Civil Engineering and Development Department

Agreement No. CE 59/2015 (EP)
Environmental Team for
Tseung Kwan O – Lam Tin Tunnel
Design and Construction

Monthly Environmental Monitoring and Audit Report for January 2017

(version 1.0)

Approved By

(Dr. Priscilla Choy,
Environmental Team Leader)

REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

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EXECUTIVE SUMMARY

Introduction

1. This is the 3rd Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for the "Agreement No. CE 59/2015 (EP) Environmental Team for Tseung Kwan O – Lam Tin Tunnel – Design and Construction" (hereinafter called "the Project"). This report documents the findings of EM&A Works conducted in January 2017.

2. During the reporting month, the following works contracts were undertaken:

- Contract No. NE/2015/01 – Tseung Kwan O – Lam Tin Tunnel – Main Tunnel and Associated Works; and
- Contract No. NE/2015/02 – Tseung Kwan O – Lam Tin Tunnel – Road P2 and Associated Works.

Environmental Monitoring Works

3. Environmental monitoring for the Project was performed in accordance with the EM&A Manual and the monitoring results were checked and reviewed. Site Inspections/Audits were conducted once per week. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.

4. Summary of the non-compliance in the reporting month for the Project is tabulated in Table I.

Table I Non-compliance Record for the Project in the Reporting Month

Environmental Monitoring	No. of Exceedance		No. of Exceedance due to Construction Activities of this Project		Action Taken
	Action Level	Limit Level	Action Level	Limit Level	
Air Quality	0	0	0	0	N/A
Noise	11	1	10	1	Refer to the Appendix O
Groundwater Quality	1	6	0	0	N/A (Refer to Part 8, Executive Summary)
Marine Water Quality	0	0	0	0	N/A
Groundwater Level Monitoring (Piezometer Monitoring)	N/A	N/A	N/A	N/A	N/A
Ecological	N/A	N/A	N/A	N/A	N/A
Cultural Heritage	N/A	N/A	N/A	N/A	N/A
Landfill Gas	0	0	0	0	N/A

Air Quality Monitoring

5. All 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

6. All 24-hour TSP monitoring was conducted as scheduled in the reporting month, except at Station AM4(A) – Cha Kwo Ling Public Cargo Working Area Administrative Office on 17 January 2017 was cancelled due to power supply failure. The monitoring was re-scheduled to 20 January 2017. No Action/Limit Level exceedance was recorded.

Construction Noise Monitoring

7. All noise monitoring was conducted as scheduled in the reporting month. Eleven Action Level exceedance was recorded due to the documented complaints received from monitoring station in the reporting month. One Limit Level exceedance was recorded on 23 January 2017 at CM3 - Block S, Yau Lai Estate Phase 5, Yau Tong. The investigation results for limit level exceedance is shown in **Appendix K**.

8. Two Action Level exceedance was recorded for the reporting period of December 2016 due to documented complaints from monitoring station received in this reporting period.

Water Quality Monitoring

9. Groundwater monitoring was conducted as scheduled in the reporting month. One Action Level Exceedance and Six Limit Level exceedance were recorded. The exceedances are considered to be non-Project related.

10. All marine water monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

11. Construction phase daily piezometer monitoring was not carried out in this reporting period as there is no tunnel construction activities are carried out within +/- 50m of the piezometer gate in plan.

Ecological Monitoring

12. Post-translocation coral monitoring survey shall be conducted once every 3 months for a period of 12 months after completion of coral translocation. The survey is scheduled in February 2017 tentatively.

Monitoring on Cultural Heritage

13. Monitoring of vibration impacts at Cha Kwo Ling Tin Hau Temple has not commenced in the reporting period as there is no construction works less than 100m from the temple.

Landscape and Visual Monitoring and Audit

14. The implementation of landscape and visual mitigation measures was checked during the environmental site inspections. Recommended follow-up actions have been discharged by the Contractor. Details of the audit findings and implementation status are presented in Section 10.

Landfill Gas Monitoring

15. Monitoring of landfill gases commenced in the reporting month and were carried out by the Contractor at excavation location, Portion III. No Limit Level exceedance was recorded.

Environmental Site Inspection

16. Joint weekly site inspections were conducted by representatives of the Contractor, Engineer and Environmental Team. The representative of the IEC joined the site inspection on 18 and 26 January 2017. Details of the audit findings and implementation status are presented in Section 10.

Waste Management

17. Wastes generated from this Project include inert construction and demolition (C&D) materials, non-inert C&D materials and marine sediments. Details of waste management data is presented in Section 11 and **Appendix P**.

Key Information in the Reporting Month

18. Summary of key information in the reporting month is tabulated in Table II.

Table II Summary Table for Key Information in the Reporting Month

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint received / Complaint referred by EPD	10	Air quality and construction noise nuisance due to works near Lam Tin Interchange	Investigation completed and presented in Appendix O	Closed	except for complaint on 27 January 2017
Complaint referred by EPD	2	Night-time noise and light nuisance due to works near Ocean Shores			---
Complaint in December 2016 referred by EPD	2	Construction dust and noise nuisance near Yau Lai Estate in December 2016	Under Investigation	On-going	---
	1	Soil / muddy water near Cha Kwo Ling Tsuen in December 2016			
Reporting Changes	1	Variation of environmental permit (VEP) was applied and the latest Environmental Permit (EP No.: EP-458/2013/C) was issued by the DEP on 20 January 2017.	N/A	N/A	---
Notifications of any summons & prosecutions received	0	---	N/A	N/A	---

Future Key Issues

19. The future key environmental issues in the coming month include:

- Watering for dust generation from haul road, stockpiles of dusty materials, exposed site area, excavation works and rock breaking activities;
- Noisy construction activity such as rock-breaking activities and piling works;
- Runoff from exposed slope or site area;
- Wastewater and runoff discharge from site;
- Accumulation of silt, mud and sand along U-channels and sedimentation tanks;
- Set up and implementation of temporary drainage system for the surface runoff;
- Storage of chemicals/fuel and chemical waste/waste oil on site;
- Accumulation and storage of general and construction waste on site; and
- Marine water quality impact and indirect impact to coral communities due to marine construction for TKO-LTT reclamation.

1. INTRODUCTION

1.1 Cinotech Consultants Limited (Cinotech) was commissioned by Civil Engineering and Development Department (CEDD) as the Environmental Team (ET) to undertake environmental monitoring and auditing services for the Works Contracts involved in the implementation of Tseung Kwan O – Lam Tin Tunnel (TKO-LTT) project to ensure that the environmental performance of the Works Contracts comply with the requirements specified in the Environmental Permit (EP), Environmental Monitoring & Audit (EM&A) Manual, Environmental Impact Assessment (EIA) Report of the TKO-LTT project and other relevant statutory requirements. This is the 3rd Monthly EM&A report summarizing the EM&A works for the Project in January 2017.

Purpose of the Report

1.2 This is the 3rd Monthly EM&A Report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period in January 2017. The commencement date of construction of this Project is 7 November 2016.

Structure of the Report

1.3 The structure of the report is as follows:

Section 1: **Introduction** – purpose and structure of the report.

Section 2: **Contract Information** – summarises background and scope of the Contract, site description, project organization and contact details, construction programme, the construction works undertaken and the status of Environmental Permits/Licenses during the reporting month.

Section 3: **Air Quality Monitoring** – summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations, Action and Limit Levels, monitoring results and Event / Action Plans.

Section 4: **Noise Monitoring** – summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations, Action and Limit Levels, monitoring results and Event / Action Plans.

Section 5: **Water Quality Monitoring** – summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations, Action and Limit Levels, monitoring results and Event / Action Plans.

Section 6: **Ecological Monitoring** – summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations and Action and Limit Levels, monitoring results and Event / Action Plans.

Section 7: **Monitoring on Cultural Heritage** –summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations and monitoring results.

Section 8: **Landscape and Visual Monitoring Requirements** – summarises the requirements of landscape and visual monitoring

Section 9: **Landfill Gas Monitoring** – summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations, monitoring results and Limit Levels and Action Plan

Section 10: **Environmental Site Inspection** – summarises the audit findings of the weekly site inspections undertaken within the reporting month.

Section 11: **Waste Management** – summarises the waste management data in the reporting month.

Section 12: **Environmental Non-conformance** – summarises any monitoring exceedance, environmental complaints, environmental summons and successful prosecutions within the reporting month.

Section 13: **Future Key Issues** – summarises the impact forecast and monitoring schedule for the next three months.

Section 14: **Conclusions and Recommendation**

2. PROJECT INFORMATION

Background

2.1 In 2002, Civil Engineering and Development Department (CEDD) commissioned an integrated planning and engineering study under Agreement No. CE 87/2001 (CE) "Further Development of Tseung Kwan O – Feasibility Study" (the "TKO Study") to formulate a comprehensive plan for further development of TKO New Town. It recommended to further develop TKO to house a total population of 450,000 besides the district's continuous commercial and industrial developments.

2.2 At present, the Tseung Kwan O Tunnel is the main connection between Tseung Kwan O (TKO) and other areas in the territory. To cope with the anticipated transport need, the TKO Study recommended the provision of Tseung Kwan O – Lam Tin Tunnel (TKO-LTT) (hereinafter referred to as "the Project") and Cross Bay Link (CBL) to meet the long-term traffic demand between TKO and the external areas. The site layout plan for the Project is shown in **Figure 1**.

2.3 The Environmental Impact Assessment (EIA) Report for the TKO-LTT project was approved under the Environmental Impact Assessment Ordinance (EIAO) in July 2013. The corresponding Environmental Permit (EP) was issued in August 2013 (EP no.: EP-458/2013). Variations to the EP was applied and the latest EP (EP no.: EP-458/2013/C) was issued by the Director of Environmental Protection (DEP) in January 2017.

Project Organizations

2.4 Different parties with different levels of involvement in the project organization include:
- Project Proponent – Civil Engineering and Development Department (CEDD)
- The Engineer and the Engineer's Representative (ER) – AECOM
- Environmental Team (ET) – Cinotech Consultants Limited (Cinotech)
- Independent Environmental Checker (IEC) – AnewR Consulting Limited (AnewR)

2.5 The key contacts of the Project are shown in **Table 2.1**.

Table 2.1 Key Project Contacts

Party	Role	Contact Person	Phone No.	Fax No.
CEDD	Project Proponent	Mr. Chiang Nin Tat, Eric	2301 1384	2739 0076
AECOM	Engineer's Representative	Mr. KY Chan	3922 9000	2759 1698
Cinotech	Environmental Team	Dr. Priscilla Choy	2151 2089	3107 1388
		Ms. Ivy Tam	2151 2090	
AnewR	Independent Environmental Checker	Mr. Adi Lee	2618 2836	3007 8648

Construction Activities undertaken during the Reporting Month

2.6 The major site activities undertaken in the reporting month included:

Table 2.2 Summary Table for Major Site Activities in the Reporting Month

Contract No.	Project Title	Site Activities (January 2017)	
NE/2015/01	Tseung Kwan O – Lam Tin Tunnel – Main Tunnel and Associated Works	Lam Tin Interchange	1) Excavation for Tunnel Adit 2) Haul Road Construction 3) Slope Feature no. 11NE-D/C119 (along Lei Yue Mun Road) 4) EHC2 U-Trough 5) Site Formation – Area 1G1 6) Site Formation – Area 2 7) Temp Steel Bridge across CKL Road
		TKO Interchange	1) Haul Road Construction 2) Temporary Barging Facilities 3) BMCPC Bridge Temporary Diversion
NE/2015/02	Tseung Kwan O – Lam Tin Tunnel – Road P2 and Associated Works	1) Installation of Marine Cofferdam; 2) CPTs and Marine Drill holes 3) Installation of Water Gate 4) Construction of Retaining Wall 5) Piling Works 6) Temporary Road for Tong Yin Street 7) Transformer room construction works 8) Installation of 2100mm dia pipe at Portion IV 9) Construction of U-trough 10) Site Establishment 11) Pre-stage Temporary Road construction works at Tong Yin Street. 12) Tree Transplantation Works	

2.7 The construction programme showing the inter-relationship with environmental protection/mitigation measures are presented in **Table 2.3**.

Table 2.3 Construction Programme Showing the Inter-Relationship with Environmental Protection/Mitigation Measures

Construction Works	Major Environmental Impact	Control Measures
As mentioned in **Table 2.2**	Noise, dust impact, water quality and waste generation	• Sufficient watering of the works site with active dust emitting activities • Properly cover the stockpiles • On-site waste sorting and implementation of trip ticket system • Appropriate desilting/sedimentation devices provided on site for treatment before discharge • Use of quiet plant and well-maintained construction plant • Provide movable noise barrier

Status of Environmental Licences, Notification and Permits

2.8 A summary of the relevant permits, licences, and/or notifications on environmental protection for this Project is presented in **Table 2.4**.

Table 2.4 Summary of the Status of Environmental Licences, Notification and Permits

Contract No.	Permit / License No.	Valid Period		Status
		From	To	
Environmental Permit (EP)				
N/A	EP-458/2013/B	31/12/2015	19/1/2017	Superseded by EP-458/2013/C
N/A	EP-458/2013/C	20/1/2017	N/A	Valid
Notification pursuant to Air Pollution Control (Construction Dust) Regulation				
NE/2015/01	EPD Ref no.: 405305	21/07/2016	N/A	Valid
	EPD Ref no.: 405582	28/07/2016	N/A	Valid
NE/2015/02	EPD Ref no.: 406100	12/08/2016	N/A	Valid
Billing Account for Construction Waste Disposal				
NE/2015/01	Account No. 7025431	11/07/2016	N/A	Valid
NE/2015/02	Account No. 7025654	16/08/2016	N/A	Valid
Registration of Chemical Waste Producer				
NE/2015/01	Waste Producer No. 5218-290-L2881-02	22/08/2016	N/A	Valid
	Waste Producer No. 5213-833-L2532-03	22/08/2016	N/A	Valid
NE/2015/02	Waste Producer No. 5213-838-C4094-01	19/08/2016	N/A	Valid
Effluent Discharge License under Water Pollution Control Ordinance				
NE/2015/01	WT00025806-2016	22/11/2016	30/11/2021	Valid
	WT00026212-2016	25/11/2016	30/11/2021	Valid
NE/2015/02	WT00026386-2016	15/12/2016	31/12/2021	Valid
Construction Noise Permit (CNP)				
NE/2015/01	GW-RE0976-16	08/10/2016	20/03/2017	Valid
	GW-RE1183-16	16/12/2016	15/06/2017	Valid
	GW-RE1211-16	24/12/2016	22/06/2017	Valid
	GW-RE1216-16	23/12/2016	22/06/2017	Superseded by CNP No. GW-RE0047-17 on 27 Jan 2017
	GW-RE0010-17	13/01/2017	11/02/2017	Valid
	GW-RE0047-17	27/01/2017	26/03/2017	Valid

Contract No.	Permit / License No.	Valid Period		Status
		From	To	
NE/2015/02	GW-RE1141-16	06/12/2016	17/05/2017	Valid
	GW-RE1208-16	23/12/2016	22/06/2017	Valid
	GW-RE0049-17	01/02/2017	31/07/2017	Valid
Marine Dumping Permit				
NE/2015/02	EP/MD/17-118	1/12/2016	31/05/2017	Valid

Summary of EM&A Requirements

2.9 The EM&A programme requires construction noise monitoring, air quality monitoring, water quality monitoring, environmental site audit, etc. The EM&A requirements for each parameter are described in the following sections, including:

- All monitoring parameters;
- Action and Limit levels for all environmental parameters;
- Event Action Plans;
- Environmental mitigation measures, as recommended in the Project EIA Report.

2.10 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 10 of this report.

2.11 This report presents the monitoring results, observations, locations, equipment, period, methodology and QA/QC procedures of the required monitoring parameters, namely air quality and noise levels and audit works for the Project in January 2017.

3. AIR QUALITY

Monitoring Requirements

3.1 According to EM&A Manual of the Project, 1-hour and 24-hour TSP monitoring are required to monitor the air quality. For regular impact monitoring, a sampling frequency of at least once in every six days shall be undertaken at all of the monitoring stations for 24-hour TSP monitoring. For 1-hour TSP monitoring, the sampling frequency of at least three times in every six days shall be undertaken when the highest dust impact occurs. **Appendix A** shows the established Action/Limit Levels for the environmental monitoring works.

Monitoring Locations

3.2 Six designated monitoring stations were selected for air quality monitoring programme. **Table 3.1** describes the air quality monitoring locations, which are also depicted in **Figure 2**.

Table 3.1 Locations for Air Quality Monitoring

Monitoring Stations	Location	Location of Measurement
AM1	Tin Hau Temple	Ground Level
AM2	Sai Tso Wan Recreation Ground	Ground Level
AM3	Yau Lai Estate Bik Lai House	Rooftop (41/F)
AM4(1)	Sitting-out Area at Cha Kwo Ling Village	Ground Level
AM4(A)(2) (*)	Cha Kwo Ling Public Cargo Working Area Administrative Office	Rooftop (3/F)
AM5(A)(*)	Tseung Kwan O DSD Desilting Compound	Ground Level
AM6(A) (*)	Park Central, L1/F Open Space Area	1/F

Remarks: (1) For 1-hour TSP monitoring; (2) For 24-hour TSP monitoring
(*) Air quality monitoring at designated station AM4(24-hr TSP), AM5 and AM6 was rejected by the premise owners. Therefore, baseline and impact air quality monitoring works were carried out at alternative air quality monitoring stations AM4(A) (24-hr TSP only), AM5(A) and AM6(A) respectively.

Monitoring Equipment

3.3 High Volume Samplers (HVS) were used to carry out 24-hour TSP monitoring. Direct reading dust meter were also used to measure 1-hour average TSP levels. The 1-hour sampling was determined periodically by HVS to check the validity and accuracy of the results measured by direct reading method.

3.4 Wind data monitoring equipment was set at rooftop (about 41/F) of Yau Lai Estate Bik Lai House for logging wind speed and wind direction such that the wind sensors are clear of obstructions or turbulence caused by building. The wind data monitoring equipment is re-calibrated at least once every six months and the wind directions are divided into 16 sectors of 22.5 degrees each. The location is shown in **Figure 2**.

3.5 **Table 3.2** summarizes the equipment to be used in the baseline air quality monitoring. Copies of calibration certificates are attached in **Appendix B**.

Table 3.2 Air Quality Monitoring Equipment

Equipment	Model and Make	Quantity
Calibrator	TISCH Model: TE-5025A	1
1-hour TSP Dust Meter	Sibata Model No.: LD-3 / LD-3B	3
	Met One Instruments Model No.: AEROCET-531	1
	Handheld Particle Counter Hal-HPC300	4
HVS Sampler	TISCH Model: TE-5170	1
	GMW Model: GS2310	5
Wind Anemometer	Davis Weather Monitor II, Model no. 7440	1

Monitoring Parameters and Frequency

3.6 **Table 3.3** summarizes the monitoring parameters, monitoring period and frequencies of baseline air quality monitoring.

Table 3.3 Frequency and Parameters of Air Quality Monitoring

Monitoring Stations	Parameter	Period	Frequency
AM1, AM2, AM3, AM4, AM5(A) and AM6(A)	1-hour TSP	0700 – 1900 hrs	3 times per day
AM1, AM2, AM3, AM4(A), AM5(A) and AM6(A)	24-hour TSP	24 hours	Daily

Monitoring Methodology

1-hour TSP Monitoring

Measuring Procedures

3.7 The measuring procedures of the 1-hour dust meter are in accordance with the Manufacturer's Instruction Manual as follows:

(Model LD3 / LD3B)

- The 1-hour dust meter is placed at least 1.3 meters above ground.
- Set POWER to "ON" and make sure that the battery level was not flash or in low level.
- Allow the instrument to stand for about 3 minutes and then the cap of the air sampling inlet has been released.
- Push the knob at MEASURE position.
- Set time/mode setting to [BG] by pushing the time setting switch. Then, start the background measurement by pushing the start/stop switch once. It will take 6 sec. to complete the background measurement.
- Push the time setting switch to change the time setting display to [MANUAL] at the bottom left of the liquid crystal display. Finally, push the start/stop switch to stop the measuring after 1 hour sampling.
- Information such as sampling date, time, count value and site condition were recorded during the monitoring period.

(AEROCET-531)

- The 1-hour dust meter is placed at least 1.3 meters above ground.

- Remove the red rubber cap from the AEROCET-531 inlet nozzle.
- Turn on the power switch that is located on the right side of the AEROCET-531.
- On power up the product intro screen is displayed for 3 seconds. The intro screen displays the product name and firmware version.
- Then the main counter screen will be displayed.
- Press the START button. Internal vacuum pump start running. After 1 minute the pump will stop and the 0.5μm and 5μm channels will show the cumulative counts of particles larger than 0.5μm and 5μm per cubic foot.
- The AEROCET-531 is now checked out and ready for use.
- To switch off the AEROCET-531 power to stop the measuring after 1 hour sampling.
- Information such as sampling date, time, and display value and site condition were recorded during the monitoring period.

(Equipment: Hal Technology; Model no. Hal-HPC300)

- The 1-hour dust meter is placed at least 1.3 meters above ground.
- Set POWER to "ON" and make sure that the battery level was not flash or in low level.
- Allow the instrument to stand for about 3 minutes and then the cap of the air sampling inlet has been released.
- Push the knob at MEASURE position.
- Set time/mode setting to [BG] by pushing the time setting switch. Then, start the background measurement by pushing the start/stop switch once. It will take 6 sec. to complete the background measurement.
- Push the time setting switch to change the time setting display to [MANUAL] at the bottom left of the liquid crystal display. Finally, push the start/stop switch to stop the measuring after 1 hour sampling.
- Information such as sampling date, time, count value and site condition were recorded during the monitoring period.

Maintenance/Calibration

3.8 The following maintenance/calibration is required for the direct dust meters:

- Check and calibrate the meter by HVS to check the validity and accuracy of the results measured by direct reading method at 2-month intervals throughout all stages of the air quality monitoring.

24-hour TSP Monitoring

Instrumentation

3.9 High volume samplers (HVS) (TISCH Model: TE-5170) complete with appropriate sampling inlets were employed for 24-hour TSP monitoring. The sampler is composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complied with that required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50).

3.10 The positioning of the HVS samplers are as follows:

- a horizontal platform with appropriate support to secure the samplers against gusty wind shall be provided;
- no two samplers shall be placed less than 2 meter apart
- the distance between the sampler and an obstacle, such as buildings, must be at least twice the height that the obstacle protrudes above the sampler;

- a minimum of 2 metres of separation from walls, parapets and penthouses is required for rooftop samplers;
- a minimum of 2 metres of separation from any supporting structure, measured horizontally is required;
- no furnace or incinerator flue is nearby;
- airflow around the sampler is unrestricted;
- the sampler is more than 20 metres from the dripline;
- any wire fence and gate, to protect the sampler, shall not cause any obstruction during monitoring;
- permission must be obtained to set up the samplers and to obtain access to the monitoring stations; and
- a secured supply of electricity is needed to operate the samplers.

Operating/analytical procedures for the operation of HVS

3.11 Prior to the commencement of the dust sampling, the flow rate of the high volume sampler was properly set (between 1.1 m^3/min. and 1.4 m^3/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.

3.12 For TSP sampling, fiberglass filters with a collection efficiency of > 99% for particles of 0.3μm diameter were used.

3.13 The power supply was checked to ensure the sampler worked properly. On sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the designated air monitoring station.

3.14 The filter holding frame was then removed by loosening the four nuts and a weighted and conditioned filter was carefully centered with the stamped number upwards, on a supporting screen.

3.15 The filter was aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.

3.16 The shelter lid was closed and secured with the aluminum strip.

3.17 The timer was then programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).

3.18 After sampling, the filter was removed and sent to the HOKLAS laboratory (Wellab Ltd.) for weighing. The elapsed time will be also recorded.

3.19 Before weighing, all filters was equilibrated in a conditioning environment for 24 hours. The conditioning environment temperature should be between 25°C and 30°C and not vary by more than ±3°C; the relative humidity (RH) should be < 50% and not vary by more than ±5%. A convenient working RH is 40%.

Maintenance/Calibration

3.20 The following maintenance/calibration is required for the HVS:

- The high volume motors and their accessories will be properly maintained. Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking will be made to ensure that the equipment and necessary power supply are in good working condition.
- High volume samplers will be calibrated at bi-monthly intervals using TE-5025A Calibration Kit throughout all stages of the air quality monitoring.

Results and Observations

3.21 All 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

3.22 All 24-hour TSP monitoring was conducted as scheduled in the reporting month, except at Station AM4(A) – Cha Kwo Ling Public Cargo Working Area Administrative Office on 17 January 2017 was cancelled due to power supply failure. The monitoring was re-scheduled to 20 January 2017. No Action/Limit Level exceedance was recorded.

3.23 The air temperature, precipitation and the relative humidity data was obtained from Hong Kong Observatory where the wind speed and wind direction were recorded by the installed Wind Anemometer at rooftop of Yau Lai Estate Bik Lai House (41/F). The location is shown in **Figure 2**. This weather information for the reporting month is summarized in **Appendix C**.

3.24 The monitoring data and graphical presentations of 1-hour and 24-hour TSP monitoring results are shown in **Appendices E** and **Appendix F** respectively.

3.25 The summary of exceedance record in reporting month is shown in **Appendix K**. No exceedance was recorded for the air quality monitoring.

3.26 According to our field observations, the major dust source identified at the designated air quality monitoring stations are as follows:

Table 3.4 Major Dust Source during Air Quality Monitoring

Station	Major Dust Source
AM1 – Tin Hau Temple	Road Traffic at Cha Kwo Ling Road
AM2 – Sai Tso Wan Recreation Ground	N/A
AM3 – Yau Lai Estate Bik Lai House	Road Traffic near Eastern Cross Harbour Tunnel Toll Plaza
AM4 - Sitting-out Area at Cha Kwo Ling Village	Road Traffic at Cha Kwo Ling Road
AM4(A) - Cha Kwo Ling Public Cargo Working Area Administrative Office	Road Traffic at Cha Kwo Ling Road
AM5(A) - Tseung Kwan O DSD Desilting Compound	Vehicle Movement within the Desilting Compound
AM6(A) - Park Central, L1/F Open Space Area	Road Traffic at Po Yap Road

4. NOISE

Monitoring Requirements

4.1 According to EM&A Manual of the Project, construction noise monitoring was conducted to monitor the construction noise arising from the construction activities. The regular monitoring frequency for each monitoring station shall be on a weekly basis and conduct one set of measurements between 0700 and 1900 hours on normal weekdays. **Appendix A** shows the established Action and Limit Levels for the environmental monitoring works.

Monitoring Locations

4.2 Noise monitoring was conducted at 8 designated monitoring stations (CM1, CM2, CM3, CM4, CM5, CM6(A), CM7(A), CM8(A)) in the reporting period. **Table 4.1** and **Figure 3** show the locations of these stations.

Table 4.1 Noise Monitoring Stations

Monitoring Stations	Locations	Location of Measurement
CM1	Nga Lai House, Yau Lai Estate Phase 1, Yau Tong	Rooftop (41/F)
CM2	Bik Lai House, Yau Lai Estate Phase 1, Yau Tong	Rooftop (41/F)
CM3	Block S, Yau Lai Estate Phase 5, Yau Tong	Rooftop (40/F)
CM4	Tin Hau Temple, Cha Kwo Ling	Ground Level
CM5	CCC Kei Faat Primary School, Yau Tong	Rooftop (6/F)
CM6(A)*	Site Boundary of Contract No. NE/2015/02 near Tower 1, Ocean Shores	Ground Level
CM7(A)*	Site Boundary of Contract No. NE/2015/02 near Tower 7, Ocean Shores	Ground Level
CM8(A)*	Park Central, L1/F Open Space Area	1/F

Remarks: * Noise monitoring at designated station CM6, CM7 & CM8 was rejected by the premise owners. Therefore, baseline and impact noise monitoring works were carried out at alternative noise monitoring stations CM6(A), CM7(A) and CM8(A) respectively.

Monitoring Equipments

4.3 Integrating Sound Level Meter was used for impact noise monitoring. The meters are Type 1 sound level meter capable of giving a continuous readout of the noise level readings including equivalent continuous sound pressure level (L_{eq}) and percentile sound pressure level (L_x) that also complied with International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1) specifications. **Table 4.2** summarizes the noise monitoring equipment being used. Copies of calibration certificates are attached in **Appendix B**.

Table 4.2 Noise Monitoring Equipment

Equipment	Model and Make	Quantity
Integrating Sound Level Meter	SVAN 955 / 957	6
Calibrator	SV30A	3
	Brüel & Kjær 4231	2

4.4 **Table 4.3** summarizes the monitoring parameters, frequency and total duration of monitoring. The noise monitoring schedule is shown in **Appendix D**.

Table 4.3 Frequency and Parameters of Noise Monitoring

Monitoring Stations	Parameter	Period	Frequency	Measurement
M1	L_{10}(30 min) dB(A) L_{90}(30 min) dB(A) L_{eq}(30 min) dB(A)	0700-1900 hrs on normal weekdays	Once per week	Façade
M2				Façade
M3				Façade
M4				Façade
M5				Façade
M6(A)				Free Field
M7(A)				Free Field
M8(A)				Façade

Monitoring Methodology and QA/QC Procedure

4.5 The monitoring procedures are as follows:

- The monitoring station was normally be at a point 1m from the exterior of the sensitive receivers building façade and be at a position 1.2m above the ground.
- For free field measurement, the meter was positioned away from any nearby reflective surfaces. All records for free field noise levels was adjusted with a correction of +3 dB(A).
- The battery condition was checked to ensure the correct functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time was set as follows:
  - frequency weighting : A
  - time weighting : Fast
  - measurement time : 30 minutes
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement will be more than 1.0 dB, the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.
- At the end of the monitoring period, the L_{eq}, L_{90} and L_{10} was recorded. In addition, noise sources was recorded on a standard record sheet.
- Noise monitoring will be cancelled in the presence of fog, rain, and wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s. Supplementary monitoring was provided to ensure sufficient data would be obtained.

Maintenance and Calibration

4.6 The microphone head of the sound level meter and calibrator was cleaned with a soft cloth at quarterly intervals.

4.7 The sound level meter and calibrator was checked and calibrated at yearly intervals.

4.8 Immediately prior to and following each noise measurement the accuracy of the sound level meter was 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.

Results and Observations

4.9 All noise monitoring was conducted as scheduled in the reporting month. Eleven Action Level exceedance was recorded due to the documented complaints received from monitoring station in the reporting month. One Limit Level exceedance was recorded on 23 January 2017 at CM3 - Block S, Yau Lai Estate Phase 5, Yau Tong. The investigation results for limit level exceedance is shown in **Appendix K**.

4.10 Two Action Level exceedance was recorded for the reporting period of December 2016 due to documented complaints from monitoring station received in this reporting period.

4.11 Noise monitoring results and graphical presentations are shown in **Appendix G**.

4.12 The summary of exceedance record in the reporting month is shown in **Appendix K**.

4.13 The major noise source identified at the designated noise monitoring stations are shown in **Table 4.4**.

Table 4.4 Major Noise Source during Noise Monitoring

Monitoring Stations	Locations	Major Noise Source
CM1	Nga Lai House, Yau Lai Estate Phase 1, Yau Tong	Road Traffic near Eastern Cross Harbour Tunnel Toll Plaza
CM2	Bik Lai House, Yau Lai Estate Phase 1, Yau Tong	Road Traffic near Eastern Cross Harbour Tunnel Toll Plaza
CM3	Block S, Yau Lai Estate Phase 5, Yau Tong	Road Traffic near Eastern Cross Harbour Tunnel Toll Plaza
CM4	Tin Hau Temple, Cha Kwo Ling	Road Traffic at Cha Kwo Ling Road
CM5	CCC Kei Faat Primary School, Yau Tong	Road Traffic at Yau Tong Road
CM6(A)	Site Boundary of Contract No. NE/2015/02 near Tower 1, Ocean Shores	Road Traffic at O King Road near Ocean Shores
CM7(A)	Site Boundary of Contract No. NE/2015/02 near Tower 7, Ocean Shores	Road Traffic at Tong Yin Street
CM8(A)	Park Central, L1/F Open Space Area	Road Traffic at Po Yap Road

4.14 All the Construction Noise Levels (CNLs) reported in this report were adjusted with the corresponding baseline level (i.e. Measured L_{eq} – Baseline L_{eq} = CNL), in order to facilitate the interpretation of the noise exceedance. The baseline noise level and the Noise Limit Level at each designated noise monitoring station are presented in **Table 4.5**.

Table 4.5 Baseline Noise Level and Noise Limit Level for Monitoring Stations

Station	Baseline Noise Level, dB (A) (at 0700 – 1900 hrs on normal weekdays)	Noise Limit Level, dB (A) (at 0700 – 1900 hrs on normal weekdays)
CM1	65.5	75
CM2	63.6	
CM3	65.6	
CM4	62.0	
CM5	68.2	70*
CM6(A)	61.9	75
CM7(A)	58.3	
CM8(A)	69.1	

(*) Noise Limit Level is 65 dB(A) during school examination periods.

5. WATER QUALITY

Monitoring Requirements

Groundwater Quality

5.1 Groundwater quality monitoring shall be conducted as identified in the EIA report (locations refer to Figure 4, Stream 1 to 3). Groundwater quality monitoring was not conducted at the other identified monitoring station in the EIA Report, Stream 4, as it was found to be not accessible due to safety reason. According to the EM&A Manual, dissolved oxygen (DO), pH, temperature, turbidity, suspended solids (SS), 5-day biochemical oxygen demand (BOD_5), Total organic carbon (TOC), Total Nitrogen, Ammonia-N and Total Phosphate are the parameters for the monitoring. **Appendix A** shows the established Action and Limit Levels.

Marine Water Quality

5.2 Marine water quality monitoring was conducted three times per week at the designated monitoring stations. Monitoring took place two times per monitoring day during mid ebb and mid flood tides at three depths (1 meter from surface, mid depth and 1 meter from the bottom). For Tseung Kwan O Salt Water Intake (i.e. Station M6), water sampling and in situ measurements was taken at the vertical level where the water abstraction point of the intake is located (i.e. approximately mid-depth level). If the water depth is less than 6m, the mid-depth measurement may be omitted. If the depth is less than 3m, only the mid-depth measurements need to be taken.

5.3 Duplicate in-situ measurements (Dissolved oxygen (DO) concentration, DO saturation, turbidity, pH, temperature and salinity) and water samples (suspended solids (SS)) at each depth were monitored in accordance with the requirements in the EM&A Manual. For selection of tides for in-situ measurement and water sampling, tidal range of individual flood and ebb tides were not less than 0.5m.

Groundwater Level Monitoring (Piezometer Monitoring)

5.4 Daily piezometer monitoring at any time of the day shall be carried throughout the whole period when any tunnel construction activities are carried out within +/- 50m of the piezometer gate in plan. The monitoring has not commenced in this reporting period.

Monitoring Locations

Groundwater Quality

5.5 Stream 1 – Stream 3 is designated for the groundwater quality monitoring according to EM&A Manual. The locations are also summarized in **Table 5.1** and shown on **Figure 4**.

Table 5.1 Groundwater Quality Monitoring Stations

Monitoring Streams	Descriptions	Sampling Location
Stream 1	Stream running between the Kwong Tin Estate and Lei Yue Mun Road	1 sampling location for each stream
Stream 2	Stream on western coast of Chiu Keng Wan	
Stream 3	Stream on western coast of Chiu Keng Wan	

Marine Water Quality

5.6 A total of twelve monitoring stations are designated for the baseline water quality monitoring program according to EM&A Manual. The locations are also summarized in **Table 5.2** and shown on **Figure 5**.

Table 5.2 Marine Water Quality Monitoring Stations

Monitoring Stations	Descriptions	Coordinates	
		Easting	Northing
M1	Junk Bay Coral Site – Junk Bay near Chiu Keng Wan	844255	817565
M2	Junk Bay Coral Site – Junk Bay	844076	817087
M3	Junk Bay Coral Site – Junk Island	844491	817890
M4	Junk Bay Coral Site –Chiu Keng Wan	843209	816416
M5	Junk Bay Coral Site – Fat Tong Chau	845463	815769
M6	Tseung Kwan O Salt Water Intake	845512	817442
C1	Control Station – Southeast	844696	814773
C2	Control Station – Northwest	842873	816014
G1	Gradient Station	844418	817560
G2	Gradient Station	844290	817384
G3	Gradient Station	844488	817735
G4	Gradient Station	844967	817551

Monitoring Equipments

5.7 For in-situ monitoring, a multi-parameter meter (Aquaread AP-2000-D) was used to measure Dissolved oxygen (DO) concentration, DO saturation (DO %), pH, temperature and turbidity. A sampler was used to collect water samples for laboratory analysis of SS, BOD_5, TOC, Total Nitrogen, Ammonia-N and Total Phosphate.

Dissolved Oxygen (DO) and Temperature Measuring Equipment

5.8 The instrument for measuring dissolved oxygen and temperature was portable and weatherproof complete with cable, sensor, comprehensive operation manuals and use DC power source. It was capable of measuring:

- a dissolved oxygen level in the range of 0-20 mg/L and 0-200% saturation; and
- a temperature of 0-45 degree Celsius.

5.9 It has a membrane electrode with automatic temperature compensation complete with a cable.

5.10 Sufficient stocks of spare electrodes and cables were available for replacement where necessary.

5.11 Salinity compensation was built-in in the DO equipment.

Turbidity

5.12 Turbidity was measured in situ by the nephelometric method. The instrument was portable and weatherproof using a DC power source complete with cable, sensor and comprehensive operation manuals. The equipment was capable of measuring turbidity between 0-1000 NTU. The probe cable was not be less than 25m in length.

pH

5.13 The instrument was consisting of a potentiometer, a glass electrode, a reference electrode and a temperature-compensating device. It was readable to 0.1pH in a range of 0 to 14. Standard buffer solutions of at least pH 7 and pH 10 were used for calibration of the instrument before and after use.

Water Depth Detector

5.14 A portable, battery-operated echo sounder was used for the determination of water depth at each designated monitoring station.

Water Sampler

5.15 Water samples collected for laboratory analysis were stored in high density polythene bottles sample containers, with appropriate preservatives added. All sampling bottles were labeled (waterproof) with the sampling date and time, sample lot number and sampling location reference number to avoid mishandling.

Sample Container and Storage

5.16 Following collection, water samples for laboratory analysis were stored in high density polythene bottles, with preservative appropriately added where necessary. They will be packed in ice (cooled to 4°C without being frozen), delivered to the laboratory and analysed as soon as possible.

Calibration of In Situ Instruments

5.17 All in situ monitoring instruments were checked, calibrated and certified by a laboratory accredited under HOKLAS or other international accreditation scheme before use, and subsequently re-calibrated at 3 monthly intervals throughout all stages of the water quality monitoring.

5.18 For the on-site calibration of field equipment, the BS 1427:1993, "Guide to Field and on-site test methods for the analysis of waters" was observed.

5.19 Before each round of monitoring, a zero check in distilled water was performed with the turbidity probe of Aquaread AP-2000-D. The probe was then be calibrated with a solution of known NTU.

5.20 Sufficient stocks of spare parts were maintained for replacements when necessary. Backup monitoring equipment was also being made available so that monitoring can proceed uninterrupted even when some equipment is under maintenance, calibration, etc.

5.21 **Table 5.3** summarizes the equipment used in the water quality monitoring program. Copies of the calibration certificates of the equipment are shown in **Appendix B**.

Table 5.3 Water Quality Monitoring Equipment

Equipment	Model and Make	Qty.
Water Sampler	Kahlsico Water-Bottle Model 135DW 150	1
Multi-parameter Water Quality System	YSI 6820-C-M	1
	Aquaread AP-2000-D	5
Monitoring Position Equipment	“Magellan” Handheld GPS Model GPS-320	1
Water Depth Detector	Fishfinder 140	1

Monitoring Parameters and Frequency

5.22 **Table 5.4** summarizes the monitoring parameters, monitoring period and frequencies of the water quality monitoring in the reporting period.

Table 5.4 Water Quality Monitoring Parameters and Frequency

Monitoring Stations	Parameters, unit	Depth	Frequency
Groundwater Quality			
Stream 1-Stream 3	• DO, mg/L • DO Saturation, % • pH • Water Temperature (°C) • Turbidity, NTU • SS, mg/L • BOD_5, mg O_2/L • TOC, mg-TOC/L • Total Nitrogen, mg/L • Ammonia-N, mg NH_3-N/L • Total Phosphate, mg-P/L	Mid-depth	Biweekly (When the tunnel construction works are found within 50m of the location, weekly.)
Marine Water Quality			
M1 M2 M3 M4 M5 M6 C1 C2 G1 G2 G3 G4	*In-situ*: Dissolved oxygen (DO) concentration, DO saturation, turbidity, pH, temperature and salinity Laboratory Testing: Suspended Solids (SS)	M1-M5, C1-C2, G1-G4 • 3 water depths: 1m below water surface, mid-depth and 1m above sea bed. • If the water depth is less than 3m, mid-depth sampling only. • If the water depth is less than 6m, omit mid-depth sampling. M6 • at the vertical level where the water abstraction point of the intake is located(i.e. approximately mid-depth level)	3 days per week / 2 per monitoring day (1 for mid-ebb and 1 for mid-flood)

Monitoring Methodology

Groundwater Quality

5.23 At each monitoring location, two consecutive in-situ measurements for DO concentration, DO saturation, pH, temperature and turbidity were taken for water samples on site. The probes were 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 was more than 25% of the value of the first reading, the reading was discarded and further readings were taken.

5.24 For SS, BOD_5, TOC, Total Nitrogen, Ammonia-N and Total Phosphate, measurement and grab samples of surface water was collected. Water samples of about adequate volume was collected and stored in high density polythene bottles. Following collection, water samples

was stored in high density polythene bottles. Preservation H_2SO_4 was appropriately added for water samples for TOC, Total Nitrogen, Ammonia-N and Total Phosphate testing. Water samples was packed in ice and cooled to 4°C (without being frozen), delivered to the HOKLAS accredited laboratory, Wellab Limited and analyzed.

Marine Water Quality

5.25 The monitoring stations were accessed using survey boat by the guide of a hand-held Global Positioning System (GPS). The depth of the monitoring location was measured using depth meter in order to determine the sampling depths. Afterwards, the probes of the in-situ measurement equipment was lowered to the predetermined depths (1 m below water surface, mid-depth and 1 m above seabed) and the measurements was carried out accordingly. The in-situ measurements at predetermined depths was carried out in duplicate. In case the difference in the duplicate in-situ measurement results was larger than 25%, the third set of in-situ measurement would be carried out for result confirmation purpose.

5.26 Water sampler was lowered into the water to the required depths of sampling. Upon reaching the pre-determined depth, a messenger to activate the sampler was then released to travel down the wire. The water sample was sealed within the sampler before retrieving. At each station, water samples for SS at three depths (1 m below water surface, mid-depth and 1 m above seabed) were collected accordingly. Water samples were stored in a cool box and kept at less than 4°C but without frozen and sent to the laboratory as soon as possible.

Laboratory Analytical Methods

5.27 The testing of all parameters were conducted by Wellab Ltd. (HOKLAS Registration No.083) and comprehensive quality assurance and control procedures in place in order to ensure quality and consistency in results. The testing method and limit of reporting are provided in **Table 5.5**.

Table 5.5 Methods for Laboratory Analysis for Water Samples

Parameters (Unit)	Proposed Method	Reporting Limit	Detection Limit
SS (mg/L)	APHA 2540 D	0.5 mg/L (1)	0.5 mg/L
BOD_5 (mg O_2/L)	APHA 19ed 5210B	2 mg O_2/L	--
TOC (mg-TOC/L)	In-house method SOP020 (Wet Oxidation)	1 mg-TOC/L	--
Total Nitrogen (mg/L)	In-house method SOP063 (FIA)	0.6 mg/L	--
Ammonia-N (mg NH_3-N/L)	In-house method SOP057 (FIA)	0.05 mg NH_3-N/L	--
Total Phosphorus (mg-P/L)(2)	In-house method SOP055 (FIA)	0.05 mg-P/L	--

Note:
1) Limit of Reporting is reported as Detection Limit for non-HOKLAS report.
2) Parameter Total Phosphorus represents the laboratory testing for total phosphate content in water which is the sum of all three forms of phosphates in water.

QA/QC Requirements

Decontamination Procedures

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

Sampling Management and Supervision

5.29 Water samples were dispatched to the testing laboratory for analysis as soon as possible after the sampling. All samples were stored in a cool box and kept at less than 4°C but without frozen. All water samples were handled under chain of custody protocols and relinquished to the laboratory representatives at locations specified by the laboratory.

5.30 QA/QC procedures as attached in **Appendix J** are available for the parameters analyzed in the HOKLAS-accredited laboratory, WELLAB Ltd.

Results and Observations

Groundwater Quality Monitoring

5.31 All groundwater quality monitoring was conducted as scheduled in the reporting month. Summary of groundwater quality monitoring results and Action/Limit Level exceedance are shown in **Table 5.6**. Groundwater monitoring results, graphical presentations and laboratory testing reports are shown in **Appendix H**.

Table 5.6 Summary of Groundwater Quality Monitoring Results

Date	Location	Parameters (unit)								
		pH	Dissolved Oxygen (mg/L)	Turbidity (NTU)	SS (mg/L)	BOD_5 (mg O_2/L)	TOC (mg-TOC/L)	Total Nitrogen (mg/L)	NH_3-N (mg NH_3-N/L)	Total Phosphorus (mg-P/L)
4 Jan 2017	Stream 1	6.9	8.5	2.0	1.0	<2	4	1.3	<0.05	<0.05
	Stream 2	7.0	8.9	2.1	3.8	<2	***5***	1.4	<0.05	<0.05
	Stream 3	7.1	8.8	2.0	0.9	<2	4	1.3	<0.05	<0.05
19 Jan 2017	Stream 1	7.1	8.5	1.6	***7.8***	<2	***6***	1.2	***0.15***	***0.07***
	Stream 2	6.8	8.7	1.9	***5.8***	<2	4	***2.0***	<0.05	<0.05
	Stream 3	7.2	8.8	1.4	2.2	<2	3	1.2	<0.05	<0.05
No. of Exceedance	Action Level	0	0	0	1	0	0	0	0	0
	Limit Level	0	0	0	1	0	2	1	1	1

Note: ***Bold Italic*** means Action Level exceedance
Bold Italic with underline means Limit Level exceedance

5.32 According to the information provided by the Contractor, no tunnel boring or tunnel construction works were carried out in both Lam Tin side and Tseung Kwan O side in January 2017. Therefore, it is considered that the exceedance is not project-related. The summary of exceedance record in the reporting month is shown in **Appendix K**.

5.33 Other relevant data was also recorded, such as monitoring location / position, time, sampling depth, weather conditions and any special phenomena or work underway nearby.

Marine Water Quality Monitoring

5.34 All marine water quality monitoring was conducted as scheduled in the reporting month. Marine water monitoring results and graphical presentations are shown in **Appendix I**. Other relevant data was also recorded, such as monitoring location / position, time, sampling depth, weather conditions and any special phenomena or work underway nearby.

5.35 Calculated Action and Limit Levels for Marine Water Quality is presented in **Appendix I**. No exceedance of Action and Limit Levels of marine water quality was recorded during the reporting period.

Groundwater Level Monitoring (Piezometer Monitoring)

5.36 Daily piezometer monitoring at any time of the day shall be carried throughout the whole period when any tunnel construction activities are carried out within +/- 50m of the piezometer gate in plan.

5.37 Construction Phase Piezometer Monitoring has not commenced in this reporting period.

6. ECOLOGY

Post-Translocation Coral Monitoring

6.1 Post-translocation monitoring survey is recommended in the EM&A Manual to audit the success of translocation. Information gathered during each post-translocation monitoring survey should include observations on the presence, survival, health condition and growth of the translocated coral colonies. These parameters should then be compared with the baseline results collected from the pre-translocation survey.

6.2 The post-translocation coral monitoring shall be conducted once every 3 months after completion for a period of 12 months.

6.3 The first post-translocation coral monitoring is scheduled to be carried out in February 2017 tentatively.

7. MONITORING ON CULTURAL HERITAGE

7.1 According to the EM&A Manual, monitoring of vibration impacts should be conducted when the construction works are less than 100m from the Built Heritage in close proximity of the worksite, namely the Cha Kwo Ling Tin Hau temple.

7.2 Based on the information provided by the Contractor, no construction works are within 100m of the Cha Kwo Ling Tin Hau temple in the reporting period. Therefore, monitoring of vibration impacts has not commenced in the reporting period.

8. LANDSCAPE AND VISUAL IMPACT REQUIREMENTS

8.1 Landscape and visual mitigation measures during the construction phase shall be checked to ensure that they are fully realized and implemented on site.

8.2 Site audits were carried out on a weekly basis to monitor and audit the timely implementation of landscape and visual mitigation measures. The summaries of site audits are attached in **Appendix L**.

8.3 No non-compliance of the landscape and visual impact was recorded in the reporting month.

9. LANDFILL GAS MONITORING

Monitoring Requirement

9.1 In accordance with the EM&A Manual, monitoring of landfill gas is required for construction works within the Sai Tso Wan Landfill Consultation Zone during the construction phase. This section presents the results of landfill gas measurements performed by the Contractor. **Appendix A** shows the Limit Levels for the monitoring works.

9.2 The "Landfill Gas Monitoring Proposal", including the monitoring programme and detailed actions, is submitted to the EPD for approval. Details of monitoring in this Proposal is in line with the monitoring requirements stipulated in the EM&A Manual.

