Tai Po Monthly Environmental Monitoring & Audit Report – July 2018







Appendix E

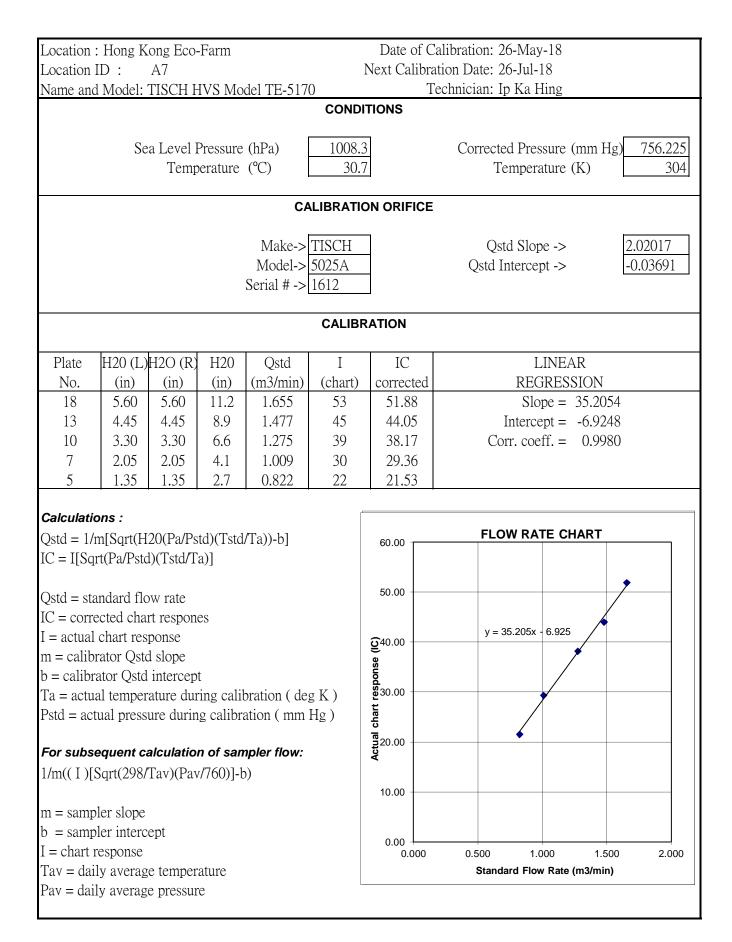
Calibration Certificate of Monitoring Equipment



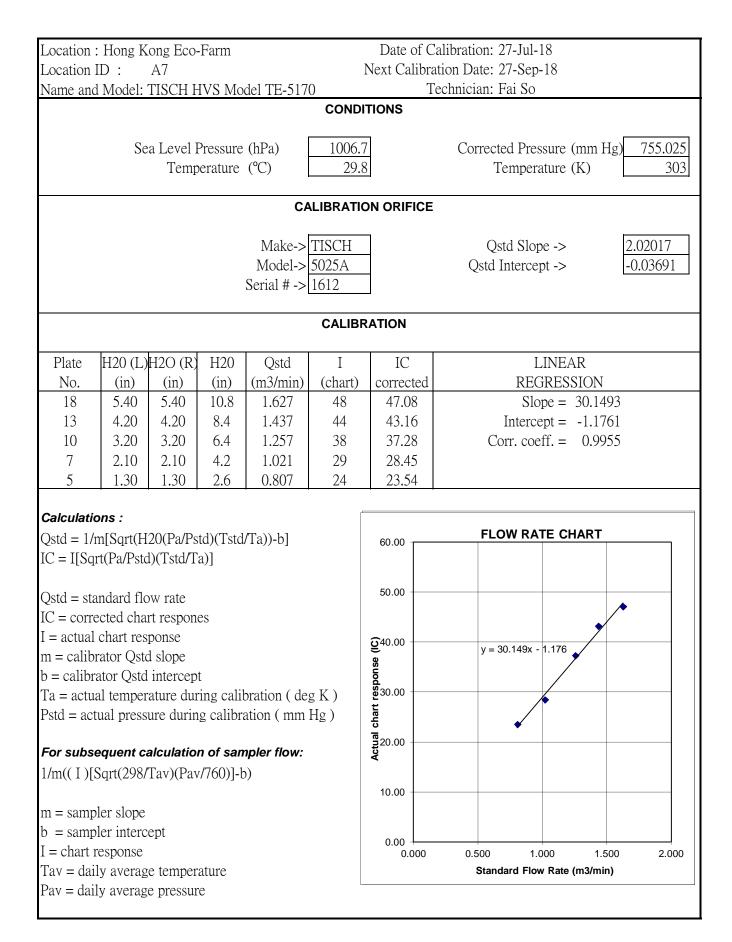
MONITORING EQUIPMENT CALIBRATION CERTIFICATES Τ Т _ r D

Items	Aspect	Description of Equipment	Date of Calibration	Date of Next Calibration
1		TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for A4	26 May 18	26 Jul 18
1a		TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for A4	27 Jul 18	27 Sep 18
2		TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for A7	26 May 18	26 Jul 18
2a		TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for A7	27 Jul 18	27 Sep 18
3	Air	Calibration Kit TISCH Model TE-5025A Orifice ID 1612 and Rootsmeter S/N 438320	13 Feb 18	13 Feb 19
4		Laser Dust Monitor, Model LD-3B (Serial No. 456658) – EQ115	15 Mar 18	15 Mar 19
5		Laser Dust Monitor, Model LD-3B (Serial No. 456659) – EQ116	15 Mar 18	15 Mar 19
6		Laser Dust Monitor, Model LD-3B (Serial No. 456660) – EQ117	15 Mar 18	15 Mar 19
7		Laser Dust Monitor, Model LD-3B (Serial No. 456662) – EQ118	15 Mar 18	15 Mar 19
8		Bröel & Kjær 2238 Sound Level Meter (Serial No. 2285722) – EQ009	10 Jun 18	10 Jun 19
9		Rion NL-52 Sound Level Meter (Serial No. 00142581) – EQ015	12 May 18	12 May 19
10		Rion NL-31 Sound Level Meter (Serial No. 00410247) – EQ068	9 Jun 18	9 Jun 19
11	Noise	Brüel & Kjær 4231 Acoustical Calibrator (Serial No. 2713428) – EQ082	12 May 18	12 May 19
12		Rion Sound Level Calibrator NC-73 (Serial No.: 10655561) - EQ085	22 Jul 17	22 Jul 18
13		Rion Sound Level Calibrator NC-74 (Serial No.: 34657230) - EQ086	18 Jun 18	18 Jun 19
14		Rion Sound Level Calibrator NC-74 (Serial No.: 34657231) - EQ087	22 Jul 17	22 Jul 18
15	Water	Valeport Ltd - Model 106 Current Meter (Serial No. 60011)	16 Jun 17	16 Jun 19
16	water	Multifunctional Meter – YSI Professional DSS (Serial No. 17B102764/17B100758) – (EQW019)_	17 May 18	17 Aug 18

Location :	: No	o. 101 Lu	ng Mei '	Tsuen		Date of	Calibration: 26-N	√lay-18		
Location 1	ID :	A4				Next Cal	oration Date: 26-J	ul-18		
Name and	l Model:	TISCH H	HVS Mo	del TE-517	0		Technician: Ip K	a Hing		
					COND	TIONS				
						_				
	Se	a Level I	Pressure	(hPa)	1008.3	3	Corrected I	Pressure (mm	Hg) 756.225	
		Temp	berature	(°C)	30.7	7	Temj	perature (K)	304	
						-				
				CA	LIBRATIO	ON ORIF	E			
						-				
				Make->	TISCH		Qstd S	Slope ->	2.02017	
				Model->		_	Qstd Inte	rcept ->	-0.03691	
				Serial # ->	1612					
					-					
					CALIBF	RATION				
Plate	H20(I)	H2O (R)	H20	Qstd	I	IC		LINEAR		
No.	(in)	(in)	(in)	(m3/min)	(chart)	correct	d F	REGRESSION	J	
110.	5.90	5.90	11.8	1.698	44	43.0		Slope = 26.1		
13	4.50	4.50	9.0	1.486	39	38.1		ercept = -1.3		
10	3.45	3.45	6.9	1.303	33	32.30		Corr. coeff. = 0.9962		
7	2.30	2.30	4.6	1.067	26	25.4		0.9	<i>)</i> 02	
5	1.30	1.30	2.6	0.807	20	20.5				
	1.50	1.50	2.0	0.007	21	20.5				
Calculatio	ons :									
Qstd = 1/r	n[Sart(H	20(Pa/Ps	std)(Tstd	/Ta))-b]		50.00 -	FLOW F	RATE CHART		
IC = I[Squ						00.00				
	,							y = 26.121x - 1	1.325	
Qstd = sta	indard flo	ow rate				40.00 -				
IC = corrections			es			40.00			•	
I = actual	chart res	ponse				(C				
m = calibi	rator Qsto	d slope				e e e e				
b = calibr	ator Qstd	intercep	t) a 30.00 - 20				
Ta = actua	al temper	ature du	ring calil	bration (de	gK)	Les		\		
Pstd = act	ual press	ure durir	ng calibra	ation (mm	Hg)	hart	•			
For subse	equent c	alculatio	n of san	npler flow:		Actual				
1/m((I)[S	Sqrt(298/	Tav)(Pav	/760)] - t))		40.00				
						10.00 +				
m = samp	ler slope									
b = samp	ler interc	ept								
I = chart r	-					+ 0.00 0.0	0.500	1.000 1	.500 2.000	
Tav = dai	ly averag	e temper	ature					Flow Rate (m3/m		
Pav = dail	ly averag	e pressui	e]	



r							
Location : No. 101 Lung Mei Tsuen							e of Calibration: 27-Jul-18
Location	ID:	A4				Next Cal	alibration Date: 27-Sep-18
Name and	l Model: '	TISCH H	IVS Mo	del TE-517	0		Technician: Fai So
						TIONS	
	Se	a Level I	Pressure	(hPa)	1006.7	7	Corrected Pressure (mm Hg) 755.025
			berature	. ,	29.8		Temperature (K) 303
		Tomp	oracare	(0)	27.		
				CA	LIBRATI	ON ORIF	FICE
				Make->	TISCH	7	Qstd Slope -> 2.02017
				Model->	5025A		Qstd Intercept -> -0.03691
				Serial # ->	1612		
					CALIB	RATION	
					CALIDI		
Plate	H20(L)	H2O (R)	H20	Qstd	I	IC	C LINEAR
No.	(in)	(in)	(in)	(m3/min)	(chart)	correct	
18	5.10	5.10	10.2	1.581	41	40.22	
13	4.00	4.00	8.0	1.403	36	35.3	1
10	3.30	3.30	6.6	1.105	32	31.39	1
7	2.00	2.00	4.0	0.997	26	25.50	
5	1.30	1.30	4.0 2.6	0.997	20	20.60	
	1.30	1.50	2.0	0.007	Ζ1	20.00	<u>50</u>
Calculatio	ons :				Γ		
Qstd = 1/1		20(Pa/Ps	td)(Tstd	/Ta)) - h]		50.00	FLOW RATE CHART
IC = I[Sq]				/1u)) 0]		50.00	
10 – 1[04	11(1 1/1 50	•)(1500/1	u/]				
Qstd = sta	ndard flo	w rate					y = 24.936x + 0.360
Q stu = sta IC = corre			90			40.00 +	
I = actual		-	68				
		-				(<u>)</u>	
m = calibr	-	-				8 30.00 +	
b = calibr	-	_				bdsa	
	-		_	bration (de		artra	
Pstd = act	ual press	ure durin	ig calibr	ation (mm	Hg)	e 30.00 - 20.00 -	
						Actual	
	-			npler flow:		¥	
1/m((I)[Sqrt(298/	Tav)(Pav	///60)] - t))		10.00 +	
						-	
m = samp	_						
b = samp		ept				0.00	
I = chart I	-						.000 0.500 1.000 1.500 2.000
Tav = dai	ly averag	e temper	ature				Standard Flow Rate (m3/min)
Pav = dai	ly averag	e pressur	e		L		





RECALIBRATION DUE DATE: February 13, 2019

Cal. Date:	February 13	3. 2018	Rootsn	neter S/N: 4	138320	Ta: 3	293	°К
			noorsh				Pa: 763.3	
Operator:	Jim Tisch	Sec. 20			1012	ra.	/05.5	mm Hg
Calibration	Model #:	TE-5025A	Calib	rator S/N:	1012			_
		Vol. Init	Vol. Final	ΔVol.	ΔTime	ΔΡ	ΔΗ	1
	Run	(m3)	(m3)	(m3)	(min)	(mm Hg)	(in H2O)	
	1	1	2	1	1.3970	3.2	2.00	1
	2	3	4	1	1.0000	6.3	4.00	-
	3	5	6	1	0.8900	7.9	5.00	1
	4	7	8	1	0.8440	8.7	5.50	1
	5	9	10	1	0.7010	12.6	8.00	
			D	ata Tabulat	ion			1
		· · · · · · · · · · · · · · · · · · ·	[/ D-	V/ Total X			F 1 S	1
	Vstd	Qstd	$\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right)}$)(<u>Tstd</u>)		~~	√∆Н(Та/Ра)	
	(m3)	(x-axis)	(y-axi	s)	Va	(x-axis)	(y-axis)	
	1.0172	0.7281	1.4293		0.9958	0.7128	0.8762	
	1.0130	1.0130	2.0213		0.9917	0.9917	1.2392	
	1.0109	1.1358	2.2599		0.9896	1.1120	1.3854	-
	1.0098	1.1964	2.3702		0.9886	1.1713	1.4530	-
	1.0046	1.4331	2.858		0.9835	1.4030	1.7524	_
		m=	2.020		~ ~	m=	1.26500	
	QSTD	b=	-0.036		QA	b=	-0.02263	
		r=	0.999	88		r=	0.99988	2
				Calculation	IS			
	Vstd=	∆Vol((Pa-∆P)	/Pstd)(Tstd/Ta	i)		∆Vol((Pa-∆P	P)/Pa)	
	Qstd=	Vstd/∆Time			Qa=	Va/∆Time		
			For subsequ	ent flow rat	e calculatio	ns:		
	Qstd= $1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$				Qa=	$1/m \left(\sqrt{\Delta H} \right)$	(Ta/Pa))-b)	
-	Standard	Conditions						
Tstd				[RECAI	IBRATION	
Pstd		mm Hg			LIS EDA roc	ommende ar	nual recalibrati	on ner 100
Alle on like on		(ey	n H2O)				legulations Part	and the second second second
	tor manomet						Reference Met	
	absolute tem						ended Particula	
	barometric pi							
b: intercep			57		th	e Atmosphe	re, 9.2.17, page	50
m: slope								

Tisch Environmental, Inc.

145 South Miami Avenue

Village of Cleves, OH 45002

www.tisch-env.cor TOLL FREE: (877)263-761(FAX: (513)467-900

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



	SUB-CONTRACTING REPORT							
CONTACT	: MR BEN TAM	WORK ORDER	HK1825892					
CLIENT	ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING							
ADDRESS	: RM A 20/F., GOLD KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T. HONG KONG	SUB-BATCH DATE RECEIVED DATE OF ISSUE	1 12-APR-2018 19-APR-2018					
PROJECT	:	NO. OF SAMPLES CLIENT ORDER	: 1					

SUB CONTRACTING PEROPT

General Comments

• Sample(s) were received in ambient condition.

- Sample(s) analysed and reported on an as received basis.
- Calibration was subcontracted to and analysed by Action United Enviro Services.

Position

Signatories

Signatories

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

P Richard Fung

General Manager

This is the Final Report and supersedes any preliminary report with this batch number.

Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

ALS Technichem (HK) Pty Ltd Part of the ALS Laboratory Group 11/F. Chung Shun Knitting Centre 1 - 3 Wing Yip Street Kwai Chung N.T. Hong Kong Tel. +852 2610 1044 Fax. +852 2610 2021 www.alsglobal.com

HK1825892-001	S/N: 456660	Equipments	12-Apr-2018	S/N: 456660	
ALS Lab ID	Client's Sample ID	Sample Type	Sample Date	External Lab Report No.	
PROJECT	ACTION UNITED ENV	/IRONMENT SERVICES	AND CONSULTING		(ALS)
SUB-BATCH	: 1				
VORK ORDER	: HK1825892				

Equipment Verification Report (TSP)

Equipment Calibrated:

Туре:	Laser Dust monitor
Manufacturer:	Sibata LD-3B
Serial No.	456660
Equipment Ref:	EQ117
Job Order	HK1825892

Standard Equipment:

Standard Equipment:	Higher Volume Sampler	
Location & Location ID:	AUES office (calibration room)	
Equipment Ref:	HVS 018	
Last Calibration Date:	27 February 2018	

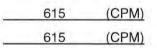
Equipment Verification Results:

Calibration Date:

12 & 13 March 2018

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m ³ (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
2hr07min	9:50 ~ 11:57	19.6	1019.0	0.073	4016	31.7
2hr14min	12:05 ~ 14:19	19.6	1019.0	0.075	4544	33.8
2hr17min	9:50 ~ 12:07	20.9	1016.7	0.075	4912	35.7

Sensitivity Adjustment Scale Setting (Before Calibration) Sensitivity Adjustment Scale Setting (After Calibration)



Linear Regression of Y or X

Slope (K-factor): Correlation Coefficient (R)

	the structure of the state
-	0.0022
	2102220121
	0.9970
	The second second
	15 March 2018



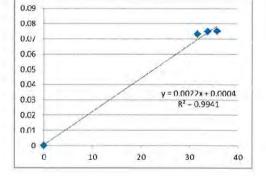
Date of Issue

1. Strong Correlation (R>0.8)

2. Factor 0.0022 should be apply for TSP monitoring

*If R<0.5, repair or re-verification is required for the equipment





Location : Gold King Industrial Building, Kwai Chung Location ID : Calibration Room							Date of Calibration: 27-Feb-18 Next Calibration Date: 27-May-18
					CON	NDITIONS	
	Se	a Level I Temp	Pressure perature		<u>.3</u>	Corrected Pressure (mm Hg) 762.975 Temperature (K) 292	
					CALIBRA	TION ORIFICE	
			Calibra	Make-> Model-> tion Date->	TISCH 5025A 28-Feb-1	25A Qstd Intercept ->	
					CAL	BRATION	
Plate No. 18 13 10	H20 (L) (in) 6.2 5.1 3.9	H2O (R) (in) 6.2 5.1 3.9	H20 (in) 12.4 10.2 7.8	Qstd (m3/min) 1.694 1.538 1.346	52 52.63 46 46.55 I		LINEAR REGRESSION Slope = 39.8525 Intercept = -14.3322 Corr. coeff. = 0.9974
8 5	2.6 1.7	2.6 1.7	5.2 3.4	1.101 0.893	40 30 20	40.48 30.36 20.24	Con. coen. = 0.9974
IC = I[Sq:Qstd = staIC = correctiona = actualm = calibritco = calibritfo = calibritfo = calibritfo = calibritfor = actualPstd = actualPstd = actualPstd = actualFor subso $I/m((I)[State = samp$	m[Sqrt(H2 rt(Pa/Pstd) ected chart chart resp rator Qstd ator Qstd al tempera ual pressu equent ca Sqrt(298/I ler slope)(Tstd/Ta w rate t respone slope intercept iture during <i>lculatior</i> Cav)(Pav)	a)] ss ng calib g calibra n of san	pration (deg ation (mm F apler flow:	「「」」 (「」、 Actual chart response (IC)	60.00 50.00 40.00 30.00 20.00	FLOW RATE CHART
= chart r Γav = dai	ler interce response ly average ly average	e tempera				0.00	0.500 1.000 1.500 2.000 Standard Flow Rate (m3/min)

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



SUB-CONTRACTING REPORT							
CONTACT	: MR BEN TAM	WORK ORDER	HK1825891				
CLIENT	ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING						
ADDRESS	RM A 20/F., GOLD KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T. HONG KONG	SUB-BATCH DATE RECEIVED DATE OF ISSUE	: 1 : 12-APR-2018 : 19-APR-2018				
PROJECT	;	NO. OF SAMPLES CLIENT ORDER	: 1 :				

General Comments

• Sample(s) were received in ambient condition.

- Sample(s) analysed and reported on an as received basis.
- Calibration was subcontracted to and analysed by Action United Enviro Services.

Signatories

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

	Signatories		Position	
	Richard Fung	W	General Manager	
14		/		

This is the Final Report and supersedes any preliminary report with this batch number.

Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

ALS Technichem (HK) Pty Ltd Part of the ALS Laboratory Group 11/F. Chung Shun Knitting Centre 1 - 3 Wing Yip Street Kwai Chung N.T. Hong Kong Tel. +852 2610 1044 Fax. +852 2610 2021 www.alsglobal.com

WORK ORDER SUB-BATCH CLIENT PROJECT	: HK1825891 - 1 - ACTION UNITED ENV 	ALS			
ALS Lab	Client's Sample ID	Sample Type	Sample Date	External Lab Report No.	
HK1825891-001	S/N: 456659	Equipments	12-Apr-2018	S/N: 456659	

Equipment Verification Report (TSP)

Equipment Calibrated:

Туре:	Laser Dust monitor					
Manufacturer:	Sibata LD-3B					
Serial No.	456659					
Equipment Ref:	EQ116					
Job Order	HK1825891					

Standard Equipment:

Standard Equipment:	Higher Volume Sampler
Location & Location ID:	AUES office (calibration room)
Equipment Ref:	HVS 018
Last Calibration Date:	27 February 2018

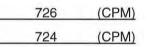
Equipment Verification Results:

Calibration Date:

12 & 13 March 2018

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m ³ (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
2hr07min	9:50 ~ 11:57	19.6	1019.0	0.073	4313	34.1
2hr14min	12:05 ~ 14:19	19.6	1019.0	0.075	4413	32.8
2hr17min	9:50 ~ 12:07	20.9	1016.7	0.075	4906	35.7

Sensitivity Adjustment Scale Setting (Before Calibration) Sensitivity Adjustment Scale Setting (After Calibration)



Linear Regression of Y or X

Slope (K-factor):	-
Correlation Coefficient (R)	_
Date of Issue	1

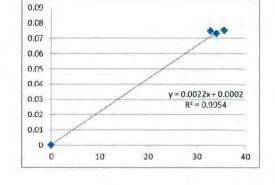
1-	0.0022
1	0.9977
	15 March 2018

Remarks:

1. Strong Correlation (R>0.8)

2. Factor 0.0022 should be apply for TSP monitoring

*If R<0.5, repair or re-verification is required for the equipment





Location :Gold King Industrial Building, Kwai ChungLocation ID :Calibration Room							ng		alibration: 27-Feb-18 tion Date: 27-May-18
					4	CONDIT	IONS		
	Se	a Level F Temp	Pressure erature		1	017.3 19.1		Corrected Pressure (Temperature (
					CALI	BRATIO	N ORIFICE		
Make-> TISC Model-> 5025 Calibration Date-> 28-Feb							5A Qstd Intercept -> -0.020		2.11965 -0.02696 28-Feb-18
					(CALIBR	TION		
Plate No. 18 13 10 8	H20 (L) (in) 6.2 5.1 3.9 2.6	H2O (R) (in) 6.2 5.1 3.9 2.6	H20 (in) 12.4 10.2 7.8 5.2	Qstd (m3/min) 1.694 1.538 1.346 1.101	(ch 5 4 4	I c art) c 2 6 0 0	IC orrected 52.63 46.55 40.48 30.36	LINEA REGRES Slope = Intercept = Corr. coeff. =	
5 alculatio	1.7	1.7	3.4	0.893	2	0	20.24		
$P_{a} = 1/r$ $P_{a} = I[Squeen C = I[Squeen C = standard = stand$	n[Sqrt(H t(Pa/Pstd ndard flo cted char chart resp rator Qstd ator Qstd d temper: ual pressu equent ca Sqrt(298/ ler slope ler interco	t respone ponse l slope intercept ature during alculatior Tav)(Pav)	n)] ss g calibra g calibra	oration (deg ation (mm F n pler flow:		60.00 50.00 40.00 90.00 90.00 90.00			2
	y average	e tempera e pressure					0.000	0.500 1.000 Standard Flow Rate (m3/	1.500 2.000 min)

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



SUB-CONTRACTING REPORT							
CONTACT	: MR BEN TAM	WORK ORDER	HK1825890				
CLIENT	ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING						
ADDRESS	RM A 20/F., GOLD KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T. HONG KONG	SUB-BATCH DATE RECEIVED DATE OF ISSUE	: 1 : 12-APR-2018 : 19-APR-2018				
PROJECT	:	NO. OF SAMPLES CLIENT ORDER	: 1 :				

General Comments

• Sample(s) were received in ambient condition.

- Sample(s) analysed and reported on an as received basis.
- Calibration was subcontracted to and analysed by Action United Enviro Services.

Position

Signatories

Richard Fung

Signatories

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

np

General Manager

This is the Final Report and supersedes any preliminary report with this batch number.

Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

ALS Technichem (HK) Pty Ltd Part of the ALS Laboratory Group 11/F. Chung Shun Knitting Centre 1 - 3 Wing Yip Street Kwai Chung N.T. Hong Kong Tel. +852 2610 1044 Fax. +852 2610 2021 www.alsglobal.com

WORK ORDER SUB-BATCH CLIENT PROJECT	: HK1825890 1 : ACTION UNITED ENV :	/IRONMENT SERVICES	AND CONSULTING		ALS
ALS Lab	Client's Sample ID	Sample Type	Sample Date	External Lab Report No.	
HK1825890-001	S/N: 456658	Equipments	12-Apr-2018	S/N: 456658	

Equipment Verification Report (TSP)

Equipment Calibrated:

Туре:	Laser Dust monitor
Manufacturer:	Sibata LD-3B
Serial No.	456658
Equipment Ref:	EQ115
Job Order	HK1825890

Standard Equipment:

Standard Equipment:	Higher Volume Sampler
Location & Location ID:	AUES office (calibration room)
Equipment Ref:	HVS 018
Last Calibration Date:	27 February 2018

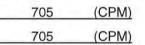
Equipment Verification Results:

Calibration Date:

12 & 13 March 2018

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m ³ (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
2hr07min	9:50 ~ 11:57	19.6	1019.0	0.073	4333	34.2
2hr14min	12:05 ~ 14:19	19.6	1019.0	0.075	4469	33.3
2hr17min	9:50 ~ 12:07	20.9	1016.7	0.075	4912	35.7

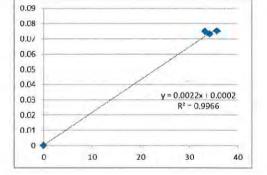
Sensitivity Adjustment Scale Setting (Before Calibration) Sensitivity Adjustment Scale Setting (After Calibration)



Linear Regression of Y or X

Slope (K-factor): Correlation Coefficient (R)

-	0.0022
	0.9983
	15 March 2018



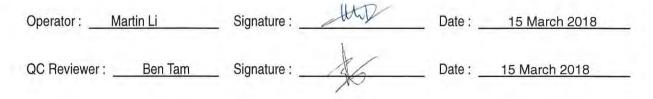
Remarks:

Date of Issue

1. Strong Correlation (R>0.8)

2. Factor 0.0022 should be apply for TSP monitoring

*If R<0.5, repair or re-verification is required for the equipment



Location : Gold King Industrial Building, Kwai Chu Location ID : Calibration Room						vai Chun	Chung Date of Calibration: 27-Feb-18 Next Calibration Date: 27-May-18			
					2	CONDITI	ONS			
	Sea	a Level I Temp	Pressure erature		1	017.3 19.1		Corrected Pressure (mm Hg) 762.975 Temperature (K) 292		
					CALI	BRATION	ORIFICE			
						SCHQstd Slope ->2.119625AQstd Intercept ->-0.0269eb-17Expiry Date->28-Feb-				
					C	CALIBRA	TION			
Plate No. 18 13 10 8 5	H20 (L) (in) 6.2 5.1 3.9 2.6 1.7	H2O (R) (in) 6.2 5.1 3.9 2.6 1.7	H20 (in) 12.4 10.2 7.8 5.2 3.4	Qstd (m3/min) 1.694 1.538 1.346 1.101 0.893	(cha 5 4 4 3	I IC hart) corrected 52 52.63 46 46.55 40 40.48 30 30.36 20 20.24		LINEAR REGRESSION Slope = 39.8525 Intercept = -14.3322 Corr. coeff. = 0.9974		
C = I[Square] $C = correction C = correction C = correction C = correction C = calibration C = calibration$	m[Sqrt(H2 rt(Pa/Pstd) endard flov ected chart chart resp rator Qstd ator Qstd ator Qstd i al tempera ual pressu equent can Sqrt(298/T ler slope ler interce	w rate respone onse slope intercept ture during re during lculatior Tav)(Pav)	a)] es ing calibr g calibra n of san	oration (deg ation (mm F n pler flow:		60.00 50.00 40.00 (C) 40.00 90.00 10.00 00.00	.000	FLOW RATE CHART		
fav = dail	ly average ly average							Standard Flow Rate (m3/min)		

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



_	SUB-CONTRACTING REPORT						
CONTACT	: MR BEN TAM	WORK ORDER	HK1825893				
CLIENT	ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING						
ADDRESS	: RM A 20/F., GOLD KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T. HONG KONG	SUB-BATCH DATE RECEIVED DATE OF ISSUE	: 1 : 12-APR-2018 : 19-APR-2018				
PROJECT	3 55	NO. OF SAMPLES CLIENT ORDER	: 1 :				

General Comments

- Sample(s) were received in ambient condition.
- Sample(s) analysed and reported on an as received basis.
- Calibration was subcontracted to and analysed by Action United Enviro Services.

Position

Signatories

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

Signatories Richard Fung

General Manager

This is the Final Report and supersedes any preliminary report with this batch number.

Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

ALS Technichem (HK) Pty Ltd Part of the ALS Laboratory Group

11/F. Chung Shun Knitting Centre 1 - 3 Wing Yip Street Kwai Chung N.T. Hong Kong Tel. +852 2610 1044 Fax. +852 2610 2021 www.alsglobal.com

WORK ORDER SUB-BATCH CLIENT PROJECT	: HK1825893 1 ACTION UNITED EN :	VIRONMENT SERVICES	AND CONSULTING		ALS
ALS Lab	Client's Sample ID	Sample	Sample Date	External Lab Report No.	
ID		Туре			

Equipment Verification Report (TSP)

Equipment Calibrated:

Туре:	Laser Dust monitor			
Manufacturer:	Sibata LD-3B			
Serial No.	456662			
Equipment Ref:	EQ118			
Job Order	HK1825893			

Standard Equipment:

Standard Equipment:	Higher Volume Sampler	
Location & Location ID:	AUES office (calibration room)	_
Equipment Ref:	HVS 018	
Last Calibration Date:	27 February 2018	

Equipment Verification Results:

Calibration Date:

12 & 13 March 2018

Hour	Time	Time Mean Mean Pre Temp °C (h		Concentration in mg/m ³ (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)	
2hr07min	9:50 ~ 11:57	19.6	1019.0	0.073	4108	32.4	
2hr14min	12:05 ~ 14:19	19.6	1019.0	0.075	4532	33.7	
2hr17min	9:50 ~ 12:07	20.9	1016.7	0.075	5016	36.5	

Sensitivity Adjustment Scale Setting (Before Calibration) Sensitivity Adjustment Scale Setting (After Calibration) <u>591 (CPM)</u> 591 (CPM)

10

20

y = 0.0022x + 0.0004

 $R^2 = 0.9934$

40

30

0.09

0.07

0.06 0.05

0.04

0.03

0.02

0.01

0

0

Linear Regression of Y or X

Slope (K-factor): Correlation Coefficient (R)

1	0.0022
	0.9967
	15 March 2018

Remarks:

Date of Issue

1. Strong Correlation (R>0.8)

2. Factor 0.0022 should be apply for TSP monitoring

*If R<0.5, repair or re-verification is required for the equipment



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location :Gold King Industrial Building, Kwai ChungLocation ID :Calibration Room						g	Date of Calibration: 27-Feb-18 Next Calibration Date: 27-May-18			
					3	CONDIT	IONS			
Sea Level Pressure (hPa)1017.3Temperature (°C)19.1								Corrected Pressure (r Temperature (F		
					CALI	BRATION	ORIFICE			
			Calibra	Make-> Model-> tion Date->	TIS 502 28-Fe	.5A	A Qstd Intercept -> -0.02696			
					C	CALIBRA	TION			
Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)] (cha		IC orrected	LINEA REGRESS		
18 13 10 8 5	6.2 5.1 3.9 2.6 1.7	6.2 5.1 3.9 2.6 1.7	12.4 10.2 7.8 5.2 3.4	1.694 1.538 1.346 1.101 0.893	5 4 4 3 2	6 0 0	52.63 46.55 40.48 30.36 20.24	Slope = Intercept = Corr. coeff. =	39.8525 -14.3322 0.9974	
	ons : m[Sqrt(H rt(Pa/Pstc			/Ta))-b]		60.00		FLOW RATE CHAR	T A	
IC = correctI = actualm = calibc = calibrTa = actu		rt respone ponse l slope intercept ature dur	t ing calil	oration (deg ation (mm F	1.1.1.1.1	90.00 40.00 90.00 (IC) 90.00 90.00 90.00				
<i>For subsequent calculation of sampler flow:</i> 1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)						10.00				
m = sampler slope b = sampler intercept I = chart response Tav = daily average temperature							0.00 0.000 0.500 1.000 1.500 2.000 Standard Flow Rate (m3/min)			
	ly average				1					



Certificate No. : C183086 證書編號

ITEM TESTED / 送檢項目	(Job No. / 序引編號:IC18-0867)	Date of Receipt / 收件日期:29 May 2018
Description / 儀器名稱 :	Integrating Sound Level Meter (EQ009)	
Manufacturer / 製造商 :	Brüel & Kjær	
Model No. / 型號 :	2238	
Serial No. / 編號 :	2285722	
Supplied By / 委託者 :	Action-United Environmental Services and C	Consulting
	Unit A, 20/F., Gold King Industrial Building	,
	35-41 Tai Lin Pai Road, Kwai Chung, N.T.	

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Line Voltage / 電壓 : --- Relative Humidity / 相對濕度 : (50±25)%

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 10 June 2018

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only. The results do not exceed manufacturer's specification. The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA

Tested By 測試	: KCLee Engineer			
Certified By 核證	: <u>Chan Man</u> CA H C Chan Engineer	Date of Issue 簽發日期	:	11 June 2018

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

Sun Creation Engineering Limited – Calibration & Testing Laboratory

c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

輝創工程有限公司一校正及檢測實驗所

c/o 香港新界屯門興安里一號四樓

Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com



Certificate No. : C183086 證書編號

- 1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
- 2. Self-calibration using laboratory acoustic calibrator was performed before the test from 6.1.1.2 to 6.4.
- 3. The results presented are the mean of 3 measurements at each calibration point.
- 4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C180024
CL281	Multifunction Acoustic Calibrator	PA160023

- 5. Test procedure : MA101N.
- 6. Results :
- 6.1 Sound Pressure Level
- 6.1.1 Reference Sound Pressure Level
- 6.1.1.1 Before Self-calibration

	UUT S	Setting	Applied	Value	UUT	
Range	Parameter	Frequency	Time	Level	Freq.	Reading
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)
50 - 130	L _{AFP}	А	F	94.00	1	94.1

6.1.1.2 After Self-calibration

UUT Setting					Applied Value		IEC 60651
Range	Parameter	Frequency	Time	Level	Freq.	Reading	Type 1 Spec.
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)	(dB)
50 - 130	L _{AFP}	А	F	94.00	1	94.0	± 0.7

6.1.2 Linearity

	UUT	Г Setting	Applied	d Value	UUT	
Range	Parameter	Frequency	Time	Level	Freq.	Reading
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)
50 - 130	L _{AFP}	А	F	94.00	1	94.0 (Ref.)
				104.00		104.0
				114.00		114.0

IEC 60651 Type 1 Spec. : \pm 0.4 dB per 10 dB step and \pm 0.7 dB for overall different.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

Sun Creation Engineering Limited - Calibration & Testing Laboratory

c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

輝創工程有限公司 — 校正及檢測實驗所

c/o 香港新界屯門興安里一號四樓

Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.



輝創工程有限公司 **Sun Creation Engineering Limited**

Calibration & Testing Laboratory

Certificate of Calibration 校正證書

Certificate No. : C183086 證書編號

6.2 Time Weighting

6.2.1 Continuous Signal

		Applie	d Value	UUT	IEC 60651					
Range	Parameter	Frequency	Time	Level	Freq.	Reading	Type 1 Spec.			
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)	(dB)			
50 - 130	L _{AFP}	А	F	94.00	1	94.0	Ref.			
	L _{ASP}		S			94.1	± 0.1			
	L _{AIP}		Ι			94.1	± 0.1			

6.2.2 Tone Burst Signal (2 kHz)

	UUT Setting				Applied Value		IEC 60651
Range	Parameter	Frequency	Time	Level	Burst	Reading	Type 1 Spec.
(dB)		Weighting	Weighting	(dB)	Duration	(dB)	(dB)
30 - 110	L _{AFP}	А	F	106.0	Continuous	106.0	Ref.
	L _{AFMax}				200 ms	104.9	-1.0 ± 1.0
	L _{ASP}		S		Continuous	106.0	Ref.
	L _{ASMax}				500 ms	102.0	-4.1 ± 1.0

6.3 Frequency Weighting

6.3.1 A-Weighting

		Setting		Applied Value		UUT	IEC 60651
Range	Parameter	Frequency	Time	Level	Freq.	Reading	Type 1 Spec.
(dB)		Weighting	Weighting	(dB)	-	(dB)	(dB)
50 - 130	L _{AFP}	А	F	94.00	31.5 Hz	54.5	-39.4 ± 1.5
					63 Hz	67.8	-26.2 ± 1.5
					125 Hz	77.8	-16.1 ± 1.0
					250 Hz	85.3	-8.6 ± 1.0
					500 Hz	90.8	-3.2 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	95.2	$+1.2 \pm 1.0$
					4 kHz	95.0	$+1.0 \pm 1.0$
					8 kHz	92.8	-1.1 (+1.5 ; -3.0)
					12.5 kHz	89.7	-4.3 (+3.0 ; -6.0)

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

Sun Creation Engineering Limited - Calibration & Testing Laboratory c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

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c/o 香港新界屯門興安里一號四樓

Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com

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Certificate No. : C183086 證書編號

6.3.2 <u>C-Weighting</u>

	UUT	Setting		Applied Value		UUT	IEC 60651
Range	Parameter	Frequency	Time	Level	Freq.	Reading	Type 1 Spec.
(dB)		Weighting	Weighting	(dB)		(dB)	(dB)
50 - 130	L _{CFP}	C	F	94.00	31.5 Hz	90.9	-3.0 ± 1.5
					63 Hz	93.1	-0.8 ± 1.5
					125 Hz	93.8	-0.2 ± 1.0
					250 Hz	94.0	0.0 ± 1.0
					500 Hz	94.0	0.0 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	93.8	-0.2 ± 1.0
					4 kHz	93.1	-0.8 ± 1.0
					8 kHz	90.9	-3.0 (+1.5 ; -3.0)
			×.		12.5 kHz	87.7	-6.2 (+3.0 ; -6.0)

6.4 <u>Time Averaging</u>

	inter it with Bing									
UUT Setting			Applied Value					UUT	IEC 60804	
Range	Parameter	Frequency	Integrating	Frequency	Burst	Burst	Burst	Equivalent	Reading	Type 1
(dB)		Weighting	Time	(kHz)	Duration	Duty	Level	Level	(dB)	Spec.
					(ms)	Factor	(dB)	(dB)		(dB)
30 - 110	L _{Aeq}	А	10 sec.	4	1	1/10	110.0	100	99.9	± 0.5
						$1/10^{2}$		90	90.0	± 0.5
			60 sec.			$1/10^{3}$		80	79.0	± 1.0
			5 min.			1/104		70	69.1	± 1.0

Remarks : - UUT Microphone Model No. : 4188 & S/N : 2658547

- Mfr's Spec. : IEC 60651 Type 1 & IEC 60804 Type 1

- Uncertainties of Applied Value :	250 Hz - 500 Hz 1 kHz 2 kHz - 4 kHz 8 kHz 12.5 kHz 104 dB : 1 kHz 114 dB : 1 kHz	: $\pm 0.30 \text{ dB}$: $\pm 0.20 \text{ dB}$: $\pm 0.35 \text{ dB}$: $\pm 0.45 \text{ dB}$: $\pm 0.70 \text{ dB}$: $\pm 0.10 \text{ dB}$ (Ref. 94 dB) : $\pm 0.10 \text{ dB}$ (Ref. 94 dB)
	114 dB : 1 kHz	
	Burst equivalent level	$\pm 0.2 \text{ dB}$ (Ref. 110 dB continuous sound level)

- The uncertainties are for a confidence probability of not less than 95 %.

Note :

Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

Sun Creation Engineering Limited – Calibration & Testing Laboratory c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong 輝創工程有限公司 — 校正及檢測實驗所 c/o 香港新界屯門興安里—號四樓 Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.