Monitoring Parameters, Locations and Frequency

9.3 The proposed parameters for Landfill gas monitoring include Methane, Carbon dioxide and Oxygen.

9.4 The monitoring was carried out at least daily before starting the work of the day.

Monitoring Locations

9.5 Monitoring of oxygen, methane and carbon dioxide was performed for excavations at 1m depth or more within the Consultation Zone. In this reporting month, the area required to be monitored for landfill gas are shown below and **Figure 6** shows the landfill gas monitoring locations.

- Excavation Locations: Portion III
- Manholes and Chambers: N/A
- Relocation of monitoring wells: N/A
- Any other Confined Spaces: N/A

Monitoring Equipment

9.6 **Table 9.1** summarizes the equipment employed by the Contractor for the landfill gas monitoring.

Table 9.1 Landfill Gas Monitoring Equipment

Equipment	Model and Make	Quantity
Intrinsically safe, portable gas detector	Crowcon Tetra Portable Gas Detector (Serial No. 100378267/01-007)	1

Results and Observations

9.7 In the reporting month, landfill gas monitoring was carried out by the Contractor at the aforesaid locations on 22 occasions. No Limit Level exceedance for landfill gas monitoring was recorded in the reporting month. The monitoring results are provided in **Appendix R**. Copies of calibration certificates are attached in **Appendix B.**

10. ENVIRONMENTAL AUDIT

Site Audits

10.1 Site audits were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. The summaries of site audits are attached in **Appendix L**.

10.2 Joint weekly site audits by the representatives of the Engineer, Contractor and the ET were conducted in the reporting month as shown in below:

- Contract No. NE/2015/01: 4, 11, 18, and 25 January 2017
- Contract No. NE/2015/02: 5, 12, 17, and 26 January 2017

Monthly joint site inspection with the representative of IEC was conducted on 18 January 2017 (for Contract No. NE/2015/01) and 26 January 2017 (Contract No. NE/2015/02).

Implementation Status of Environmental Mitigation Measures

10.3 According to the EIA Study Report, Environmental Permit and the EM&A Manual of the Project, the mitigation measures detailed in the documents are recommended to be implemented during the construction phase. An updated summary of the Implementation Schedule and Recommended Mitigation Measures is provided in **Appendix N**.

10.4 During site inspections in the reporting month, no non-conformance was identified. The observations and recommendations made during the audit sessions are summarized in **Table 10.1**.

Table 10.1 Observations and Recommendations of Site Audit

Parameters	Date	Observations and Recommendations	Follow-up
Contract No. NE/2015/01			
Water Quality	21 and 28 Dec 2016	Reminder: The contractor is reminded to provide mitigation measures to intercept and direct muddy water generation to waste water treatment facilities at construction of haul road at Cha Kwo Ling.	The deficiency was observed to be improved/rectified by the Contractor during the audit session on 04 January 2017.
	21 Dec 2016	Reminder: To remove general refuse in u-channel near the discharge point of CKL.	Follow up action will be reported in next reporting month.
	04, 11, 18 and 25 Jan 2017	Reminder: To remove the sand accumulated in catchpit in TKO.	Follow up action will be reported in next reporting month.
Noise	18 Jan 2017	Reminder: To repair the noise enclosure at the breaker in TKO	The deficiency was observed to be improved/rectified by the Contractor during the audit session on 25 January 2017.
	18 and 25 Jan 2017	Reminder: The contractor is reminded to provide additional noise mitigation measures during breaking works at CKL.	Follow up action will be reported in next reporting month.
Landscape and Visual	--	--	--
Air Quality	14, 21, 28 Dec 2016 / 04, 11, 18 Jan 2017	Reminder: The Contractor is reminded to provide cover by impervious material to exposed slope in Cha Kwo Ling after works.	The deficiency was observed to be improved/rectified by the Contractor during the audit session on 25 January 2017.

Parameters	Date	Observations and Recommendations	Follow-up
	28 Dec 2016	Reminder: To provide sufficient water spray for haul road in Cha Kwo Ling to avoid dust generation.	The deficiency was observed to be improved/rectified by the Contractor during the audit session on 04 January 2017.
	11 Jan 2017	Reminder: The contractor is reminded to provide sufficient water spraying to the exposed at TKO.	The deficiency was observed to be improved/rectified by the Contractor during the audit session on 18 January 2017.
	25 Jan 2017	Observation: Part of open slope at TKO observed dry. The contractor is reminded to provide water spray to prevent dust generation.	Follow up action will be reported in next reporting month.
Waste / Chemical Management	28 Dec 2016 and 04 Jan 2017	Reminder: To remove the oil stain near drip tray of generator-set at Cha Kwo Ling.	The deficiency was observed to be improved/rectified by the Contractor during the audit session on 11 January 2017.
Permits/ Licenses	--	--	--
Contract No. NE/2015/02			
Water Quality	28 Dec 2016	Reminder: To provide sand bag bunds to gullies at Portion 1 to avoid discharge of surface runoff.	The deficiency was observed to be improved/rectified by the Contractor during the audit session on 05 January 2017.
	12 Jan 2017	Observation: To clear the sand accumulated in gullies in Area A and provide sand bag bunds to gullies to prevent discharge of surface runoff	The deficiency was observed to be improved/rectified by the Contractor during the audit session on 17 January 2017.
	12 Jan 2017	Reminder: To provide sand bag bunds to footing of temporary hoarding in Area A.	The deficiency was observed to be improved/rectified by the Contractor during the audit session on 17 January 2017.
	26 Jan 2017	Reminder: To provide sand bag bunds near access gate of Area A.	Follow up action will be reported in next reporting month.
Noise	--	--	--
Landscape and Visual	12 Jan 2017	Reminder: To remove construction material waste from tree protection area in Portion 1.	The deficiency was observed to be improved/rectified by the Contractor during the audit session on 17 January 2017.
Air Quality	12 Jan 2017	Reminder: To properly cover stockpile of dusty materials in Area A.	The deficiency was observed to be improved/rectified by the Contractor during the audit session on 17 January 2017.
	26 Jan 2017	Reminder: To cover stockpile of dusty material by impervious sheets before CNY holidays at Portion 5.	Follow up action will be reported in next reporting month.
Waste / Chemical Management	28 Dec 2016	Reminder: To provide sufficient drip tray to chemical container, air compressor at Portion 8.	The deficiency was observed to be improved/rectified by the Contractor during the audit session on 05 January 2017.
	28 Dec 2016	Reminder: To remove chemical container from near gullies at Portion 1.	The deficiency was observed to be improved/rectified by the Contractor during the audit session on 05 January 2017.
	17 Jan 2017	Reminder: To provide skip or container for the disposal of general refuse next to site office.	The deficiency was observed to be improved/rectified by the Contractor during the audit session on 26 January 2017.

Parameters	Date	Observations and Recommendations	Follow-up
Permits/ Licenses	05 Jan 2017	Reminder: To display the Environmental Permit on hopper barge.	The deficiency was observed to be improved/rectified by the Contractor during the audit session on 12 January 2017.

11. WASTE MANAGEMENT

11.1 Waste generated from this Project includes inert construction and demolition (C&D) materials, non-inert C&D materials and marine sediments. Inert C&D waste includes soil, broken rock, broken concrete and building debris, while non-inert C&D materials are made up of C&D waste which cannot be reused or recycled and has to be disposed of at the designated landfill sites. Marine sediment shall be expected from excavation and dredging works of this Project.

11.2 With reference to relevant handling records of this Project, the quantities of different types of waste generated in the reporting month are summarised and presented in **Appendix P**.

11.3 The Contractors are advised to minimize the wastes generated through the recycling or reusing. All mitigation measures stipulated in the approved EM&A Manual and waste management plans shall be fully implemented. The status of implementation of waste management and reduction measures are summited in **Appendix N**.

12. ENVIRONMENTAL NON-CONFORMANCE

Summary of Exceedances

12.1 No exceedance of Action and Limit Levels of air quality monitoring in the reporting period.

12.2 Ten Action Level exceedance in noise monitoring was recorded due to the documented complaints received from monitoring station in the reporting month. One Limit Level exceedance was recorded on 23 January 2017 at CM3 - Block S, Yau Lai Estate Phase 5, Yau Tong. The investigation results for limit level exceedance is shown in **Appendix K**.

12.3 Two Action Level exceedance was recorded for the reporting period of December 2016 due to documented complaints from monitoring station received in this reporting period.

12.4 One Action Limit exceedance and Six Limit Level exceedances in ground water quality monitoring was recorded during the reporting period. The exceedance is considered to be non-Project related. The summary of exceedance is provided in **Appendix K**.

12.5 Should the monitoring results of the environmental monitoring parameters at any designated monitoring stations indicate that the Action / Limit Levels are exceeded, the actions in accordance with the Event and Action Plans in **Appendix M** be carried out.

Summary of Environmental Non-Compliance

12.6 No environmental non-compliance was recorded in the reporting month.

Summary of Environmental Complaint

12.7 11 environmental complaints were received in the reporting month. 4 environmental complaints received in December 2016 was referred in this reporting period. The Cumulative Complaint Log since the commencement of the Project is presented in **Appendix O**. The investigation status and result is also reported in **Appendix O**.

Summary of Environmental Summon and Successful Prosecution

12.8 There was no successful environmental prosecution or notification of summons received since the Project commencement. The Cumulative Log for environmental summon and successful prosecution since the commencement of the Project is presented in **Appendix O**.

13. FUTURE KEY ISSUES

13.1 Tentative construction programmes for the next three months are provided in **Appendix Q**.

13.2 Major site activities to be undertaken for the next reporting period are summarized in **Table 13.1**:

Table 13.1 Summary Table for Site Activities in the next Reporting Period

Contract No.	Project Title	Site Activities (February 2017)	
NE/2015/01	Tseung Kwan O - Lam Tin Tunnel - Main Tunnel and Associated Works	Lam Tin Interchange	1) Excavation for Tunnel Adit 2) Haul Road Construction 3) Slope Feature no. 11NE-D/C119 (along Lei Yue Mun Road) 4) EHC2 U-Trough 5) Site Formation – Area 1G1 6) Site Formation – Area 2 7) Temp Steel Bridge across CKL Road 8) Pipe Pile Wall – Area 2A
		TKO Interchange	1) Haul Road Construction 2) Temporary Barging Facilities 3) BMCPC Bridge Temporary Diversion
NE/2015/02	Tseung Kwan O – Lam Tin Tunnel – Road P2 and Associated Works	1) Site Hull Road; 2) Weight Bridge 3) Supervisor and Contractor's site accommodation 4) Installation of 2100mm dia. Drainage at Portion IV 5) Construction of Transformer Room at Portion I 6) Construction of Retaining wall 7) Transformer room construction works 8) Construction of Temporary Transformer Room 9) Installation of Project Sign Board 10) Site Establishment 11) Installation of Marine Cofferdam including driven of sheet pile and bedding preparation for box sections 12) Installation of Water Gate 13) Removal of Rock Armour and temporary storage adjacent to DSD desilting compound	

Key Issues for the Coming Month

13.3 Key environmental issues in the coming month include:

- Watering for dust generation from haul road, stockpiles of dusty materials, exposed site area, excavation works and rock breaking activities;
- Noisy construction activity such as rock-breaking activities and piling works;
- Runoff from exposed slope or site area;

- Wastewater and runoff discharge from site;
- Accumulation of silt, mud and sand along U-channels and sedimentation tanks;
- Set up and implementation of temporary drainage system for the surface runoff;
- Storage of chemicals/fuel and chemical waste/waste oil on site;
- Accumulation and storage of general and construction waste on site; and
- Marine water quality impact and indirect impact to coral communities due to marine construction for TKO-LTT reclamation.

Monitoring Schedule for the Next Month

13.4 The tentative environmental monitoring schedules for the next month are shown in **Appendix D**.

14. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

14.1 This is the 3rd Environmental Monitoring and Audit (EM&A) Report which presents the EM&A works undertaken during the period in January 2017 in accordance with EM&A Manual and the requirement under EP.

Air Quality Monitoring

14.2 All 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

14.3 All 24-hour TSP monitoring was conducted as scheduled in the reporting month, except at Station AM4(A) – Cha Kwo Ling Public Cargo Working Area Administrative Office on 17 January 2017 was cancelled due to power supply failure. The monitoring was re-scheduled to 20 January 2017. No Action/Limit Level exceedance was recorded.

Construction Noise Monitoring

14.4 All noise monitoring was conducted as scheduled in the reporting month. Eleven Action Level exceedance was recorded due to the documented complaints received from monitoring station in the reporting month. One Limit Level exceedance was recorded on 23 January 2017 at CM3 - Block S, Yau Lai Estate Phase 5, Yau Tong. The investigation results for limit level exceedance is shown in **Appendix K**.

14.5 Two Action Level exceedance was recorded for the reporting period of December 2016 due to documented complaints from monitoring station received in this reporting period.

Water Quality Monitoring

14.6 All groundwater Quality monitoring was conducted as scheduled in the reporting month. One Action Level Exceedance and Six Limit Level exceedance were recorded. The exceedance is considered to be non-Project related.

14.7 All marine water quality monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

Ecological Monitoring

14.8 First post-translocation coral monitoring survey is scheduled in February 2017 tentatively.

Monitoring on Cultural Heritage

14.9 Monitoring of vibration impacts at Cha Kwo Ling Tin Hau Temple has not commenced in the reporting period as there is no construction works less than 100m from the temple.

Landscape and Visual Monitoring and Audit

14.10 No non-compliance of the landscape and visual impact was recorded in the reporting month.

Landfill Gas Monitoring

14.11 Monitoring of landfill gases commenced in the reporting month and were carried out by the Contractor at excavation location, Portion III. No Limit Level exceedance was recorded.

Environmental Site Inspection

14.12 Joint weekly site inspections were conducted by representatives of the Contractor, Engineer and Environmental Team. During site inspections in the reporting month, no non-conformance was identified

Complaint, Prosecution and Notification of Summons

14.13 11 environmental complaints, no successful prosecution or notification of summons were received during the reporting period. 4 environmental complaints received in December 2016 was referred in this reporting period.

Recommendations

14.14 Joint weekly site audits by the representatives of the Engineer, Contractor and the ET were conducted in the reporting month. According to environmental audits performed, the following recommendations were made:

Air Quality Impact
- To implement dust suppression measures such as water spray on all haul roads, stockpiles, dry surfaces, excavation and rock breaking works.
- To cover stockpile of dusty material by impervious material
- To properly display NRMM Label to Powered Mechanical Equipment on site
- To avoid smoke emission from Powered Mechanical Equipment on site

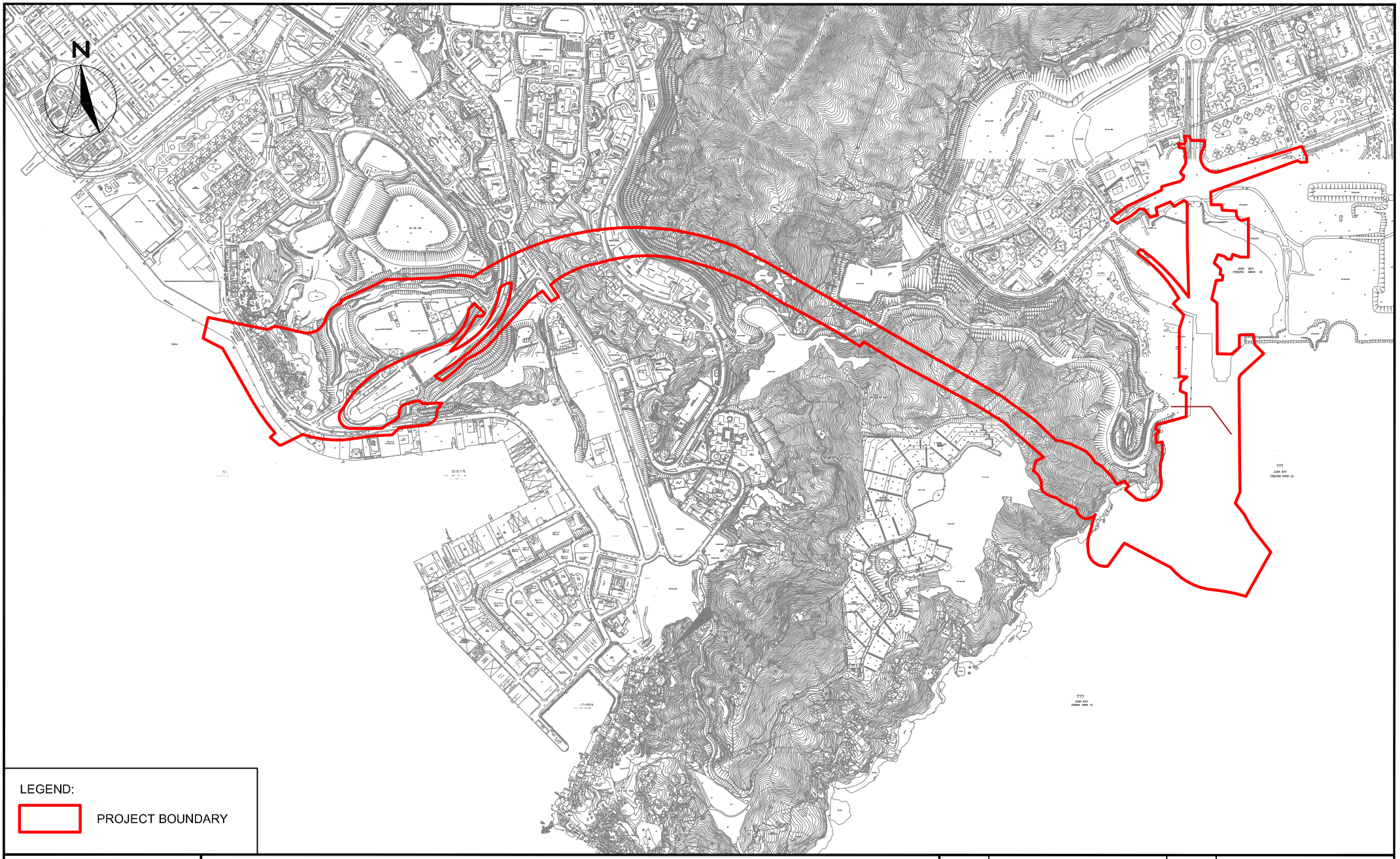
Construction Noise
- N/A

Water Quality Impact
- To prevent any surface runoff discharge into any stream course or the waters in vicinity.
- To review and implement temporary drainage system.
- To ensure properly maintenance for de-silting facilities.
- To clear the silt and sediment in the sedimentation tanks or those accumulated in drainage.
- To provide bund to gullies and stockpile storage area on site to avoid leakage of surface runoff.
- To divert all the water generated from construction site to de-silting facilities with enough handling capacity before discharge.

Waste/Chemical Management
- To check for any accumulation of waste materials or rubbish on site.
- To avoid any discharge or accidental spillage of chemical waste or oil directly from the site.
- To avoid improper handling or storage of oil drum on site.
- To provide label to identify waste storage area within site.

Landscape and Visual
- N/A

FIGURES



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Agreement No. CE/59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction

Site Layout Plan

SCALE	1:15000 @ A4	DATE	NOV 2016
CHECK	JF	DRAWN	JW
JOB No.	MA16034	FIGURE NO. 1	REV -

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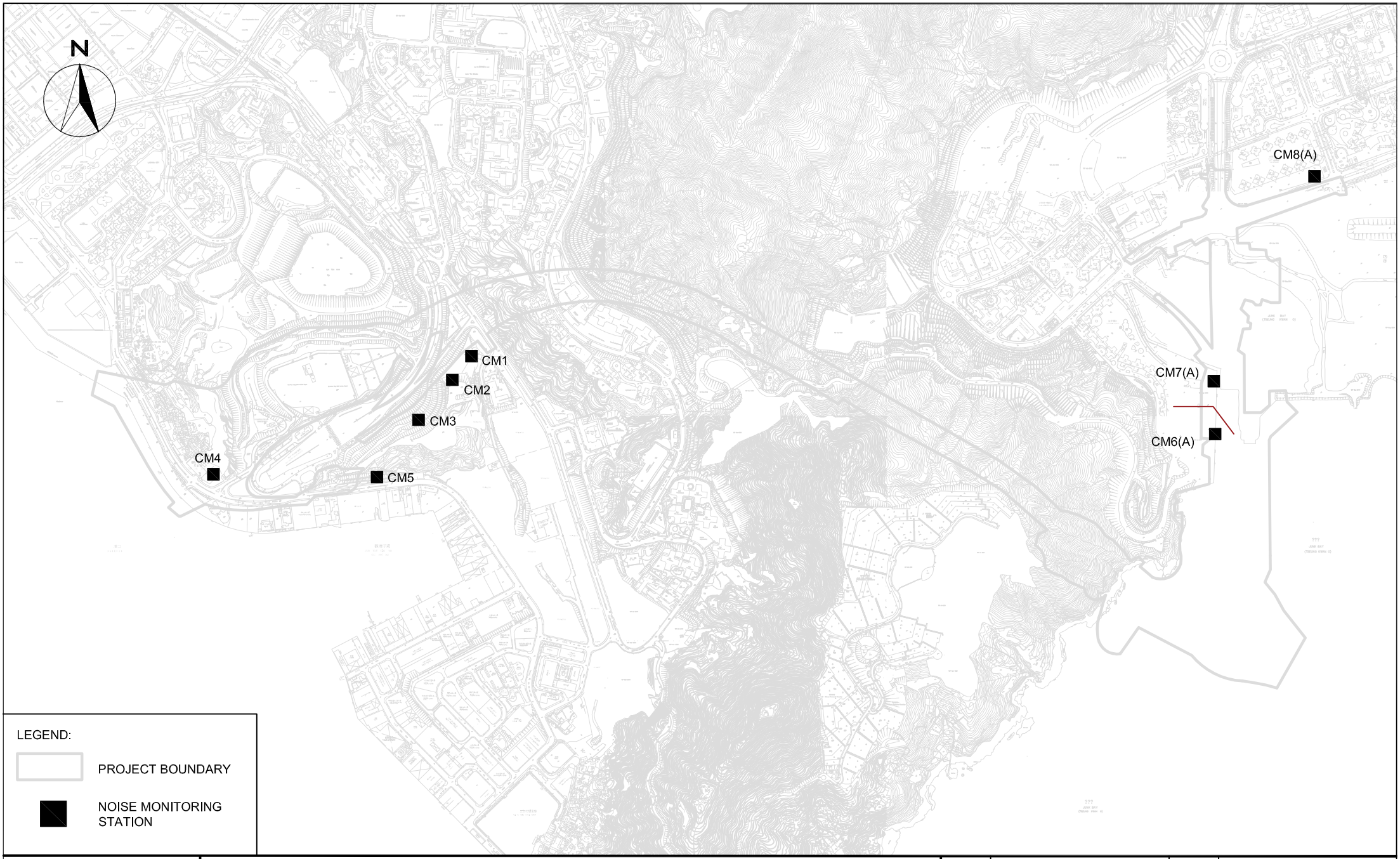
Cinotech Consultants Limited

Agreement No. CE/59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction

Air Quality Monitoring Stations

SCALE	1:15000 @ A4	DATE	DEC 2016
CHECK	JF	DRAWN	JW
JOB No.	MA16034	FIGURE NO. 2	REV -

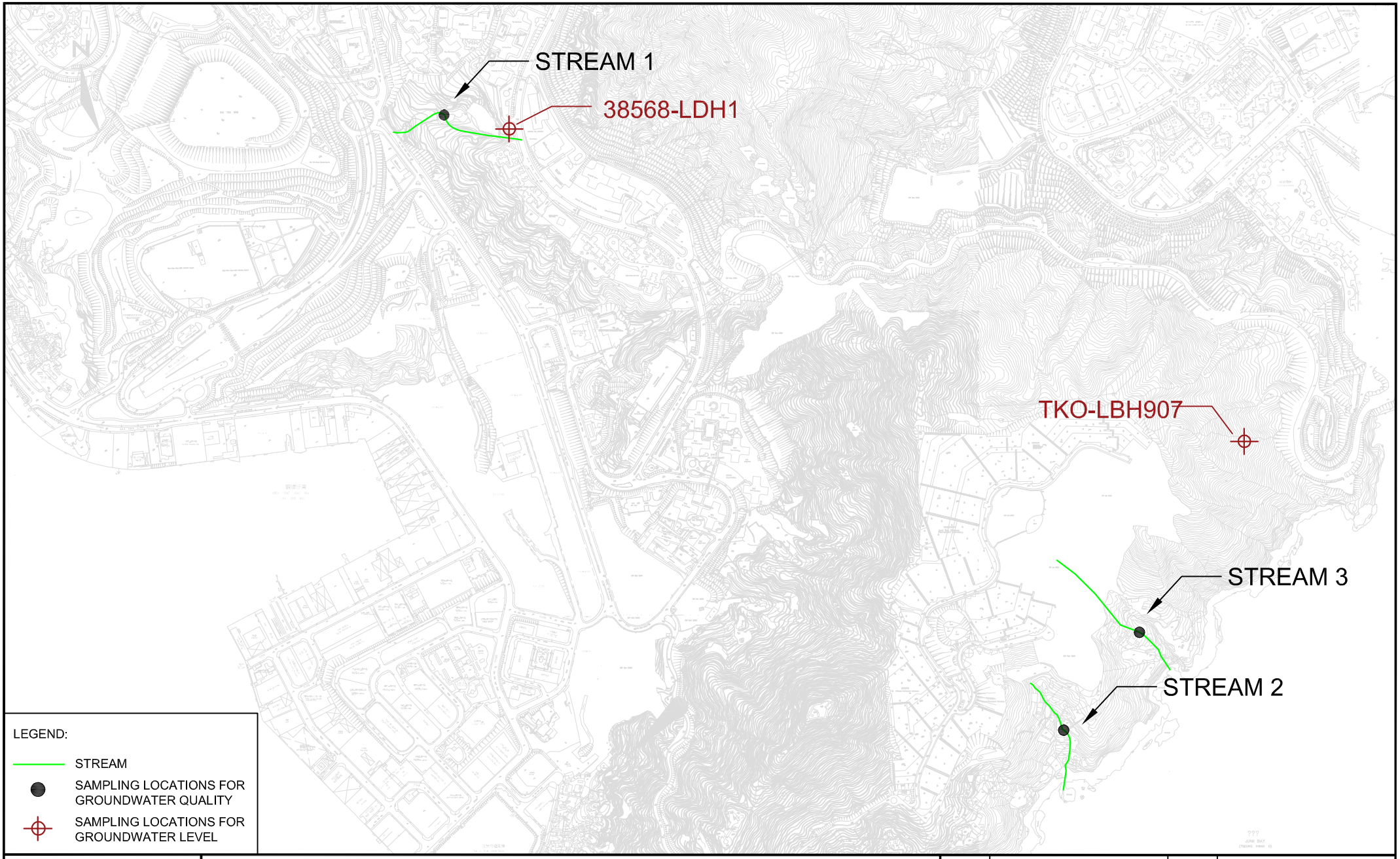


CINOTECH
Cinotech Consultants Limited

Agreement No. CE/59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction

Noise Monitoring Stations

SCALE	1:15000 @ A4	DATE	DEC 2016
CHECK	JF	DRAWN	JW
JOB No.	MA16034	FIGURE NO. 3	REV -

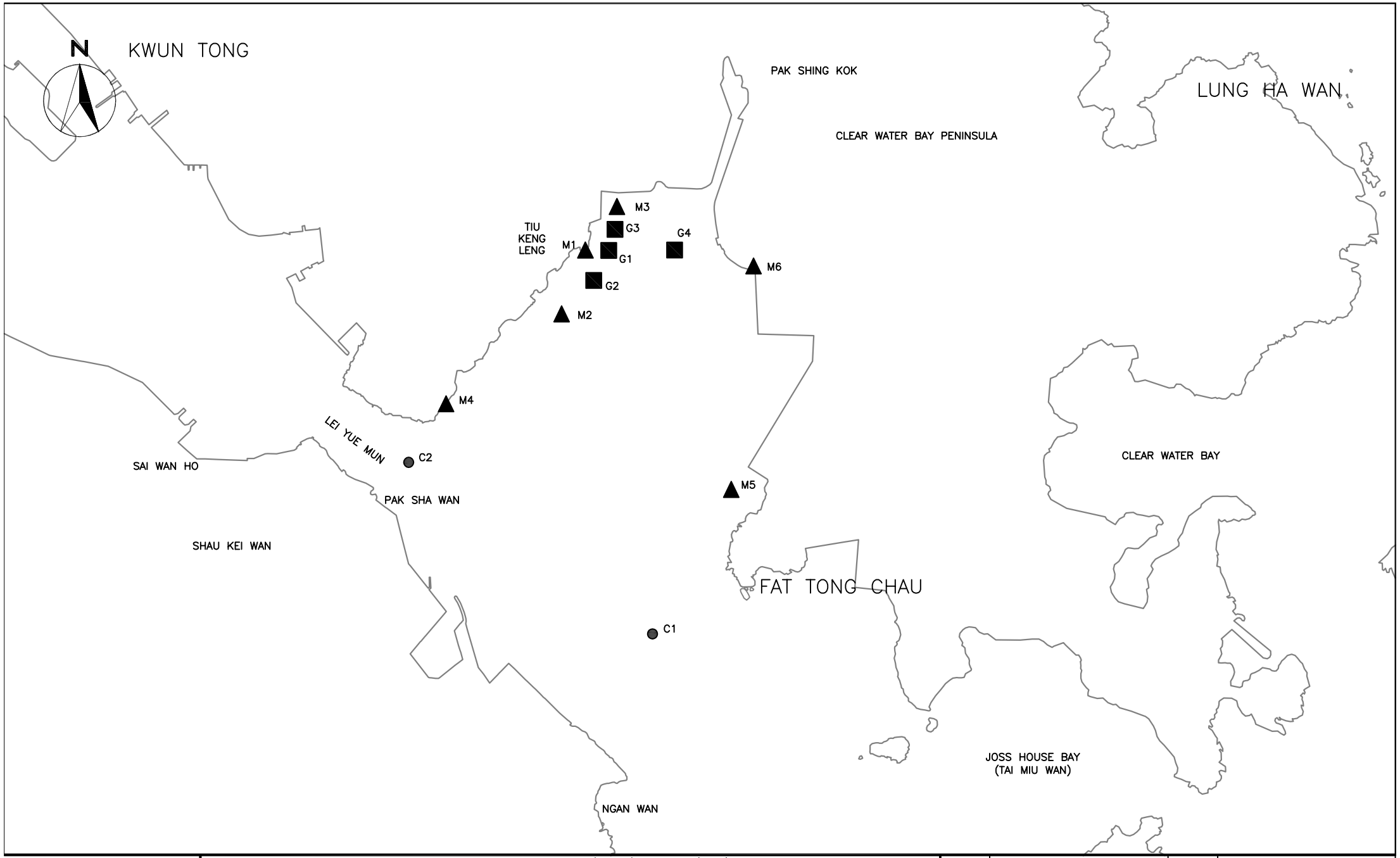


CINOTECH
Cinotech Consultants Limited

Agreement No. CE/59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction

Location of Streams for Groundwater Quality and Groundwater Level Monitoring

SCALE	1:10000 @ A4	DATE	OCT 2016
CHECK	JF	DRAWN	JW
JOB No.	MA16034	FIGURE NO. 4	REV -



CINOTECH
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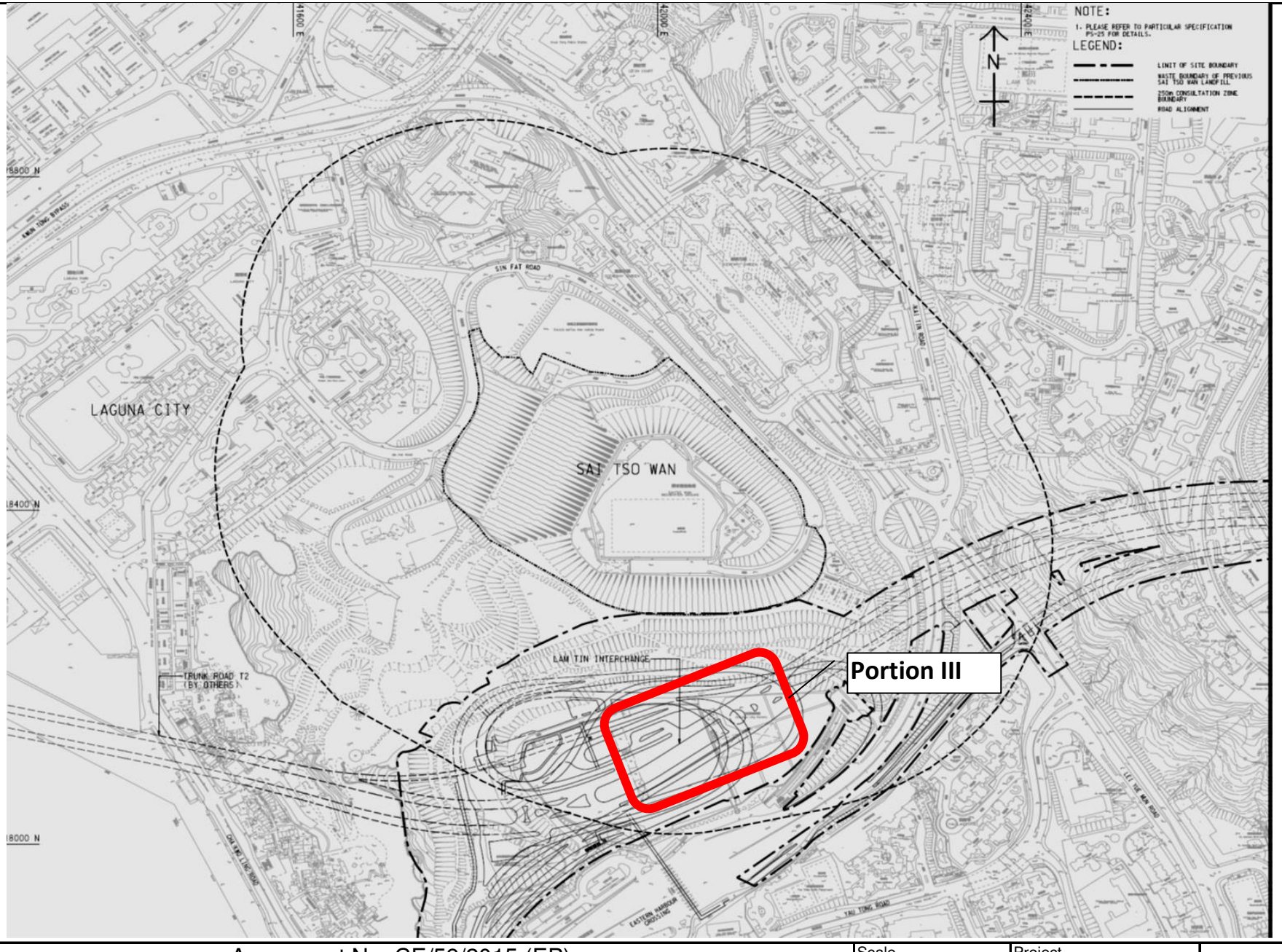
Agreement No. CE/59/2015 (EP)
Environmental Team for Tseung Kwan O – Lam Tin Tunnel – Design and Construction

Locations of Water Quality Monitoring Stations

SCALE	N.T.S	DATE	AUG 2016
CHECK	JF	DRAWN	JW
PROJECT NO.	MA16034	FIGURE NO.	5
		REV	–



Title	Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Locations of Landfill Gas Monitoring	Scale: N.T.S Date: Dec-16	Project No.: MA16034 Figure: 6

CINOTECH

APPENDIX A
ACTION AND LIMIT LEVELS

APPENDIX A – Action and Limit Levels

Air Quality

1-hr TSP

Monitoring Stations	Location	Action Level, µg/m³	Limit Level, µg/m³
AM1	Tin Hau Temple	275	500
AM2	Sai Tso Wan Recreation Ground	273	
AM3	Yau Lai Estate Bik Lai House	271	
AM4	Sitting-out Area at Cha Kwo Ling Village	278	
AM5(A)	Tseung Kwan O DSD Desilting Compound	273	
AM6(A)	Park Central, L1/F Open Space Area	285	

24-hr TSP

Monitoring Stations	Location	Action Level, µg/m³	Limit Level, µg/m³
AM1	Tin Hau Temple	173	500
AM2	Sai Tso Wan Recreation Ground	192	
AM3	Yau Lai Estate Bik Lai House	167	
AM4(A)	Cha Kwo Ling Public Cargo Working Area Administrative Office	210	
AM5(A)	Tseung Kwan O DSD Desilting Compound	175	
AM6(A)	Park Central, L1/F Open Space Area	165	

Noise

Time Period	Action Level	Limit Level
0700-1900 hrs on normal weekdays	When one documented complaint is received from any one of the monitoring stations	75 dB(A) (1)
1900-2300 on all days and 0700-2300 on general holidays (including Sundays)		60/65/70 dB(A)(2)(3)
2300-0700 on all days		45/50/55 dB(A)(2)(3)

[1] 70 dB(A) for schools and 65 dB(A) for schools during examination period.
[2] Acceptable Noise Levels for Area Sensitivity Rating of A/B/C
3 If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed.

Water Quality

Groundwater

Parameters	Action	Limit
DO in mg L^{-1}	7.6	7.5
pH	6.0 – 8.9	6.0 – 9.0
BOD_5 in mg L^{-1}	2.0	2.0
TOC in mg L^{-1}	4.3	4.9
Total Nitrogen in mg L^{-1}	1.7	1.7
Ammonia-N in mg L^{-1}	0.05	0.06
Total Phosphate in mg L^{-1}	0.05	0.05
SS in mg L^{-1}	5.5	6.2
Turbidity in NTU	2.2	2.4

Notes:
1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, 5-day biochemical oxygen demand (BOD_5), Total organic carbon (TOC), Total Nitrogen, Ammonia-N and Total Phosphate, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and the EPD may amend the figures whenever it is considered as necessary.

Groundwater Level Monitoring

Drill Hole No.	38568-LDH1	TKO-LBH907
Action Level (mPD)	+74.65	+17.59

Marine Water Quality

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day	***6.9mg/L*** or 130% of upstream control station's SS at the same tide of the same day
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:
1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Ecology

Post-translocation Coral Monitoring

Parameter	Action Level Definition	Limit Level Definition
Mortality	If during Impact Monitoring a 15% increase in the percentage of partial mortality on hard corals occurs at more than 20% of the tagged coral at any one Impact Monitoring Site that is not recorded at the Control Site, then the Action Level is exceeded.	If during the Impact Monitoring a 25% increase in the percentage of partial mortality occurs at more than 20% of the tagged coral at any one Impact Monitoring Site that is not recorded at the Control Site, then the Limit Level is exceeded.

Landfill Gas Monitoring

Parameter	Limit Level
Oxygen	<19%
	<18%
Methane	>10% LEL (i.e. > 0.5% by volume)
	>20% LEL (i.e. > 1% by volume)
Carbon Dioxide	>0.5%
	>1.5%

APPENDIX B
COPIES OF CALIBRATION CERTIFICATES

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA16034/08/0002

Station: AM1 - Tin Hau Temple Operator: WK

Date: 24-Nov-16 Next Due Date: 23-Jan-17

Equipment No.: A-01-05 Serial No. 10599

Ambient Condition			
Temperature, Ta (K)	288.5	Pressure, Pa (mmHg)	768.4

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Mar-17	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	13.3	3.73	63.18	7.2	2.74
2	10.1	3.25	55.17	5.4	2.37
3	8.7	3.01	51.26	4.9	2.26
4	5.4	2.37	40.57	3.1	1.80
5	3.2	1.83	31.42	1.9	1.41

By Linear Regression of Y on X

Slope , mw = **0.0417** **Intercept, bw =** **0.1042**

Correlation coefficient* = **0.9994**

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.44**

Remarks:

Conducted by: WK, Tang Signature: Kwan Date: 24/11/16

Checked by: AV Signature: Date: 24 November 2016

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA16034/08/0003

Station: AM1 - Tin Hau Temple Operator: WK

Date: 19-Jan-17 Next Due Date: 18-Mar-17

Equipment No.: A-01-05 Serial No. 10599

Ambient Condition			
Temperature, Ta (K)	292.6	Pressure, Pa (mmHg)	769.3

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Mar-17	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	13.4	3.72	63.01	7.3	2.74
2	10.1	3.23	54.82	5.5	2.38
3	8.8	3.01	51.23	4.9	2.25
4	5.4	2.36	40.31	3.2	1.82
5	3.3	1.84	31.70	2.0	1.44

By Linear Regression of Y on X

Slope , mw = **0.0412** **Intercept, bw :** **0.1363**

Correlation coefficient* = **0.9997**

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.54**

Remarks:

Conducted by: wk Tang Signature: Kwan Date: 19/1/17

Checked by: LH Signature: Date: 19 January 2017

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA16034/08/0002

Station: AM2 - Sai Tso Wan Recreation Ground Operator: WK

Date: 15-Nov-16 Next Due Date: 14-Jan-17

Equipment No.: A-01-08 Serial No. 1287

Ambient Condition			
Temperature, Ta (K)	297.4	Pressure, Pa (mmHg)	766.6

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Mar-17	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	13.5	3.69	62.63	7.3	2.72
2	10.7	3.29	55.85	5.6	2.38
3	8.6	2.95	50.16	4.7	2.18
4	5.4	2.34	39.92	3.0	1.74
5	3.1	1.77	30.45	1.8	1.35

By Linear Regression of Y on X

Slope , mw = **0.0420** **Intercept, bw =** **0.0657**

Correlation coefficient* = **0.9993**

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.46**

Remarks:

Conducted by: Wk. Tang Signature: Kwan Date: 15/11/16

Checked by: [illegible] Signature: Date: 15 November 2016

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA16034/08/0003

Station: AM2 - Sai Tso Wan Recreation Ground Operator: WK

Date: 13-Jan-17 Next Due Date: 12-Mar-17

Equipment No.: A-01-08 Serial No. 1287

Ambient Condition			
Temperature, Ta (K)	285.6	Pressure, Pa (mmHg)	765.3

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Mar-17	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	13.2	3.72	63.14	7.4	2.79
2	10.8	3.37	57.19	5.8	2.47
3	8.7	3.02	51.42	4.9	2.27
4	5.2	2.34	39.94	3.0	1.78
5	3.2	1.83	31.52	1.8	1.38

By Linear Regression of Y on X

Slope , mw = 0.0437 **Intercept, bw =** 0.0097

Correlation coefficient* = 0.9989

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.40**

Remarks:

Conducted by: WK. Tang Signature: K wai Date: 13/1/17

Checked by: LH Signature: Date: 13 January 2017

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA16034/03/0002

Station: AM3 - Yau Lai Estate, Bik Lai House Operator: WK

Date: 12-Nov-16 Next Due Date: 11-Jan-17

Equipment No.: A-01-03 Serial No. 10379

Ambient Condition			
Temperature, Ta (K)	296	Pressure, Pa (mmHg)	767.4

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	**mc x Qstd + bc = $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$**			
Next Calibration Date:	3-Mar-17	**Qstd = $\{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ -bc} / mc**			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	12.4	3.55	60.23	6.7	2.61
2	10.3	3.24	54.97	5.6	2.39
3	7.8	2.82	47.95	4.4	2.11
4	5.3	2.32	39.67	2.9	1.72
5	3.1	1.78	30.54	1.7	1.31

By Linear Regression of Y on X

Slope , mw = 0.0437 **Intercept, bw =** -0.0134

Correlation coefficient* = 0.9994

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.43**

Remarks:

Conducted by: wk Tang Signature: Kwan Date: 12/11/16

Checked by: HT Signature: Date: 12 November 2016

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA16034/03/0003

Station: AM3 - Yau Lai Estate, Bik Lai House Operator: WK

Date: 9-Jan-17 Next Due Date: 8-Mar-17

Equipment No.: A-01-03 Serial No. 10379

Ambient Condition			
Temperature, Ta (K)	292.6	Pressure, Pa (mmHg)	766.5

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Mar-17	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	12.6	3.60	61.02	6.9	2.66
2	10.7	3.32	56.30	5.7	2.42
3	7.9	2.85	48.49	4.2	2.08
4	5.2	2.31	39.50	2.7	1.67
5	3.3	1.84	31.64	1.8	1.36

By Linear Regression of Y on X

Slope , mw = 0.0444 **Intercept, bw =** -0.0652

Correlation coefficient* = 0.9993

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.30**

Remarks:

Conducted by: WK Tang Signature: Kwai Date: 9/1/17

Checked by: [illegible] Signature: Date: 9 January 2017

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA16034/54/0002

Station: AM4(A) - Cha Kwo Ling Public Cargo Working Area Administrative Office

Operator: WK

Date: 24-Nov-16

Next Due Date: 23-Jan-17

Equipment No.: A-01-54

Serial No. 1536

Ambient Condition			
Temperature, Ta (K)	289.8	Pressure, Pa (mmHg)	766.3

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	**mc x Qstd + bc = $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$**			
Next Calibration Date:	3-Mar-17	**Qstd = $\{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ -bc} / mc**			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	17.7	4.28	72.50	10.1	3.24
2	13.5	3.74	63.42	7.9	2.86
3	10.2	3.25	55.24	6.2	2.54
4	6.4	2.58	43.93	3.9	2.01
5	4.2	2.09	35.75	2.6	1.64

By Linear Regression of Y on X

Slope , mw = 0.0435 **Intercept, bw =** 0.1017

Correlation coefficient* = 0.9995

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.75**

Remarks:

Conducted by: Wk Tang Signature: Kwai Date: 24/11/16

Checked by: WT Signature: Date: 24 November 2016

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA16034/54/0003

Station: AM4(A) - Cha Kwo Ling Public Cargo Working Area Administrative Office

Operator: WK

Date: 23-Jan-17

Next Due Date: 22-Mar-17

Equipment No.: A-01-54

Serial No. 1536

Ambient Condition			
Temperature, Ta (K)	290.6	Pressure, Pa (mmHg)	772.2

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Mar-17	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	17.7	4.29	72.68	10.2	3.26
2	13.2	3.71	62.88	7.8	2.85
3	10.6	3.32	56.43	6.4	2.58
4	6.7	2.64	45.04	3.9	2.02
5	4.3	2.12	36.25	2.7	1.68

By Linear Regression of Y on X

Slope , mw = 0.0442 **Intercept, bw =** 0.0624

Correlation coefficient* = 0.9992

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.70**

Remarks:

Conducted by: WK Tang Signature: Kwan Date: 23/1/17

Checked by: bw Signature: Date: 23 January 2017

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA16034/37/0002

Station: AM5(A) - DSD Desilting Compound Operator: WK

Date: 15-Nov-16 Next Due Date: 14-Jan-17

Equipment No.: A-01-37 Serial No. 1704

Ambient Condition			
Temperature, Ta (K)	297.7	Pressure, Pa (mmHg)	763.4

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Mar-17	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	17.3	4.17	70.61	9.4	3.07
2	13.9	3.74	63.38	7.5	2.75
3	10.4	3.23	54.93	5.6	2.37
4	6.3	2.52	42.94	3.5	1.88
5	4.1	2.03	34.81	2.3	1.52

By Linear Regression of Y on X

Slope , mw = 0.0432 **Intercept, bw =** 0.0159

Correlation coefficient* = 0.9999

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.49**

Remarks:

Conducted by: Wk Tang Signature: Date: 15/11/16

Checked by: [illegible] Signature: Date: 15 November 2016

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA16034/37/0003

Station: AM5(A) - DSD Desilting Compound Operator: WK

Date: 13-Jan-17 Next Due Date: 12-Mar-17

Equipment No.: A-01-37 Serial No. 1704

Ambient Condition			
Temperature, Ta (K)	285.4	Pressure, Pa (mmHg)	765

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Mar-17	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	17.2	4.25	71.96	8.9	3.06
2	13.8	3.81	64.55	7.6	2.83
3	10.5	3.32	56.41	5.8	2.47
4	6.3	2.57	43.89	3.5	1.92
5	4.2	2.10	35.99	2.4	1.59

By Linear Regression of Y on X

Slope , mw = 0.0417 **Intercept, bw :** 0.0967

Correlation coefficient* = 0.9988

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.40**

Remarks:

Conducted by: Wk. Tang Signature: Date: 13/1/17

Checked by: Signature: Date: 13 January 2017

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA16034/07/0002

Station: AM6 - Park Central | Operator: WK

Date: 5-Dec-16 | Next Due Date: 4-Feb-17

Equipment No.: A-01-07 | Serial No. 10592

Ambient Condition			
Temperature, Ta (K)	294.6	Pressure, Pa (mmHg)	766.2

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Mar-17	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	11.8	3.47	58.87	7.5	2.77
2	9.7	3.15	53.45	5.7	2.41
3	7.2	2.71	46.17	4.5	2.14
4	5.0	2.26	38.62	3.1	1.78
5	3.4	1.86	31.99	2.0	1.43

By Linear Regression of Y on X

Slope , mw = 0.0481 **Intercept, bw =** -0.0983

Correlation coefficient* = 0.9974

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.80**

Remarks:

Conducted by: wk Tang Signature: Kwan Date: 5/12/16

Checked by: Signature: Date: 5 December 2016

TISCH ENVIRONMENTAL, INC.
145 SOUTH MIAMI AVE
VILLAGE OF CLEVES, OH
45002
513.467.9000
877.263.7610 TOLL FREE
513.467.9009 FAX

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Mar 04, 2016 Rootsmeter S/N 0438320 Ta (K) - 295
Operator Tisch Orifice I.D. - 2896 Pa (mm) - 755.65

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.4340	3.2	2.00
2	NA	NA	1.00	1.0250	6.4	4.00
3	NA	NA	1.00	0.9150	7.9	5.00
4	NA	NA	1.00	0.8770	8.7	5.50
5	NA	NA	1.00	0.7210	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)
1.0001	0.6974	1.4173
0.9959	0.9716	2.0044
0.9938	1.0861	2.2410
0.9928	1.1320	2.3503
0.9875	1.3696	2.8346

Qstd slope (m) = 2.11176
intercept (b) = -0.05079
coefficient (r) = 0.99982

y axis = SQRT[H2O(Pa/760)(298/Ta)]

Va	(x axis) Qa	(y axis)
0.9957	0.6944	0.8836
0.9915	0.9674	1.2496
0.9894	1.0814	1.3971
0.9885	1.1271	1.4653
0.9831	1.3636	1.7672

Qa slope (m) = 1.32235
intercept (b) = -0.03166
coefficient (r) = 0.99982

y axis = SQRT[H2O(Ta/Pa)]

CALCULATIONS

Vstd = Diff. Vol[(Pa-Diff. Hg)/760](298/Ta)
Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa]
Qa = Va/Time

For subsequent flow rate calculations:

Qstd = 1/m{[SQRT(H2O(Pa/760)(298/Ta))]- b}
Qa = 1/m{[SQRT H2O(Ta/Pa)]- b}

WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 1516, 1701 & 1716, Technology Park,
18 On Lai Street, Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/160820
Date of Issue:	2016-08-20
Date Received:	2016-08-20
Date Tested:	2016-08-20
Date Completed:	2016-08-20
Next Due Date:	2017-02-19

ATTN: **Miss Mei Ling Tang**

Certificate of Calibration

Item for calibration:

Description	: Weather Monitor II
Manufacturer	: Davis Instruments
Model No.	: 7440
Serial No.	: MC01010A44

Test conditions:

Room Temperature	: 24 degree Celsius
Relative Humidity	: 56 %

Test Specifications:

1. Performance check of anemometer
2. Performance check of wind direction sensor

Methodology:

In-house method with reference anemometer (RS232 Integral Vane Digital Anemometer)

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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Website: www.wellab.com.hk

TEST REPORT

Test Report No.:	C/160820
Date of Issue:	2016-08-20
Date Received:	2016-08-20
Date Tested:	2016-08-20
Date Completed:	2016-08-20
Next Due Date:	2017-02-19
Page:	2 of 2

Results:

1. Performance check of anemometer

Air Velocity, m/s		Difference D (m/s)
Instrument Reading (V1)	Reference Value (V1)	D = V1 – V2
2.00	2.00	0.00

2. Performance check of wind direction sensor

Wind Direction (°)		Difference D (°)
Instrument Reading (W1)	Reference Value (W2)	D = W1 - W2
0	0	0
45.2	45	0.2
90.1	90	0.1
134.8	135	-0.2
180.3	180	0.3
225.1	225	0.1
270.2	270	0.2
315.1	315	0.1
360	360	0

**********END OF REPORT**********

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/A/170106B
Date of Issue:	2017-01-09
Date Received:	2017-01-06
Date Tested:	2017-01-06
Date Completed:	2017-01-09
Next Due Date:	2017-03-08

ATTN: **Mr. W. K. Tang**

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 853944
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 685 CPM
Equipment No.	: A-02-04

Test Conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 63 %

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	0.0038

****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/A/170106
Date of Issue:	2017-01-09
Date Received:	2017-01-06
Date Tested:	2017-01-06
Date Completed:	2017-01-09
Next Due Date:	2017-03-08

ATTN: **Mr. W. K. Tang**

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 541146
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 625 CPM
Equipment No.	: A-02-07

Test Conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 63 %

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	0.0033

****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

Patrick Tse
PATRICK TSE
Laboratory Manager

WELLAB LIMITED
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18 On Lai Street, Shatin, N.T., Hong Kong.
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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/161230
Date of Issue:	2017-01-03
Date Received:	2016-12-30
Date Tested:	2016-12-30
Date Completed:	2017-01-03
Next Due Date:	2017-03-02

ATTN: **Mr. W. K. Tang**

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 095029
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 551 CPM
Equipment No.	: A-02-10

Test Conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 66 %

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	0.0038

****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/161230D
Date of Issue:	2017-01-03
Date Received:	2016-12-30
Date Tested:	2016-12-30
Date Completed:	2017-01-03
Next Due Date:	2017-03-02
Page:	1 of 1

ATTN: **Mr. W. K. Tang**

Certificate of Calibration

Item for Calibration:

Description	: Dust Monitor
Manufacturer	: Met One Instruments
Model No.	: AEROCET-531
Serial No.	: N6734
Flow rate	:0.1 cfm
Zero Count Test	:0 mg (The result of the 2-minute sample)
Equipment No.	: A-02-13

Test Conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 66 %

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	1.183

****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 1516, 1701 & 1716, Technology Park,
18 On Lai Street, Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/161216A
Date of Issue:	2016-12-19
Date Received:	2016-12-16
Date Tested:	2016-12-16
Date Completed:	2016-12-19
Next Due Date:	2017-02-18

ATTN: **Mr. W. K. Tang**

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Handheld Particle Counter
Manufacturer	: Hal Technology
Model No.	: Hal-HPC300
Serial No.	: 3020408
Flow rate	: 0.1 cfm
Zero Count Test	: 0 count per 5 minutes
Equipment No.	: A-26-01

Test Conditions:

Room Temperature	: 23 degree Celsius
Relative Humidity	: 64 %

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	1.043

****

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**

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Laboratory Manager

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/161216B
Date of Issue:	2016-12-19
Date Received:	2016-12-16
Date Tested:	2016-12-16
Date Completed:	2016-12-19
Next Due Date:	2017-02-18

ATTN: **Mr. W. K. Tang**

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Handheld Particle Counter
Manufacturer	: Hal Technology
Model No.	: Hal-HPC300
Serial No.	: 3020409
Flow rate	: 0.1 cfm
Zero Count Test	: 0 count per 5 minutes
Equipment No.	: A-26-02

Test Conditions:

Room Temperature	: 23 degree Celsius
Relative Humidity	: 64 %

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	1.103

****

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/161216C
Date of Issue:	2016-12-19
Date Received:	2016-12-16
Date Tested:	2016-12-16
Date Completed:	2016-12-19
Next Due Date:	2017-02-18

ATTN: **Mr. W. K. Tang**

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Handheld Particle Counter
Manufacturer	: Hal Technology
Model No.	: Hal-HPC300
Serial No.	: 3020410
Flow rate	: 0.1 cfm
Zero Count Test	: 0 count per 5 minutes
Equipment No.	: A-26-03

Test Conditions:

Room Temperature	: 23 degree Celsius
Relative Humidity	: 64 %

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	1.122

****

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/161209
Date of Issue:	2016-12-12
Date Received:	2016-12-09
Date Tested:	2016-12-09
Date Completed:	2016-12-12
Next Due Date:	2017-02-11

ATTN: **Mr. W. K. Tang**

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Handheld Particle Counter
Manufacturer	: Hal Technology
Model No.	: Hal-HPC300
Serial No.	: 3020411
Flow rate	: 0.1 cfm
Zero Count Test	: 0 count per 5 minutes
Equipment No.	: A-26-04

Test Conditions:

Room Temperature	: 24 degree Celsius
Relative Humidity	: 69 %

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	1.117

****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/160917B
Date of Issue:	2016-09-19
Date Received:	2016-09-17
Date Tested:	2016-09-17
Date Completed:	2016-09-19
Next Due Date:	2017-09-18
Page:	1 of 1

ATTN: **Mr. W.K. Tang**

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 955
Serial No.	: 12553
Microphone No.	: 35222
Equipment No.	: N-08-02

Test conditions:

Room Temperatre	: 24 degree Celsius
Relative Humidity	: 57%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

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Laboratory Manager

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/161230
Date of Issue:	2017-01-03
Date Received:	2016-12-30
Date Tested:	2016-12-30
Date Completed:	2017-01-03
Next Due Date:	2018-01-02

ATTN: **Mr. W. K. Tang**

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 955
Serial No.	: 14303
Microphone No.	: 35222
Equipment No.	: N-08-05

Test conditions:

Room Temperatre	: 21 degree Celsius
Relative Humidity	: 62 %

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

Remark: 1)This report supersedes the one dated 2012/01/21 with certificate number C/N/120120/1.

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
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Shatin, NT, Hong Kong

ATTN: **Mr. W.K. Tang**

Test Report No.:	C/N/160826A
Date of Issue:	2016-08-29
Date Received:	2016-08-26
Date Tested:	2016-08-26
Date Completed:	2016-08-29
Next Due Date:	2017-08-28
Page:	1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 21455
Microphone No.	: 43730
Equipment No.	: N-08-07

Test conditions:

Room Temperatre	: 25 degree Celsius
Relative Humidity	: 57%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/160819B
Date of Issue:	2016-08-22
Date Received:	2016-08-19
Date Tested:	2016-08-19
Date Completed:	2016-08-22
Next Due Date:	2017-08-21

ATTN: **Mr. W.K. Tang**

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 21459
Microphone No.	: 43676
Equipment No.	: N-08-08

Test conditions:

Room Temperatre	: 24 degree Celsius
Relative Humidity	: 58%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

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Laboratory Manager

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/160819C
Date of Issue:	2016-08-22
Date Received:	2016-08-19
Date Tested:	2016-08-19
Date Completed:	2016-08-22
Next Due Date:	2017-08-21

ATTN: **Mr. W.K. Tang**

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 21460
Microphone No.	: 43679
Equipment No.	: N-08-09

Test conditions:

Room Temperatre	: 24 degree Celsius
Relative Humidity	: 58%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/161128
Date of Issue:	2016-11-30
Date Received:	2016-11-28
Date Tested:	2016-11-28
Date Completed:	2016-11-30
Next Due Date:	2017-11-29

ATTN: **Mr. W.K. Tang**

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 23853
Microphone No.	: 48530
Equipment No.	: N-08-10

Test conditions:

Room Temperatre	: 21 degree Celsius
Relative Humidity	: 66%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/161104/1
Date of Issue:	2016-11-07
Date Received:	2016-11-04
Date Tested:	2016-11-04
Date Completed:	2016-11-07
Next Due Date:	2017-11-06
Page:	1 of 1

ATTN: **Mr. W.K. Tang**

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: Brüel & Kjær
Model No.	: 4231
Serial No.	: 2326353
Equipment No.	: N-02-01

Test conditions:

Room Temperatre	: 21 degree Celsius
Relative Humidity	: 62 %

Methodology:

The sound calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

Patrick Tse

PATRICK TSE
Laboratory Manager

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/160819D
Date of Issue:	2016-08-22
Date Received:	2016-08-19
Date Tested:	2016-08-19
Date Completed:	2016-08-22
Next Due Date:	2017-08-21

ATTN: **Mr. W.K. Tang**

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: Brüel & Kjær
Model No.	: 4231
Serial No.	: 2412367
Equipment No.	: N-02-03

Test conditions:

Room Temperatre	: 24 degree Celsius
Relative Humidity	: 58%

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/160930A
Date of Issue:	2016-10-03
Date Received:	2016-09-30
Date Tested:	2016-09-30
Date Completed:	2016-10-03
Next Due Date:	2017-10-02

ATTN: **Mr. W.K. Tang**

Page: 1 of 1

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 24803
Equipment No.	: N-09-03

Test conditions:

Room Temperatre	: 25 degree Celsius
Relative Humidity	: 60%

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/160930B
Date of Issue:	2016-10-03
Date Received:	2016-09-30
Date Tested:	2016-09-30
Date Completed:	2016-10-03
Next Due Date:	2017-10-02

ATTN: **Mr. W.K. Tang**

Page: 1 of 1

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 24791
Equipment No.	: N-09-04

Test conditions:

Room Temperatre	: 25 degree Celsius
Relative Humidity	: 60%

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/160930C
Date of Issue:	2016-10-03
Date Received:	2016-09-30
Date Tested:	2016-09-30
Date Completed:	2016-10-03
Next Due Date:	2017-10-02
Page:	1 of 1

ATTN: **Mr. W.K. Tang**

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 24780
Equipment No.	: N-09-05

Test conditions:

Room Temperatre	: 25 degree Celsius
Relative Humidity	: 60%

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

WELLAB 匯力 Testing & Research

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TEST REPORT

APPLICANT:	**Cinotech Consultants Limited** **RM 1710, Technology Park,** **18 On Lai Street,** **Shatin, N.T., Hong Kong**	Test Report No.: Date of Issue: Date Received: Date Tested: Date Completed: Next Due Date:	C/W/161116 2016-11-16 2016-11-16 2016-11-16 2016-11-16 2017-02-15
ATTN:	**Miss Mei Ling Tang**	Page:	1 of 2

Certificate of Calibration

Item for calibration:

Description	: Multiparameter Water Quality Probe
Manufacturer	: Aquaread Ltd
Model No.	: AP-2000-D
Serial No.	:122252120
Equipment No.	: W.18.02

Test conditions:

Room Temperatre	: 23 degree Celsius
Relative Humidity	: 58%

Test Specifications:

Performance checking for pH, Oxidation Reduction Potential (ORP), Dissolved oxygen (D.O.), Turbidity, Salinity, Conductivity and Temperature

Methodology:

According to manufacturer instruction manual, APHA 20e 4500-O C

****

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

WELLAB 匯力 Testing & Research

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18 On Lai Street, Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
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TEST REPORT

Test Report No.:	C/W/161116
Date of Issue:	2016-11-16
Date Received:	2016-11-16
Date Tested:	2016-11-16
Date Completed:	2016-11-16
Next Due Date:	2017-02-15
Page:	2 of 2

Certificate of Calibration

Results:

pH performance checking

	Instrument Readings (pH unit)	Accetance Criteria	Comment
pH QC buffer 4.01	4.02	4.01 ± 0.10	Pass
pH QC buffer 6.86	6.82	6.86 ± 0.10	Pass
pH QC buffer 9.18	9.17	9.18 ± 0.10	Pass

ORP performance checking

	Instrument Readings (mV)	Accetance Criteria	Comment
Zobell Solution	227.4	229 ± 10	Pass

D.O. performance checking

Winkler Titration value (mg/L)	Instrument Readings (mg/L)	Accetance Criteria	Comment
8.40	8.43	Difference between Titration value and instrument reading <0.2mg/L	Pass

Turbidity check

Turbidity solution (NTU)	Instrument Readings (NTU)	Accetance Criteria	Comment
0.00	0.00	0.00 ± 0.05	Pass
100	100	100 ± 5	Pass
1000	1000	1000 ± 100	Pass

Salinity Performance check

Salinity, ppt		Acceptable range	Comment
Instrument Reading	Theoretical Value	30.0 ± 3	Pass
30.6	30.0		

Conductivity performance checking

	Instrument Readings (mV)	Accetance Criteria	Comment
KCl stock solution (2570 µs/cm)	2590	2442-2698	Pass

Temperature performance checking

Reference thermometer-E431 Readings (°C)	Instrument Readings (°C)	Correction (°C)	Comment
24.1	24.0	+0.1	N/A

**********END OF REPORT**********

WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 1516, 1701 & 1716, Technology Park,
18 On Lai Street, Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

ATTN: **Miss Mei Ling Tang**

Test Report No.:	C/W/161012C
Date of Issue:	2016-10-12
Date Received:	2016-10-12
Date Tested:	2016-10-12
Date Completed:	2016-10-12
Next Due Date:	2017-01-11
Page:	1 of 2

Certificate of Calibration

Item for calibration:

Description	: Multiparameter Water Quality Probe
Manufacturer	: Aquaread Ltd
Model No.	: AP-2000-D
Serial No.	: 122251620
Equipment No.	: W.18.09

Test conditions:

Room Temperatre	: 20 degree Celsius
Relative Humidity	: 57%

Test Specifications:

Performance checking for pH, Oxidation Reduction Potential (ORP), Dissolved oxygen (D.O.), Turbidity, Salinity, Conductivity and Temperature

Methodology:

According to manufacturer instruction manual, APHA 20e 4500-O C

****

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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TEST REPORT

Test Report No.:	C/W/161012C
Date of Issue:	2016-10-12
Date Received:	2016-10-12
Date Tested:	2016-10-12
Date Completed:	2016-10-12
Next Due Date:	2017-01-11
Page:	2 of 2

Certificate of Calibration

Results:

pH performance checking

	Instrument Readings (pH unit)	Accetance Criteria	Comment
pH QC buffer 4.01	4.06	4.01 ± 0.10	Pass
pH QC buffer 6.86	6.88	6.86 ± 0.10	Pass
pH QC buffer 9.18	9.17	9.18 ± 0.10	Pass

ORP performance checking

	Instrument Readings (mV)	Accetance Criteria	Comment
Zobell Solution	229.3	229 ± 10	Pass

D.O. performance checking

Winkler Titration value (mg/L)	Instrument Readings (mg/L)	Accetance Criteria	Comment
8.40	8.44	Difference between Titration value and instrument reading <0.2mg/L	Pass

Turbidity check

Turbidity solution (NTU)	Instrument Readings (NTU)	Accetance Criteria	Comment
0.00	0.00	0.00 ± 0.05	Pass
100	100	100 ± 5	Pass
1000	1000	1000 ± 100	Pass

Salinity Performance check

Salinity, ppt		Acceptable range	Comment
Instrument Reading	Theoretical Value	30.0 ± 3	Pass
30.0	30.0		

Conductivity performance checking

	Instrument Readings (mV)	Accetance Criteria	Comment
KCl stock solution (2570 µs/cm)	2682	2442-2698	Pass

Temperature performance checking

Reference thermometer-E431 Readings (°C)	Instrument Readings (°C)	Correction (°C)	Comment
24.1	24.2	-0.1	N/A

**********END OF REPORT**********

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TEST REPORT

APPLICANT:	**Cinotech Consultants Limited** **RM 1710, Technology Park,** **18 On Lai Street,** **Shatin, N.T., Hong Kong**	Test Report No.: Date of Issue: Date Received: Date Tested: Date Completed: Next Due Date:	C/W/170111A 2017-01-11 2017-01-11 2017-01-11 2017-01-11 2017-04-10
ATTN:	**Miss Mei Ling Tang**	Page:	1 of 2

Certificate of Calibration

Item for calibration:

Description	: Multiparameter Water Quality Probe
Manufacturer	: Aquaread Ltd
Model No.	: AP-2000-D
Serial No.	: 122251620
Equipment No.	: W.18.09

Test conditions:

Room Temperatre	: 21 degree Celsius
Relative Humidity	: 57%

Test Specifications:

Performance checking for pH, Oxidation Reduction Potential (ORP), Dissolved oxygen (D.O.), Turbidity, Salinity, Conductivity and Temperature

Methodology:

According to manufacturer instruction manual, APHA 20e 4500-O C

****

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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TEST REPORT

Test Report No.:	C/W/170111A
Date of Issue:	2017-01-11
Date Received:	2017-01-11
Date Tested:	2017-01-11
Date Completed:	2017-01-11
Next Due Date:	2017-04-10
Page:	2 of 2

Certificate of Calibration

Results:

pH performance checking

	Instrument Readings (pH unit)	Accetance Criteria	Comment
pH QC buffer 4.01	4.05	4.01 ± 0.10	Pass
pH QC buffer 6.86	6.88	6.86 ± 0.10	Pass
pH QC buffer 9.18	9.19	9.18 ± 0.10	Pass

ORP performance checking

	Instrument Readings (mV)	Accetance Criteria	Comment
Zobell Solution	228.9	229 ± 10	Pass

D.O. performance checking

Winkler Titration value (mg/L)	Instrument Readings (mg/L)	Accetance Criteria	Comment
8.40	8.40	Difference between Titration value and instrument reading <0.2mg/L	Pass

Turbidity check

Turbidity solution (NTU)	Instrument Readings (NTU)	Accetance Criteria	Comment
0.00	0.00	0.00 ± 0.05	Pass
100	100	100 ± 5	Pass
1000	1000	1000 ± 100	Pass

Salinity Performance check

Salinity, ppt		Acceptable range	Comment
Instrument Reading	Theoretical Value	30.0 ± 3	Pass
30.0	30.5		

Conductivity performance checking

	Instrument Readings (mV)	Accetance Criteria	Comment
KCl stock solution (2570 µs/cm)	2679	2442-2698	Pass

Temperature performance checking

Reference thermometer-E431 Readings (°C)	Instrument Readings (°C)	Correction (°C)	Comment
24.1	24.2	-0.1	N/A

**********END OF REPORT**********

WELLAB LIMITED
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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

ATTN: **Miss Mei Ling Tang**

Test Report No.:	C/W/161012D
Date of Issue:	2016-10-12
Date Received:	2016-10-12
Date Tested:	2016-10-12
Date Completed:	2016-10-12
Next Due Date:	2017-01-11
Page:	1 of 2

Certificate of Calibration

Item for calibration:

Description	: Multiparameter Water Quality Probe
Manufacturer	: Aquaread Ltd
Model No.	: AP-2000-D
Serial No.	:122252320
Equipment No.	: W.18.10

Test conditions:

Room Temperatre	: 20 degree Celsius
Relative Humidity	: 57%

Test Specifications:

Performance checking for pH, Oxidation Reduction Potential (ORP), Dissolved oxygen (D.O.), Turbidity, Salinity, Conductivity and Temperature

Methodology:

According to manufacturer instruction manual, APHA 20e 4500-O C

****

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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TEST REPORT

Test Report No.:	C/W/161012D
Date of Issue:	2016-10-12
Date Received:	2016-10-12
Date Tested:	2016-10-12
Date Completed:	2016-10-12
Next Due Date:	2017-01-11
Page:	2 of 2

Certificate of Calibration

Results:

pH performance checking

	Instrument Readings (pH unit)	Accetance Criteria	Comment
pH QC buffer 4.01	4.04	4.01 ± 0.10	Pass
pH QC buffer 6.86	6.88	6.86 ± 0.10	Pass
pH QC buffer 9.18	9.16	9.18 ± 0.10	Pass

ORP performance checking

	Instrument Readings (mV)	Accetance Criteria	Comment
Zobell Solution	229.7	229 ± 10	Pass

D.O. performance checking

Winkler Titration value (mg/L)	Instrument Readings (mg/L)	Accetance Criteria	Comment
8.40	8.43	Difference between Titration value and instrument reading <0.2mg/L	Pass

Turbidity check

Turbidity solution (NTU)	Instrument Readings (NTU)	Accetance Criteria	Comment
0.00	0.00	0.00 ± 0.05	Pass
100	100	100 ± 5	Pass
1000	1000	1000 ± 100	Pass

Salinity Performance check

Salinity, ppt		Acceptable range	Comment
Instrument Reading	Theoretical Value	30.0 ± 3	Pass
30.0	30.0		

Conductivity performance checking

	Instrument Readings (mV)	Accetance Criteria	Comment
KCl stock solution (2570 µs/cm)	2667	2442-2698	Pass

Temperature performance checking

Reference thermometer-E431 Readings (°C)	Instrument Readings (°C)	Correction (°C)	Comment
24.1	24.3	-0.2	N/A

**********END OF REPORT**********

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TEST REPORT

APPLICANT:	**Cinotech Consultants Limited** **RM 1710, Technology Park,** **18 On Lai Street,** **Shatin, N.T., Hong Kong**	Test Report No.: Date of Issue: Date Received: Date Tested: Date Completed: Next Due Date:	C/W/170111B 2017-01-11 2017-01-11 2017-01-11 2017-01-11 2017-04-10
ATTN:	**Miss Mei Ling Tang**	Page:	1 of 2

Certificate of Calibration

Item for calibration:

Description	: Multiparameter Water Quality Probe
Manufacturer	: Aquaread Ltd
Model No.	: AP-2000-D
Serial No.	:122252320
Equipment No.	: W.18.10

Test conditions:

Room Temperatre	: 21 degree Celsius
Relative Humidity	: 57%

Test Specifications:

Performance checking for pH, Oxidation Reduction Potential (ORP), Dissolved oxygen (D.O.), Turbidity, Salinity, Conductivity and Temperature

Methodology:

According to manufacturer instruction manual, APHA 20e 4500-O C

****

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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TEST REPORT

Test Report No.:	C/W/170111B
Date of Issue:	2017-01-11
Date Received:	2017-01-11
Date Tested:	2017-01-11
Date Completed:	2017-01-11
Next Due Date:	2017-04-10
Page:	2 of 2

Certificate of Calibration

Results:

pH performance checking

	Instrument Readings (pH unit)	Accetance Criteria	Comment
pH QC buffer 4.01	4.08	4.01 ± 0.10	Pass
pH QC buffer 6.86	6.89	6.86 ± 0.10	Pass
pH QC buffer 9.18	9.15	9.18 ± 0.10	Pass

ORP performance checking

	Instrument Readings (mV)	Accetance Criteria	Comment
Zobell Solution	228.4	229 ± 10	Pass

D.O. performance checking

Winkler Titration value (mg/L)	Instrument Readings (mg/L)	Accetance Criteria	Comment
8.40	8.42	Difference between Titration value and instrument reading <0.2mg/L	Pass

Turbidity check

Turbidity solution (NTU)	Instrument Readings (NTU)	Accetance Criteria	Comment
0.00	0.00	0.00 ± 0.05	Pass
100	100	100 ± 5	Pass
1000	1000	1000 ± 100	Pass

Salinity Performance check

Salinity, ppt		Acceptable range	Comment
Instrument Reading	Theoretical Value	30.0 ± 3	Pass
30.0	30.0		

Conductivity performance checking

	Instrument Readings (mV)	Accetance Criteria	Comment
KCl stock solution (2570 µs/cm)	2670	2442-2698	Pass

Temperature performance checking

Reference thermometer-E431 Readings (°C)	Instrument Readings (°C)	Correction (°C)	Comment
24.1	24.2	-0.1	N/A

**********END OF REPORT**********

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

ATTN: **Miss Mei Ling Tang**

Test Report No.:	C/W/161012
Date of Issue:	2016-10-12
Date Received:	2016-10-12
Date Tested:	2016-10-12
Date Completed:	2016-10-12
Next Due Date:	2017-01-11
Page:	1 of 2

Certificate of Calibration

Item for calibration:

Description	: Multiparameter Water Quality Probe
Manufacturer	: Aquaread Ltd
Model No.	: AP-2000-D
Serial No.	:122251520
Equipment No.	: W.18.12

Test conditions:

Room Temperatre	: 20 degree Celsius
Relative Humidity	: 57%

Test Specifications:

Performance checking for pH, Oxidation Reduction Potential (ORP), Dissolved oxygen (D.O.), Turbidity, Salinity, Conductivity and Temperature

Methodology:

According to manufacturer instruction manual, APHA 20e 4500-O C

****

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**

Patrick Tse

PATRICK TSE
Laboratory Manager

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TEST REPORT

Test Report No.:	C/W/161012
Date of Issue:	2016-10-12
Date Received:	2016-10-12
Date Tested:	2016-10-12
Date Completed:	2016-10-12
Next Due Date:	2017-01-11
Page:	2 of 2

Certificate of Calibration

Results:

pH performance checking

	Instrument Readings (pH unit)	Accetance Criteria	Comment
pH QC buffer 4.01	4.02	4.01 ± 0.10	Pass
pH QC buffer 6.86	6.87	6.86 ± 0.10	Pass
pH QC buffer 9.18	9.18	9.18 ± 0.10	Pass

ORP performance checking

	Instrument Readings (mV)	Accetance Criteria	Comment
Zobell Solution	229.9	229 ± 10	Pass

D.O. performance checking

Winkler Titration value (mg/L)	Instrument Readings (mg/L)	Accetance Criteria	Comment
8.40	8.47	Difference between Titration value and instrument reading <0.2mg/L	Pass

Turbidity check

Turbidity solution (NTU)	Instrument Readings (NTU)	Accetance Criteria	Comment
0.00	0.00	0.00 ± 0.05	Pass
100	100	100 ± 5	Pass
1000	1000	1000 ± 100	Pass

Salinity Performance check

Salinity, ppt		Acceptable range	Comment
Instrument Reading	Theoretical Value	30.0 ± 3	Pass
30.0	30.3		

Conductivity performance checking

	Instrument Readings (mV)	Accetance Criteria	Comment
KCl stock solution (2570 µs/cm)	2579	2442-2698	Pass

Temperature performance checking

Reference thermometer-E431 Readings (°C)	Instrument Readings (°C)	Correction (°C)	Comment
24.1	24.3	-0.2	N/A

**********END OF REPORT**********

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Test Report No.:	C/W/170111
Date of Issue:	2017-01-11
Date Received:	2017-01-11
Date Tested:	2017-01-11
Date Completed:	2017-01-11
Next Due Date:	2017-04-10

ATTN: **Miss Mei Ling Tang**

Certificate of Calibration

Item for calibration:

Description	: Multiparameter Water Quality Probe
Manufacturer	: Aquaread Ltd
Model No.	: AP-2000-D
Serial No.	:122251520
Equipment No.	: W.18.12

Test conditions:

Room Temperatre	: 21 degree Celsius
Relative Humidity	: 57%

Test Specifications:

Performance checking for pH, Oxidation Reduction Potential (ORP), Dissolved oxygen (D.O.), Turbidity, Salinity, Conductivity and Temperature

Methodology:

According to manufacturer instruction manual, APHA 20e 4500-O C

****

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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TEST REPORT

Test Report No.:	C/W/170111
Date of Issue:	2017-01-11
Date Received:	2017-01-11
Date Tested:	2017-01-11
Date Completed:	2017-01-11
Next Due Date:	2017-04-10

Certificate of Calibration

Results:

pH performance checking

	Instrument Readings (pH unit)	Accetance Criteria	Comment
pH QC buffer 4.01	4.03	4.01 ± 0.10	Pass
pH QC buffer 6.86	6.87	6.86 ± 0.10	Pass
pH QC buffer 9.18	9.19	9.18 ± 0.10	Pass

ORP performance checking

	Instrument Readings (mV)	Accetance Criteria	Comment
Zobell Solution	228.6	229 ± 10	Pass

D.O. performance checking

Winkler Titration value (mg/L)	Instrument Readings (mg/L)	Accetance Criteria	Comment
8.40	8.45	Difference between Titration value and instrument reading <0.2mg/L	Pass

Turbidity check

Turbidity solution (NTU)	Instrument Readings (NTU)	Accetance Criteria	Comment
0.00	0.00	0.00 ± 0.05	Pass
100	100	100 ± 5	Pass
1000	1000	1000 ± 100	Pass

Salinity Performance check

Salinity, ppt		Acceptable range	Comment
Instrument Reading	Theoretical Value	30.0 ± 3	Pass
30.0	30.7		

Conductivity performance checking

	Instrument Readings (mV)	Accetance Criteria	Comment
KCl stock solution (2570 µs/cm)	2586	2442-2698	Pass

Temperature performance checking

Reference thermometer-E431 Readings (°C)	Instrument Readings (°C)	Correction (°C)	Comment
24.1	24.2	-0.1	N/A

**********END OF REPORT**********

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TEST REPORT

APPLICANT:	**Cinotech Consultants Limited** **RM 1710, Technology Park,** **18 On Lai Street,** **Shatin, N.T., Hong Kong**	Test Report No.: Date of Issue: Date Received: Date Tested: Date Completed: Next Due Date:	C/W/161012E 2016-10-12 2016-10-12 2016-10-12 2016-10-12 2017-01-11
ATTN:	**Miss Mei Ling Tang**	Page:	1 of 2

Certificate of Calibration

Item for calibration:

Description	: Multiparameter Water Quality Probe
Manufacturer	: Aquaread Ltd
Model No.	:AP-2000-D
Serial No.	:122251720
Equipment No.	: W.18.13

Test conditions:

Room Temperatre	: 20 degree Celsius
Relative Humidity	: 57%

Test Specifications:

Performance checking for pH, Oxidation Reduction Potential (ORP), Dissolved oxygen (D.O.), Turbidity, Salinity, Conductivity and Temperature

Methodology:

According to manufacturer instruction manual, APHA 20e 4500-O C

****

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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TEST REPORT

Test Report No.:	C/W/161012E
Date of Issue:	2016-10-12
Date Received:	2016-10-12
Date Tested:	2016-10-12
Date Completed:	2016-10-12
Next Due Date:	2017-01-11
Page:	2 of 2

Certificate of Calibration

Results:

pH performance checking

	Instrument Readings (pH unit)	Accetance Criteria	Comment
pH QC buffer 4.01	4.05	4.01 ± 0.10	Pass
pH QC buffer 6.86	6.84	6.86 ± 0.10	Pass
pH QC buffer 9.18	9.20	9.18 ± 0.10	Pass

ORP performance checking

	Instrument Readings (mV)	Accetance Criteria	Comment
Zobell Solution	228.4	229 ± 10	Pass

D.O. performance checking

Winkler Titration value (mg/L)	Instrument Readings (mg/L)	Accetance Criteria	Comment
8.40	8.44	Difference between Titration value and instrument reading <0.2mg/L	Pass

Turbidity check

Turbidity solution (NTU)	Instrument Readings (NTU)	Accetance Criteria	Comment
0.00	0.00	0.00 ± 0.05	Pass
100	100	100 ± 5	Pass
1000	1000	1000 ± 100	Pass

Salinity Performance check

Salinity, ppt		Acceptable range	Comment
Instrument Reading	Theoretical Value	30.0 ± 3	Pass
30.2	30.0		

Conductivity performance checking

	Instrument Readings (mV)	Accetance Criteria	Comment
KCl stock solution (2570 µs/cm)	2679	2442-2698	Pass

Temperature performance checking

Reference thermometer-E431 Readings (°C)	Instrument Readings (°C)	Correction (°C)	Comment
24.1	24.0	+0.1	N/A

**********END OF REPORT**********

WELLAB LIMITED
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TEST REPORT

APPLICANT:	**Cinotech Consultants Limited** **RM 1710, Technology Park,** **18 On Lai Street,** **Shatin, N.T., Hong Kong**	Test Report No.: Date of Issue: Date Received: Date Tested: Date Completed: Next Due Date:	C/W/170111C 2017-01-11 2017-01-11 2017-01-11 2017-01-11 2017-04-10
ATTN:	**Miss Mei Ling Tang**	Page:	1 of 2

Certificate of Calibration

Item for calibration:

Description	: Multiparameter Water Quality Probe
Manufacturer	: Aquaread Ltd
Model No.	:AP-2000-D
Serial No.	:122251720
Equipment No.	: W.18.13

Test conditions:

Room Temperatre	: 21 degree Celsius
Relative Humidity	: 57%

Test Specifications:

Performance checking for pH, Oxidation Reduction Potential (ORP), Dissolved oxygen (D.O.), Turbidity, Salinity, Conductivity and Temperature

Methodology:

According to manufacturer instruction manual, APHA 20e 4500-O C

****

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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TEST REPORT

Test Report No.:	C/W/170111C
Date of Issue:	2017-01-11
Date Received:	2017-01-11
Date Tested:	2017-01-11
Date Completed:	2017-01-11
Next Due Date:	2017-04-10
Page:	2 of 2

Certificate of Calibration

Results:

pH performance checking

	Instrument Readings (pH unit)	Accetance Criteria	Comment
pH QC buffer 4.01	4.06	4.01 ± 0.10	Pass
pH QC buffer 6.86	6.82	6.86 ± 0.10	Pass
pH QC buffer 9.18	9.22	9.18 ± 0.10	Pass

ORP performance checking

	Instrument Readings (mV)	Accetance Criteria	Comment
Zobell Solution	229.4	229 ± 10	Pass

D.O. performance checking

Winkler Titration value (mg/L)	Instrument Readings (mg/L)	Accetance Criteria	Comment
8.40	8.42	Difference between Titration value and instrument reading <0.2mg/L	Pass

Turbidity check

Turbidity solution (NTU)	Instrument Readings (NTU)	Accetance Criteria	Comment
0.00	0.00	0.00 ± 0.05	Pass
100	100	100 ± 5	Pass
1000	1000	1000 ± 100	Pass

Salinity Performance check

Salinity, ppt		Acceptable range	Comment
Instrument Reading	Theoretical Value	30.0 ± 3	Pass
30.2	30.0		

Conductivity performance checking

	Instrument Readings (mV)	Accetance Criteria	Comment
KCl stock solution (2570 µs/cm)	2688	2442-2698	Pass

Temperature performance checking

Reference thermometer-E431 Readings (°C)	Instrument Readings (°C)	Correction (°C)	Comment
24.1	24.2	-0.1	N/A

**********END OF REPORT**********

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

ATTN: **Mr. W.K. Tang**

Test Report No.:	C/W/161006A
Date of Issue:	2016-10-06
Date Received:	2016-10-06
Date Tested:	2016-10-06
Date Completed:	2016-10-06
Next Due Date:	2017-01-05
Page:	1 of 2

Certificate of Calibration

Item for calibration:

Description	: Sonde Environmental Monitoring System
Manufacturer	: YSI
Model No.	: 6820-C-M
Serial No.	: 12B100804
Equipment No.	: W.03.13

Test conditions:

Room Temperature	: 21 degree Celsius
Relative Humidity	: 60%

Test Specifications:

Conductivity & Salinity Sensor, Model: 6560, L/N: 12B100055
1. Conductivity performance check with Potassium Chloride standard solution
2. Salinity performance check with Sodium Chloride standard solution

Dissolved Oxygen Sensor, Model: 6562, L/N: 12A100930
1. Performance check against Winkler titration

Turbidity Sensor, Model: 6136, S/N: 12B100645
1. Calibration check with Formazin standard solution

pH Meter, Model: 6561, L/N: 11H
1. Calibration check with standard pH buffer

Depth Meter
1. Calibration check at 1m water level depth

Methodologies:

1. YSI 6-Series Sonde Environmental Monitoring System Instruction Manual
2. In-house method with reference to APHA and ISO standards
   Conductivity (APHA 20ed 2510), Salinity (APHA 20ed 2520B)
   Dissolved Oxygen (APHA 20ed 4500-O C), Turbidity (APHA 19ed 2130 B),
   pH (APHA 19th 4500-H+ B)

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 1516, 1701 & 1716, Technology Park,
18 On Lai Street, Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

Test Report No.:	C/W/161006A
Date of Issue:	2016-10-06
Date Received:	2016-10-06
Date Tested:	2016-10-06
Date Completed:	2016-10-06
Next Due Date:	2017-01-05
Page:	2 of 2

Results:

1. Conductivity performance check

Specific Conductivity, µS/cm		Correction, µS/cm	Acceptable range
Salinity Meter (C1)	Theoretical Value (C2)	D = C1 - C2	
1420	1420	0	1420 ± 20

2. Salinity Performance check

Salinity, ppt		Correction, ppt	Acceptable range
Instrument Reading	Theoretical Value		
30.0	30.0	0	30.0 ± 3

3. Dissolved Oxygen check

Oxygen level in water at 20°C	Dissolved Oxygen, mg O_2/L		Correction, mg O_2/L	Acceptable range
	D.O. Meter	Winkler Titration		
Saturated	9.0	9.0	0.0	± 0.2
Half-saturated	5.8	5.8	0.0	± 0.2
Zero	0.0	0.0	0.0	± 0.2

4. Turbidity check

Turbidity value in solution, NTU	Calibration Value, NTU	Correction, NTU	Acceptable range
0.00	0.00	0.00	0.00 ± 0.05
100	100	0	100 ± 5
1000	1000	0	1000 ± 100

5. pH Meter check

Test Parameters	Performance characteristic	Acceptable range
Liquid junction error ΔpH_j , pH unit	0.01	Less than 0.05
Shift on stirring ΔpH_s , pH unit	0.01	Less than 0.02
Noise ΔpH_n , pH unit	0.00	Less than 0.02

6. Depth Meter check

Instrument Reading, m	Calibration Value, m	Correction, m	Acceptable range
1.0	1.00	0.00	1.00 ± 0.05

**********END OF REPORT**********

WELLAB 匯力
Testing & Research

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Rms 1516, 1701 & 1716, Technology Park,
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Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

ATTN: **Mr. W.K. Tang**

Test Report No.:	C/W/170105A
Date of Issue:	2017-01-05
Date Received:	2017-01-05
Date Tested:	2017-01-05
Date Completed:	2017-01-05
Next Due Date:	2017-04-04
Page:	1 of 2

Certificate of Calibration

Item for calibration:

Description	: Sonde Environmental Monitoring System
Manufacturer	: YSI
Model No.	: 6820-C-M
Serial No.	: 12B100804
Equipment No.	: W.03.13

Test conditions:

Room Temperature	: 20 degree Celsius
Relative Humidity	: 64%

Test Specifications:

Conductivity & Salinity Sensor, Model: 6560, L/N: 12B100055
1. Conductivity performance check with Potassium Chloride standard solution
2. Salinity performance check with Sodium Chloride standard solution

Dissolved Oxygen Sensor, Model: 6562, L/N: 12A100930
1. Performance check against Winkler titration

Turbidity Sensor, Model: 6136, S/N: 12B100645
1. Calibration check with Formazin standard solution

pH Meter, Model: 6561, L/N: 11H
1. Calibration check with standard pH buffer

Depth Meter
1. Calibration check at 1m water level depth

Methodologies:

1. YSI 6-Series Sonde Environmental Monitoring System Instruction Manual
2. In-house method with reference to APHA and ISO standards
   Conductivity (APHA 20ed 2510), Salinity (APHA 20ed 2520B)
   Dissolved Oxygen (APHA 20ed 4500-O C), Turbidity (APHA 19ed 2130 B),
   pH (APHA 19th 4500-H+ B)

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

Patrick Tse

PATRICK TSE
Laboratory Manager

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TEST REPORT

Test Report No.:	C/W/170105A
Date of Issue:	2017-01-05
Date Received:	2017-01-05
Date Tested:	2017-01-05
Date Completed:	2017-01-05
Next Due Date:	2017-04-04

Results:

1. Conductivity performance check

Specific Conductivity, µS/cm		Correction, µS/cm	Acceptable range
Salinity Meter (C1)	Theoretical Value (C2)	D = C1 - C2	
1420	1420	0	1420 ± 20

2. Salinity Performance check

Salinity, ppt		Correction, ppt	Acceptable range
Instrument Reading	Theoretical Value		
30.0	30.0	0	30.0 ± 3

3. Dissolved Oxygen check

Oxygen level in water at 20°C	Dissolved Oxygen, mg O_2/L		Correction, mg O_2/L	Acceptable range
	D.O. Meter	Winkler Titration		
Saturated	9.0	9.0	0.0	± 0.2
Half-saturated	5.8	5.8	0.0	± 0.2
Zero	0.0	0.0	0.0	± 0.2

4. Turbidity check

Turbidity value in solution, NTU	Calibration Value, NTU	Correction, NTU	Acceptable range
0.00	0.00	0.00	0.00 ± 0.05
100	100	0	100 ± 5
1000	1000	0	1000 ± 100

5. pH Meter check

Test Parameters	Performance characteristic	Acceptable range
Liquid junction error ΔpH_j , pH unit	0.01	Less than 0.05
Shift on stirring ΔpH_s , pH unit	0.01	Less than 0.02
Noise ΔpH_n , pH unit	0.00	Less than 0.02

6. Depth Meter check

Instrument Reading, m	Calibration Value, m	Correction, m	Acceptable range
1.0	1.00	0.00	1.00 ± 0.05

**********END OF REPORT**********

APPENDIX C
WEATHER INFORMATION

APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD

I. General Information

Date	Mean Air Temperature (°C)	Mean Relative Humidity (%)	Precipitation (mm)
1 January 2017	18.4 – 20.8	80	0
2 January 2017	18.4 – 23.3	81	0
3 January 2017	18.9 – 21.3	83	0
4 January 2017	18.7 – 21.7	80	0
5 January 2017	18.9 – 23.4	80	0
6 January 2017	19.7 – 25.0	80	0
7 January 2017	19.7 – 22.8	79	0
8 January 2017	20.5 – 25.5	76	0
9 January 2017	19.7 – 21.8	78	0
10 January 2017	18.8 – 20.5	79	0
11 January 2017	18.2 -19.7	80	0
12 January 2017	16.9 – 20.3	81	Trace
13 January 2017	15.1 – 17.1	84	0.5
14 January 2017	14.5 – 16.5	87	1.0
15 January 2017	14.3 – 16.8	85	1.5
16 January 2017	14.7 – 17.4	80	0.4
17 January 2017	16.7 – 19.2	76	0
18 January 2017	18.0 – 20.0	86	Trace
19 January 2017	18.7 – 24.1	85	0

APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD

I. General Information

Date	Mean Air Temperature (°C)	Mean Relative Humidity (%)	Precipitation (mm)
20 January 2017	16.2 – 20.6	69	Trace
21 January 2017	14.6 – 19.0	67	0
22 January 2017	13.6 – 19.8	58	0
23 January 2017	15.2 – 19.4	71	0
24 January 2017	15.7 – 18.9	72	0
25 January 2017	15.9 – 20.9	76	0
26 January 2017	16.2 – 19.8	75	0
27 January 2017	14.4 – 21.3	69	0
28 January 2017	16.4 – 18.8	79	0.3
29 January 2017	18.1 – 21.5	88	2.4
30 January 2017	17.4 – 23.4	90	1.2
31 January 2017	15.9 – 17.6	87	0.5

* The above information was extracted from the daily weather summary by Hong Kong Observatory.

APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Speed m/s	Direction
1-Jan-2017	0:00	2.4	SSW
1-Jan-2017	1:00	2.7	SW
1-Jan-2017	2:00	2.8	WNW
1-Jan-2017	3:00	2.6	W
1-Jan-2017	4:00	2.5	WNW
1-Jan-2017	5:00	2.9	W
1-Jan-2017	6:00	2.6	W
1-Jan-2017	7:00	2.2	W
1-Jan-2017	8:00	2.5	W
1-Jan-2017	9:00	2.9	NE
1-Jan-2017	10:00	3	NE
1-Jan-2017	11:00	3.5	NNE
1-Jan-2017	12:00	3.9	NE
1-Jan-2017	13:00	3.9	NNE
1-Jan-2017	14:00	3.8	NNE
1-Jan-2017	15:00	4.3	SE
1-Jan-2017	16:00	3.5	W
1-Jan-2017	17:00	3.1	N
1-Jan-2017	18:00	2.9	WNW
1-Jan-2017	19:00	2.5	SW
1-Jan-2017	20:00	2.5	ENE
1-Jan-2017	21:00	2.4	ENE
1-Jan-2017	22:00	2	ENE
1-Jan-2017	23:00	2.3	W
2-Jan-2017	0:00	2.6	WSW
2-Jan-2017	1:00	2.5	NE
2-Jan-2017	2:00	2.4	SSE
2-Jan-2017	3:00	2.6	ENE
2-Jan-2017	4:00	2.2	ENE
2-Jan-2017	5:00	2.9	W
2-Jan-2017	6:00	3	ENE
2-Jan-2017	7:00	3.5	W
2-Jan-2017	8:00	3.5	NNE
2-Jan-2017	9:00	3.4	E
2-Jan-2017	10:00	3.4	SSW
2-Jan-2017	11:00	3.7	NE
2-Jan-2017	12:00	3.2	ENE

II. Mean Wind Speed and Wind Direction

2-Jan-2017	13:00	2.5	N
2-Jan-2017	14:00	3.3	NNE
2-Jan-2017	15:00	2.5	WNW
2-Jan-2017	16:00	2.7	SSW
2-Jan-2017	17:00	2.6	W
2-Jan-2017	18:00	2.1	W
2-Jan-2017	19:00	2.4	NE
2-Jan-2017	20:00	2.5	W
2-Jan-2017	21:00	2.3	W
2-Jan-2017	22:00	2.5	ESE
2-Jan-2017	23:00	2.4	NNE
3-Jan-2017	0:00	2.4	W
3-Jan-2017	1:00	2.1	WNW
3-Jan-2017	2:00	2.2	WSW
3-Jan-2017	3:00	2.8	W
3-Jan-2017	4:00	2.3	W
3-Jan-2017	5:00	2.2	SSW
3-Jan-2017	6:00	1.8	NW
3-Jan-2017	7:00	1.7	ESE
3-Jan-2017	8:00	2.8	W
3-Jan-2017	9:00	2.4	W
3-Jan-2017	10:00	2.5	NW
3-Jan-2017	11:00	2.9	WNW
3-Jan-2017	12:00	3.4	WNW
3-Jan-2017	13:00	3.5	SW
3-Jan-2017	14:00	3.4	W
3-Jan-2017	15:00	2.8	SE
3-Jan-2017	16:00	2.8	ENE
3-Jan-2017	17:00	2.6	NNE
3-Jan-2017	18:00	2.2	N
3-Jan-2017	19:00	2	ENE
3-Jan-2017	20:00	1.5	ESE
3-Jan-2017	21:00	1.5	E
3-Jan-2017	22:00	1.7	ENE
3-Jan-2017	23:00	1.7	W
4-Jan-2017	0:00	1.2	E
4-Jan-2017	1:00	1.2	WSW
4-Jan-2017	2:00	1.1	W

II. Mean Wind Speed and Wind Direction

4-Jan-2017	3:00	1	SSW
4-Jan-2017	4:00	0.9	SW
4-Jan-2017	5:00	1.2	SW
4-Jan-2017	6:00	1.3	NNW
4-Jan-2017	7:00	1.9	SW
4-Jan-2017	8:00	2.2	S
4-Jan-2017	9:00	3.4	N
4-Jan-2017	10:00	3.5	N
4-Jan-2017	11:00	3.1	NNE
4-Jan-2017	12:00	4.5	N
4-Jan-2017	13:00	4	WNW
4-Jan-2017	14:00	3.3	NNE
4-Jan-2017	15:00	3.3	SE
4-Jan-2017	16:00	2.8	SW
4-Jan-2017	17:00	2.2	N
4-Jan-2017	18:00	2.6	E
4-Jan-2017	19:00	2.3	ESE
4-Jan-2017	20:00	2.3	SE
4-Jan-2017	21:00	3	ENE
4-Jan-2017	22:00	2.3	SSE
4-Jan-2017	23:00	2.4	ESE
5-Jan-2017	0:00	2.2	ENE
5-Jan-2017	1:00	2.3	ENE
5-Jan-2017	2:00	2.4	ENE
5-Jan-2017	3:00	2.6	ENE
5-Jan-2017	4:00	2.5	SSE
5-Jan-2017	5:00	2.3	W
5-Jan-2017	6:00	2.2	W
5-Jan-2017	7:00	2.2	SSW
5-Jan-2017	8:00	2	SW
5-Jan-2017	9:00	2.1	WSW
5-Jan-2017	10:00	2.7	SSW
5-Jan-2017	11:00	2.4	WNW
5-Jan-2017	12:00	3.3	W
5-Jan-2017	13:00	2.9	WSW
5-Jan-2017	14:00	3.3	W
5-Jan-2017	15:00	2.6	W
5-Jan-2017	16:00	3	SE

II. Mean Wind Speed and Wind Direction

5-Jan-2017	17:00	2.6	SSE
5-Jan-2017	18:00	2.4	SE
5-Jan-2017	19:00	2.8	SE
5-Jan-2017	20:00	3.4	ESE
5-Jan-2017	21:00	3.5	ESE
5-Jan-2017	22:00	3.1	ESE
5-Jan-2017	23:00	3.1	SSE
6-Jan-2017	0:00	2.9	ESE
6-Jan-2017	1:00	3.5	ESE
6-Jan-2017	2:00	2.8	SW
6-Jan-2017	3:00	2.7	SSW
6-Jan-2017	4:00	3.3	SW
6-Jan-2017	5:00	3.2	SW
6-Jan-2017	6:00	3.2	WSW
6-Jan-2017	7:00	3	WSW
6-Jan-2017	8:00	3.3	W
6-Jan-2017	9:00	3.3	WNW
6-Jan-2017	10:00	3.1	WSW
6-Jan-2017	11:00	3.1	WNW
6-Jan-2017	12:00	3.9	SSW
6-Jan-2017	13:00	3.5	WNW
6-Jan-2017	14:00	3	ESE
6-Jan-2017	15:00	3.4	ESE
6-Jan-2017	16:00	3.2	WNW
6-Jan-2017	17:00	2.4	SE
6-Jan-2017	18:00	1.9	W
6-Jan-2017	19:00	1.7	WSW
6-Jan-2017	20:00	1.8	WNW
6-Jan-2017	21:00	2.3	NE
6-Jan-2017	22:00	2.1	ENE
6-Jan-2017	23:00	2.6	N
7-Jan-2017	0:00	3.3	W
7-Jan-2017	1:00	3	NE
7-Jan-2017	2:00	2.9	W
7-Jan-2017	3:00	2.4	NW
7-Jan-2017	4:00	1.9	N
7-Jan-2017	5:00	1.8	WSW
7-Jan-2017	6:00	2.3	W

II. Mean Wind Speed and Wind Direction

7-Jan-2017	7:00	2.6	WSW
7-Jan-2017	8:00	2.5	SW
7-Jan-2017	9:00	2.8	SSW
7-Jan-2017	10:00	2.5	SW
7-Jan-2017	11:00	2.5	WNW
7-Jan-2017	12:00	2.6	W
7-Jan-2017	13:00	2.4	W
7-Jan-2017	14:00	2.1	WNW
7-Jan-2017	15:00	2.4	WSW
7-Jan-2017	16:00	2.6	W
7-Jan-2017	17:00	2.5	NNE
7-Jan-2017	18:00	2.8	WSW
7-Jan-2017	19:00	2.7	W
7-Jan-2017	20:00	2.8	NNE
7-Jan-2017	21:00	2.2	WSW
7-Jan-2017	22:00	2.6	WNW
7-Jan-2017	23:00	2.1	WSW
8-Jan-2017	0:00	2	WSW
8-Jan-2017	1:00	1.7	WNW
8-Jan-2017	2:00	2.2	SSW
8-Jan-2017	3:00	1.9	NNE
8-Jan-2017	4:00	2.4	SSE
8-Jan-2017	5:00	2.3	SSE
8-Jan-2017	6:00	2.3	ENE
8-Jan-2017	7:00	2.3	SE
8-Jan-2017	8:00	2.1	S
8-Jan-2017	9:00	3.1	SE
8-Jan-2017	10:00	3	S
8-Jan-2017	11:00	4	SSE
8-Jan-2017	12:00	3.8	SSE
8-Jan-2017	13:00	4	SSE
8-Jan-2017	14:00	3.7	SSE
8-Jan-2017	15:00	3.9	S
8-Jan-2017	16:00	3.2	SSE
8-Jan-2017	17:00	2.8	ESE
8-Jan-2017	18:00	2.1	ESE
8-Jan-2017	19:00	1.4	ENE
8-Jan-2017	20:00	1.1	S

II. Mean Wind Speed and Wind Direction

8-Jan-2017	21:00	1.8	S
8-Jan-2017	22:00	1.9	SSE
8-Jan-2017	23:00	1.6	E
9-Jan-2017	0:00	1.5	SSE
9-Jan-2017	1:00	1.5	SE
9-Jan-2017	2:00	1.7	ENE
9-Jan-2017	3:00	1.6	SE
9-Jan-2017	4:00	1.5	SE
9-Jan-2017	5:00	1.7	SE
9-Jan-2017	6:00	1.6	E
9-Jan-2017	7:00	1.4	SE
9-Jan-2017	8:00	1.4	SE
9-Jan-2017	9:00	2.1	SSE
9-Jan-2017	10:00	2.6	S
9-Jan-2017	11:00	2.6	ESE
9-Jan-2017	12:00	3	SE
9-Jan-2017	13:00	3.8	SSW
9-Jan-2017	14:00	3.4	ENE
9-Jan-2017	15:00	3.1	NNE
9-Jan-2017	16:00	2.9	ESE
9-Jan-2017	17:00	3.1	SE
9-Jan-2017	18:00	2.4	S
9-Jan-2017	19:00	1.3	SSE
9-Jan-2017	20:00	0.8	SE
9-Jan-2017	21:00	0.8	SE
9-Jan-2017	22:00	0.8	SE
9-Jan-2017	23:00	0.9	SE
10-Jan-2017	0:00	1.6	SE
10-Jan-2017	1:00	1.8	S
10-Jan-2017	2:00	1.7	S
10-Jan-2017	3:00	1.5	SSW
10-Jan-2017	4:00	1	ESE
10-Jan-2017	5:00	1.3	S
10-Jan-2017	6:00	1.2	ESE
10-Jan-2017	7:00	1.2	ESE
10-Jan-2017	8:00	1	N
10-Jan-2017	9:00	1.7	N
10-Jan-2017	10:00	2.6	NNW

II. Mean Wind Speed and Wind Direction

10-Jan-2017	11:00	2.7	N
10-Jan-2017	12:00	2.8	WSW
10-Jan-2017	13:00	2.7	SSE
10-Jan-2017	14:00	2.6	SSE
10-Jan-2017	15:00	2	SSE
10-Jan-2017	16:00	2.2	NNE
10-Jan-2017	17:00	2.7	ENE
10-Jan-2017	18:00	1.9	ENE
10-Jan-2017	19:00	0.6	SSE
10-Jan-2017	20:00	0.6	SSE
10-Jan-2017	21:00	0.6	SSE
10-Jan-2017	22:00	0.7	SSE
10-Jan-2017	23:00	0.7	SSE
11-Jan-2017	0:00	0.7	ESE
11-Jan-2017	1:00	0.8	ENE
11-Jan-2017	2:00	0.8	E
11-Jan-2017	3:00	0.8	E
11-Jan-2017	4:00	0.6	NE
11-Jan-2017	5:00	0.7	NE
11-Jan-2017	6:00	0.7	N
11-Jan-2017	7:00	0.7	S
11-Jan-2017	8:00	0.6	SE
11-Jan-2017	9:00	0.8	SE
11-Jan-2017	10:00	1.1	SSE
11-Jan-2017	11:00	1.2	SSE
11-Jan-2017	12:00	1.7	SSE
11-Jan-2017	13:00	2.7	SSE
11-Jan-2017	14:00	2.7	SSE
11-Jan-2017	15:00	2.5	SSE
11-Jan-2017	16:00	2.3	SSE
11-Jan-2017	17:00	2.4	ENE
11-Jan-2017	18:00	1.4	ENE
11-Jan-2017	19:00	0.6	SSE
11-Jan-2017	20:00	0.7	SSE
11-Jan-2017	21:00	0.5	SSE
11-Jan-2017	22:00	0.5	ESE
11-Jan-2017	23:00	0.5	ESE
12-Jan-2017	0:00	0.6	NE

II. Mean Wind Speed and Wind Direction

12-Jan-2017	1:00	0.5	NE
12-Jan-2017	2:00	0.5	SE
12-Jan-2017	3:00	0.5	NE
12-Jan-2017	4:00	0.4	SE
12-Jan-2017	5:00	0.4	S
12-Jan-2017	6:00	0.4	SE
12-Jan-2017	7:00	0.5	SSE
12-Jan-2017	8:00	0.7	ESE
12-Jan-2017	9:00	0.6	NE
12-Jan-2017	10:00	1	SE
12-Jan-2017	11:00	2.3	SSE
12-Jan-2017	12:00	2.5	S
12-Jan-2017	13:00	2.5	SE
12-Jan-2017	14:00	2.4	ESE
12-Jan-2017	15:00	2.8	ENE
12-Jan-2017	16:00	2.3	NE
12-Jan-2017	17:00	2.1	NE
12-Jan-2017	18:00	1.4	SSE
12-Jan-2017	19:00	1.1	SSE
12-Jan-2017	20:00	0.9	SE
12-Jan-2017	21:00	0.7	SSW
12-Jan-2017	22:00	0.4	SW
12-Jan-2017	23:00	0.5	SW
13-Jan-2017	0:00	0.4	SW
13-Jan-2017	1:00	0.4	SSE
13-Jan-2017	2:00	0.4	S
13-Jan-2017	3:00	0.5	E
13-Jan-2017	4:00	0.5	E
13-Jan-2017	5:00	0.5	NE
13-Jan-2017	6:00	0.5	SW
13-Jan-2017	7:00	0.6	S
13-Jan-2017	8:00	0.5	WNW
13-Jan-2017	9:00	0.6	SSW
13-Jan-2017	10:00	1.2	SSW
13-Jan-2017	11:00	1.2	W
13-Jan-2017	12:00	1.6	SSE
13-Jan-2017	13:00	2	NE
13-Jan-2017	14:00	1.9	W

II. Mean Wind Speed and Wind Direction

13-Jan-2017	15:00	2.2	W
13-Jan-2017	16:00	1.7	SW
13-Jan-2017	17:00	1.6	ENE
13-Jan-2017	18:00	1.2	W
13-Jan-2017	19:00	1	ENE
13-Jan-2017	20:00	0.9	ENE
13-Jan-2017	21:00	1	E
13-Jan-2017	22:00	1.2	W
13-Jan-2017	23:00	1.5	SW
14-Jan-2017	0:00	1.7	WNW
14-Jan-2017	1:00	2.2	SSE
14-Jan-2017	2:00	1.7	S
14-Jan-2017	3:00	1.9	N
14-Jan-2017	4:00	1.5	NNE
14-Jan-2017	5:00	1.3	ENE
14-Jan-2017	6:00	1.3	N
14-Jan-2017	7:00	1.2	WNW
14-Jan-2017	8:00	1.4	WNW
14-Jan-2017	9:00	1.4	NW
14-Jan-2017	10:00	1.3	E
14-Jan-2017	11:00	1.6	WNW
14-Jan-2017	12:00	2.2	S
14-Jan-2017	13:00	1.7	SW
14-Jan-2017	14:00	1.7	WNW
14-Jan-2017	15:00	1.3	W
14-Jan-2017	16:00	1.5	N
14-Jan-2017	17:00	1.3	N
14-Jan-2017	18:00	1.3	NE
14-Jan-2017	19:00	0.8	E
14-Jan-2017	20:00	1	NE
14-Jan-2017	21:00	0.8	ENE
14-Jan-2017	22:00	1.2	ENE
14-Jan-2017	23:00	1.1	ENE
15-Jan-2017	0:00	1.1	NE
15-Jan-2017	1:00	1	SW
15-Jan-2017	2:00	0.9	WNW
15-Jan-2017	3:00	0.6	WNW
15-Jan-2017	4:00	0.8	SW

II. Mean Wind Speed and Wind Direction

15-Jan-2017	5:00	1.4	SW
15-Jan-2017	6:00	1.7	SW
15-Jan-2017	7:00	2	WSW
15-Jan-2017	8:00	2.3	W
15-Jan-2017	9:00	2.7	WSW
15-Jan-2017	10:00	3.2	SW
15-Jan-2017	11:00	3.1	SW
15-Jan-2017	12:00	2.7	WSW
15-Jan-2017	13:00	2.7	SW
15-Jan-2017	14:00	2.4	SW
15-Jan-2017	15:00	2.4	SSE
15-Jan-2017	16:00	2.8	SSW
15-Jan-2017	17:00	2.8	NE
15-Jan-2017	18:00	2.6	E
15-Jan-2017	19:00	2.3	SW
15-Jan-2017	20:00	2	W
15-Jan-2017	21:00	1.9	ENE
15-Jan-2017	22:00	1.9	E
15-Jan-2017	23:00	1.7	ESE
16-Jan-2017	0:00	1.8	E
16-Jan-2017	1:00	1.8	SE
16-Jan-2017	2:00	1.9	SE
16-Jan-2017	3:00	2	SE
16-Jan-2017	4:00	1.8	SE
16-Jan-2017	5:00	2	SE
16-Jan-2017	6:00	1.6	N
16-Jan-2017	7:00	1.5	WSW
16-Jan-2017	8:00	1.6	SW
16-Jan-2017	9:00	1.9	SW
16-Jan-2017	10:00	2	SSW
16-Jan-2017	11:00	2	SSE
16-Jan-2017	12:00	2.3	SSE
16-Jan-2017	13:00	2.7	WSW
16-Jan-2017	14:00	2.5	WSW
16-Jan-2017	15:00	2.5	NNW
16-Jan-2017	16:00	2.3	WSW
16-Jan-2017	17:00	2.2	NNE
16-Jan-2017	18:00	1.3	NE

II. Mean Wind Speed and Wind Direction

16-Jan-2017	19:00	1.2	WNW
16-Jan-2017	20:00	0.9	W
16-Jan-2017	21:00	1.5	WNW
16-Jan-2017	22:00	1.2	SSE
16-Jan-2017	23:00	1	NE
17-Jan-2017	0:00	1.1	W
17-Jan-2017	1:00	1.1	W
17-Jan-2017	2:00	1.2	W
17-Jan-2017	3:00	1.2	WNW
17-Jan-2017	4:00	0.9	SSE
17-Jan-2017	5:00	1	SSE
17-Jan-2017	6:00	1.3	E
17-Jan-2017	7:00	1.2	SSE
17-Jan-2017	8:00	1.3	SSE
17-Jan-2017	9:00	1.2	SE
17-Jan-2017	10:00	1.4	SSE
17-Jan-2017	11:00	1.6	ESE
17-Jan-2017	12:00	2.1	ESE
17-Jan-2017	13:00	2.3	NE
17-Jan-2017	14:00	2	N
17-Jan-2017	15:00	2	NE
17-Jan-2017	16:00	2.2	NE
17-Jan-2017	17:00	1.8	NE
17-Jan-2017	18:00	1.9	SSW
17-Jan-2017	19:00	1.4	SW
17-Jan-2017	20:00	1.2	SW
17-Jan-2017	21:00	1.3	W
17-Jan-2017	22:00	1.3	NNW
17-Jan-2017	23:00	1.2	W
18-Jan-2017	0:00	1.5	WNW
18-Jan-2017	1:00	1.4	WNW
18-Jan-2017	2:00	1.4	NW
18-Jan-2017	3:00	1.3	WNW
18-Jan-2017	4:00	1.3	W
18-Jan-2017	5:00	1.2	WNW
18-Jan-2017	6:00	1.3	W
18-Jan-2017	7:00	1.2	WSW
18-Jan-2017	8:00	1.3	WSW

II. Mean Wind Speed and Wind Direction

18-Jan-2017	9:00	1.5	W
18-Jan-2017	10:00	2.3	WNW
18-Jan-2017	11:00	2.6	SW
18-Jan-2017	12:00	3.5	W
18-Jan-2017	13:00	3.3	SW
18-Jan-2017	14:00	3.4	WNW
18-Jan-2017	15:00	3.2	SW
18-Jan-2017	16:00	3.7	NW
18-Jan-2017	17:00	3.2	SSE
18-Jan-2017	18:00	2.7	SSE
18-Jan-2017	19:00	3.4	SSE
18-Jan-2017	20:00	3.3	SSE
18-Jan-2017	21:00	3.5	SE
18-Jan-2017	22:00	3.7	SSE
18-Jan-2017	23:00	3	SE
19-Jan-2017	0:00	2.7	SE
19-Jan-2017	1:00	2.6	SE
19-Jan-2017	2:00	2.8	ESE
19-Jan-2017	3:00	2.8	ESE
19-Jan-2017	4:00	3	SE
19-Jan-2017	5:00	2.9	SE
19-Jan-2017	6:00	2.7	SE
19-Jan-2017	7:00	2.3	SSE
19-Jan-2017	8:00	2.3	SSE
19-Jan-2017	9:00	3.5	ESE
19-Jan-2017	10:00	2.7	SE
19-Jan-2017	11:00	2.7	E
19-Jan-2017	12:00	2.8	E
19-Jan-2017	13:00	2.9	E
19-Jan-2017	14:00	2.3	E
19-Jan-2017	15:00	2.5	ESE
19-Jan-2017	16:00	2.6	E
19-Jan-2017	17:00	2.4	ESE
19-Jan-2017	18:00	2.1	ESE
19-Jan-2017	19:00	1.8	E
19-Jan-2017	20:00	1.7	ESE
19-Jan-2017	21:00	1.4	S
19-Jan-2017	22:00	1.5	ENE

II. Mean Wind Speed and Wind Direction

19-Jan-2017	23:00	1.3	ENE
20-Jan-2017	0:00	1.3	ENE
20-Jan-2017	1:00	1.7	SE
20-Jan-2017	2:00	1.9	E
20-Jan-2017	3:00	1.1	E
20-Jan-2017	4:00	1.2	E
20-Jan-2017	5:00	0.9	ESE
20-Jan-2017	6:00	0.9	SSE
20-Jan-2017	7:00	0.9	SSE
20-Jan-2017	8:00	0.8	ENE
20-Jan-2017	9:00	1.8	ESE
20-Jan-2017	10:00	1.8	SSE
20-Jan-2017	11:00	2.3	SSE
20-Jan-2017	12:00	1.8	ENE
20-Jan-2017	13:00	2.7	E
20-Jan-2017	14:00	2.5	E
20-Jan-2017	15:00	3.1	E
20-Jan-2017	16:00	2.8	E
20-Jan-2017	17:00	2.6	E
20-Jan-2017	18:00	2.4	ENE
20-Jan-2017	19:00	2.1	SE
20-Jan-2017	20:00	1.8	ESE
20-Jan-2017	21:00	1.4	NE
20-Jan-2017	22:00	1.5	NE
20-Jan-2017	23:00	1.9	ESE
21-Jan-2017	0:00	1.7	ESE
21-Jan-2017	1:00	1.9	ESE
21-Jan-2017	2:00	1.7	E
21-Jan-2017	3:00	1.7	SE
21-Jan-2017	4:00	1.7	ESE
21-Jan-2017	5:00	2	SE
21-Jan-2017	6:00	3.8	SE
21-Jan-2017	7:00	3.2	SSE
21-Jan-2017	8:00	2.4	SSE
21-Jan-2017	9:00	2	S
21-Jan-2017	10:00	2.8	SSW
21-Jan-2017	11:00	3.1	SE
21-Jan-2017	12:00	3	SSE

II. Mean Wind Speed and Wind Direction

21-Jan-2017	13:00	3	NE
21-Jan-2017	14:00	3.3	WSW
21-Jan-2017	15:00	3	SW
21-Jan-2017	16:00	2.9	SW
21-Jan-2017	17:00	3	WNW
21-Jan-2017	18:00	3.7	NE
21-Jan-2017	19:00	4.3	E
21-Jan-2017	20:00	3.5	E
21-Jan-2017	21:00	4	N
21-Jan-2017	22:00	3.4	NE
21-Jan-2017	23:00	3.1	ESE
22-Jan-2017	0:00	3.4	E
22-Jan-2017	1:00	3.4	E
22-Jan-2017	2:00	3.2	SSE
22-Jan-2017	3:00	3.1	SE
22-Jan-2017	4:00	3.4	SE
22-Jan-2017	5:00	3	ESE
22-Jan-2017	6:00	2.4	SE
22-Jan-2017	7:00	2.9	ESE
22-Jan-2017	8:00	3.8	S
22-Jan-2017	9:00	3.9	SE
22-Jan-2017	10:00	3.8	NE
22-Jan-2017	11:00	4.2	WSW
22-Jan-2017	12:00	4.2	SW
22-Jan-2017	13:00	3.9	NE
22-Jan-2017	14:00	3.7	W
22-Jan-2017	15:00	4.2	W
22-Jan-2017	16:00	4.4	WSW
22-Jan-2017	17:00	4.1	W
22-Jan-2017	18:00	3.7	S
22-Jan-2017	19:00	3.7	WNW
22-Jan-2017	20:00	3	SE
22-Jan-2017	21:00	3.8	SSE
22-Jan-2017	22:00	3.9	SSE
22-Jan-2017	23:00	2.7	ESE
23-Jan-2017	0:00	2.3	NE
23-Jan-2017	1:00	2.3	NE
23-Jan-2017	2:00	2.4	ENE

II. Mean Wind Speed and Wind Direction

23-Jan-2017	3:00	2.2	E
23-Jan-2017	4:00	2.1	ESE
23-Jan-2017	5:00	1.9	ESE
23-Jan-2017	6:00	1.9	ENE
23-Jan-2017	7:00	1.7	E
23-Jan-2017	8:00	2.3	ENE
23-Jan-2017	9:00	2.6	SE
23-Jan-2017	10:00	2.9	SE
23-Jan-2017	11:00	2.7	SE
23-Jan-2017	12:00	2.8	SE
23-Jan-2017	13:00	2.6	ESE
23-Jan-2017	14:00	2.7	SE
23-Jan-2017	15:00	3.3	SE
23-Jan-2017	16:00	2.9	SE
23-Jan-2017	17:00	2.6	NE
23-Jan-2017	18:00	2.2	E
23-Jan-2017	19:00	1.3	ENE
23-Jan-2017	20:00	1.8	E
23-Jan-2017	21:00	1.6	SE
23-Jan-2017	22:00	2.4	E
23-Jan-2017	23:00	1.9	N
24-Jan-2017	0:00	1.8	N
24-Jan-2017	1:00	1.8	SE
24-Jan-2017	2:00	2	SE
24-Jan-2017	3:00	2.2	SE
24-Jan-2017	4:00	2.3	NE
24-Jan-2017	5:00	2.3	SE
24-Jan-2017	6:00	2.7	NE
24-Jan-2017	7:00	2.3	SE
24-Jan-2017	8:00	3.2	ESE
24-Jan-2017	9:00	3.6	ESE
24-Jan-2017	10:00	4.1	SE
24-Jan-2017	11:00	4	SE
24-Jan-2017	12:00	3.2	SE
24-Jan-2017	13:00	2.8	SE
24-Jan-2017	14:00	2.9	SE
24-Jan-2017	15:00	3.3	SE
24-Jan-2017	16:00	2.9	SE

II. Mean Wind Speed and Wind Direction

24-Jan-2017	17:00	2.3	ENE
24-Jan-2017	18:00	2.6	E
24-Jan-2017	19:00	2.7	SE
24-Jan-2017	20:00	2.7	NE
24-Jan-2017	21:00	2.4	E
24-Jan-2017	22:00	2.5	E
24-Jan-2017	23:00	2.6	SE
25-Jan-2017	0:00	2.4	SE
25-Jan-2017	1:00	1.8	SE
25-Jan-2017	2:00	1.4	SE
25-Jan-2017	3:00	1.4	ESE
25-Jan-2017	4:00	1.5	ESE
25-Jan-2017	5:00	1.6	SE
25-Jan-2017	6:00	1.8	ESE
25-Jan-2017	7:00	1.5	ESE
25-Jan-2017	8:00	1.4	SE
25-Jan-2017	9:00	2	ESE
25-Jan-2017	10:00	2.3	SSE
25-Jan-2017	11:00	2.6	SE
25-Jan-2017	12:00	3.5	SSE
25-Jan-2017	13:00	3	ESE
25-Jan-2017	14:00	2.5	SSE
25-Jan-2017	15:00	2.7	ESE
25-Jan-2017	16:00	2.5	NE
25-Jan-2017	17:00	2.2	E
25-Jan-2017	18:00	1.9	ENE
25-Jan-2017	19:00	1.6	ENE
25-Jan-2017	20:00	1.8	N
25-Jan-2017	21:00	1.4	NE
25-Jan-2017	22:00	1.3	NE
25-Jan-2017	23:00	1.1	SE
26-Jan-2017	0:00	1.7	ESE
26-Jan-2017	1:00	1.7	SSE
26-Jan-2017	2:00	1.7	WSW
26-Jan-2017	3:00	1.6	WSW
26-Jan-2017	4:00	1.6	W
26-Jan-2017	5:00	1.5	N
26-Jan-2017	6:00	1.2	SE

II. Mean Wind Speed and Wind Direction

26-Jan-2017	7:00	1.8	SE
26-Jan-2017	8:00	2.8	ENE
26-Jan-2017	9:00	3.3	ESE
26-Jan-2017	10:00	4.3	SSE
26-Jan-2017	11:00	4.3	ESE
26-Jan-2017	12:00	4.5	SW
26-Jan-2017	13:00	4.5	WNW
26-Jan-2017	14:00	4.1	WNW
26-Jan-2017	15:00	4.2	WSW
26-Jan-2017	16:00	3.2	SW
26-Jan-2017	17:00	2	E
26-Jan-2017	18:00	2	W
26-Jan-2017	19:00	1.7	W
26-Jan-2017	20:00	1.6	W
26-Jan-2017	21:00	1.4	W
26-Jan-2017	22:00	2.2	W
26-Jan-2017	23:00	2.4	ENE
27-Jan-2017	0:00	3	ENE
27-Jan-2017	1:00	2.6	WNW
27-Jan-2017	2:00	2.5	SSW
27-Jan-2017	3:00	2.7	NNW
27-Jan-2017	4:00	2.6	WNW
27-Jan-2017	5:00	2.2	W
27-Jan-2017	6:00	2.2	W
27-Jan-2017	7:00	1.7	WNW
27-Jan-2017	8:00	2.2	SW
27-Jan-2017	9:00	2.6	W
27-Jan-2017	10:00	3.2	WNW
27-Jan-2017	11:00	3.7	W
27-Jan-2017	12:00	4.5	NE
27-Jan-2017	13:00	4.5	NE
27-Jan-2017	14:00	4.1	ESE
27-Jan-2017	15:00	3.7	W
27-Jan-2017	16:00	3.4	NE
27-Jan-2017	17:00	2.7	ENE
27-Jan-2017	18:00	2.1	NE
27-Jan-2017	19:00	1.4	NNE
27-Jan-2017	20:00	1.7	NNE

II. Mean Wind Speed and Wind Direction

27-Jan-2017	21:00	1.8	N
27-Jan-2017	22:00	1.2	N
27-Jan-2017	23:00	1.9	NE
28-Jan-2017	0:00	1.6	ENE
28-Jan-2017	1:00	2.2	NE
28-Jan-2017	2:00	1.5	N
28-Jan-2017	3:00	1.6	N
28-Jan-2017	4:00	2.4	WSW
28-Jan-2017	5:00	2.2	SSE
28-Jan-2017	6:00	2.4	SW
28-Jan-2017	7:00	2.7	SW
28-Jan-2017	8:00	3.4	WSW
28-Jan-2017	9:00	3	ENE
28-Jan-2017	10:00	3.3	ENE
28-Jan-2017	11:00	3.2	N
28-Jan-2017	12:00	3.1	NW
28-Jan-2017	13:00	3.3	WSW
28-Jan-2017	14:00	3	WSW
28-Jan-2017	15:00	2.5	WNW
28-Jan-2017	16:00	2.6	ENE
28-Jan-2017	17:00	2.1	N
28-Jan-2017	18:00	2.1	ESE
28-Jan-2017	19:00	1.5	ESE
28-Jan-2017	20:00	1.3	W
28-Jan-2017	21:00	1.7	N
28-Jan-2017	22:00	1.8	N
28-Jan-2017	23:00	1.9	ENE
29-Jan-2017	0:00	1.7	N
29-Jan-2017	1:00	1.9	N
29-Jan-2017	2:00	1.7	WSW
29-Jan-2017	3:00	1.9	N
29-Jan-2017	4:00	1.8	W
29-Jan-2017	5:00	2.4	W
29-Jan-2017	6:00	1.6	N
29-Jan-2017	7:00	1.3	WSW
29-Jan-2017	8:00	1.5	SW
29-Jan-2017	9:00	1.7	ENE
29-Jan-2017	10:00	2.2	ENE

II. Mean Wind Speed and Wind Direction

29-Jan-2017	11:00	2.9	ENE
29-Jan-2017	12:00	3.1	NE
29-Jan-2017	13:00	2.7	ENE
29-Jan-2017	14:00	2.4	ENE
29-Jan-2017	15:00	2.7	ENE
29-Jan-2017	16:00	2.3	ENE
29-Jan-2017	17:00	1.6	W
29-Jan-2017	18:00	1.6	WSW
29-Jan-2017	19:00	1.2	NE
29-Jan-2017	20:00	1.2	W
29-Jan-2017	21:00	1.2	W
29-Jan-2017	22:00	1.2	SE
29-Jan-2017	23:00	1.2	SE
30-Jan-2017	0:00	1.2	SE
30-Jan-2017	1:00	1.4	SE
30-Jan-2017	2:00	1.4	ENE
30-Jan-2017	3:00	1.4	E
30-Jan-2017	4:00	1.8	SE
30-Jan-2017	5:00	2	S
30-Jan-2017	6:00	1.9	SE
30-Jan-2017	7:00	1.9	ESE
30-Jan-2017	8:00	1.6	ESE
30-Jan-2017	9:00	2.4	SE
30-Jan-2017	10:00	2.6	ESE
30-Jan-2017	11:00	2.5	SE
30-Jan-2017	12:00	2.5	ENE
30-Jan-2017	13:00	2.6	NE
30-Jan-2017	14:00	2.4	ENE
30-Jan-2017	15:00	2.3	ENE
30-Jan-2017	16:00	2	ENE
30-Jan-2017	17:00	2.2	ENE
30-Jan-2017	18:00	1.6	ESE
30-Jan-2017	19:00	1.6	SSE
30-Jan-2017	20:00	1.6	SSE
30-Jan-2017	21:00	1.4	WSW
30-Jan-2017	22:00	1.3	WSW
30-Jan-2017	23:00	1.5	N
31-Jan-2017	0:00	1.8	N

II. Mean Wind Speed and Wind Direction

31-Jan-2017	1:00	1.7	ESE
31-Jan-2017	2:00	1.6	SW
31-Jan-2017	3:00	1.7	WNW
31-Jan-2017	4:00	1.7	WNW
31-Jan-2017	5:00	1.5	WSW
31-Jan-2017	6:00	1.4	SW
31-Jan-2017	7:00	1.7	WNW
31-Jan-2017	8:00	2	W
31-Jan-2017	9:00	1.9	W
31-Jan-2017	10:00	2.3	SSW
31-Jan-2017	11:00	2.3	WSW
31-Jan-2017	12:00	1.9	ESE
31-Jan-2017	13:00	2.1	SE
31-Jan-2017	14:00	1.7	ESE
31-Jan-2017	15:00	1.8	SE
31-Jan-2017	16:00	2.1	NE
31-Jan-2017	17:00	1.9	SE
31-Jan-2017	18:00	1.9	SE
31-Jan-2017	19:00	1.8	SE
31-Jan-2017	20:00	1.5	E
31-Jan-2017	21:00	1.7	ESE
31-Jan-2017	22:00	1.8	ESE
31-Jan-2017	23:00	2	SE

APPENDIX D
ENVIRONMENTAL MONITORING SCHEDULES

Agreement No. CE/59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction
Impact Air Quality and Noise Monitoring Schedule (January 2017)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1-Jan	**2-Jan**	3-Jan	4-Jan	5-Jan	6-Jan	7-Jan
		1 hr TSP X3 [AM1, AM2, AM3, AM4, AM5(A) & AM6(A)] Noise [CM2, CM4, CM6(A), CM7(A), CM8(A)]	Noise [CM1, CM3, CM5]	24 hr TSP	1 hr TSP X3 [AM5(A), AM6(A)] 24 hr TSP [AM4(A)]	
8-Jan	9-Jan	10-Jan	11-Jan	12-Jan	13-Jan	14-Jan
	1 hr TSP X3 [AM1, AM2, AM3, AM4] Noise [CM2, CM4]		24 hr TSP	1 hr TSP X3 [AM5(A), AM6(A)] Noise [CM1, CM3, CM5] [CM6(A), CM7(A), CM8(A)]	1 hr TSP X3 [AM1, AM2, AM3, AM4]	
15-Jan	16-Jan	17-Jan	18-Jan	19-Jan	20-Jan	21-Jan
		24 hr TSP (*) [AM1, AM2, AM3, AM5(A) & AM6(A)]	1 hr TSP X3 [AM5(A), AM6(A)] Noise [CM1, CM3, CM5] [CM6(A), CM7(A), CM8(A)]	1 hr TSP X3 [AM1, AM2, AM3, AM4] Noise [CM2, CM4]	24 hr TSP [AM4(A)]	
22-Jan	23-Jan	24-Jan	25-Jan	26-Jan	27-Jan	**28-Jan**
	Noise [CM1, CM2, CM3, CM5] 24 hr TSP	1 hr TSP X3 [AM5(A), AM6(A)] Noise [CM6(A), CM7(A), CM8(A)]	1 hr TSP X3 [AM1, AM2, AM3, AM4] Noise [CM1, CM2, CM3, CM4]	24 hr TSP	1 hr TSP X3 [AM1, AM2, AM3, AM4, AM5(A) & AM6(A)]	
29-Jan	**30-Jan**	**31-Jan**				

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

Note: (*) 24-hour TSP montioring at AM4(A) -Cha Kwo Ling Public Cargo Working Area Administrative Office is cancelled due to power failure.

Air Quality Monitoring Station

AM1 - Tin Hau Temple
AM2 - Sai Tso Wan Recreation Ground
AM3 - Yau Lai Estate Bik Lai House
AM4[(1)] - Sitting-out Area at Cha Kwo Ling Village
AM4(A)[(2)] - Cha Kwo Ling Public Cargo Working Area Administrative Office
AM5(A) - Tseung Kwan O DSD Desilting Compound
AM6(A) - Park Central, L1/F Open Space Area

Noise Monitoring Station

CM1 - Nga Lai House, Yau Lai Estate Phase 1, Yau Tong
CM2 - Bik Lai House, Yau Lai Estate Phase 1, Yau Tong
CM3 - Block S, Yau Lai Estate Phase 5, Yau Tong
CM4 - Tin Hau Temple, Cha Kwo Ling
CM5 - CCC Kei Faat Primary School, Yau Tong
CM6(A) - Site Boundary of Contract No. NE/2015/02 near Tower 1, Ocean Shores
CM7(A) - Site Boundary of Contract No. NE/2015/02 near Tower 7, Ocean Shores
CM8(A) - Park Central, L1/F Open Space Area

Note (1) For 1-hour TSP monitoring; (2) For 24-hour TSP monitoring

Agreement No. CE/59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction
Impact Groundwater Quality Monitoring Schedule (January 2017)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1-Jan	**2-Jan**	3-Jan	4-Jan	5-Jan	6-Jan	7-Jan
			Groundwater Quality Monitoring			
8-Jan	9-Jan	10-Jan	11-Jan	12-Jan	13-Jan	14-Jan
15-Jan	16-Jan	17-Jan	18-Jan	19-Jan	20-Jan	21-Jan
				Groundwater Quality Monitoring		
22-Jan	23-Jan	24-Jan	25-Jan	26-Jan	27-Jan	**28-Jan**
29-Jan	**30-Jan**	**31-Jan**				

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

Monitoring Location:
Stream 1, Stream 2, Stream 3

Agreement No. CE/59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction
Impact Water Quality Monitoring Schedule (January 2016)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1-Jan	**2-Jan**	3-Jan	4-Jan	5-Jan	6-Jan	7-Jan
		Mid-Flood 10:26 Mid-Ebb 16:06		Mid-Flood 11:59 Mid-Ebb 18:04		Mid-Ebb 06:57 Mid-Flood 13:37
8-Jan	9-Jan	10-Jan	11-Jan	12-Jan	13-Jan	14-Jan
	Mid-Ebb 09:24 Mid-Flood 15:19		Mid-Ebb 11:30 Mid-Flood 16:58		Mid-Flood 07:39 Mid-Ebb 13:07	
15-Jan	16-Jan	17-Jan	18-Jan	19-Jan	20-Jan	21-Jan
	Mid-Flood 10:22 Mid-Ebb 16:01		Mid-Flood 11:46 Mid-Ebb 17:48		Mid-Ebb 06:33 Mid-Flood 13:17	
22-Jan	23-Jan	24-Jan	25-Jan	26-Jan	27-Jan	28-Jan
	Mid-Ebb 09:15 Mid-Flood 14:38		Mid-Ebb 11:00 Mid-Flood 16:00		Mid-Ebb 12:21 Mid-Flood 17:28	
29-Jan	**30-Jan**	**31-Jan**				

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

Agreement No. CE/59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction
Tentative Impact Air Quality and Noise Monitoring Schedule (February 2017)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1-Feb	2-Feb	3-Feb	4-Feb
			24 hr TSP	1 hr TSP X3 [AM1, AM2, AM3, AM4, AM5(A) & AM6(A)] Noise [CM2, CM4, CM6(A), CM7(A), CM8(A)]	Noise [CM1, CM3, CM5]	
5-Feb	6-Feb	7-Feb	8-Feb	9-Feb	10-Feb	11-Feb
	24 hr TSP	1 hr TSP X3 [AM1, AM2, AM3, AM4, AM5(A) & AM6(A)] Noise [CM2, CM4, CM6(A), CM7(A), CM8(A)]		Noise [CM1, CM3, CM5]	24 hr TSP	
12-Feb	13-Feb	14-Feb	15-Feb	16-Feb	17-Feb	18-Feb
	1 hr TSP X3 [AM1, AM2, AM3, AM4, AM5(A) & AM6(A)]		Noise [CM1, CM3, CM5]	24 hr TSP	1 hr TSP X3 [AM1, AM2, AM3, AM4, AM5(A) & AM6(A)] Noise [CM2, CM4, CM6(A), CM7(A), CM8(A)]	
19-Feb	20-Feb	21-Feb	22-Feb	23-Feb	24-Feb	25-Feb
			Noise [CM1, CM3, CM5] 24 hr TSP	1 hr TSP X3 [AM1, AM2, AM3, AM4, AM5(A) & AM6(A)] Noise [CM2, CM4, CM6(A), CM7(A), CM8(A)]		
26-Feb	27-Feb	28-Feb				
		24 hr TSP				

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

Air Quality Monitoring Station

AM1 - Tin Hau Temple
AM2 - Sai Tso Wan Recreation Ground
AM3 - Yau Lai Estate Bik Lai House
AM4[(1)] - Sitting-out Area at Cha Kwo Ling Village
AM4(A)[(2)] - Cha Kwo Ling Public Cargo Working Area Administrative Office
AM5(A) - Tseung Kwan O DSD Desilting Compound
AM6(A) - Park Central, L1/F Open Space Area

Note (1) For 1-hour TSP monitoring; (2) For 24-hour TSP monitoring

Noise Monitoring Station

CM1 - Nga Lai House, Yau Lai Estate Phase 1, Yau Tong
CM2 - Bik Lai House, Yau Lai Estate Phase 1, Yau Tong
CM3 - Block S, Yau Lai Estate Phase 5, Yau Tong
CM4 - Tin Hau Temple, Cha Kwo Ling
CM5 - CCC Kei Faat Primary School, Yau Tong
CM6(A) - Site Boundary of Contract No. NE/2015/02 near Tower 1, Ocean Shores
CM7(A) - Site Boundary of Contract No. NE/2015/02 near Tower 7, Ocean Shores
CM8(A) - Park Central, L1/F Open Space Area

Agreement No. CE/59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction
Tentative Impact Groundwater Quality Monitoring Schedule (February 2017)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1-Jan	**2-Jan**	**3-Jan**	1-Feb	2-Feb	3-Feb	4-Feb
					Groundwater Quality Monitoring	
5-Feb	6-Feb	7-Feb	8-Feb	9-Feb	10-Feb	11-Feb
12-Feb	13-Feb	14-Feb	15-Feb	16-Feb	17-Feb	18-Feb
			Groundwater Quality Monitoring			
19-Feb	20-Feb	21-Feb	22-Feb	23-Feb	24-Feb	25-Feb
26-Feb	27-Feb	28-Feb				
	Groundwater Quality Monitoring					

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

Monitoring Location:
Stream 1, Stream 2, Stream 3

Agreement No. CE/59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction
Tentative Impact Water Quality Monitoring Schedule (February 2017)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1-Feb	2-Feb	3-Feb	4-Feb
			Mid-Flood 9:42 Mid-Ebb 15:37		Mid-Flood 11:11 Mid-Ebb 17:29	
5-Feb	6-Feb	7-Feb	8-Feb	9-Feb	10-Feb	11-Feb
	Mid-Ebb 7:49 Mid-Flood 13:46		Mid-Ebb 10:31 Mid-Flood 15:53		Mid-Ebb 12:11 Mid-Flood 17:38	
12-Feb	13-Feb	14-Feb	15-Feb	16-Feb	17-Feb	18-Feb
	Mid-Flood 8:20 Mid-Ebb 14:03		Mid-Flood 9:17 Mid-Ebb 15:11		Mid-Flood 10:23 Mid-Ebb 16:36	
19-Feb	20-Feb	21-Feb	22-Feb	23-Feb	24-Feb	25-Feb
	Mid-Ebb 7:25 Mid-Flood 12:26		Mid-Ebb 10:43 Mid-Flood 15:34		Mid-Ebb 12:00 Mid-Flood 17:17	
26-Feb	27-Feb	28-Feb				
	Mid-Ebb 13:06 Mid-Flood 18:51					

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

APPENDIX E
1-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

Appendix E - 1-hour TSP Monitoring Results

Location AM1 - Tin Hau Temple			
Date	Time	Weather	Particulate Concentration (μg/m^3)
3-Jan-17	13:00	Sunny	12.1
3-Jan-17	14:00	Sunny	13.2
3-Jan-17	15:00	Sunny	14.3
9-Jan-17	13:00	Cloudy	180.5
9-Jan-17	14:00	Cloudy	182.3
9-Jan-17	15:00	Cloudy	180.1
13-Jan-17	9:00	Cloudy	117.6
13-Jan-17	10:00	Cloudy	123.5
13-Jan-17	11:00	Cloudy	125.8
19-Jan-17	13:50	Sunny	179.6
19-Jan-17	14:50	Sunny	187.5
19-Jan-17	15:50	Sunny	146.4
25-Jan-17	13:00	Sunny	128.5
25-Jan-17	14:00	Sunny	133.1
25-Jan-17	15:00	Sunny	136.5
27-Jan-17	9:00	Sunny	23.5
27-Jan-17	10:00	Sunny	22.3
27-Jan-17	11:00	Sunny	22.3
		Average	107.2
		Maximum	187.5
		Minimum	12.1

Location AM2 - Sai Tso Wan Recreation Ground			
Date	Time	Weather	Particulate Concentration (μg/m^3)
3-Jan-17	13:10	Sunny	29.2
3-Jan-17	14:10	Sunny	27.1
3-Jan-17	15:10	Sunny	27.1
9-Jan-17	13:00	Cloudy	237.0
9-Jan-17	14:00	Cloudy	235.4
9-Jan-17	15:00	Cloudy	238.1
13-Jan-17	13:00	Cloudy	92.7
13-Jan-17	14:00	Cloudy	95.7
13-Jan-17	15:00	Cloudy	96.9
19-Jan-17	13:30	Sunny	122.4
19-Jan-17	14:30	Sunny	114.3
19-Jan-17	15:30	Sunny	102.1
25-Jan-17	13:00	Sunny	46.1
25-Jan-17	14:00	Sunny	46.8
25-Jan-17	15:00	Sunny	46.3
27-Jan-17	9:00	Sunny	22.5
27-Jan-17	10:00	Sunny	24.8
27-Jan-17	11:00	Sunny	24.8
		Average	90.5
		Maximum	238.1
		Minimum	22.5

Location AM3 - Yau Lai Estate Bik Lai House			
Date	Time	Weather	Particulate Concentration (μg/m^3)
3-Jan-17	9:00	Cloudy	13.5
3-Jan-17	10:00	Cloudy	11.2
3-Jan-17	11:00	Cloudy	11.2
9-Jan-17	9:00	Cloudy	237.0
9-Jan-17	10:00	Cloudy	235.4
9-Jan-17	11:00	Cloudy	238.1
13-Jan-17	13:05	Cloudy	129.4
13-Jan-17	14:05	Cloudy	125.6
13-Jan-17	15:05	Cloudy	120.6
19-Jan-17	9:00	Sunny	163.6
19-Jan-17	10:00	Sunny	137.4
19-Jan-17	11:00	Sunny	112.3
25-Jan-17	13:00	Sunny	125.8
25-Jan-17	14:00	Sunny	120.5
25-Jan-17	15:00	Sunny	127.5
27-Jan-17	13:00	Sunny	29.6
27-Jan-17	14:00	Sunny	26.0
27-Jan-17	15:00	Sunny	28.4
		Average	110.7
		Maximum	238.1
		Minimum	11.2

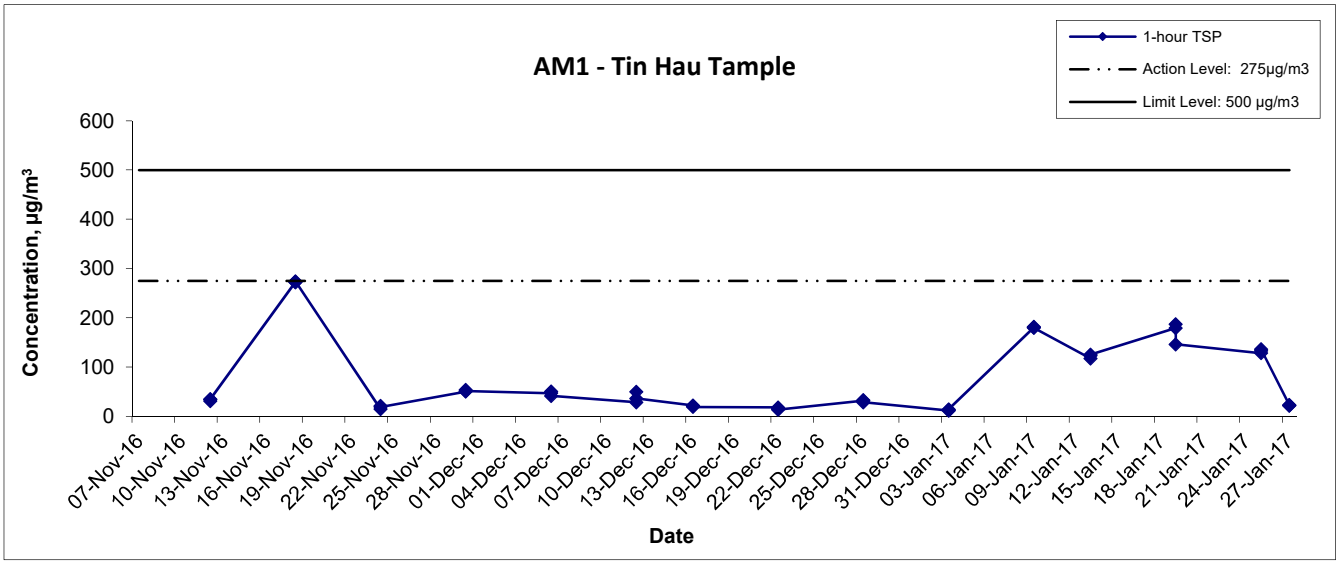
Appendix E - 1-hour TSP Monitoring Results