Certificate No. : C182473 證書編號

ITEM TESTED / 送檢項	頁目	(Job No. / 序引編號:IC18-0867)	Date of Receipt / 收件日期:26 April 2018			
Description / 儀器名稱	:	Sound Level Meter (EQ015)				
Manufacturer / 製造商	:	Rion				
Model No. / 型號	3	NL-52				
Serial No. / 編號	:	00142581				
Supplied By / 委託者	:	Action-United Environmental Services and G	Consulting			
		Unit A, 20/F., Gold King Industrial Building,				
		35-41 Tai Lin Pai Road, Kwai Chung, N.T.				

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Line Voltage / 電壓 : --- Relative Humidity / 相對濕度 : (50±25)%

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 12 May 2018

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only. The results do not exceed manufacturer's specification. The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA

Tested By 測試

H T Wong Technical Officer

KC Lee Engineer

Certified By 核證 Date of Issue 簽發日期 15 May 2018

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

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Sun Creation Engineering Limited – Calibration & Testing Laboratory c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong 輝創工程有限公司 — 校正及檢測實驗所 c/o 香港新界屯門興安里—號四樓 Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com

Website/網址: www.suncreation.com

:



Certificate No. : C182473 證書編號

Certificate No.

C180024

PA160023

- 1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
- 2. Self-calibration was performed before the test.
- 3. The results presented are the mean of 3 measurements at each calibration point.
- 4. Test equipment :

Equipment ID CL280 CL281

Description 40 MHz Arbitrary Waveform Generator Multifunction Acoustic Calibrator

- 5. Test procedure : MA101N.
- 6. Results :
- 6.1 Sound Pressure Level
- 6.1.1 Reference Sound Pressure Level

	UUT	Setting		Applie	d Value	UUT	IEC 61672
Range	Function	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)	(dB)
30 - 130	L _A	A	Fast	94.00	1	94.3	± 1.1

6.1.2 Linearity

	UUT Setting				d Value	UUT
Range	Function	Frequency	Time	Level	Freq.	Reading
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)
30 - 130	L _A	А	Fast	94.00	1	94.3 (Ref.)
				104.00		104.3
				114.00		114.3

IEC 61672 Class 1 Spec. : \pm 0.6 dB per 10 dB step and \pm 1.1 dB for overall different.

6.2 Time Weighting

	UUT Setting				Applied Value		UUT	IEC 61672
Ran	ge	Function	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.
(dE	3)		Weighting	Weighting	(dB)	(kHz)	(dB)	(dB)
30 - 1	130	L _A	А	Fast	94.00	1	94.3	Ref.
				Slow			94.3	± 0.3

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

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clo 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong 輝創工程有限公司 — 校正及檢測實驗所

c/o 香港新界屯門興安里一號四樓

Fax/傳真: (852) 2744 8986 Tel/電話: (852) 2927 2606 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.



Certificate No. : C182473 證書編號

6.3 Frequency Weighting

6.3.1 A-Weighting

	IIIIT	Setting		Applied Value		UUT	IEC 61672
D							Contraction of the Contraction o
Range	Function	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.
(dB)		Weighting	Weighting	(dB)		(dB)	(dB)
30 - 130	L _A	А	Fast	94.00	63 Hz	68.0	-26.2 ± 1.5
					125 Hz	78.1	-16.1 ± 1.5
					250 Hz	85.6	-8.6 ± 1.4
					500 Hz	91.0	-3.2 ± 1.4
					1 kHz	94.3	Ref.
					2 kHz	95.5	$+1.2 \pm 1.6$
					4 kHz	95.3	$+1.0 \pm 1.6$
					8 kHz	93.3	-1.1 (+2.1;-3.1)
					12.5 kHz	89.9	-4.3 (+3.0 ; -6.0)

6.3.2 C-Weighting

o worgining							
	UUT	Setting		Applied Value		UUT	IEC 61672
Range	Function	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.
(dB)		Weighting	Weighting	(dB)		(dB)	(dB)
30 - 130	L _C	C	Fast	94.00	63 Hz	93.5	-0.8 ± 1.5
					125 Hz	94.1	-0.2 ± 1.5
					250 Hz	94.3	0.0 ± 1.4
					500 Hz	94.3	0.0 ± 1.4
					1 kHz	94.3	Ref.
					2 kHz	94.1	-0.2 ± 1.6
					4 kHz	93.5	-0.8 ± 1.6
					8 kHz	91.4	-3.0 (+2.1;-3.1)
					12.5 kHz	87.9	-6.2 (+3.0 ; -6.0)

Remarks : - UUT Microphone Model No. : UC-59 & S/N : 06015

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value :	94 dB : 63 Hz - 125 Hz 250 Hz - 500 Hz 1 kHz 2 kHz - 4 kHz 8 kHz 12.5 kHz 104 dB : 1 kHz 114 dB : 1 kHz	: $\pm 0.20 \text{ dB}$: $\pm 0.35 \text{ dB}$: $\pm 0.45 \text{ dB}$: $\pm 0.70 \text{ dB}$: $\pm 0.10 \text{ dB}$ (Ref. 94 dB)
	114 dB : 1 kHz	$\pm 0.10 \text{ dB}$ (Ref. 94 dB)

- The uncertainties are for a confidence probability of not less than 95 %.

Note :

Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

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Certificate No. : C183083 證書編號

ITEM TESTED / 送檢項目	(Job No. / 序引編號:IC18-0867)	Date of Receipt / 收件日期:28 May 2018
Description / 儀器名稱 :	Sound Level Meter (EQ068)	
Manufacturer / 製造商 :	Rion	
Model No. / 型號 :	NL-31	
Serial No. / 編號 :	00410247	
Supplied By / 委託者 :	Action-United Environmental Services and	Consulting
	Unit A, 20/F., Gold King Industrial Buildin	lg,
	35-41 Tai Lin Pai Road, Kwai Chung, N.T.	

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Line Voltage / 電壓 : ---

Relative Humidity / 相對濕度 : (50±25)%

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 9 June 2018

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only. The results do not exceed manufacturer's specification. The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA

Tested By 測試	: K C Lee Engineer		
Certified By 核證	: <u>Chan Un</u> H C Chan Engineer	Date of Issue : 簽發日期	11 June 2018

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

Sun Creation Engineering Limited - Calibration & Testing Laboratory

c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

輝創工程有限公司 — 校正及檢測實驗所

c/o 香港新界屯門興安里一號四樓

Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 H

E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com



Certificate No. : C183083 證書編號

- 1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
- 2. Self-calibration was performed before the test.
- 3. The results presented are the mean of 3 measurements at each calibration point.
- 4. Test equipment :

Equipment ID CL280 CL281 Description 40 MHz Arbitrary Waveform Generator Multifunction Acoustic Calibrator Certificate No. C180024 PA160023

- 5. Test procedure : MA101N.
- 6. Results :
- 6.1 Sound Pressure Level
- 6.1.1 Reference Sound Pressure Level

UUT Setting				Applied Value		UUT	IEC 61672 Class 1
Range	Mode	Frequency	Time	Level	Freq.	Reading	Spec.
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)	(dB)
30 - 120	L _A	А	Fast	94.00	1	93.7	± 1.1

6.1.2 Linearity

UUT Setting				Applied Value		UUT
Range	Mode	Frequency	Time	Level	Freq.	Reading
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)
30 - 120	L _A	А	Fast	94.00	1	93.7 (Ref.)
				104.00		103.7
				114.00		113.7

IEC 61672 Class 1 Spec. : \pm 0.6 dB per 10 dB step and \pm 1.1 dB for overall different.

6.2 Time Weighting

	UUT Setting				Applied Value		IEC 61672 Class 1
Range	Mode	Frequency	Time	Level	Freq.	Reading	Spec.
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)	(dB)
30 - 120	L _A	А	Fast	94.00	1	93.7	Ref.
			Slow			93.7	± 0.3

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

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c/o 香港新界屯門興安里一號四樓

Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.



Certificate No. : C183083 證書編號

6.3 Frequency Weighting

6.3.1 A-Weighting

 i i ii eigning	2						
UUT Setting				Applied Value		UUT	IEC 61672 Class 1
Range	Mode	Frequency	Time	Level	Freq.	Reading	Spec.
(dB)		Weighting	Weighting	(dB)		(dB)	(dB)
30 - 120	L _A	А	Fast	94.00	63 Hz	67.3	-26.2 ± 1.5
					125 Hz	77.4	-16.1 ± 1.5
					250 Hz	84.9	-8.6 ± 1.4
					500 Hz	90.4	-3.2 ± 1.4
					1 kHz	93.7	Ref.
					2 kHz	94.9	$+1.2 \pm 1.6$
					4 kHz	94.8	$+1.0 \pm 1.6$
					8 kHz	92.6	-1.1 (+2.1 ; -3.1)
					12.5 kHz	89.7	-4.3 (+3.0 ; -6.0)

6.3.2 C-Weighting

	UUT Setting				Appl	ied Value	UUT	IEC 61672 Class 1		
I	Range	Mode	Frequency	Time	Level	Freq.	Reading	Spec.		
	(dB)		Weighting	Weighting	(dB)		(dB)	(dB)		
31	0 - 120	L _C	С	Fast	94.00	63 Hz	92.8	-0.8 ± 1.5		
						125 Hz	93.5	-0.2 ± 1.5		
						250 Hz	93.6	0.0 ± 1.4		
						500 Hz	93.7	0.0 ± 1.4		
						1 kHz	93.7	Ref.		
						2 kHz	93.6	-0.2 ± 1.6		
						4 kHz	93.0	-0.8 ± 1.6		
						8 kHz	90.7	-3.0 (+2.1 ; -3.1)		
		8				12.5 kHz	87.9	-6.2 (+3.0 ; -6.0)		

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

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Certificate No. : C183083 證書編號

Remarks : - UUT Microphone Model No. : UC-53A & S/N : 319841

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value :	94 dB	: 63 Hz - 125 Hz 250 Hz - 500 Hz 1 kHz 2 kHz - 4 kHz	: :	± 0.30 dB ± 0.20 dB
		8 kHz	÷	$\pm 0.45 \text{ dB}$
		12.5 kHz	:	$\pm 0.70 \text{ dB}$
	104 dB	: 1 kHz	:	± 0.10 dB (Ref. 94 dB)
	114 dB	: 1 kHz	:	± 0.10 dB (Ref. 94 dB)

- The uncertainties are for a confidence probability of not less than 95 %.

Note :

Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

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The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.



Certificate No. : C182470 證書編號

ITEM TESTED / 送檢項	頁目	(Job No. / 序引編號: IC18-0867)	Date of Receipt / 收件日期:26 April 2018
Description / 儀器名稱	:	Acoustical Calibrator (EQ082)	
Manufacturer / 製造商	:	Brüel & Kjær	
Model No. / 型號	:	4231	
Serial No. / 編號	:	2713428	
Supplied By / 委託者	:	Action-United Environmental Services and	Consulting
		Unit A, 20/F., Gold King Industrial Building	g,
		35-41 Tai Lin Pai Road, Kwai Chung, N.T.	

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Line Voltage / 電壓 : --- Relative Humidity / 相對濕度 : (50±25)%

TEST SPECIFICATIONS / 測試規範

Calibration check

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DATE OF TEST / 測試日期 : 12 May 2018

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only. The results do not exceed manufacturer's specification. The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA

Tested By 測試

H T Wong

Technical Officer

K C Lee Engineer

Certified By 核證 Date of Issue 簽發日期 15 May 2018

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

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Sun Creation Engineering Limited - Calibration & Testing Laboratory

c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

輝創工程有限公司 — 校正及檢測實驗所

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Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986

2744 8986 E-mail/電郵: callab@suncreation.com

Website/網址: www.suncreation.com

:



Certificate No. : C182470 證書編號

- 1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.
- 2. The results presented are the mean of 3 measurements at each calibration point.
- 3. Test equipment :

<u>Equipment ID</u> CL130	<u>Description</u> Universal Counter	<u>Certificate No.</u> C173864
CL281	Multifunction Acoustic Calibrator	PA160023
TST150A	Measuring Amplifier	C181288

- 4. Test procedure : MA100N.
- 5. Results :
- 5.1 Sound Level Accuracy

UUT	Measured Value	Mfr's Spec.	Uncertainty of Measured Value
Nominal Value	(dB)	(dB)	(dB)
94 dB, 1 kHz	94.0	± 0.2	± 0.2
114 dB, 1 kHz	114.1		

5.2 Frequency Accuracy

UUT Nominal Value	Measured Value	Mfr's	Uncertainty of Measured Value
(kHz)	(kHz)	Spec.	(Hz)
1	1.000 0	1 kHz ± 0.1 %	± 0.1

Remark : The uncertainties are for a confidence probability of not less than 95 %.

Note :

Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

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Certificate No. : C174094 證書編號

ITEM TESTED / 送檢項目	目 (Job No. / 序引編號:IC17-0924)	Date of Receipt / 收件日期:14 July 2017
Description / 儀器名稱 :	Sound Level Calibrator (EQ085)	
Manufacturer / 製造商 :	Rion	
Model No. / 型號 :	NC-73	
Serial No. / 編號 :	10655561	
Supplied By / 委託者 :	Action-United Environmental Services an	d Consulting
	Unit A, 20/F., Gold King Industrial Build	ing,
	35-41 Tai Lin Pai Road, Kwai Chung, N.T	Г.
TEST CONDITIONS / 測試條件		

/ 测武保什

Temperature / 溫度 : $(23 \pm 2)^{\circ}C$ Line Voltage / 雷壓 : ----

Relative Humidity / 相對濕度 : $(55 \pm 20)\%$

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 22 July 2017 :

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.

The results do not exceed manufacturer's specification & user's specified acceptance criteria. The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA

Tested By 測試

H T Wong

Technical Officer

K C Lee Engineer

Certified By 核證

Date of Issue 簽發日期

:

25 July 2017

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laborator

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

Sun Creation Engineering Limited - Calibration & Testing Laboratory

c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong 輝創工程有限公司 – 枝正及檢測實驗所

c/o 香港新界屯門興安里一號青山灣機樓四樓

Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com



Calibration and Testing Laboratory

Certificate of Calibration 校正證書

Certificate No. : C174094 證書編號

- 1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.
- 2. The results presented are the mean of 3 measurements at each calibration point.

.

3. Test equipment :

Equipment ID CL130 CL281 TST150A Description Universal Counter Multifunction Acoustic Calibrator Measuring Amplifier <u>Certificate No.</u> C173864 PA160023 C161175

- 4. Test procedure : MA100N.
- 5. Results :
- 5.1 Sound Level Accuracy

UUT	Measured Value	Mfr's Spec.	Uncertainty of Measured Value
Nominal Value	(dB)	(dB)	(dB)
94 dB, 1 kHz	93.9	± 0.5	± 0.2

5.2 Frequency Accuracy

UUT Nominal Value	Measured Value	User's	Uncertainty of Measured Value
(kHz)	(kHz)	Spec.	(Hz)
1	0.954	1 kHz ± 6 %	± 1

Remarks : - The user's specified acceptance criteria (user's spec.) is a customer pre-defined operating tolerance of the UUT, suitable for one's own intended use.

- The uncertainties are for a confidence probability of not less than 95 %.

Note :

Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

本證書所載校正用之測試器材均可溯源至國際標準。局部後印本證書需先獲本實驗所書面批准。

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輝創工程有限公司 - 校正及檢測實驗所 c/o 香港新界屯門與安里一號青山灣機樓四樓

Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.



輝創工程有限公司

Sun Creation Engineering Limited

Calibration & Testing Laboratory

Certificate of Calibration 校正證書

Certificate No. : C183261 證書編號

ITEM TESTED / 送檢項目		(Job No. / 序引編號:IC18-0867)	Date of Receipt / 收件日期: 12 June 2018
Description / 儀器名稱	:	Sound Calibrator (EQ086)	
Manufacturer / 製造商	:	Rion	
Model No. / 型號	:	NC-74	
Serial No. / 編號	:	34657230	
Supplied By / 委託者	:	Action-United Environmental Services and G	Consulting
		Unit A, 20/F., Gold King Industrial Building	у Э
		35-41 Tai Lin Pai Road, Kwai Chung, N.T.	
TECT CONDITIONS /	tu -	A first 1 fts	
TEST CONDITIONS / 測試條件			

Temperature / 溫度 : (23 ± 2)°C Line Voltage / 電壓 : ---

Relative Humidity / 相對濕度 : (50 ± 25)%

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 18 June 2018

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only. The results do not exceed manufacturer's specification. The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA

Tested By 測試

:	word .
	H T Wong

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Technical Officer

Certified By : K C Lee Engineer

Date of Issue 簽發日期 :

20 June 2018

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

Sun Creation Engineering Limited – Calibration & Testing Laboratory c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong 輝創工程有限公司 — 校正及檢測實驗所 c/o 香港新界屯門興安里—號四樓 Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com



Certificate No. : C183261 證書編號

- 1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.
- 2. The results presented are the mean of 3 measurements at each calibration point.
- 3. Test equipment :

Equipment ID CL130 CL281 TST150A Description Universal Counter Multifunction Acoustic Calibrator Measuring Amplifier Certificate No. C173864 PA160023 C181288

- 4. Test procedure : MA100N.
- 5. Results :
- 5.1 Sound Level Accuracy

UUT	Measured Value	Mfr's Spec.	Uncertainty of Measured Value
Nominal Value	(dB)	(dB)	(dB)
94 dB, 1 kHz	94.1	± 0.3	± 0.2

5.2 Frequency Accuracy

UUT Nominal Value	Measured Value	Mfr's	Uncertainty of Measured Value
(kHz)	(kHz)	Spec.	(Hz)
1	1.002	1 kHz ± 1 %	± 1

Remark : The uncertainties are for a confidence probability of not less than 95 %.

Note :

Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.



輝創工程有限公司

Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration 校正證書

Certificate No. : C174095 證書編號

ITEM TESTED / 送檢項目 Description / 儀器名稱 : Manufacturer / 製造商 : Model No. / 型號 : Serial No. / 編號 : Supplied By / 委託者 :	(Job No. / 序引編號: IC17-0924) Sound Calibrator Rion NC-74 34657231 Action-United Environmental Services a Unit A, 20/F., Gold King Industrial Build 35-41 Tai Lin Pai Road, Kwai Chung, N	ding,
TEST CONDITIONS / 測記 Temperature / 溫度 : (2: Line Voltage / 電壓 :		Relative Humidity / 相對濕度 : (55 ± 20)%
TEST SPECIFICATIONS	/ 測試規範	

DATE OF TEST / 測試日期 : 22 July 2017

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only. The results do not exceed manufacturer's specification. The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory

- Agilent Technologies / Keysight Technologies
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA

Tested By 測試

H T Wong

Technical Officer

K C Lee Engineer

Certified By 核證 Date of Issue 簽發日期 :

25 July 2017

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

Sun Creation Engineering Limited - Calibration & Testing Laboratory e/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong 輝創工程有限公司 - 校正及檢測實驗所

c/o 香港新界屯門興安里一號青山灣機樓四樓

Tel/電話: 2927 2606 Fax/俳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址:: www.suncreation.com



Certificate No. : C174095 證書編號

- 1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.
- 2. The results presented are the mean of 3 measurements at each calibration point.
- 3. Test equipment :

ł

Equipment ID CL130 CL281 **TST150A**

Description Universal Counter Multifunction Acoustic Calibrator Measuring Amplifier

Certificate No. C173864 PA160023 C161175

- 4. Test procedure : MA100N.
- 5. Results :
- 5.1 Sound Level Accuracy

UUT	Measured Value	Mfr's Spec.	Uncertainty of Measured Value
Nominal Value	(dB)	(dB)	(dB)
94 dB, 1 kHz	94.1	± 0.3	± 0.2

5.2 Frequency Accuracy

UUT Nominal Value	Measured Value	Mfr's	Uncertainty of Measured Value
(kHz)	(kHz)	Spec.	(Hz)
1	1.001	1 kHz ± 1 %	± 1

Remark : The uncertainties are for a confidence probability of not less than 95 %.

Note :

Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

Sun Creation Engineering Limited - Calibration & Testing Laboratory

c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong 輝創工程有限公司 – 校正及檢測實驗所

c/o 香港新界屯門興安里一號青山灣機樓四樓

Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

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ALS Technichem (HK) Pty Ltd 11/F, Chung Shun Knitting Centre 1-3 Wing Yip Street, Kwai Chung N.T., Hong Kong T: +852 2610 1044 | F: +852 2610 2021

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

CONTACT: CLIENT:	MR BEN TAM ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING	WORK ORDER:	HK1830343
ADDRESS:	RM A 20/F., GOLD KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG,	SUB-BATCH: LABORATORY: DATE RECEIVED:	0 HONG KONG 16-May-2018
	N.T., HONG KONG.	DATE OF ISSUE:	17-May-2018

COMMENTS

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

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

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

Scope of Test:	Conductivity, Dissolved Oxygen, pH Value, Turbitidy, Salinity and Temperature
Equipment Type:	Multifunctional Meter
Brand Name:	YSI
Model No.:	Professional DSS
Serial No.:	17B102764/17B100758
Equipment No.:	EQW019
Date of Calibration:	17 May, 2018

<u>NOTES</u>

This is the Final Report and supersedes any preliminary report with this batch number.

Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

Ms. Lin Wai Yu Assistant Manager - Inorganic

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REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

WORK ORDER:	HK1830343		ALS
SUB-BATCH: DATE OF ISSUE: CLIENT:	0 17-May-2018 ACTION UNITED ENVIRONMEN	IT SERVICES AND CONSULTING	
Equipment Type: Brand Name: Model No.: Serial No.: Equipment No.: Date of Calibration:	Multifunctional Meter YSI Professional DSS 17B102764/17B100758 EQW019 17 May, 2018	Date of Next Calibration:	17 August, 2018

PARAMETERS:

Conductivity

Method Ref: APHA (21st edition), 2510B

Expected Reading (µS/cm)	Displayed Reading (µS/cm)	Tolerance (%)
146.9	144.6	-1.6
6667	6381	-4.3
12890	12838	-0.4
58670	55528	-5.4
	Tolerance Limit (%)	±10.0

Dissolved Oxygen

Method Ref: APHA (21st edition), 4500-0: G

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
3.79	3.85	+0.06
5.45	5.62	+0.17
8.19	8.31	+0.12
	Tolerance Limit (mg/L)	±0.20

pH Value

Method Ref: APHA (21st edition), 4500H:B

Expected Reading (pH unit)	Displayed Reading (pH unit)	Tolerance (pH unit)
4.0	3.96	-0.04
7.0	7.11	+0.11
10.0	10.05	+0.05
	Tolerance Limit (pH unit)	±0.20

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

Ms. Lin Wai Yu Assistant Manager - Inorganic

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

WORK ORDER:	HK1830343		(ALS
SUB-BATCH: DATE OF ISSUE: CLIENT:	0 17-May-2018 ACTION UNITED ENVIRONMEN	IT SERVICES AND CONSULTING		(
Equipment Type: Brand Name: Model No.: Serial No.: Equipment No.: Date of Calibration:	Multifunctional Meter YSI Professional DSS 17B102764/17B100758 EQW019 17 May, 2018	Date of Next Calibration:	17 August, 2018	
PARAMETERS:				

Turbidity

Method Ref: APHA (21st edition), 2130B

Displayed Reading (NTU)	Tolerance (%)							
0.50								
4.36	+9.0							
38.94	-2.7							
78.27	-2.2							
368.96	-7.8							
742.44	-7.2							
Tolerance Limit (%)	±10.0							
	0.50 4.36 38.94 78.27 368.96 742.44							

Salinity

Method Ref: APHA (21st edition), 2520B

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.00	
10	10.17	+1.7
20	19.86	-0.7
30	30.38	+1.3
	Tolerance Limit (%)	±10.0

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

Ms. Lin Wai Yu Assistant Manager - Inorganic

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

Serial No.: Equipment No.: Date of Calibration:	17B102764/17B100758 EQW019 17 May, 2018	Date of Next Calibration:	17 August, 2018
Equipment No.:	EQW019	Data of Nove Calibrations	17 August 2010
	-		
Serial No.:			
Model No.:	Professional DSS		
Equipment Type: Brand Name:	Multifunctional Meter YSI		
DATE OF ISSUE: CLIENT:	17-May-2018 ACTION UNITED ENVIRONMEN	IT SERVICES AND CONSULTING	
SUB-BATCH:	0		
WORK ORDER:	HK1830343		ALS

Expected Reading (°C)	Displayed Reading (°C)	Tolerance (°C)
9.0	10.3	+1.3
22.0	21.8	-0.2
40.5	38.9	-1.6
	Tolerance Limit (°C)	±2.0

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

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Ms. Lin Wai Yu Assistant Manager - Inorganic

ALEPORT

This document certifies that the instrument detailed below has been calibrated according to Valeport Limited's Standard Procedures, using equipment with calibrations traceable to UKAS or National Standards.

Calibration Certificate Number:	49714
Instrument Type:	106
Instrument Serial Number:	60011
Calibrated By:	L.Bicknell
Date:	16/06/2017
Signed:	US

Full details of the results from the calibration procedure applied to each fitted sensor are available, on request, via email. This summary certificate should be kept with the instrument.



T: +44 (0) 1803 869292 E: sales@valeport.co.uk | www.valeport.co.uk



Hong Kong Accreditation Service 香港認可處

Certificate of Accreditation

認可證書

This is to certify that 特此證明

ALS TECHNICHEM (HK) PTY LIMITED

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

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

HOKLAS Accredited Laboratory

「香港實驗所認可計劃」認可實驗所

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

Environmental Testing 環境測試

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

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

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

Registration Number : HCKLAS 066 註冊號碼 :



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

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Appendix F

Event and Action Plan

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Event and Action Plan for Air Quality

	г			ACTION				
EVENT		ET		IEC		ER		Contractor
Action Level Exceedance for One Sample	1. 2. 3. 4.	Identify source(s) of impact; Inform the IEC and the ER; Repeat measurement to confirm findings; Carry out investigation for the cause of exceedance, if the exceedance is project-related, increase monitoring frequency to daily	1. 2.	Check monitoring data submitted by ET; Check Contractor's working method	1.	Notify Contractor	1. 2.	Rectify any unacceptable practice; Amend working methods if appropriate
Action Level Exceedance for Two or More Consecutive Samples	1. 2. 3. 4. 5. 6. 7.	Identify source(s) of impact; Inform the IEC and ER; Repeat measurement to confirm findings; Carry out investigation for the cause of exceedance, if the exceedance is project-related, increase monitoring frequency to daily Discuss with IEC and Contractor on remedial action required; If exceedance continues, arrange meeting with IEC and ER; If exceedance stops, cease additional monitoring	1. 2. 3. 4. 5.	Check monitoring data submitted by ET; Check Contractor's working method; Discuss with ET and Contractor on possible remedial measures; Advise the ER on the effectiveness of the proposed remedial measures; Supervise implementation of remedial measures	1. 2. 3.	Confirm receipt of notification of failure in writing; Notify Contractor; Ensure remedial measures properly implemented	1. 2. 3.	Submit proposals for remedial actions to IEC within 3 working days of notification; Implement the agreed proposals; Amend proposal if appropriate
Limit Level Exceedance for One Sample	1. 2. 3. 4.	Identify source(s) of impact; Inform the EPD and the ER;	 1. 2. 3. 4. 	Check monitoring data submitted by ET; Check Contractor's working method; Discuss with ET and Contractor on possible remedial measures; Advise the ER on the effectiveness of the proposed	1. 2. 3.	Confirm receipt of notification of failure in writing; Notify Contractor; Ensure remedial measures properly implemented	 1. 2. 3. 4. 	Take immediate action to avoid further exceedance; Submit proposals for remedial actions to IEC within 3 working days of notification; Implement the agreed proposals; Amend proposal if

	ACTION								
EVENT	ET	IEC	ER	Contractor					
	 Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of results 	remedial measures;5. Supervise implementation of remedial measures		appropriate					
Exceedance for Two or More Consecutive Samples	 Notify IEC, ER, Contractor and EPD; Identify source(s) of impact; Repeat measurement to confirm findings; Carry out investigation for the cause of exceedance, if the exceedance is project-related, increase monitoring frequency to daily Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; Arrange meeting with IEC and ER to discuss the remedial actions to be taken; Assess effectiveness of Contractor's remedial action and keep IEC, EPD and ER informed of the result; If exceedance stop, cease additional monitoring 	 Discuss amongst ER, ET and Contractor on the potential remedial actions; Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; Supervise the implementation of remedial measures 	 Confirm receipt of notification of failure in writing; Notify Contractor; In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented; Ensure remedial measures properly implemented; If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated 	 Take immediate action to avoid further exceedance; Submit proposals for remedial actions to IEC within 3 working days of notification; Implement the agreed proposals Resubmit proposals if problem still not under control; Stop the relevant portion of works as determined by the ER until the exceedance is abated 					

Event and Action Plan for Construction Noise

EXCEEDANCE	ACTION					
EACEEDANCE	ЕТ	IEC	ER	Contractor		
Action Level	 Notify IEC and Contractor; Carry out investigation; Report the results of investigation to the IEC and Contractor; Discuss with the Contractor and formulate remedial measures; Increase monitoring frequency to check mitigation effectiveness 	 Review the analysed results submitted by the ET; Review the proposed remedial measures by the Contractor and advise the ER accordingly; Supervise the implementation of remedial measures 	 Confirm receipt of notification of failure in writing; Notify Contractor; Require Contractor to propose remedial measures for the analysed noise problem; Ensure remedial measures are properly implemented 	 Submit noise mitigation proposals to IEC; Implement noise mitigation proposals 		
Limit Level	 Notify IEC, ER, EPD and Contractor; Identify source; Carry out investigation; Report the results of investigation to the IEC and Contractor; Discuss with the Contractor and formulate remedial measures; Increase monitoring frequency to check mitigation effectiveness 	 Review the analysed results submitted by the ET; Review the proposed remedial measures by the Contractor and advise the ER accordingly; Supervise the implementation of remedial measures 	 Confirm receipt of notification of failure in writing; Notify Contractor; Require Contractor to propose remedial measures for the analysed noise problem; Ensure remedial measures are properly implemented 	 Submit noise mitigation proposals to IEC; Implement noise mitigation proposals 		

Event and Action Plan for Water Quality

EXTENT				
EVENT	ЕТ	IEC	ER	Contractor
Action Level being exceeded by one sampling day	 Repeat <i>in-situ</i> measurement to confirm findings; Identify source(s) of impact; Inform the IEC and the Contractor; Check monitoring data, all plant, equipment and the Contractor's working methods; Discuss mitigation measures with the IEC and the Contractor; 	 Discuss with the ET and the Contractor on the mitigation measures; Review proposals on mitigation measures submitted by the Contractor; Assess the effectiveness of the implemented mitigation measures. 	 Discuss with the IEC on the proposed mitigation measures; Make agreement on the mitigation measures to be implemented. 	 Inform the ER and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with the ET and the IEC and propose mitigation measures to the IEC and ER; Implement the agreed mitigation measures.
Action Level being exceeded by more than one consecutive sampling days	 Repeat <i>in-situ</i> measurement to confirm findings; Identify source(s) of impact; Inform the IEC and the Contractor; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with the IEC and the Contractor; Ensure mitigation measures are implemented; 	 Discuss with the ET and the Contractor on the mitigation measures; Review proposals on mitigation measures submitted by the Contractor accordingly; Assess the effectiveness of the implemented mitigation measures. 	 Discuss with the IEC on the proposed mitigation measures; Make agreement on the mitigation measures to be implemented; Assess effectiveness of the implemented mitigation measures. 	 Inform the ER and confirm notification of the noncompliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with the ET and the IEC and propose mitigation measures to the IEC and ER within 3 working days; Implement the agreed mitigation measures.
Limit Level being exceeded by one consecutive sampling day	 Repeat <i>in-situ</i> measurement to confirm findings; Identify source(s) of impact; Inform the IEC, the Contractor and the EPD; Check monitoring data, all plant, equipment and the Contractor's working methods; Discuss mitigation measures with 	 Discuss with the ET / Contractor on the mitigation measures; Review proposals on mitigation measures submitted by the Contractor and advise the ER accordingly; Assess the effectiveness of the implemented mitigation measures. 	 Discuss with the IEC, the ET and the Contractor on the proposed mitigation measures; Request the Contractor to critically review the working methods; Make agreement on the mitigation measures to be implemented; 	 Inform the ER and confirm notification of the noncompliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with the ET, the IEC and the ER and propose mitigation

EVENT	ACTION					
EVENT	ЕТ	IEC	ER	Contractor		
	the IEC, the ER and the Contractor;6. Ensure mitigation measures are implemented.		4. Assess the effectiveness of the implemented mitigation measures.	measures to the IEC and the ER within 3 working days;6. Implement the agreed mitigation measures.		
Limit Level being exceeded by more than one consecutive sampling days	 Repeat <i>in-situ</i> measurement to confirm findings; Identify source(s) of impact; Inform the IEC, the Contractor and EPD; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with the IEC, the ER and the Contractor; Ensure mitigation measures are implemented; 	 Discuss with ET and Contractor on the mitigation measures; Review proposals on mitigation measures submitted by the Contractor and advise the ER accordingly; Assess the effectiveness of the implemented mitigation measures. 	 Discuss with the IEC, the ET and the Contractor on the proposed mitigation measures; Request Contractor to critically review working methods; Make agreement on the mitigation measures to be implemented; Assess effectiveness of the implemented mitigation measures; Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the marine work until no exceedance of Limit Level. 	 Inform the ER and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with the ET, the IEC and the ER and propose mitigation measures to the IEC and the ER within 3 working days; Implement the agreed mitigation measures; As directed by the ER, slow down or stop all or part of the construction activities. 		



Appendix G

Impact Monitoring Schedule

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Impact Monitoring Schedule for the Reporting Period

Date		Noise	Air Quality Monitoring		Ig With On With	
		Monitoring (0700 – 1900)	1-hour TSP 24-hour TSP		Water Quality	
Sun	1-Jul-18					
Mon	2-Jul-18					
Tue	3-Jul-18				√ (#)	
Wed	4-Jul-18			✓ (A4* & A7)		
Thu	5-Jul-18				*	
Fri	6-Jul-18	\checkmark	\checkmark		\checkmark	
Sat	7-Jul-18					
Sun	8-Jul-18					
Mon	9-Jul-18				\checkmark	
Tue	10-Jul-18			✓ (A4* & A7)		
Wed	11-Jul-18				\checkmark	
Thu	12-Jul-18	\checkmark	\checkmark			
Fri	13-Jul-18				*	
Sat	14-Jul-18					
Sun	15-Jul-18					
Mon	16-Jul-18			✓ (A4* & A7)	\checkmark	
Tue	17-Jul-18					
Wed	18-Jul-18	\checkmark	\checkmark			
Thu	19-Jul-18				√ (^)	
Fri	20-Jul-18					
Sat	21-Jul-18			*	\checkmark	
Sun	22-Jul-18					
Mon	23-Jul-18				✓(^)	
Tue	24-Jul-18	\checkmark	\checkmark			
Wed	25-Jul-18				\checkmark	
Thu	26-Jul-18					
Fri	27-Jul-18			✓ (A4@ & A7)	\checkmark	
Sat	28-Jul-18					
Sun	29-Jul-18					
Mon	30-Jul-18	\checkmark	\checkmark	✓ (A4@& A7)	\checkmark	
Tue	31-Jul-18					

(#) Water quality monitoring at ebb tide was cancelled due to Thunderstorm Warning Signal issued by the Hong Kong Observatory.

[^] Water quality monitoring at flood tide was cancelled due to Thunderstorm Warning Signal issued by the Hong Kong Observatory.

* The monitoring event was cancelled / failure due to adverse weather condition / power failure.

(a) The 24-hour TSP monitoring location at A4 was temporarily shifted to the site boundary of Lung Mei Site.

✓	Monitoring Day	
	Sunday or Public Holiday	



Scheduled		Tides of Tai Po Kau		Proposed Sampling Time (#)	
Monitoring Day		Mid-Ebb	Mid-Flood	Mid-Ebb	Mid-Flood
Tue	3-Jul-18	14:48	07:53	13:18 - 16:18	06:23 - 09:23
Fri	6-Jul-18	18:22	12:02*	16:52 - 19:52	10:32 - 13:32
Mon	9-Jul-18	09:41	15:58	08:11 - 11:11	14:28 - 17:28
Wed	11-Jul-18	11:29	18:00	09:59 - 12:59	16:30 - 19:30
Mon	16-Jul-18	15:31	08:49	14:01 - 17:01	07:19 - 10:19
Thu	19-Jul-18	17:56*	11:31	16:26 - 19:26	10:01 - 13:01
Sat	21-Jul-18	07:44	13:59*	06:14 - 09:14	12:29 - 15:29
Mon	23-Jul-18	10:12	16:44*	08:42 - 11:42	15:14 - 18:14
Wed	25-Jul-18	11:44	18:18	10:14 - 13:14	16:48 - 19:48
Fri	27-Jul-18	13:02	19:33	11:32 - 14:32	18:03 - 21:03
Mon	30-Jul-18	14:43	07:53	13:13 - 16:13	06:23 - 09:23
Romark					

Marine Water Quality Monitoring Schedule

Remark:

(*) The tidal range for the flood and ebb tide is less than 0.5m.

(#) The water quality sampling will be undertaken within a 3-hour window of 1.5 hour before and 1.5 hour after mid flood and mid-ebb tides.



Impact Monitoring Schedule for next Reporting Period

	Date	Noise Monitoring	Air Quality	Monitoring	Water Quality*
	Date	(0700 – 1900)	1-hour TSP	24-hour TSP	-
Wed	1-Aug-18				\checkmark
Thu	2-Aug-18			\checkmark	
Fri	3-Aug-18				\checkmark
Sat	4-Aug-18		\checkmark		
Sun	5-Aug-18				
Mon	6-Aug-18				\checkmark
Tue	7-Aug-18				
Wed	8-Aug-18			\checkmark	\checkmark
Thu	9-Aug-18				
Fri	10-Aug-18	✓	✓		\checkmark
Sat	11-Aug-18				
Sun	12-Aug-18				
Mon	13-Aug-18				\checkmark
Tue	14-Aug-18			\checkmark	
Wed	15-Aug-18				\checkmark
Thu	16-Aug-18	✓	\checkmark		
Fri	17-Aug-18				\checkmark
Sat	18-Aug-18				
Sun	19-Aug-18				
Mon	20-Aug-18			\checkmark	\checkmark
Tue	21-Aug-18				
Wed	22-Aug-18	✓	\checkmark		\checkmark
Thu	23-Aug-18				
Fri	24-Aug-18				\checkmark
Sat	25-Aug-18			\checkmark	
Sun	26-Aug-18				
Mon	27-Aug-18				\checkmark
Tue	28-Aug-18	✓	\checkmark		
Wed	29-Aug-18				\checkmark
Thu	30-Aug-18				
Fri	31-Aug-18			\checkmark	\checkmark
	_	oring Schedule was prov	ided by Fugro Tec	hnical Services Lin	nited

✓	Monitoring Day
	Sunday or Public Holiday



Monthly Environmental Monitoring & Audit Report – July 2018

Project: CEDD Contract No. CV/2012/05 - Bathing Beach at Lung Mei, Tai Po

Impact Monitoring Schedule (Aug 2018)

Sun	Mon	Tue	Wed	Thur	Fri	Sat
			1 WQM Mid-Ebb(14:21-17:21) Mid-Flood(08:48-11:48)	2	3 WQM Mid-Ebb(15:37-18:37) Mid-Flood(09:21-12:21)	4
5	6 WQM Mid-Ebb (06:30-09:30) Mid-Flood(12:50-15:50)	7	8 WQM Mid-Ebb (08:39-11:39) Mid-Flood(15:24-18:24)	9	10 WQM Mid-Ebb (10:34-13:34) Mid-Flood(17:07-18:37)	11
12	13 WQM Mid-Ebb (06:22-09:22) Mid-Flood(12:56-15:56)	14	15 WQM Mid-Ebb (07:57-10:57) Mid-Flood(14:21-17:21)	16	17 WQM Mid-Ebb (09:37-12:37) Mid-Flood(15:50-18:50)	18
19	20 WQM Mid-Ebb (08:33-11:33) Mid-Flood(15:28-18:28)	21	22 WQM Mid-Ebb (09:08-12:08) Mid-Flood(16:00-19:00)	23	24 WQM Mid-Ebb (09:12-12:12) Mid-Flood(17:11-20:11)	25
26	27 WQM Mid-Ebb (05:38-08:38) Mid-Flood(12:14-15:14)	28	29 WQM Mid-Ebb (06:58-09:58) Mid-Flood(13:21-16:21)	30	31 WQM Mid-Ebb (08:22-11:22) Mid-Flood(14:32-17:32)	

Remarks

 International State

 1. Monitoring Locations – G1, R1, R2, I1, I2, I3, W1, M1 and FC21

 2. Actual monitoring will be subjected to change due to any safety concern or adverse weather condition

 (*) The tidal range for the flood and ebb tide is less than 0.5m.