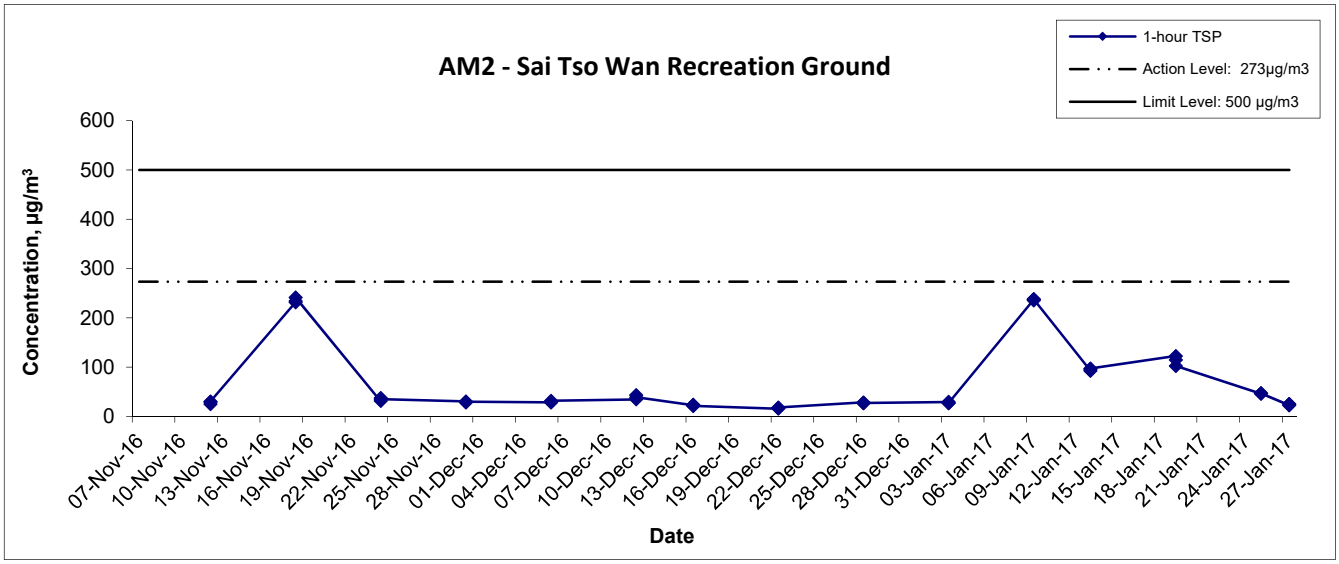
Location AM4 - Sitting-out Area at Cha Kwo Ling Village			
Date	Time	Weather	Particulate Concentration (μg/m^3)
3-Jan-17	13:00	Sunny	13.5
3-Jan-17	14:00	Sunny	18.0
3-Jan-17	15:00	Sunny	15.7
9-Jan-17	9:00	Cloudy	197.3
9-Jan-17	10:00	Cloudy	196.7
9-Jan-17	11:00	Cloudy	197.6
13-Jan-17	8:55	Cloudy	150.9
13-Jan-17	9:55	Cloudy	153.1
13-Jan-17	10:55	Cloudy	157.9
19-Jan-17	9:00	Sunny	165.2
19-Jan-17	10:00	Sunny	154.0
19-Jan-17	11:00	Sunny	143.8
25-Jan-17	9:00	Sunny	146.8
25-Jan-17	10:00	Sunny	142.4
25-Jan-17	11:00	Sunny	141.4
27-Jan-17	13:00	Sunny	14.5
27-Jan-17	14:00	Sunny	13.4
27-Jan-17	15:00	Sunny	13.4
		Average	113.1
		Maximum	197.6
		Minimum	13.4

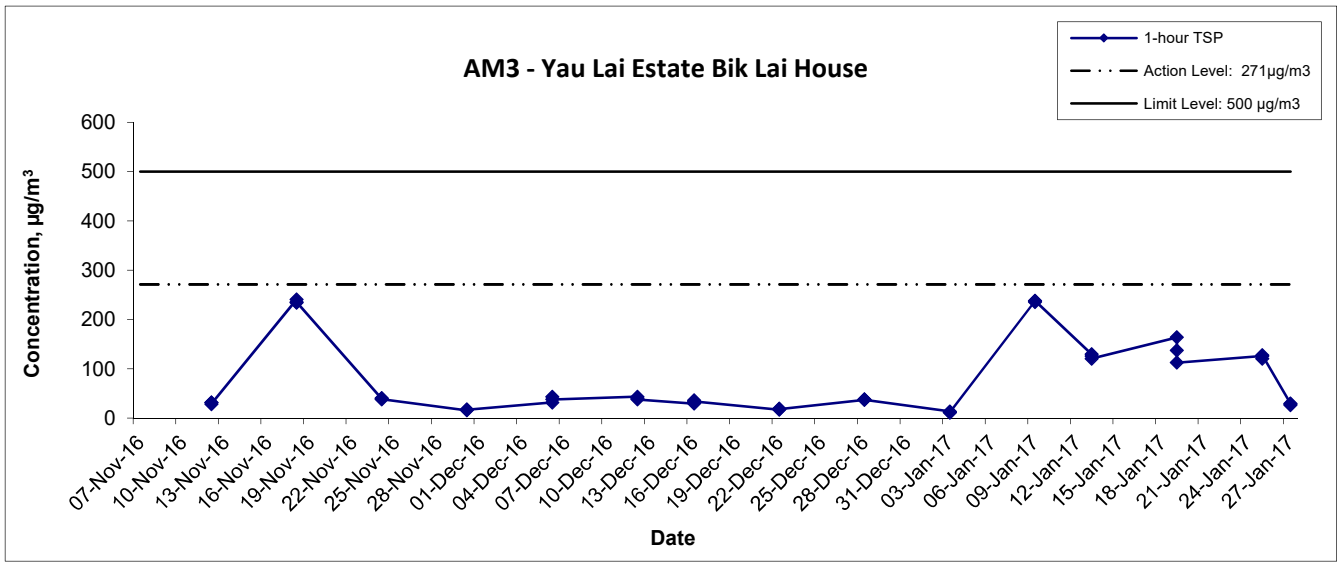
Location AM5(A) - Tseung Kwan O DSD Desilting Compound			
Date	Time	Weather	Particulate Concentration (μg/m^3)
3-Jan-17	9:00	Sunny	34.2
3-Jan-17	10:00	Sunny	34.2
3-Jan-17	11:00	Sunny	33.1
6-Jan-17	9:00	Sunny	69.9
6-Jan-17	10:00	Sunny	83.0
6-Jan-17	11:00	Sunny	81.7
12-Jan-17	9:00	Cloudy	36.8
12-Jan-17	10:00	Cloudy	39.0
12-Jan-17	11:00	Cloudy	40.1
18-Jan-17	13:25	Cloudy	134.1
18-Jan-17	14:25	Cloudy	135.8
18-Jan-17	15:25	Cloudy	134.8
24-Jan-17	13:00	Sunny	56.3
24-Jan-17	14:00	Sunny	50.9
24-Jan-17	15:00	Sunny	54.2
27-Jan-17	13:00	Sunny	28.1
27-Jan-17	14:00	Sunny	30.3
27-Jan-17	15:00	Sunny	26.9
		Average	61.3
		Maximum	135.8
		Minimum	26.9

Location AM6(A) - Park Central, L1/F Open Space Area			
Date	Time	Weather	Particulate Concentration (μg/m^3)
3-Jan-17	8:40	Sunny	31.3
3-Jan-17	9:40	Sunny	32.3
3-Jan-17	10:40	Sunny	31.3
6-Jan-17	13:00	Sunny	82.6
6-Jan-17	14:00	Sunny	80.9
6-Jan-17	15:00	Sunny	83.0
12-Jan-17	13:00	Cloudy	34.7
12-Jan-17	14:00	Cloudy	35.7
12-Jan-17	15:00	Cloudy	39.0
18-Jan-17	13:00	Cloudy	101.0
18-Jan-17	14:00	Cloudy	102.6
18-Jan-17	15:00	Cloudy	100.9
24-Jan-17	13:00	Sunny	39.1
24-Jan-17	14:00	Sunny	36.9
24-Jan-17	15:00	Sunny	38.0
27-Jan-17	9:00	Sunny	20.2
27-Jan-17	10:00	Sunny	22.4
27-Jan-17	11:00	Sunny	20.2
		Average	51.8
		Maximum	102.6
		Minimum	20.2

1-hr TSP Concentration Levels

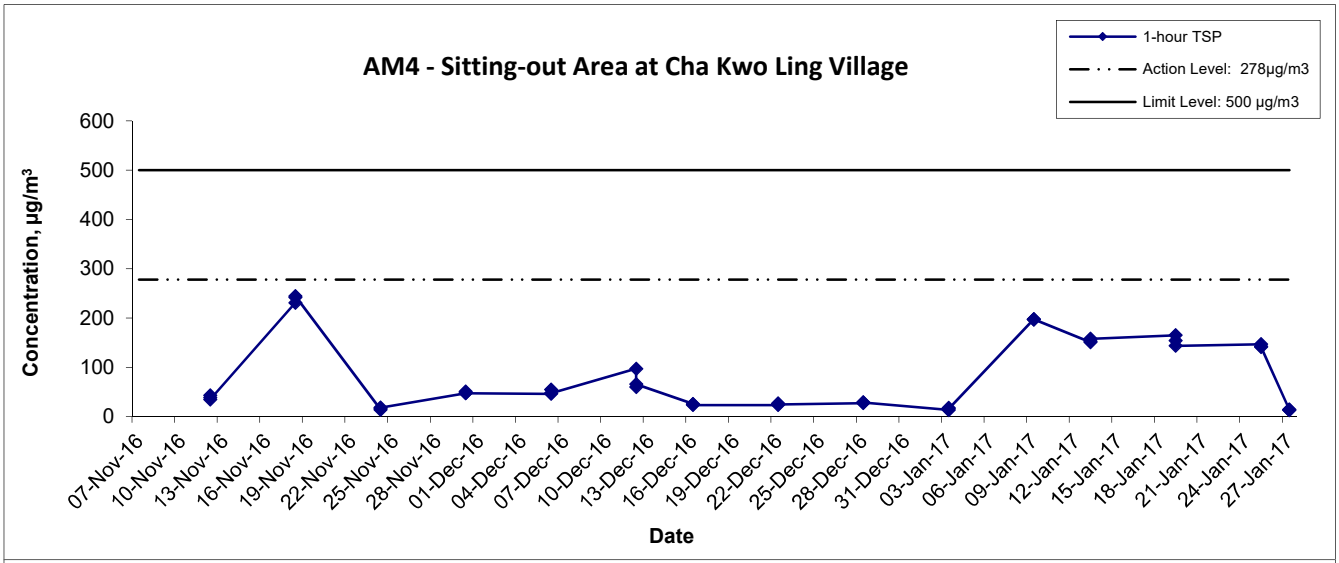


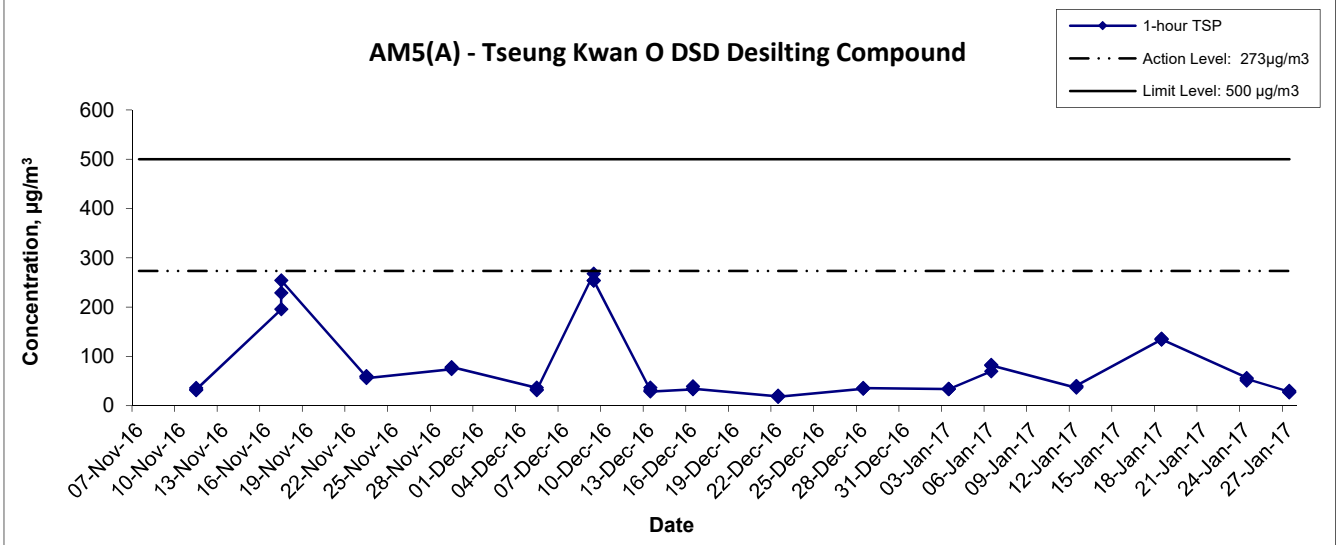


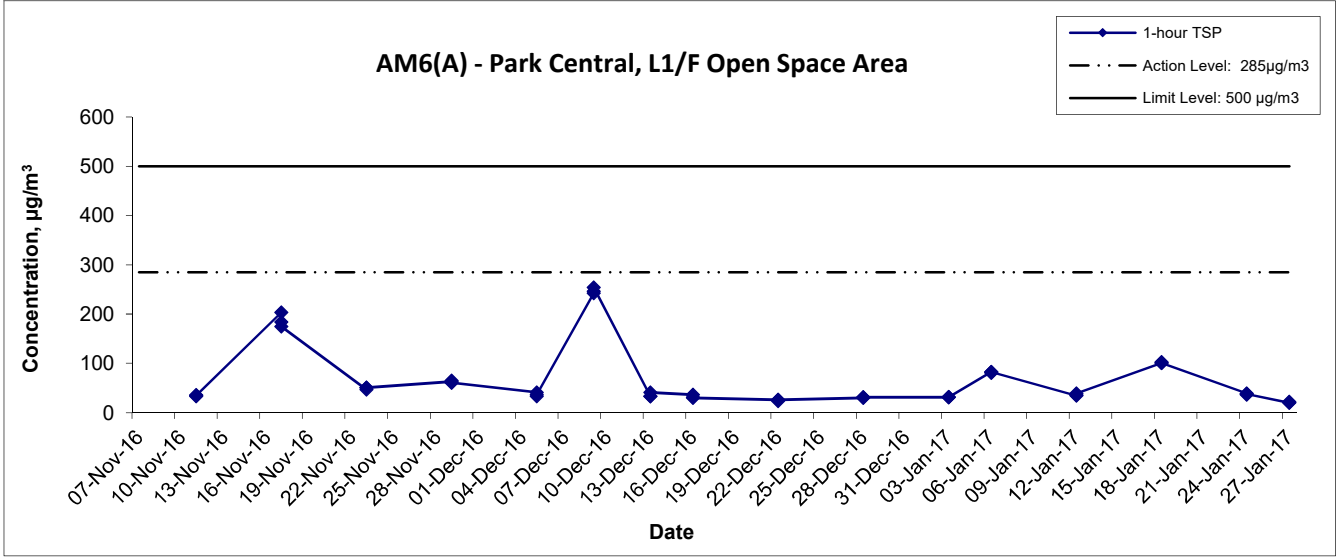


Title: Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Graphical Presentation of 1-hour TSP Monitoring Results	Scale: N.T.S Date: Jan 17	Project No.: MA16034 Appendix: E	CINOTECH

1-hr TSP Concentration Levels







Title		Scale	Project No.
Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Graphical Presentation of 1-hour TSP Monitoring Results		N.T.S	MA16034
		Date: Jan 17	Appendix: E

CINOTECH

APPENDIX F
24-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

Appendix F - 24-hour TSP Monitoring Results

Location AM1 - Tin Hau Temple

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)
				Initial	Final		Initial	Final		Initial	Final			
5-Jan-17	Sunny	292.5	766.1	3.6232	3.7843	0.1611	1331.0	1355.0	24.0	1.20	1.20	1.20	1724.3	93.4
11-Jan-17	Sunny	291.9	767.4	3.5942	3.8352	0.2410	1355.0	1379.0	24.0	1.20	1.20	1.20	1727.7	139.5
17-Jan-17	Cloudy	290.7	769.8	3.6194	3.7910	0.1716	1379.0	1403.0	24.0	1.20	1.20	1.20	1734.4	98.9
23-Jan-17	Sunny	289.1	773.3	3.5934	3.8740	0.2806	1403.0	1427.0	24.0	1.22	1.22	1.22	1760.3	159.4
26-Jan-17	Sunny	290.5	772.4	3.6239	3.7963	0.1724	1427.0	1451.0	24.0	1.22	1.22	1.22	1754.6	98.3
													Min	93.4
													Max	159.4
													Average	117.9

Location AM2 - Sai Tso Wan Recreation Ground

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)
				Initial	Final		Initial	Final		Initial	Final			
5-Jan-17	Sunny	293.3	766.7	3.5821	3.6663	0.0842	22170.9	22194.9	24.0	1.23	1.23	1.23	1774.0	47.5
11-Jan-17	Cloudy	292.4	767.0	3.5874	3.7047	0.1173	22194.9	22218.9	24.0	1.23	1.23	1.23	1777.2	66.0
17-Jan-17	Cloudy	291.4	769.4	3.5837	3.6640	0.0803	22343.3	22367.3	24.0	1.21	1.21	1.21	1740.6	46.1
23-Jan-17	Sunny	290.2	772.7	3.5918	3.6726	0.0808	22367.3	22391.3	24.0	1.21	1.21	1.21	1747.9	46.2
26-Jan-17	Sunny	291.9	771.6	3.6114	3.6933	0.0819	22391.3	22415.3	24.0	1.21	1.21	1.21	1741.6	47.0
													Min	46.1
													Max	66.0
													Average	50.6

Location AM3 - Yau Lai Estate, Bik Lai House

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)
				Initial	Final		Initial	Final		Initial	Final			
5-Jan-17	Sunny	294.3	767.2	3.6510	3.7472	0.0962	10822.0	10846.0	24.0	1.22	1.22	1.22	1751.0	54.9
11-Jan-17	Sunny	292.5	767.9	3.5972	3.7586	0.1614	10846.0	10870.0	24.0	1.22	1.22	1.22	1751.5	92.1
17-Jan-17	Sunny	290.4	769.3	3.5779	3.6957	0.1178	10870.0	10894.0	24.0	1.22	1.22	1.22	1759.2	67.0
23-Jan-17	Sunny	289.7	773.7	3.6057	3.7516	0.1459	10894.0	10918.0	24.0	1.23	1.23	1.23	1766.1	82.6
26-Jan-17	Sunny	290.8	772.5	3.5927	3.7064	0.1137	10958.7	10982.7	24.0	1.22	1.22	1.22	1761.5	64.5
													Min	54.9
													Max	92.1
													Average	72.2

Appendix F - 24-hour TSP Monitoring Results

Location AM4(A) - Cha Kwo Ling Public Cargo Working Area Administrative Office

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)
				Initial	Final		Initial	Final		Initial	Final			
5-Jan-17	Sunny	293.8	765.9	3.5880	3.8339	0.2459	7825.2	7849.2	24.0	1.22	1.22	1.22	1751.1	140.4
6-Jan-17	Sunny	294.2	765.2	3.6094	3.7369	0.1275	7849.2	7873.2	24.0	1.21	1.21	1.21	1749.0	72.9
11-Jan-17	Cloudy	291.4	767.1	3.6063	3.7774	0.1711	7873.2	7897.2	24.0	1.22	1.22	1.22	1760.1	97.2
20-Jan-17	Cloudy	288.5	771.4	3.6132	3.8689	0.2557	7897.2	7921.2	24.0	1.23	1.23	1.23	1774.6	144.1
23-Jan-17	Sunny	289.8	772.1	3.5773	3.8517	0.2744	7921.2	7945.2	24.0	1.22	1.22	1.22	1755.1	156.3
													Min	72.9
													Max	156.3
													Average	122.2

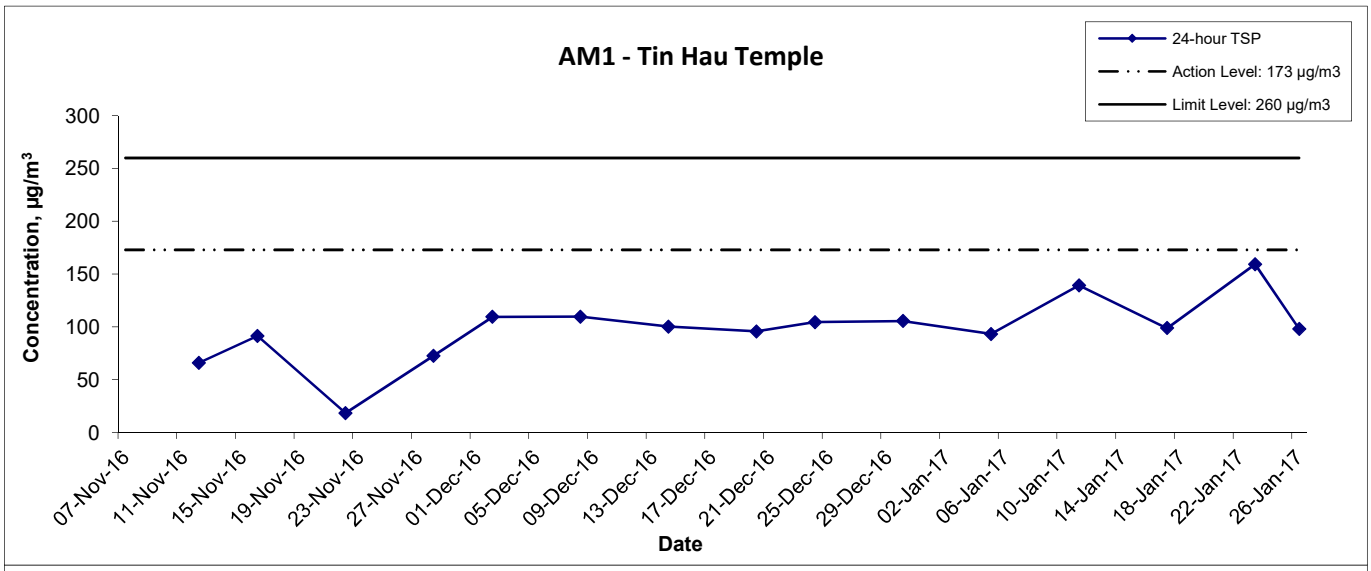
Location AM5(A) - Tseung Kwan O DSD Desilting Compound

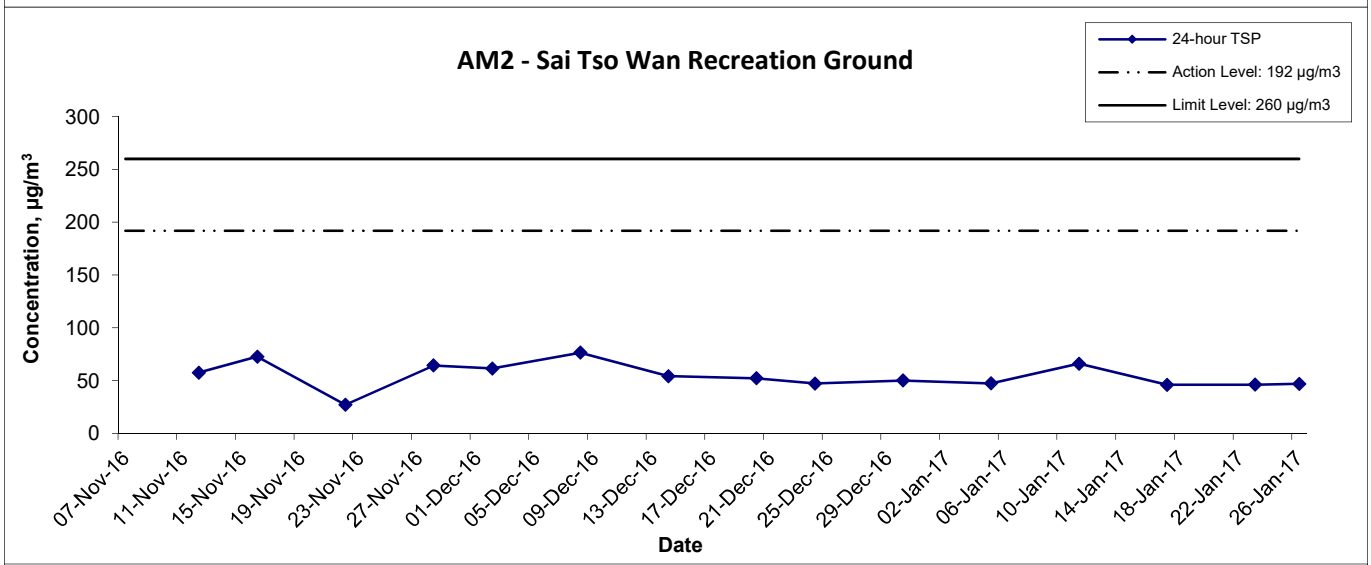
Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)
				Initial	Final		Initial	Final		Initial	Final			
5-Jan-17	Sunny	292.4	766.4	3.6124	3.7514	0.1390	21591.5	21615.5	24.0	1.23	1.23	1.23	1774.1	78.3
11-Jan-17	Cloudy	292.5	766.6	3.5834	3.7894	0.2060	21615.5	21639.5	24.0	1.23	1.23	1.23	1774.0	116.1
17-Jan-17	Cloudy	291.6	767.1	3.5697	3.7151	0.1454	21639.5	21663.5	24.0	1.21	1.21	1.21	1735.6	83.8
23-Jan-17	Sunny	290.2	773.5	3.5903	3.7886	0.1983	21663.5	21687.5	24.0	1.21	1.21	1.21	1747.7	113.5
26-Jan-17	Sunny	290.9	771.6	3.3170	3.4301	0.1131	21687.5	21711.5	24.0	1.21	1.21	1.21	1743.2	64.9
													Min	64.9
													Max	116.1
													Average	91.3

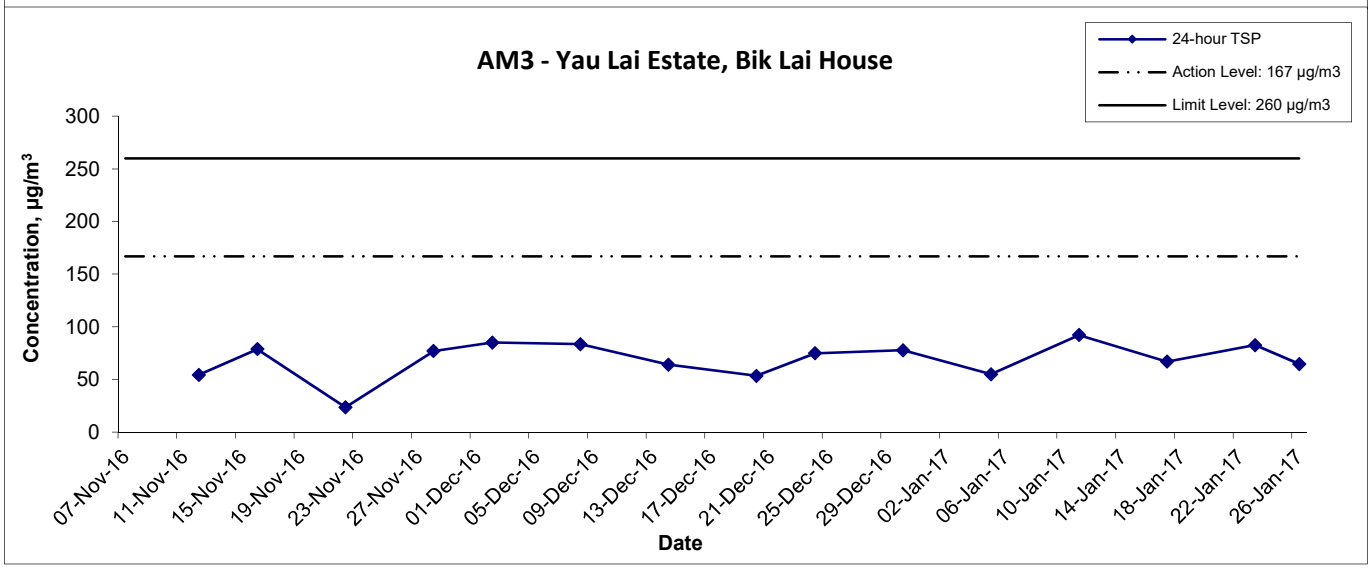
Location AM6(A) - Park Central, L1/F Open Space Area

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)
				Initial	Final		Initial	Final		Initial	Final			
5-Jan-17	Sunny	293.5	766.6	3.6341	3.7582	0.1241	14651.8	14675.8	24.0	1.22	1.22	1.22	1754.7	70.7
11-Jan-17	Cloudy	291.7	767.5	3.5738	3.7608	0.1870	14675.8	14699.8	24.0	1.22	1.22	1.22	1760.8	106.2
17-Jan-17	Cloudy	290.4	768.3	3.5896	3.7113	0.1217	14699.8	14723.8	24.0	1.23	1.23	1.23	1765.4	68.9
23-Jan-17	Sunny	290.7	772.4	3.6015	3.7924	0.1909	14723.8	14747.8	24.0	1.23	1.23	1.23	1769.0	107.9
26-Jan-17	Sunny	291.8	772.1	3.3026	3.4304	0.1278	14747.8	14771.8	24.0	1.23	1.23	1.23	1765.5	72.4
													Min	68.9
													Max	107.9
													Average	85.2

24-hr TSP Concentration Levels

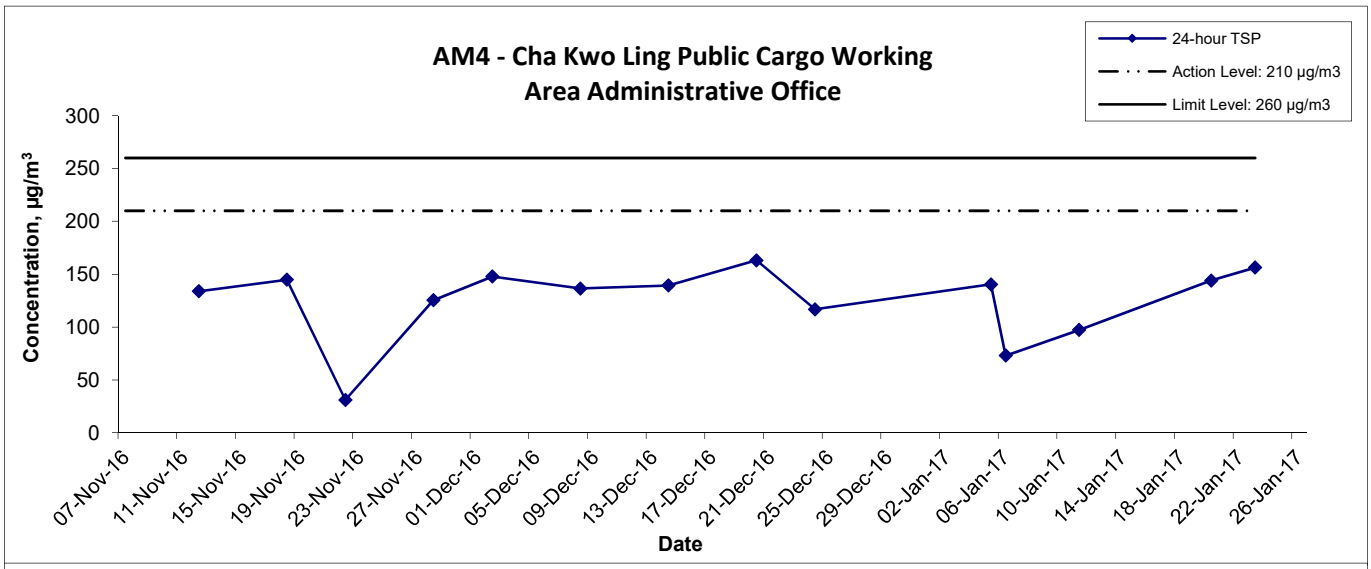


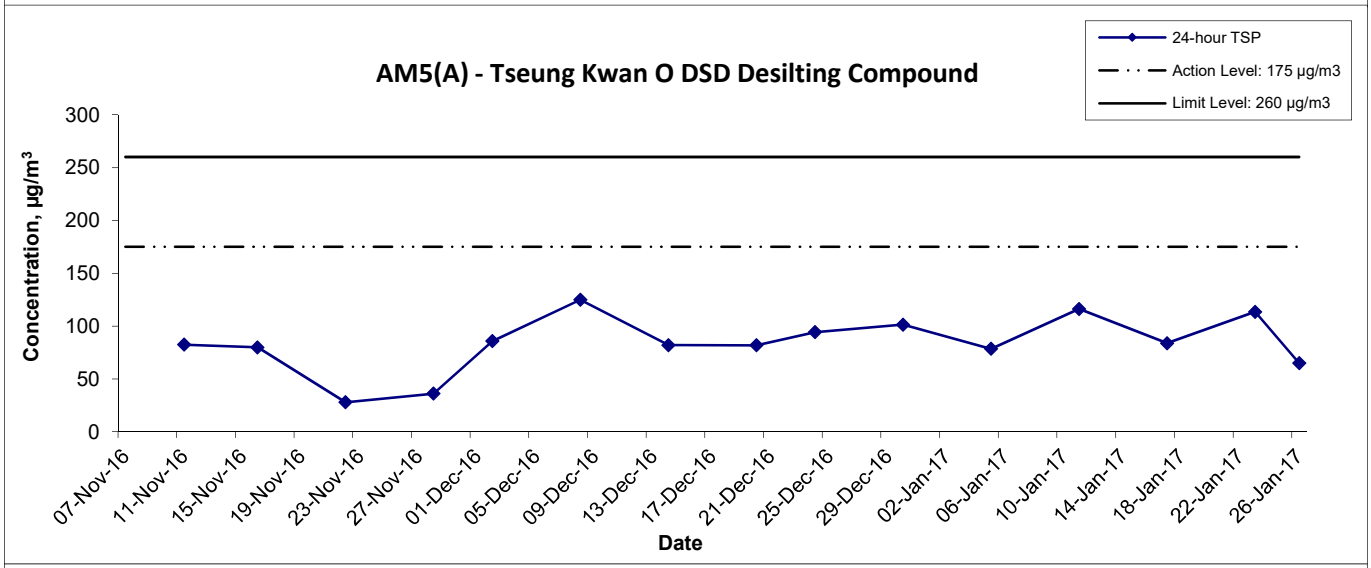


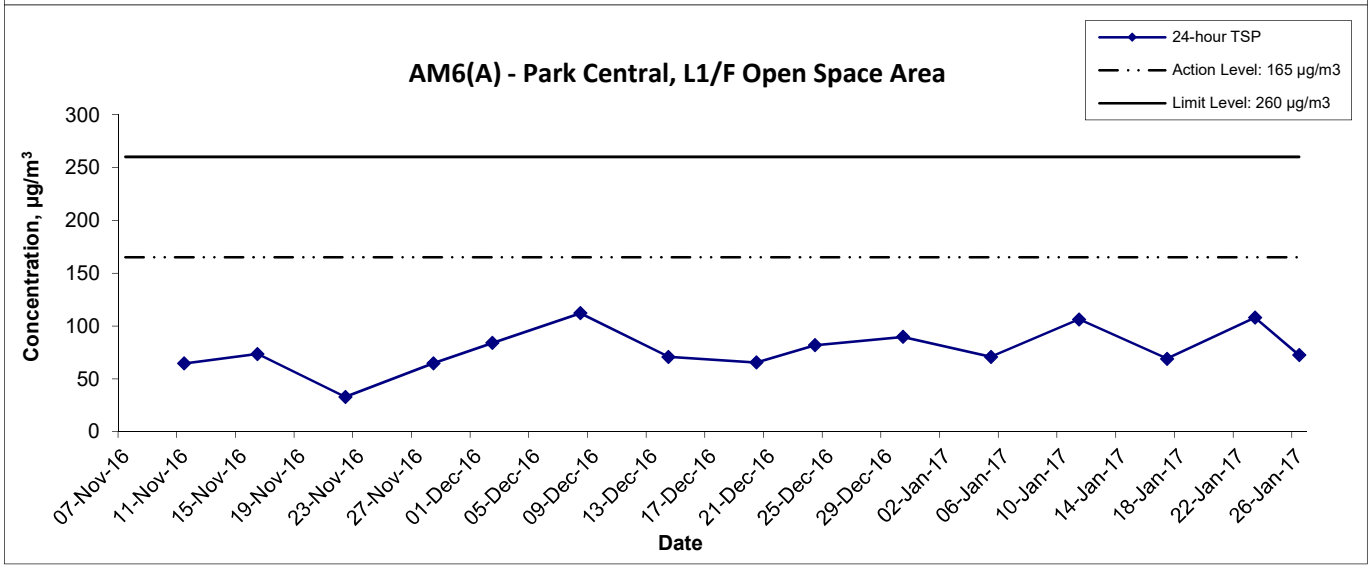


Title		Scale	Project No.	
	Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction	N.T.S	MA16034	CINOTECH
	Graphical Presentation of 24-hour TSP Monitoring Results	Date: Jan 17	Appendix: F	

24-hr TSP Concentration Levels







Title: Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Graphical Presentation of 24-hour TSP Monitoring Results	Scale: N.T.S Date: Jan 17	Project No.: MA16034 Appendix: F	CINOTECH

APPENDIX G
NOISE MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

Appendix G - Noise Monitoring Results

(0700-1900 hrs on Normal Weekdays)

Location CM1 - Nga Lai House, Yau Lai Estate Phase 1, Yau Tong							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
4-Jan-17	13:45	Sunny	68.7	70.6	63.6	65.5	65.9
12-Jan-17	10:15	Cloudy	72.3	74.6	68.9		71.3
18-Jan-17	9:00	Cloudy	72.8	75.3	68.6		71.9
23-Jan-17	9:15	Sunny	72.5	75.6	67.6		71.5
25-Jan-17	13:45	Sunny	68.1	69.9	65.4		64.6

Location CM2 - Bik Lai House, Yau Lai Estate Phase 1, Yau Tong							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
3-Jan-17	10:30	Cloudy	74.2	67.7	64.8	63.6	73.8
9-Jan-17	10:30	Cloudy	74.3	77.0	69.8		73.9
19-Jan-17	9:15	Sunny	71.4	73.9	67.7		70.6
23-Jan-17	10:15	Sunny	73.4	76.1	67.9		72.9
25-Jan-17	14:40	Sunny	70.4	72.2	68.0		69.4

Location CM3 - Block S, Yau Lai Estate Phase 5, Yau Tong							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
4-Jan-17	13:00	Sunny	68.4	70.3	61.4	65.6	65.2
12-Jan-17	11:30	Cloudy	74.4	77.2	67.7		73.8
18-Jan-17	9:55	Cloudy	74.8	77.2	71.4		74.2
23-Jan-17	9:05	Sunny	77.3	79.9	72.5		77.0
23-Jan-17	13:20(*)	Sunny	76.7	79.6	71.7		76.3
25-Jan-17	15:35	Sunny	72.3	74.1	68.9		71.3

(*) Repeated Measurement due to Limit Level Exceedance

Location CM4 - Tin Hau Temple, Cha Kwo Ling							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
3-Jan-17	13:30	Sunny	57.5	59.2	52.4	62.0	57.5 Measured $\leqq$ Baseline
9-Jan-17	13:00	Cloudy	58.8	61.4	49.6		58.8 Measured $\leqq$ Baseline
19-Jan-17	15:20	Sunny	59.9	62.3	59.9		59.9 Measured $\leqq$ Baseline
25-Jan-17	16:15	Sunny	69.4	71.0	66.3		67.1

Location CM5 - CCC Kei Faat Primary School, Yau Tong							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
4-Jan-17	14:35	Sunny	67.8	70.4	64.1	68.2	67.8 Measured $\leqq$ Baseline
12-Jan-17	9:10	Cloudy	69.3	72.8	65.7		62.8
18-Jan-17	10:50	Cloudy	67.8	70.5	63.5		67.8 Measured $\leqq$ Baseline
23-Jan-17	9:30	Sunny	72.3	74.9	68.5		71.3

Appendix G - Noise Monitoring Results

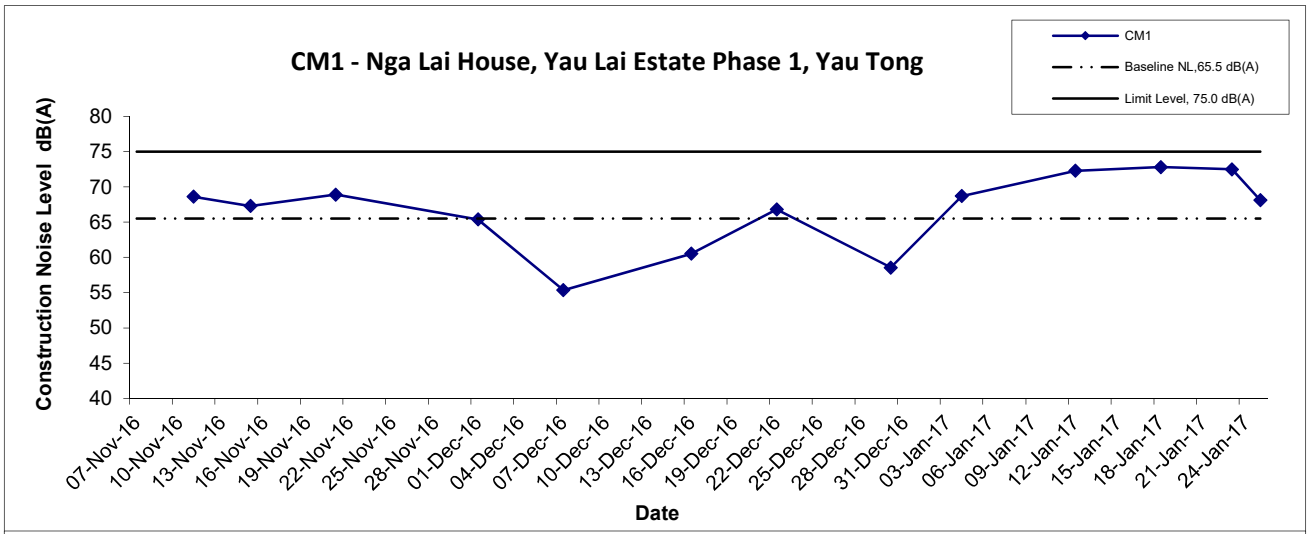
(0700-1900 hrs on Normal Weekdays)

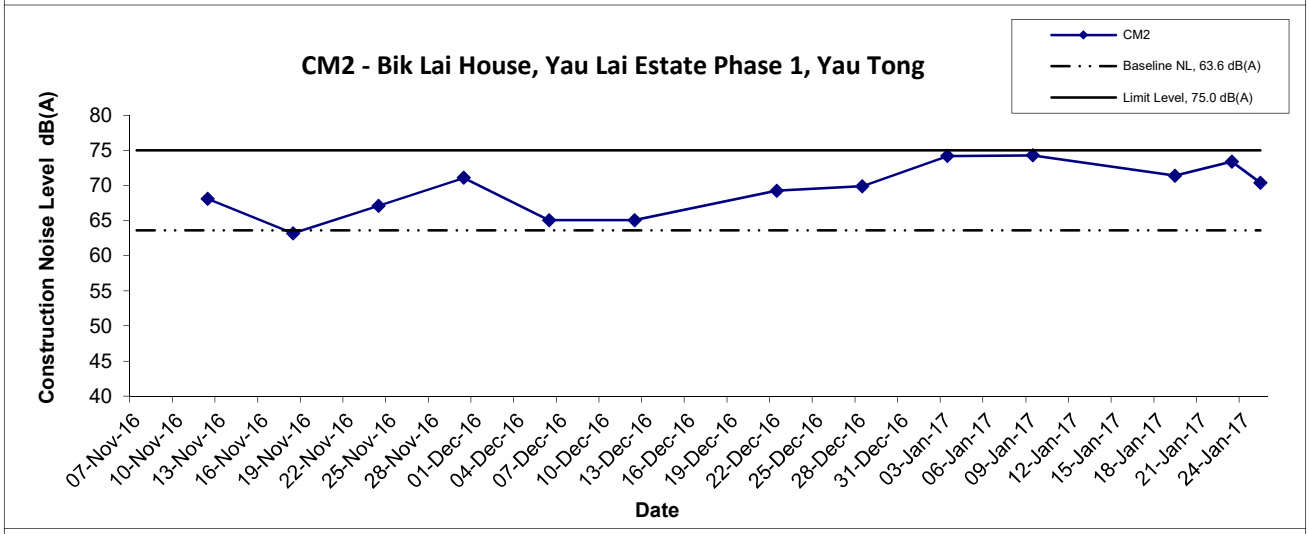
Location CM6(A) - Site Boundary of Contract No. NE/2015/02 near Tower 1, Ocean Shores							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
3-Jan-17	11:20	Sunny	68.4	68.7	62.4	61.9	67.3
12-Jan-17	16:25	Cloudy	63.2	65.3	60.3		57.3
18-Jan-17	14:50	Cloudy	59.6	61.8	55.8		59.6 Measured ≦ Baseline
24-Jan-17	13:15	Sunny	60.9	65.4	57.1		60.9 Measured ≦ Baseline

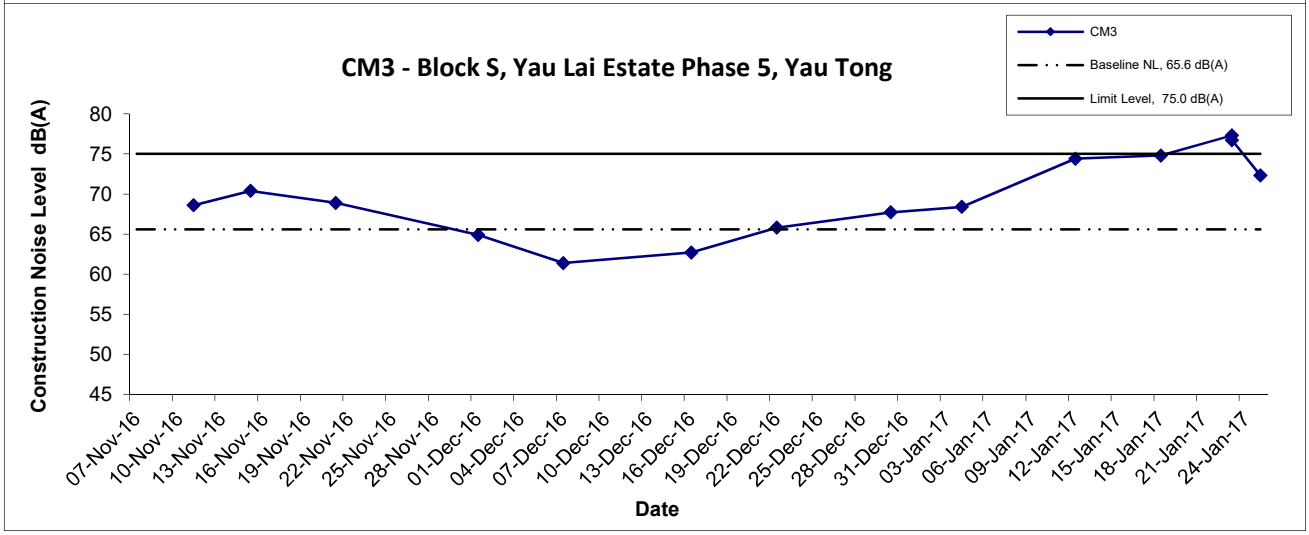
Location CM7(A) - Site Boundary of Contract No. NE/2015/02 near Tower 7, Ocean Shores							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
3-Jan-17	10:10	Sunny	66.2	67.3	60.0	58.3	65.4
12-Jan-17	17:15	Cloudy	65.1	67.2	60.9		64.1
18-Jan-17	13:40	Cloudy	64.2	67.6	57.0		62.9
24-Jan-17	14:00	Sunny	62.0	64.2	57.7		59.6

Location CM8(A) - Park Central, L1/F Open Space Area							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
3-Jan-17	9:00	Sunny	63.4	64.7	59.6	69.1	63.4 Measured ≦ Baseline
12-Jan-17	13:45	Cloudy	67.3	69.5	63.4		67.3 Measured ≦ Baseline
18-Jan-17	13:00	Cloudy	62.0	64.6	58.8		62.0 Measured ≦ Baseline
24-Jan-17	15:00	Sunny	69.4	72.2	61.2		57.6