 (#) The water quality sampling will be undertaken within a 3-hour window of 1.5 hour before and 1.5 hour after mid flood and mid ebb.



Appendix H

Database of Monitoring Result



24-hour TSP Monitoring Data

DATE	SAMPLE NUMBER	EI	LAPSED TIM	ΙE	CHAR	T REA	DING	AVG TEMP	AVG AIR PRESS	STANDA RD FLOW RATE	AIR VOLUM E	FILTER	、 、	DUST WEIGHT COLLECTE D	24-Hr TSP (µg/m ³)	ACTION LEVEL (µg/m ³)	LEVEL
		INITIAL	FINAL	(min)	MIN	MAX	AVG	(°C)	(hPa)	(m^3/min)	(std m ³)	INITIAL	FINAL	(g)			
A4 - No. 101	Lung Me	Tsuen															
4-Jul-18																Power fa	ilure (#)
10-Jul-18																Power fa	ilure (#)
16-Jul-18																Power fa	ilure (#)
21-Jul-18																Power fa	ilure (#)
27-Jul-18	22870	13187.00	13211.00	1440.00	40	40	40.0	29	1005.7	1.57	2265	2.6947	2.9390	0.2443	108	142	260
30-Jul-18	22613	13211.00	13235.00	1440.00	40	40	40.0	28.7	1006.4	1.57	2267	2.6947	2.9905	0.2958	130	142	260
A7 - Hong Ko	ng Eco-F	arm			-	-			•							-	
4-Jul-18	22934	10515.06	10539.24	1450.80	32	32	32.0	28.7	1006.4	1.10	1591	2.6633	2.7130	0.0497	31	141	260
10-Jul-18	22939	10539.24	10563.41	1450.20	40	40	40.0	29	1005.7	1.32	1916	2.6788	2.7434	0.0646	34	141	260
16-Jul-18	22982	10563.41	10587.41	1440.00	30	31	30.5	28.9	1005.9	1.05	1518	2.6586	2.7064	0.0478	31	141	260
21-Jul-18																Power fa	ilure (#)
27-Jul-18 (*)	22614	19686.51	19710.51	1440.00	28	28	28.0	28.8	1006.2	0.96	1380	2.6788	2.7159	0.0371	27	141	260
30-Jul-18 (*)	22653	19710.51	19734.51	1440.00	46	46	46.0	28.8	1006.2	1.55	2232	2.6662	2.8727	0.2065	93	141	260

Note (#) 24-hour TSP monitoring was suspended due to power supply issue. (*) 24- hour TSP was performed at temporary station of A4 (site boundary of Lung Mei Site) on 27 and 30 July 2018.

1-hour TSP Monitoring Data

Date	Start Time	1 st reading	2 nd reading	3 rd reading	Action Level (µg/m ³)	Limit Level (µg/m ³)
A4 - No. 101 I	Lung Mei Tsuen					
6-Jul-18	13:45	33	32	32	275	500
12-Jul-18	10:28	18	12	14	275	500
18-Jul-18	10:45	64	50	45	275	500
24-Jul-18	9:32	42	43	45	275	500
30-Jul-18	9:50	40	41	107	275	500
A7 - Hong Kor	ng Eco-Farm					
6-Jul-18	14:16	28	31	32	274	500
12-Jul-18	13:36	22	12	21	274	500
18-Jul-18	14:15	44	43	39	274	500
24-Jul-18	9:26	40	42	43	274	500
30-Jul-18	9:41	38	41	42	274	500

AUES

Construction Noise Monitoring Results, dB(A)

Date	Start Time	1 st Leq _{5min}	L10	L90	2 nd Leq _{5min}	L10	L90	3 nd Leq _{5min}	L10	L90	4 th Leq _{5min}	L10	L90	5 th Leq _{5min}	L10	L90	6 th Leq _{5min}	L10	L90	Leq30	façade correction	Limit Level (dB(A))
N1 - Village	e house ·	- No. 165	5A Lung	Mei																		
6-Jul-18	13:44	57.9	61.3	45.1	56.9	59.9	40.0	57.1	60.6	49.4	59.0	62.2	47.9	58.7	61.0	47.6	60.7	64.4	50.5	59	62	75
12-Jul-18	10:03	61.0	63.0	58.6	65.6	66.5	64.0	65.8	66.5	65.0	66.5	67.1	64.9	67.4	68.4	65.2	64.9	67.7	61.4	66	69	75
18-Jul-18	10:54	62.7	63.2	48.6	59.7	62.3	49.9	55.2	58.4	46.2	60.7	64.4	48.9	57.6	61.8	46.8	58.3	62.0	46.9	60	63	75
24-Jul-18	10:13	57.1	59.8	53.4	57.1	60.1	53.3	60.3	63.2	55.7	58.7	62.2	51.0	59.8	61.8	53.2	59.9	62.1	53.0	59	62	75
30-Jul-18	10:27	52.3	56.3	43.2	56.6	60.9	45.9	55.1	58.4	41.9	57.4	58.7	41.2	55.7	57.5	42.7	56.3	58.0	43.0	56	59	75
N2a - Villag	ge house	- No. 10	1 Lung	Mei																		
6-Jul-18	13:50	59.4	61.7	42.9	57.6	61.2	47.5	59.7	63.0	47.4	58.3	61.5	44.2	56.8	59.9	44.0	64.2	64.7	51.4	60	N/A	75
12-Jul-18	10:33	61.3	64.4	53.0	57.2	60.6	48.0	59.6	61.5	47.6	58.3	60.8	47.1	56.7	59.3	48.1	62.4	63.7	48.0	60	N/A	75
18-Jul-18	11:25	60.6	65.9	46.9	65.7	65.6	50.4	65.7	71.5	51.4	65.8	71.6	47.7	61.1	65.1	46.3	65.0	68.9	50.8	64	N/A	75
24-Jul-18	9:42	59.0	62.5	52.6	59.2	62.1	52.3	57.7	60.6	52.2	57.3	59.5	50.8	58.6	60.1	51.8	59.5	61.7	52.4	59	N/A	75
30-Jul-18	9:53	55.5	58.7	46.3	54.0	57.3	46.0	56.7	59.9	46.2	55.6	58.9	46.8	54.8	57.9	45.4	55.2	58.4	46.7	55	N/A	75
N3a - Villag	ge house	- No. 66	6C Lo Ts	z Tin																		
6-Jul-18	14:20	56.0	61.1	44.3	54.4	59.0	45.5	60.4	61.6	44.7	52.0	56.3	42.9	54.1	58.1	47.1	55.3	58.3	47.9	56	59	75
12-Jul-18	13:05	59.1	63.1	49.6	57.4	60.9	47.7	50.2	51.5	47.0	54.2	60.0	45.7	55.5	60.7	46.8	60.2	63.2	50.1	57	60	75
18-Jul-18	12.39	60.6	62.4	48.3	58.2	61.5	49.7	53.2	55.9	48.2	53.5	55.3	49.7	55.6	56.9	50.0	54.3	57.3	49.6	57	60	75
24-Jul-18	10:48	58.8	61.1	47.3	57.1	60.4	49.0	55.0	57.3	47.1	54.7	58.6	48.8	56.8	59.8	49.1	57.2	60.9	49.7	57	60	75
30-Jul-18	11:01	52.7	57.4	45.1	53.0	53.8	46.2	47.6	50.2	44.4	49.3	49.8	43.1	50.8	50.2	44.8	49.2	49.8	43.1	51	54	75
N4 - Village	e house ·	- No. 79	Lo Tsz T	ſin																		
6-Jul-18	14:27	56.3	60.0	45.6	64.3	60.9	44.2	54.0	58.8	42.6	60.4	62.3	44.1	61.4	61.4	47.0	56.9	60.9	46.9	60	N/A	75
12-Jul-18	12:37	60.9	62.6	54.8	59.1	62.3	54.9	60.6	63.9	56.1	66.6	67.2	65.6	65.8	66.8	65.0	63.2	64.6	61.0	64	N/A	75
18-Jul-18	13:14	58.8	62.0	52.8	59.4	61.7	52.0	59.2	62.3	52.1	62.8	64.9	52.6	59.3	62.5	53.8	60.0	62.7	53.4	60	N/A	75
24-Jul-18	11:20	62.7	67.6	51.6	70.6	70.1	52.8	64.2	68.1	52.4	60.7	64.9	52.2	62.7	66.9	52.4	60.4	65.4	52.8	65	N/A	75
30-Jul-18	11:41	56.7	57.2	46.6	55.6	59.0	46.5	54.4	57.9	46.0	57.8	59.9	44.4	55.8	57.7	44.4	54.9	56.2	44.0	56	N/A	75

Remark:

Sound level meter set at N1 and N3a are made free-field measurement, façade correction (+3dB(A)) has added according to acoustical principles and EPD guidelines;

	Cloudy Moderate Location	Tide*	Co-ord	lingtes	*** /											
Sea Condition: N	Moderate Location	Tide*	Co-ord	lingter	*** /											
Date / Time		Tide*	Co-ord	linates	*** /											
Date / Time		Tide*		mates	Water	Sampling	Current	Current	Temp	DO	DO	Turbidity	Salinity	pН	SS	Chlorophyll-a
			East	North	Depth m	Depth m	Direction degrees	Speed m/s	ະ	Conc mg/L	Saturation %	NTU	ppt	unit	mg/L	μg/L
	<i>a</i>						U									
	G1	ME														
	01	IIIL														
	R1	ME														
	R2	ME														
	¥.	2.07														
	I1	ME														
	I2	ME														
	I3	ME														
	W1	ME														
	M1	ME														
	DODI															
	FCZ1	ME														
						1.00			28.9 28.9	6.54 6.54	100.9 101	1.28 1.26	31.12 31.13	8.28 8.28	4	1.5 1.7
8:34	G1	MF	841473	835922	4.9		97	0.084						0.12.0	-	
						3.90			26.8	5.66	85	1.21	32.99	8.23	4	1.9
									26.9 29.1	5.68 6.79	85.6 104.9	1.15 1.29	32.91 31.02	8.22 8.32	5 5	1.6 2
						1.00			29.1 27.9	6.8 6.53	105 99.5	1.29 1.09	31.02 31.96	8.33 8.31	4	2 1.9
8:41	R1	MF	842323	835709	6.6	3.30	153	0.102	27.9	6.01	91.6	1.15	31.96	8.3	4	2
						5.60			24.4 24.3	3.12 2.98	45.4 43.3	2.41 2.5	34.03 34	8.07 8.06	5	2.3
						1.00			29.3 29.3	6.36 6.35	98.6 98.4	2.5 2.53	30.96 30.96	8.28 8.28	4	2
8:19	R2	MF	840722	836227	5.1	4.10	121	0.094	29	6.51	100.6	1.41	31.22	8.28	4	2.4
8:12	I1	MF	841333	836607	2.7	1.35	169	0.064	28.8 26	6.47 5.06	99.8 75.3	1.4 1.16	31.37 33.37	8.28 8.19	4 5	2 2.6
0.12	- 11	wii	041555	050007	2.7		107	0.001	28.9 28.8	6.27 6.45	96.7 99.4	1.46	31.3 31.38	8.29 8.29	4	2.2
8:08	I2	MF	841605	836584	5	1.00	145	0.075	28.6 26.1	6.4 5.12	98.5 76.3	1.33 1.16	31.63 33.37	8.29 8.21	5	2.2 3.4
						4.00			26.1	5.09	75.8	1.17	33.38	8.2	4	3.2
0.02	13	ME	841804	026602	5.2	1.00	127	0.081	29.3 29.2	6.62 6.6	102.4 102.1	1.47 1.46	30.82 30.86	8.28 8.28	3	2.2 2.4
8:03	15	MF	641804	836693	5.2	4.20	126	0.081	26.6 26.6	4.61 4.55	69.1 68.2	1.45	33.16 33.16	8.14 8.14	4	2.5
						1.00			28.4	6.59	101.1	2.07	31.71	8.3	3	2.5
8:52	W1	MF	841844	836557	8	4.00	139	0.091	28.4 28.5	6.71 6.68	103 102.6	1.83 1.85	31.69 31.66	8.31 8.31	2	2.4 2.3
0.52	vv 1	мг	041044	02022/	0		139	0.091	26 26.1	5 4.95	74.4 73.7	1.34 1.35	33.36 33.32	8.18 8.18	2	2.6 2.6
						7.00			24.9	3.07	45	2.3	33.76	8.04	3	2.8
	M1	MF	840834	836407	0.7	0.35	84	0.053	28.7 28.7	6.2 6.22	95.6 95.7	1.4 1.38	31.5 31.58	8.29 8.29	4	1.8 1.6
8:16																
8:16	FCZ1	MF	841165	835253	4.8	1.00	213	0.114	28.8 28.8	6.39 6.35	98.4 97.7	1.31 1.29	31.19 31.2	8.27 8.27	4	2.4

 Remarks:
 MF - Middle Flood tide

 ME - Middle Ebb tide

 For SS, if the monitoring result is less than Limit of Report 2mg/L, the result value will be assumed as 2 for the calculation.

 For Chorophyll-a, if the monitoring result is less than Limit of Report 0.1µg/L, the result value will be assumed as 0.1 for the calculation.

						Impac	t Water Q	uality Mo	nitoring l	Result						
Sampling Date:																
Weather:	Fine Moderate															
Sea Condition:	Moderate		a		Water	Sampling	Current	Current	-	DO	DO	-	a u u			<i>a</i>
Date / Time	Location	Tide*		dinates	Depth	Depth	Direction	Speed	Temp	Conc	Saturation	Turbidity	Salinity	pН	SS	Chlorophyll-a
			East	North	m	m	degrees	m/s	°C 28.9	mg/L	% 126.3	NTU 2.14	ppt 29.82	unit 8.43	mg/L	μg/L 6.2
						1.00			28.9	8.25 8.23	120.5	2.14	29.82	8.43	3 5	6.8
17:27	G1	ME	841475	835921	4.8		213	0.125								
						2.00			25.8	5.32	78.6	1.93	32.99	8.49	6	7.4
						3.80			25.3	5.36	78.4	1.95	33.7	8.47	4	7.6
						1.00			29.7 29.5	8.11 8.19	124.5 125.4	2.5 2.5	27.84 28.02	8.38 8.39	4 3	6.8 7.1
17:34	R1	ME	842283	835706	6.6	3.30	201	0.146	26.5	6.33	94.9	2.08	33.09	8.43	4	7.1
17.54	KI	IVIL	042205	055700	0.0	5.50	201	0.140	26.3 25.8	5.82 4.49	87.1 66.7	1.97 2.65	33.28 33.46	8.45 8.48	2 6	8.3 7.7
						5.60			25.6	4.49	61.4	2.62	33.56	8.49	5	8
						1.00			28.9	7.74	118.3	2.26	29.64	8.49	5	5.1
17:15	R2	ME	840724	836215	5.2		148	0.108	28.9 26.3	7.82 6.78	119.6 100.6	2.21 2.94	29.69 32.19	8.49 8.53	5	5.1 6.4
						4.20			26.2	5.9	87.7	2.81	32.68	8.53	8	7.2
17:04	I1	ME	841318	836592	2.8	1.40	173	0.092	29.3 29.3	8.03	123 128.1	2.49 2.54	28.91	8.61 8.61	4	2.6 2.8
						1.00			29.3	8.36 7.96	128.1	2.34	28.89 28.66	8.72	6	3.2
17:01	I2	ME	841583	836595	4.9	1.00	134	0.084	29.3	8	122.5	2.83	28.7	8.71	6	2.5
						3.90	-		26.2 26.1	6.84 6.01	102 89.7	2.23 1.98	33.32 33.38	8.76 8.78	6 5	3.5 3.3
						1.00			29.5	7.41	113.7	1.99	28.34	8.92	3	4.5
16:55	13	ME	841823	836663	4.7		116	0.098	29.3 26.4	7.52 6.55	115.2 98.1	1.87 2.57	28.67 33.33	8.94 9.19	4 3	5 3.9
						3.70			26.4	5.91	88.4	2.57	33.4	9.19	4	3.6
						1.00			28.9	7.7	116.9	2.18	28.54	8.48	5	8.2
									28.9 26.4	7.84	119.1 88.8	2.38	28.52 33.23	8.47 8.45	5	8.4 7.7
17:45	W1	ME	841864	836565	8	4.00	105	0.086	24.8	4.21	61.6	1.6	34.2	8.47	6	8.9
						7.00			24.8 24.7	3.89	56.9	1.73 1.74	34.05	8.48 8.49	6	9.2
17.00	2.61	1.05	0.400.2.4	026405	0.0	0.45	07	0.050	30.8	3.87 7.75	56.5 119	2.77	34.1 24.82	8.91	5 5	8.7 4.3
17:09	M1	ME	840834	836405	0.9	0.45	97	0.059	30.8	7.91	121.4	2.81	24.83	8.89	5	4.4
						1.00			28.5 28.7	7.51 7.62	114.9 116.6	1.72 1.88	30.89 30.45	8.55 8.54	3	6.2 6.6
17:21	FCZ1	ME	841176	835224	4.8	3.80	108	0.138	26.3	6.73	99.9	1.88	32.13	8.54	3	7.2
						3.80			26.9	6.58	98.6	1.98	32.19	8.53	4	6.8
									28.7	7.14	109.3	2.54	30.35	8.51	5	9.5
						1.00			28.7	7.14	111.1	2.54	30.55	8.53	5	9.3
13:03	G1	MF	841473	835924	5.5		103	0.103								
									25.7	4.38	64.8	2.37	33.55	8.65	6	8.7
						4.50			25.6	4.12	61	2.46	33.59	8.66	5	10.4
						1.00			28.6 28.6	7.46	113.2 114.7	2.33	29.17 29.14	8.29 8.29	4	9.2 8.6
12.11	R1	MF	842308	925714	5.7	2.85	116	0.120	26.9	7.66	114.7	2.55	30.82	8.32	5	9.7
13:11	K1	MIL	842308	835714	5.7	2.85	116	0.120	26	6.07	90.2	2.44	33.1	8.38	4	11.2
						4.70			24.9 24.8	4.47	65.5 64.9	2.41 2.49	33.75 33.79	8.44 8.45	4	8.6 9.4
						1.00			27.6	7.13	107.6	3.7	30.92	8.58	4	8.8
12:51	R2	MF	840754	836241	4.5		129	0.096	27.5 25.6	7.15 4.88	107.9 72.1	3.03	31.46 33.54	8.63 8.77	4 5	9.4 9.4
						3.50			25.6	4.61	68.2	2.95	33.68	8.79	4	10
12:43	I1	MF	841341	836582	2.8	1.40	96	0.084	27.4	6.51	98.3	2.73	31.81	8.97	5	10.4
						1.00			27.3 28.1	6.37 7.01	96.1 105.4	2.11 2.42	31.95 29.21	8.99 9	6 6	10.2 12.3
12:38	12	MF	841597	836576	4.5	1.00	72	0.079	28	6.95	104.7	2.15	29.66	9.02	5	10.1
12.00			011097	000070		3.50		0.077	26 26	4.8 4.53	71.4 67.4	1.45 1.43	33.46 33.45	9.3 9.3	6 6	12.2 10.9
						1.00			28.5	7.25	109	2.44	27.76	9.38	6	13.7
12:34	13	MF	841806	836672	4.6	1.00	148	0.082	28.3	7.28	109.4	2.45	28.19	9.42	6	13.7
						3.60			26.2 26.2	6.22 5.71	92.8 85.2	2.57 2.66	33.39 33.4	9.8 9.8	8 6	16.4 12.9
						1.00			28.4	6.85	104	1.63	29.85	8.25	5	9.5
									27.9 25.9	6.83 5.3	103.3 78.7	1.52 1.35	30.7 33.3	8.27 8.35	5	10.3 8.7
13:22	W1	MF	841872	836577	7.5	3.75	203	0.091	23.9	5.31	79	1.33	33.41	8.35	3	9.4
						6.50			24.3	3.52	51.1	1.8	34.16	8.41	4	9.8
10 :-			0.40	00.015				0.0	24.3 30.6	3.43 7.38	49.8 113.4	1.94 2.66	34.02 25.55	8.41 8.49	4	9.1 10.2
12:47	M1	MF	840828	836406	0.7	0.35	118	0.061	30.7	7.4	113.9	2.64	25.54	8.49	5	9.5
						1.00			27.5 27.5	6.86 6.9	103.6 104.2	1.31 1.41	31.62 31.5	8.59	5 6	12.5 11.3
12:57	FCZ1	MF	841167	835208	4.4	2.40	83	0.107	27.5	5.23	77.4	1.41	33.11	8.6 8.66	6	11.5
				1		3.40			25.8	4.97	73.6	1.41	33.25	8.66	5	10.6

 Remarks:
 MF - Middle Flood tide

 ME - Middle Ebb tide
 MF - Middle Ebb tide

 For SS, if the monitoring result is less than Limit of Report 2mg/L, the result value will be assumed as 2 for the calculation.

 For Chorophyll-a, if the monitoring result is less than Limit of Report 0.1µg/L, the result value will be assumed as 0.1 for the calculation.

Contract No. CV/2012/05
Bathing Beach at Lung Mei, Tai Po

ampling Date:	0. Inl 19					mp	act Water	Quality IV	i omtor II	-5 iscould	r -					
Waathan																
Weather:	Sunny															
ea Condition:	Moderate	2			XX/- 4	C	Guuna	Growt		DO	DO	1		1	1	r
Date / Time	Location	Tide*	Co-ore	dinates	Water Depth	Sampling Depth	Current Direction	Current Speed	Temp	Conc	DO Saturation	Turbidity	Salinity	pН	SS	Chlorophyll
Date / Thie	Location	The	East	North	m	m	degrees	m/s	ç	mg/L	%	NTU	ppt	unit	mg/L	μg/L
			Last	TOT			utgrets	11/5	28.2	7.57	114.5	1.67	29.81	8.83	7	4.7
						1.00			28.3	7.6	115.2	1.66	29.77	8.83	8	5.1
11:06	G1	ME	841476	835920	4.9		129	0.086								
11.00	0.		011170	000720			,	0.000	26.5	6.00	00.1	4.1	22.10	0.04	10	2.0
						3.90			26.5 27	6.82 6.92	99.1 104.2	4.1 3.02	<u>33.12</u> 33.13	8.84 8.82	10 9	3.9
						1.00			28.2	7.41	112.5	3.28	30.49	8.63	13	4.2
						1.00			28.1	7.47	113.4	3.29	30.22	8.63	12	4.8
11:12	R1	ME	842287	835721	6.4	3.20	58	0.103	27.1	7.01	105.6	3.48	32.44	8.63	14	3.6
									27.1 25	7.03	106 99.4	3.51 4.12	32.48 33.08	8.63 8.62	14 12	4.9
						5.40			25.1	6.93	99.1	4.23	33.06	8.61	13	4.9
						1.00			29	7.1	108.1	3.99	28.63	8.75	10	3.3
10:54	R2	ME	840740	836204	4.8	1.00	69	0.093	29	7.1	108.2	2.95	28.65	8.75	11	3.3
						3.80			26.8 26.8	5.25 4.97	79 74.7	3.72 3.95	33.02 33.06	8.78 8.79	11 10	2.5 4.4
10.15								0.44.5	20.8	7.64	116	2.44	30.23	9.15	10	3.4
10:47	I1	ME	841325	836576	2.4	1.20	215	0.115	28.2	7.67	116.4	2.44	30.24	9.15	10	4
						1.00			28.4	7.39	112.5	2.92	30.4	9.17	11	5.5
10:42	I2	ME	841596	836621	4.8		243	0.127	28.3 28	7.57	115.1	2.56	30.43	9.22 9.27	9 12	5.3
						3.80			28	7.62	115.7 115.6	2.48 2.47	31.02 31.33	9.27	11	4.5
						1.00			28.2	7.31	111.2	1.49	30.66	8.96	6	3.3
10:38	13	ME	841805	836667	5.1	1.00	39	0.087	28.2	7.57	115.1	1.5	30.7	8.97	6	3.6
10.58	15	MIL	041005	850007	5.1	4.10	39	0.007	27.9	7.01	106.3	1.63	31.23	9.02	6	5.2
				-					27.8 28.2	6.77 7.41	102.7 112.5	1.66 1.44	31.46 30.49	9.04 8.63	6 6	4.2 4.8
						1.00			28.2	7.41	112.5	1.44	30.49	8.63	6	4.6
11:20	W1	ME	841862	836589	7.6	2.00	310	0.118	27.1	7.01	105.6	2.48	32.44	8.63	7	4.5
11:20	W I	ME	841802	830389	7.0	3.80	510	0.118	27.1	7.03	106	2.54	32.48	8.63	7	5
						6.60			25	6.62	89.4	3.75	33.78	8.62	7	5.8
									25.1 28.8	6.53 7.2	88.1 109.8	3.81 2.02	33.76 29.3	8.61 8.83	8 12	5.5 1.7
10:51	M1	ME	840828	836406	0.9	0.45	53	0.124	28.9	7.21	109.8	2.02	29.3	8.83	11	2.2
						1.00			28.8	7.48	113.8	1.59	29.11	8.69	2	5.7
11:00	FCZ1	ME	841172	835218	4.6	1.00	41	0.093	28.8	7.55	115	1.6	29.1	8.69	4	5.2
						3.60			28.3 27.8	7.24 6.95	111 106	1.61 1.64	31.8 32.2	8.71 8.72	4 5	5.3 4.8
									27.0	0.95	100	1.04	32.2	0.72	3	4.0
					(28.4	7.75	118.1	1.59	30.64	8.31	6	4.9
						1.00			28.6	7.78	118.9	1.57	30.52	8.3	6	4.5
15:08	G1	MF	841473	835924	5	2.50	301	0.125								
10.00	0.		011110	00072.	~											
									29.4	7.0	110	2.29	20.07	0.2	6	5.6
					ļ	4.00			28.4	7.2	110 108.4	2.38	30.97	8.3 8.29	6	5.6
									28.2	7.11	108.4	2.73	31.28	8.29	6	6.2
						4.00 1.00			28.2 28.1 28.3	7.11 7.5 7.54	108.4 114.3 115.1	2.73 1.5 1.46	31.28 31.27 31.17	8.29 8.42 8.41	6 5 4	6.2 3.8 3.1
15:14	R1	MF	842308	835709	6.5			0.111	28.2 28.1 28.3 27.8	7.11 7.5 7.54 7.71	108.4 114.3 115.1 117.2	2.73 1.5 1.46 3.53	31.28 31.27 31.17 31.62	8.29 8.42 8.41 8.43	6 5 4 12	6.2 3.8 3.1 3
15:14	R1	MF	842308	835709	6.5	1.00	285	0.111	28.2 28.1 28.3 27.8 27.7	7.11 7.5 7.54 7.71 7.76	108.4 114.3 115.1 117.2 117.7	2.73 1.5 1.46 3.53 5.56	31.28 31.27 31.17 31.62 31.77	8.29 8.42 8.41 8.43 8.43		6.2 3.8 3.1 3 3.5
15:14	R1	MF	842308	835709	6.5	1.00		0.111	28.2 28.1 28.3 27.8 27.7 26.8	7.11 7.5 7.54 7.71 7.76 6.53	108.4 114.3 115.1 117.2 117.7 98.2	$ \begin{array}{r} 2.73 \\ 1.5 \\ 1.46 \\ 3.53 \\ 5.56 \\ 3.65 \\ \end{array} $	31.28 31.27 31.17 31.62 31.77 32.76	8.29 8.42 8.41 8.43 8.43 8.43 8.46	6 5 4 12 11 12	$ \begin{array}{r} 6.2 \\ 3.8 \\ 3.1 \\ 3 \\ 3.5 \\ 4 \end{array} $
15:14	R1	MF	842308	835709	6.5	1.00 3.25 5.50		0.111	28.2 28.1 28.3 27.8 27.7 26.8 26.6 29	7.11 7.5 7.54 7.71 7.76 $6.536.197.5$	108.4 114.3 115.1 117.2 117.7 98.2 92.8 114.7	$\begin{array}{r} 2.73 \\ 1.5 \\ 1.46 \\ 3.53 \\ 5.56 \\ 3.65 \\ 3.56 \\ 1.82 \end{array}$	31.28 31.27 31.17 31.62 31.77 32.76 33.05 29.43	8.29 8.42 8.41 8.43 8.43 8.44 8.46 8.46 8.44	$ \begin{array}{r} 6 \\ 5 \\ 4 \\ 12 \\ 11 \\ 12 \\ 14 \\ 4 \end{array} $	$ \begin{array}{r} 6.2 \\ 3.8 \\ 3.1 \\ 3 \\ 3.5 \\ 4 \\ 4.1 \\ 4.3 \\ \end{array} $
				835709		1.00 3.25	285		28.2 28.1 28.3 27.8 27.7 26.8 26.6 29 29.1	$\begin{array}{r} 7.11 \\ 7.5 \\ 7.54 \\ 7.71 \\ 7.76 \\ 6.53 \\ 6.19 \\ 7.5 \\ 7.63 \end{array}$	108.4 114.3 115.1 117.2 117.7 98.2 92.8 114.7 116.8	$\begin{array}{r} 2.73 \\ 1.5 \\ 1.46 \\ 3.53 \\ 5.56 \\ 3.65 \\ 3.56 \\ 1.82 \\ 1.86 \end{array}$	31.28 31.27 31.17 31.62 31.77 32.76 33.05 29.43 29.41	8.29 8.42 8.41 8.43 8.43 8.44 8.46 8.46 8.44 8.44	$ \begin{array}{r} 6 \\ 5 \\ 4 \\ 12 \\ 11 \\ 12 \\ 14 \\ 4 \\ 5 \\ \end{array} $	$ \begin{array}{r} 6.2 \\ 3.8 \\ 3.1 \\ 3 \\ 3.5 \\ 4 \\ 4.1 \\ 4.3 \\ 3.6 \\ \end{array} $
15:14 14:53	R1 R2	MF	842308 840728		6.5 4.5	1.00 3.25 5.50		0.111	28.2 28.1 28.3 27.8 27.7 26.8 26.6 29 29.1 27.6	$\begin{array}{r} 7.11 \\ 7.5 \\ 7.54 \\ 7.71 \\ 7.76 \\ 6.53 \\ 6.19 \\ 7.5 \\ 7.63 \\ 6.49 \end{array}$	108.4 114.3 115.1 117.2 117.7 98.2 92.8 114.7 116.8 98.5	$\begin{array}{r} 2.73 \\ 1.5 \\ 1.46 \\ 3.53 \\ 5.56 \\ 3.65 \\ 3.56 \\ 1.82 \\ 1.86 \\ 3.7 \end{array}$	31.28 31.27 31.17 31.62 31.77 32.76 33.05 29.43 29.41 32.2	8.29 8.42 8.41 8.43 8.43 8.44 8.46 8.46 8.44 8.44 8.44	$ \begin{array}{r} 6 \\ 5 \\ 4 \\ 12 \\ 11 \\ 12 \\ 14 \\ 4 \\ 5 \\ 6 \\ \end{array} $	$\begin{array}{r} 6.2 \\ 3.8 \\ 3.1 \\ 3 \\ 3.5 \\ 4 \\ 4.1 \\ 4.3 \\ 3.6 \\ 4.6 \\ \end{array}$
14:53	R2	MF	840728	836208	4.5	1.00 3.25 5.50 1.00 3.50	285	0.095	28.2 28.1 28.3 27.8 27.7 26.8 26.6 29 29.1 27.6 29	$\begin{array}{r} 7.11 \\ 7.5 \\ 7.54 \\ 7.71 \\ 7.76 \\ 6.53 \\ 6.19 \\ 7.5 \\ 7.63 \\ 6.49 \\ 7.44 \end{array}$	$\begin{array}{c} 108.4 \\ 114.3 \\ 115.1 \\ 117.2 \\ 98.2 \\ 92.8 \\ 114.7 \\ 116.8 \\ 98.5 \\ 114.3 \\ \end{array}$	$\begin{array}{c} 2.73 \\ 1.5 \\ 1.46 \\ 3.53 \\ 5.56 \\ 3.65 \\ 3.56 \\ 1.82 \\ 1.86 \\ 3.7 \\ 3.81 \end{array}$	31.28 31.27 31.17 31.62 31.77 32.76 33.05 29.43 29.41 32.2 30.15	8.29 8.42 8.41 8.43 8.43 8.44 8.46 8.46 8.44 8.44 8.44 8.44 8.44	$ \begin{array}{r} 6 \\ 5 \\ 4 \\ 12 \\ 11 \\ 12 \\ 14 \\ 4 \\ 5 \\ 6 \\ 8 \\ \end{array} $	$\begin{array}{c} 6.2 \\ 3.8 \\ 3.1 \\ 3 \\ 3.5 \\ 4 \\ 4.1 \\ 4.3 \\ 3.6 \\ 4.6 \\ 5 \end{array}$
						1.00 3.25 5.50 1.00	285		28.2 28.1 28.3 27.8 27.7 26.8 26.6 29 29.1 27.6	$\begin{array}{r} 7.11 \\ 7.5 \\ 7.54 \\ 7.71 \\ 7.76 \\ 6.53 \\ 6.19 \\ 7.5 \\ 7.63 \\ 6.49 \end{array}$	108.4 114.3 115.1 117.2 117.7 98.2 92.8 114.7 116.8 98.5	$\begin{array}{r} 2.73 \\ 1.5 \\ 1.46 \\ 3.53 \\ 5.56 \\ 3.65 \\ 3.56 \\ 1.82 \\ 1.86 \\ 3.7 \end{array}$	31.28 31.27 31.17 31.62 31.77 32.76 33.05 29.43 29.41 32.2	8.29 8.42 8.41 8.43 8.43 8.44 8.46 8.46 8.44 8.44 8.44	$ \begin{array}{r} 6 \\ 5 \\ 4 \\ 12 \\ 11 \\ 12 \\ 14 \\ 4 \\ 5 \\ 6 \\ \end{array} $	$\begin{array}{r} 6.2 \\ 3.8 \\ 3.1 \\ 3 \\ 3.5 \\ 4 \\ 4.1 \\ 4.3 \\ 3.6 \\ 4.6 \\ \end{array}$
14:53	R2	MF	840728	836208	4.5	1.00 3.25 5.50 1.00 3.50 1.30	285	0.095	28.2 28.1 28.3 27.8 27.7 26.8 29 29.1 27.6 29 29.1 27.6 29 29.2 29 28.9 28.9 28.6	7.11 7.5 7.54 7.71 7.76 6.53 6.19 7.5 7.63 6.49 7.44 7.71 7.8 7.7	108.4 114.3 115.1 117.2 98.2 92.8 114.7 116.8 98.5 114.3 118.4 119.6 117.7	$\begin{array}{c} 2.73 \\ 1.5 \\ 1.46 \\ 3.53 \\ 5.56 \\ 3.65 \\ 3.65 \\ 1.82 \\ 1.86 \\ 3.7 \\ 3.81 \\ 2.81 \\ 2.81 \\ 2.76 \\ 2.56 \end{array}$	$\begin{array}{r} 31.28\\ 31.27\\ 31.17\\ 31.62\\ 31.77\\ 32.76\\ 33.05\\ 29.43\\ 29.41\\ 32.2\\ 30.15\\ 30.14\\ 30.2\\ 30.48\\ \end{array}$	$\begin{array}{r} 8.29\\ 8.42\\ 8.41\\ 8.43\\ 8.43\\ 8.46\\ 8.46\\ 8.44\\ 8.44\\ 8.44\\ 8.44\\ 8.4\\ 8.61\\ 8.61\\ 8.69\end{array}$	$\begin{array}{c} 6 \\ 5 \\ 4 \\ 12 \\ 11 \\ 12 \\ 14 \\ 4 \\ 5 \\ 6 \\ 8 \\ 10 \\ 10 \\ 10 \end{array}$	$\begin{array}{c} 6.2 \\ 3.8 \\ 3.1 \\ 3 \\ 3.5 \\ 4 \\ 4.1 \\ 4.3 \\ 3.6 \\ 4.6 \\ 5 \\ 4.2 \\ 3.5 \\ 4.9 \\ \end{array}$
14:53	R2	MF	840728	836208	4.5	1.00 3.25 5.50 1.00 3.50	285	0.095	28.2 28.1 28.3 27.8 27.7 26.8 26.6 29 29.1 27.6 29 29 29 29 28.9 28.6 28.7	$\begin{array}{c} 7.11\\ 7.5\\ 7.54\\ 7.71\\ 7.76\\ 6.53\\ 6.19\\ 7.5\\ 7.63\\ 6.49\\ 7.44\\ 7.71\\ 7.8\\ 7.7\\ 7.76\end{array}$	108.4 114.3 115.1 117.2 98.2 92.8 114.7 116.8 98.5 114.3 118.4 119.6 117.7 118.8	$\begin{array}{c} 2.73 \\ 1.5 \\ 1.46 \\ 3.53 \\ 5.56 \\ 3.65 \\ 3.56 \\ 1.82 \\ 1.86 \\ 3.7 \\ 3.81 \\ 2.81 \\ 2.76 \\ 2.56 \\ 5.54 \end{array}$	31.28 31.27 31.17 31.62 31.77 32.76 33.05 29.43 29.41 32.2 30.15 30.14 30.2 30.48 30.4	8.29 8.42 8.41 8.43 8.43 8.46 8.44 8.44 8.44 8.44 8.44 8.44 8.61 8.69 8.69 8.69	$\begin{array}{c} 6 \\ 5 \\ 4 \\ 12 \\ 11 \\ 12 \\ 14 \\ 4 \\ 5 \\ 6 \\ 8 \\ 10 \\ 10 \\ 10 \\ 10 \end{array}$	$\begin{array}{c} 6.2 \\ 3.8 \\ 3.1 \\ 3 \\ 3.5 \\ 4 \\ 4.1 \\ 4.3 \\ 3.6 \\ 4.6 \\ 5 \\ 4.2 \\ 3.5 \\ 4.9 \\ 4.8 \end{array}$
14:53 14:45	R2 11	MF MF	840728 841349	836208 836584	4.5 2.6	1.00 3.25 5.50 1.00 3.50 1.30	285 84 46	0.095	28.2 28.1 28.3 27.8 27.7 26.8 27.7 26.8 29 29 29 27.6 29 27.6 29 28.9 28.9 28.9 28.9 28.9 28.9 28.9 2	$\begin{array}{c} 7.11\\ 7.5\\ 7.54\\ 7.71\\ 7.76\\ 6.53\\ 6.19\\ 7.5\\ 7.63\\ 6.49\\ 7.44\\ 7.71\\ 7.8\\ 7.7\\ 7.76\\ 7.91\end{array}$	$\begin{array}{c} 108.4\\ 114.3\\ 115.1\\ 117.2\\ 117.7\\ 98.2\\ 92.8\\ 114.7\\ 116.8\\ 98.5\\ 114.3\\ 118.4\\ 119.6\\ 117.7\\ 118.8\\ 120.8\\ \end{array}$	$\begin{array}{c} 2.73 \\ 1.5 \\ 1.46 \\ 3.53 \\ 5.56 \\ 3.65 \\ 3.65 \\ 3.65 \\ 1.82 \\ 1.82 \\ 1.86 \\ 3.7 \\ 3.81 \\ 2.81 \\ 2.76 \\ 2.56 \\ 5.54 \\ 2.61 \end{array}$	$\begin{array}{r} 31.28\\ 31.27\\ 31.17\\ 31.62\\ 31.77\\ 32.76\\ 33.05\\ 29.43\\ 29.41\\ 32.2\\ 30.15\\ 30.14\\ 30.2\\ 30.48\\ 30.4\\ 30.97\\ \end{array}$	8.29 8.42 8.41 8.43 8.46 8.46 8.46 8.44 8.44 8.44 8.44 8.61 8.61 8.69 8.69 8.69	$\begin{array}{c} 6 \\ 5 \\ 4 \\ 12 \\ 11 \\ 12 \\ 14 \\ 4 \\ 5 \\ 6 \\ 8 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 $	$\begin{array}{c} 6.2 \\ 3.8 \\ 3.1 \\ 3 \\ 3.5 \\ 4 \\ 4.1 \\ 4.3 \\ 3.6 \\ 4.6 \\ 4.6 \\ 5 \\ 4.2 \\ 3.5 \\ 4.9 \\ 4.8 \\ 4.4 \\ \end{array}$
14:53 14:45	R2 11	MF MF	840728 841349	836208 836584	4.5 2.6	1.00 3.25 5.50 1.00 3.50 1.30 1.00 3.60	285 84 46	0.095	28.2 28.1 28.3 27.7 26.8 26.6 29 29.1 27.6 29 29 29 29 28.9 28.9 28.6 28.7 28.4 28.6	$\begin{array}{c} 7.11\\ 7.5\\ 7.54\\ 7.71\\ 7.76\\ 6.53\\ 6.19\\ 7.5\\ 7.63\\ 6.49\\ 7.44\\ 7.71\\ 7.8\\ 7.7\\ 7.76\\ 7.71\\ 7.8\\ 7.7\\ 7.76\\ 7.91\\ 7.88\end{array}$	$\begin{array}{c} 108.4\\ 114.3\\ 115.1\\ 117.2\\ 117.7\\ 98.2\\ 92.8\\ 114.7\\ 116.8\\ 98.5\\ 114.3\\ 118.4\\ 119.6\\ 117.7\\ 118.8\\ 120.8\\ 120.5\\ \end{array}$	$\begin{array}{c} 2.73\\ 1.5\\ 1.46\\ 3.53\\ 5.56\\ 3.56\\ 1.82\\ 1.86\\ 3.7\\ 3.81\\ 2.81\\ 2.81\\ 2.56\\ 5.54\\ 2.56\\ 5.54\\ 2.61\\ 2.58\end{array}$	$\begin{array}{r} 31.28\\ 31.27\\ 31.17\\ 31.62\\ 31.77\\ 32.76\\ 33.05\\ 29.43\\ 29.41\\ 32.2\\ 30.15\\ 30.14\\ 30.2\\ 30.48\\ 30.4\\ 30.97\\ 30.64\\ \end{array}$	8.29 8.42 8.41 8.43 8.43 8.46 8.46 8.44 8.44 8.44 8.44 8.61 8.69 8.69 8.69 8.69	$\begin{array}{c} 6 \\ 5 \\ 4 \\ 12 \\ 11 \\ 12 \\ 14 \\ 4 \\ 5 \\ 6 \\ 8 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 9 \\ \end{array}$	$\begin{array}{c} 6.2 \\ 3.8 \\ 3.1 \\ 3 \\ 3.5 \\ 4 \\ 4.1 \\ 4.3 \\ 3.6 \\ 4.6 \\ 5 \\ 4.2 \\ 3.5 \\ 4.9 \\ 4.8 \\ 4.4 \\ 4.8 \end{array}$
14:53 14:45 14:40	R2 I1 I2	MF MF MF	840728 841349 841581	836208 836584 836595	4.5 2.6 4.6	1.00 3.25 5.50 1.00 3.50 1.30 1.00	285 84 46 68	0.095 0.143 0.159	28.2 28.1 28.3 27.8 27.7 26.8 27.7 26.8 29 29 29 27.6 29 27.6 29 28.9 28.9 28.9 28.9 28.9 28.9 28.9 2	$\begin{array}{c} 7.11\\ 7.5\\ 7.54\\ 7.71\\ 7.76\\ 6.53\\ 6.19\\ 7.5\\ 7.63\\ 6.49\\ 7.44\\ 7.71\\ 7.8\\ 7.7\\ 7.76\\ 7.91\end{array}$	$\begin{array}{c} 108.4\\ 114.3\\ 115.1\\ 117.2\\ 117.7\\ 98.2\\ 92.8\\ 114.7\\ 116.8\\ 98.5\\ 114.3\\ 118.4\\ 119.6\\ 117.7\\ 118.8\\ 120.8\\ \end{array}$	$\begin{array}{c} 2.73 \\ 1.5 \\ 1.46 \\ 3.53 \\ 5.56 \\ 3.65 \\ 3.65 \\ 3.65 \\ 1.82 \\ 1.82 \\ 1.86 \\ 3.7 \\ 3.81 \\ 2.81 \\ 2.76 \\ 2.56 \\ 5.54 \\ 2.61 \end{array}$	$\begin{array}{r} 31.28\\ 31.27\\ 31.17\\ 31.62\\ 31.77\\ 32.76\\ 33.05\\ 29.43\\ 29.41\\ 32.2\\ 30.15\\ 30.14\\ 30.2\\ 30.48\\ 30.4\\ 30.97\\ \end{array}$	8.29 8.42 8.41 8.43 8.46 8.46 8.46 8.44 8.44 8.44 8.44 8.61 8.61 8.69 8.69 8.69	$\begin{array}{c} 6 \\ 5 \\ 4 \\ 12 \\ 11 \\ 12 \\ 14 \\ 4 \\ 5 \\ 6 \\ 8 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 $	$\begin{array}{c} 6.2 \\ 3.8 \\ 3.1 \\ 3 \\ 3.5 \\ 4 \\ 4.1 \\ 4.3 \\ 3.6 \\ 4.6 \\ 4.6 \\ 5 \\ 4.2 \\ 3.5 \\ 4.9 \\ 4.8 \\ 4.4 \\ \end{array}$
14:53 14:45	R2 11	MF MF	840728 841349	836208 836584	4.5 2.6	1.00 3.25 5.50 1.00 3.50 1.30 1.00 3.60 1.00	285 84 46	0.095	28.2 28.1 28.3 27.8 27.7 26.8 29 29.1 27.6 29 29 29 29 28.9 28.6 28.7 28.4 28.6 28.7 28.4 28.4	$\begin{array}{c} 7.11\\ 7.5\\ 7.54\\ 7.71\\ 7.76\\ 6.53\\ 6.19\\ 7.5\\ 7.63\\ 6.49\\ 7.5\\ 7.63\\ 6.49\\ 7.71\\ 7.8\\ 7.71\\ 7.8\\ 7.71\\ 7.8\\ 8.14\\ 8.17\\ 7.51\\ \end{array}$	$\begin{array}{c} 108.4\\ 114.3\\ 115.1\\ 117.2\\ 98.2\\ 92.8\\ 114.7\\ 116.8\\ 98.5\\ 114.3\\ 118.4\\ 119.6\\ 117.7\\ 118.8\\ 120.8\\ 120.5\\ 124.8\\ 125.1\\ 114.9\\ \end{array}$	$\begin{array}{c} 2.73\\ 1.5\\ 1.46\\ 3.53\\ 5.56\\ 3.65\\ 3.65\\ 1.82\\ 1.86\\ 3.7\\ 3.81\\ 2.81\\ 2.76\\ 2.56\\ 5.54\\ 2.61\\ 2.58\\ 2.61\\ 2.58\\ 2.61\\ 1.94\\ \end{array}$	$\begin{array}{c} 31.28\\ 31.27\\ 31.17\\ 31.17\\ 31.62\\ 32.76\\ 32.76\\ 32.76\\ 32.76\\ 32.76\\ 32.78\\ 30.43\\ 30.5\\ 30.44\\ 30.4\\ 30.4\\ 30.4\\ 30.4\\ 30.4\\ 30.4\\ 30.64\\ 30.57\\ 30.59\\ 31.05\\ \end{array}$	8.29 8.42 8.41 8.43 8.43 8.44 8.44 8.44 8.44 8.44 8.44	$\begin{array}{c} 6 \\ 5 \\ 4 \\ 12 \\ 11 \\ 12 \\ 14 \\ 4 \\ 5 \\ 6 \\ 8 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 9 \\ 11 \\ 10 \\ 11 \\ 10 \end{array}$	$\begin{array}{c} 6.2\\ 3.8\\ 3.1\\ 3\\ 3\\ 4\\ 4.1\\ 4.3\\ 3.6\\ 4.6\\ 5\\ 4.2\\ 3.5\\ 4.2\\ 3.5\\ 4.2\\ 3.5\\ 4.2\\ 3.5\\ 4.2\\ 3.5\\ 5\\ 3.5\\ 5.1\\ 5.3\end{array}$
14:53 14:45 14:40	R2 I1 I2	MF MF MF	840728 841349 841581	836208 836584 836595	4.5 2.6 4.6	1.00 3.25 5.50 1.00 3.50 1.30 1.00 3.60	285 84 46 68	0.095 0.143 0.159	28.2 28.1 28.3 27.8 27.7 26.8 29 29 29 29 29 29 29 29 29 29 29 29 29	$\begin{array}{c} 7.11\\ 7.5\\ 7.54\\ 7.71\\ 7.76\\ 6.53\\ 6.19\\ 7.5\\ 7.63\\ 6.49\\ 7.44\\ 7.71\\ 7.8\\ 8.649\\ 7.71\\ 7.76\\ 7.91\\ 7.76\\ 7.91\\ 7.88\\ 8.14\\ 8.14\\ 8.17\\ 7.51\\ 7.34\\ \end{array}$	$\begin{array}{c} 108.4\\ 114.3\\ 115.1\\ 117.2\\ 117.7\\ 98.2\\ 92.8\\ 92.8\\ 114.7\\ 116.8\\ 98.5\\ 114.3\\ 118.4\\ 119.6\\ 117.7\\ 118.8\\ 120.8\\ 120.5\\ 124.8\\ 125.1\\ 114.9\\ 112 \end{array}$	$\begin{array}{c} 2.73\\ 1.5\\ 1.46\\ 3.53\\ 5.56\\ 3.65\\ 3.65\\ 1.82\\ 1.82\\ 1.86\\ 3.7\\ 3.81\\ 2.81\\ 2.81\\ 2.56\\ 5.54\\ 2.61\\ 2.58\\ 2.61\\ 2.6\\ 1.94\\ 2.09\end{array}$	$\begin{array}{c} 31.28\\ 31.27\\ 31.17\\ 31.17\\ 31.62\\ 31.77\\ 32.76\\ 33.05\\ 29.41\\ 32.2\\ 30.14\\ 32.2\\ 30.14\\ 32.2\\ 30.14\\ 30.2\\ 30.48\\ 30.4\\ 30.97\\ 30.64\\ 30.57\\ 30.57\\ 30.59\\ 31.05\\ 31.41\\ \end{array}$	8.29 8.42 8.41 8.43 8.46 8.46 8.46 8.44 8.44 8.44 8.44 8.61 8.69 8.69 8.69 8.69 8.69 8.69 8.99 8.99	$\begin{array}{c} 6\\ 5\\ 4\\ 12\\ 11\\ 12\\ 14\\ 4\\ 5\\ 6\\ 8\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10$	$\begin{array}{c} 6.2\\ 3.8\\ 3.1\\ 3\\ 3\\ 3\\ 3\\ 5\\ 4\\ 4.1\\ 4.3\\ 3.6\\ 4.6\\ 5\\ 4.2\\ 3.5\\ 4.9\\ 4.8\\ 4.4\\ 4.8\\ 4.3\\ 5.1\\ 5.3\\ 4.8\end{array}$
14:53 14:45 14:40	R2 I1 I2	MF MF MF	840728 841349 841581	836208 836584 836595	4.5 2.6 4.6	1.00 3.25 5.50 1.00 3.50 1.30 1.00 3.60 1.00	285 84 46 68	0.095 0.143 0.159	28.2 28.1 28.3 27.8 27.7 26.8 29 29.1 27.6 29 29 29 29 29 29 29 29 29 29 28.9 28.4 28.7 28.4 28.7 28.7 28.7 28.4 28.9	$\begin{array}{c} 7.11\\ 7.5\\ 7.54\\ 7.71\\ 7.76\\ 6.53\\ 6.19\\ 7.5\\ 7.63\\ 6.49\\ 7.44\\ 7.71\\ 7.8\\ 8.14\\ 8.17\\ 7.51\\ 7.34\\ 8.14\\ 8.17\\ 7.51\\ 7.34\\ 7.88\end{array}$	$\begin{array}{c} 108.4\\ 114.3\\ 115.1\\ 117.2\\ 117.7\\ 98.2\\ 92.8\\ 114.7\\ 116.8\\ 98.5\\ 114.3\\ 118.4\\ 119.6\\ 117.7\\ 118.8\\ 120.8\\ 120.5\\ 124.8\\ 125.1\\ 114.9\\ 112\\ 112\\ 112\\ 121.1\\ \end{array}$	$\begin{array}{c} 2.73\\ 1.5\\ 1.46\\ 3.53\\ 5.56\\ 3.65\\ 3.56\\ 1.82\\ 1.82\\ 1.86\\ 3.7\\ 3.81\\ 2.81\\ 2.76\\ 2.56\\ 5.54\\ 2.61\\ 2.58\\ 2.61\\ 2.58\\ 2.61\\ 2.61\\ 2.58\\ 2.61\\ 1.94\\ 2.09\\ 1.57\\ \end{array}$	$\begin{array}{c} 31.28\\ 31.27\\ 31.17\\ 31.17\\ 31.62\\ 32.76\\ 32.76\\ 32.76\\ 33.05\\ 29.43\\ 32.2\\ 30.15\\ 30.2\\ 30.14\\ 30.2\\ 30.48\\ 30.48\\ 30.48\\ 30.97\\ 30.64\\ 30.97\\ 30.64\\ 30.59\\ 31.05\\ 31.41\\ 30.65\\ \end{array}$	$\begin{array}{c} 8.29\\ 8.42\\ 8.41\\ 8.43\\ 8.46\\ 8.44\\ 8.44\\ 8.44\\ 8.44\\ 8.44\\ 8.61\\ 8.69\\ 8.69\\ 8.69\\ 8.69\\ 8.69\\ 8.69\\ 8.98\\ 8.93\\ 8.93\\ 8.93\\ 8.93\\ 8.93\\ 8.94\\ 8.44\\ \end{array}$	$\begin{array}{c} 6\\ 5\\ 4\\ 12\\ 11\\ 12\\ 14\\ 4\\ 5\\ 6\\ 8\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 11\\ 11$	$\begin{array}{c} 6.2\\ 3.8\\ 3.1\\ 3\\ 3\\ 4\\ 4.1\\ 4.3\\ 3.6\\ 4.6\\ 5\\ 4.2\\ 3.5\\ 4.9\\ 4.8\\ 4.4\\ 4.8\\ 4.3\\ 5.1\\ 5.3\\ 4.8\\ 5.2\\ \end{array}$
14:53 14:45 14:40 14:36	R2 11 12 13	MF MF MF	840728 841349 841581 841809	836208 836584 836595 836668	4.5 2.6 4.6 4.8	1.00 3.25 5.50 1.00 3.50 1.30 1.00 3.60 1.00 3.80 1.00	285 84 46 68 95	0.095 0.143 0.159 0.098	28.2 28.1 28.3 27.8 27.7 26.8 29 29 29 29 29 29 28.9 28.6 28.7 28.4 28.6 28.7 28.4 28.4 28.4 28.4 28.9 28.9	$\begin{array}{c} 7.11\\ 7.5\\ 7.54\\ 7.71\\ 7.76\\ 6.53\\ 6.19\\ 7.5\\ 7.63\\ 6.49\\ 7.44\\ 7.71\\ 7.8\\ 7.7\\ 7.76\\ 7.91\\ 7.88\\ 8.14\\ 8.17\\ 7.51\\ 7.51\\ 7.34\\ 7.87\\ 7.97\\ \end{array}$	$\begin{array}{c} 108.4\\ 114.3\\ 115.1\\ 117.7\\ 98.2\\ 92.8\\ 114.7\\ 116.8\\ 98.5\\ 114.3\\ 118.4\\ 119.6\\ 117.7\\ 118.8\\ 120.8\\ 120.5\\ 124.8\\ 125.1\\ 114.9\\ 112\\ 121.1\\ 122.6\\ \end{array}$	$\begin{array}{c} 2.73\\ 1.5\\ 1.46\\ 3.53\\ 5.56\\ 3.65\\ 3.65\\ 1.82\\ 1.86\\ 3.7\\ 3.81\\ 2.81\\ 2.76\\ 2.56\\ 5.54\\ 2.61\\ 2.58\\ 2.61\\ 2.58\\ 2.61\\ 1.94\\ 2.09\\ 1.57\\ 1.58\end{array}$	$\begin{array}{c} 31.28\\ 31.27\\ 31.17\\ 31.17\\ 31.62\\ 32.76\\ 32.76\\ 32.76\\ 32.76\\ 32.76\\ 32.76\\ 32.76\\ 30.29,41\\ 32.2\\ 30.14\\ 30.4\\ 30.4\\ 30.4\\ 30.4\\ 30.4\\ 30.4\\ 30.4\\ 30.4\\ 30.4\\ 30.57\\ 30.59\\ 31.05\\ 31.41\\ 30.65\\ \end{array}$	$\begin{array}{r} 8.29\\ 8.42\\ 8.41\\ 8.43\\ 8.43\\ 8.46\\ 8.44\\ 8.44\\ 8.44\\ 8.44\\ 8.44\\ 8.69\\ 8.69\\ 8.69\\ 8.69\\ 8.69\\ 8.69\\ 8.69\\ 8.99\\ 8.93\\ 8.93\\ 8.92\\ 8.44\\ 8.43\\ \end{array}$	$\begin{array}{c} 6\\ 5\\ 4\\ 12\\ 11\\ 12\\ 14\\ 4\\ 5\\ 6\\ 8\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 9\\ 11\\ 11\\ 10\\ 10\\ 7\\ 7\end{array}$	$\begin{array}{c} 6.2\\ 3.8\\ 3.1\\ 3\\ 3\\ 4\\ 4.1\\ 4.3\\ 3.6\\ 5\\ 4.2\\ 3.5\\ 4.2\\ 3.5\\ 4.2\\ 3.5\\ 4.2\\ 3.5\\ 4.2\\ 3.5\\ 4.2\\ 3.5\\ 4.8\\ 4.8\\ 4.3\\ 5.1\\ 5.3\\ 4.8\\ 5.2\\ 5\\ 5\end{array}$
14:53 14:45 14:40	R2 I1 I2	MF MF MF	840728 841349 841581	836208 836584 836595	4.5 2.6 4.6	1.00 3.25 5.50 1.00 3.50 1.30 1.00 3.60 1.00 3.80	285 84 46 68	0.095 0.143 0.159	28.2 28.1 28.3 27.8 27.7 26.8 29 29.1 27.6 29 29 29 29 29 29 29 29 29 29 28.9 28.4 28.7 28.4 28.7 28.7 28.7 28.4 28.9	$\begin{array}{c} 7.11\\ 7.5\\ 7.54\\ 7.71\\ 7.76\\ 6.53\\ 6.19\\ 7.5\\ 7.63\\ 6.49\\ 7.44\\ 7.71\\ 7.8\\ 8.14\\ 8.17\\ 7.51\\ 7.34\\ 8.14\\ 8.17\\ 7.51\\ 7.34\\ 7.88\end{array}$	$\begin{array}{c} 108.4\\ 114.3\\ 115.1\\ 117.2\\ 117.7\\ 98.2\\ 92.8\\ 114.7\\ 116.8\\ 98.5\\ 114.3\\ 118.4\\ 119.6\\ 117.7\\ 118.8\\ 120.8\\ 120.5\\ 124.8\\ 125.1\\ 114.9\\ 112\\ 112\\ 112\\ 121.1\\ \end{array}$	$\begin{array}{c} 2.73\\ 1.5\\ 1.46\\ 3.53\\ 5.56\\ 3.65\\ 3.56\\ 1.82\\ 1.82\\ 1.86\\ 3.7\\ 3.81\\ 2.81\\ 2.76\\ 2.56\\ 5.54\\ 2.61\\ 2.58\\ 2.61\\ 2.58\\ 2.61\\ 2.61\\ 2.58\\ 2.61\\ 1.94\\ 2.09\\ 1.57\\ \end{array}$	$\begin{array}{c} 31.28\\ 31.27\\ 31.17\\ 31.17\\ 31.62\\ 32.76\\ 32.76\\ 32.76\\ 33.05\\ 29.43\\ 32.2\\ 30.15\\ 30.2\\ 30.14\\ 30.2\\ 30.48\\ 30.48\\ 30.48\\ 30.97\\ 30.64\\ 30.97\\ 30.64\\ 30.59\\ 31.05\\ 31.41\\ 30.65\\ \end{array}$	$\begin{array}{c} 8.29\\ 8.42\\ 8.41\\ 8.43\\ 8.46\\ 8.44\\ 8.44\\ 8.44\\ 8.44\\ 8.44\\ 8.61\\ 8.69\\ 8.69\\ 8.69\\ 8.69\\ 8.69\\ 8.69\\ 8.98\\ 8.93\\ 8.93\\ 8.93\\ 8.93\\ 8.93\\ 8.94\\ 8.44\\ \end{array}$	$\begin{array}{c} 6\\ 5\\ 4\\ 12\\ 11\\ 12\\ 14\\ 4\\ 5\\ 6\\ 8\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 11\\ 11$	$\begin{array}{c} 6.2\\ 3.8\\ 3.1\\ 3\\ 3\\ 4\\ 4.1\\ 4.3\\ 3.6\\ 4.6\\ 5\\ 4.2\\ 3.5\\ 4.9\\ 4.8\\ 4.4\\ 4.8\\ 4.3\\ 5.1\\ 5.3\\ 4.8\\ 5.2\\ \end{array}$
14:53 14:45 14:40 14:36	R2 11 12 13	MF MF MF	840728 841349 841581 841809	836208 836584 836595 836668	4.5 2.6 4.6 4.8	1.00 3.25 5.50 1.00 3.50 1.30 1.00 3.60 1.00 3.80 1.00 4.05	285 84 46 68 95	0.095 0.143 0.159 0.098	$\begin{array}{r} 28.2\\ 28.1\\ 28.3\\ 27.8\\ 27.7\\ 26.8\\ 26.6\\ 29\\ 29\\ 29\\ 29\\ 28.9\\ 28.9\\ 28.9\\ 28.7\\ 28.4\\ 28.7\\ 28.7\\ 28.4\\ 28.7\\ 28.7\\ 28.4\\ 28.9\\ 27.8\\ 27.8\\ 27.9\\ 27.8\\ 27.9\\ 25.6\\ \end{array}$	$\begin{array}{c} 7.11\\ 7.5\\ 7.54\\ 7.71\\ 7.76\\ 6.53\\ 6.19\\ 7.5\\ 6.49\\ 7.63\\ 6.49\\ 7.71\\ 7.8\\ 8.14\\ 8.17\\ 7.76\\ 7.91\\ 7.88\\ 8.14\\ 8.17\\ 7.51\\ 7.34\\ 7.91\\ 7.88\\ 7.99\\ 7.99\\ 7.88\\ 7.99\\ 4.9\\ 4.9\end{array}$	$\begin{array}{c} 108.4\\ 114.3\\ 115.1\\ 117.2\\ 2117.7\\ 98.2\\ 92.8\\ 114.7\\ 116.8\\ 98.5\\ 114.3\\ 118.4\\ 119.6\\ 117.7\\ 118.8\\ 120.8\\ 122.5\\ 124.8\\ 125.1\\ 124.8\\ 122.5\\ 124.8\\ 122.1\\ 114.9\\ 112\\ 121.1\\ 122.6\\ 119.7\\ 121.6\\ 72.4 \end{array}$	$\begin{array}{c} 2.73\\ 1.5\\ 1.46\\ 3.53\\ 5.56\\ 3.65\\ 3.56\\ 1.82\\ 1.86\\ 3.7\\ 3.81\\ 2.81\\ 2.76\\ 2.61\\ 2.56\\ 5.54\\ 2.61\\ 2.58\\ 2.61\\ 2.6\\ 1.94\\ 2.09\\ 1.57\\ 1.58\\ 2\\ 2\\ 2.08\\ 2.58\\ 2.$	$\begin{array}{r} 31.28\\ 31.27\\ 31.17\\ 31.17\\ 31.62\\ 31.77\\ 32.76\\ 33.05\\ 29.43\\ 32.9.41\\ 32.2\\ 30.14\\ 30.2\\ 30.14\\ 30.4\\ 30.4\\ 30.4\\ 30.4\\ 30.4\\ 30.57\\ 30.57\\ 30.59\\ 31.05\\ 31.41\\ 30.65\\ 31.85\\ 31.84\\ 33.44\\ \end{array}$	$\begin{array}{r} 8.29\\ 8.42\\ 8.41\\ 8.43\\ 8.43\\ 8.44\\ 8.44\\ 8.44\\ 8.44\\ 8.44\\ 8.44\\ 8.61\\ 8.69\\ 8.69\\ 8.69\\ 8.69\\ 8.69\\ 8.99\\ 8.98\\ 8.93\\ 8.92\\ 8.43\\ 8.43\\ 8.43\\ 8.43\\ 8.45\\ \end{array}$	$\begin{array}{c} 6\\ 5\\ 4\\ 12\\ 11\\ 12\\ 14\\ 4\\ 5\\ 6\\ 8\\ 8\\ 8\\ 8\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10$	$\begin{array}{c} 6.2\\ 3.8\\ 3.1\\ 3\\ 3\\ 4\\ 4.1\\ 4.3\\ 3.6\\ 5\\ 4.2\\ 3.5\\ 4.2\\ 3.5\\ 4.2\\ 3.5\\ 4.2\\ 3.5\\ 4.2\\ 3.5\\ 4.2\\ 3.5\\ 4.2\\ 3.5\\ 4.8\\ 5.1\\ 5.3\\ 4.8\\ 5.2\\ 5\\ 5.6\\ 5.2\\ 6.2\\ \end{array}$
14:53 14:45 14:40 14:36	R2 11 12 13	MF MF MF	840728 841349 841581 841809	836208 836584 836595 836668	4.5 2.6 4.6 4.8	1.00 3.25 5.50 1.00 3.50 1.30 1.00 3.60 1.00 3.80 1.00	285 84 46 68 95	0.095 0.143 0.159 0.098	$\begin{array}{r} 28.2\\ 28.1\\ 28.3\\ 27.8\\ 27.7\\ 26.8\\ 26.6\\ 29\\ 29.1\\ 27.6\\ 29\\ 29\\ 28.9\\ 28.9\\ 28.7\\ 28.4\\ 28.7\\ 28.7\\ 28.7\\ 28.7\\ 28.7\\ 28.7\\ 28.7\\ 28.7\\ 28.7\\ 28.7\\ 28.7\\ 28.7\\ 28.7\\ 28.7\\ 28.7\\ 28.7\\ 28.7\\ 28.7\\ 28.7\\ 28.5\\ 27.9\\ 25.6\\ 25.6\\ \end{array}$	$\begin{array}{c} 7.11\\ 7.5\\ 7.54\\ 7.71\\ 7.76\\ 6.53\\ 6.19\\ 7.5\\ 6.49\\ 7.44\\ 7.71\\ 7.8\\ 7.76\\ 7.91\\ 7.8\\ 8.14\\ 8.17\\ 7.76\\ 7.91\\ 7.88\\ 8.14\\ 8.17\\ 7.34\\ 7.88\\ 7.99\\ 7.88\\ 7.99\\ 4.36\\ \end{array}$	$\begin{array}{c} 108.4\\ 114.3\\ 115.1\\ 117.2\\ 117.7\\ 98.2\\ 92.8\\ 92.8\\ 114.7\\ 116.8\\ 98.5\\ 114.3\\ 118.4\\ 119.6\\ 117.7\\ 118.8\\ 120.8\\ 120.5\\ 124.8\\ 125.1\\ 114.9\\ 112\\ 121.1\\ 122.6\\ 119.7\\ 121.6\\ 119.7\\ 121.6\\ 72.4\\ 64.5\\ \end{array}$	$\begin{array}{c} 2.73\\ 1.5\\ 1.46\\ 3.53\\ 5.56\\ 3.65\\ 3.56\\ 1.82\\ 1.82\\ 1.86\\ 3.7\\ 3.81\\ 2.81\\ 2.76\\ 2.56\\ 5.54\\ 2.61\\ 2.58\\ 2.61\\ 2.6\\ 1.94\\ 2.09\\ 1.57\\ 1.58\\ 2\\ 2.08\\ 2.58\\ 2.58\\ 2.77\\ \end{array}$	$\begin{array}{r} 31.28\\ 31.27\\ 31.7\\ 31.7\\ 31.7\\ 31.7\\ 31.62\\ 32.76\\ 33.05\\ 29.43\\ 29.41\\ 32.2\\ 30.14\\ 30.2\\ 30.44\\ 30.5\\ 30.48\\ 30.48\\ 30.48\\ 30.57\\ 30.65\\ 30.65\\ 30.65\\ 30.65\\ 31.85\\ 31.84\\ 33.44\\ 33.52\\ \end{array}$	$\begin{array}{r} 8.29\\ 8.42\\ 8.41\\ 8.43\\ 8.43\\ 8.44\\ 8.44\\ 8.44\\ 8.44\\ 8.44\\ 8.61\\ 8.69\\ 8.69\\ 8.69\\ 8.69\\ 8.69\\ 8.69\\ 8.98\\ 8.99\\ 8.98\\ 8.92\\ 8.44\\ 8.43\\ 8.43\\ 8.43\\ 8.43\\ 8.45\\ \end{array}$	$\begin{array}{c} 6\\ 5\\ 4\\ 12\\ 11\\ 12\\ 14\\ 4\\ 5\\ 6\\ 8\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10$	$\begin{array}{c} 6.2\\ 3.8\\ 3.1\\ 3\\ 3\\ 3\\ 3\\ 3\\ 4\\ 4.1\\ 4.3\\ 3.6\\ 4.6\\ 5\\ 4.2\\ 3.5\\ 4.9\\ 4.8\\ 4.4\\ 4.8\\ 4.3\\ 5.1\\ 5.3\\ 4.8\\ 5.2\\ 5.6\\ 5.2\\ 6.2\\ 6.2\\ 6.4\end{array}$
14:53 14:45 14:40 14:36	R2 11 12 13	MF MF MF	840728 841349 841581 841809	836208 836584 836595 836668	4.5 2.6 4.6 4.8	1.00 3.25 5.50 1.00 3.50 1.30 1.00 3.60 1.00 3.80 1.00 4.05	285 84 46 68 95	0.095 0.143 0.159 0.098	$\begin{array}{r} 28.2\\ 28.1\\ 28.3\\ 27.8\\ 27.8\\ 27.8\\ 27.8\\ 27.8\\ 29.1\\ 29.2\\ 29.1\\ 29.2\\ 29.2\\ 29.2\\ 29.2\\ 29.2\\ 29.2\\ 29.2\\ 29.2\\ 29.2\\ 29.2\\ 29.2\\ 29.2\\ 29.2\\ 29.2\\ 28.6\\ 28.7\\ 28.4\\ 28.6\\ 28.7\\ 28.4\\ 28.4\\ 28.6\\ 28.7\\ 28.4\\ 28.9\\ 27.9\\ 25.6\\ 25.6\\ 28.9\\$	$\begin{array}{c} 7.11\\ 7.5\\ 7.54\\ 7.71\\ 7.76\\ 6.53\\ 6.19\\ 7.5\\ 6.49\\ 7.63\\ 7.63\\ 7.63\\ 7.63\\ 7.76\\ 7.76\\ 7.91\\ 7.8\\ 7.77\\ 7.76\\ 7.91\\ 7.88\\ 8.14\\ 7.97\\ 7.88\\ 8.17\\ 7.51\\ 7.51\\ 7.51\\ 7.51\\ 7.51\\ 7.51\\ 7.88\\ 7.97\\ 7.99\\ 7.99\\ 7.34\\ 7.34\\ 7.34\\ 7.88\\ 7.97\\ 7.88\\ 7.97\\ 7.88\\ 7.97\\ 7.88\\ 7.97\\ 7.88\\ 7.97\\ 7.88\\ 7.97\\ 7.88\\ 7.97\\ 7.88\\ 7.97\\ 7.88\\ 7.97\\ 7.88\\ 7.97\\ 7.99\\ 7.34\\ 7.34\\ 7.88\\ 7.97\\ 7.88\\ 7.99\\ 7.34\\ 7.88\\ 7.99\\ 7.34\\ 7.88\\ 7.98\\ 7.$	$\begin{array}{c} 108.4\\ 114.3\\ 115.1\\ 117.2\\ 117.7\\ 98.2\\ 92.8\\ 114.7\\ 116.8\\ 98.5\\ 114.3\\ 118.4\\ 119.6\\ 117.7\\ 118.8\\ 120.8\\ 120.5\\ 124.8\\ 125.1\\ 118.8\\ 120.8\\ 125.1\\ 112\\ 121.1\\ 122.6\\ 119.7\\ 121.6\\ 72.4\\ 64.5\\ 112.4\end{array}$	$\begin{array}{c} 2.73\\ 1.5\\ 1.46\\ 3.53\\ 5.56\\ 3.65\\ 3.56\\ 1.82\\ 1.82\\ 1.86\\ 3.7\\ 3.81\\ 2.81\\ 2.76\\ 2.56\\ 5.54\\ 2.61\\ 2.58\\ 2.61\\ 2.6\\ 1.94\\ 2.09\\ 1.57\\ 1.58\\ 2.09\\ 1.57\\ 1.58\\ 2.09\\ 2.58\\ 2.77\\ 2.57\\ \end{array}$	$\begin{array}{c} 31.28\\ 31.27\\ 31.17\\ 31.17\\ 31.62\\ 31.77\\ 32.76\\ 32.76\\ 32.76\\ 32.27\\ 30.15\\ 30.2\\ 30.48\\ 30.2\\ 30.15\\ 30.15\\ 30.15\\ 30.15\\ 30.48\\ 30.2\\ 30.48\\ 30.97\\ 30.64\\ 30.97\\ 30.64\\ 30.59\\ 31.05\\ 31.85\\ 31.84\\ 33.65\\ 31.84\\ 33.44\\ 33.52\\ 30.05\\ \end{array}$	$\begin{array}{r} 8.29\\ 8.42\\ 8.41\\ 8.43\\ 8.46\\ 8.44\\ 8.44\\ 8.44\\ 8.44\\ 8.44\\ 8.44\\ 8.44\\ 8.69\\ 8.69\\ 8.69\\ 8.69\\ 8.69\\ 8.69\\ 8.98\\ 8.98\\ 8.93\\ 8.93\\ 8.93\\ 8.93\\ 8.93\\ 8.93\\ 8.44\\ 8.43\\ 8.43\\ 8.43\\ 8.45\\ 8.45\\ 8.47\\ \end{array}$	$\begin{array}{c} 6\\ 5\\ 4\\ 12\\ 11\\ 12\\ 14\\ 4\\ 5\\ 6\\ 8\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10$	$\begin{array}{c} 6.2\\ 3.8\\ 3.1\\ 3\\ 3\\ 4\\ 4.1\\ 4.3\\ 3.6\\ 4.6\\ 5\\ 4.2\\ 3.5\\ 4.9\\ 4.8\\ 4.4\\ 4.8\\ 4.3\\ 5.1\\ 5.3\\ 4.8\\ 5.2\\ 5\\ 5.6\\ 5.2\\ 6.2\\ 6.4\\ 4.4\end{array}$
14:53 14:45 14:40 14:36 15:22	R2 11 12 13 W1	MF MF MF MF	840728 841349 841581 841809 841863	836208 836584 836595 836668 836562	4.5 2.6 4.6 4.8 8.1	1.00 3.25 5.50 1.00 3.50 1.30 1.00 3.60 1.00 3.80 1.00 3.80 1.00 3.80 1.00 3.80 1.00 3.80 1.00 3.80	285 84 46 68 95 109	0.095 0.143 0.159 0.098 0.076	$\begin{array}{r} 28.2\\ 28.1\\ 28.3\\ 27.8\\ 27.7\\ 26.8\\ 26.6\\ 29\\ 29\\ 29\\ 28.9\\ 28.9\\ 28.9\\ 28.6\\ 28.7\\ 28.4\\ 28.7\\ 28.4\\ 28.7\\ 28.4\\ 28.7\\ 28.4\\ 28.9\\ 27.8\\ 27.8\\ 27.8\\ 27.9\\ 22.5\\ 6\\ 25.6\\ 25.6\\ 29.1\\ 29.1\\ 29.1\\ 29.2\\ 29$	$\begin{array}{c} 7.11\\ 7.54\\ 7.54\\ 7.71\\ 7.76\\ 6.53\\ 6.19\\ 7.5\\ 6.49\\ 7.43\\ 7.71\\ 7.8\\ 8.14\\ 8.17\\ 7.76\\ 7.91\\ 7.8\\ 8.14\\ 8.17\\ 7.78\\ 8.14\\ 8.17\\ 7.78\\ 7.91\\ 7.88\\ 8.14\\ 8.17\\ 7.51\\ 7.34\\ 7.51\\ 7.34\\ 7.97\\ 7.88\\ 7.99\\ 4.9\\ 4.36\\ 7.37\\ 7.37\\ \end{array}$	$\begin{array}{c} 108.4\\ 114.3\\ 115.1\\ 117.2\\ 117.7\\ 98.2\\ 92.8\\ 98.5\\ 114.7\\ 116.8\\ 98.5\\ 114.3\\ 118.4\\ 119.6\\ 117.7\\ 118.8\\ 120.5\\ 124.8\\ 120.5\\$	$\begin{array}{c} 2.73\\ 1.5\\ 1.46\\ 3.53\\ 5.56\\ 3.65\\ 3.56\\ 1.82\\ 1.86\\ 3.7\\ 3.81\\ 2.81\\ 2.76\\ 2.56\\ 5.54\\ 2.61\\ 2.61\\ 2.6\\ 1.94\\ 2.09\\ 1.57\\ 1.58\\ 2\\ 2.08\\ 2.58\\ 2.77\\ 2.58\\ 2.58\\ 2.77\\ 2.55\\$	$\begin{array}{r} 31.28\\ 31.27\\ 31.17\\ 31.17\\ 31.62\\ 31.77\\ 32.76\\ 32.76\\ 33.05\\ 29.43\\ 32.2\\ 30.14\\ 30.2\\ 30.41\\ 30.2\\ 30.41\\ 30.4\\ 30.4\\ 30.4\\ 30.4\\ 30.57\\ 30.57\\ 30.57\\ 30.59\\ 31.05\\ 31.41\\ 30.65\\ 31.85\\ 31.84\\ 33.52\\ 30.65\\ 31.84\\ 33.52\\ 30.05\\ \end{array}$	$\begin{array}{r} 8.29\\ 8.42\\ 8.41\\ 8.43\\ 8.43\\ 8.44\\ 8.44\\ 8.44\\ 8.44\\ 8.44\\ 8.44\\ 8.61\\ 8.69\\ 8.69\\ 8.69\\ 8.69\\ 8.69\\ 8.99\\ 8.98\\ 8.93\\ 8.92\\ 8.44\\ 8.43\\ 8.43\\ 8.43\\ 8.43\\ 8.45\\ 8.45\\ 8.47\\ 8.46\end{array}$	$\begin{array}{c} 6\\ 5\\ 4\\ 12\\ 11\\ 12\\ 14\\ 4\\ 5\\ 6\\ 8\\ 8\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10$	$\begin{array}{c} 6.2\\ 3.8\\ 3.1\\ 3\\ 3\\ 3\\ 4\\ 4.1\\ 4.3\\ 3.6\\ 4.6\\ 5\\ 4.2\\ 3.5\\ 4.2\\ 3.5\\ 4.2\\ 3.5\\ 4.2\\ 3.5\\ 4.2\\ 3.5\\ 4.2\\ 5\\ 5\\ 5\\ 5.2\\ 5.3\\ 4.8\\ 5.2\\ 5\\ 5.2\\ 5.6\\ 5.2\\ 6.2\\ 6.4\\ 4.4\\ 4.9\end{array}$
14:53 14:45 14:40 14:36 15:22	R2 11 12 13 W1	MF MF MF MF	840728 841349 841581 841809 841863	836208 836584 836595 836668 836562	4.5 2.6 4.6 4.8 8.1	1.00 3.25 5.50 1.00 3.50 1.30 1.00 3.60 1.00 3.80 1.00 4.05 7.10	285 84 46 68 95 109	0.095 0.143 0.159 0.098 0.076	$\begin{array}{r} 28.2\\ 28.1\\ 28.3\\ 27.8\\ 27.8\\ 27.8\\ 27.8\\ 27.8\\ 29.1\\ 29.2\\ 29.1\\ 29.2\\ 29.2\\ 29.2\\ 29.2\\ 29.2\\ 29.2\\ 29.2\\ 29.2\\ 29.2\\ 29.2\\ 29.2\\ 29.2\\ 29.2\\ 29.2\\ 28.6\\ 28.7\\ 28.4\\ 28.6\\ 28.7\\ 28.4\\ 28.4\\ 28.6\\ 28.7\\ 28.4\\ 28.9\\ 27.9\\ 25.6\\ 25.6\\ 28.9\\$	$\begin{array}{c} 7.11\\ 7.5\\ 7.54\\ 7.71\\ 7.76\\ 6.53\\ 6.19\\ 7.5\\ 6.49\\ 7.63\\ 7.63\\ 7.63\\ 7.63\\ 7.76\\ 7.76\\ 7.91\\ 7.8\\ 8.14\\ 7.79\\ 7.88\\ 8.17\\ 7.51\\ 7.34\\ 8.17\\ 7.51\\ 7.34\\ 7.97\\ 7.88\\ 7.99\\ 4.9\\ 7.99\\ 4.36\\ 7.34\\ \end{array}$	$\begin{array}{c} 108.4\\ 114.3\\ 115.1\\ 117.2\\ 117.7\\ 98.2\\ 92.8\\ 114.7\\ 116.8\\ 98.5\\ 114.3\\ 118.4\\ 119.6\\ 117.7\\ 118.8\\ 120.8\\ 120.5\\ 124.8\\ 125.1\\ 118.8\\ 120.8\\ 125.1\\ 112\\ 121.1\\ 122.6\\ 119.7\\ 121.6\\ 72.4\\ 64.5\\ 112.4\end{array}$	$\begin{array}{c} 2.73\\ 1.5\\ 1.46\\ 3.53\\ 5.56\\ 3.65\\ 3.56\\ 1.82\\ 1.82\\ 1.86\\ 3.7\\ 3.81\\ 2.81\\ 2.76\\ 2.56\\ 5.54\\ 2.61\\ 2.58\\ 2.61\\ 2.6\\ 1.94\\ 2.09\\ 1.57\\ 1.58\\ 2.09\\ 1.57\\ 1.58\\ 2.09\\ 2.58\\ 2.77\\ 2.57\\ \end{array}$	$\begin{array}{c} 31.28\\ 31.27\\ 31.17\\ 31.17\\ 31.62\\ 31.77\\ 32.76\\ 32.76\\ 32.76\\ 32.27\\ 30.15\\ 30.2\\ 30.48\\ 30.2\\ 30.15\\ 30.15\\ 30.15\\ 30.15\\ 30.48\\ 30.2\\ 30.48\\ 30.97\\ 30.64\\ 30.97\\ 30.64\\ 30.59\\ 31.05\\ 31.85\\ 31.84\\ 33.65\\ 31.84\\ 33.44\\ 33.52\\ 30.05\\ \end{array}$	$\begin{array}{r} 8.29\\ 8.42\\ 8.41\\ 8.43\\ 8.46\\ 8.44\\ 8.44\\ 8.44\\ 8.44\\ 8.44\\ 8.44\\ 8.44\\ 8.69\\ 8.69\\ 8.69\\ 8.69\\ 8.69\\ 8.69\\ 8.98\\ 8.98\\ 8.93\\ 8.93\\ 8.93\\ 8.93\\ 8.93\\ 8.93\\ 8.44\\ 8.43\\ 8.43\\ 8.43\\ 8.45\\ 8.45\\ 8.47\\ \end{array}$	$\begin{array}{c} 6\\ 5\\ 4\\ 12\\ 11\\ 12\\ 14\\ 4\\ 5\\ 6\\ 8\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10$	$\begin{array}{c} 6.2\\ 3.8\\ 3.1\\ 3\\ 3\\ 4\\ 4.1\\ 4.3\\ 3.6\\ 4.6\\ 5\\ 4.2\\ 3.5\\ 4.9\\ 4.8\\ 4.4\\ 4.8\\ 4.3\\ 5.1\\ 5.3\\ 4.8\\ 5.2\\ 5\\ 5.6\\ 5.2\\ 6.2\\ 6.4\\ 4.4\end{array}$

 Remarks:
 MF - Middle Flood tide ME - Middle Ebb tide
 3.60
 27.9
 7.22
 110
 2.18
 31.87
 8.3

 For SS, if the monitoring result is less than Limit of Report 2mg/L, the result value will be assumed as 2 for the calculation. For Chorophyll-a, if the monitoring result is less than Limit of Report 0.1µg/L, the result value will be assumed as 0.1 for the calculation.