Noise Levels

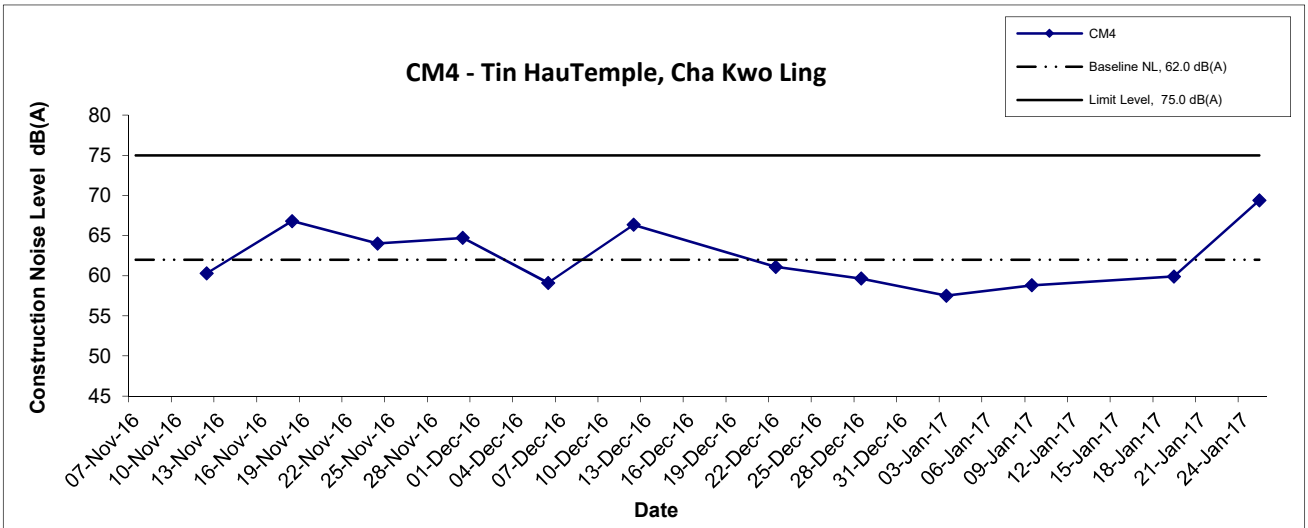


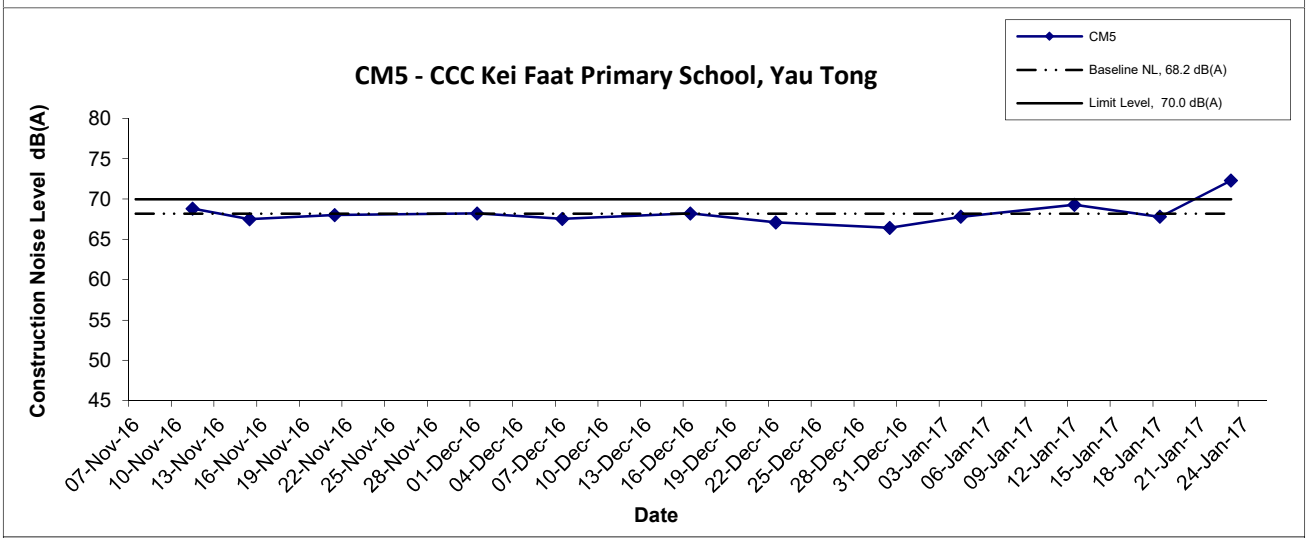


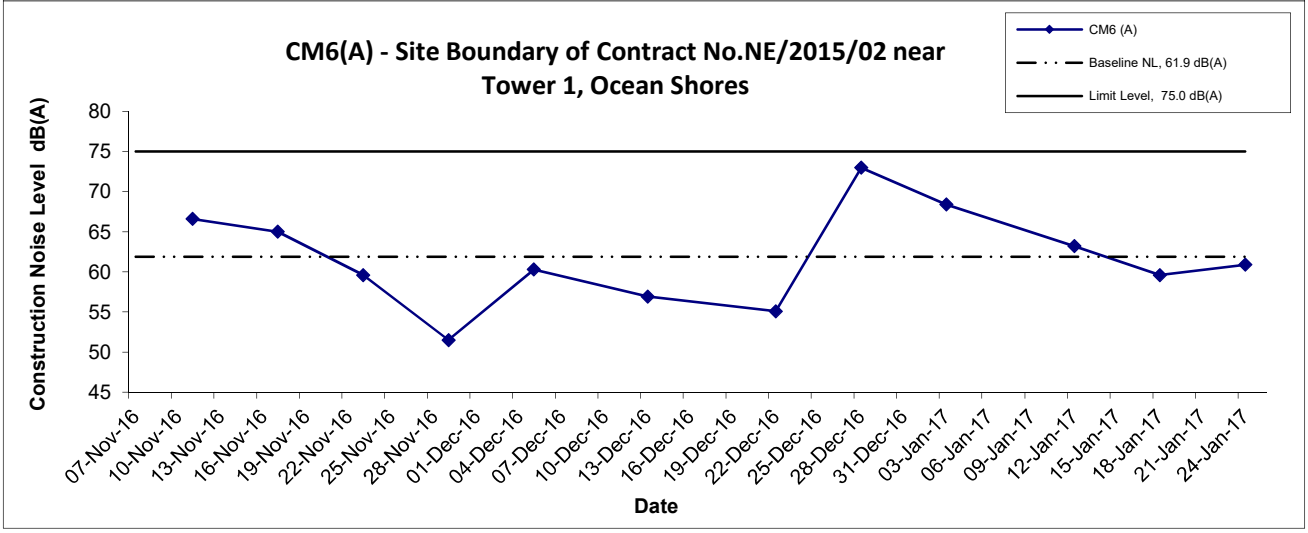


Title: Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Graphical Presentation of Construction Noise Monitoring Results	Scale: N.T.S Date: Jan 17	Project No.: MA16034 Appendix: G	CINOTECH

Noise Levels

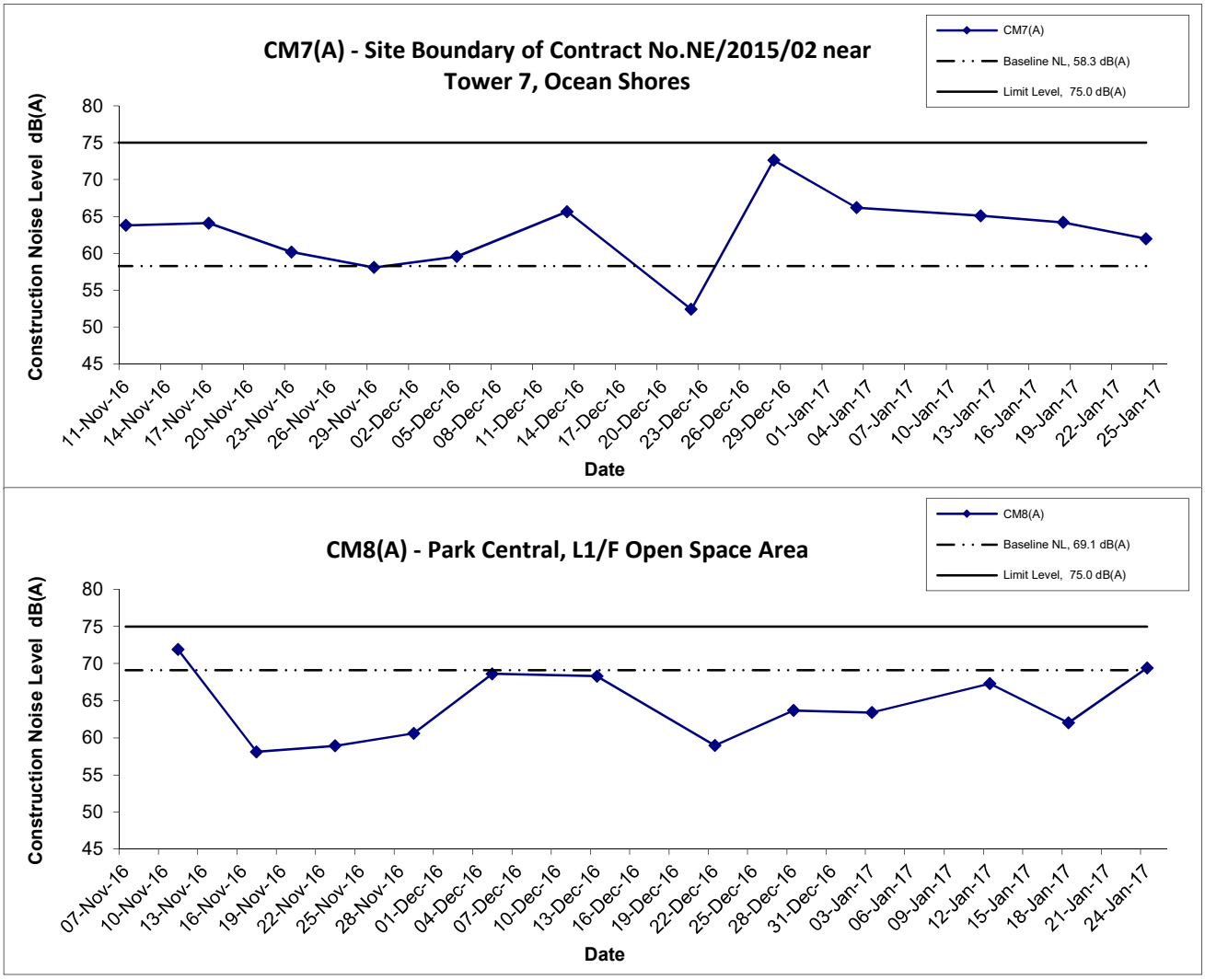






Title	Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S Date Jan 17	Project No. MA16034 Appendix G	CINOTECH

Noise Levels



Title: Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Graphical Presentation of Construction Noise Monitoring Results	Scale: N.T.S Date: Jan 17	Project No.: MA16034 Appendix: G	CINOTECH

APPENDIX H
GROUNDWATER QUALITY MONITORING RESULTS, GRAPHICAL PRESENTATIONS AND LABORATORY TESTING REPORTS

Agreement No. CE/59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction

Groundwater Quality Monitoring Results at Stream 1

Date	Weather Condition	Sampling Time	Depth (m)	Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)	
				Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
4-Jan-17	Cloudy	11:10	Middle	19.3 19.2	19.3	6.9 6.9	6.9	0.2 0.2	0.2	92.4 92.5	92.5	8.5 8.5	8.5	2.0 2.0	2.0
19-Jan-17	Fine	17:00	Middle	19.2 19.1	19.2	7.1 7.1	7.1	0.1 0.1	0.1	91.4 91.5	91.5	8.4 8.5	8.5	1.5 1.7	1.6

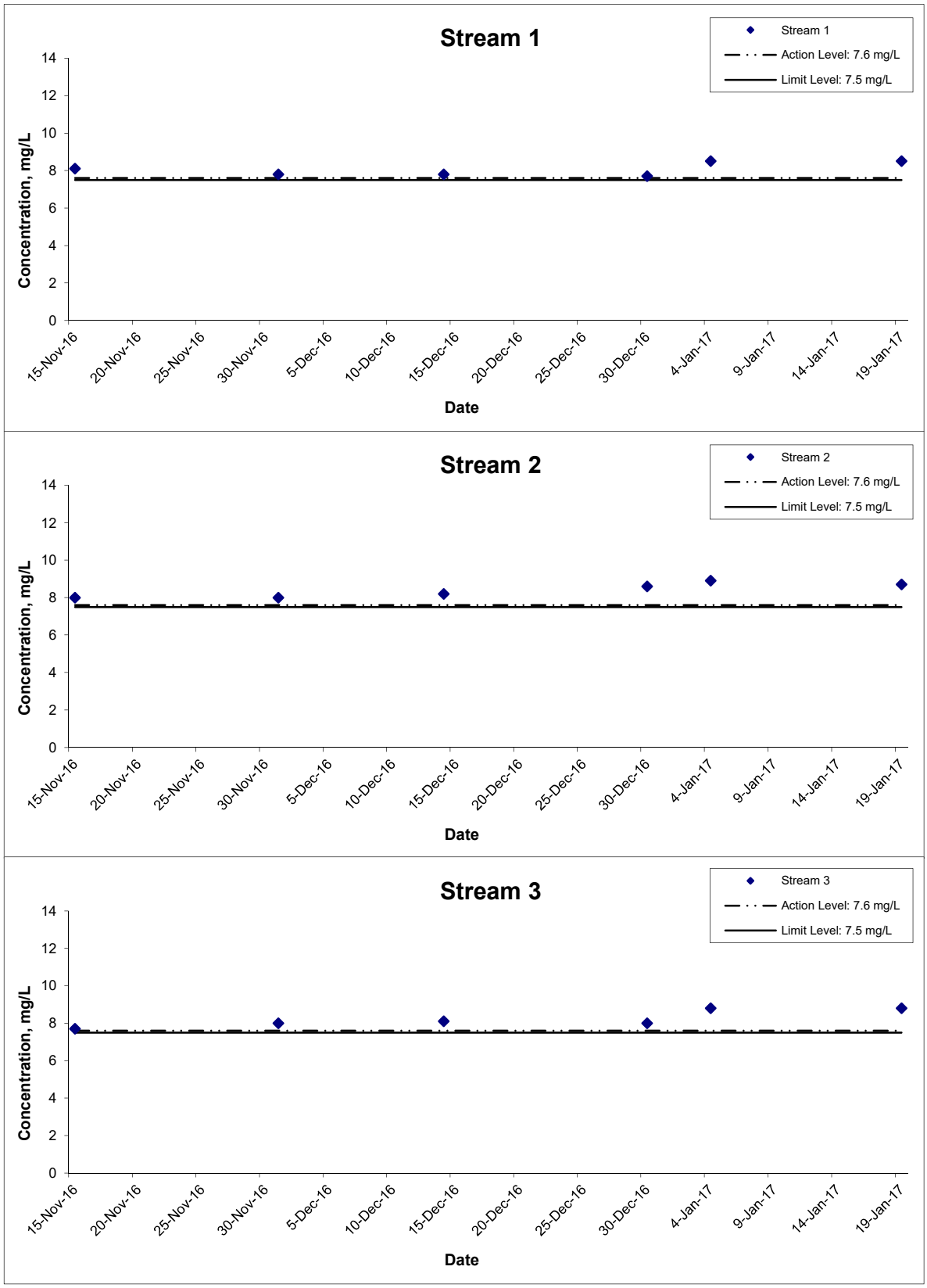
Groundwater Quality Monitoring Results at Stream 2

Date	Weather Condition	Sampling Time	Depth (m)	Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)	
				Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
4-Jan-17	Cloudy	10:41	Middle	19.6 19.6	19.6	7.0 6.9	7.0	0.1 0.1	0.1	96.8 95.9	96.4	8.9 8.8	8.9	2.0 2.1	2.1
19-Jan-17	Fine	16:32	Middle	19.1 19.2	19.2	6.8 6.8	6.8	0.1 0.1	0.1	93.6 93.8	93.7	8.7 8.7	8.7	1.9 1.9	1.9

Groundwater Quality Monitoring Results at Stream 3

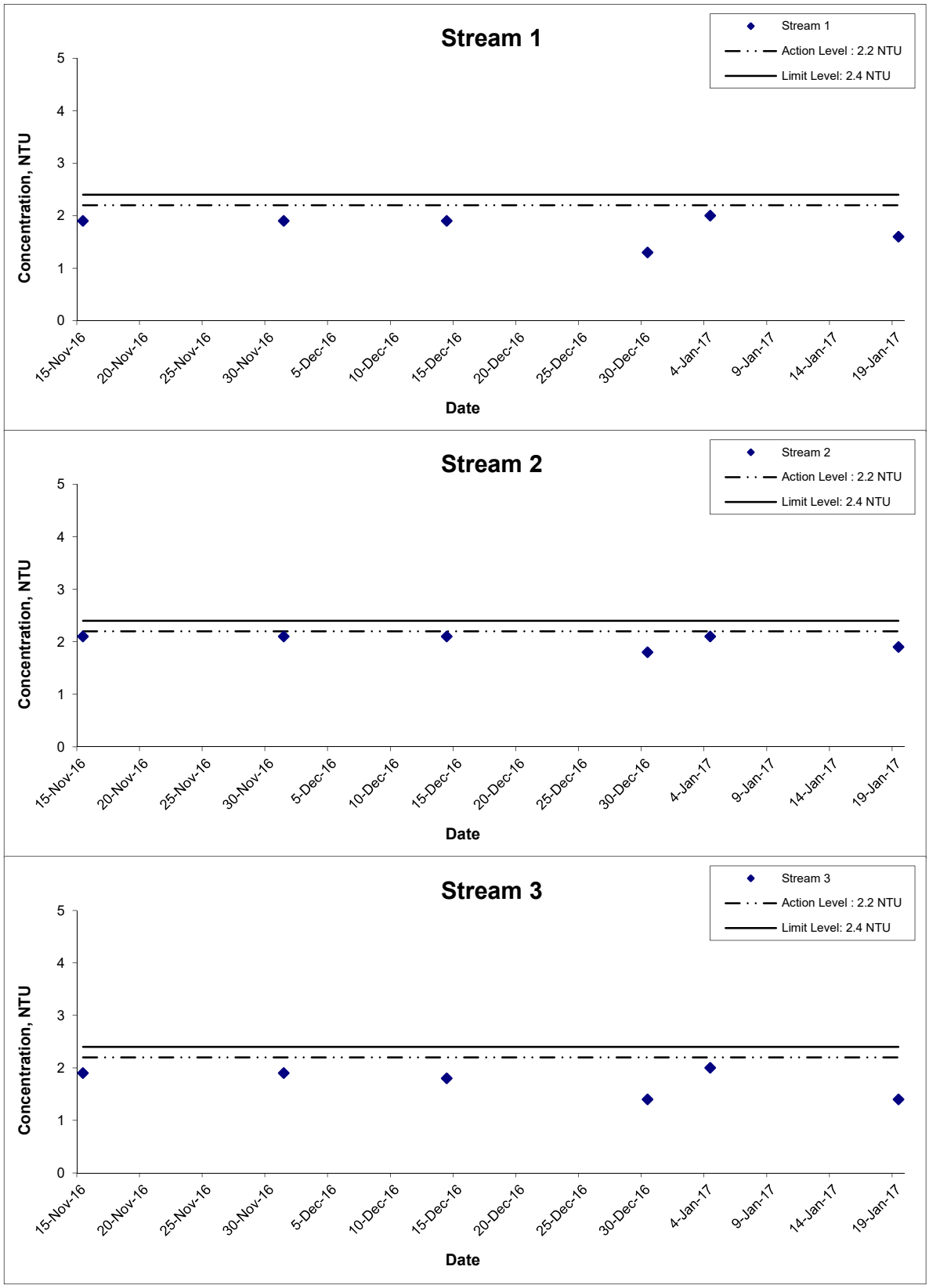
Date	Weather Condition	Sampling Time	Depth (m)	Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)	
				Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
4-Jan-17	Cloudy	10:24	Middle	19.4 19.4	19.4	7.0 7.1	7.1	0.1 0.1	0.1	95.3 95.1	95.2	8.8 8.8	8.8	1.9 2.0	2.0
19-Jan-17	Fine	16:13	Middle	18.9 19.0	19.0	7.1 7.2	7.2	0.2 0.2	0.2	94.3 94.2	94.3	8.8 8.7	8.8	1.3 1.5	1.4

Dissolved Oxygen



Title	Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Groundwater Quality Monitoring Result	Scale: N.T.S	Project No.: MA16034	CINOTECH
		Date: Jan 17	Appendix: H	

Turbidity



Title	Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Groundwater Quality Monitoring Result	Scale: N.T.S	Project No.: MA16034	CINOTECH
		Date: Jan 17	Appendix: H	

WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 1214, 1502, 1516, 1701 & 1716,
Technology Park, 18 On Lai Street,
Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
1710, Technology Park,
18 On Lai Street,
Shatin, N.T.

ATTN: **Ms. Mei Ling Tang**

Report No.:	26334
Date of Issue:	2017-01-12
Date Received:	2017-01-04
Date Tested:	2017-01-04
Date Completed:	2017-01-12
Page:	1 of 1

Sample Description : 3 liquid samples as received from client said to be groundwater
Laboratory No. : 26334
Project No. : MA16034 (Groundwater)
Project Name : Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O – Lam Tin Tunnel – Design and Construction
Custody No. : MA16034(Groundwater)/170104
Sampling Date : 2017-01-04

Tests Requested & Methodology:

Item	Parameters	Ref. Method	Limit of reporting
1	Total Suspended Solids	APHA 17ed 2540 D	*0.5 mg/L
2	Biochemical Oxygen Demand	APHA 19ed 5210B	2 mg O_2/L
3	Total Organic Carbon	In-house method SOP020 (Wet Oxidation)	1 mg-TOC/L
4	Total Nitrogen	In-house method SOP063 (FIA)	0.6 mg N/L
5	Ammonia	In-house method SOP057 (FIA)	0.05 mg NH_3-N/L
6	Total Phosphorus	In-house method SOP055 (FIA)	0.05 mg-P/L

Results:

Sample ID	Stream 1	Stream 2	Stream 3
Sampling Depth	S	S	S
Sample No.	26334-1	26334-2	26334-3
Total Suspended Solids (mg/L)	1.0	3.8	0.9
Biochemical Oxygen Demand (mg O_2/L)	<2	<2	<2
Total Organic Carbon (mg-TOC/L)	4	5	4
Total Nitrogen (mg N/L)	1.3	1.4	1.3
Ammonia (mg NH_3-N/L)	<0.05	<0.05	<0.05
Total Phosphorus (mg-P/L)	<0.05	<0.05	<0.05

Remarks: 1) < = less than
2) S = Surface, M = Middle, B = Bottom
3) * Limit of Reporting is reported as Detection Limit

**********END OF REPORT**********

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 1214, 1502, 1516, 1701 & 1716,
Technology Park, 18 On Lai Street,
Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
1710, Technology Park,
18 On Lai Street,
Shatin, N.T.

ATTN: **Ms. Mei Ling Tang**

Report No.:	26409
Date of Issue:	2017-01-27
Date Received:	2017-01-19
Date Tested:	2017-01-19
Date Completed:	2017-01-27
Page:	1 of 1

Sample Description : 3 liquid samples as received from client said to be groundwater
Laboratory No. : 26409
Project No. : MA16034 (Groundwater)
Project Name : Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O – Lam Tin Tunnel – Design and Construction
Custody No. : MA16034(Groundwater)/170119
Sampling Date : 2017-01-19

Tests Requested & Methodology:

Item	Parameters	Ref. Method	Limit of reporting
1	Total Suspended Solids	APHA 17ed 2540 D	*0.5 mg/L
2	Biochemical Oxygen Demand	APHA 19ed 5210B	2 mg O_2/L
3	Total Organic Carbon	In-house method SOP020 (Wet Oxidation)	1 mg-TOC/L
4	Total Nitrogen	In-house method SOP063 (FIA)	0.6 mg N/L
5	Ammonia	In-house method SOP057 (FIA)	0.05 mg NH_3-N/L
6	Total Phosphorus	In-house method SOP055 (FIA)	0.05 mg-P/L

Results:

Sample ID	Stream 1	Stream 2	Stream 3
Sampling Depth	S	S	S
Sample No.	26409-1	26409-2	26409-3
Total Suspended Solids (mg/L)	7.8	5.8	2.2
Biochemical Oxygen Demand (mg O_2/L)	<2	<2	<2
Total Organic Carbon (mg-TOC/L)	6	4	3
Total Nitrogen (mg N/L)	1.1	2.0	1.2
Ammonia (mg NH_3-N/L)	0.15	<0.05	<0.05
Total Phosphorus (mg-P/L)	0.07	<0.05	<0.05

Remarks: 1) < = less than
2) S = Surface, M = Middle, B = Bottom
3) * Limit of Reporting is reported as Detection Limit

**********END OF REPORT**********

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

APPENDIX I
MARINE WATER QUALITY MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

Appendix I - Action and Limit Levels for Marine Water Quality on 3 January 2017 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C2: 9.0 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C2: 9.8 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.1 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.6 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.1 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.6 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 7.6 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 8.2 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 03 January 2017

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Cloudy	Moderate	17:03	Surface	1	23.4 23.2	23.3	8.1 8.1	8.1	31.5 31.6	31.6	108.5 106.1	107.3	7.7 7.6	7.7	7.2	2.7 2.8	2.8	5.0	4.3 4.4	4.4	4.3
				Middle	10.5	23.4 23.1	23.3	8.1 8.1	8.1	32.6 32.6	32.6	93.7 94.8	94.3	6.6 6.7	6.7		4.3 4.9	4.6		5.5 5.6	5.6	
				Bottom	20	23.2 23.1	23.2	8.1 8.1	8.1	33.3 33.2	33.3	91.2 93.2	92.2	6.4 6.6	6.5	6.5	7.9 7.2	7.6		2.8 2.9	2.9	
C2	Cloudy	Moderate	15:25	Surface	1	23.0 23.0	23.0	8.1 8.1	8.1	31.7 31.7	31.7	102.2 106.9	104.6	7.3 7.6	7.5	7.2	2.2 2.7	2.5	5.3	5.0 5.2	5.1	5.8
				Middle	18	23.0 23.0	23.0	8.1 8.1	8.1	33.0 33.0	33.0	93.5 97.6	95.6	6.6 6.9	6.8		5.9 5.9	5.9		5.9 5.8	5.9	
				Bottom	35	23.0 23.0	23.0	8.1 8.1	8.1	33.1 33.2	33.2	88.0 88.8	88.4	6.2 6.3	6.3	6.3	7.4 7.6	7.5		6.3 6.2	6.3	
G1	Cloudy	Moderate	16:07	Surface	1	23.0 22.9	23.0	8.1 8.1	8.1	33.1 33.1	33.1	99.4 96.4	97.9	7.1 6.9	7.0	6.9	3.9 3.3	3.6	3.2	4.9 4.9	4.9	4.5
				Middle	4	22.9 22.6	22.8	8.1 8.1	8.1	33.4 33.4	33.4	92.2 99.9	96.1	6.5 7.1	6.8		3.2 3.1	3.2		3.8 3.9	3.9	
				Bottom	7	22.9 22.6	22.8	8.1 8.1	8.1	33.6 33.6	33.6	92.2 93.1	92.7	6.5 6.6	6.6	6.6	2.8 2.5	2.7		4.7 4.8	4.8	
G2	Cloudy	Moderate	15:49	Surface	1	23.0 23.0	23.0	8.1 8.1	8.1	33.1 33.1	33.1	103.0 107.7	105.4	7.3 7.6	7.5	7.2	3.1 3.2	3.2	2.9	5.6 5.5	5.6	6.0
				Middle	5	23.0 22.9	23.0	8.1 8.1	8.1	33.4 33.4	33.4	93.7 97.6	95.7	6.6 6.9	6.8		2.9 3.1	3.0		6.2 6.0	6.1	
				Bottom	9	22.9 22.9	22.9	8.2 8.2	8.2	34.2 34.0	34.1	88.5 89.0	88.8	6.2 6.3	6.3	6.3	2.5 2.6	2.6		6.2 6.3	6.3	
G3	Cloudy	Moderate	16:18	Surface	1	23.0 23.0	23.0	8.1 8.1	8.1	33.5 33.5	33.5	100.5 100.5	100.5	7.1 7.1	7.1	7.1	2.5 2.2	2.4	2.5	4.6 4.6	4.6	5.0
				Middle	4	22.9 22.7	22.8	8.1 8.1	8.1	33.5 33.5	33.5	100.6 100.1	100.4	7.1 7.1	7.1		2.7 2.5	2.6		4.4 4.4	4.4	
				Bottom	7	23.0 22.7	22.9	8.1 8.1	8.1	33.5 33.5	33.5	101.8 102.8	102.3	7.2 7.3	7.3	7.3	2.7 2.3	2.5		5.9 5.9	5.9	
G4	Cloudy	Moderate	16:36	Surface	1	23.4 23.2	23.3	8.0 8.0	8.0	31.5 31.5	31.5	87.4 83.1	85.3	6.2 5.9	6.1	6.1	2.9 2.4	2.7	3.3	5.2 5.3	5.3	6.0
				Middle	4	23.4 23.2	23.3	8.1 8.1	8.1	32.5 32.5	32.5	84.4 85.1	84.8	6.0 6.0	6.0		3.3 3.7	3.5		7.0 6.8	6.9	
				Bottom	7	23.2 23.2	23.2	8.1 8.1	8.1	33.2 33.0	33.1	85.5 80.6	83.1	6.0 5.7	5.9	5.9	3.6 3.7	3.7		5.7 5.8	5.8	
M1	Cloudy	Moderate	15:58	Surface	1	23.0 23.0	23.0	8.1 8.0	8.1	33.5 33.5	33.5	97.3 97.7	97.5	6.9 6.9	6.9	6.9	2.4 2.5	2.5	2.8	4.7 4.8	4.8	5.6
				Middle	3	22.9 22.9	22.9	8.8 8.1	8.5	33.6 33.5	33.6	96.4 96.1	96.3	6.8 6.8	6.8		2.6 2.6	2.6		5.2 5.3	5.3	
				Bottom	5	23.0 22.8	22.9	8.1 8.1	8.1	33.7 33.7	33.7	96.5 96.0	96.3	6.8 6.8	6.8	6.8	2.9 3.4	3.2		6.7 6.4	6.6	
M2	Cloudy	Moderate	15:43	Surface	1	23.0 22.9	23.0	8.1 8.1	8.1	31.7 31.7	31.7	95.7 96.1	95.9	6.8 6.9	6.9	6.9	2.2 2.7	2.5	4.0	3.3 3.4	3.4	5.7
				Middle	5.5	23.0 22.9	23.0	8.1 8.1	8.1	33.0 33.0	33.0	95.4 95.8	95.6	6.8 6.8	6.8		3.9 3.9	3.9		6.8 6.8	6.8	
				Bottom	10	22.9 22.9	22.9	8.1 8.1	8.1	33.1 33.2	33.2	88.0 87.4	87.7	6.2 6.2	6.2	6.2	5.4 5.6	5.5		7.0 6.6	6.8	
M3	Cloudy	Moderate	16:29	Surface	1	23.3 23.1	23.2	8.1 8.1	8.1	31.3 31.3	31.3	93.4 95.4	94.4	6.7 6.8	6.8	6.5	2.1 2.2	2.2	2.6	5.4 5.3	5.4	5.4
				Middle	4.5	23.3 23.1	23.2	8.1 8.1	8.1	31.9 31.9	31.9	84.2 88.1	86.2	6.0 6.3	6.2		2.5 2.7	2.6		5.0 5.3	5.2	
				Bottom	8	23.1 23.1	23.1	8.1 8.1	8.1	32.3 32.3	32.3	85.0 83.9	84.5	6.0 6.0	6.0	6.0	2.9 2.8	2.9		5.5 5.4	5.5	
M4	Cloudy	Moderate	15:34	Surface	1	23.0 23.0	23.0	8.1 8.1	8.1	33.5 33.5	33.5	105.1 103.8	104.5	7.4 7.4	7.4	7.2	2.4 2.5	2.5	3.1	5.2 5.2	5.2	4.3
				Middle	4	23.0 22.3	22.7	8.1 8.1	8.1	33.6 33.6	33.6	97.8 96.9	97.4	6.9 6.9	6.9		2.9 2.8	2.9		3.2 3.1	3.2	
				Bottom	7	23.0 22.3	22.7	8.1 8.1	8.1	34.5 34.5	34.5	96.2 94.8	95.5	6.8 6.8	6.8	6.8	3.9 3.9	3.9		4.5 4.6	4.6	
M5	Cloudy	Moderate	16:56	Surface	1	23.3 23.1	23.2	8.1 8.1	8.1	31.5 31.5	31.5	90.5 96.0	93.3	6.4 6.9	6.7	6.7	2.9 2.5	2.7	4.8	5.4 5.3	5.4	5.0
				Middle	5.5	23.3 23.2	23.3	8.1 8.1	8.1	32.5 32.6	32.6	91.9 97.1	94.5	6.5 6.9	6.7		5.1 4.4	4.8		3.9 4.0	4.0	
				Bottom	10	23.2 23.2	23.2	8.1 8.1	8.1	33.2 33.3	33.3	94.2 89.3	91.8	6.7 6.3	6.5	6.5	6.7 7.1	6.9		5.4 5.6	5.5	
M6	Cloudy	Moderate	16:43	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.2	- -	-	3.5	- -	-	7.1
				Middle	2	23.4 23.2	23.3	8.1 8.1	8.1	31.3 31.4	31.4	101.6 100.9	101.3	7.2 7.2	7.2		3.5 3.4	3.5		7.0 7.1	7.1	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 3 January 2017 (Mid-Flood Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C1: 5.3 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C1: 15.7 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 7.0 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.5 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 7.0 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.5 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 7.0 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.5 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 03 January 2017

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Cloudy	Moderate	11:34	Surface	1	23.5 23.1	23.3	8.2 8.2	8.2	32.1 32.1	32.1	105.5 107.4	106.5	7.5 7.6	7.6	7.2	2.9 3.1	3.0	3.5	5.7 5.8	5.8	5.1
				Middle	10	23.5 22.9	23.2	8.2 8.2	8.2	32.3 32.3	32.3	94.3 94.1	94.2	6.7 6.7	6.7		3.0 3.1	3.1		3.6 3.5	3.6	
				Bottom	19	23.1 23.0	23.1	8.3 8.2	8.3	32.4 32.4	32.4	93.1 92.9	93.0	6.6 6.6	6.6	6.6	4.3 4.4	4.4		5.8 5.8	5.8	
C2	Cloudy	Moderate	09:35	Surface	1	23.3 22.7	23.0	8.1 8.1	8.1	32.4 32.4	32.4	101.8 102.0	101.9	7.2 7.3	7.3	7.0	4.0 3.7	3.9	4.1	3.6 3.5	3.6	5.6
				Middle	18	23.2 22.5	22.9	8.1 8.1	8.1	32.5 32.5	32.5	95.0 93.8	94.4	6.7 6.7	6.7		4.2 4.0	4.1		7.0 7.2	7.1	
				Bottom	35	22.7 22.5	22.6	8.2 8.2	8.2	32.5 32.5	32.5	93.8 93.5	93.7	6.7 6.7	6.7	6.7	4.3 4.4	4.4		6.1 6.3	6.2	
G1	Cloudy	Moderate	10:17	Surface	1	23.1 22.9	23.0	8.2 8.2	8.2	32.2 32.2	32.2	101.3 101.8	101.6	7.2 7.3	7.3	7.0	3.0 2.8	2.9	3.8	5.7 5.7	5.7	4.1
				Middle	4	23.1 22.9	23.0	8.2 8.2	8.2	32.3 32.3	32.3	92.3 93.4	92.9	6.6 6.7	6.7		3.5 4.0	3.8		2.7 2.8	2.8	
				Bottom	7	22.9 22.9	22.9	8.2 8.2	8.2	32.5 32.4	32.5	92.5 93.7	93.1	6.6 6.7	6.7	6.7	4.7 4.7	4.7		3.7 3.8	3.8	
G2	Cloudy	Moderate	10:01	Surface	1	23.0 22.9	23.0	8.2 8.2	8.2	32.7 32.7	32.7	100.1 100.6	100.4	7.1 7.2	7.2	7.0	2.7 2.3	2.5	2.8	4.9 4.8	4.9	4.5
				Middle	5	23.0 22.9	23.0	8.2 8.2	8.2	32.8 32.8	32.8	94.0 92.9	93.5	6.7 6.6	6.7		2.6 2.7	2.7		4.8 4.9	4.9	
				Bottom	9	22.9 22.9	22.9	8.2 8.2	8.2	33.2 33.2	33.2	90.2 89.1	89.7	6.4 6.3	6.4	6.4	3.3 3.3	3.3		3.9 3.6	3.8	
G3	Cloudy	Moderate	10:31	Surface	1	22.6 22.6	22.6	8.2 8.2	8.2	32.2 32.1	32.2	101.2 101.7	101.5	7.3 7.3	7.3	7.0	2.7 2.5	2.6	3.4	4.7 4.8	4.8	4.0
				Middle	4	22.6 22.6	22.6	8.2 8.2	8.2	32.5 32.5	32.5	92.7 92.7	92.7	6.6 6.6	6.6		2.9 3.2	3.1		3.6 3.5	3.6	
				Bottom	7	22.6 22.6	22.6	8.2 8.2	8.2	32.8 32.8	32.8	91.2 90.7	91.0	6.5 6.5	6.5	6.5	4.3 4.4	4.4		3.6 3.4	3.5	
G4	Cloudy	Moderate	11:03	Surface	1	23.6 23.0	23.3	8.2 8.2	8.2	32.2 32.2	32.2	101.8 101.1	101.5	7.2 7.2	7.2	6.9	3.0 3.2	3.1	4.0	5.4 5.2	5.3	4.3
				Middle	4	23.6 22.9	23.3	8.2 8.2	8.2	32.5 32.5	32.5	93.9 93.2	93.6	6.6 6.6	6.6		4.0 3.8	3.9		4.2 4.2	4.2	
				Bottom	7	23.0 23.0	23.0	8.3 8.3	8.3	33.0 33.0	33.0	96.9 96.9	96.9	6.9 6.9	6.9	6.9	4.9 5.2	5.1		3.3 3.4	3.4	
M1	Cloudy	Moderate	10:09	Surface	1	22.7 22.6	22.7	8.2 8.2	8.2	32.5 32.5	32.5	99.8 100.0	99.9	7.1 7.2	7.2	7.2	2.6 2.8	2.7	2.8	5.4 5.6	5.5	5.3
				Middle	3	22.6 22.6	22.6	8.2 8.2	8.2	32.4 32.4	32.4	98.8 98.4	98.6	7.1 7.1	7.1		2.8 2.9	2.9		5.3 5.2	5.3	
				Bottom	5	22.6 22.5	22.6	8.2 8.2	8.2	32.5 32.5	32.5	93.0 92.6	92.8	6.7 6.6	6.7	6.7	2.8 3.0	2.9		5.1 5.1	5.1	
M2	Cloudy	Moderate	09:55	Surface	1	23.3 22.7	23.0	8.2 8.2	8.2	32.7 32.6	32.7	96.4 95.8	96.1	6.8 6.9	6.9	6.7	2.9 2.8	2.9	2.9	4.6 4.5	4.6	4.4
				Middle	5.5	23.2 22.5	22.9	8.2 8.2	8.2	32.7 32.8	32.8	90.1 88.6	89.4	6.4 6.4	6.4		2.9 2.9	2.9		5.4 5.6	5.5	
				Bottom	10	22.7 22.5	22.6	8.2 8.2	8.2	32.9 32.9	32.9	87.5 87.3	87.4	6.3 6.3	6.3	6.3	2.9 2.9	2.9		2.9 3.0	3.0	
M3	Cloudy	Moderate	10:51	Surface	1	23.5 23.2	23.4	8.2 8.2	8.2	32.7 32.7	32.7	113.6 109.3	111.5	8.0 7.7	7.9	7.4	3.5 3.5	3.5	3.7	3.2 3.1	3.2	4.5
				Middle	4.5	23.6 23.0	23.3	8.2 8.2	8.2	32.9 33.0	33.0	95.8 95.3	95.6	6.7 6.8	6.8		3.7 3.6	3.7		6.0 6.2	6.1	
				Bottom	8	23.2 23.0	23.1	8.2 8.2	8.2	33.3 33.3	33.3	88.3 87.5	87.9	6.2 6.2	6.2	6.2	3.9 4.1	4.0		4.1 4.2	4.2	
M4	Cloudy	Moderate	09:47	Surface	1	22.7 22.6	22.7	8.2 8.2	8.2	32.4 32.4	32.4	101.0 100.9	101.0	7.2 7.2	7.2	7.0	2.2 2.1	2.2	3.2	5.2 5.1	5.2	4.9
				Middle	4	22.7 22.0	22.4	8.2 8.2	8.2	32.4 32.4	32.4	93.7 92.3	93.0	6.7 6.7	6.7		2.4 2.7	2.6		4.2 4.1	4.2	
				Bottom	7	22.6 22.0	22.3	8.2 8.2	8.2	32.6 32.6	32.6	90.4 88.1	89.3	6.5 6.4	6.5	6.5	4.9 4.7	4.8		5.6 5.2	5.4	
M5	Cloudy	Moderate	11:27	Surface	1	23.4 23.2	23.3	8.2 8.2	8.2	32.4 32.4	32.4	101.4 100.9	101.2	7.2 7.2	7.2	6.9	3.8 3.8	3.8	4.0	5.8 5.9	5.9	5.2
				Middle	5.5	23.4 22.9	23.2	8.2 8.3	8.3	32.5 32.5	32.5	92.9 92.8	92.9	6.6 6.6	6.6		3.0 2.9	3.0		5.2 5.4	5.3	
				Bottom	10	23.1 22.9	23.0	8.3 8.3	8.3	32.6 32.6	32.6	89.8 89.2	89.5	6.4 6.4	6.4	6.4	4.9 5.2	5.1		4.5 4.4	4.5	
M6	Cloudy	Moderate	11:13	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.5	- -	-	3.6	- -	-	4.2
				Middle	2.1	23.6 23.1	23.4	8.2 8.2	8.2	32.1 32.1	32.1	104.2 105.0	104.6	7.4 7.5	7.5		3.5 3.7	3.6		4.1 4.2	4.2	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 5 January 2017 (Mid-Ebb Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C2: 7.0 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C2: 7.5 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.5 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 7.0 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.5 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 7.0 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 5.5 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.0 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 05 January 2017

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Cloudy	Moderate	19:00	Surface	1	27.9 27.7	27.8	8.2 8.1	8.2	32.4 32.4	32.4	111.8 114.3	113.1	7.3 7.5	7.4	7.0	5.0 4.6	4.8	5.6	5.7 5.9	5.8	5.3
				Middle	10	27.9 27.6	27.8	8.1 8.2	8.2	32.6 32.6	32.6	99.8 100.2	100.0	6.5 6.6	6.6		5.9 5.1	5.5		5.9 5.8	5.9	
				Bottom	19	27.7 27.6	27.7	8.1 8.1	8.1	32.7 32.7	32.7	98.8 98.7	98.8	6.5 6.5	6.5	6.5	7.0 6.1	6.6		4.2 4.4	4.3	
C2	Cloudy	Moderate	17:22	Surface	1	27.6 27.5	27.6	8.2 8.1	8.2	32.7 32.7	32.7	107.7 109.0	108.4	7.1 7.2	7.2	6.9	3.2 3.1	3.2	4.2	5.2 5.6	5.4	4.7
				Middle	18	27.6 27.6	27.6	8.1 8.1	8.1	32.7 32.7	32.7	100.5 100.4	100.5	6.6 6.6	6.6		3.4 3.7	3.6		4.2 4.1	4.2	
				Bottom	35	27.5 27.6	27.6	8.1 8.1	8.1	32.8 32.8	32.8	100.1 100.2	100.2	6.6 6.6	6.6	6.6	5.9 5.7	5.8		4.6 4.6	4.6	
G1	Cloudy	Moderate	18:04	Surface	1	27.5 27.4	27.5	8.1 8.2	8.2	32.5 32.5	32.5	107.4 108.1	107.8	7.1 7.1	7.1	6.8	3.7 3.5	3.6	4.4	3.3 3.2	3.3	3.5
				Middle	4	27.5 27.2	27.4	8.2 8.2	8.2	32.6 32.6	32.6	97.6 98.7	98.2	6.4 6.5	6.5		3.9 4.2	4.1		3.0 3.1	3.1	
				Bottom	7	27.4 27.2	27.3	8.2 8.2	8.2	32.7 32.7	32.7	98.0 99.0	98.5	6.5 6.6	6.6	6.6	5.3 5.4	5.4		4.1 4.3	4.2	
G2	Cloudy	Moderate	17:46	Surface	1	27.5 27.5	27.5	8.1 8.1	8.1	33.0 33.0	33.0	106.3 107.0	106.7	7.0 7.0	7.0	6.8	3.9 3.8	3.9	4.4	3.7 3.8	3.8	3.7
				Middle	5	27.5 27.4	27.5	8.1 8.1	8.1	33.1 33.1	33.1	99.8 98.6	99.2	6.6 6.5	6.6		4.4 4.3	4.4		4.5 4.4	4.5	
				Bottom	9	27.5 27.4	27.5	8.2 8.2	8.2	33.5 33.4	33.5	95.7 94.3	95.0	6.3 6.2	6.3	6.3	4.9 4.9	4.9		2.7 2.7	2.7	
G3	Cloudy	Moderate	18:14	Surface	1	27.5 27.5	27.5	8.1 8.1	8.1	32.4 32.4	32.4	108.2 108.8	108.5	7.1 7.2	7.2	6.9	4.0 3.8	3.9	4.8	5.2 5.3	5.3	4.6
				Middle	4	27.4 27.3	27.4	8.1 8.1	8.1	32.8 32.8	32.8	98.8 98.6	98.7	6.5 6.5	6.5		4.5 5.0	4.8		5.5 5.3	5.4	
				Bottom	7	27.5 27.3	27.4	8.1 8.1	8.1	33.1 33.0	33.1	97.3 96.5	96.9	6.4 6.4	6.4	6.4	5.7 5.7	5.7		3.1 3.2	3.2	
G4	Cloudy	Moderate	18:33	Surface	1	27.9 27.7	27.8	8.0 8.1	8.1	32.5 32.5	32.5	107.8 107.8	107.8	7.1 7.1	7.1	6.8	4.0 3.4	3.7	4.4	3.7 3.8	3.8	5.2
				Middle	4	27.9 27.7	27.8	8.1 8.1	8.1	32.8 32.8	32.8	99.3 99.3	99.3	6.5 6.5	6.5		4.0 4.2	4.1		6.6 6.5	6.6	
				Bottom	7	27.7 27.7	27.7	8.1 8.1	8.1	33.2 33.3	33.3	103.2 103.2	103.2	6.8 6.8	6.8	6.8	5.5 5.4	5.5		5.1 5.0	5.1	
M1	Cloudy	Moderate	17:55	Surface	1	27.5 27.5	27.5	8.1 8.1	8.1	32.7 32.7	32.7	106.6 106.9	106.8	7.0 7.0	7.0	6.8	3.6 4.0	3.8	4.1	5.5 5.4	5.5	5.0
				Middle	3	27.5 27.4	27.5	8.1 8.1	8.1	32.7 32.7	32.7	99.3 98.8	99.1	6.5 6.5	6.5		3.8 3.8	3.8		6.6 6.3	6.5	
				Bottom	5	27.5 27.9	27.7	8.1 8.2	8.2	33.1 32.8	33.0	94.7 98.4	96.6	6.2 6.4	6.3	6.3	4.3 5.0	4.7		3.0 3.0	3.0	
M2	Cloudy	Moderate	17:39	Surface	1	27.5 27.5	27.5	8.2 8.2	8.2	32.9 32.9	32.9	101.8 102.2	102.0	6.7 6.7	6.7	6.5	3.7 3.9	3.8	4.3	3.8 7.5	5.7	5.1
				Middle	5.5	27.5 27.5	27.5	8.1 8.1	8.1	33.0 33.1	33.1	95.0 94.7	94.9	6.2 6.2	6.2		4.6 4.3	4.5		4.7 4.4	4.6	
				Bottom	10	27.5 27.5	27.5	8.1 8.1	8.1	33.2 33.2	33.2	93.2 93.2	93.2	6.1 6.1	6.1	6.1	4.7 4.7	4.7		4.8 4.9	4.9	
M3	Cloudy	Moderate	18:26	Surface	1	27.8 27.7	27.8	8.1 8.1	8.1	33.0 33.0	33.0	120.4 116.2	118.3	7.9 7.6	7.8	7.2	3.9 4.1	4.0	4.4	3.3 3.4	3.4	4.4
				Middle	4.5	27.8 27.7	27.8	8.1 8.1	8.1	33.2 33.3	33.3	101.2 101.4	101.3	6.6 6.6	6.6		4.7 4.5	4.6		4.5 4.4	4.5	
				Bottom	8	27.7 27.7	27.7	8.1 8.1	8.1	33.6 33.6	33.6	93.4 93.0	93.2	6.1 6.1	6.1	6.1	4.5 4.6	4.6		5.1 5.6	5.4	
M4	Cloudy	Moderate	17:30	Surface	1	27.5 27.5	27.5	8.1 8.1	8.1	32.7 32.7	32.7	107.9 107.9	107.9	7.1 7.1	7.1	6.9	5.0 4.7	4.9	5.1	5.3 5.5	5.4	5.2
				Middle	4	27.5 26.8	27.2	8.1 8.1	8.1	32.7 32.7	32.7	100.0 98.4	99.2	6.6 6.6	6.6		5.2 5.0	5.1		5.9 6.0	6.0	
				Bottom	7	27.5 26.8	27.2	8.1 8.1	8.1	32.9 32.9	32.9	96.5 93.9	95.2	6.3 6.2	6.3	6.3	5.3 5.4	5.4		4.3 4.2	4.3	
M5	Cloudy	Moderate	18:52	Surface	1	27.9 27.7	27.8	8.1 8.1	8.1	32.7 32.7	32.7	107.5 107.2	107.4	7.0 7.0	7.0	6.8	4.4 4.8	4.6	5.2	2.9 2.9	2.9	3.8
				Middle	5.5	27.9 27.7	27.8	8.2 8.1	8.2	32.8 32.8	32.8	98.4 98.9	98.7	6.4 6.5	6.5		5.0 4.9	5.0		4.6 4.5	4.6	
				Bottom	10	27.7 27.7	27.7	8.2 8.1	8.2	32.9 32.9	32.9	95.2 95.0	95.1	6.2 6.2	6.2	6.2	5.9 6.2	6.1		3.8 3.7	3.8	
M6	Cloudy	Moderate	18:40	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.3	- -	-	4.4	- -	-	4.1
				Middle	2.1	27.9 27.7	27.8	8.1 8.1	8.1	32.4 32.4	32.4	110.3 111.8	111.1	7.2 7.3	7.3		4.2 4.5	4.4		4.0 4.1	4.1	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 5 January 2017 (Mid-Flood Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C1: 9.7 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C1: 10.5 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 6.8 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.4 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 6.8 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.4 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 7.8 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 8.5 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 05 January 2017