	11-Jul-18						act Water	2		5						
Weather:																
Sea Condition:	Moderate															
sea Conuntion:	Mouerate				XX7 /	a 11	a	<i>a i</i>	1	D.O.	DO	1			1	r
D (17)	• ··		Co-ore	linates	Water	Sampling	Current	Current	Temp	DO	DO	Turbidity	Salinity	pН	SS	Chlorophyll-
Date / Time	Location	Tide*			Depth	Depth	Direction	Speed	-	Conc	Saturation		-	-		
			East	North	m	m	degrees	m/s	°C	mg/L	%	NTU	ppt	unit	mg/L	µg/L
						1.00			29 29.1	8.45 8.45	130.3 130.4	1.25 1.27	30.91 30.79	8.48 8.46	4 5	2.6 2.8
12.00	C 1		0.41.470	005004	4.0		100	0.100	29.1	0.45	130.4	1.27	30.79	8.40	5	2.8
12:09	G1	ME	841479	835924	4.8		106	0.122								
						3.80			28.8	8.08	124.5	1.33	31.14	8.45	7	3.4
									28.7 30.2	8.06 7.51	124 116.9	1.34	31.33 28.99	8.45 7.93	6 10	2.3
						1.00			29.8	7.75	120.3	2.65 2.55	28.99	7.95	9	3
12:14	R1	ME	842302	835701	6.3	3.15	104	0.154	29	7.38	113.8	2.49	30.79	8.07	8	2.8
12.14	KI	MIL	042302	855701	0.5	5.15	104	0.154	28.4	7.51	115.1	2.58	31.55	8.15	7	2.6
						5.30			28.1	6.97	106.4	2.88	31.88	8.19	9	3
									27.9 29.9	6.9 7.9	105.3 123	2.89 2.33	31.97 29.9	8.21 8.39	10 7	3 3.2
11:57	R2	ME	840725	836201	5.1	1.00	92	0.135	29.6	8.03	124.7	2.3	30.15	8.41	8	3.8
11:57	K2	ME	840725	836201	5.1	4.10	92	0.155	28.4	7.34	112.5	2.68	31.69	8.51	10	3.6
									28.1	6.9	105.6	2.65	31.91	8.53	9	3.4
11:49	I1	ME	841328	836572	2.4	1.20	345	0.172	29.9 29.7	7.28	113.1 115.4	2.65 2.54	29.55 29.82	8.53 8.55	7	3.7 3.3
						1.00			29.7	7.59	115.4	1.55	30.65	8.55	6	3.8
11:45	12	ME	841573	836584	5.1	1.00	108	0.201	29.1	7.87	121.4	1.55	30.61	8.92	7	3.6
11.45	12	IVIE	0413/3	030384	5.1	4.10	108	0.201	28.8	7.56	116.4	1.68	30.92	8.94	8	3.4
	<u> </u>								28.7	7.62	117.1	1.66	31.11	8.95	9	3.3
						1.00			29.5 29.5	6.98 7.05	108 109.2	1.35 1.37	30.08 30.19	9.52 9.57	6 8	2.8
11:42	I3	ME	841798	836670	5.3		123	0.192	29.3	7.03	111.2	1.37	30.69	9.37	10	2.8
						4.30			28.8	7.28	112.2	1.86	31.14	9.9	9	1.7
						1.00			29.4	7.77	120.1	1.32	30.14	8.17	6	2.6
						1.00			29.4	7.72	119.3	1.33	30.12	8.14	7	2.5
12:21	W1	ME	841842	836559	7.6	3.80	359	0.127	28.8 28	7.37 7.25	113.4 110.7	1.54 1.62	30.97 31.95	8.14 8.16	7 8	2.8 2.5
						1.10			27.6	5.72	86.8	2.12	32.3	8.22	12	3
						6.60			27.2	5.93	89.6	2.69	32.63	8.24	11	3.2
11:53	M1	ME	840818	836398	0.9	0.45	83	0.146	31.1	7.18	112.8	2.86	28.21	8.34	7	2.1
			0.0000						31.1	7.22	113.5	2.72	28.21	8.32	8	2.2
						1.00			28.6 28.9	7.9 7.96	121.3 122.5	1.87 1.33	31.29 31.05	8.56 8.56	8 7	3.5 3.4
12:03	FCZ1	ME	841172	835201	4.7	2.70	29	0.135	28.6	7.51	115.4	1.43	31.41	8.55	15	2.5
						3.70			28.4	7.67	117.6	1.44	31.63	8.55	14	2.7
			_	_		_			_				_			
						1.00			29.6	8.6	133.7	1.3	30.55	7.95	12	3
									29.8	8.53	133	1.31	30.47	7.94	12	3
16:58	G1	MF	841468	835911	4.9		308	0.119								
						3.90			28.1	7.52	115	2.16	31.99	7.96	15	3.8
						5.90			28.2	7.54	115.4	2.36	32.1	8	16	3.9
						1.00			30.6 30.3	7.82	122.5 123.4	1.69 1.61	29.11 29.41	7.72	6 6	3.8 3.7
									28.7	8.17	125.4	2.25	31.29	7.83	7	3.9
17:12	R1	MF	842285	835703	6.6	3.30	351	0.169	28.6	8.3	127.5	2.66	31.43	7.89	6	3.7
						5.60			28.1	6.67	102.8	2.97	31.89	7.92	11	3.9
	<u> </u>					2.50			27.8 29.9	6.62	100.9 129.2	2.95	32.26	7.93	11	3.3 3.3
			0.40			1.00			29.9	8.27 8.29	129.2	1.3 1.29	30.42 30.43	7.87 7.87	6 5	3.3
16:47	R2	MF	840718	836208	4.6	2.00	59	0.149	29.9	7.96	129.3	2.39	31.64	7.91	10	4
						3.60			28.2	7.83	119.9	2.52	31.87	7.92	11	3.5
16:37	I1	MF	841309	836572	2.7	1.35	26	0.136	29.7	7.61	118.4	1.4	30.29	8.11	12	4.5
		-					-		29.7 30.5	7.86 7.58	122.1 118.7	1.44 1.42	30.37 29.6	8.12 8.22	12	4
16.00	10		041575	026506	~	1.00	100	0.120	30.5	7.58	118.7	1.42	29.66	8.22	6 6	4 3.9
16:33	I2	MF	841576	836596	5	4.00	128	0.129	28.7	8.19	125.8	1.29	31.14	8.3	5	4.2
						4.00			28.7	8.2	126	1.26	31.28	8.32	5	4.1
						1.00			29.3	8.18	126.6	1.39	30.63	9.21	6	3.7
16:23	I3	MF	841782	836668	4.9		133	0.133	29.3 28.9	8.27 8	128 123.4	1.28 1.9	30.67 31.2	9.21 9.24	5 6	4.1 3.2
						3.90			28.9	8.08	123.4	1.89	31.56	9.24	6	3.5
-						1.00			30.7	7.88	123.9	1.68	29.2	7.67	6	4.7
						1.00			30.6	7.93	124.4	1.73	29.34	7.69	6	4.6
17:20	W1	MF	841842	836551	6.7	3.35	204	0.188	28.6 28.5	8.2 8.21	125.7 125.9	1.66	31.04	7.75	14	4.9
									28.5	8.21 4.04	60.8	1.58 2.85	31.28 33.03	7.82	15 15	4.2
						5.70			26.8	3.48	52.4	2.85	33.08	7.82	15	3.9
16:40	M1	MF	840812	836403	0.7	0.35	203	0.153	31.9	7.43	118.7	1.86	28.87	7.78	26	3.8
10.40	1411	1911.	040012	050405	0.7	0.00	205	0.155	31.9	7.49	119.6	1.96	28.88	7.77	96	3.2
						1.00			28.9 29.3	8.54	131.6 132.4	1.4 1.31	31.22 30.83	8 7.99	11 11	4 3.6
16:52	FCZ1	MF	841156	835201	4.6	_	159	0.123	29.3	8.55 7.79	132.4	1.51	31.86	7.99	11	5.2
			1	1		3.60			28.1	7.69	117.5	1.59	32.02	7.98	11	4.3

 Remarks:
 MF - Middle Flood tide

 ME - Middle Elbb tide
 28.1

 For SS, if the monitoring result is less than Limit of Report 2mg/L, the result value will be assumed as 2 for the calculation.

 For Chorophyll-a, if the monitoring result is less than Limit of Report 0.1µg/L, the result value will be assumed as 0.1 for the calculation.

ampling Date:	16. Jul. 19					mp	act Water	Quanty M	onnorm	5 result						
Weather:																
	Moderate	<u>,</u>														
cu conurtion.			a		Water	Sampling	Current	Current		DO	DO		a. u. u.			<i>(</i> 1), , , , , , , , , , , , , , , , , , ,
Date / Time	Location	Tide*	Co-ore	dinates	Depth	Depth	Direction	Speed	Temp	Conc	Saturation	Turbidity	Salinity	рН	SS	Chlorophyll-a
			East	North	m	m	degrees	m/s	°C	mg/L	%	NTU	ppt	unit	mg/L	μg/L
						1.00			27.8 27.8	7.02	107.4 107.4	2.05 2.03	32.9 32.9	8.51 8.51	6 6	4.9 4.9
14.42	C1	ME	041460	025012			201	0.150	27.0	7.02	107.4	2.03	32.9	0.31	0	4.9
14:43	G1	ME	841468	835912	4.4		201	0.159								
						3.40			27.8 27.8	6.92 6.91	105.9 105.8	1.29 1.3	33.01 33.02	8.53 8.53	8	5.1 5.2
						1.00			27.8	6.53	103.8	1.02	33.67	8.3	7	2.7
						1.00			27.9	6.52	100.4	1.07	33.68	8.3	6	3
14:49	R1	ME	842281	835701	7.3	3.65	243	0.175	27.9 27.9	6.36 6.36	97.9 97.9	2.44 2.38	33.82 33.82	8.28 8.28	10 10	3.1 2.8
						6.20			27.9	6.3	97.9	2.38	33.82	8.35	9	3
						6.30			27.9	6.29	96.8	2.11	33.88	8.35	10	3
						1.00			27.8 27.8	6.96	106 1	1.66	32.43	9.44 9.44	6	7.4
14:29	R2	ME	840752	836198	5		189	0.118	27.8	6.96 6.91	106.1 105.2	1.71 2.02	32.43 32.5	9.44	6 7	6.3 6.5
						4.00			27.7	6.89	104.9	2.02	32.51	9.47	6	6.5
14:21	I1	ME	841325	836577	2.4	1.20	156	0.093	27.8 27.8	6.97	106.5	1.61	32.68	9.59	8	7.4
						1.00			27.8	6.98 6.86	106.7 105.1	1.6 1.54	32.69 33.04	9.59 9.58	9 6	6.1 5.3
14:15	12	ME	841582	836593	4.7	1.00	173	0.145	27.8	6.86	105.1	1.55	33.04	9.58	6	5.8
17.15	12	IVIL:	071302	050575	<i>'</i>	3.70	1/5	0.145	27.9	6.36	97.6	1.57	33.5	9.53	12	6.5
									27.9 27.9	6.34 6.19	97.4 95.1	1.68 1.74	33.54 33.49	9.51 9.64	13 11	6 3.7
14:11	13	ME	841802	836671	4.6	1.00	139	0.183	27.9	6.24	95.9	1.66	33.43	9.65	10	3.6
14.11	15	IVIL	041002	850071	4.0	3.60	139	0.185	27.8	6.12	94	2.17	33.67	9.68	12	3.2
									27.8 28.1	6.08 6.58	93.4 101.3	2.21	33.71 33.28	9.68 8.35	13 12	3.1 4.9
						1.00			28.1	6.58	101.3	1.07	33.28	8.35	11	4.4
14:57	W1	ME	841842	836565	8.2	4.10	204	0.149	27.9	6.33	97.3	1.18	33.57	8.37	10	4.3
					•				27.9 27.7	6.33 5.7	97.3 87.5	1.18 2.24	33.57 33.74	8.37 8.4	11 11	5 4.5
						7.20			27.7	5.68	87.1	2.24	33.74	8.4	11	4.1
14:25	M1	ME	840816	836402	0.9	0.45	186	0.082	28.1	6.59	101.1	1.66	32.73	9.24	10	2.4
11.20			0.0010	050102	0.9		100		28.1 27.3	6.6	101.3	1.63	32.72	9.24	11 10	2.4
14.25	5071		041165	025200	5.0	1.00	202	0.440	27.5	6.84 6.85	103.5	1.38 1.36	32.16 32.07	8.83 8.82	10	6 5.7
14:37	FCZ1	ME	841165	835208	5.3	4.30	203	0.119	27.4	6.45	98.2	1.87	33.24	8.8	11	5.3
						1.50			27.4	6.47	98.6	1.77	33.36	8.8	11	5.9
<u> </u>									27.3	6.43	97.5	1.47	32.88	7.71	10	5
						1.00			27.3	6.4	97.3	1.47	32.88	7.71	10	4.8
9:59	G1	MF	841465	835921	5		254	0.148								
7.57	01		041405	055721	5		254	0.140	27.3	6.28	95.4	1.66	33.13	7.66	10	5.6
						4.00			27.3	6.27	95.4	1.60	33.13	7.67	9	5
						1.00			27.4	6.22	95.1	2.18	33.97	7.77	9	1.4
						1.00			27.5 27.5	6.2	94.8 93.3	2.19	33.97 33.99	7.76	10 9	1.3
10:06	R1	MF	842288	835709	6.3	3.15	249	0.136	27.5	6.1 6.09	93.2	2.39 2.38	33.99	7.71	8	1.6 1.5
						5.30	1		27.5	6.03	92.3	2.75	34.01	7.72	10	1.5
							<u> </u>		27.5 27.1	6.01	92 94.5	2.86 2.32	34.02	7.72 8.33	10 10	1.4 4.9
			1	1		1.00	1		41.1	6.28		2.32	32.2 32.3	8.33	10	4.9
0.20	D2	ME	940725	026200	4.1		222	0.104	27.1	6.28	94.6					4.4
9:39	R2	MF	840725	836200	4.1		233	0.184	27.1 27.3	5.82	88.2	2.18	32.78	8.28	11	
						3.10			27.1 27.3 27.3	5.82 5.81	88.2 88	2.18 2.19	32.8	8.28	12	4.8
9:39 9:33	R2 I1	MF MF	840725 841354	836200 836575	4.1 2.9		233 208	0.184 0.141	27.1 27.3	5.82 5.81 6.26	88.2	2.18 2.19 1.5	32.8 33.09	8.28 8.31		
						3.10 1.45			27.1 27.3 27.3 27.3 27.3 27.3 27.4	5.82 5.81 6.26 6.25 6.08	88.2 88 95 95 92.5	2.18 2.19 1.5 1.54 1.64	32.8 33.09 33.09 33.2	8.28 8.31 8.31 8.13	12 6 7 4	4.8 4.5 3.9 3.1
						3.10			27.1 27.3 27.3 27.3 27.3 27.3 27.4 27.4	5.82 5.81 6.26 6.25 6.08 6.06	88.2 88 95 95 92.5 92.2	2.18 2.19 1.5 1.54 1.64 1.64	32.8 33.09 33.09 33.2 33.2	8.28 8.31 8.31 8.13 8.12	12 6 7 4 5	4.8 4.5 3.9 3.1 3.1
9:33	I1	MF	841354	836575	2.9	3.10 1.45	208	0.141	27.1 27.3 27.3 27.3 27.3 27.4 27.4 27.4 27.5	5.82 5.81 6.26 6.25 6.08 6.06 5.82	88.2 88 95 92.5 92.2 89	2.18 2.19 1.5 1.54 1.64 1.64 1.82	32.8 33.09 33.09 33.2 33.2 33.86	8.28 8.31 8.31 8.13 8.12 8.12	12 6 7 4	4.8 4.5 3.9 3.1 3.1 4.4
9:33	I1	MF	841354	836575	2.9	3.10 1.45 1.00 4.10	208	0.141	27.1 27.3 27.3 27.3 27.3 27.4 27.4 27.5 27.5 27.6	5.82 5.81 6.26 6.25 6.08 6.06 5.82 5.81 5.85	88.2 88 95 92.5 92.2 89 89 89 89.4	$\begin{array}{r} 2.18 \\ 2.19 \\ 1.5 \\ 1.64 \\ 1.64 \\ 1.82 \\ 1.86 \\ 1.65 \end{array}$	32.8 33.09 33.2 33.2 33.2 33.86 33.86 33.46	8.28 8.31 8.13 8.12 8.12 8.12 8.12 7.61	12 6 7 4 5 8 7 5	$ \begin{array}{r} 4.8 \\ 4.5 \\ 3.9 \\ 3.1 \\ 3.1 \\ 4.4 \\ 3.8 \\ 2.7 \\ \end{array} $
9:33	I1	MF	841354	836575	2.9	3.10 1.45 1.00	208	0.141	27.1 27.3 27.3 27.3 27.4 27.4 27.4 27.5 27.5 27.6 27.6	5.82 5.81 6.26 6.25 6.08 6.06 5.82 5.81 5.85 5.86	88.2 88 95 92.5 92.2 89 89 89 89 89.4 89.5	$\begin{array}{r} 2.18\\ 2.19\\ 1.5\\ 1.54\\ 1.64\\ 1.64\\ 1.82\\ 1.86\\ 1.65\\ 1.59\end{array}$	32.8 33.09 33.09 33.2 33.2 33.86 33.86 33.86 33.46 33.49	8.28 8.31 8.31 8.13 8.12 8.12 8.12 7.61 7.66	$ \begin{array}{r} 12 \\ 6 \\ 7 \\ 4 \\ 5 \\ 8 \\ 7 \\ 5 \\ 5 \\ 5 \\ 5 \\ 5 \end{array} $	$ \begin{array}{r} 4.8 \\ 4.5 \\ 3.9 \\ 3.1 \\ 4.4 \\ 3.8 \\ 2.7 \\ 2.6 \\ \end{array} $
9:33 9:28	I1 I2	MF MF	841354 841581	836575 836593	2.9	3.10 1.45 1.00 4.10	208 198	0.141	27.1 27.3 27.3 27.3 27.4 27.4 27.4 27.5 27.5 27.6 27.6 27.6	5.82 5.81 6.26 6.25 6.08 6.06 5.82 5.81 5.85 5.86 5.61	88.2 88 95 92.5 92.2 89 89 89 89.4 89.5 86	$\begin{array}{r} 2.18\\ 2.19\\ 1.5\\ 1.54\\ 1.64\\ 1.64\\ 1.82\\ 1.86\\ 1.65\\ 1.59\\ 2.03\\ \end{array}$	32.8 33.09 33.2 33.2 33.86 33.86 33.46 33.49 33.94	8.28 8.31 8.13 8.13 8.12 8.12 8.12 7.61 7.66 7.91	$ \begin{array}{r} 12 \\ 6 \\ 7 \\ 4 \\ 5 \\ 8 \\ 7 \\ 5 \\ 5 \\ 7 \\ 7 \\ 7 \\ 7 \end{array} $	$ \begin{array}{r} 4.8 \\ 4.5 \\ 3.9 \\ 3.1 \\ 4.4 \\ 3.8 \\ 2.7 \\ 2.6 \\ 3.2 \\ \end{array} $
9:33 9:28	I1 I2	MF MF	841354 841581	836575 836593	2.9	3.10 1.45 1.00 4.10 1.00 3.90	208 198	0.141 0.086	27.1 27.3 27.3 27.3 27.3 27.4 27.4 27.4 27.5 27.6 27.6 27.6 27.6 27.6 27.6 27.6	5.82 5.81 6.26 6.25 6.08 6.06 5.82 5.81 5.85 5.86 5.61 5.58 6.08	88.2 88 95 92.5 92.2 89 89 89.4 89.5 86 85.6 93	$\begin{array}{r} 2.18\\ 2.19\\ 1.5\\ 1.54\\ 1.64\\ 1.64\\ 1.82\\ 1.86\\ 1.65\\ 1.59\\ 2.03\\ 2.05\\ 1.67\\ \end{array}$	32.8 33.09 33.2 33.2 33.86 33.86 33.46 33.49 33.94 33.95 33.66	8.28 8.31 8.13 8.12 8.12 8.12 7.61 7.66 7.91 7.91 7.78	$ \begin{array}{r} 12 \\ 6 \\ 7 \\ 4 \\ 5 \\ 5 \\ 7 \\ 5 \\ 7 \\ 6 \\ 6 \\ 6 \end{array} $	$ \begin{array}{r} 4.8 \\ 4.5 \\ 3.9 \\ 3.1 \\ 3.1 \\ 4.4 \\ 3.8 \\ 2.7 \\ 2.6 \\ 3.2 \\ 2.8 \\ 2.5 \\ \end{array} $
9:33 9:28	I1 I2	MF MF	841354 841581	836575 836593	2.9	3.10 1.45 1.00 4.10 1.00	208 198	0.141 0.086	27.1 27.3 27.3 27.3 27.3 27.4 27.4 27.4 27.5 27.5 27.6 27.6 27.6 27.6 27.6 27.6 27.6	5.82 5.81 6.26 6.25 6.08 6.06 5.82 5.81 5.85 5.86 5.61 5.58 6.08 6.04	88.2 88 95 92.5 92.2 89 89.4 89.5 86 85.6 93 92.4	$\begin{array}{r} 2.18\\ 2.19\\ 1.5\\ 1.54\\ 1.64\\ 1.82\\ 1.86\\ 1.65\\ 1.59\\ 2.03\\ 2.05\\ 1.67\\ 1.68\end{array}$	32.8 33.09 33.09 33.2 33.2 33.86 33.86 33.86 33.46 33.49 33.94 33.94 33.95 33.66 33.66	8.28 8.31 8.13 8.12 8.12 7.61 7.66 7.91 7.91 7.78 7.74	$ \begin{array}{r} 12 \\ 6 \\ 7 \\ 4 \\ 5 \\ 5 \\ 7 \\ 5 \\ 5 \\ 7 \\ 6 \\ 6 \\ 7 \\ 7 \end{array} $	$\begin{array}{r} 4.8 \\ 4.5 \\ 3.9 \\ 3.1 \\ 3.1 \\ 4.4 \\ 3.8 \\ 2.7 \\ 2.6 \\ 3.2 \\ 2.8 \\ 2.5 \\ 2.2 \end{array}$
9:33 9:28	I1 I2	MF MF	841354 841581	836575 836593	2.9	3.10 1.45 1.00 4.10 1.00 3.90	208 198	0.141 0.086	$\begin{array}{c} 27.1 \\ 27.3 \\ 27.3 \\ 27.3 \\ 27.3 \\ 27.4 \\ 27.4 \\ 27.5 \\ 27.6 \\ 27$	$\begin{array}{c} 5.82\\ 5.81\\ 6.26\\ 6.25\\ 6.08\\ 6.06\\ 5.82\\ 5.81\\ 5.85\\ 5.86\\ 5.61\\ 5.58\\ 6.08\\ 6.04\\ 5.86\end{array}$	88.2 88 95 92.5 92.2 89 89 89.4 89.5 86 85.6 93 92.4 89.7	$\begin{array}{r} 2.18\\ 2.19\\ 1.5\\ 1.54\\ 1.64\\ 1.82\\ 1.86\\ 1.65\\ 1.59\\ 2.03\\ 2.05\\ 1.67\\ 1.68\\ 1.74\\ \end{array}$	32.8 33.09 33.09 33.2 33.2 33.86 33.86 33.46 33.49 33.94 33.94 33.95 33.66 33.66 33.78	8.28 8.31 8.13 8.12 8.12 7.61 7.61 7.91 7.91 7.78 7.74 7.57	$ \begin{array}{r} 12\\ 6\\ 7\\ 4\\ 5\\ 7\\ 5\\ 7\\ 6\\ 6\\ 7\\ 8\\ 8 \end{array} $	$\begin{array}{r} 4.8 \\ 4.5 \\ 3.9 \\ 3.1 \\ 3.1 \\ 4.4 \\ 2.7 \\ 2.6 \\ 3.2 \\ 2.8 \\ 2.5 \\ 2.2 \\ 3 \end{array}$
9:33 9:28 9:20	I1 I2 I3	MF MF MF	841354 841581 841809	836575 836593 836667	2.9 5.1 4.9	3.10 1.45 1.00 4.10 1.00 3.90 1.00 4.10	208 198 175	0.141 0.086 0.098	27.1 27.3 27.3 27.3 27.3 27.4 27.4 27.4 27.5 27.5 27.6 27.6 27.6 27.6 27.6 27.6 27.6	5.82 5.81 6.26 6.25 6.08 6.06 5.82 5.81 5.85 5.86 5.61 5.58 6.08 6.04	88.2 88 95 92.5 92.2 89 89.4 89.5 86 85.6 93 92.4	$\begin{array}{r} 2.18\\ 2.19\\ 1.5\\ 1.54\\ 1.64\\ 1.82\\ 1.86\\ 1.65\\ 1.59\\ 2.03\\ 2.05\\ 1.67\\ 1.68\end{array}$	32.8 33.09 33.09 33.2 33.2 33.86 33.86 33.86 33.46 33.49 33.94 33.94 33.95 33.66 33.66	8.28 8.31 8.13 8.12 8.12 7.61 7.66 7.91 7.91 7.78 7.74	$ \begin{array}{r} 12 \\ 6 \\ 7 \\ 4 \\ 5 \\ 5 \\ 7 \\ 5 \\ 5 \\ 7 \\ 6 \\ 6 \\ 7 \\ 7 \end{array} $	$\begin{array}{r} 4.8 \\ 4.5 \\ 3.9 \\ 3.1 \\ 3.1 \\ 4.4 \\ 3.8 \\ 2.7 \\ 2.6 \\ 3.2 \\ 2.8 \\ 2.5 \\ 2.2 \end{array}$
9:33 9:28 9:20	I1 I2 I3	MF MF MF	841354 841581 841809	836575 836593 836667	2.9 5.1 4.9	3.10 1.45 1.00 4.10 1.00 3.90 1.00	208 198 175	0.141 0.086 0.098	$\begin{array}{c} 27.1 \\ 27.3 \\ 27.3 \\ 27.3 \\ 27.3 \\ 27.4 \\ 27.4 \\ 27.5 \\ 27.5 \\ 27.6 \\ 27$	$\begin{array}{r} 5.82\\ 5.81\\ 6.26\\ 6.25\\ 6.08\\ 6.06\\ 5.82\\ 5.81\\ 5.85\\ 5.86\\ 5.61\\ 5.86\\ 6.04\\ 5.86\\ 6.04\\ 5.86\\ 5.26\\ 5.26\\ 5.26\end{array}$	88.2 88 95 92.5 92.2 89 89.4 89.5 89.4 89.5 85.6 93 92.4 88.6 80.8 80.8	$\begin{array}{c} 2.18\\ 2.19\\ 1.5\\ 1.54\\ 1.64\\ 1.64\\ 1.82\\ 1.86\\ 1.65\\ 1.59\\ 2.03\\ 2.05\\ 1.67\\ 1.68\\ 1.74\\ 1.79\\ 2.28\\ 2.25\\ \end{array}$	32.8 33.09 33.2 33.2 33.2 33.86 33.86 33.49 33.94 33.94 33.95 33.66 33.66 33.66 33.78 33.82 33.82 34.08 34.07	8.28 8.31 8.13 8.13 8.12 8.12 7.61 7.91 7.91 7.91 7.74 7.75 7.56 7.58 7.58	$ \begin{array}{r} 12\\ 6\\ 7\\ 4\\ 5\\ 8\\ 7\\ 6\\ 6\\ 7\\ 8\\ 7\\ 6\\ 6\\ 7\\ 6\\ 6\\ 7\\ 6\\ 6\\ 7\\ 6\\ 6\\ 7\\ 6\\ 6\\ 7\\ 6\\ 6\\ 7\\ 6\\ 6\\ 7\\ 6\\ 6\\ 7\\ 6\\ 6\\ 7\\ 6\\ 6\\ 7\\ 6\\ 6\\ 7\\ 6\\ 6\\ 7\\ 6\\ 6\\ 7\\ 6\\ 6\\ 7\\ 6\\ 6\\ 7\\ 6\\ 6\\ 7\\ 6\\ 6\\ 7\\ 6\\ 6\\ 7\\ 6\\ 6\\ 6\\ 7\\ 6\\ 6\\ 6\\ 7\\ 6\\ 6\\ 6\\ 7\\ 6\\ 6\\ 6\\ 7\\ 6\\ 6\\ 6\\ 7\\ 6\\ 6\\ 6\\ 7\\ 6\\ 6\\ 6\\ 7\\ 6\\ 6\\ 6\\ 7\\ 6\\ 6\\ 6\\ 7\\ 6\\ 6\\ 6\\ 7\\ 6\\ 6\\ 6\\ 6\\ 7\\ 6\\ 6\\ 6\\ 6\\ 7\\ 6\\ 6\\ 6\\ 6\\ 7\\ 6\\ 6\\ 6\\ 6\\ 7\\ 6\\ 6\\ 6\\ 6\\ 7\\ 6\\ 6\\ 6\\ 6\\ 7\\ 6\\ 6\\ 6\\ 6\\ 7\\ 6\\ 6\\ 6\\ 6\\ 7\\ 6\\ 6\\ 6\\ 6\\ 6\\ 7\\ 6\\ 6\\ 6\\ 6\\ 6\\ 6\\ 6\\ 6\\ 6\\ 6\\ 7\\ 6\\ 6\\ 6\\ 6\\ 6\\ 6\\ 6\\ 6\\ 7\\ 6\\ 6\\ 6\\ 6\\ 6\\ 6\\ 6\\ 6\\ 6\\ 6\\ 6\\ 6\\ 6\\$	$\begin{array}{r} 4.8 \\ 4.5 \\ 3.9 \\ 3.1 \\ 3.1 \\ 4.4 \\ 3.8 \\ 2.7 \\ 2.6 \\ 3.2 \\ 2.8 \\ 2.5 \\ 2.2 \\ 3 \\ 3.1 \\ 2.2 \\ 3 \\ 3.1 \\ 2.2 \\ 2.3 \end{array}$
9:33 9:28 9:20	I1 I2 I3	MF MF MF	841354 841581 841809	836575 836593 836667	2.9 5.1 4.9	3.10 1.45 1.00 4.10 1.00 3.90 1.00 4.10	208 198 175	0.141 0.086 0.098	$\begin{array}{c} 27.1 \\ 27.3 \\ 27.3 \\ 27.3 \\ 27.3 \\ 27.4 \\ 27.4 \\ 27.5 \\ 27.5 \\ 27.6 \\ 27.6 \\ 27.6 \\ 27.6 \\ 27.6 \\ 27.6 \\ 27.6 \\ 27.6 \\ 27.6 \\ 27.6 \\ 27.6 \\ 27.6 \\ 27.6 \\ 27.6 \\ 27.6 \\ 27.6 \\ 26.6 \\ 26.6 \\ \end{array}$	$\begin{array}{c} 5.82\\ 5.81\\ 6.26\\ 6.25\\ 6.08\\ 6.06\\ 5.82\\ 5.81\\ 5.85\\ 5.86\\ 5.61\\ 5.86\\ 6.04\\ 5.86\\ 6.04\\ 5.86\\ 5.78\\ 5.26\\ 5.26\\ 6.34\\ \end{array}$	88.2 88 95 92.5 92.2 89 89 89.4 89.5 86 85.6 93 92.4 89.7 88.6 80.8 80.8 80.8 93.4 89.7	$\begin{array}{c} 2.18\\ 2.19\\ 1.5\\ 1.54\\ 1.64\\ 1.64\\ 1.82\\ 1.86\\ 1.65\\ 2.03\\ 2.03\\ 2.03\\ 1.67\\ 1.68\\ 1.79\\ 2.28\\ 2.25\\ 1.85\\ \end{array}$	32.8 33.09 33.2 33.2 33.86 33.46 33.46 33.49 33.95 33.66 33.66 33.66 33.66 33.63 33.78 33.82 33.84 33.82 33.82 33.82 33.82 33.82	8.28 8.31 8.13 8.12 8.12 7.61 7.91 7.91 7.91 7.74 7.57 7.56 7.58 8.34	$ \begin{array}{r} 12\\ 6\\ 7\\ 4\\ 5\\ 8\\ 7\\ 6\\ 6\\ 7\\ 7\\ 6\\ 6\\ 5\\ 7\\ 6\\ 5\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 6\\ 7\\ 6\\ 5\\ 7\\ 6\\ 5\\ 7\\ 6\\ 7\\ 6\\ 7\\ 6\\ 7\\ 6\\ 5\\ 7\\ 6\\ 7\\ 7\\ 6\\ 7\\ 7\\ 7\\ 6\\ 7\\ 7\\ 7\\ 6\\ 7\\ 7\\ 7\\ 6\\ 7\\ 7\\ 7\\ 7\\ 7\\ 6\\ 7\\ 7\\ 7\\ 7\\ 7\\ 7\\ 7\\ 7\\ 7\\ 7\\ 7\\ 7\\ 7\\$	$\begin{array}{r} 4.8 \\ 4.5 \\ 3.9 \\ 3.1 \\ 3.1 \\ 4.4 \\ 3.8 \\ 2.7 \\ 2.6 \\ 3.2 \\ 2.8 \\ 2.5 \\ 2.2 \\ 3.3 \\ 3.1 \\ 2.2 \\ 2.3 \\ 3.6 \end{array}$
9:33 9:28 9:20 10:15	11 12 13 W1	MF MF MF	841354 841581 841809 841872	836575 836593 836667 836565	2.9 5.1 4.9 8.2	3.10 1.45 1.00 4.10 1.00 3.90 1.00 4.10 7.20 0.60	208 198 175 193	0.141 0.086 0.098 0.123	$\begin{array}{c} 27.1 \\ 27.3 \\ 27.3 \\ 27.3 \\ 27.3 \\ 27.4 \\ 27.5 \\ 27.5 \\ 27.6 \\ 27$	$\begin{array}{c} 5.82\\ 5.81\\ 6.26\\ 6.25\\ 6.08\\ 6.06\\ 5.82\\ 5.81\\ 5.85\\ 5.86\\ 5.81\\ 5.58\\ 6.08\\ 6.04\\ 5.86\\ 5.78\\ 5.26\\ 5.78\\ 5.26\\ 5.26\\ 5.26\\ 5.26\\ 6.34\\ 6.29\\ \end{array}$	88.2 88 95 92.5 92.2 89 89.4 89.5 86 85.6 93 92.4 89.7 88.6 80.8 80.8 80.8 80.8 94.6 94.1	$\begin{array}{c} 2.18\\ 2.19\\ 1.5\\ 1.54\\ 1.64\\ 1.82\\ 1.86\\ 1.65\\ 1.59\\ 2.05\\ 1.67\\ 1.68\\ 1.74\\ 1.79\\ 2.28\\ 2.25\\ 1.82\\ 1.82\\ \end{array}$	$\begin{array}{r} 32.8\\ 33.09\\ 33.09\\ 33.2\\ 33.2\\ 33.8\\ 33.8\\ 33.8\\ 33.8\\ 33.46\\ 33.49\\ 33.95\\ 33.66\\ 33.78\\ 33.66\\ 33.78\\ 33.66\\ 33.78\\ 33.66\\ 33.78\\ 33.66\\ 33.78\\ 33.66\\ 33.78\\ 33.62\\ 34.08\\ 34.07\\ 32.21\\ \end{array}$	8.28 8.31 8.13 8.12 8.12 7.61 7.66 7.91 7.74 7.74 7.56 7.58 7.58 8.34 8.34	$ \begin{array}{r} 12\\ 6\\ 7\\ 4\\ 5\\ 8\\ 7\\ 7\\ 6\\ 6\\ 7\\ 7\\ 6\\ 5\\ 5\\ 5\\ \end{array} $	$\begin{array}{r} 4.8 \\ 4.5 \\ 3.9 \\ 3.1 \\ 3.1 \\ 4.4 \\ 3.8 \\ 2.7 \\ 2.6 \\ 3.2 \\ 2.8 \\ 2.5 \\ 2.2 \\ 3.1 \\ 2.2 \\ 3.1 \\ 2.2 \\ 3.6 \\ 4.2 \end{array}$
9:33 9:28 9:20 10:15	11 12 13 W1	MF MF MF	841354 841581 841809 841872	836575 836593 836667 836565	2.9 5.1 4.9 8.2	3.10 1.45 1.00 4.10 1.00 3.90 1.00 4.10 7.20	208 198 175 193	0.141 0.086 0.098 0.123	$\begin{array}{c} 27.1 \\ 27.3 \\ 27.3 \\ 27.3 \\ 27.3 \\ 27.4 \\ 27.4 \\ 27.5 \\ 27.5 \\ 27.6 \\ 27.6 \\ 27.6 \\ 27.6 \\ 27.6 \\ 27.6 \\ 27.6 \\ 27.6 \\ 27.6 \\ 27.6 \\ 27.6 \\ 27.6 \\ 27.6 \\ 27.6 \\ 27.6 \\ 27.6 \\ 26.6 \\ 26.6 \\ \end{array}$	$\begin{array}{c} 5.82\\ 5.81\\ 6.26\\ 6.25\\ 6.08\\ 6.06\\ 5.82\\ 5.81\\ 5.85\\ 5.86\\ 5.61\\ 5.86\\ 6.04\\ 5.86\\ 6.04\\ 5.86\\ 5.78\\ 5.26\\ 5.26\\ 6.34\\ \end{array}$	88.2 88 95 92.5 92.2 89 89 89.4 89.5 86 85.6 93 92.4 89.7 88.6 80.8 80.8 80.8 93.4 89.7	$\begin{array}{c} 2.18\\ 2.19\\ 1.5\\ 1.54\\ 1.64\\ 1.64\\ 1.82\\ 1.86\\ 1.65\\ 2.03\\ 2.03\\ 2.03\\ 1.67\\ 1.68\\ 1.79\\ 2.28\\ 2.25\\ 1.85\\ \end{array}$	32.8 33.09 33.2 33.2 33.86 33.46 33.46 33.49 33.95 33.66 33.66 33.66 33.66 33.63 33.78 33.82 33.84 33.82 33.82 33.82 33.82 33.82	8.28 8.31 8.13 8.12 8.12 7.61 7.91 7.91 7.91 7.74 7.57 7.56 7.58 8.34	$ \begin{array}{r} 12\\ 6\\ 7\\ 4\\ 5\\ 8\\ 7\\ 6\\ 6\\ 7\\ 7\\ 6\\ 6\\ 5\\ 7\\ 6\\ 5\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 7\\ 6\\ 5\\ 7\\ 6\\ 7\\ 6\\ 5\\ 7\\ 6\\ 5\\ 7\\ 6\\ 7\\ 6\\ 7\\ 6\\ 7\\ 6\\ 5\\ 7\\ 6\\ 7\\ 7\\ 6\\ 7\\ 7\\ 7\\ 6\\ 7\\ 7\\ 7\\ 6\\ 7\\ 7\\ 7\\ 6\\ 7\\ 7\\ 7\\ 7\\ 7\\ 6\\ 7\\ 7\\ 7\\ 7\\ 7\\ 7\\ 7\\ 7\\ 7\\ 7\\ 7\\ 7\\ 7\\$	$\begin{array}{r} 4.8 \\ 4.5 \\ 3.9 \\ 3.1 \\ 3.1 \\ 4.4 \\ 3.8 \\ 2.7 \\ 2.6 \\ 3.2 \\ 2.5 \\ 2.5 \\ 2.5 \\ 2.5 \\ 3.1 \\ 2.2 \\ 3.3 \\ 3.6 \end{array}$

 Remarks:
 MF - Middle Flood tide

 ME - Middle Ebb tide
 For SS, if the monitoring result is less than Limit of Report 2mg/L, the result value will be assumed as 2 for the calculation.

 For Chorophyll-a, if the monitoring result is less than Limit of Report 0.1µg/L, the result value will be assumed as 0.1 for the calculation.

						Impact	Water Qu	uality Mor	itoring	Result						
Sampling Date:	19-Jul-18						~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~									
Weather:	Fine															
Sea Condition:	Moderate	9														
			Co-or	dinates	Water	Sampling		Current	Temp	DO	DO	Turbidity	Salinity	pН	SS	Chlorophyll-a
Date / Time	Location	Tide*		1	Depth	Depth	Direction	Speed	-	Conc	Saturation		-	-		
			East	North	m	m	degrees	m/s	<u>ී</u> 28.5	mg/L 8.65	% 132.9	NTU 4.08	ppt 31.49	unit 6.93	mg/L 14	μg/L 8.3
						1.00			28.5	8.77	134.5	4.11	31.28	6.96	16	7.7
17:04	G1	ME	841486	835926	4.5		125	0.083								
									28.5	8.36	128.3	4.21	31.54	7	22	8.3
						3.50			28.5	8.34	128	4.2	31.61	7	25	8.8
						1.00			28.5	8.21	126.2	3.91	31.86	6.84	21	8.4
								0.440	28.4 28.3	8.37 8.36	128.5 128.3	4.27 4.38	31.92 32.03	6.85 6.87	23 27	9.4 7.6
17:17	R1	ME	842301	835701	6.4	3.20	154	0.119	28.3	8.35	128	4.38	32.05	6.87	25 27	8
						5.40			27.9 27.9	5.15 5.45	79.1 83.7	5.01 4.99	33.47 33.33	7.1 7.1	27 26	8.5 8.2
						1.00			28.5	7.96	121.9	4.99	31.2	6.98	20	7.6
16:52	R2	ME	840719	836195	4.9	1.00	114	0.153	28.5	8.2	125.6	4.03	31.23	6.98	23	8.3
10:02	112		0.0719	000170		3.90		0.100	28.5 28.5	8.64 8.63	132.4 132.4	4.09 4.09	31.31 31.35	6.96 6.96	27 30	8.6 7.2
16.46	T1	ME	941254	926572	26	1.20	102	0.124	27.6	8.07	122.4	4.53	32.23	7.04	33	7.2
16:46	I1	ME	841354	836572	2.6	1.30	193	0.134	28 28.2	8.38	127.8	4.23	31.93	7.08	38	7.2
						1.00			28.2 28.2	8.24 8.28	126 126.7	4.13 4.13	31.84 31.82	7.28 7.28	23 25	6.7 7.5
16:43	12	ME	841596	836592	4.8	3.80	56	0.115	28.3	8.02	123.1	4.33	32.15	7.25	26	7
			l			5.00			28.3	8.02	123.1	4.36	32.18 31.9	7.24	24 24	7.8
						1.00			28.5 28.4	8.34 8.39	128.2 128.9	4.13 4.09	31.9	7.7 7.7	24	6.7 7
16:39	13	ME	841796	836672	4.9	3.90	173	0.113	28.2 28.2	8.3	127.2	4.56	32.13	7.7	26 27	7.4
						5.70			28.2	8.3	127.3	4.55	32.16	7.69		7.1
						1.00			28.3 28.3	8.21 8.22	126 126.2	4.25 4.23	32.08 32.06	7.16	18 16	8 8.9
17:24	W1	ME	841872	836566	7.8	3.90	152	0.102	28.4	8.33	128	4.24	32.03	7.17	20	8.7
17.24	** 1	WIL	041072	050500	7.0	5.70	152	0.102	28.4	8.35 5.44	128.3 83.5	4.24 4.73	32.04 32.98	7.17 7.19	19 22	7.5
						6.80			28.1 28	5.35	82.1	4.75	33.1	7.19	24	7.6
16:49	M1	ME	840809	836407	0.8	0.40	111	0.083	28	8.2	124.8	4.26	31.55	7.11	16	8.7
10.49		IIIE	040009	050407	0.0	0.10	111	0.005	28.1	8.28 8.85	126.2	4.38 4.06	31.46 31.31	7.11 6.86	17 25	7.3 8.5
14.57	E071		041107	025210	17	1.00	100	0.054	28.5 28.5	8.84	135.6 135.5	4.06	31.3	6.87	21	5.6
16:57	FCZ1	ME	841186	835218	4.7	3.70	198	0.056	28.5	8.46	129.9	4.09	31.47	6.87	23	8.5
									28.5	8.49	130.4	4.14	31.57	6.87	26	8.1
	G1	MF														
	R1	MF														
	KI	IVII														
	R2	MF														
	I1	MF														
	12	MF														
	12	1411.														
	13	MF														
	15															
	W1	MF														
	M1	MF														
	FCZ1	MF														

 Remarks:
 MF - Middle Flood tide

 ME - Middle Ebb tide
 For SS, if the monitoring result is less than Limit of Report 2mg/L, the result value will be assumed as 2 for the calculation.

 For Chorophyll-a, if the monitoring result is less than Limit of Report 0.1µg/L, the result value will be assumed as 0.1 for the calculation.

Sampling Date:	21. Jul 19					inpact	t Water Qu	1allty 19101	utoring	Result						
Weather:																
	Moderate	<u>,</u>														
seu continuon:			C	1	Water	Sampling	Current	Current	m	DO	DO	T	a r u		66	
Date / Time	Location	Tide*	Co-ord	iinates	Depth	Depth	Direction	Speed	Temp	Conc	Saturation	Turbidity	Salinity	pН	SS	Chlorophyll-a
			East	North	m	m	degrees	m/s	ິ	mg/L	%	NTU	ppt	unit	mg/L	μg/L
						1.00			29 29	8.09 8.09	125 124.9	2.8 2.89	31.12 31.16	7.55 7.56	6 7	2.8
0.10	C 1	ME	041462	925021	<i>c</i> 1		114	0.000	23	8.09	124.9	2.89	51.10	7.50	,	5
9:18	G1	ME	841463	835921	5.1		114	0.089								
						4.10			28.2 28.2	5.59 5.57	86.2 85.8	2.61	33.23 33.24	7.67	6 7	6.8 6.2
						1.00			28.2	8.53	131.5	2.03	31.09	7.15	5	8.3
						1.00			28.9	8.52	131.4	2.02	31.09	7.15	6	5.3
9:26	R1	ME	842302	835702	6.3	3.15	143	0.069	28.4 28.4	7.24	111.6 111.4	1.94 1.93	32.56 32.62	7.19	8 6	4.8
						5.00			28.2	6.41	98.7	3.93	33.17	7.26	8	6.3
						5.30			28.2	6.39	98.5	4.17	33.19	7.26	7	7.9
						1.00			29.1 29.1	7.7	118.8 118.9	2.52 2.5	30.8 30.75	7.74	5 4	4.6
9:06	R2	ME	840726	836209	5.4	4.40	128	0.077	29.1	5.76	89.1	2.3	32.38	7.65	5	5.2 2
						4.40			28.5	5.78	89.2	2.82	32.49	7.66	7	7.2
8:59	I1	ME	841328	836584	2.6	1.30	147	0.103	28.6 28.7	7.8 7.8	119.8 119.9	1.92	31.62	8.2 8.19	10	5.3
						1.00			28.7	7.92	119.9	1.91 1.89	31.58 31.56	7.75	8 14	6 6.7
8:54	I2	ME	841599	836586	4.8	1.00	139	0.083	28.9	7.93	122.5	1.86	31.58	7.75	12	3
0.04	12		041077	050500		3.80	,	0.005	28.7 28.7	6.86	106 105.5	1.9 1.92	32.18 32.29	7.73	16 14	5.6 5.9
									28.7	6.83 7.89	105.5	1.92	32.29	7.49	14	3.5
8:51	13	ME	841796	836672	5.1	1.00	156	0.082	28.7	7.88	121.5	1.82	31.58	7.51	9	1
0.51	15	MIL	041790	050072	5.1	4.10	150	0.002	28.3	5.19	80.1	2.5	33.1	7.66	13	7.5
									28.2 28.9	5.11 8.1	78.9 125.3	2.47 1.95	33.22 31.62	7.68 7.9	10 8	3.8 4.6
						1.00			28.9	8.1	125.2	1.92	31.62	7.9	8	4.5
9:33	W1	ME	841865	836565	7.7	3.85	157	0.079	28.4	6.26	96.6	2.08	33	7.95	9	1.3
									28.3 27.9	6.26 4.65	96.6 71.6	2.06	33.08 33.74	7.96 8.09	7 8	0.6
						6.70			27.9	4.66	71.7	2.85	33.76	8.09	9	1
9:03	M1	ME	840849	836420	1	0.50	99	0.103	29.3	6.29	97.4	3.22	30.48	7.53	12	7.4
									29.3 29.1	6.23 8.62	96.4 132.9	3.22 2.24	30.42 30.73	7.52 7.51	10 9	6.6 6.7
9:13	FCZ1	ME	841196	835208	4.6	1.00	142	0.114	29.1	8.61	132.8	2.2	30.75	7.49	11	6.9
9.13	FULI	ME	041190	855208	4.0	3.60	142	0.114	28.4	6.35	98	2.28	32.58	7.33	16	6.9
									28.4	6.34	97.7	2.31	32.62	7.33	13	7.1
									30	8.93	139.6	2.04	30.52	7.91	15	8
						1.00			30	8.94	139.8	2.03	30.59	7.91	13	7.6
13:37	G1	MF	841496	835920	4.6		173	0.082								
						2.50			29.3	7.24	112.8	2.24	31.77	7.93	15	6.7
						3.60			29.1	6.9	107.3	2.3	31.96	7.94	14	6.4
						1.00			29.3 29.1	8.41 8.39	130.6 130.1	1.76 1.69	31.25 31.56	7.93 7.94	19 18	12.4 12.6
12.12	D.1		0.40000	025506		2.20		0.070	29.1	7.01	108.4	3.22	33.31	7.94	18	12.0
13:43	R1	MF	842296	835706	6.4	3.20	145	0.073	28.3	7	108.2	3.25	33.31	7.97	18	11.3
						5.40			27.9 27.9	4.86	74.9	4.69	33.94 33.95	7.98 7.98	20 19	12.4
						1.00			27.9	4.84 8.69	74.6 135.5	4.9 2.16	31.33	8.06	19	11.8 7
13:26	R2	MF	840756	836205	4.5	1.00	182	0.084	29.5	8.76	136.6	2.17	31.41	8.08	20	9
			5.0750	000200		3.50			28.7 28.6	5.4 5.25	83.7 81.3	4.11 4.29	32.57 32.68	8.34 8.37	21 19	8.3 8.3
12.10	11	MF	841352	836574	2.4	1.20	1.42	0.107	28.6	5.25 8.11	81.3	2.04	28.89	8.37	9	8.5 7.6
13:19	I1	WIF	041352	0303/4	2.4	1.20	142	0.106	30.6	8.13	127.2	2.06	28.92	7.7	11	8.7
						1.00			30.5 30.5	8.29 8.29	129.5 129.5	3.39 3.53	28.83 28.86	7.75	15 17	9.7 8.9
13:15	I2	MF	841275	836592	4.7	2.70	114	0.096	28.5	6.57	129.5	2.59	32.91	8.08	20	8.9
						3.70			28.5	6.54	101.1	2.58	32.98	8.1	19	8.2
						1.00			29.7 29.7	8.39 8.11	131.3 127	2.61 2.64	31.65 31.65	7.63	13 12	7.3 7.1
13:12	I3	MF	841801	836671	4.9	2.00	169	0.088	29.7	7.34	127	2.64	32.16	7.62	12	5.3
						3.90			29.1	7.36	114.5	2.36	32.31	7.63	13	8.4
						1.00			29.7 29.5	8.43	131.5	1.96 1.91	30.97 31.32	7.92 7.93	7 8	6.3
12.52	3374		041077	026506		2.50	152	0.007	29.5	8.52 6.72	132.8 103.7	2.12	33.39	7.93	8	6.6 7.3
13:52	W1	MF	841877	836580	7.4	3.70	173	0.097	28.2	6.88	106.3	2.1	33.39	7.97	10	7.8
						6.40			27.9	4.56	70.2	2.81	33.67	7.98	12	4.8
10.55	14		0.40020.6	006101	0		1.0-5	0.151	27.9 30.8	4.54 8.3	69.9 131.3	2.95 2.54	33.7 30.25	7.98	10	5.8 5.1
	M1	MF	840836	836401	0.7	0.35	123	0.104	30.5	8.3	131.2	2.91	30.96	7.62	8	5
13:23																
13:25						1.00			30	9.21	144.2	2.06	30.63	7.91	14	5.4
13:23	FCZ1	MF	841172	835218	4.6	1.00 3.60	186	0.081	30 30 28.6	9.21 9.22 6.41	144.2 144.4 99.2	2.06 2.06 2.18	30.63 30.67 32.6	7.91 7.91 7.96	14 17 18	5.4 6.1 6.5

 Remarks:
 MF - Middle Flood tide

 ME - Middle Ebb tide
 For SS, if the monitoring result is less than Limit of Report 2mg/L, the result value will be assumed as 2 for the calculation.

 For Chorophyll-a , if the monitoring result is less than Limit of Report 0.1µg/L, the result value will be assumed as 0.1 for the calculation.

						Impact	Water Qu	ality Mor	nitoring	Result						
Sampling Date:	23-Jul-18						<u> </u>									
Weather:																
Sea Condition:	Moderate	9														
			Co-or	dinates	Water	Sampling		Current	Temp	DO	DO	Turbidity	Salinity	pН	SS	Chlorophyll-a
Date / Time	Location	Tide*			Depth	Depth	Direction	Speed	-	Conc	Saturation		-	-		
			East	North	m	m	degrees	m/s	ී 29.7	mg/L 7.93	% 124.2	NTU 1	ppt 31.59	unit 7.92	mg/L 6	μg/L 7.8
						1.00			29.7	7.95	124.2	0.98	31.6	7.92	6	8.4
11:03	G1	ME	841493	835921	5.2		86	0.109								
	_								28.5	5.49	85.3	1.79	33.58	7.96	7	9.8
						4.20			28.5	5.47	84.9	1.83	33.61	7.96	6	9.3
						1.00			29.6	7.89	123.2	1.45	31.46	7.92	5	7.6
									29.6 28.3	7.91 5.89	123.6 91.3	1.51 1.58	31.56 33.72	7.92 7.96	4 5	8.1 6.8
11:10	R1	ME	842293	835702	6.6	3.30	83	0.123	28.3	5.87	90.9	1.63	33.74	7.97	4	8.3
						5.60			28.2 28.2	5.43 5.37	84 83.2	2.57 2.76	33.85 33.86	7.97	6 5	7.5
						1.00			30	8.21	128.5	1.45	30.57	7.97	4	7
10:52	R2	ME	840721	836205	4.8	1.00	49	0.117	30	8.21	128.5	1.55	30.57	7.91	4	6.6
10.02	112	MIL	040721	050205		3.80	72	0.117	28.4 28.4	4.14 4.23	64.2 65.6	2.54 2.56	33.71 33.7	7.96	6 5	7.2
10.45	11	ME	941222	926592	26	1.20	55	0.124	30.1	8.05	126.2	1.05	30.46	7.91	3	6.4
10:45	I1	ME	841332	836582	2.6	1.30	55	0.134	30.1	8.08	126.6	1.04	30.48	7.91	3	6.7
						1.00			29.8 29.8	7.72 7.73	120.5 120.7	1.09 1.13	30.79 30.73	7.92 7.92	3	8.2 8.6
10:42	I2	ME	841593	836602	5.1	4.10	89	0.1	29.8	6.32	98.1	1.15	33.6	7.92	6	10.1
						4.10			28.4	6.3	97.8	1.86	33.62	7.96	8	10.4
						1.00			28.9 28.9	7.27 7.27	113.3 113.4	1.27 1.28	33.03 33.04	7.94 7.94	4	7.9 9.4
10:39	13	ME	841804	836669	5.3	4.20	65	0.093	28.5	5.55	86.2	1.09	33.51	7.94	5	8.1
						4.30			28.4	5.54	85.9	1.16	33.55	7.96	5	8.4
						1.00			29.8 29.8	7.82 7.87	122.2 123	0.98	30.98 31	7.92 7.92	4 3	<u>8.7</u> 9
11:18	W1	ME	841862	836563	0.1	4.05	48	0.091	28.6	7.11	110.5	0.9	33.36	7.96	4	9.2
11:18	W I	ME	841802	830303	8.1	4.05	48	0.091	28.6	7.11	110.4	0.92	33.38	7.96	3	8
						7.10			28.1 28	4.66 4.65	72.1 71.8	1.27 1.44	33.92 33.98	7.97	5	8.4 8.3
10.50	MI	ME	940912	926412	1.1	0.55	32	0.088	30.1	7.32	114.5	2.26	30.22	7.91	5	6.4
10:50	M1	ME	840813	836412	1.1	0.55	32	0.088	30.1	7.33	114.6	2.25	30.22	7.91	6	6
						1.00			29.7 29.6	7.78 7.78	121.7 121.7	1.15 1.2	31.51 31.8	7.92 7.92	5 5	13.5 13.6
10:58	FCZ1	ME	841174	835228	5	4.00	54	0.108	28.4	4.73	73.4	1.47	33.69	7.96	6	9.7
						4.00			28.4	4.71	73.1	1.45	33.69	7.96	6	8.8
	G1	MF														
	D1	ME														
	R1	MF														
	R2	MF														
	I1	MF														
	11	IVIT.														
	12	MF														
		_														
	10															
	13	MF														
	W1	MF														
	.,,1															
	M1	MF														
	EC71	ME														
	FCZ1	MF														

 Remarks:
 MF - Middle Flood tide

 ME - Middle Ebb tide
 For SS, if the monitoring result is less than Limit of Report 2mg/L, the result value will be assumed as 2 for the calculation.

 For Chorophyll-a, if the monitoring result is less than Limit of Report 0.1µg/L, the result value will be assumed as 0.1 for the calculation.

Image in the image. The image in the image. The image in the image. The image in the image in the image in the image in the	omnling Data	25 1.1 10	1				inpact	t Water Qı	ianty MOI	moring	Result						
countiecountiecountiecountcoun	A U		•														
h h h i																	
back back <thback< th=""> back back <th< th=""><th>Sea Condition:</th><th>Moderate</th><th>e</th><th></th><th></th><th>Water</th><th>Sompling</th><th>Current</th><th>Current</th><th></th><th>DO</th><th>DO</th><th></th><th>-</th><th></th><th></th><th>1</th></th<></thback<>	Sea Condition:	Moderate	e			Water	Sompling	Current	Current		DO	DO		-			1
Image: state	Date / Time	Location	Tide*	Co-ore	linates					Temp			Turbidity	Salinity	pН	SS	Chlorophyll-a
12.57 GI ME 84.1476 85.392, 4.9 1.00 1.45 20.9 8.38 1.30, 1 1.55 40.0 7.01 5 6.7 12.57 R1 ME 84.238 85.707 6.4 3.00 1.16 3.00 1.25 3.07 7.24 7.80 1.16 3.00 1.06 1.15 12.57 R1 ME 84.238 85.707 6.4 3.00 1.16 3.00 1.06 3.01 2.25 3.28 3.26 1.06 1.07 3.01 1.06 1.08 2.07 5.80 9.16 2.30 3.02 1.06 1.08 1.08 2.07 2.03 3.03 1.06 1.08 1.08 2.00 2.01 <td< th=""><th>Dute / Time</th><th>Botunon</th><th>1140</th><th>East</th><th>North</th><th></th><th></th><th></th><th></th><th>°C</th><th></th><th></th><th>NTU</th><th>ppt</th><th>unit</th><th>mg/L</th><th>ug/L</th></td<>	Dute / Time	Botunon	1140	East	North					°C			NTU	ppt	unit	mg/L	ug/L
12.47 CH ME S41476 S5921 A A A A B										29.9	8.33	130.1	1.55	30.6	7.91	5	9.3
Image: border							1.00			29.9	8.38	131	1.56	30.61	7.91	3	8.7
10 100	12:47	G1	ME	841476	835921	4.9		145	0.134								
12:57 R1 ME 84/288 85707 6.4 100 -5.0 100 -7.0							3.90				7.78	121.6	3.37	32.45	7.93	5	9.7
12:37 R1 ME 84238 8570 6.4 1.00 3.20 1.14 2.37 87.3 13.6 1.00 3.15 7.02 2 10.2 12:37 R2 ME 84238 8361 4.8 1.00 3.30 7.66 1.35 1.10 7.02 2 10.2 3.31 7.66 3.34 7.05 3 7.67 3.31 7.66 3.34 7.05 3 7.67 3.31 7.66 3.34 7.05 3 7.67 3.31 7.66 3.34 7.05 3 7.67 3.31 7.66 3.34 7.05 3 7.67 7.7 7.1 4 4.00 7.68 1.01 7.7 7.8 1.10 7.8 7.8 1.10 7.8 7.8 1.00 7.8 8.37 1.30 1.34 9.06 7.97 6 1.01 7.92 2 1.01 7.92 2 1.01 7.92 7 1.01 7.92 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>3.90</td> <td></td>							3.90										
1297 R1 ME 8428 83707 64 3.0 16 23.5 58.0 9.6 23.5 79.5 3 8.7.3 12.37 R2 ME 8407.5 8.8.276 7.66 13.9.2 7.66 13.9.2 7.66 13.9.3 1.60 7.66 13.9.3 1.60 7.61 1.9.3 1.60 7.65 11.9.4 1.61 7.03 4 0.7.3 4.6 0.7.3 4.6 0.7.3 4.6 0.7.3 4.6 0.7.3 4.6 0.7.3 4.6 0.7.3 4.6 0.7.3 4.6 0.7.3 4.6 0.7.3 4.6 0.7.3 4.6 0.7.3 4.6 0.7.3 4.6 0.7.3 4.6 0.7.3 4.6 0.7.3 4.6 0.7.3 4.6 0.7.3 4.6 0.8.3 7.7.5 5.6 0.8.3 7.7.5 5.6 0.8.3 7.7.5 5.6 0.8.3 7.7.5 5.6 0.8.3 7.7.5 5.6 0.8.3 7.7.5							1.00				8.72			31.13	7.92		
100 100 5.0 100 23.0 071 5.48 34.20 7.00 5.0 5.7 12.37 R2 ME 840725 33.612 4.8 100 100 100 119 1.47 30.3 7.06 119.8 1.47 30.3 7.06 119.8 1.47 30.3 7.06 119.8 1.47 30.3 7.06 119.8 1.47 30.3 7.06 119.8 1.47 30.3 7.06 119.8 1.47 30.3 7.06 119.8 1.47 30.3 7.02 7.22 7.22 7.22 7.22 7.22 7.22 7.22 7.22 7.22 7.22 7.22 7.22 7.22 7.22 7.22 7.22 7.22 7.23<	12.57	D1	ME	040002	925707	6.4	2.20	126	0.114								
12.37 R2 ME 84072 836215 4.8 100 3.80 107 3.80 100 3.81 7.66 1197 4.4 7.06 30.7 7.61 4.0 12.27 II ME 84138 83699 2.4 120 105 0.089 7.86 1007 122.8 437 732 4.8 9.6 7.6 10.7 10.7 10.7 72 8.8 7.66 10.9 10.	12.57	KI	NIE	042203	855707	0.4	3.20	130	0.114								
12.37 R2 ME 84075 380.15 4.8 100 3.80 176 119.8 1.47 80.7 7.60 119.8 1.47 80.7 7.60 19.8 1.47 80.7 7.60 19.8 1.47 80.7 7.60 19.8 1.50 1.50 7.60 19.8 1.47 80.7 7.92 7.93							5.40										
12.37 R2 ME 840725 836215 4.8							1.00										
12.27 11 M 841318 83692 2.4 1.20 105 0.089 228 4.26 1426 426 1427 127 2.46 1.20 105 12.27 11 ME 84138 83692 2.4 1.20 105 0.089 29.8 8.22 128 2.33 30.47 7.92 8 9.8 1.33 1067 7.92 8 9.8 1.33 10.67 7.92 8 1.00 2.93 8.36 1.33 10.67 7.92 8 1.00 2.93 8.36 1.33 10.67 7.92 8 1.00 2.93 8.26 1.26 1.23 1.01 1.01 1.01 2.93 8.26 1.26 1.15 1.03 4 1.01 2.93 8.26 1.26 1.15 1.93 1.03 1.01 2.93 8.26 1.28 1.16 0.27 1.91 8.29 1.26 1.28 1.16 0.27 1.91 1.93<	12:37	R2	MF	840725	836215	4.8	1.00	187	0.097	30.1	7.66				7.91	4	9.2
12.27 11 ME 84138 83659 2.4 105 0.089 298 8.19 12.6 2.46 30.47 792 7 11.1 12.27 12 ME 84158 83659 4.8 100 138 130.5 12.8 2.46 30.47 792 5 11.3 12.27 12 ME 84158 83659 4.8 100 13.6 83.1 130.5 1.33 30.67 792 5 11.3 12.18 13 ME 841823 836569 5.1 100 100 100 128 <td< td=""><td>12.07</td><td>112</td><td>IIIL</td><td>040725</td><td>050215</td><td>4.0</td><td>3.80</td><td>107</td><td>0.077</td><td></td><td></td><td></td><td></td><td></td><td></td><td>,</td><td></td></td<>	12.07	112	IIIL	040725	050215	4.0	3.80	107	0.077							,	
12.10 11 ME 84137 800.2 2.4 1.0 10.3 0.00 29.8 8.22 128 133 10.47 7.92 8 9.8 12.23 12 ME 841584 83659 4.8 118 0.087 22.9 8.3 103.1 133 0.007 7.92 8 0.8 12.18 13 ME 841823 836664 5.1 1.00 23.8 130.6 10.1 14.8 0.007 7.92 8 0.8 1.01 12.18 ME 841823 836664 5.1 1.00 4.00 97 8.14 12.6 13.5 7.93 4 4.01 13.08 MI ME 84185 836665 0.9 1.00 1.00 2.83 12.8 1.26 12.8 1.01 1.02 2.97 3.14 1.26 3.16 7.03 4 1.01 1.02 2.97 3.14 1.26 1.02 1.02 2.24 3.13 1.08 1.01 2.24 3.01 1.02 1.01 2.24 3.01 1.02 1.01 2.24 3.01 1.02 1.01 2.24 3.01 1.02 1.01 2.24	10.07	T1	ЪŒ	041210	026502	2.4	1.00	105	0.000								
12.3 12 ME 84184 836595 4.8 1.00 3.0 148 3.0 0.087 28.0 28.16 28.0 8.16 80.11 148 3.25 7.95 3.25 7.94 7.95 6.10.3 12.18 13 ME 841823 836664 5.1 40.0 9.00 40.0 1.88 31.6 7.95 4.1 0.08 13.36 MI ME 841823 836664 7.6 3.00 1.00 2.83 4.30 1.08 31.6 7.93 4.1 10.0 13.36 WI ME 841865 836564 7.6 3.00 1.00 2.97 8.11 12.07 1.24 1.01 7.03 4.4 10.0 12.32 MI ME 840834 836405 0.9 0.45 129 0.064 30.7 7.43 118.2 2.41 30.09 7.92 7.6 12.32 MI ME 84107 7.93 4.4 9.04 30.07 7.43 18.8<	12:27	11	ME	841318	836592	2.4	1.20	105	0.089	29.8	8.22	128	2.39	30.47	7.92	8	9.8
12 ME 841584 83695 4.8 3.00 18 0.087 2.8 8.16 1.8 0.08 7.9 2.0 0.07 12.18 13 ME 841823 83666 5.1 100 97 0.09 233 8.26 12.8 1.60 31.57 7.93 4 0.99 13.08 ME 841823 83666 7.6 1.00 97 0.09 29.3 8.26 12.8 1.00 31.57 7.93 4 0.99 13.08 ME 841865 836564 7.6 1.00 1.00 28.6 4.30 71.3 1.08 31.6 7.93 4 10.2 12.32 M1 ME 841865 836564 7.6 6.00 1.00 1.28 7.42 2.43 83.01 7.93 4 1.00 2.8 4.42 66.3 2.025 3.28 7.95 8 1.00 2.28 8.36 10.01 2.28							1.00										
1218 13 ME 841823 336664 5.1 10.0 4.10 97 40.93 8.26 12.8 12.6 1.5.8 32.7 7.93 4 11.1 12.18 13 ME 841823 33.6664 5.1 10.0 97 4.0 99 38.26 12.84 12.84 12.84 13.8 31.6 7.93 4.1 10.1 13.08 W1 ME 841865 836564 7.6 3.80 10.0 28.8 5.1 7.94 2.24 31.11 7.95 7 9.4 10.0 12.32 M1 ME 84083 836405 0.9 0.45 12.9 0.064 30.7 7.47 11.7 2.36 30.05 7.9 4.4 10.0 28.8 4.1 68.1 2.98 3.61 7.90 4.8 10.0 28.8 10.0 28.8 10.0 28.8 10.0 28.9 3.67 12.2 3.0 10.0 28.9 3.67	12:23	I2	ME	841584	836595	4.8		118	0.087								
12.18 13 ME 84.18.23 83.6664 5.1 1.00 4.10 97 29.3 8.26 12.84 1.26 31.57 7.93 4 99 9.93 13.08 W1 ME 84.1825 82.5 12.84 1.26 31.57 7.93 4 10.4 13.08 W1 ME 84.1825 83.664 7.6 3.00 100 23.7 8.11 11.27 31.01 7.93 4 10.0 12.32 M1 ME 841865 83.6564 7.6 3.00 168 10.0 28.7 4.11 17.9 2.36 30.05 7.89 7.6 4.0 12.32 M1 ME 840834 836405 0.9 0.45 129 0.064 30.7 7.47 117.9 2.36 30.05 7.89 7.6 6.4 12.42 FCZI ME 84.1177 83.522.1 12.0 1.00 1.02 2.9 3.67 13.02 7.03 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td>3.80</td><td></td><td></td><td>28.9</td><td></td><td></td><td></td><td>32.7</td><td></td><td></td><td></td></t<>							3.80			28.9				32.7			
12:18 13 ME 841823 83664 5.1 - - 97 0.094 - 23:3 6.29 173:4 1.03 1.16 1.93 4.0 97 97 13:08 W1 ME 841865 836564 7.6 - </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>1.00</td> <td></td>							1.00										
100 4.10 4.10 28.6 4.59 7.13 1.98 33.23 7.95 6 9.6 13.08 W1 ME 84.1865 8.3654 7.6 1.00 29.7 8.11 127.1 1.48 31.01 7.92 6 9.6 12.32 M1 ME 84.1865 8.3654 7.6 1.00 28.7 4.99 7.75 2.24 31.1 7.95 8 1.00 12.32 M1 ME 840834 836405 0.9 0.45 129 0.064 30.7 7.49 118.2 2.41 80.05 7.89 7.9 6. 4.9 7.749 118.2 2.41 80.05 7.89 7.9 6. 4.9 7.9 6. 4.9 7.9 6. 7.9 7.9 7.9 7.9 7.9 7.9 7.9 7.9 7.9 7.9 7.9 7.9 7.9 7.9 7.9 7.9 7.9 7.9 7.9	12:18	I3	ME	841823	836664	5.1		97	0.094								
13.08 W1 ME 841865 836564 7.6 33.0 168 0.10 29.7 8.14 17.1 1.48 31.01 7.92 7 9 12:32 M1 ME 841865 836564 0.9 0.45 129 0.064 30.0 7.85 2.25 33.28 7.95 8 10 12:32 M1 ME 840834 836405 0.9 0.45 129 0.064 30.7 7.46 30.01 7.89 8 9.11 12:42 FCZI ME 841177 835224 4.6 1.00 10.14 7.47 11.90 1.63 30.01 7.92 7 9 9.24 7.85 30.01 7.89 8 9.01 1.02 7.8 8.30 13.01 1.43 30.01 7.92 7 9 9.24 7.5 9.23 3.67 47.2 2.93 32.97 7.94 8 9.27 7.3 9 8.5							4.10										
13.08 W1 ME 841865 836564 7.6 3.80 16.8 0.103 $\frac{297}{288}$ 8.11 7.92 7.9 9.3 12.32 M1 ME 840834 83605 0.9 0.45 129 0.064 30.7 7.47 117.9 2.36 30.11 7.95 7 9.4 12.32 M1 ME 840834 836405 0.9 0.45 129 0.064 30.7 7.47 117.9 2.36 30.01 7.92 7 9.9 12.42 FCZ1 ME 84117 83524 4.6 100 10.1 10.14 228 8.36 130.7 1.63 30.91 7.92 7 9 12.42 FCZ1 ME 841175 83521 5.1 10.0 1.01 1.02 2.8 8.30 130.1 1.47 30.9 7.9 7.5 7.5 17.31 G1 MF 841463 835921 5.1							1.00			29.7							
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $																	
12:32 M1 ME 84034 836405 0.9 0.45 129 0.06 30.7 7.47 11.79 2.36 30.05 7.89 8 9.11 12:32 M1 ME 84034 836405 0.9 0.45 129 0.064 30.7 7.47 11.79 2.36 30.05 7.89 5 5.9 12:42 FCZI ME 84117 83524 6.1 100 161 0.12 428 8.36 130.7 1.63 30.91 7.92 7 9 12:42 MI ME 84117 83524 1.00 161 0.12 428 8.36 130.7 1.63 30.91 7.92 7 9 17:31 GI MF 841463 835921 5 100 100 101 100 101 100 101 101 117 7.91 7 7.5.9 17:41 RI MF 841263 8350	13:08	W1	ME	841865	836564	7.6	3.80	168	0.103								
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $							6.60			28	4.41	68.2	2.98	34.17	7.97	8	10
12.32 MI ME 84854 36403 0.9 0.43 12.9 0.04 30.7 7.49 118.2 2.41 30.05 7.89 7 6.4 12.42 FCZ1 ME 841177 835224 4.6 1.00 1.00 29.8 8.36 1.307 1.63 30.01 7.90 7 9 9.4 17.31 GI MF 841463 835921 5 - - 29.8 8.36 1.307 1.63 30.01 7.94 9 9.4 9.5 17.31 GI MF 841463 835921 5 - - - 30.1 8.86 139.3 2.12 31.17 7.91 6 7.4 -							0.00										
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	12:32	M1	ME	840834	836405	0.9	0.45	129	0.064								
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $							1.00										
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	12:42	FCZ1	ME	841177	835224	46	1.00	161	0.124				1.47				
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $							3.60										
$\begin{array}{c c c c c c c c c c c c c c c c c c c $										20.9	5.07	47.2	2.93	32.91	7.94	0	2.1
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $							1.00			30.1	8.86	139.3	2.12	31.17	7.91	6	7.4
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$							1.00			30.1	8.93	140.3	2.12	31.17	7.91	7	7.3
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	17:31	G1	MF	841463	835921	5		102	0.134								
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$							4.00			29.1	5.91	92.4	2.23	33	7.94	7	5.9
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $							4.00										
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $							1.00										
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	15.44	D.I	N/F	0.42200	025707	60	2.15	140	0.104								
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	17:41	RI	MF	842288	835707	6.3	3.15	143	0.126	28.4		94.3	2.71	33.87	7.96		5
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $							5.30										
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$							1.67										
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	17.18	R2	ME	840726	836200	41	1.00	130	0.089	30.6	8.61	135.8	2.88	30.36	7.89	9	9.3
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	17.10	112	1411.	070720	050200	7.1	3.10	137	0.009								
$\begin{array}{c c c c c c c c c c c c c c c c c c c $				04477	00.0777												
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	17:09	11	MF	841354	836575	2.9	1.45	121	0.097	30.3	8.91	139.9	2.26	30.31	7.9	5	11.1
$\begin{array}{c c c c c c c c c c c c c c c c c c c $							1.00										
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	17:05	I2	MF	841582	836593	5.1		113	0.094								
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$							4.10										
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$							1.00			30.1	8.87	139.4	1.19	31.04	7.91	6	11.3
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	17:00	13	MF	841808	836667	4.9		174	0.086							,	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$							3.90										
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$							1.00			29.9	8.76	137.3	2.61	31.05	7.91	9	8.1
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$							1.00							31.07			
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	17:52	W1	MF	841872	836564	8.2	4.10	89	0.102								
$\begin{array}{c c c c c c c c c c c c c c c c c c c $							7.00	1									
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$							7.20			28.6	4.34	67.5	3.32	33.54	7.95	11	8.1
17:24 FCZ1 MF 841172 835217 4.4 1.00 153 0.109 29.9 8.13 127.5 1.76 31.32 7.91 6 14.2 17:24 FCZ1 MF 841172 835217 4.4 153 0.109 29.9 8.41 131.8 1.95 31.35 7.91 6 14.6 0.109 20.9 8.41 131.8 1.95 31.35 7.91 6 14.6	17:14	M1	MF	840836	836398	1.2	0.60	93	0.059								
17:24 FCZ1 MF 841172 835217 4.4 153 0.109 29.9 8.41 131.8 1.95 31.35 7.91 6 14.6																	
	17.24	EC71	ME	841172	835217	4.4	1.00	153	0 100	29.9	8.41	131.8	1.95	31.35	7.91	6	14.6
	17.24	FCZI	IVIT	0411/2	055217	4.4	3.40	135	0.109	30.8 30.8		140.2 140.4	2.33 2.25	30.13 30.16	7.88 7.88		8.6 9.1

 Remarks:
 MF - Middle Ebb tide

 ME - Middle Ebb tide
 30.8

 For SS, if the monitoring result is less than Limit of Report 2mg/L, the result value will be assumed as 2 for the calculation.

 For Chorophyll-a, if the monitoring result is less than Limit of Report 0.1µg/L, the result value will be assumed as 0.1 for the calculation.