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Cloudy	Moderate	13:20	Surface	1	27.5 27.1	27.3	8.2 8.2	8.2	30.7 30.8	30.8	115.7 112.9	114.3	7.7 7.6	7.7	7.2	3.7 3.8	3.8	5.7	5.7 5.6	5.7	5.5
				Middle	10.5	27.4 26.9	27.2	8.2 8.2	8.2	31.8 31.8	31.8	99.9 100.5	100.2	6.6 6.7	6.7		5.3 4.9	5.1		4.1 4.2	4.2	
				Bottom	20	27.1 27.0	27.1	8.3 8.2	8.3	32.5 32.4	32.5	96.9 98.9	97.9	6.4 6.6	6.5	6.5	7.9 8.2	8.1		6.4 6.5	6.5	
C2	Cloudy	Moderate	11:20	Surface	1	27.2 26.6	26.9	8.1 8.1	8.1	30.9 30.9	30.9	109.2 113.1	111.2	7.3 7.6	7.5	7.2	3.4 3.5	3.5	4.1	3.9 3.9	3.9	4.3
				Middle	18	27.2 26.4	26.8	8.1 8.1	8.1	32.1 32.1	32.1	99.8 102.9	101.4	6.6 6.9	6.8		3.9 3.8	3.9		5.0 5.1	5.1	
				Bottom	35	26.6 26.4	26.5	8.2 8.2	8.2	32.3 32.4	32.4	93.1 93.6	93.4	6.2 6.3	6.3	6.3	4.9 4.9	4.9		4.0 3.9	4.0	
G1	Cloudy	Moderate	12:03	Surface	1	27.0 26.9	27.0	8.2 8.2	8.2	32.3 32.3	32.3	105.9 102.6	104.3	7.0 6.8	6.9	6.9	3.9 4.3	4.1	4.2	4.3 4.2	4.3	3.2
				Middle	4	27.1 26.9	27.0	8.2 8.2	8.2	32.6 32.6	32.6	98.3 106.7	102.5	6.5 7.1	6.8		4.2 4.1	4.2		3.1 3.0	3.1	
				Bottom	7	26.9 26.9	26.9	8.2 8.2	8.2	32.8 32.8	32.8	98.1 99.5	98.8	6.5 6.6	6.6	6.6	4.3 4.5	4.4		2.3 2.3	2.3	
G2	Cloudy	Moderate	11:46	Surface	1	26.9 26.9	26.9	8.2 8.2	8.2	32.3 32.3	32.3	109.5 114.5	112.0	7.3 7.6	7.5	7.2	3.2 3.7	3.5	5.0	5.4 5.3	5.4	4.9
				Middle	5	26.9 26.9	26.9	8.2 8.2	8.2	32.6 32.6	32.6	99.6 103.8	101.7	6.6 6.9	6.8		4.9 4.9	4.9		4.0 3.7	3.9	
				Bottom	9	26.9 26.9	26.9	8.2 8.2	8.2	33.4 33.2	33.3	94.0 94.7	94.4	6.2 6.3	6.3	6.3	6.4 6.6	6.5		5.2 5.3	5.3	
G3	Cloudy	Moderate	12:16	Surface	1	26.6 26.6	26.6	8.2 8.2	8.2	32.7 32.7	32.7	106.3 106.2	106.3	7.1 7.1	7.1	7.1	3.5 3.2	3.4	3.8	0.9 0.9	0.9	2.5
				Middle	4	26.6 26.5	26.6	8.2 8.2	8.2	32.7 32.7	32.7	106.6 106.2	106.4	7.1 7.1	7.1		3.7 3.5	3.6		3.6 3.5	3.6	
				Bottom	7	26.6 26.5	26.6	8.2 8.2	8.2	32.7 32.7	32.7	107.6 109.0	108.3	7.2 7.3	7.3	7.3	4.7 4.3	4.5		3.0 2.9	3.0	
G4	Cloudy	Moderate	12:48	Surface	1	27.5 26.9	27.2	8.2 8.2	8.2	30.7 30.7	30.7	93.2 88.1	90.7	6.2 5.9	6.1	6.1	3.9 3.5	3.7	5.6	2.8 2.9	2.9	4.8
				Middle	4	27.5 26.8	27.2	8.2 8.2	8.2	31.7 31.7	31.7	89.9 90.1	90.0	6.0 6.0	6.0		5.1 5.4	5.3		5.1 5.0	5.1	
				Bottom	7	26.9 26.9	26.9	8.3 8.3	8.3	32.4 32.2	32.3	90.6 85.4	88.0	6.0 5.7	5.9	5.9	7.7 8.1	7.9		6.4 6.4	6.4	
M1	Cloudy	Moderate	11:54	Surface	1	26.6 26.6	26.6	8.2 8.2	8.2	32.7 32.7	32.7	103.0 103.3	103.2	6.9 6.9	6.9	6.9	4.4 4.5	4.5	4.6	5.1 5.0	5.1	6.4
				Middle	3	26.6 26.5	26.6	8.2 8.2	8.2	32.9 32.9	32.9	102.0 101.6	101.8	6.8 6.8	6.8		3.9 4.4	4.2		7.6 7.7	7.7	
				Bottom	5	27.5 27.1	27.3	8.2 8.2	8.2	31.5 31.5	31.5	108.0 107.1	107.6	7.2 7.2	7.2	7.2	4.9 5.1	5.0		6.4 6.3	6.4	
M2	Cloudy	Moderate	11:40	Surface	1	27.2 26.6	26.9	8.2 8.2	8.2	30.9 30.9	30.9	102.3 101.7	102.0	6.8 6.9	6.9	6.9	4.1 4.2	4.2	4.3	4.2 4.1	4.2	5.5
				Middle	5.5	27.2 26.4	26.8	8.2 8.2	8.2	32.1 32.1	32.1	101.9 101.1	101.5	6.8 6.8	6.8		3.9 4.1	4.0		6.2 6.1	6.2	
				Bottom	10	26.6 26.4	26.5	8.2 8.2	8.2	32.3 32.4	32.4	93.1 92.2	92.7	6.2 6.2	6.2	6.2	4.6 4.5	4.6		6.0 5.9	6.0	
M3	Cloudy	Moderate	12:36	Surface	1	27.5 27.1	27.3	8.2 8.2	8.2	30.5 30.4	30.5	99.7 101.5	100.6	6.6 6.8	6.7	6.5	3.1 3.2	3.2	4.3	3.7 3.6	3.7	3.4
				Middle	4.5	27.5 26.9	27.2	8.2 8.2	8.2	31.1 31.1	31.1	89.9 93.4	91.7	6.0 6.3	6.2		4.5 4.7	4.6		3.0 3.0	3.0	
				Bottom	8	27.1 26.9	27.0	8.2 8.2	8.2	31.5 31.5	31.5	90.4 88.9	89.7	6.0 6.0	6.0	6.0	4.9 5.3	5.1		3.4 3.3	3.4	
M4	Cloudy	Moderate	11:32	Surface	1	26.6 26.5	26.6	8.2 8.2	8.2	32.7 32.7	32.7	111.2 109.7	110.5	7.4 7.3	7.4	7.2	3.2 3.7	3.5	5.0	4.0 4.1	4.1	3.9
				Middle	4	26.6 26.0	26.3	8.2 8.2	8.2	32.8 32.8	32.8	103.5 102.7	103.1	6.9 6.9	6.9		4.9 4.9	4.9		4.4 4.2	4.3	
				Bottom	7	26.5 26.0	26.3	8.2 8.2	8.2	33.7 33.7	33.7	101.7 100.4	101.1	6.8 6.7	6.8	6.8	6.4 6.6	6.5		3.4 3.4	3.4	
M5	Cloudy	Moderate	13:12	Surface	1	27.4 27.1	27.3	8.2 8.2	8.2	30.7 30.7	30.7	96.4 102.1	99.3	6.4 6.8	6.6	6.7	3.9 3.4	3.7	4.9	3.9 3.7	3.8	3.2
				Middle	5.5	27.4 26.9	27.2	8.2 8.3	8.3	31.7 31.8	31.8	97.9 102.8	100.4	6.5 6.9	6.7		4.3 4.7	4.5		3.5 3.5	3.5	
				Bottom	10	27.1 26.9	27.0	8.3 8.3	8.3	32.4 32.5	32.5	100.1 94.5	97.3	6.6 6.3	6.5	6.5	6.5 6.7	6.6		2.5 2.3	2.4	
M6	Cloudy	Moderate	12:58	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.2	- -	-	4.5	- -	-	3.5
				Middle	2	27.6 27.1	27.4	8.2 8.2	8.2	30.5 30.5	30.5	108.5 107.2	107.9	7.2 7.2	7.2		4.5 4.4	4.5		3.5 3.4	3.5	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 7 January 2017 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C2: 7.8 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C2: 8.5 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.4 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.9 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.4 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.9 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 4.6 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 4.9 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 07 January 2017

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Moderate	08:16	Surface	1	23.4 23.0	23.2	8.1 8.1	8.1	31.9 32.0	32.0	111.0 108.3	109.7	7.9 7.7	7.8	7.4	3.7 3.8	3.8	4.5	3.6 3.5	3.6	3.6
				Middle	10.5	23.3 22.8	23.1	8.1 8.1	8.1	33.0 33.0	33.0	96.2 96.7	96.5	6.8 6.9	6.9		5.3 5.9	5.6		3.7 3.6	3.7	
				Bottom	20	23.0 22.9	23.0	8.1 8.1	8.1	33.7 33.5	33.6	93.4 95.2	94.3	6.6 6.8	6.7	6.7	4.2 4.2	4.2		3.5 3.5	3.5	
C2	Sunny	Moderate	06:16	Surface	1	23.1 22.5	22.8	8.1 8.1	8.1	32.1 32.1	32.1	104.8 108.5	106.7	7.5 7.8	7.7	7.4	3.2 3.7	3.5	5.0	5.3 5.2	5.3	4.8
				Middle	18	23.1 22.3	22.7	8.1 8.1	8.1	33.3 33.3	33.3	96.1 98.9	97.5	6.8 7.1	7.0		4.9 4.9	4.9		5.4 5.4	5.4	
				Bottom	35	22.5 22.3	22.4	8.1 8.1	8.1	33.5 33.6	33.6	89.7 90.2	90.0	6.4 6.5	6.5	6.5	6.4 6.6	6.5		3.8 3.7	3.8	
G1	Sunny	Moderate	06:59	Surface	1	22.9 22.8	22.9	8.1 8.1	8.1	33.5 33.5	33.5	101.8 98.7	100.3	7.2 7.0	7.1	7.1	4.9 4.3	4.6	4.2	2.1 2.1	2.1	2.1
				Middle	4	23.0 22.8	22.9	8.1 8.1	8.1	33.8 33.8	33.8	94.7 102.5	98.6	6.7 7.3	7.0		4.2 4.1	4.2		2.2 2.3	2.3	
				Bottom	7	22.8 22.8	22.8	8.1 8.1	8.1	34.0 34.0	34.0	94.5 95.7	95.1	6.7 6.8	6.8	6.8	3.8 3.5	3.7		2.0 2.0	2.0	
G2	Sunny	Moderate	06:43	Surface	1	22.8 22.8	22.8	8.1 8.1	8.1	33.5 33.5	33.5	105.2 109.8	107.5	7.5 7.8	7.7	7.4	4.1 4.2	4.2	3.8	4.1 4.1	4.1	3.1
				Middle	5	22.8 22.8	22.8	8.1 8.1	8.1	33.8 33.7	33.8	95.9 99.8	97.9	6.8 7.1	7.0		3.9 4.1	4.0		2.3 2.2	2.3	
				Bottom	9	22.8 22.8	22.8	8.2 8.2	8.2	34.6 34.3	34.5	90.7 91.3	91.0	6.4 6.5	6.5	6.5	3.2 3.3	3.3		2.9 3.0	3.0	
G3	Sunny	Moderate	07:12	Surface	1	22.5 22.5	22.5	8.1 8.1	8.1	33.9 33.9	33.9	102.1 102.0	102.1	7.3 7.3	7.3	7.3	3.5 3.2	3.4	3.5	5.4 5.5	5.5	3.4
				Middle	4	22.5 22.4	22.5	8.1 8.1	8.1	33.9 33.9	33.9	102.4 102.0	102.2	7.3 7.3	7.3		3.7 3.5	3.6		2.3 2.3	2.3	
				Bottom	7	22.5 22.4	22.5	8.1 8.1	8.1	33.9 33.9	33.9	103.3 104.7	104.0	7.4 7.5	7.5	7.5	3.7 3.3	3.5		2.5 2.5	2.5	
G4	Sunny	Moderate	07:44	Surface	1	23.4 22.8	23.1	8.0 8.0	8.0	31.9 31.9	31.9	89.9 85.0	87.5	6.4 6.1	6.3	6.3	3.9 3.4	3.7	4.3	3.4 3.3	3.4	4.1
				Middle	4	23.4 22.7	23.1	8.1 8.1	8.1	32.9 32.9	32.9	86.9 86.9	86.9	6.1 6.2	6.2		4.3 4.7	4.5		4.8 4.9	4.9	
				Bottom	7	22.8 22.8	22.8	8.1 8.1	8.1	33.6 33.4	33.5	87.4 82.5	85.0	6.2 5.9	6.1	6.1	4.6 4.6	4.6		4.2 4.0	4.1	
M1	Sunny	Moderate	06:51	Surface	1	22.5 22.5	22.5	8.1 8.1	8.1	33.8 33.8	33.8	99.0 99.4	99.2	7.1 7.1	7.1	7.1	3.4 3.5	3.5	4.0	2.6 2.6	2.6	3.1
				Middle	3	22.5 22.4	22.5	8.1 8.1	8.1	34.1 34.1	34.1	98.1 97.7	97.9	7.0 7.0	7.0		3.9 4.4	4.2		2.4 2.4	2.4	
				Bottom	5	22.5 22.4	22.5	8.1 8.1	8.1	34.1 34.1	34.1	98.1 97.7	97.9	7.0 7.0	7.0	7.0	4.2 4.5	4.4		4.4 4.3	4.4	
M2	Sunny	Moderate	06:36	Surface	1	23.1 22.5	22.8	8.1 8.1	8.1	32.1 32.1	32.1	98.4 97.8	98.1	7.0 7.0	7.0	7.0	3.2 3.7	3.5	5.0	4.7 4.9	4.8	3.2
				Middle	5.5	23.1 22.3	22.7	8.1 8.1	8.1	33.3 33.3	33.3	98.0 97.2	97.6	6.9 7.0	7.0		4.9 4.9	4.9		2.4 2.4	2.4	
				Bottom	10	22.5 22.3	22.4	8.1 8.1	8.1	33.5 33.6	33.6	89.7 88.9	89.3	6.4 6.4	6.4	6.4	6.4 6.6	6.5		2.5 2.5	2.5	
M3	Sunny	Moderate	07:32	Surface	1	23.4 23.0	23.2	8.1 8.1	8.1	31.7 31.6	31.7	95.9 97.7	96.8	6.8 7.0	6.9	6.6	3.1 3.2	3.2	3.6	2.3 2.4	2.4	4.4
				Middle	4.5	23.4 22.8	23.1	8.1 8.1	8.1	32.3 32.3	32.3	86.8 90.0	88.4	6.1 6.4	6.3		3.5 3.7	3.6		6.7 6.8	6.8	
				Bottom	8	23.0 22.8	22.9	8.1 8.1	8.1	32.7 32.7	32.7	87.3 85.8	86.6	6.2 6.1	6.2	6.2	3.9 3.8	3.9		4.2 4.0	4.1	
M4	Sunny	Moderate	06:28	Surface	1	22.5 22.4	22.5	8.1 8.1	8.1	33.9 33.9	33.9	106.7 105.3	106.0	7.6 7.5	7.6	7.4	3.4 3.5	3.5	4.1	5.6 5.6	5.6	3.8
				Middle	4	22.5 21.9	22.2	8.1 8.1	8.1	34.0 34.0	34.0	99.5 98.7	99.1	7.1 7.1	7.1		3.9 3.8	3.9		2.5 2.6	2.6	
				Bottom	7	22.4 21.9	22.2	8.1 8.1	8.1	34.9 34.9	34.9	97.8 96.5	97.2	6.9 6.9	6.9	6.9	4.9 4.9	4.9		3.2 3.1	3.2	
M5	Sunny	Moderate	08:08	Surface	1	23.3 23.0	23.2	8.1 8.1	8.1	31.9 31.9	31.9	92.9 98.2	95.6	6.6 7.0	6.8	6.9	3.9 3.5	3.7	4.4	3.0 3.0	3.0	3.6
				Middle	5.5	23.3 22.8	23.1	8.1 8.1	8.1	32.9 33.0	33.0	94.3 98.8	96.6	6.7 7.0	6.9		6.1 5.4	5.8		5.2 5.3	5.3	
				Bottom	10	23.0 22.8	22.9	8.1 8.1	8.1	33.6 33.6	33.6	96.3 91.1	93.7	6.8 6.5	6.7	6.7	3.7 3.8	3.8		2.5 2.5	2.5	
M6	Sunny	Moderate	07:54	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.4	- -	-	4.5	- -	-	1.6
				Middle	2	23.5 23.0	23.3	8.1 8.1	8.1	31.6 31.7	31.7	104.2 103.0	103.6	7.4 7.4	7.4		4.5 4.4	4.5		1.6 1.6	1.6	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 7 January 2017 (Mid-Flood Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C1: 5.4 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C1: 5.9 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 5.3 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 5.7 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 5.3 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 5.7 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 8.2 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 8.8 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 07 January 2017

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Moderate	14:02	Surface	1	22.4 22.2	22.3	8.2 8.2	8.2	32.0 32.0	32.0	103.9 106.1	105.0	7.5 7.7	7.6	7.2	3.6 3.8	3.7	4.0	4.4 4.4	4.4	4.9
				Middle	10	22.4 22.1	22.3	8.2 8.2	8.2	32.2 32.2	32.2	93.0 93.2	93.1	6.7 6.8	6.8		3.7 3.8	3.8		3.6 3.6	3.6	
				Bottom	19	22.2 22.1	22.2	8.2 8.2	8.2	32.3 32.3	32.3	92.0 91.9	92.0	6.7 6.7	6.7	6.7	4.7 4.3	4.5		6.9 6.7	6.8	
C2	Sunny	Moderate	12:24	Surface	1	22.1 22.0	22.1	8.1 8.1	8.1	32.3 32.3	32.3	100.1 101.3	100.7	7.3 7.3	7.3	7.1	4.7 4.4	4.6	4.8	4.0 3.9	4.0	3.2
				Middle	18	22.1 22.0	22.1	8.1 8.1	8.1	32.3 32.3	32.3	93.5 93.5	93.5	6.8 6.8	6.8		4.9 4.7	4.8		2.5 2.6	2.6	
				Bottom	35	22.0 22.0	22.0	8.1 8.1	8.1	32.3 32.4	32.4	93.2 93.2	93.2	6.8 6.8	6.8	6.8	5.0 5.1	5.1		3.0 3.0	3.0	
G1	Sunny	Moderate	13:06	Surface	1	22.0 21.9	22.0	8.2 8.2	8.2	32.0 32.1	32.1	99.8 100.4	100.1	7.3 7.3	7.3	7.0	3.7 3.5	3.6	4.1	3.6 3.6	3.6	3.6
				Middle	4	22.0 21.7	21.9	8.2 8.2	8.2	32.2 32.2	32.2	90.9 91.8	91.4	6.6 6.7	6.7		4.2 4.7	4.5		4.5 4.3	4.4	
				Bottom	7	21.9 21.7	21.8	8.2 8.2	8.2	32.3 32.3	32.3	91.3 92.2	91.8	6.6 6.7	6.7	6.7	4.3 4.2	4.3		2.6 2.7	2.7	
G2	Sunny	Moderate	12:48	Surface	1	22.0 22.0	22.0	8.2 8.2	8.2	32.6 32.6	32.6	98.8 99.4	99.1	7.2 7.2	7.2	7.0	3.4 3.0	3.2	3.6	3.4 3.5	3.5	3.2
				Middle	5	22.0 21.9	22.0	8.1 8.1	8.1	32.7 32.7	32.7	92.9 91.8	92.4	6.7 6.7	6.7		3.3 3.4	3.4		3.0 3.0	3.0	
				Bottom	9	22.0 21.9	22.0	8.2 8.2	8.2	33.1 33.0	33.1	89.2 88.0	88.6	6.4 6.4	6.4	6.4	4.0 4.1	4.1		3.2 3.1	3.2	
G3	Sunny	Moderate	13:16	Surface	1	22.0 22.0	22.0	8.2 8.2	8.2	32.0 32.0	32.0	100.5 101.1	100.8	7.3 7.3	7.3	7.0	3.4 3.2	3.3	4.1	3.6 3.6	3.6	3.2
				Middle	4	21.9 21.8	21.9	8.2 8.2	8.2	32.3 32.3	32.3	92.0 91.8	91.9	6.7 6.7	6.7		3.6 3.9	3.8		2.9 2.8	2.9	
				Bottom	7	22.0 21.8	21.9	8.2 8.2	8.2	32.6 32.6	32.6	90.7 89.9	90.3	6.6 6.5	6.6	6.6	5.0 5.1	5.1		3.1 3.1	3.1	
G4	Sunny	Moderate	13:35	Surface	1	22.4 22.2	22.3	8.2 8.2	8.2	32.1 32.1	32.1	100.2 100.2	100.2	7.2 7.3	7.3	7.0	3.7 3.9	3.8	4.4	1.1 1.1	1.1	3.4
				Middle	4	22.4 22.2	22.3	8.2 8.2	8.2	32.4 32.4	32.4	92.5 92.5	92.5	6.7 6.7	6.7		4.7 4.5	4.6		3.4 3.5	3.5	
				Bottom	7	22.2 22.2	22.2	8.3 8.3	8.3	32.8 32.8	32.8	96.1 96.1	96.1	6.9 6.9	6.9	6.9	4.6 4.9	4.8		5.6 5.4	5.5	
M1	Sunny	Moderate	12:57	Surface	1	22.0 22.0	22.0	8.1 8.2	8.2	32.3 32.4	32.4	99.0 99.3	99.2	7.2 7.2	7.2	7.0	3.3 3.5	3.4	3.7	2.7 2.8	2.8	3.3
				Middle	3	22.0 21.9	22.0	8.2 8.2	8.2	32.3 32.4	32.4	92.4 92.0	92.2	6.7 6.7	6.7		3.5 3.7	3.6		2.8 2.8	2.8	
				Bottom	5	22.0 21.9	22.0	8.2 8.2	8.2	32.5 32.5	32.5	92.5 92.0	92.3	6.7 6.7	6.7	6.7	3.9 4.3	4.1		4.4 4.2	4.3	
M2	Sunny	Moderate	12:41	Surface	1	22.0 22.0	22.0	8.2 8.1	8.2	32.5 32.5	32.5	94.7 95.1	94.9	6.9 6.9	6.9	6.7	3.6 3.5	3.6	3.6	3.5 3.5	3.5	3.7
				Middle	5.5	22.0 22.0	22.0	8.1 8.2	8.2	32.6 32.7	32.7	88.6 88.3	88.5	6.4 6.4	6.4		3.6 3.6	3.6		5.3 5.6	5.5	
				Bottom	10	22.0 22.0	22.0	8.2 8.1	8.2	32.8 32.8	32.8	86.9 86.9	86.9	6.3 6.3	6.3	6.3	3.6 3.6	3.6		2.1 2.0	2.1	
M3	Sunny	Moderate	13:28	Surface	1	22.3 22.2	22.3	8.2 8.2	8.2	32.6 32.5	32.6	111.7 107.8	109.8	8.0 7.8	7.9	7.4	4.2 4.2	4.2	4.4	2.9 2.9	2.9	3.0
				Middle	4.5	22.3 22.2	22.3	8.2 8.2	8.2	32.8 32.9	32.9	94.2 94.4	94.3	6.8 6.8	6.8		4.4 4.3	4.4		3.7 3.7	3.7	
				Bottom	8	22.2 22.2	22.2	8.2 8.2	8.2	33.2 33.2	33.2	87.2 86.8	87.0	6.3 6.2	6.3	6.3	4.6 4.8	4.7		2.3 2.3	2.3	
M4	Sunny	Moderate	12:32	Surface	1	22.0 22.0	22.0	8.1 8.1	8.1	32.3 32.3	32.3	100.3 100.3	100.3	7.3 7.3	7.3	7.1	2.9 2.8	2.9	3.8	4.2 4.2	4.2	3.4
				Middle	4	22.0 21.3	21.7	8.2 8.2	8.2	32.3 32.3	32.3	93.1 91.6	92.4	6.8 6.7	6.8		3.1 3.4	3.3		3.1 3.1	3.1	
				Bottom	7	22.0 21.3	21.7	8.2 8.2	8.2	32.5 32.5	32.5	89.9 87.5	88.7	6.5 6.4	6.5	6.5	5.2 5.1	5.2		2.8 2.7	2.8	
M5	Sunny	Moderate	13:54	Surface	1	22.4 22.2	22.3	8.2 8.2	8.2	32.3 32.3	32.3	100.0 99.6	99.8	7.2 7.2	7.2	7.0	4.5 4.5	4.5	4.3	2.6 2.5	2.6	3.4
				Middle	5.5	22.4 22.2	22.3	8.2 8.2	8.2	32.4 32.4	32.4	91.7 92.1	91.9	6.6 6.7	6.7		3.7 3.6	3.7		4.3 4.3	4.3	
				Bottom	10	22.2 22.2	22.2	8.3 8.3	8.3	32.5 32.4	32.5	88.8 88.6	88.7	6.4 6.4	6.4	6.4	4.7 4.8	4.8		3.1 3.2	3.2	
M6	Sunny	Moderate	13:42	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.5	- -	-	4.3	- -	-	2.1
				Middle	2.1	22.4 22.2	22.3	8.2 8.2	8.2	32.0 32.0	32.0	102.5 103.8	103.2	7.4 7.5	7.5		4.2 4.4	4.3		2.1 2.1	2.1	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 9 January 2017 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C2: 9.2 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C2: 10.0 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.4 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.9 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.4 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.9 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 4.2 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 4.6 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 09 January 2017

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Cloudy	Moderate	10:44	Surface	1	20.7 20.6	20.7	8.1 8.0	8.1	30.8 30.1	30.5	93.3 92.8	93.1	7.0 7.0	7.0	6.9	2.7 3.0	2.9	5.8	1.9 1.8	1.9	2.0
				Middle	10	20.5 20.4	20.5	8.0 8.0	8.0	30.9 30.9	30.9	89.6 87.1	88.4	6.7 6.6	6.7		6.7 6.6	6.7		1.6 1.6	1.6	
				Bottom	19	20.3 20.3	20.3	8.0 8.0	8.0	29.4 29.3	29.4	84.9 85.6	85.3	6.5 6.5	6.5	6.5	7.5 7.8	7.7		2.5 2.6	2.6	
C2	Cloudy	Moderate	08:35	Surface	1	20.3 20.4	20.4	7.8 7.8	7.8	28.9 28.3	28.6	90.1 89.4	89.8	6.9 6.8	6.9	6.9	4.5 4.0	4.3	6.2	5.3 5.3	5.3	3.9
				Middle	18	20.4 20.3	20.4	7.9 8.0	8.0	28.2 28.4	28.3	88.3 90.7	89.5	6.8 6.9	6.9		6.3 6.8	6.6		3.0 3.0	3.0	
				Bottom	35	20.3 20.3	20.3	8.1 8.1	8.1	28.7 28.7	28.7	86.8 87.1	87.0	6.6 6.7	6.7	6.7	7.8 7.6	7.7		3.4 3.5	3.5	
G1	Cloudy	Moderate	09:23	Surface	1	20.3 20.3	20.3	8.1 8.1	8.1	29.5 31.3	30.4	90.4 89.3	89.9	6.9 6.7	6.8	7.0	3.3 3.2	3.3	4.8	2.5 2.6	2.6	3.3
				Middle	4	20.3 20.3	20.3	8.1 8.1	8.1	31.1 31.2	31.2	92.3 93.7	93.0	7.0 7.1	7.1		4.1 3.9	4.0		4.3 4.3	4.3	
				Bottom	7	20.3 20.3	20.3	8.1 8.0	8.1	31.2 31.3	31.3	85.2 82.7	84.0	6.4 6.2	6.3	6.3	6.9 7.2	7.1		2.9 2.9	2.9	
G2	Cloudy	Moderate	09:06	Surface	1	20.4 20.5	20.5	8.1 8.1	8.1	30.1 30.7	30.4	94.5 92.7	93.6	7.1 7.0	7.1	6.8	2.3 2.4	2.4	4.4	5.0 5.0	5.0	3.8
				Middle	5	20.5 20.5	20.5	8.1 8.1	8.1	30.9 30.9	30.9	86.0 85.5	85.8	6.5 6.4	6.5		4.7 5.1	4.9		2.6 2.6	2.6	
				Bottom	9	20.5 20.4	20.5	8.0 8.0	8.0	31.0 31.1	31.1	86.9 87.2	87.1	6.5 6.6	6.6	6.6	5.9 5.8	5.9		3.7 3.6	3.7	
G3	Cloudy	Moderate	09:36	Surface	1	20.6 20.6	20.6	8.1 8.1	8.1	31.7 30.6	31.2	94.0 95.0	94.5	7.0 7.1	7.1	7.0	4.1 4.5	4.3	4.8	4.6 4.6	4.6	4.4
				Middle	4	20.6 20.5	20.6	8.1 8.1	8.1	30.8 30.9	30.9	91.1 89.5	90.3	6.8 6.7	6.8		4.9 5.3	5.1		5.7 5.4	5.6	
				Bottom	7	20.5 20.5	20.5	8.1 8.1	8.1	31.0 31.0	31.0	90.6 91.7	91.2	6.8 6.9	6.9	6.9	4.8 4.9	4.9		3.1 3.1	3.1	
G4	Cloudy	Moderate	10:10	Surface	1	20.0 20.1	20.1	8.0 8.0	8.0	29.3 29.6	29.5	93.5 94.1	93.8	7.2 7.2	7.2	7.2	2.9 2.5	2.7	4.5	3.8 3.7	3.8	3.9
				Middle	4	20.2 20.2	20.2	8.0 8.0	8.0	30.4 30.4	30.4	92.1 93.3	92.7	7.0 7.1	7.1		4.6 4.9	4.8		5.1 5.0	5.1	
				Bottom	7	20.3 20.3	20.3	8.1 8.0	8.1	30.5 30.5	30.5	91.9 82.1	87.0	6.9 6.2	6.6	6.6	6.1 5.9	6.0		2.9 2.8	2.9	
M1	Cloudy	Moderate	09:15	Surface	1	20.5 20.6	20.6	8.1 8.1	8.1	31.2 31.0	31.1	89.5 90.5	90.0	6.7 6.8	6.8	6.8	4.8 4.8	4.8	5.3	2.3 2.4	2.4	2.3
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.2	20.6 20.6	20.6	8.1 8.1	8.1	31.0 31.0	31.0	90.6 90.5	90.6	6.8 6.8	6.8	6.8	5.8 5.5	5.7		2.1 2.1	2.1	
M2	Cloudy	Moderate	08:58	Surface	1	20.4 20.4	20.4	8.0 8.0	8.0	31.3 30.4	30.9	94.7 92.3	93.5	7.1 7.0	7.1	6.8	3.1 2.8	3.0	4.7	1.5 1.5	1.5	1.4
				Middle	5.5	20.5 20.5	20.5	8.0 8.0	8.0	30.8 30.8	30.8	85.7 85.7	85.7	6.4 6.4	6.4		4.2 4.5	4.4		1.8 1.8	1.8	
				Bottom	10	20.5 20.5	20.5	8.0 8.0	8.0	31.2 31.2	31.2	87.0 88.3	87.7	6.5 6.6	6.6	6.6	6.3 6.8	6.6		0.9 0.9	0.9	
M3	Cloudy	Moderate	09:56	Surface	1	20.2 20.3	20.3	8.1 8.1	8.1	30.3 30.3	30.3	90.7 91.6	91.2	6.9 6.9	6.9	6.8	3.1 3.0	3.1	5.2	1.7 1.7	1.7	2.0
				Middle	4.5	20.4 20.4	20.4	8.1 8.1	8.1	30.9 30.9	30.9	88.4 88.5	88.5	6.7 6.7	6.7		5.8 5.4	5.6		2.0 1.9	2.0	
				Bottom	8	20.4 20.4	20.4	8.1 8.1	8.1	31.0 31.0	31.0	83.4 84.1	83.8	6.3 6.3	6.3	6.3	6.5 7.0	6.8		2.2 2.3	2.3	
M4	Cloudy	Moderate	08:49	Surface	1	20.2 20.3	20.3	8.0 8.0	8.0	28.2 28.9	28.6	92.3 95.2	93.8	7.1 7.3	7.2	7.0	3.5 3.6	3.6	5.0	1.8 1.8	1.8	2.0
				Middle	4	20.4 20.4	20.4	8.0 8.0	8.0	29.7 29.8	29.8	90.1 89.9	90.0	6.8 6.8	6.8		4.8 4.9	4.9		1.3 1.3	1.3	
				Bottom	7	20.4 20.4	20.4	8.0 8.0	8.0	30.3 30.4	30.4	87.4 88.7	88.1	6.6 6.7	6.7	6.7	6.3 6.4	6.4		3.1 2.9	3.0	
M5	Cloudy	Moderate	10:35	Surface	1	20.2 20.2	20.2	8.1 8.1	8.1	30.6 30.6	30.6	89.5 88.4	89.0	6.8 6.7	6.8	6.8	4.2 4.3	4.3	5.7	2.6 2.6	2.6	3.0
				Middle	5.5	20.3 20.3	20.3	8.1 8.1	8.1	30.6 30.7	30.7	89.8 89.7	89.8	6.8 6.8	6.8		5.6 6.0	5.8		3.5 3.4	3.5	
				Bottom	10	20.3 20.3	20.3	8.1 8.1	8.1	30.8 30.9	30.9	89.4 88.9	89.2	6.7 6.7	6.7	6.7	7.0 6.8	6.9		3.0 3.0	3.0	
M6	Cloudy	Moderate	10:21	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.7	- -	-	5.3	- -	-	1.9
				Middle	2.1	20.3 20.3	20.3	8.0 8.0	8.0	32.0 31.7	31.9	89.1 88.1	88.6	6.7 6.6	6.7		5.3 5.3	5.3		1.9 1.9	1.9	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 9 January 2017 (Mid-Flood Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C1: 6.7 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C1: 7.3 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 7.0 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.5 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 7.0 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.5 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 6.2 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 6.8 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 09 January 2017

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Cloudy	Moderate	15:40	Surface	1	20.7 20.5	20.6	8.1 8.0	8.1	32.1 31.2	31.7	98.7 98.5	98.6	7.3 7.4	7.4	7.3	3.2 3.9	3.6	4.4	5.7 5.8	5.8	4.7
				Middle	10	20.2 20.5	20.4	8.1 8.1	8.1	31.2 31.1	31.2	93.1 94.4	93.8	7.0 7.1	7.1		3.9 4.0	4.0		2.9 3.0	3.0	
				Bottom	19	20.4 20.5	20.5	8.1 8.1	8.1	29.3 29.5	29.4	91.3 91.5	91.4	6.9 6.9	6.9	6.9	5.4 5.7	5.6		5.2 5.1	5.2	
C2	Cloudy	Moderate	13:52	Surface	1	20.5 20.5	20.5	8.0 8.0	8.0	31.1 31.1	31.1	96.6 96.9	96.8	7.3 7.3	7.3	7.2	2.7 2.3	2.5	4.3	3.8 3.8	3.8	3.2
				Middle	18	20.1 20.5	20.3	7.9 8.0	8.0	30.5 30.6	30.6	94.2 94.8	94.5	7.1 7.1	7.1		3.9 3.6	3.8		2.8 2.8	2.8	
				Bottom	35	20.2 20.4	20.3	8.0 8.1	8.1	30.5 30.6	30.6	93.7 94.9	94.3	7.1 7.2	7.2	7.2	6.8 6.2	6.5		3.1 3.1	3.1	
G1	Cloudy	Moderate	14:40	Surface	1	20.5 20.0	20.3	8.1 8.1	8.1	29.4 29.3	29.4	96.2 94.4	95.3	7.3 7.2	7.3	7.2	3.7 3.9	3.8	4.1	3.7 3.6	3.7	3.2
				Middle	4	20.3 19.8	20.1	8.1 8.0	8.1	29.6 29.8	29.7	92.7 92.1	92.4	7.0 7.1	7.1		4.2 4.1	4.2		1.3 1.3	1.3	
				Bottom	7	19.6 19.7	19.7	8.1 8.1	8.1	30.5 30.3	30.4	91.1 90.6	90.9	7.0 6.9	7.0	7.0	4.5 4.3	4.4		4.8 4.6	4.7	
G2	Cloudy	Moderate	14:22	Surface	1	20.0 20.4	20.2	8.1 8.1	8.1	30.1 30.0	30.1	93.4 94.3	93.9	7.1 7.1	7.1	7.0	4.3 4.2	4.3	3.7	5.4 5.3	5.4	4.4
				Middle	5	20.5 20.1	20.3	8.0 8.0	8.0	30.4 30.4	30.4	92.0 91.2	91.6	6.9 6.9	6.9		2.2 2.6	2.4		3.2 3.1	3.2	
				Bottom	9	20.0 20.2	20.1	8.0 8.0	8.0	29.9 30.1	30.0	89.9 89.6	89.8	6.9 6.8	6.9	6.9	4.4 4.5	4.5		4.5 4.5	4.5	
G3	Cloudy	Moderate	14:51	Surface	1	20.5 20.1	20.3	8.1 8.1	8.1	29.1 29.3	29.2	95.0 95.5	95.3	7.2 7.3	7.3	7.2	3.4 3.4	3.4	5.3	4.0 4.0	4.0	3.6
				Middle	4	20.3 20.1	20.2	8.0 8.1	8.1	30.0 30.0	30.0	92.9 92.1	92.5	7.0 7.0	7.0		5.9 5.8	5.9		4.0 3.9	4.0	
				Bottom	7	20.1 19.8	20.0	8.1 8.1	8.1	30.5 30.5	30.5	91.9 90.5	91.2	7.0 6.9	7.0	7.0	6.1 6.8	6.5		2.8 2.8	2.8	
G4	Cloudy	Moderate	15:11	Surface	1	20.8 20.9	20.9	8.0 8.0	8.0	31.0 31.3	31.2	95.5 95.7	95.6	7.1 7.1	7.1	7.1	4.7 4.0	4.4	5.2	2.9 2.9	2.9	3.9
				Middle	4	20.4 20.3	20.4	8.1 8.1	8.1	31.0 31.0	31.0	92.8 93.5	93.2	7.0 7.0	7.0		5.0 5.6	5.3		3.1 3.2	3.2	
				Bottom	7	20.4 20.4	20.4	8.1 8.2	8.2	30.9 30.9	30.9	89.5 89.9	89.7	6.7 6.8	6.8	6.8	5.8 5.9	5.9		5.6 5.5	5.6	
M1	Cloudy	Moderate	14:31	Surface	1	20.3 20.4	20.4	8.0 8.1	8.1	29.1 29.2	29.2	93.6 93.7	93.7	7.1 7.1	7.1	7.1	3.1 3.3	3.2	4.0	3.6 3.4	3.5	3.7
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.5	20.1 20.0	20.1	8.1 8.1	8.1	29.7 29.6	29.7	91.8 90.7	91.3	7.0 6.9	7.0	7.0	4.9 4.4	4.7		3.7 3.8	3.8	
M2	Cloudy	Moderate	14:13	Surface	1	20.1 20.4	20.3	8.1 8.0	8.1	31.2 31.0	31.1	93.1 93.4	93.3	7.0 7.0	7.0	6.9	2.8 2.3	2.6	4.4	5.9 6.0	6.0	5.3
				Middle	5.5	20.2 20.2	20.2	8.0 8.1	8.1	30.1 29.8	30.0	89.5 89.1	89.3	6.8 6.8	6.8		5.4 5.5	5.5		5.6 5.3	5.5	
				Bottom	10	20.2 20.3	20.3	8.1 8.0	8.1	30.7 30.4	30.6	89.0 88.8	88.9	6.7 6.7	6.7	6.7	5.1 5.3	5.2		4.3 4.3	4.3	
M3	Cloudy	Moderate	15:02	Surface	1	20.4 20.4	20.4	8.1 8.1	8.1	31.6 31.7	31.7	98.2 99.3	98.8	7.4 7.4	7.4	7.3	1.9 1.8	1.9	3.7	5.2 5.4	5.3	4.2
				Middle	4.5	20.4 20.4	20.4	8.1 8.0	8.1	31.9 32.0	32.0	95.4 96.5	96.0	7.1 7.2	7.2		3.1 3.6	3.4		3.2 3.3	3.3	
				Bottom	8	20.5 20.5	20.5	8.0 8.1	8.1	31.9 32.2	32.1	93.2 101.3	97.3	7.0 7.6	7.3	7.3	5.6 6.0	5.8		4.0 4.0	4.0	
M4	Cloudy	Moderate	14:04	Surface	1	20.1 20.5	20.3	8.0 8.0	8.0	29.4 29.6	29.5	95.9 97.2	96.6	7.3 7.4	7.4	7.3	3.5 3.5	3.5	3.9	3.0 3.0	3.0	3.3
				Middle	4	20.4 20.3	20.4	8.1 8.0	8.1	29.9 29.8	29.9	94.6 93.5	94.1	7.2 7.1	7.2		3.3 3.5	3.4		2.9 3.0	3.0	
				Bottom	7	19.4 19.5	19.5	8.1 8.1	8.1	29.4 29.5	29.5	89.5 87.9	88.7	6.9 6.8	6.9	6.9	4.8 4.9	4.9		3.9 3.9	3.9	
M5	Cloudy	Moderate	15:31	Surface	1	20.3 20.5	20.4	8.1 8.0	8.1	31.7 32.4	32.1	97.1 97.6	97.4	7.3 7.3	7.3	7.2	4.1 4.0	4.1	5.5	4.3 4.4	4.4	3.8
				Middle	5.5	20.4 20.5	20.5	8.1 8.1	8.1	30.8 31.5	31.2	92.9 94.1	93.5	7.0 7.0	7.0		6.1 6.0	6.1		2.9 2.9	2.9	
				Bottom	10	20.4 20.4	20.4	8.2 8.2	8.2	30.3 30.4	30.4	89.8 89.5	89.7	6.8 6.8	6.8	6.8	6.3 6.4	6.4		3.9 4.0	4.0	
M6	Cloudy	Moderate	15:19	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.2	- -	-	4.1	- -	-	4.0
				Middle	2.1	20.6 20.8	20.7	8.1 8.1	8.1	31.0 31.6	31.3	95.7 95.8	95.8	7.2 7.1	7.2		4.2 4.0	4.1		4.0 3.9	4.0	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 11 January 2017 (Mid-Ebb Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C2: 8.6 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C2: 9.4 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 5.5 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.0 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 5.5 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.0 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 3.8 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 4.2 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 11 January 2017

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Cloudy	Moderate	12:25	Surface	1	20.2 20.2	20.2	8.0 8.0	8.0	30.1 30.2	30.2	95.3 95.2	95.3	7.2 7.2	7.2	7.1	2.9 3.0	3.0	5.6	1.7 1.6	1.7	3.2
				Middle	10	20.1 20.1	20.1	8.0 8.0	8.0	30.6 30.7	30.7	91.9 90.8	91.4	7.0 6.9	7.0		6.5 6.6	6.6		5.4 5.3	5.4	
				Bottom	19	19.9 19.8	19.9	8.1 8.1	8.1	30.7 30.8	30.8	88.2 88.4	88.3	6.7 6.7	6.7	6.7	7.1 7.3	7.2		2.5 2.6	2.6	
C2	Cloudy	Moderate	10:00	Surface	1	20.0 20.1	20.1	8.0 8.0	8.0	30.1 30.3	30.2	93.5 93.9	93.7	7.1 7.1	7.1	7.1	4.4 4.2	4.3	5.6	4.6 4.5	4.6	3.3
				Middle	18	19.9 19.9	19.9	8.1 8.0	8.1	30.3 30.4	30.4	92.1 92.2	92.2	7.0 7.0	7.0		5.3 5.4	5.4		2.1 2.2	2.2	
				Bottom	35	19.7 19.8	19.8	8.1 8.1	8.1	30.7 30.7	30.7	89.6 89.3	89.5	6.8 6.8	6.8	6.8	7.1 7.2	7.2		3.1 3.2	3.2	
G1	Cloudy	Moderate	10:58	Surface	1	20.1 20.1	20.1	8.1 8.1	8.1	30.5 30.5	30.5	93.5 93.1	93.3	7.1 7.1	7.1	7.1	3.5 3.4	3.5	4.9	3.7 3.8	3.8	2.6
				Middle	4	20.0 20.0	20.0	8.1 8.1	8.1	30.5 30.5	30.5	92.4 92.3	92.4	7.0 7.0	7.0		4.1 3.9	4.0		1.9 2.0	2.0	
				Bottom	7	20.0 20.0	20.0	8.1 8.1	8.1	30.5 30.5	30.5	91.9 92.0	92.0	7.0 7.0	7.0	7.0	6.9 7.2	7.1		1.9 1.9	1.9	
G2	Cloudy	Moderate	10:35	Surface	1	20.2 20.3	20.3	8.0 8.0	8.0	30.1 30.1	30.1	92.8 92.6	92.7	7.0 7.0	7.0	7.0	2.9 2.7	2.8	4.3	3.6 3.5	3.6	3.0
				Middle	5	20.0 20.0	20.0	8.0 8.0	8.0	30.5 30.5	30.5	92.0 91.5	91.8	7.0 7.0	7.0		4.3 4.5	4.4		3.2 3.3	3.3	
				Bottom	9	19.9 19.8	19.9	8.0 8.0	8.0	31.0 31.0	31.0	91.3 91.0	91.2	6.9 6.9	6.9	6.9	5.6 5.7	5.7		2.2 2.2	2.2	
G3	Cloudy	Moderate	11:12	Surface	1	20.1 20.1	20.1	8.1 8.1	8.1	30.7 30.6	30.7	94.9 94.6	94.8	7.2 7.2	7.2	7.2	4.2 4.5	4.4	4.7	2.2 2.1	2.2	2.6
				Middle	4	20.0 20.0	20.0	8.1 8.1	8.1	30.8 30.9	30.9	93.8 93.4	93.6	7.1 7.1	7.1		4.8 5.0	4.9		3.9 4.0	4.0	
				Bottom	7	19.8 19.9	19.9	8.1 8.1	8.1	31.0 31.0	31.0	92.6 92.4	92.5	7.0 7.0	7.0	7.0	4.8 4.9	4.9		1.7 1.7	1.7	
G4	Cloudy	Moderate	11:46	Surface	1	19.9 19.9	19.9	8.0 8.0	8.0	30.6 30.6	30.6	93.3 93.6	93.5	7.1 7.1	7.1	7.1	3.0 3.1	3.1	4.6	3.1 3.2	3.2	2.7
				Middle	4	19.9 19.9	19.9	8.0 8.0	8.0	30.7 30.6	30.7	92.4 92.7	92.6	7.0 7.1	7.1		4.6 4.9	4.8		2.6 2.6	2.6	
				Bottom	7	19.7 19.7	19.7	8.1 8.0	8.1	31.0 31.0	31.0	92.1 91.8	92.0	7.0 7.0	7.0	7.0	6.0 5.8	5.9		2.2 2.1	2.2	
M1	Cloudy	Moderate	10:46	Surface	1	20.2 20.2	20.2	8.0 8.0	8.0	30.6 30.6	30.6	93.2 93.1	93.2	7.1 7.0	7.1	7.1	3.3 3.4	3.4	3.5	1.6 1.7	1.7	2.3
				Middle	3	20.2 20.1	20.2	8.0 8.0	8.0	30.6 30.6	30.6	93.7 93.7	93.7	7.1 7.1	7.1		3.5 3.5	3.5		3.4 3.3	3.4	
				Bottom	5	20.0 20.0	20.0	8.1 8.1	8.1	30.6 30.6	30.6	93.7 94.2	94.0	7.1 7.2	7.2	7.2	3.5 3.6	3.6		1.6 1.8	1.7	
M2	Cloudy	Moderate	10:25	Surface	1	20.2 20.2	20.2	8.0 8.0	8.0	30.3 30.2	30.3	93.8 94.5	94.2	7.1 7.2	7.2	7.1	3.5 3.2	3.4	4.8	2.6 2.5	2.6	2.5
				Middle	5	20.1 20.1	20.1	8.0 8.0	8.0	30.3 30.3	30.3	91.3 91.4	91.4	6.9 6.9	6.9		4.3 4.5	4.4		2.2 2.3	2.3	
				Bottom	9	19.8 19.7	19.8	8.0 8.0	8.0	30.4 30.4	30.4	90.5 90.5	90.5	6.9 6.9	6.9	6.9	6.5 6.8	6.7		2.5 2.4	2.5	
M3	Cloudy	Moderate	11:32	Surface	1	20.0 20.0	20.0	8.0 8.0	8.0	30.3 30.3	30.3	94.2 94.5	94.4	7.2 7.2	7.2	7.1	4.2 4.0	4.1	5.5	2.8 2.8	2.8	2.7
				Middle	4	19.9 19.9	19.9	8.0 8.0	8.0	30.8 30.6	30.7	90.9 90.6	90.8	6.9 6.9	6.9		5.5 5.4	5.5		1.5 1.6	1.6	
				Bottom	7	19.8 19.8	19.8	8.1 8.1	8.1	30.9 30.8	30.9	89.1 89.2	89.2	6.8 6.8	6.8	6.8	6.7 7.0	6.9		3.7 3.8	3.8	
M4	Cloudy	Moderate	10:14	Surface	1	20.2 20.3	20.3	8.0 8.0	8.0	30.2 30.2	30.2	93.4 93.7	93.6	7.1 7.1	7.1	7.1	3.9 3.8	3.9	5.0	3.9 4.0	4.0	3.2
				Middle	4	20.1 20.1	20.1	8.0 8.0	8.0	30.5 30.5	30.5	92.4 92.6	92.5	7.0 7.0	7.0		4.6 4.7	4.7		2.2 2.3	2.3	
				Bottom	7	19.8 19.7	19.8	8.0 8.0	8.0	30.5 30.5	30.5	91.0 91.0	91.0	6.9 7.0	7.0	7.0	6.2 6.4	6.3		3.2 3.2	3.2	
M5	Cloudy	Moderate	12:15	Surface	1	20.2 20.2	20.2	8.0 8.0	8.0	30.6 30.6	30.6	92.1 91.6	91.9	7.0 6.9	7.0	7.1	4.2 4.3	4.3	5.6	3.1 3.2	3.2	2.6
				Middle	5.5	19.9 19.9	19.9	8.0 8.0	8.0	30.6 30.6	30.6	93.2 92.5	92.9	7.1 7.0	7.1		5.6 5.3	5.5		2.0 1.9	2.0	
				Bottom	10	19.7 19.6	19.7	8.0 8.0	8.0	30.8 30.8	30.8	91.9 91.4	91.7	7.0 7.0	7.0	7.0	7.0 6.8	6.9		2.6 2.7	2.7	
M6	Cloudy	Moderate	12:00	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.9	- -	-	3.4	- -	-	2.0
				Middle	1	20.1 20.1	20.1	8.0 8.0	8.0	30.4 30.3	30.4	91.1 90.0	90.6	6.9 6.8	6.9		3.4 3.3	3.4		2.0 2.0	2.0	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 11 January 2017 (Mid-Flood Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C1: 8.6 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C1: 9.4 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 5.5 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 6.0 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 5.5 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 6.0 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 3.6 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 3.9 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 11 January 2017