Contract No. CV/2012/05 Bathing Beach at Lung Mei, Tai Po

						Impact	t Water Qı	ality Mo	nitoring	Result						
Sampling Date:	27-Jul-18															
Weather:																
Sea Condition:	Moderate	9	-			-										
D (D	.		Co-ore	linates	Water	Sampling		Current	Temp	DO	DO	Turbidity	Salinity	pН	SS	Chlorophyll-a
Date / Time	Location	Tide*	East	North	Depth m	Depth m	Direction degrees	Speed m/s	ື	Conc mg/L	Saturation %	NTU	ppt	unit	mg/L	μg/L
			East	North	ш		uegrees	III/S	31.4	9.05	145.3	1.26	31.31	8.44	3 mg/L	μg/L 5.1
						1.00			31.3	9.11	146.1	1.11	31.24	8.44	4	4.8
13:45	G1	ME	841476	835921	5		125	0.079								
									29.2	5.48	85.9	1.3	33.28	8.47	6	4.6
						4.00			29.1	4.9	76.8	1.34	33.48	8.47	4	5.1
						1.00			30.5	9.18	146.1	1.64	31.9	8.45	3	4.8
									30.3 30	9.55 7.67	151.3 121.4	1.18 1.27	32.13 32.45	8.45 8.46	3	5.2 5.6
13:58	R1	ME	842283	835707	6.4	3.20	119	0.093	29.4	6.76	106.3	1.37	33.17	8.40	4	4.6
						5.40			28.9	5.21	81.5	1.42	33.65	8.47	4	4.4
									28.9 31.2	5.18 8.99	80.9 144.1	1.41 1.12	33.72 31.36	8.48 8.44	4	4.8 4.5
12.24	D.a) (T	0.40725	02/215	4.7	1.00	102	0.100	28.9	6.02	94	1.12	33.23	8.44	6	4.3
13:34	R2	ME	840725	836215	4.7	3.70	193	0.123	28.9	4.81	75.2	2.02	33.57	8.47	6	5.6
						5.70			28.6	3.73	58.2	2.12	33.95	8.48	5	4.2
13:25	I1	ME	841318	836592	2.4	1.20	124	0.076	30.1	9.34 9.37	147.8 148.2	1.08	32.14 32.15	8.45 8.46	3	4.9 5.7
						1.00			30.4	9.68	153.6	1.19	32.03	8.40	3	6.2
13:22	I2	ME	841584	836595	5	1.00	153	0.088	30.4	9.67	153.5	1.2	32.05	8.45	3	6
			0.1504	000000		4.00	100	0.000	29.7 29.5	6.05 5.82	95.4 91.7	1.61 1.62	32.86 33.07	8.46 8.47	4	5.8 5.5
									<u>29.3</u> 30.9	9.03	144	1.02	31.38	8.44	4	5.5 7.9
13:18	I3	ME	841823	836664	5.2	1.00	159	0.105	30.8	8.99	143.2	1.41	31.52	8.44	3	7.3
15.16	15	WIL	041025	850004	5.2	4.20	139	0.105	29.5	7.14	112.4	1.5	32.95	8.46	6	5.5
									29.4 30.1	6.66 8.4	104.8 133.3	1.61	33.09 32.64	8.47 8.45	6	6.4 4.6
						1.00			30.1	8.55	135.4	1.25	32.55	8.45	3	4.0
14:08	W1	ME	841865	836564	7.5	3.75	109	0.124	29.4	5.66	89	1.46	33	8.47	6	4.3
11.00	,, 1	MIL	041005	050504	7.5	5.75	105	0.124	29.2	5.35	83.9	1.68	33.38	8.47	4	4.2
						6.50			28.6 28.5	4.36	67.9 63.4	1.73 1.66	33.96 33.99	8.48 8.48	5	4.2
13:29	M1	ME	840834	836405	0.9	0.45	135	0.069	33.2	8.35	137.3	1.86	30.35	8.41	5	3.7
13.29	IVII	MIL	040034	850405	0.9	0.45	155	0.009	33.2	8.38	137.8	1.87	30.35	8.41	4	3.6
						1.00			30.9 30.9	9.46 9.93	151.1 158.5	1.22	31.71 31.67	8.44 8.44	<2	5.1 3.8
13:39	FCZ1	ME	841177	835224	4.6	3.60	138	0.087	29	5.59	87.3	1.42	33.28	8.44	<2	3.3
						3.60			29	5.33	83.3	1.47	33.36	8.47	3	4
									24.4		1 10 1			0.40		2.4
						1.00			31.6 31.6	9.25 9.31	149.1 150	1.4 1.39	31.44 31.33	8.43 8.43	4 3	3.6 3.8
10.22	C 1) (T	041462	025021	5 1		10.4		31.0	9.51	130	1.39	51.55	0.45	3	3.0
18:32	G1	MF	841463	835921	5.1		104	0.111								
						4.10			29.5 29.4	7.28	114.5	1.44	32.99	8.46	3	3.8
									<u>29.4</u> 31.4	6.87 9.42	108.1 151.4	1.42 1.3	33.22 31.38	8.47 8.43	4	4 3.9
						1.00			31.4	9.44	151.8	1.3	31.38	8.43	2	3.1
18:40	R1	MF	842288	835707	6.3	3.15	116	0.087	29.7	8.15	130.7	1.66	32.55	8.44	3	3.3
			0.2200						29.7 28.7	8.22 4.02	129.3 62.7	1.77 2.18	32.69 33.87	8.46 8.48	<2	3.9 4.2
						5.30			28.7	3.98	62.7	2.18	33.89	8.48	<2	4.2
						1.00			31.7	9.45	152.5	1.34	31.25	8.43	<2	3.9
18:20	R2	MF	840726	836200	4.2		138	0.101	31.6	9.45	152.5	1.34	31.27	8.43	4	3.9
						3.20			29.5 29.5	7.5	117.8 111.3	1.39 1.39	32.91 32.99	8.47 8.47	4 5	3.4 3.9
18:12	I1	MF	841354	836575	2.9	1.45	144	0.088	31.6	9.16	147.5	1.25	31.09	8.43	5	3.7
10.12	11	1411.	071334	050515	2.7	1.40	1++	0.000	31.6	9.2	148.1	1.27	31.07	8.43	5	5
						1.00			31.3 31.3	9.12 9.14	146.2 146.6	1.13	31.34 31.34	8.44 8.44	3 5	4.3 3.8
18:08	I2	MF	841582	836593	5.2	4.20	154	0.079	30.5	8.49	135.1	1.86	32.14	8.44	4	4.2
						4.20			30.5	8.52	135.5	1.86	32.21	8.45	6	3.8
						1.00			31.5 31.5	8.91	143.3 144.4	1.62 1.38	31.11 31.15	8.43 8.43	4	3.4
18:05	I3	MF	841808	836667	5	1.00	187	0.069	31.5	8.98 9.01	144.4	1.38	31.15	8.43	4	3.6 3.4
						4.00			29.7	8.7	137.1	1.42	32.53	8.46	4	4.5
						1.00			31.2	9.54	153	1.23	31.57	8.44	4	4.2
									31.2 29.1	9.57 7.4	153.4 116	1.21 1.51	31.58 33.17	8.44 8.47	4 5	5.1 3.8
18:52	W1	MF	841872	836564	8.4	4.20	182	0.086	29.1	6.8	106.3	1.51	33.24	8.47	5	3.7
						7.40	1		28.7	3.75	58.5	2.1	33.94	8.48	5	3.4
									28.6	3.73	58.2	2.12	33.95	8.48	5	4.1
18:15	M1	MF	840836	836398	1	0.50	117	0.081	31.6 31.6	8.23 8.36	132.4 134.4	2.56 2.4	31 30.99	8.43 8.43	8 8	5.2 4.9
						1.00			31.8	9.47	153.1	1.2	31.14	8.43	3	3.9
18:26	FCZ1	MF	841172	835217	4.6	1.00	164	0.089	31.7	9.52	153.7	1.28	31.22	8.43	4	4.4
			0.11/2	000217		3.60	104		29.4	7.32	115	1.32	32.98	8.47	4	4.1
Dl	ME MEL				1				29.4	7.11	111.8	1.3	33.07	8.47	4	4.2

 Remarks:
 MF - Middle Elbo ide

 ME - Middle Ebb ide
 MF - Middle Ebb ide

 For SS, if the monitoring result is less than Limit of Report 2mg/L, the result value will be assumed as 2 for the calculation.

 For Chorophyll-a, if the monitoring result is less than Limit of Report 0.1µg/L, the result value will be assumed as 0.1 for the calculation.

Sampling Date:	30 1-1 10					Impac	et Water Q	uanty Mo	nitoring	ĸesult						
Weather:		1														
Sea Condition:	r ine Moderate															
Sea Condition:	Moderate	e 			Water	Sampling	Current	Current		DO	DO					I
Date / Time	Location	Tide*	Co-ore	linates	Depth	Depth	Direction	Speed	Temp	Conc	Saturation	Turbidity	Salinity	pН	SS	Chlorophyll-a
			East	North	m	m	degrees	m/s	ĉ	mg/L	%	NTU	ppt	unit	mg/L	μg/L
						1.00			32.1	10.09	164.6	1.43	32	7.64	5	5.8
									32	10.01	163	1.45	32.03	7.64	5	6.4
13:46	G1	ME	841464	835912	5.1		145	0.121								
						4.10			28.9	3.69	57.8	2.18	34.05	7.75	5	5.1
									28.9 31.6	3.74 9.57	58.6 154.9	2.16	34.05 31.92	7.75 7.66	6 4	5.7 6.3
						1.00			30	7.99	126.7	1.31	33.1	7.71	4	5.6
13:53	R1	ME	842281	835701	6.3	3.15	136	0.132	29.1	6.15	96.7	1.29	33.96	7.74	6	5.1
			0.2201	000701			150	0.102	29.1 28.6	6.19 4.29	97.2 66.9	2.28 2.75	33.98 34.19	7.74	5	5.7 5.8
						5.30			28.5	4.29	66.8	2.75	34.19	7.76	8	5.8
						1.00			32	9.35	152.2	1.39	31.87	7.64	4	6.2
13:34	R2	ME	840752	836197	5.4	1.00	128	0.106	31.8 29.2	9.92	161.1	1.46	31.97	7.65	4	6.6
						4.40			29.2	3.68 3.82	57.9 59.9	2.45 2.63	33.92 33.99	7.74	5	5.9 5.7
13:24	I1	ME	841325	836577	2.6	1.30	147	0.102	31.2	10.44	167.9	1.6	32.06	7.67	7	7
15.24	11	ME	071323	11000	2.0	1.50	1+/	0.102	31.2	9.55	153.6	1.66	32.09	7.67	8	5.7
						1.00			31.4 31.4	10.29 10.32	165.8 166.3	1.57 1.52	31.81 31.81	7.66	6 7	4.2 4.1
13:20	12	ME	841581	836593	4.8	3.80	113	0.097	28.8	5.7	89.3	2.14	34.11	7.75	6	7.7
						5.80			28.8	5.7	89.1	2.11	34.11	7.75	7	6.4
						1.00			31.3 31.2	9.4 9.43	151.3 151.7	1.6 1.57	32.12 32.15	7.67 7.67	6 7	7.8 7.2
13:15	13	ME	841802	836671	5.1	4.10	106	0.095	29	5.66	88.7	2.42	33.82	7.74	12	6.4
						4.10			29	5.46	85.6	2.43	33.91	7.74	13	6.4
						1.00			31.6	9.44	152.6	1.45	31.87	7.66	5	8.5
							-		31.6 28.9	9.5 6.08	153.7 95.2	1.37	31.87 34.08	7.66	5 7	8.2 7.4
14:02	W1	ME	841844	836567	7.7	3.85	184	0.084	28.9	6.08	95.2	1.02	34.08	7.75	7	6.3
						6.70			28.4	3.02	47	2.25	34.27	7.76	6	7.1
						0.70			28.2 32.7	2.97 8.21	46.1 134.8	2.9 1.37	34.4 31.62	7.77 7.62	7 8	8.4 7.1
13:28	M1	ME	840816	836402	1	0.50	173	0.071	32.7	8.33	134.8	1.37	31.62	7.62	9	7.7
						1.00			32	9.73	158.3	1.5	31.95	7.65	5	10.4
13:40	FCZ1	ME	841165	835208	4.6	1.00	154	0.112	32.1	9.69	157.9	1.42	31.9	7.64	6	9.5
						3.60			29.3 29.3	4.74 4.39	74.7 69.2	1.79 1.89	33.9 33.92	7.73	6 6	8.4 7.9
									27.0	1107	0712	1.09	00002	1110	0	
						1.00			31.2	8.12	130.2	1.39	31.67	7.67	8	4.7
						1.00	-		31.1	8.52	136.6	1.44	31.67	7.67	9	4.3
8:42	G1	MF	841473	835924	5		97	0.128								
						4.00			29.4	6.96	109.4	1.35	33.26	7.73	10	4.4
						4.00			29.3	6.73	105.9	1.19	33.59	7.73	9	4.4
						1.00			30.8 30.8	8.42 8.49	134.3 135.5	1.29	31.67 31.67	7.68	4 5	4.4
8:49	R1	MF	842308	835709	6.3	3.15	114	0.134	29.4	7.04	110.5	2.66	33.21	7.73	6	4.9
0.49	KI	WIF	642306	855709	0.5	3.15	114	0.134	29.6	7.25	114.3	2.38	33.18	7.72	6	4.4
						5.30			28.1 28.1	4.03	62.4 58.1	2.22 2.28	34.48 34.48	7.77	8	5.8 7
		-				1.00			31.1	8.18	131.3	1.87	31.85	7.67	5	4
8:31	R2	MF	840728	836208	4.1	1.00	135	0.086	31	8.26	132.3	1.7	31.9	7.68	5	3.8
			0.0720			3.10			29.1 29.1	5.05 4.44	79.2 69.7	2.74 2.85	33.51 33.84	7.74	5	3.8 3.7
8.22	T1	ME	041240	026504	2.0	1.45	109	0.001	30.7	8.45	134.9	2.83	32.09	7.69	8	4.4
8:23	I1	MF	841349	836584	2.9	1.45	128	0.091	30.7	8.49	135.4	2.47	32.07	7.69	7	5
						1.00			30.3 30.3	7.8	123.4 124.6	2.42	31.6	7.7	10 10	7.3
8:17	I2	MF	841581	836595	5.1		106	0.093	28.7	<u>5</u>	77.8	2.4	31.62 33.47	7.7	10	7 6.7
						4.10			28.7	4.5	70.2	2.82	33.96	7.75	12	6.4
						1.00			30.7	8.19	130.7	1.41	32.13	7.69	10	4.8
8:12	13	MF	841809	836668	4.9		117	0.084	30.6 28.7	8.25 4.32	131.6 67.6	1.37 2.05	32.21 34.11	7.69	9 12	4.3 5.2
						3.90			28.7	4.34	67.9	2.05	34.09	7.75	13	4.6
						1.00			30.7	8.11	129.2	1.35	31.85	7.69	8	4.1
									30.7 28.9	8.22 4.99	130.9 78.1	1.36 1.48	31.85 33.75	7.69	8	4.8
8:58	W1	MF	841863	836562	8.2	4.10	138	0.086	28.9	4.99	77.5	1.48	33.75	7.75	10	4.8
0.50						7.20	1		28.3	3.45	53.6	3.32	34.29	7.77	10	3.9
0.50		1							28.3	3.44	53.4 131.9	3.45 2.69	34.31 31.71	7.77 7.67	10 8	4.4
8.56																47
8:27	M1	MF	840829	836408	1.2	0.60	146	0.069	31.2 31.2	8.22 8.23						
	M1	MF	840829	836408	1.2		146	0.069	31.2 31.3	8.23 8.88	132.2 143	2.67	<u>31.72</u> 31.84	7.67	10 8	4.1 4.6
	M1 FCZ1	MF MF	840829 841162	836408 835204	1.2 4.4	0.60 1.00	146 167	0.069	31.2	8.23	132.2	2.67	31.72	7.67	10	4.1

 Remarks:
 MF - Middle Elbo ide

 ME - Middle Ebb ide
 ME - Middle Ebb ide

 For SS, if the monitoring result is less than Limit of Report 2mg/L, the result value will be assumed as 2 for the calculation.
 For Chorophyll-a, if the monitoring result is less than Limit of Report 0.1µg/L, the result value will be assumed as 0.1 for the calculation.

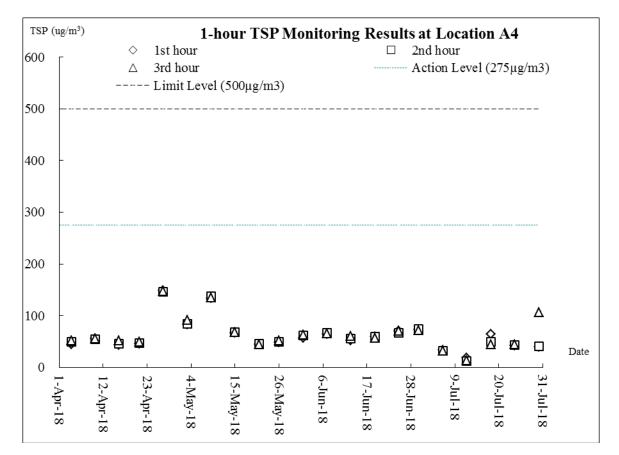


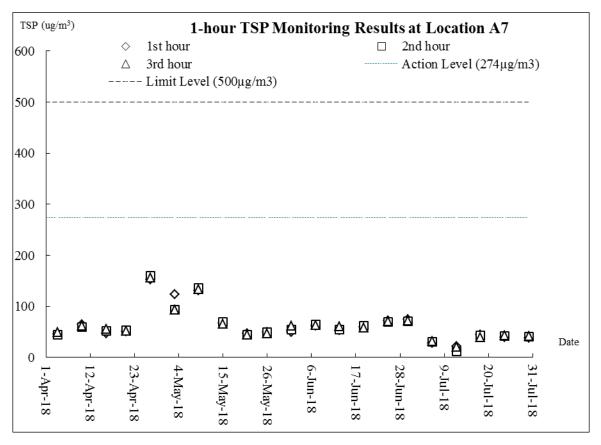
Appendix I

Graphical Plots for Monitoring Results



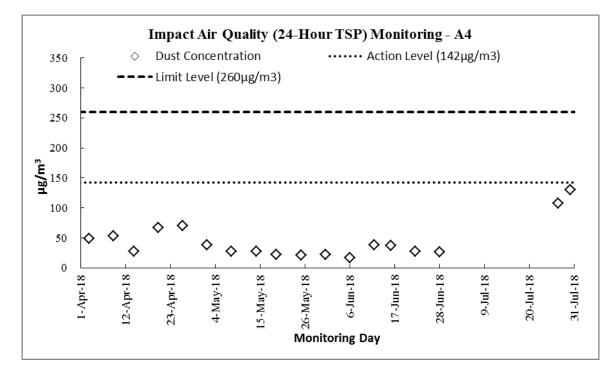
<u>Air Quality – 1-hour TSP</u>

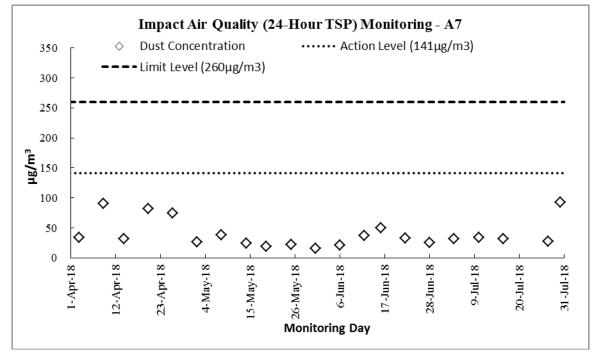






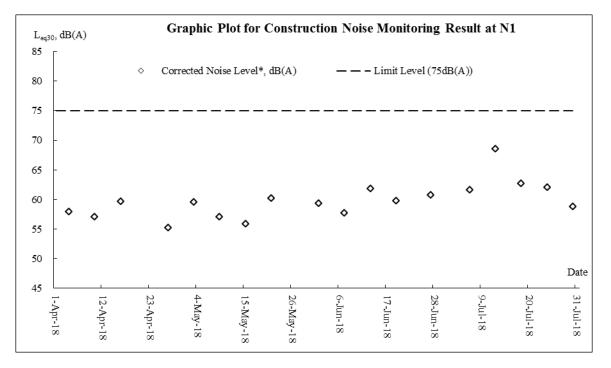
<u>Air Quality – 24-hour TSP</u>

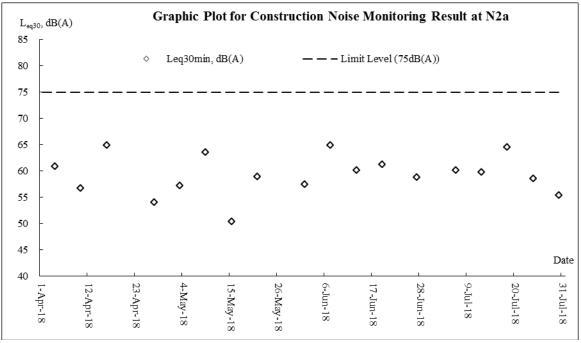




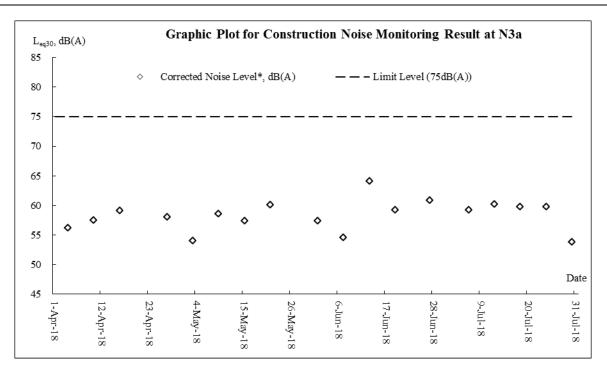


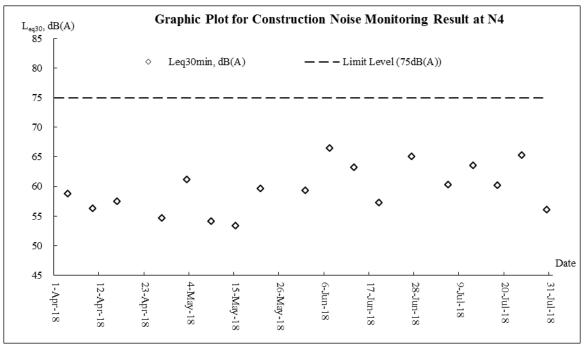
Construction Noise





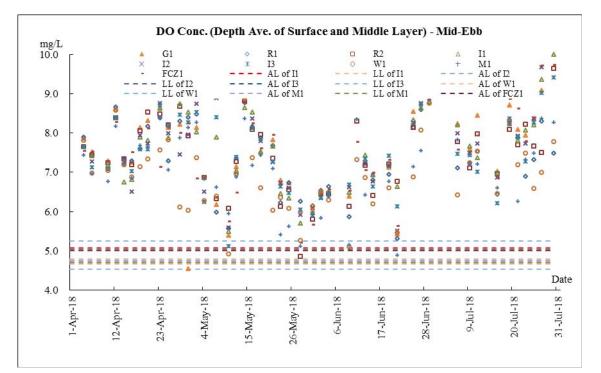


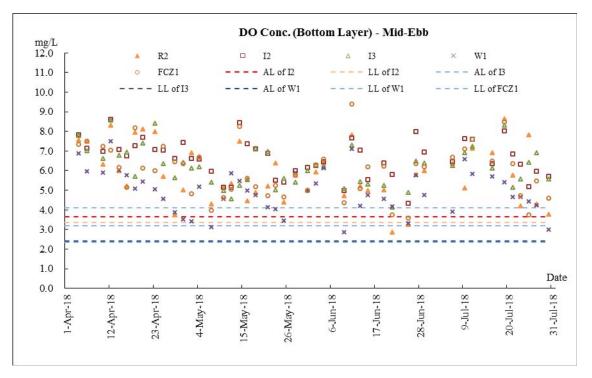




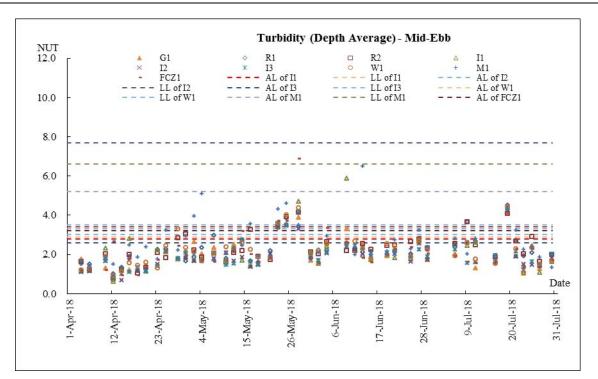


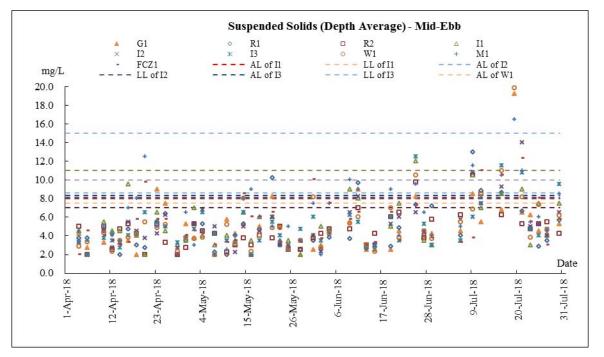
Water Quality



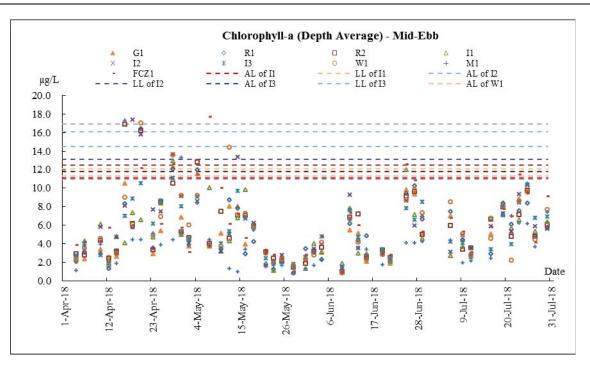


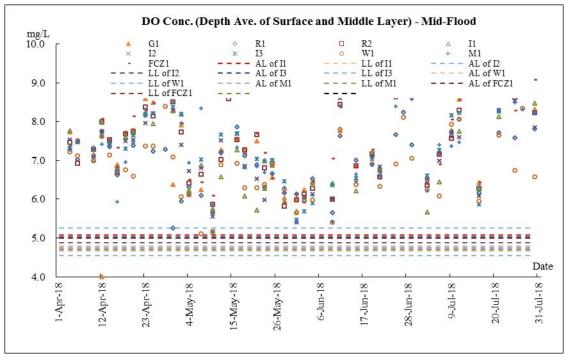




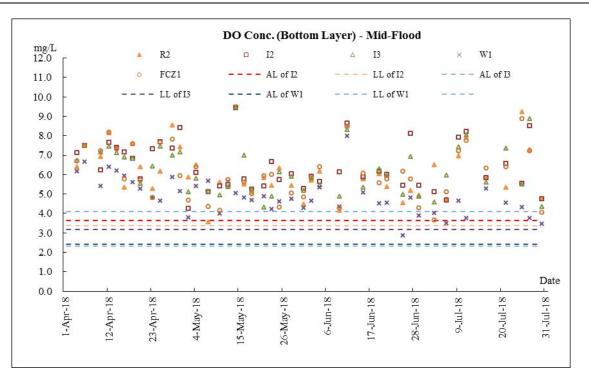


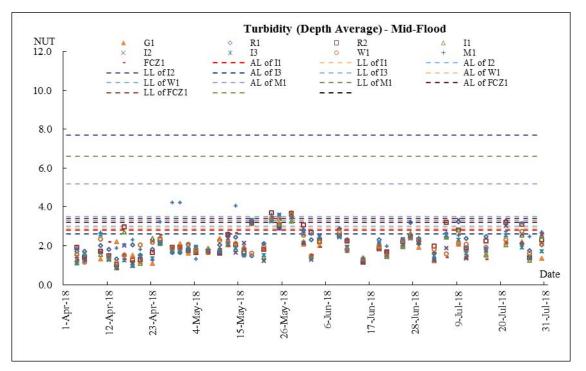




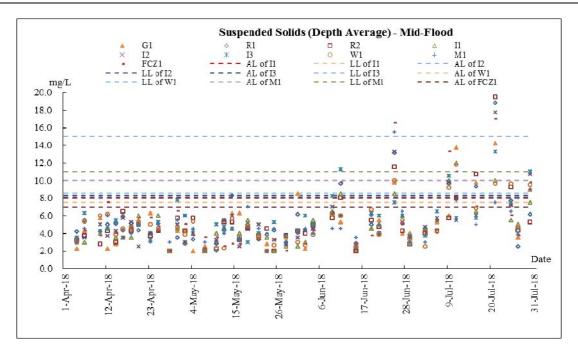


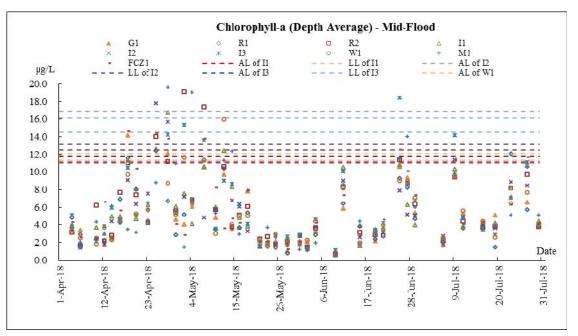














Appendix J

Meteorological Data



				Tai Po	Station	Tai Mei T	uk Station
Date	2	Weather	Total Rainfall (mm)	Mean Air Temp. (°C)	Mean Relative Humidity (%)	Wind Speed (km/h)	Wind Direction
1-Jul-18	Sun	Sunny intervals and one or two showers.	4.2	30.4	77.0	28.1	SW
2-Jul-18	Mon	Sunny intervals and one or two showers.	2.1	27.9	83.7	19	W/SW
3-Jul-18	Tue	Sunny intervals and one or two showers.	15.4	28.8	85.7	17.5	W/SW
4-Jul-18	Wed	Hot with sunny periods during the day.	3.4	30.1	77.3	21	W/SW
5-Jul-18	Thu	Sunny periods and isolated showers.	1.5	27.8	85	18.7	W
6-Jul-18	Fri	Very hot in the afternoon.	5	30	79	12.3	W/SW
7-Jul-18	Sat	Sunny periods and one or two showers.	5.2	27.9	84.0	13.5	S
8-Jul-18	Sun	Hot with sunny periods during the day.	14.4	28	78.5	19.7	E/NE
9-Jul-18	Mon	Moderate easterly winds,	11.3	27.8	81.7	28.2	E/NE
10-Jul-18	Tue	Mainly fine and hot.	1.3	28.5	81.5	14.5	E/SE
11-Jul-18	Wed	Mainly fine. Very hot in the afternoon.	0	30.3	72	10.1	W/SW
12-Jul-18	Thu	Moderate to fresh east to southeasterly winds.	Trace	28.8	78.5	14.2	E/NE
13-Jul-18	Fri	Cloudy with showers and a few squally thunderstorms.	50.4	26.8	92.5	20.9	E/NE
14-Jul-18	Sat	A few showers at first. Moderate to fresh	52.7	27.3	91.0	37.8	Е
15-Jul-18	Sun	Mainly cloudy with sunny intervals.	67.4	26.5	87.5	38.5	E/NE
16-Jul-18	Mon	Mainly cloudy tonight. Moderate to fresh easterly winds,	5.8	27.6	82.5	30	Ν
17-Jul-18	Tue	Mainly cloudy with a few showers	6.5	29.7	78	15.7	E/NE
18-Jul-18	Wed	Mainly cloudy with a few showers and isolated thunderstorms.	29.6	27.5	84.7	36.5	Е
19-Jul-18	Thu	Mainly cloudy with isolated showers	17.3	28.6	82.2	31.5	E/NE
20-Jul-18	Fri	Very hot with sunny periods during the day tomorrow.	7.1	28.4	81.5	19.4	E/NE
21-Jul-18	Sat	Sunny intervals and occasional showers.	0	29.3	75.0	12.1	SW
22-Jul-18	Sun	A few squally thunderstorms later.	Trace	29.8	63.7	16.5	SW
23-Jul-18	Mon	Moderate south to southeasterly winds	30.8	28.5	83.2	17.5	E/SE
24-Jul-18	Tue	Mainly cloudy with a few showers and isolated squally thunderstorms.	0.1	29.3	82.5	11.7	S/SE
25-Jul-18	Wed	Hot with sunny periods during the day tomorrow	2.7	29.3	81.5	11.6	S/SE
26-Jul-18	Thu	Mainly cloudy with one or two showers. Isolated thunderstorms at first.	3.4	29.1	82	11.6	E/NE
27-Jul-18	Fri	Mainly fine and very hot apart from isolated showers.	0.3	29.5	77	6	S/SE
28-Jul-18	Sat	Mainly fine and very hot apart from isolated showers.	0	29.8	75.0	10.5	Е
29-Jul-18	Sun	Mainly fine and very hot	0	29.7	69.2	9.9	SE
30-Jul-18	Mon	Mainly fine and very hot apart from isolated showers.	0	30	68	12.7	SE
31-Jul-18	Tue	Very hot with sunny periods	3.3	30.3	71.5	14.2	W

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Appendix K

Waste Flow Table

		Actual	Quantities of In	ert C&D Mater	ials Generated N	Ionthly	Actual	Actual (Quantities of No	on-inert C&D W	aste Generated	Monthly
Year	Mth	Total Quantities Generated	Broken Concrete (see Note 3)	Reused in the Contract	Reused in Other Projects	Disposed in Public Fill	Quantities of Import Fill	Metal	Paper / Cardboard Packaging	Plastics (see Note 2)	Chemical Waste	Others: tree branches, root and leaves
		(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)
	Jun	0	0	0	0	0	0	0	0	0	0	0
	Jul	0	0	0	0	0	0	0	0	0	0	0
3	Aug	0	0	0	0	0	0	0	0	0	0	0
2013	Sep	0	0	0	0	0	0	0	0	0	0	0
0	Oct	0	0	0	0	0	0	0	0	0	0	0
	Nov	0	0	0	0	0	0	0	0	0	0	0
	Dec	0	0	0	0	0	0	0	0	0	0	0
	Jan	0	0	0	0	0	0	0	0	0	0	0
16	:	0	0	0	0	0	0	0	0	0	0	0
2014-2016	Jun	0	0	0	0	0	0	0	0	0	0	0
014	Sub-total:	0	0	0	0	0	0	0	0	0	0	0
2(:	0	0	0	0	0	0	0	0	0	0	0
	Oct	0	0	0	0	0	0	0	0	0	0	0
2016	Nov	0	0	0	0	0	0	0	0	0	0	0
2(Dec	0	0	0	0	0	0	0	0	0	0	0
	Total:	0	0	0	0	0	0	0	0	0	0	0
	Jan	0	0	0	0	0	0	0	0	0	0	0
	Feb	0	0	0	0	0	0	0	0	0	0	0.0024
	Mar	0	0	0	0	0	0	0	0	0	0	0
	Apr	0	0	0	0	0 0	0	0	0	0	0	0
	May	0	0	0	0	0	0	4.97 0	0	0	0	0.103644 0.0064
2017	Jun Sub totali	0	0	0	0	0	0	4.97	0	0	0	0.112444
20	Sub-total: Jul	0	0	0	0	0	0	0	0	0	0	0.0112444
	Aug	0	0	0	0	0	0	0	0	0	0	0.01104
	Sep	0	0	0	0	0	0	0	0	0	0	0.02883
	Oct	0	0	0	0	0	0	0	0	0	0	0.02883
	Nov	0.04875	0	0	0	0.04875	0	0	0	0	0	0.26
	Dec	0	0	0	0	0	0	0	0	0	0	0.0325
	Total:	0.04875	0	0	0	0.04875	0	4.97	0	0	0	0.444814
	Jan	0	0	0	0	0	0	0	0	0	0	0.078
	Feb	0	0	0	0	0	0	0	0	0	0	0
	Mar	1.633125	0	0	0	1.633125	0	0	0	0	0	0.0065
	Apr	1.31625	0	0	0	1.31625	0.62548	0	0	0	0	0
	May	0	0	0	0	0	1.94848	0	0	0	0	0.0065
~	Jun	0	0	0	0	0	2.728	0	0	0	0	0
2018	Sub-total:	2.998125	0	0	0	2.998125	5.30196	4.97	0	0	0	0.535814
5	Jul	0	0	0	0	0	4.88	0	0	0	0	0
	Aug											
	Sep											
	Oct											
	Nov											
	Dec											
	Total:	2.998125	0	0	0	2.998125	10.18196	4.97	0	0	0	0.535814



Appendix L

Implementation Schedule for Environmental Mitigation Measures

EIA Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measure & Main Concerns to address	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent	ImplementationStageDesCODec	Relevant Legislation Guidelines
Air Qu	ality – Cor	nstruction Phase					
4.5.1	-	Dust Control					
		a Vehicle washing facilities should be provided at the designated vehicle exit point;	To ensure dust emission is controlled and compliance with relevant statutory	Project Site / During construction	Contractor	\checkmark	Air Pollution Control (Construction
		 b Every vehicle should be washed to remove any dusty materials from its body and wheels immediately before leaving the worksite; c The load carried by the trucks should be covered entirely to ensure no leakage from the vehicles; 	requirements				Dust) Regulations
		d Hoarding of not less than 2.4 m high from ground level should be provided along the entire length of that portion of the site boundary adjoining a road or other area accessible to the public except for a site entrance or exit;					
		e The main haul road should be kept clear of dusty materials and should be sprayed with water so as to maintain the entire road surface wet at all the time;					
		f The stockpile of dusty materials should be either covered entirely by					

EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measure	Location/Duration of Measures/Timing of	Implementation Agent	-	Sta	ge	Legislation
		address	Measures		Des	С	O De	Guidennes
	impervious sheets; place in an area sheltered on the top and three sides; or sprayed with water to maintain the entire surface wet at all the time;							
	g Belt conveyor system should be enclosed on the top and two sides;							
	h The height of the belt conveyor should be kept as low as possible to avoid delivery at height; and							
	i All the exposed area should be kept wet always to minimise dust emission.							
-	Air Quality Control							
	a All dump trucks entering or leaving the Project Site should be provided with mechanical covers in good service condition; and	To ensure air quality standards compliance with relevant statutory requirements	Project Site / During construction	Contractor		✓		ETWB TCW No 19/2005
	b Ultra-low-sulphur diesel (ULSD) should be used for all construction plant on site.							
		Ref impervious sheets; place in an area sheltered on the top and three sides; or sprayed with water to maintain the entire surface wet at all the time; g Belt conveyor system should be enclosed on the top and two sides; h The height of the belt conveyor should be kept as low as possible to avoid delivery at height; and i All the exposed area should be kept wet always to minimise dust emission. - Air Quality Control a All dump trucks entering or leaving the Project Site should be provided with mechanical covers in good service condition; and b Ultra-low-sulphur diesel (ULSD) should be used for all construction	Ref Recommended Measure & Main Concerns to address impervious sheets; place in an area sheltered on the top and three sides; or sprayed with water to maintain the entire surface wet at all the time; g g Belt conveyor system should be enclosed on the top and two sides; h h The height of the belt conveyor should be kept as low as possible to avoid delivery at height; and i i All the exposed area should be kept wet always to minimise dust emission. To ensure air quality standards compliance with relevant statutory requirements - Air Quality Control a All dump trucks entering or leaving the Project Site should be provided with mechanical covers in good service condition; and To ensure air quality standards compliance with relevant statutory requirements b Ultra-low-sulphur diesel (ULSD) should be used for all construction Statutory	RefRecommended Measure & Main Concerns to addressMeasures/Timing of Completion of Measuresimpervious sheets; place in an area sheltered on the top and three sides; or sprayed with water to maintain the entire surface wet at all the time;Image: Second Secon	Ref Recommended Measure & Main Concerns to address Measures/Timing of Completion of Measures Agent impervious sheets; place in an area sheltered on the top and three sides; or sprayed with water to maintain the entire surface wet at all the time; Impervious sheets; place in an area Impervious sheets; place in an area g Belt conveyor system should be enclosed on the top and two sides; Impervious sheets; place in an area Impervious sheets; place in an area h The height of the belt conveyor should be kept as low as possible to avoid delivery at height; and Impervious sheets; place in an area Impervious sheets; place in an area i All the exposed area should be kept wet always to minimise dust emission. Impervious sheets; place in an area Impervious sheets; place in an area a All dump trucks entering or leaving the Project Site should be provided with mechanical covers in good service condition; and To ensure air quality standards compliance with relevant statutory requirements Project Site / During construction Contractor b Ultra-low-sulphur diesel (ULSD) should be used for all construction Impervious should be used for all construction Impervious should be used for all construction Impervious should be used for all construction	Ref Recommended Measure & Measures/Timing of Agent Completion of Measures /	Ref Recommended Measure & Main Concerns to address Measures/Timing of Completion of Measures Agent Stal impervious sheets; place in an area sheltered on the top and three sides; or sprayed with water to maintain the entire surface wet at all the time; Belt conveyor system should be enclosed on the top and two sides; Image: Stal Image:	Ref Recommended Measure & Main Concerns to address Measures/Timing of Measure Completion of Measures Agent Stage impervious sheets; place in an area sheltered on the top and three sides; or sprayed with water to maintain the entire surface wet at all the time; g Belt conveyor system should be enclosed on the top and three sides; impervious sheets; place in an area sheltered on the top and three sides; impervious sheets; place in an area sheltered on the top and three sides; impervious system should be enclosed on the top and three sides; impervious system should be enclosed on the top and two sides; impervious sheets; place in an area should be kept as low as possible to avoid delivery at height; and i All the exposed area should be kept wet always to minimise dust emission. improve Site should be provided with mechanical covers in good service condition; and To ensure air quality standards compliance with relevant stantutory requirements Project Site / During contractor V

4.7.1 - EM&A Requirements

Regular site audits (at a frequency of not

EIA Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measure	Location/Duration of Measures/Timing of	Implementation Agent		eme Stag		Legislation
			& Main Concerns to address	Completion of Measures		Des	С	O Dec	Guidelines
		less than once every two weeks) are recommended.	To ensure that appropriate dust control measures are implemented and good site practices are adopted	Project Site / During construction	ET and Contractor		√		Air Pollution Control (Construction Dust) Regulations
4.7.1	3.0-3.7	Implementation of a construction dust monitoring in every six days	To ensure compliance with the relevant criterion during the construction works.	ASRs A4 (No. 101 Lung Mei Tsuen) and A6 (No. 79 Lo Tsz Tin tsuen) / during construction	ET and Contractor		✓		Air Pollution Control (Construction Dust) Regulations
Noise -	- Construc	tion Phase							
5.6.1		Site hoardings at the particular work site boundary may be provided for achieving screening effect, provided that the hoardings have no openings or gaps and meet the same specifications for movable noise barriers. The proposed movable noise barriers should be at least 3m high with a surface density of not less than 7 kg m ⁻² , which could provide a minimum of 5 dB(A) attenuation. Skid footing of movable noise barriers should be located at a distance not more than a few metres of stationary plant and mobile plant such that the NSRs would not have direct line of sight to the plant. The length of the barriers should also be at least five times greater than its height.	To reduce the construction noise impact.	Project Site / During construction	ET and Contractor		~		Noise Control Ordinance (NCO) and Annex 5 of the EIAO-TM
5.7.1	-	The following Quiet Powered Mechanical	To reduce the construction	Project Site / During	Contractor		✓		Noise Control

EIA Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measure & Main Concerns to	Location/Duration of Measures/Timing of Completion of	Implementation Agent		Sta	ge		Legislation
			address	Measures		Des	С	0 1	Dec	Guidelines
(Table 5.12)		Equipment (PME) should be used during the construction Phase.	noise impact.	construction phase						Ordinance (NCO) and
		 Mobile Crane, SWL listed in the data base of quality powered mechanical equipment prepared by the Noise Control Authority, 107 dB(A); 								Annex 5 of the EIAO-TM
		 Tracked Loader, British Standard 5228 – Table C3, Reference No. 16, 104 dB(A); 								
		 Pneumatic breaker, British Standard 5228 – Table C2, Reference No. 10, 110 dB(A); 								
		• Concrete Lorry Mixer British Standard 5228 – Table C6, Reference No. 23, 100 dB(A); and								
		• Excavator British Standard 5228 - Table C3, Reference No. 97, 105 dB(A).								
5.7.1	-	Construction Works on Land								
(Table 5.13)	ole	Movable noise barrier should be provided for excavator and mobile crane;	To reduce the construction noise impact.	Project Site / During the Site Formation,	Contractor		✓			Noise Control Ordinance
		Timber sawing machine should be operated behind site hoarding/ movable noise barrier; and		construction of seawall, ramp, staircase, retaining walls, sump tanks for						(NCO) and Annex 5 of the EIAO-TM
		Concrete lorry mixer should be operated behind site hoarding/movable noise barrier.		grey water system and superstructure						

EIA Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measure & Main Concerns to address	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent		Stage	Relevant Legislation Guidelines
5.7.1 (Table 5.13)	-	Timber sawing machine should be operated behind movable noise barrier; and Movable noise barrier should be provided for excavator and mobile crane.	To reduce the construction noise impact.	foundation Project Site / During the localised road widening works along Ting Kok Road	Contractor		(Noise Control Ordinance (NCO) and Annex 5 of the EIAO-TM
5.7.1 (Table 5.13)	-	<u>Car Park Paving</u> Movable noise barrier should be provided for excavator.	To reduce the construction noise impact.	Project Site / During the car park paving	Contractor	``	/	Noise Control Ordinance (NCO) and Annex 5 of the EIAO-TM
5.7.1 (Table 5.13)	-	Building Works Movable noise barrier should be provided for excavator, mobile crane and earth auger; and Timber sawing machine should be operated behind site hoarding/ movable noise barrier.	To reduce the construction noise impact.	Project Site / During foundation and tanking works	Contractor	·	/	<i>Noise Control</i> <i>Ordinance</i> (NCO) and <i>Annex 5</i> of the <i>EIAO-TM</i>
5.7.1 (Table 5.13)	-	Movable noise barrier should be provided for mobile crane; and Timber sawing machine should be operated behind site hoarding/ movable noise barrier.	To reduce the construction noise impact.	Project Site / During superstructure works	Contractor	·	/	Noise Control Ordinance (NCO) and Annex 5 of the EIAO-TM

EIA Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measure & Main Concerns to	Location/Duration of Measures/Timing of Completion of	Implementation Agent	Implementation Stage	Legislation	
			address	Measures		Des C O Dec	Guidennes	
5.7.1 (Table 5.13)	-	Movable noise barrier should be provided for mobile crane.	To reduce the construction noise impact.	Project Site / During building finishes & internal fitting-out	Contractor	~	Noise Control Ordinance (NCO) and Annex 5 of the EIAO-TM	
5.7.1	-	Rock filling for the Groynes						
(Table 5.13)		Movable noise barrier should be provided for excavator and derrick lighter.	To reduce the construction noise impact.	Project Site / During the construction of gabion channel	Contractor	~	Noise Control Ordinance (NCO) and Annex 5 of the EIAO-TM	
5.7.1	-	Box Culvert Construction						
Table 5.13)		Movable noise barrier should be provided for excavator.	To reduce the construction noise impact.	Project Site / During the construction of gabion channel	Contractor	~	Noise Control Ordinance (NCO) and Annex 5 of the EIAO-TM	
5.7.1 Table	-	Movable noise barrier should be provided for excavator, mobile crane; and	To reduce the construction noise impact.	Project Site / During the construction of	Contractor	\checkmark	Noise Control Ordinance	
5.13)		Concrete lorry mixer should be operated behind site hoarding/movable noise barrier.		western culvert			(NCO) and Annex 5 of the EIAO-TM	
5.7.1 (Table 5.13)	-	Concrete lorry mixer should be operated behind site hoarding/movable noise barrier.	To reduce the construction noise impact.	Project Site / During the construction of eastern culvert	Contractor	~	Noise Control Ordinance (NCO) and Annex 5 of the EIAO-TM	
5.7.1	-	Site hoarding should be provided for work	To reduce the construction	Project Site / During	Contractor	\checkmark	Noise Control	

EIA Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measure	Location/Duration of Measures/Timing of	Implementation Agent		nentation tage	Legislation
			& Main Concerns to address	Completion of Measures		Des C	O Dec	Guidelines
(Table 5.13)		site.	noise impact.	the construction of 90m box culvert				Ordinance (NCO) and Annex 5 of the EIAO-TM
5.7.1	-	Sand Filling						
(Table 5.13)		Movable noise barrier should be provided for excavator.	To reduce the construction noise impact.	Project Site / During the construction of gabion channel	Contractor	V		Noise Control Ordinance (NCO) and Annex 5 of the EIAO-TM
5.7.1	-	Good Site Practice						
		Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme;	To reduce the construction noise impact.	Project Site / Throughout the construction period	Contractor	V		Noise Control Ordinance (NCO) and Annex 5 of the
		Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction programme;						EIAO-TM
		Mobile plant, if any, should be sited as far from NSRs as possible;						
		Machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;						
		Plant known to emit noise strongly in one direction should, wherever possible, be						

EIA Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measure	Location/Duration of Measures/Timing of	Implementation Agent	Imp	eme Sta		tion	Legislation
			& Main Concerns to address	Completion of Measures		Des	С	0	Dec	Guidelines
		orientated so that the noise is directed away from the nearby NSRs; and								
		Material stockpiles and other structures should be effectively utilised, wherever practicable, in screening noise from on-site construction activities.								
5.9.1	4.1	EM&A Requirements								
		Implementation of weekly construction noise monitoring at the representative NSRs.	To ensure compliance with the relevant criterion during the construction works.	N1, N2/N2a, N3 & N4/ Throughout the construction period	ET and Contractor		~			Noise Control Ordinance (NCO) and Annex 5 of the EIAO-TM
Water 9	Quality – C	Construction Phase								
6.6.1	-	Dredging and Sandfilling Operations	To further minimise the SS	Project Site / During	Contractor		✓			-
		Sandfilling works should be carried out after the completion of groyne construction.	level during sandfilling works	sandfilling						
6.6.1 and Figure 6.20	-	A movable cage type / metal frame type silt curtain will be deployed around the dredging area next to the grab dredger prior to commencement of dredging works.	To further minimise the SS level during the dredging and sandfilling works	Project Site / During dredging and sandfilling	Contractor		✓			Annex 6 of the EIAO-TM
6.6.1 and Figure 6.21	-	Standing type silt curtains will be deployed around the proposed sandfilling extent prior to commencement of sandfilling works.	To further minimise the SS level during the dredging and sandfilling works	Project Site / During dredging and sandfilling	Contractor		✓			Annex 6 of the EIAO-TM
6.6.1	-	A hourly dredging rate of a closed grab dredger (with a minimum grab size of 3 m^3) should be less than $31 \text{ m}^3 \text{ hr}^{-1}$, with	To further minimise the SS level during the dredging works	Project Site / During dredging	Contractor		✓			-

EIA Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measure	Location/Duration of Measures/Timing of	Implementation Agent	Implementation Stage	Legislation
			& Main Concerns to address	Completion of Measures		Des C O Dec	Guidelines
		reference to the maximum rate for dredging, which was derived in the EIA.					
5.6.1	-	A daily filling rate should be less than 1,000 $m^3 day^{-1}$, which was defined in the EIA.	To further minimise the SS level during the sandfilling works	Project Site / During sandfilling	Contractor	\checkmark	-
6.6.1	-	Mechanical grabs should be designed and maintained to avoid spillage and should seal tightly while being lifted.	To further minimise the SS level during the dredging works	Project Site / During dredging	Contractor	\checkmark	-
5.6.1	-	Barges or hoppers should have tight fitting seals to their bottom openings to prevent leakage of material.	To further minimise the SS level during the dredging and sandfilling works	Project Site / During dredging and sandfilling	Contractor	\checkmark	-
6.6.1	-	Loading of barges or hoppers shall be controlled to prevent splashing of dredged material to the surrounding water.	To further minimise the SS level during the dredging works	Project Site / During dredging	Contractor	\checkmark	-
5.6.1	-	Barges or hoppers should not be filled to a level which will cause overflow of materials or pollution of water during loading or transportation.	To further minimise the SS level during the dredging and sandfilling works	Project Site / During dredging and sandfilling	Contractor	✓	-
5.6.1	-	Excess material should be cleaned from the decks and exposed fittings of barges or hoppers before the vessel is moved.	To further minimise the SS level during the dredging and sandfilling works	Project Site / During dredging and sandfilling	Contractor	✓	-
5.6.1	-	Adequate freeboard should be maintained on barges to reduce the likelihood of decks being washed by wave action.	To further minimise the SS level during the dredging and sandfilling works	Project Site / During dredging and sandfilling	Contractor	\checkmark	-
5.6.1	-	All vessels should be sized such that adequate clearance is maintained between vessels and the seabed at all states of the	To further minimise the SS level during the dredging and sandfilling works	Project Site / During dredging and sandfilling	Contractor	✓	-

EIA Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measure	Location/Duration of Measures/Timing of	Implementation Agent	Implementation Stage	Legislation
			& Main Concerns to address	Completion of Measures		Des C O Dec	Guidelines
		tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash.					
6.6.1	-	The works should not cause foam, oil, grease, litter or other objectionable matter to be present in the water within and adjacent to the Project Site.	To further minimise the SS level during the dredging and sandfilling works	Project Site / During dredging and sandfilling	Contractor	\checkmark	ProPECC PN 1/94
6.6.1	-	<u>Construction Site Runoff</u> The excavation works for the drainage diversions should be carried out to minimise any seawater influx entering the works area and hence to keep the works area dry as much as possible.	To ensure the works area will be kept dry as much as possible and hence avoid construction site runoff	Project Site / During excavation for the drainage diversions	Contractor	~	-
6.6.1 and Figure 6.21	-	Silt curtains at the inshore waters should be deployed to enclose the works area before the commencement of the excavation works for two drainage diversions until the completion of the diversions.	To avoid any adverse water quality impacts resulting from the site runoff due to heavy rainfall	Project Site / During excavation for the drainage diversions	Contractor	✓	-
6.6.1	-	At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed and internal drainage works and erosion and sedimentation control facilities implemented. Channels, earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of efficient silt removal facilities should be based on the guidelines in <i>Appendix A1</i> of <i>ProPECC PN</i> <i>1/94</i> .	To minimise the construction site runoff	Project Site / During land based construction works	Contractor	✓	ProPECC PN 1/94
6.6.1	-	All the surface runoff should be collected by	To minimise the	Project Site / During	Contractor	\checkmark	ProPECC PN

EIA Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measure	Location/Duration of Measures/Timing of	Implementation Agent	Impl	emei Stag		Legislation
			& Main Concerns to address	Completion of Measures		Des	C	O Dec	Guidelines
		the on-site drainage system and diverted through the silt traps prior to discharge into storm drain.	construction site runoff	land based construction works					1/94
6.6.1	-	All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks, where practicable. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or by other means.	To minimise the construction site runoff	Project Site / During land based construction works	Contractor		~		ProPECC PN 1/94
6.6.1	-	All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas.	To minimise the construction site runoff	Project Site / During land based construction works	Contractor		✓		ProPECC PN 1/94
6.6.1	-	Measures should be taken to reduce the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal	To minimise the construction site runoff	Project Site / During land based construction works	Contractor		•		ProPECC PN 1/94

EIA Ref.	EM&A Ref]	Objectives of the Recommended Measure	Location/Duration of Measures/Timing of	Implementation Agent	Implementation Stage	Legislation	
			& Main Concerns to address	Completion of Measures		Des C O Dec	Guidelines	
		facilities.						
5.6.1	-	Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50 m^3 should be	To minimise the construction site runoff	Project Site / During land based construction works	Contractor	¥	ProPECC PN 1/94	
		covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.						
6.1	-	Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system.	To minimise the construction site runoff	Project Site / During land based construction works	Contractor	V	ProPECC PN 1/94	
6.6.1	-	Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarised in <i>Appendix</i> <i>A2</i> of <i>ProPECC PN 1/94</i> . Particular attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes.	To minimise the construction site runoff	Project Site / During land based construction works	Contractor	•	ProPECC PN 1/94	
.6.1	-	Oil interceptors should be provided in the	To minimise the	Project Site / During	Contractor	\checkmark	ProPECC PN	

EIA Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measure	Location/Duration of Measures/Timing of	Implementation Agent	-	emer Stag		Legislation
			& Main Concerns to address	Completion of Measures		Des	C () Dec	Guidelines
		drainage system and regularly emptied to prevent the release of oil and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.	construction site runoff	land based construction works					1/94
6.6.1	-	All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment traps should be regularly cleaned and maintained. The temporary diverted drainage should be reinstated to the original condition when the construction work has finished or the temporary diversion is no longer required.	To minimise the construction site runoff	Project Site / During land based construction works	Contractor		✓		<i>ProPECC PN</i> 1/94
6.6.1	-	Sewage Generated by Workforce							
		Sewage from toilets should be collected by a licensed waste collector.	To prevent contamination to nearby environment	Project Site / During land based construction works	Contractor		✓		Water Pollution Control Ordinance
6.6.1	-	<u>Storage and Handling of Oil, Other</u> <u>Petroleum Products and Chemicals</u> Waste streams classifiable as chemical wastes should be properly stored, collected and treated for compliance with <i>Waste</i> <i>Disposal Ordinance or Disposal (Chemical</i> <i>Waste) (General) Regulation</i> requirements.	To prevent contamination to nearby environment	Project Site / During land based construction works	Contractor		✓		Waste Disposal Ordinance
6.6.1	-	All fuel tanks and chemical storage areas should be provided with locks and be sited	To prevent contamination to	Project Site / During land based construction	Contractor		√		Waste Disposal

EIA Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measure	Location/Duration of Measures/Timing of	Implementation Agent	Implementation Stage			Legislation
			& Main Concerns to address	Completion of Measures		Des	С	O Dec	Guidelines
		on paved areas.	nearby environment	works					Ordinance
6.6.1	-	The storage areas should be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled oil, fuel and chemicals from reaching the receiving waters.	To prevent contamination to nearby environment	Project Site / During land based construction works	Contractor		~		Waste Disposal Ordinance
6.6.1	-	Oil leakage or spillage should be contained and cleaned up immediately. Waste oil should be collected and stored for recycling or disposal, in accordance with the <i>Waste</i> <i>Disposal Ordinance</i> . The Contractors should prepare guidelines and procedures for immediate clean-up actions following any spillages of oil, fuel or chemicals.	To prevent contamination to nearby environment	Project Site / During land based construction works	Contractor		✓		Waste Disposal Ordinance
6.6.1	-	Vehicle and plant servicing areas, vehicle wash bays and lubrication bays should, as far as possible, be located within roofed areas. The drainage in these covered areas should be connected to foul sewers via a petrol interceptor.	To prevent contamination to nearby environment	Project Site / During land based construction works	Contractor		✓		Waste Disposal Ordinance
6.9.1	5.1	EM&A Requirements							
and 11.6.1		Monitoring of marine water quality during the construction phase is considered necessary to evaluate whether any impacts would be posed by these marine works on the surrounding waters during the operation of dredging and filling works.	To ensure the construction works would not arise any impacts to the surrounding waters	Marine water outside the Project Site / During dredging and filling works	ET and Contractor		✓		-

EIA	EM&A Dof	Environmental Protection Measures	Objectives of the	Location/Duration of	I	I	
Kel.	Ref		Recommended Measure & Main Concerns to	Measures/Timing of Completion of	Agent	Stage	Legislation Guidelines
			address	Measures		Des C O Dec	Culutines

Water Quality – Post-Construction Phase (After the completion of the construction and before the operation of the beach)

6.9.2 and 11.6.2	5.2	EM&A Requirements E. coli monitoring should be conducted at the outlet of two diverted drains and at EPD's beach water monitoring stations for the identification of pollution loading and to establish relationship between the loading and EPD's beach monitoring programme.	To investigate the pollution loading of <i>E. coli</i> and to establish relationship with EPD's beach monitoring data	Two diverted drains and the Bathing Beach/ Within six weeks after the completion of the construction works	ET	n Phase the com of the	pletion etion and ne	-
Water (Quality – C	Operational Phase						
6.6.2	-	Surface Runoff from Project Site A petrol interceptor should be provided in the drainage system and regularly emptied to prevent the release of oil and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain. Where appropriate, the design should follow or of similar functions as stated in the <i>ProPECC PN</i>	To prevent contamination to nearby environment	Beach Park area / During operation	Operator	✓	✓	Water Pollution Control Ordinance and ProPECC PN 1/94

EIA Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measure	Location/Duration of Measures/Timing of	Implementation Agent	Implementation Stage			Legislation	
			& Main Concerns to address	Completion of Measures		Des	С	0	Dec	Guidelines
		1/94.								
6.6.2	-	Oil leakage or spillage should be contained and cleaned up immediately. Waste oil should be collected and stored for recycling or disposal in accordance with the <i>Waste</i> <i>Disposal Ordinance</i> .	To prevent contamination to nearby environment	Beach Building Facility / During operation	Operator	✓		•		Waste Disposal Ordinance
Waste	Manageme	ent – Construction Phase								
7.6	-	The Contractor should submit the plan to Project Proponent's Engineer Representative for endorsement prior to the commencement of the construction works. The plan should incorporate site-specific factors, such as the designation of areas for the segregation and temporary storage of reusable and recyclable materials.	To ensure that adverse environmental impacts are prevented	Project Site / Contract mobilisation and during construction	Contractor	✓	•			-
7.6	-	It will be the Contractor's responsibility to ensure that only reputable licensed waste collectors are used and that appropriate measures to reduce adverse impacts, including windblown litter and dust from the transportation of these wastes, are employed.	To ensure that adverse environmental impacts are prevented	Project Site / Contract mobilisation and during construction	Contractor	•	•			-
7.6	-	The Contractor must ensure that all the necessary permits or licences required under the Waste Disposal Ordinance are obtained for the construction phase.	To ensure compliance with relevant statutory requirements	Project Site / Contract mobilisation and during construction	Contractor	✓	✓			-
7.6	-	 <u>Waste Management Hierarchy</u> Nomination of approved personnel to be responsible for good site practices, 	To ensure that adverse environmental impacts are prevented	Project Site / Contract mobilisation and during construction	Contractor	✓	✓			Waste Disposal (Charges for Disposal of

EIA Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measure & Main Concerns to address	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent	ImplementationStageDesCODec	Relevant Legislation Guidelines
		arrangements for collection and effective disposal to an appropriate facility of all wastes generated at the site;					Construction Waste) Regulation;
		• Training of site personnel in proper waste management and chemical handling procedures;					ETWB TCW No.31/2004; and Appendix C of
		• Provision of sufficient waste disposal points and regular collection for disposal;					ETWB TCW No. 19/2005
		• Appropriate measures to reduce windblown litter and dust transportation of waste by either covering trucks or by transporting wastes in enclosed containers;					
		• Separation of chemical wastes for special handling and appropriate treatment at the Chemical Waste Treatment Centre;					
		• Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; and					
		 A recording system for the amount of wastes generated/recycled and disposal sites. 					
	-	 Waste Reduction Measures Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse 	To reduce construction waste generation	Project Site / During construction	Contractor	~	-

EIA Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measure & Main Concerns to	d Measure Measures/Timing of Agent erns to Completion of	-	Implementation Stage	Relevant Legislation Guidelines
			address	Measures		Des C O Dec	Guidelines
		or recycling of material and their proper disposal;					
		• Encourage collection of aluminium cans and waste paper by individual collectors during construction with separate labelled bins being provided to allow the segregation of these wastes from other general refuse generated by the workforce;					
		• Any unused chemicals and those with remaining functional capacity be recycled as far as possible;					
		• Use of reusable non-timber formwork to reduce the amount of C&D materials;					
		• Prior to disposal of construction waste, wood, steel and other metals should be separated, to the extent practical for re-use and/or recycling to reduce the quantity of waste to be disposed at landfills;					
		• Proper storage and site practices to reduce the potential for damage or contamination of construction materials; and					
		• Plan and stock construction materials carefully to reduce amount of waste generated and avoid unnecessary generation of waste.					

EIA Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measure	Location/Duration of Measures/Timing of	Implementation Agent	Implementation Stage	Legislation
			& Main Concerns to address	Completion of Measures		Des C O Dec	Guidelines
7.6.1	-	Dredging Materials					
		The final disposal site for the dredged sediments should be determined by the MFC and a dumping licence should be obtained from EPD prior to the commencement of the dredging works. Uncontaminated sediments should be disposed of at open sea disposal sites designated by the MFC. For contaminated sediments requiring Type 2 confined marine disposal, relevant contract documents should specify the allocation conditions of the MFC and EPD.	To ensure adverse environmental impacts are prevented	Dredging area / During construction	Contractor	*	Dumping at Sea Ordinance
7.6.2	-	Excavated Materials and C&D Waste					
		Management of Waste Disposal	To properly handle the	Project Site / During	Contractor	\checkmark	Waste Disposal
		The contractor should open a billing account with EPD in accordance with the Waste Disposal (Charges for Disposal of Construction Waste) Regulation for the payment of disposal charges. Every waste load transferred to Government waste disposal facilities such as public fill, sorting facilities, or landfills should require a valid "chit" which contains the information of the account holder to facilitate waste transaction recording and billing to the waste producer. A trip-ticket system should be established in accordance with TCW No. 6/2010 to monitor the reuse of surplus excavated materials off-site and disposal of construction waste and general refuse at	excavated materials and C&D waste and thus avoid any adverse impacts	construction			(Charges for Disposal of Construction Waste) Regulation

EIA Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measure	Location/Duration of Measures/Timing of	Implementation Agent	Imp	leme Sta		ation	Legislation
			& Main Concerns to address	Completion of Measures		Des	С	0	Dec	Guidelines
		transfer stations/landfills, and to control fly-tipping. The billing "chit" and trip-ticket system should be included as one of the contractual requirements and implemented by the contractor. Regular audits of the waste management measures implemented on-site as described in the Waste Management Plan should be conducted.								
		A recording system (similar to summary table as shown in Annex 4 and Annex 5 of <i>Appendix C</i> of ETWB TWC No. 19/2005) for the amount of waste generated, recycled and disposed of (including the disposal sites) will be established during the construction phase.								
7.6.2	-	Reduction of C&D Materials Generation	To reduce the generation of		Contractor		✓			-
		Public fill and construction waste should be segregated and stored in different containers or skips to facilitate reuse or recycling of the public fill and proper disposal of the construction waste. Specific areas of the work site should be designated for such segregation and storage if immediate use is not practicable.	C&D waste	construction						
		To reduce the potential dust and water quality impacts of site formation works, C&D materials should be wetted as quickly as possible to the extent practicable after excavation/filling.								

EIA Ref.	EM&A Ref]	Recommended Measure	Location/Duration of Measures/Timing of	Implementation Agent	Implementation Stage	Legislation
			& Main Concerns to address	Completion of Measures		Des C O Dec	Guidelines
7.6.3	-	 <u>Chemical Waste</u> The Contractor should register as a chemical waste producer with the EPD. Chemical waste, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes. Containers used for the storage of chemical wastes should: Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; Have a capacity of less than 450 L unless the specifications have been approved by the EPD; and Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Regulations. The storage area for chemical wastes will: Be clearly labelled and used solely for the storage of chemical waste; 	To ensure proper handling of chemical waste	Project Site / During construction	Contractor		Code of Practice on the Packaging, Handling and Storage of Chemical Wastes
		 Be enclosed on at least 3 sides; 					

EIA	EM&A	Environmental Protection Measures	Objectives of the	Location/Duration of	Implementation	Implementation	Relevant
Ref.	Ref		Recommended Measure	Measures/Timing of	Agent	Stage	Legislation
			& Main Concerns to address	Completion of Measures	C	Des C O Dec	Guidelines

- Have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest;
- Have adequate ventilation;
- Be covered to prevent rainfall entering (water collected within the bund must be tested and disposed of as chemical waste, if necessary); and
- Be arranged so that incompatible materials are appropriately separated.

Chemical waste should be collected by a licensed chemical waste collector to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Facility.

EIA Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measure	Location/Duration of Measures/Timing of	Implementation Agent	Impl	ement Stage		Legislation
			& Main Concerns to address	Completion of Measures		Des	C 0	Dec	Guidelines
7.6.4	-	Sewage An adequate number of portable toilets should be provided for the on-site construction workforce during construction phase. All portable toilets should be maintained in a state that will not deter the users from using them. Night soil should be regularly collected by a licensed collector for disposal. The sewage generated from the visitors during operation of the Proposed Beach Development should be discharged to the adjacent foul sewer conveying to Tai Po Sewage Treatment Works for treatment.	To ensure proper handling of sewage	Project Site / During construction	Contractor		~		-
7.6.5	-	General Refuse General refuse should be stored in enclosed bins or compaction units separately from construction and chemical wastes. A reputable waste collector should be employed to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to reduce odour, pest and litter impacts. The burning of refuse on construction sites is prohibited by law. Recycling bins should be provided at strategic locations to facilitate recovery of aluminium cans and waste paper from the Project Site. Materials recovered should be sold for recycling.	To ensure proper handling of general refuse	Project Site / During construction	Contractor		~		-

EIA Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measure	Location/Duration of Measures/Timing of	Implementation Agent	Imp	lementation Stage	Legislation
			& Main Concerns to address	Completion of Measures		Des	C O Dec	Guidelines
7.6.6	-	<u>Staff Training</u> Training should be provided to workers on the concept of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycling at the beginning of the construction works.	To ensure that adverse environmental impacts are prevented	Project Site / Contract mobilisation and during construction	Contractor	•	✓	-
7.7	6.1	EM&A Requirements Joint site audits by the Environmental Team and the Contractor should be undertaken on a weekly basis. Particular attention should be given to the Contractor's provision of sufficient spaces, adequacy of resources and facilities for on-site sorting and temporary storage of C&D materials. The C&D materials to be disposed of from the Project Site should be visually inspected. The public fill for delivery to the off-site stockpiling area should contain no observable non-inert materials (e.g., general refuse, timber, etc).	To ensure that adverse environmental impacts are prevented	Project Site / During construction	ET and Contractor		~	-
		The waste to be disposed of at refuse transfer stations or landfills should as far as possible contains no observable inert or reusable/recyclable C&D materials (e.g., soil, broken rock, metal, and paper/cardboard packaging, etc). Any irregularities observed during the weekly site audits should be raised promptly to the Contractor for rectification.						

EIA Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measure & Main Concerns to address	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent	ImplementationStageDesCODec	Relevant Legislation Guidelines
Ecolog	y – Cons	truction Phase					
8.10.2	7.1	Measures for Common Rat Snake To undertake a search of the Common Rat Snake within the land based Project Site just before the commencement of the construction works. Due to the small size of the Project Site and given that there are no optimal habitats for Common Rat Snake, one day-time search is considered sufficient. The surveyor(s) should actively search the areas within the Project Site and pay special attention to the leaf litters and rocks. All recorded Common Rat Snake should be caught by hand and translocated to the shrubland at the north of the Study Area, immediately after the search. The Common Rat Snake search and translocation works should be undertaken by a qualified ecologist with relevant experience in faunal translocation works.	To ensure that adverse impacts arising from the Project to Common Rat Snake are prevented	Project Site (land based) / prior to commencement of construction works	ET / Qualified Ecologist	✓	_
-	7.2	 <u>Measures for marine ecology</u> (1) To translocate target marine fauna, including fishes, starfish, sea urchins and sea cucumbers, from the intertidal area of the Site at Lung Mei to the intertidal area at the reception site of Ting Kok East before commencement of sand filling works or any other works that may cause disturbances to the 	To ensure that adverse impacts arising from the Project to marine ecology	Project Site (marine based) / prior to commencement of marine works	ET / Qualified Ecologist	✓	

EIA Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measure & Main Concerns to address	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent	ImplementationStageDesCODec	Relevant Legislation Guidelines
		existing marine ecology. The translocation works shall cover capturing, handling, holding transporting and releasing of the captured target marine fauna.					
		(2) Translocation of seahorses, including identifying, capturing, handling, protecting, transporting and placing the target seahorse species from Site at Lung Mei to the reception site of Ting Kok East, as well as pre- and post-translocation monitoring and post-construction monitoring shall be conducted. Seahorse translocation shall be undertaken before the commencement of marine construction works. The identifying, capturing, handling, protecting, transporting and placing of seahorses shall be led and supervised by the Fish Specialist.					
8.10.2	-	Dredging and Sand Filling Operations It is predicted that the sediment plume and the sediment deposition will not be large in extent and no unacceptable water impacts including DO depletion, release of contaminants and nutrients are expected. Although no unacceptable water quality impacts would result, the following good construction site practice and proactive precautionary measures are recommended to	To minimise ecological impacts arising from dredging and sand filling works	Project Site / During dredging and sand filling works	Contractor	~	-

EIA Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measure	Location/Duration of Measures/Timing of	Implementation Agent	Impl	Stage		Legislation
			& Main Concerns to address	Completion of Measures		Des	C C	Dec	Guidelines
		ensure dredging and sandfilling operations would be undertaken in such a manner as to avoid any uncontrolled or unexpected incidents during the marine works:							
		• A movable cage type / metal frame type silt curtain should be deployed around the dredging area next to the grab dredger prior to commencement of dredging works;							
		• Standing type silt curtains should be deployed around the proposed sandfilling extent prior to commencement of sandfilling works; and							
		Proper equipment, dredging rate, filling rate and good construction practices should be implemented, details refer to <i>Section 6.6.1</i> .							
3.10.2	-	 Measures for Controlling Construction Runoff Storm water run-off from the construction site should be directed into existing drainage channel via adequately designed sand/silt removal facilities such as sand/silt traps and oil interceptors. 	To minimise ecological impacts of construction runoff	Project Site / During dredging and filling works	Contractor		V		-

EIA Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measure & Main Concerns to address	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent	Stag	e	Legislation
		barriers should be provided on site to properly direct storm water to such silt removal facilities.						
8.10.2	-	 <u>Planting along the Western Drainage</u> <u>Diversion</u> Provide tree/ shrub/ climber planting along the gabion wall of the new drainage channel. Regular monitoring and removal of the weed plant <i>Mikania micrantha</i> during the establishment and maintenance period. 	To provide an ecological habitat	Along gabion wall of the new western drainage channel/ After completion of the gabion	Contractor	✓ 、	/	-
8.10.2	-	 <u>Good Construction Practices</u> Erect fences along the boundary of the Extension Site before the commencement of works to prevent vehicle movements, and encroachment of personnel, onto adjacent areas; and Regularly check the work site boundaries to ensure that they are not breached and that damage does not occur to surrounding areas. 	To avoid any adverse ecological impacts	Project Site / During construction works	Contractor	~		-
Fisheri	es – Const	ruction Phase						
9.10.1	-	EM&A Requirements EM&A is not required during the	To ensure that no water quality deterioration in the	Details refer to Section 12.6 of the EM&A	ET and Contractor	√		Environmenta Impact

EIA Ref.	EM&A Ref	Environmental Protection Measures	Recommended Measure & Main Concerns to	Location/Duration of Measures/Timing of	Implementation Agent	n Implementation Stage				Legislation
				Completion of Measures		Des	С	0	Dec	Guidelines
		construction phase of the Project. However, water quality monitoring will be conducted at the Yim Tin Tsai Fish Culture Zone. Details should be referred to the Water Quality Section.	Fish Culture Zone as a result of the dredging and sandfilling works	Manual.						Assessment Ordinance, Annex 21 of the EIAO-TM
Landsc	cape and V	isual Impact – Construction Phase								
10.5.1	-	Landscape Mitigation								
		A Landscape Plan will be submitted before the commencement of Works.	To provide landscaping work.	Before commencement of construction phase	ET and Contractor	√				-
10.6.10) -	<i>Cultivation of areas impacted during</i> <i>construction.</i> Areas impacted during the construction phase that are not required during the operation phase, are to be cultivated to a depth of 300mm in accordance with accepted Hong Kong practice and guidelines. The cultivation shall involve ripping of compacted soil by mechanical means and the addition gypsum and/or organic fertiliser if required.	To improve the soil allowing plants to thrive	Project Site / During construction	Contractor		~			-
10.6.10) -	<i>Car Park Tree Planting</i> . Advanced trees are to be planted in the car park.	To provide shade to the carpark areas and to reduce the mass of the paved areas	Project Site / During construction	Contractor		✓			-
10.6.10) -	<i>Tree and shrub planting.</i> All planting of trees and shrubs is to be carried out in accordance with the relevant best practice guidelines. Plant densities are to be provided in future detailed design documents and are to be selected so as to achieve a finished landscape that matches	To improve the appearance of the development	Project Site / During construction	Contractor			•		-

	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measure & Main Concerns to address	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent	•	Stage	Legislation
		the surrounding, undisturbed, equivalent landscape types. Regular monitoring and removal of the weed plant <i>Mikania</i> <i>micrantha</i> during the establishment and maintenance period.						
10.6.10	-	<i>Roof Terrace Planting.</i> Trees, shrubs and climbers shall be established in planters on the roof terraces of the new structures where possible.	To improve the appearance of the development by softening the building element	Project Site / During construction	Contractor		√	-
10.6.10	-	<i>Natural Rock Groynes</i> New rock groynes are needed to contain the sand of the new beach. Natural stones will be used for construction of the Groynes.	To improve the appearance of the development to make the man-made feature be more compatible with the surroundings	Project Site / During construction	Contractor		√	-
10.6.10	-	<i>Inter-Tidal Re-generation</i> . It is likely that a build up of sediment and sand will occur at the outer edges of the rock groyne. This is a natural process and the development proponent has no control over the implementation of this mitigation measure.	To improve the appearance of the development	Adjacent areas	Nil		~	-
10.6.10	-	<i>Mangrove Re-generation.</i> Mangroves of similar species to existing to be manually established by planting of droppings.	To improve the ecological value of the project	Project Site / During post-construction	Contractor		✓	-
10.6.10	-	<i>Buffer Planting.</i> Trees and shrubs are to be planted along Ting Kok road to screen the development from the nearby Village/Developed Areas.	To improve the appearance of the development	Project Site / During post-construction	Contractor		√	-

EIA Ref.	EM&A Ref		Objectives of the Recommended Measure	Location/Duration of Measures/Timing of	Implementation Agent	Implementa Stage	Legislation
				Completion of Measures		Des C O	Dec Guidelines
0.6.10	-	<i>Early Planting Works</i> Where technically feasible, new plantings are to be installed during the construction works to reduce landscape impacts.	To improve the appearance of the development	Project Site / During construction	Contractor	V	-
0.6.10	-	<i>Tree Protection/Transplantation.</i> Where technically feasible, existing trees in the Trees/Backshore Vegetation LR are to be retained. Those trees that cannot be retained that are of value are to be transplanted.	To improve the appearance of the development	Project Site / Before commencement of construction	Contractor	✓	-
0.7.9	-	Visual Mitigation					-
		<i>Design of Structures</i> . The structure shown in the photomontages are to illustrate the mass of the structures only. During the design phase of the development, features such as the location of doors, windows, eaves etc. will be detailed. All of these elements will greatly improve the appearance of the structures. Where possible, built structures will utilise appropriate designs to complement the surrounding landscape. Materials and finishes will also be considered during detailed design.	To reduce visual impacts and improve the appearance of the development	Project Site / During construction	Architect	✓	
10.7.9	-	<i>Colour Scheme</i> . Colours for the structures can be used to complement the surrounding area. Lighter colours such as shades of light grey, off-white and light brown may be utilised where technically feasible to reduce the visibility of the structures.	To reduce visual impacts and improve the appearance of the development	Project Site / During construction	Architect	✓	-
0.7.9		Plantings. In addition to the landscape	To help integrate the new	Project Site / During	Contractor	1	

EIA Ref.	EM&A Ref		Objectives of the Recommended Measure & Main Concerns to	Location/Duration of Measures/Timing of Completion of	Implementation Agent	Implementation Stage			Legislation	
			address	Measures		Des	C () Dec	Guidennes	
		mitigation plantings proposed in Section 10.5.9 of the EIA report, appropriate new plantings will be installed as appropriate to help integrate the new structures into the surrounding landscape.	structures into the surrounding landscape	post-construction						
10.7.9	-	<i>Colour of Site Hoardings.</i> In order to mitigate the visual impact of these temporary hoardings, it is recommended that the hoardings be erected at a uniform height, with a uniform colour that complements the existing surrounding landscape.	To mitigate the visual impact of temporary hoardings	Project Site / During construction	Contractor		✓		-	
	9.2	EM&A Requirements								
		A specialist Landscape Sub-Contractor should be employed for the implementation of landscape construction works and subsequent maintenance operations during a 12-month establishment period. To check the implementation and maintenance of landscape mitigation measures and ensure that they are fully	Project Site / During construction and post-construction phase	Specialist Landscape Sub-contractor,R egistered Landscape		✓		-		
		A Registered Landscape Architect should be employed to supervise the specialist Landscape Sub-contractor for the implementation of landscape works, both hard and soft, involved.	realised and that potential Architect and ET conflicts between the proposed landscape measures and any other project works and operational requirements	:						
		Measures undertaken by both the Contractor(s) and the specialist Landscape Sub-Contractor during the construction phase and first year post-construction will be audited by the Registered Landscape Architect of the ET.	are resolved at the earliest practical date and without compromise to the							
		Site inspections should be undertaken at								

EIA Ref.			Recommended Measure Measures/Timing of	Implementation Agent	Imp	lemer Stag	Legislation		
			& Main Concerns to address	Completion of Measures		Des	C () Dec	Guidelines
		least once every two weeks throughout the landscaping plants establishment period when planting works are being undertaken.							
		A tree survey should be prepared, for DLO submission, and for the purpose of existing trees protection. Removal of existing trees to be minimized. The Contractor should consider to employ a certified arborist when sizable and valuable existing tree(s) protection of transplant is required.							
		Post-construction phase auditing will be restricted to the 12-month establishment works of the landscaping proposals.							
		Advance planting- monitoring of implementation and maintenance of planting, and against potential incursion, physical damage, fire, pollution, surface erosion, etc.							
		Protection of trees to be retained-identification and demarcation of trees / vegetation to be retained, erection of physical protection (e.g. fencing), monitoring against potential incursion, physical damage, fire, pollution, surface erosion, etc.							
		Clearance of existing vegetation-identification and demarcation of trees / vegetation to be cleared, checking of							

EIA Ref.	EM&A Ref		Recommended Measure Measures/Timing of	Implementation Agent	Imp	emen Stage	Legislation		
			& Main Concerns to address	Completion of Measures		Des	C C	Dec	Guidelines
		extent of works to reduce damage, monitoring of adjacent areas against potential incursion, physical damage, fire, pollution, surface erosion, etc.							
		Transplanting of trees-identification and demarcation of trees / vegetation to be transplanted, monitoring of extent of pruning / lifting works to reduce damage, timing of operations, implementation of the stages of preparatory and translocation works, and maintenance of transplanted vegetation, etc.							
		Plant supply-monitoring of operations relating to the supply of specialist plant material (including the collecting, germination and growth of plants from seed) to ensure that plants will be available in time to be used within the construction works.							
		Soiling, planting, etc-monitoring of implementation and maintenance of soiling and planting works and against potential incursion, physical damage, fire, pollution, surface erosion, etc.							
		Architectural design and treatment of all structures (where practicable), retaining walls, elevated road structures and other engineering works-implementation and maintenance of mitigation measures, to ensure conformity with agreed designs. Erection of Site Hoardings/Fences-							



EIA Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measure & Main Concerns to address	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent	ImplementationStageDesCODec	Legislation
		Erection of site hoardings/fences during the construction phase to reduce visual impacts.					
		Establishment Works- monitoring of implementation of maintenance operations during Establishment Period.					

Remark: Des – Design; C – Construction; O – Operation; Dec – Decommissioning