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Cloudy	Moderate	17:47	Surface	1	20.2 20.2	20.2	8.0 8.0	8.0	30.2 30.2	30.2	92.1 90.6	91.4	7.0 6.9	7.0	7.1	3.1 3.0	3.1	5.6	4.6 4.5	4.6	3.2
				Middle	10	20.1 20.1	20.1	8.0 8.0	8.0	30.6 30.7	30.7	93.2 92.6	92.9	7.1 7.0	7.1		6.4 6.6	6.5		1.9 1.9	1.9	
				Bottom	19	19.8 19.8	19.8	8.1 8.1	8.1	30.7 30.7	30.7	92.1 91.4	91.8	7.0 7.0	7.0	7.0	7.3 7.2	7.3		2.9 3.0	3.0	
C2	Cloudy	Moderate	15:35	Surface	1	20.0 20.1	20.1	8.0 8.0	8.0	30.2 30.3	30.3	92.8 93.5	93.2	7.1 7.1	7.1	7.0	4.3 4.2	4.3	5.5	2.0 2.1	2.1	2.3
				Middle	18	19.8 19.8	19.8	8.1 8.0	8.1	30.3 30.4	30.4	90.9 89.8	90.4	6.9 6.9	6.9		5.2 5.4	5.3		2.3 2.2	2.3	
				Bottom	35	19.7 19.8	19.8	8.1 8.1	8.1	30.7 30.6	30.7	89.4 88.7	89.1	6.8 6.8	6.8	6.8	6.9 6.8	6.9		2.4 2.4	2.4	
G1	Cloudy	Moderate	16:31	Surface	1	20.1 20.1	20.1	8.1 8.1	8.1	30.5 30.5	30.5	94.4 93.9	94.2	7.2 7.1	7.2	7.2	3.6 3.4	3.5	4.8	2.8 2.9	2.9	2.5
				Middle	4	20.0 20.0	20.0	8.1 8.1	8.1	30.5 30.5	30.5	92.8 93.2	93.0	7.1 7.1	7.1		4.1 3.9	4.0		2.3 2.2	2.3	
				Bottom	7	20.0 19.9	20.0	8.1 8.1	8.1	30.5 30.6	30.6	91.0 91.0	91.0	6.9 6.9	6.9	6.9	6.9 7.1	7.0		2.2 2.3	2.3	
G2	Cloudy	Moderate	16:09	Surface	1	20.1 20.1	20.1	8.0 8.0	8.0	30.1 30.0	30.1	93.1 93.0	93.1	7.1 7.1	7.1	7.1	3.0 2.9	3.0	4.3	2.1 2.1	2.1	2.5
				Middle	5	20.0 20.0	20.0	8.0 8.0	8.0	30.5 30.5	30.5	92.3 92.7	92.5	7.0 7.0	7.0		4.3 4.5	4.4		2.8 2.9	2.9	
				Bottom	9	19.9 19.8	19.9	8.0 8.0	8.0	31.1 31.1	31.1	91.0 91.6	91.3	6.9 7.0	7.0	7.0	5.7 5.5	5.6		2.6 2.5	2.6	
G3	Cloudy	Moderate	16:44	Surface	1	20.1 20.1	20.1	8.0 8.0	8.0	30.6 30.6	30.6	94.4 94.6	94.5	7.2 7.2	7.2	7.1	4.3 4.3	4.3	4.6	2.1 2.1	2.1	2.0
				Middle	4	20.0 20.0	20.0	8.1 8.1	8.1	30.8 30.8	30.8	91.9 92.1	92.0	7.0 7.0	7.0		4.7 4.7	4.7		1.3 1.4	1.4	
				Bottom	7	19.8 19.9	19.9	8.1 8.1	8.1	30.9 30.9	30.9	91.5 91.8	91.7	7.0 7.0	7.0	7.0	4.8 4.9	4.9		2.4 2.4	2.4	
G4	Cloudy	Moderate	17:05	Surface	1	19.9 19.9	19.9	8.0 8.0	8.0	30.5 30.5	30.5	94.2 93.8	94.0	7.2 7.1	7.2	7.2	3.5 3.4	3.5	4.6	<0.5 <0.5	<0.5	2.0
				Middle	4	19.9 19.9	19.9	8.0 8.0	8.0	30.7 30.7	30.7	92.8 93.0	92.9	7.1 7.1	7.1		4.3 4.4	4.4		2.2 2.1	2.2	
				Bottom	7	19.8 19.8	19.8	8.1 8.1	8.1	31.0 31.0	31.0	93.1 93.0	93.1	7.1 7.1	7.1	7.1	6.0 5.9	6.0		3.3 3.2	3.3	
M1	Cloudy	Moderate	16:19	Surface	1	20.1 20.1	20.1	8.0 8.0	8.0	30.6 30.6	30.6	93.7 93.4	93.6	7.1 7.1	7.1	7.1	3.4 3.3	3.4	3.5	1.7 1.8	1.8	1.0
				Middle	3	20.1 20.0	20.1	8.0 8.0	8.0	30.6 30.6	30.6	91.6 91.8	91.7	6.9 7.0	7.0		3.4 3.5	3.5		<0.5 <0.5	<0.5	
				Bottom	5	20.0 20.0	20.0	8.0 8.0	8.0	30.6 30.6	30.6	90.3 90.4	90.4	6.9 6.9	6.9	6.9	3.5 3.6	3.6		0.6 0.6	0.6	
M2	Cloudy	Moderate	16:00	Surface	1	20.1 20.1	20.1	8.0 8.0	8.0	30.2 30.1	30.2	93.3 92.8	93.1	7.1 7.1	7.1	7.1	3.4 3.3	3.4	4.8	2.1 2.2	2.2	2.5
				Middle	5	20.1 20.1	20.1	8.0 8.0	8.0	30.4 30.4	30.4	92.5 92.5	92.5	7.0 7.0	7.0		4.3 4.4	4.4		2.9 3.0	3.0	
				Bottom	9	19.8 19.7	19.8	8.0 8.0	8.0	30.5 30.5	30.5	90.9 91.2	91.1	6.9 7.0	7.0	7.0	6.5 6.7	6.6		2.3 2.4	2.4	
M3	Cloudy	Moderate	16:56	Surface	1	20.0 20.0	20.0	8.0 8.0	8.0	30.4 30.4	30.4	95.0 95.4	95.2	7.2 7.3	7.3	7.3	4.2 4.1	4.2	5.4	1.9 2.0	2.0	3.2
				Middle	4	19.9 19.9	19.9	8.0 8.0	8.0	30.7 30.6	30.7	94.4 95.0	94.7	7.2 7.2	7.2		5.5 5.3	5.4		5.5 5.4	5.5	
				Bottom	7	19.9 19.9	19.9	8.1 8.1	8.1	30.9 30.8	30.9	92.4 92.0	92.2	7.0 7.0	7.0	7.0	6.7 6.7	6.7		2.2 2.1	2.2	
M4	Cloudy	Moderate	15:50	Surface	1	20.2 20.3	20.3	8.0 8.0	8.0	30.2 30.3	30.3	95.1 95.6	95.4	7.2 7.2	7.2	7.2	3.8 3.8	3.8	4.9	2.4 2.5	2.5	2.5
				Middle	4	20.1 20.1	20.1	8.0 8.0	8.0	30.4 30.5	30.5	93.9 94.0	94.0	7.1 7.1	7.1		4.5 4.6	4.6		3.7 3.6	3.7	
				Bottom	7	19.9 19.8	19.9	8.0 8.0	8.0	30.6 30.6	30.6	92.9 92.5	92.7	7.1 7.1	7.1	7.1	6.2 6.4	6.3		1.1 1.2	1.2	
M5	Cloudy	Moderate	17:31	Surface	1	20.1 20.1	20.1	8.0 8.0	8.0	30.6 30.6	30.6	93.5 93.1	93.3	7.1 7.1	7.1	6.9	4.2 4.2	4.2	5.5	1.5 1.4	1.5	2.2
				Middle	5.5	19.9 19.9	19.9	8.0 8.0	8.0	30.6 30.6	30.6	86.3 86.1	86.2	6.6 6.6	6.6		5.5 5.3	5.4		2.5 2.6	2.6	
				Bottom	10	19.7 19.6	19.7	8.0 8.0	8.0	30.9 30.8	30.9	85.3 85.2	85.3	6.5 6.5	6.5	6.5	7.1 6.8	7.0		2.5 2.5	2.5	
M6	Cloudy	Moderate	17:17	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.0	- -	-	3.4	- -	-	0.6
				Middle	1	20.1 20.1	20.1	8.0 8.0	8.0	30.3 30.3	30.3	92.5 92.2	92.4	7.0 7.0	7.0		3.4 3.3	3.4		0.6 0.6	0.6	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

The reporting limit for laboratory analysis of suspended solids is 2.5 mg/L. For the results below the reporting limit, the SS level will be taken as 2.5 mg/L.

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 13 January 2017 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C2: 7.0 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C2: 7.5 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 4.1 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 4.4 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 4.1 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 4.4 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 2.8 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 3.0 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 13 January 2017

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Moderate	13:57	Surface	1	22.4 22.2	22.3	8.2 8.2	8.2	32.2 32.2	32.2	100.5 102.8	101.7	7.2 7.4	7.3	6.9	3.8 4.0	3.9	4.2	3.0 2.9	3.0	2.5
				Middle	10	22.4 22.1	22.3	8.2 8.2	8.2	32.4 32.4	32.4	89.6 89.9	89.8	6.5 6.5	6.5		3.9 4.0	4.0		2.2 2.1	2.2	
				Bottom	19	22.2 22.1	22.2	8.2 8.2	8.2	32.5 32.5	32.5	88.7 88.6	88.7	6.4 6.4	6.4	6.4	4.9 4.5	4.7		2.1 2.2	2.2	
C2	Sunny	Moderate	12:19	Surface	1	22.1 22.0	22.1	8.1 8.1	8.1	32.5 32.5	32.5	96.8 98.0	97.4	7.0 7.1	7.1	6.8	4.9 4.6	4.8	5.2	3.3 3.4	3.4	2.6
				Middle	18	22.1 22.0	22.1	8.1 8.1	8.1	32.5 32.5	32.5	90.2 90.1	90.2	6.5 6.5	6.5		5.1 4.9	5.0		2.1 2.1	2.1	
				Bottom	35	22.0 22.0	22.0	8.1 8.1	8.1	32.6 32.6	32.6	89.8 89.9	89.9	6.5 6.5	6.5	6.5	5.8 5.8	5.8		1.7 2.8	2.3	
G1	Sunny	Moderate	13:01	Surface	1	22.0 21.9	22.0	8.2 8.2	8.2	32.3 32.3	32.3	96.5 97.1	96.8	7.0 7.1	7.1	6.8	3.9 3.7	3.8	5.0	1.3 1.4	1.4	1.6
				Middle	4	22.0 21.7	21.9	8.2 8.2	8.2	32.4 32.4	32.4	87.6 88.5	88.1	6.4 6.5	6.5		4.4 4.9	4.7		1.7 1.7	1.7	
				Bottom	7	21.9 21.7	21.8	8.2 8.2	8.2	32.5 32.5	32.5	88.0 88.8	88.4	6.4 6.5	6.5	6.5	6.2 6.6	6.4		1.5 1.6	1.6	
G2	Sunny	Moderate	12:43	Surface	1	22.0 22.0	22.0	8.2 8.2	8.2	32.8 32.8	32.8	95.5 96.1	95.8	6.9 7.0	7.0	6.8	3.6 3.2	3.4	3.8	1.4 1.4	1.4	1.8
				Middle	5	22.0 21.9	22.0	8.1 8.1	8.1	32.9 32.9	32.9	89.6 88.4	89.0	6.5 6.4	6.5		3.5 3.6	3.6		2.4 2.5	2.5	
				Bottom	9	22.0 21.9	22.0	8.2 8.2	8.2	33.3 33.2	33.3	85.8 84.6	85.2	6.2 6.1	6.2	6.2	4.2 4.3	4.3		1.4 1.5	1.5	
G3	Sunny	Moderate	13:11	Surface	1	22.0 22.0	22.0	8.2 8.2	8.2	32.2 32.2	32.2	97.2 97.8	97.5	7.1 7.1	7.1	6.8	3.6 3.4	3.5	4.3	2.2 2.2	2.2	1.9
				Middle	4	21.9 21.8	21.9	8.2 8.2	8.2	32.6 32.6	32.6	88.6 88.4	88.5	6.4 6.4	6.4		3.8 4.1	4.0		1.8 1.9	1.9	
				Bottom	7	22.0 21.8	21.9	8.2 8.2	8.2	32.9 32.8	32.9	87.3 86.5	86.9	6.3 6.3	6.3	6.3	5.2 5.3	5.3		1.7 1.7	1.7	
G4	Sunny	Moderate	13:30	Surface	1	22.4 22.2	22.3	8.2 8.2	8.2	32.3 32.3	32.3	96.8 96.9	96.9	7.0 7.0	7.0	6.7	3.9 4.1	4.0	5.0	1.8 1.7	1.8	2.0
				Middle	4	22.4 22.2	22.3	8.2 8.2	8.2	32.6 32.6	32.6	89.1 89.1	89.1	6.4 6.4	6.4		4.9 4.7	4.8		2.2 2.1	2.2	
				Bottom	7	22.2 22.2	22.2	8.3 8.3	8.3	33.0 33.1	33.1	92.7 92.7	92.7	6.7 6.7	6.7	6.7	6.2 6.3	6.3		2.1 2.0	2.1	
M1	Sunny	Moderate	12:52	Surface	1	22.0 22.0	22.0	8.1 8.2	8.2	32.5 32.6	32.6	95.7 96.0	95.9	6.9 7.0	7.0	6.8	3.5 3.7	3.6	3.9	2.5 2.6	2.6	3.2
				Middle	3	22.0 21.9	22.0	8.2 8.2	8.2	32.5 32.6	32.6	89.1 88.6	88.9	6.5 6.4	6.5		3.7 3.9	3.8		4.8 4.6	4.7	
				Bottom	5	22.0 21.9	22.0	8.2 8.2	8.2	32.7 32.7	32.7	89.1 88.7	88.9	6.5 6.4	6.5	6.5	4.1 4.5	4.3		2.4 2.3	2.4	
M2	Sunny	Moderate	12:36	Surface	1	22.0 22.0	22.0	8.2 8.1	8.2	32.7 32.7	32.7	91.4 91.8	91.6	6.6 6.6	6.6	6.4	3.8 3.7	3.8	3.8	2.7 2.6	2.7	2.1
				Middle	5.5	22.0 22.0	22.0	8.1 8.2	8.2	32.8 32.9	32.9	85.2 84.9	85.1	6.2 6.1	6.2		3.8 3.8	3.8		1.8 1.8	1.8	
				Bottom	10	22.0 22.0	22.0	8.2 8.1	8.2	33.0 33.0	33.0	83.6 83.6	83.6	6.0 6.0	6.0	6.0	3.8 3.8	3.8		1.7 1.6	1.7	
M3	Sunny	Moderate	13:23	Surface	1	22.3 22.2	22.3	8.2 8.2	8.2	32.8 32.8	32.8	108.4 104.5	106.5	7.8 7.5	7.7	7.2	4.4 4.4	4.4	4.6	2.2 2.1	2.2	2.5
				Middle	4.5	22.3 22.2	22.3	8.2 8.2	8.2	33.0 33.1	33.1	90.8 91.0	90.9	6.5 6.6	6.6		4.6 4.5	4.6		2.9 2.9	2.9	
				Bottom	8	22.2 22.2	22.2	8.2 8.2	8.2	33.4 33.4	33.4	83.8 83.4	83.6	6.0 6.0	6.0	6.0	4.8 5.0	4.9		2.2 2.3	2.3	
M4	Sunny	Moderate	12:28	Surface	1	22.0 22.0	22.0	8.1 8.1	8.1	32.5 32.5	32.5	96.9 96.9	96.9	7.0 7.0	7.0	6.8	3.1 3.0	3.1	4.1	2.4 2.3	2.4	2.1
				Middle	4	22.0 21.3	21.7	8.2 8.2	8.2	32.5 32.5	32.5	89.8 88.3	89.1	6.5 6.5	6.5		3.3 3.6	3.5		2.0 2.0	2.0	
				Bottom	7	22.0 21.3	21.7	8.2 8.2	8.2	32.7 32.7	32.7	86.5 84.2	85.4	6.3 6.2	6.3	6.3	5.8 5.6	5.7		1.8 1.9	1.9	
M5	Sunny	Moderate	13:50	Surface	1	22.4 22.2	22.3	8.2 8.2	8.2	32.5 32.5	32.5	96.6 96.3	96.5	7.0 7.0	7.0	6.7	4.7 4.7	4.7	4.9	2.2 2.3	2.3	2.1
				Middle	5.5	22.4 22.2	22.3	8.2 8.2	8.2	32.6 32.6	32.6	88.3 88.8	88.6	6.4 6.4	6.4		3.9 3.8	3.9		2.3 2.2	2.3	
				Bottom	10	22.2 22.2	22.2	8.3 8.3	8.3	32.7 32.7	32.7	85.4 85.2	85.3	6.2 6.1	6.2	6.2	5.8 6.1	6.0		1.8 1.8	1.8	
M6	Sunny	Moderate	13:37	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.2	- -	-	4.5	- -	-	1.3
				Middle	2.1	22.4 22.2	22.3	8.2 8.2	8.2	32.2 32.2	32.2	99.2 100.5	99.9	7.1 7.3	7.2		4.4 4.6	4.5		1.2 1.3	1.3	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 13 January 2017 (Mid-Flood Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C1: 10.8 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C1: 11.7 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 3.2 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 3.5 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 3.2 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 3.5 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 4.1 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 4.4 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 13 January 2017

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Moderate	08:57	Surface	1	23.4 23.0	23.2	8.1 8.1	8.1	31.1 31.2	31.2	114.0 111.3	112.7	8.1 8.0	8.1	7.6	4.1 4.2	4.2	6.4	2.8 2.6	2.7	2.7
				Middle	10.5	23.3 22.8	23.1	8.1 8.1	8.1	32.2 32.2	32.2	99.3 99.8	99.6	7.0 7.1	7.1		5.7 6.3	6.0		1.8 1.9	1.9	
				Bottom	20	23.0 22.9	23.0	8.1 8.1	8.1	32.9 32.8	32.9	96.5 98.3	97.4	6.9 7.0	7.0	7.0	9.3 8.6	9.0		3.4 3.3	3.4	
C2	Sunny	Moderate	06:57	Surface	1	23.1 22.5	22.8	8.1 8.1	8.1	31.3 31.3	31.3	107.9 111.4	109.7	7.7 8.1	7.9	7.6	3.6 4.1	3.9	5.4	2.0 2.0	2.0	2.3
				Middle	18	23.1 22.3	22.7	8.1 8.1	8.1	32.5 32.5	32.5	99.1 101.9	100.5	7.0 7.3	7.2		5.3 5.3	5.3		2.5 2.4	2.5	
				Bottom	35	22.5 22.3	22.4	8.1 8.1	8.1	32.7 32.8	32.8	92.8 93.2	93.0	6.7 6.7	6.7	6.7	6.8 7.0	6.9		2.4 2.5	2.5	
G1	Sunny	Moderate	07:40	Surface	1	22.9 22.8	22.9	8.1 8.1	8.1	32.7 32.7	32.7	104.8 101.8	103.3	7.5 7.3	7.4	7.3	5.3 4.7	5.0	4.6	1.4 1.5	1.5	2.3
				Middle	4	23.0 22.8	22.9	8.1 8.1	8.1	33.0 33.0	33.0	97.8 105.6	101.7	6.9 7.5	7.2		4.6 4.5	4.6		3.5 3.6	3.6	
				Bottom	7	22.8 22.8	22.8	8.1 8.1	8.1	33.2 33.2	33.2	97.6 98.8	98.2	6.9 7.0	7.0	7.0	4.2 3.9	4.1		1.7 1.6	1.7	
G2	Sunny	Moderate	07:23	Surface	1	22.8 22.8	22.8	8.1 8.1	8.1	32.7 32.7	32.7	108.2 112.8	110.5	7.7 8.1	7.9	7.6	4.5 4.6	4.6	4.2	2.2 2.2	2.2	2.0
				Middle	5	22.8 22.8	22.8	8.1 8.1	8.1	33.0 33.0	33.0	98.9 102.9	100.9	7.0 7.3	7.2		4.3 4.5	4.4		2.2 2.1	2.2	
				Bottom	9	22.8 22.8	22.8	8.2 8.2	8.2	33.8 33.6	33.7	93.8 94.4	94.1	6.7 6.7	6.7	6.7	3.7 3.6	3.7		1.7 1.7	1.7	
G3	Sunny	Moderate	07:53	Surface	1	22.5 22.5	22.5	8.1 8.1	8.1	33.1 33.1	33.1	105.1 105.1	105.1	7.5 7.5	7.5	7.5	3.9 3.6	3.8	3.9	2.5 2.4	2.5	2.6
				Middle	4	22.5 22.4	22.5	8.1 8.1	8.1	33.1 33.1	33.1	105.4 105.0	105.2	7.5 7.5	7.5		4.1 3.9	4.0		3.1 3.1	3.1	
				Bottom	7	22.5 22.4	22.5	8.1 8.1	8.1	33.1 33.1	33.1	106.3 107.7	107.0	7.6 7.7	7.7	7.7	4.1 3.7	3.9		2.2 2.1	2.2	
G4	Sunny	Moderate	08:25	Surface	1	23.4 22.8	23.1	8.0 8.0	8.0	31.1 31.1	31.1	93.0 88.1	90.6	6.6 6.3	6.5	6.5	4.3 3.8	4.1	4.7	2.9 3.0	3.0	3.6
				Middle	4	23.4 22.7	23.1	8.1 8.1	8.1	32.1 32.1	32.1	90.0 90.0	90.0	6.4 6.5	6.5		4.7 5.1	4.9		4.2 4.2	4.2	
				Bottom	7	22.8 22.8	22.8	8.1 8.1	8.1	32.8 32.6	32.7	90.5 85.7	88.1	6.5 6.1	6.3	6.3	5.0 5.1	5.1		3.7 3.6	3.7	
M1	Sunny	Moderate	07:31	Surface	1	22.5 22.5	22.5	8.1 8.1	8.1	33.1 33.1	33.1	102.1 102.4	102.3	7.3 7.3	7.3	7.3	3.8 3.9	3.9	4.4	1.9 1.9	1.9	2.6
				Middle	3	22.5 22.4	22.5	8.1 8.1	8.1	33.3 33.3	33.3	101.1 100.7	100.9	7.2 7.2	7.2		4.3 4.8	4.6		2.9 2.8	2.9	
				Bottom	5	22.5 22.4	22.5	8.1 8.1	8.1	33.3 33.3	33.3	101.1 100.7	100.9	7.2 7.2	7.2	7.2	4.6 4.9	4.8		3.1 3.0	3.1	
M2	Sunny	Moderate	07:17	Surface	1	23.1 22.5	22.8	8.1 8.1	8.1	31.3 31.3	31.3	101.4 100.8	101.1	7.3 7.3	7.3	7.3	3.6 4.1	3.9	5.4	2.4 2.5	2.5	2.5
				Middle	5.5	23.1 22.3	22.7	8.1 8.1	8.1	32.5 32.5	32.5	101.1 100.2	100.7	7.2 7.2	7.2		5.3 5.3	5.3		2.7 2.8	2.8	
				Bottom	10	22.5 22.3	22.4	8.1 8.1	8.1	32.7 32.8	32.8	92.8 92.0	92.4	6.7 6.6	6.7	6.7	6.8 7.0	6.9		2.0 2.2	2.1	
M3	Sunny	Moderate	08:13	Surface	1	23.4 23.0	23.2	8.1 8.1	8.1	30.9 30.8	30.9	99.0 100.7	99.9	7.1 7.2	7.2	6.9	3.5 3.6	3.6	4.0	3.2 3.1	3.2	2.3
				Middle	4.5	23.4 22.8	23.1	8.1 8.1	8.1	31.5 31.5	31.5	90.0 93.1	91.6	6.4 6.7	6.6		3.9 4.1	4.0		2.2 2.2	2.2	
				Bottom	8	23.0 22.8	22.9	8.1 8.1	8.1	31.9 31.9	31.9	90.4 88.9	89.7	6.5 6.4	6.5	6.5	4.3 4.2	4.3		1.4 1.5	1.5	
M4	Sunny	Moderate	07:09	Surface	1	22.5 22.4	22.5	8.1 8.1	8.1	33.1 33.1	33.1	109.7 108.4	109.1	7.9 7.8	7.9	7.7	3.8 3.9	3.9	4.5	1.8 1.8	1.8	2.5
				Middle	4	22.5 21.9	22.2	8.1 8.1	8.1	33.2 33.2	33.2	102.5 101.7	102.1	7.3 7.4	7.4		4.3 4.2	4.3		2.9 3.0	3.0	
				Bottom	7	22.4 21.9	22.2	8.1 8.1	8.1	34.1 34.1	34.1	100.9 99.6	100.3	7.2 7.2	7.2	7.2	5.3 5.3	5.3		2.6 2.6	2.6	
M5	Sunny	Moderate	08:49	Surface	1	23.3 23.0	23.2	8.1 8.1	8.1	31.1 31.1	31.1	96.0 101.2	98.6	6.9 7.3	7.1	7.1	4.3 3.9	4.1	6.2	2.4 2.5	2.5	2.6
				Middle	5.5	23.3 22.8	23.1	8.1 8.1	8.1	32.1 32.2	32.2	97.4 101.9	99.7	6.9 7.3	7.1		6.5 5.8	6.2		2.8 2.9	2.9	
				Bottom	10	23.0 22.8	22.9	8.1 8.1	8.1	32.8 32.9	32.9	99.4 94.2	96.8	7.1 6.7	6.9	6.9	8.1 8.5	8.3		2.4 2.4	2.4	
M6	Sunny	Moderate	08:35	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.6	- -	-	4.9	- -	-	2.5
				Middle	2	23.5 23.0	23.3	8.1 8.1	8.1	30.9 30.9	30.9	107.2 106.0	106.6	7.6 7.6	7.6		4.9 4.8	4.9		2.5 2.4	2.5	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 17 January 2017 (Mid-Ebb Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C2: 6.2 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C2: 6.8 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.0 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.5 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.0 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.5 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.2 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.8 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

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Water Quality Monitoring Results on 17 January 2017

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Moderate	16:50	Surface	1	22.1 21.9	22.0	8.1 8.1	8.1	30.5 30.5	30.5	106.3 108.5	107.4	7.8 8.0	7.9	7.5	4.4 4.0	4.2	5.0	3.4 3.2	3.3	4.0
				Middle	10	22.1 21.8	22.0	8.1 8.1	8.1	30.7 30.7	30.7	95.6 95.8	95.7	7.0 7.0	7.0		5.3 4.5	4.9		3.3 3.3	3.3	
				Bottom	19	21.9 21.8	21.9	8.1 8.1	8.1	30.8 30.8	30.8	94.6 94.5	94.6	6.9 6.9	6.9	6.9	6.4 5.5	6.0		5.2 5.6	5.4	
C2	Sunny	Moderate	15:12	Surface	1	21.8 21.7	21.8	8.1 8.1	8.1	30.8 30.8	30.8	102.6 103.7	103.2	7.5 7.6	7.6	7.4	2.6 2.5	2.6	3.6	4.9 5.0	5.0	4.4
				Middle	18	21.8 21.8	21.8	8.1 8.1	8.1	30.8 30.8	30.8	96.1 96.0	96.1	7.1 7.1	7.1		2.8 3.1	3.0		3.1 3.0	3.1	
				Bottom	35	21.7 21.8	21.8	8.1 8.1	8.1	30.9 30.9	30.9	95.7 95.8	95.8	7.0 7.0	7.0	7.0	5.3 5.1	5.2		5.1 5.2	5.2	
G1	Sunny	Moderate	15:54	Surface	1	21.7 21.6	21.7	8.1 8.1	8.1	30.6 30.6	30.6	102.3 102.8	102.6	7.5 7.6	7.6	7.3	3.1 2.9	3.0	3.8	4.8 4.6	4.7	4.7
				Middle	4	21.7 21.4	21.6	8.1 8.1	8.1	30.7 30.7	30.7	93.5 94.3	93.9	6.9 7.0	7.0		3.3 3.6	3.5		3.5 3.6	3.6	
				Bottom	7	21.6 21.4	21.5	8.1 8.1	8.1	30.8 30.8	30.8	93.9 94.7	94.3	6.9 7.0	7.0	7.0	4.7 4.8	4.8		5.8 5.7	5.8	
G2	Sunny	Moderate	15:36	Surface	1	21.7 21.7	21.7	8.1 8.1	8.1	31.1 31.1	31.1	101.3 101.9	101.6	7.4 7.5	7.5	7.3	3.3 3.2	3.3	3.8	5.7 5.8	5.8	4.9
				Middle	5	21.7 21.6	21.7	8.1 8.1	8.1	31.2 31.2	31.2	95.5 94.3	94.9	7.0 6.9	7.0		3.8 3.7	3.8		5.1 5.0	5.1	
				Bottom	9	21.7 21.6	21.7	8.2 8.2	8.2	31.6 31.5	31.6	91.8 90.6	91.2	6.7 6.6	6.7	6.7	4.3 4.3	4.3		3.8 3.9	3.9	
G3	Sunny	Moderate	16:04	Surface	1	21.7 21.7	21.7	8.1 8.1	8.1	30.5 30.5	30.5	103.0 103.5	103.3	7.6 7.6	7.6	7.3	3.4 3.2	3.3	4.2	3.7 3.6	3.7	5.0
				Middle	4	21.6 21.5	21.6	8.1 8.1	8.1	30.9 30.9	30.9	94.5 94.3	94.4	7.0 7.0	7.0		3.9 4.4	4.2		6.8 6.9	6.9	
				Bottom	7	21.7 21.5	21.6	8.1 8.1	8.1	31.2 31.1	31.2	93.3 92.5	92.9	6.8 6.8	6.8	6.8	5.1 5.1	5.1		4.2 4.3	4.3	
G4	Sunny	Moderate	16:23	Surface	1	22.1 21.9	22.0	8.0 8.0	8.0	30.6 30.6	30.6	102.7 102.7	102.7	7.5 7.5	7.5	7.3	3.4 2.8	3.1	4.0	4.7 4.6	4.7	4.0
				Middle	4	22.1 21.9	22.0	8.1 8.1	8.1	30.9 30.9	30.9	95.1 95.1	95.1	6.9 7.0	7.0		3.4 3.6	3.5		4.0 4.1	4.1	
				Bottom	7	21.9 21.9	21.9	8.1 8.1	8.1	31.3 31.4	31.4	98.6 98.6	98.6	7.2 7.2	7.2	7.2	5.3 5.6	5.5		3.1 3.0	3.1	
M1	Sunny	Moderate	15:45	Surface	1	21.7 21.7	21.7	8.1 8.1	8.1	30.8 30.8	30.8	101.5 101.8	101.7	7.5 7.5	7.5	7.3	3.0 3.4	3.2	3.5	5.0 5.0	5.0	5.6
				Middle	3	21.7 21.6	21.7	8.1 8.1	8.1	30.8 30.8	30.8	95.0 94.5	94.8	7.0 7.0	7.0		3.2 3.2	3.2		6.6 6.4	6.5	
				Bottom	5	22.1 21.9	22.0	8.1 8.1	8.1	30.8 30.8	30.8	95.9 96.3	96.1	7.0 7.1	7.1	7.1	4.2 3.9	4.1		5.3 5.2	5.3	
M2	Sunny	Moderate	15:29	Surface	1	21.7 21.7	21.7	8.1 8.1	8.1	31.0 31.0	31.0	97.3 97.6	97.5	7.1 7.2	7.2	7.0	3.1 3.3	3.2	3.7	3.0 2.9	3.0	3.9
				Middle	5.5	21.7 21.7	21.7	8.1 8.1	8.1	31.1 31.2	31.2	91.2 90.9	91.1	6.7 6.7	6.7		4.0 3.7	3.9		5.6 5.4	5.5	
				Bottom	10	21.7 21.7	21.7	8.1 8.1	8.1	31.3 31.3	31.3	89.6 89.6	89.6	6.6 6.6	6.6	6.6	4.1 4.1	4.1		3.2 3.1	3.2	
M3	Sunny	Moderate	16:16	Surface	1	22.0 21.9	22.0	8.1 8.1	8.1	31.1 31.1	31.1	114.0 110.2	112.1	8.3 8.1	8.2	7.7	3.3 3.5	3.4	3.8	2.7 2.8	2.8	3.9
				Middle	4.5	22.0 21.9	22.0	8.1 8.1	8.1	31.3 31.4	31.4	96.8 96.9	96.9	7.1 7.1	7.1		4.1 3.9	4.0		4.8 4.6	4.7	
				Bottom	8	21.9 21.9	21.9	8.1 8.1	8.1	31.7 31.7	31.7	89.9 89.4	89.7	6.6 6.5	6.6	6.6	3.9 4.0	4.0		4.1 4.1	4.1	
M4	Sunny	Moderate	15:20	Surface	1	21.7 21.7	21.7	8.1 8.1	8.1	30.8 30.8	30.8	102.7 102.7	102.7	7.6 7.6	7.6	7.3	4.4 4.1	4.3	4.5	3.5 3.6	3.6	5.1
				Middle	4	21.7 21.0	21.4	8.1 8.1	8.1	30.8 30.8	30.8	95.7 94.1	94.9	7.0 7.0	7.0		4.6 4.4	4.5		6.3 6.2	6.3	
				Bottom	7	21.7 21.0	21.4	8.1 8.1	8.1	31.0 31.0	31.0	92.5 90.0	91.3	6.8 6.7	6.8	6.8	4.7 4.8	4.8		5.1 5.4	5.3	
M5	Sunny	Moderate	16:42	Surface	1	22.1 21.9	22.0	8.1 8.1	8.1	30.8 30.8	30.8	102.4 102.1	102.3	7.5 7.5	7.5	7.2	3.8 4.2	4.0	4.6	5.7 5.7	5.7	5.3
				Middle	5.5	22.1 21.9	22.0	8.1 8.1	8.1	30.9 30.9	30.9	94.3 94.7	94.5	6.9 6.9	6.9		4.4 4.3	4.4		4.2 4.3	4.3	
				Bottom	10	21.9 21.9	21.9	8.1 8.1	8.1	31.0 31.0	31.0	91.4 91.2	91.3	6.7 6.7	6.7	6.7	5.3 5.6	5.5		5.9 5.9	5.9	
M6	Sunny	Moderate	16:30	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.8	- -	-	3.8	- -	-	2.5
				Middle	2.1	22.1 21.9	22.0	8.1 8.1	8.1	30.5 30.5	30.5	105.0 106.2	105.6	7.7 7.8	7.8		3.6 3.9	3.8		2.5 2.5	2.5	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 17 January 2017 (Mid-Flood Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C1: 9.0 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C1: 9.8 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 7.1 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.7 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 7.1 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.7 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 6.1 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 6.6 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 17 January 2017

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Moderate	11:32	Surface	1	21.7 21.3	21.5	8.2 8.2	8.2	30.3 30.4	30.4	110.5 107.8	109.2	8.2 8.0	8.1	7.7	3.1 3.2	3.2	5.1	6.0 5.8	5.9	5.3
				Middle	10.5	21.6 21.1	21.4	8.2 8.2	8.2	31.4 31.4	31.4	96.3 96.7	96.5	7.1 7.2	7.2		4.7 4.3	4.5		5.0 5.0	5.0	
				Bottom	20	21.3 21.2	21.3	8.2 8.2	8.2	32.1 32.0	32.1	93.6 95.3	94.5	6.9 7.0	7.0	7.0	7.3 7.6	7.5		5.1 5.1	5.1	
C2	Sunny	Moderate	09:32	Surface	1	21.4 20.8	21.1	8.1 8.1	8.1	30.5 30.5	30.5	104.6 108.0	106.3	7.7 8.1	7.9	7.6	2.8 2.9	2.9	3.5	5.8 5.8	5.8	5.3
				Middle	18	21.4 20.6	21.0	8.1 8.1	8.1	31.7 31.7	31.7	96.2 98.8	97.5	7.1 7.4	7.3		3.3 3.2	3.3		5.2 5.1	5.2	
				Bottom	35	20.8 20.6	20.7	8.1 8.1	8.1	31.9 32.0	32.0	90.0 90.4	90.2	6.7 6.7	6.7	6.7	4.3 4.3	4.3		4.8 4.8	4.8	
G1	Sunny	Moderate	10:15	Surface	1	21.2 21.1	21.2	8.2 8.2	8.2	31.9 31.9	31.9	101.6 98.7	100.2	7.5 7.3	7.4	7.4	3.3 3.7	3.5	3.6	4.9 4.9	4.9	4.1
				Middle	4	21.3 21.1	21.2	8.2 8.2	8.2	32.2 32.2	32.2	94.8 102.3	98.6	7.0 7.6	7.3		3.6 3.5	3.6		3.2 3.3	3.3	
				Bottom	7	21.1 21.1	21.1	8.2 8.2	8.2	32.4 32.4	32.4	94.7 95.8	95.3	7.0 7.1	7.1	7.1	3.7 3.9	3.8		4.2 4.2	4.2	
G2	Sunny	Moderate	09:58	Surface	1	21.1 21.1	21.1	8.2 8.2	8.2	31.9 31.9	31.9	104.9 109.4	107.2	7.7 8.1	7.9	7.6	2.6 3.1	2.9	4.4	4.3 4.3	4.3	4.6
				Middle	5	21.1 21.1	21.1	8.1 8.1	8.1	32.2 32.2	32.2	95.9 99.7	97.8	7.1 7.4	7.3		4.3 4.3	4.3		5.5 5.6	5.6	
				Bottom	9	21.1 21.1	21.1	8.2 8.2	8.2	33.0 32.8	32.9	91.0 91.5	91.3	6.7 6.7	6.7	6.7	5.8 6.0	5.9		3.9 4.0	4.0	
G3	Sunny	Moderate	10:28	Surface	1	20.8 20.8	20.8	8.2 8.2	8.2	32.3 32.3	32.3	101.9 101.8	101.9	7.6 7.6	7.6	7.6	2.9 2.6	2.8	3.2	4.2 4.1	4.2	5.3
				Middle	4	20.8 20.7	20.8	8.2 8.2	8.2	32.3 32.3	32.3	102.2 101.8	102.0	7.6 7.6	7.6		3.1 2.9	3.0		6.2 6.4	6.3	
				Bottom	7	20.8 20.7	20.8	8.2 8.2	8.2	32.3 32.3	32.3	103.1 104.4	103.8	7.6 7.7	7.7	7.7	4.1 3.7	3.9		5.3 5.3	5.3	
G4	Sunny	Moderate	11:00	Surface	1	21.7 21.1	21.4	8.2 8.2	8.2	30.3 30.3	30.3	90.3 85.5	87.9	6.7 6.4	6.6	6.6	3.3 2.9	3.1	5.0	4.9 4.8	4.9	5.3
				Middle	4	21.7 21.0	21.4	8.2 8.2	8.2	31.3 31.3	31.3	87.3 87.3	87.3	6.4 6.5	6.5		4.5 4.8	4.7		6.5 6.5	6.5	
				Bottom	7	21.1 21.1	21.1	8.3 8.3	8.3	32.0 31.8	31.9	87.8 83.1	85.5	6.5 6.1	6.3	6.3	7.1 7.5	7.3		4.4 4.5	4.5	
M1	Sunny	Moderate	10:07	Surface	1	20.8 20.8	20.8	8.1 8.2	8.2	32.3 32.3	32.3	98.9 99.3	99.1	7.3 7.4	7.4	7.4	3.8 3.9	3.9	3.9	3.9 3.8	3.9	4.4
				Middle	3	20.8 20.7	20.8	8.2 8.1	8.2	32.5 32.5	32.5	98.0 97.6	97.8	7.3 7.2	7.3		3.3 3.8	3.6		4.0 4.0	4.0	
				Bottom	5	21.7 21.3	21.5	8.2 8.2	8.2	30.9 30.8	30.9	103.4 102.6	103.0	7.6 7.6	7.6	7.6	4.0 4.1	4.1		5.2 5.1	5.2	
M2	Sunny	Moderate	09:52	Surface	1	21.4 20.8	21.1	8.2 8.1	8.2	30.5 30.5	30.5	98.3 97.7	98.0	7.3 7.3	7.3	7.3	3.5 3.6	3.6	3.7	5.5 5.4	5.5	5.2
				Middle	5.5	21.4 20.6	21.0	8.1 8.2	8.2	31.7 31.7	31.7	98.1 97.1	97.6	7.2 7.2	7.2		3.3 3.5	3.4		6.3 6.4	6.4	
				Bottom	10	20.8 20.6	20.7	8.2 8.1	8.2	31.9 32.0	32.0	90.0 89.2	89.6	6.7 6.6	6.7	6.7	4.0 3.9	4.0		3.8 3.6	3.7	
M3	Sunny	Moderate	10:48	Surface	1	21.7 21.3	21.5	8.2 8.2	8.2	30.1 30.0	30.1	96.0 97.6	96.8	7.1 7.3	7.2	6.9	2.5 2.6	2.6	3.7	4.6 4.4	4.5	4.9
				Middle	4.5	21.7 21.1	21.4	8.2 8.2	8.2	30.7 30.7	30.7	87.3 90.3	88.8	6.4 6.7	6.6		3.9 4.1	4.0		5.2 5.1	5.2	
				Bottom	8	21.3 21.1	21.2	8.1 8.2	8.2	31.1 31.1	31.1	87.7 86.3	87.0	6.5 6.4	6.5	6.5	4.3 4.7	4.5		5.0 4.9	5.0	
M4	Sunny	Moderate	09:44	Surface	1	20.8 20.7	20.8	8.1 8.1	8.1	32.3 32.3	32.3	106.4 105.0	105.7	7.9 7.8	7.9	7.7	2.6 3.1	2.9	4.4	3.7 3.7	3.7	5.1
				Middle	4	20.8 20.2	20.5	8.2 8.2	8.2	32.4 32.4	32.4	99.4 98.5	99.0	7.4 7.4	7.4		4.3 4.3	4.3		5.5 5.4	5.5	
				Bottom	7	20.7 20.2	20.5	8.2 8.2	8.2	33.3 33.3	33.3	97.8 96.5	97.2	7.2 7.2	7.2	7.2	5.8 6.0	5.9		6.0 6.0	6.0	
M5	Sunny	Moderate	11:24	Surface	1	21.6 21.3	21.5	8.2 8.2	8.2	30.3 30.3	30.3	93.1 98.1	95.6	6.9 7.3	7.1	7.1	3.3 2.8	3.1	4.3	5.5 5.6	5.6	4.9
				Middle	5.5	21.6 21.1	21.4	8.2 8.2	8.2	31.3 31.4	31.4	94.4 98.8	96.6	6.9 7.3	7.1		3.7 4.1	3.9		4.1 4.2	4.2	
				Bottom	10	21.3 21.1	21.2	8.3 8.3	8.3	32.0 32.1	32.1	96.4 91.3	93.9	7.1 6.7	6.9	6.9	5.9 6.1	6.0		5.0 5.0	5.0	
M6	Sunny	Moderate	11:10	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.7	- -	-	3.9	- -	-	7.8
				Middle	2	21.8 21.3	21.6	8.2 8.2	8.2	30.1 30.1	30.1	104.0 102.7	103.4	7.7 7.6	7.7		3.9 3.8	3.9		7.7 7.8	7.8	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 19 January 2017 (Mid-Ebb Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C2: 3.4 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C2: 3.6 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.6 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 7.2 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.6 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 7.2 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.6 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 7.2 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 19 January 2017

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Fine	Moderate	17:34	Surface	1	19.5 19.5	19.5	8.1 8.1	8.1	31.1 31.1	31.1	92.6 92.3	92.5	7.1 7.1	7.1	7.1	2.1 2.1	2.1	2.6	3.0 2.9	3.0	4.1
				Middle	10	19.2 19.2	19.2	8.1 8.1	8.1	31.2 31.2	31.2	91.6 91.8	91.7	7.0 7.1	7.1		2.8 2.9	2.9		4.6 4.5	4.6	
				Bottom	19	19.2 19.2	19.2	8.1 8.1	8.1	31.3 31.3	31.3	91.8 91.8	91.8	7.1 7.1	7.1		2.9 2.9	2.9		4.7 4.7	4.7	
C2	Fine	Moderate	16:19	Surface	1	19.4 19.4	19.4	8.0 8.0	8.0	31.0 31.0	31.0	89.6 89.4	89.5	6.9 6.9	6.9	7.0	2.7 2.8	2.8	2.8	5.4 5.6	5.5	5.5
				Middle	18	19.2 19.2	19.2	8.1 8.1	8.1	31.2 31.2	31.2	90.5 90.7	90.6	6.9 7.0	7.0		2.9 2.8	2.9		5.3 5.4	5.4	
				Bottom	35	19.2 19.2	19.2	8.1 8.1	8.1	31.2 31.2	31.2	91.9 92.3	92.1	7.1 7.1	7.1	7.1	2.8 2.8	2.8		5.4 5.5	5.5	
G1	Fine	Moderate	16:53	Surface	1	20.2 20.2	20.2	8.1 8.1	8.1	31.0 31.0	31.0	95.2 95.4	95.3	7.2 7.2	7.2	7.2	2.0 1.9	2.0	2.3	4.2 4.3	4.3	4.8
				Middle	4	19.3 19.3	19.3	8.1 8.1	8.1	31.2 31.2	31.2	92.7 92.6	92.7	7.1 7.1	7.1		2.2 2.2	2.2		4.7 4.6	4.7	
				Bottom	7	19.2 19.2	19.2	8.1 8.1	8.1	31.2 31.2	31.2	90.8 90.2	90.5	7.0 6.9	7.0	7.0	2.7 2.7	2.7		5.4 5.4	5.4	
G2	Fine	Moderate	16:41	Surface	1	19.9 19.9	19.9	8.1 8.1	8.1	31.1 31.1	31.1	94.6 94.6	94.6	7.2 7.2	7.2	7.2	1.9 1.9	1.9	2.2	3.7 3.6	3.7	4.5
				Middle	5	19.6 19.6	19.6	8.1 8.1	8.1	31.1 31.1	31.1	93.9 93.8	93.9	7.2 7.2	7.2		1.9 2.0	2.0		4.4 4.4	4.4	
				Bottom	9	19.1 19.1	19.1	8.1 8.1	8.1	31.2 31.2	31.2	91.8 91.8	91.8	7.1 7.1	7.1	7.1	2.6 2.6	2.6		5.5 5.4	5.5	
G3	Fine	Moderate	17:00	Surface	1	19.9 19.9	19.9	8.1 8.1	8.1	31.1 31.1	31.1	93.5 93.5	93.5	7.1 7.1	7.1	7.1	2.2 2.2	2.2	2.7	4.0 4.0	4.0	5.0
				Middle	4	19.3 19.3	19.3	8.1 8.1	8.1	31.2 31.2	31.2	91.7 91.4	91.6	7.0 7.0	7.0		2.5 2.6	2.6		6.5 6.6	6.6	
				Bottom	7	19.2 19.2	19.2	8.1 8.1	8.1	31.2 31.2	31.2	89.4 88.7	89.1	6.9 6.8	6.9	6.9	3.1 3.2	3.2		4.5 4.4	4.5	
G4	Fine	Moderate	17:12	Surface	1	19.4 19.4	19.4	8.1 8.1	8.1	31.2 31.2	31.2	93.2 93.2	93.2	7.1 7.1	7.1	7.2	2.2 2.2	2.2	2.4	5.3 5.2	5.3	4.2
				Middle	4	19.3 19.3	19.3	8.1 8.1	8.1	31.2 31.2	31.2	93.2 93.3	93.3	7.1 7.2	7.2		2.1 2.2	2.2		4.0 4.1	4.1	
				Bottom	7	19.2 19.2	19.2	8.1 8.1	8.1	31.2 31.2	31.2	91.6 91.2	91.4	7.0 7.0	7.0	7.0	2.9 2.9	2.9		3.1 3.0	3.1	
M1	Fine	Moderate	16:47	Surface	1	20.2 20.2	20.2	8.1 8.1	8.1	31.0 31.0	31.0	96.1 96.2	96.2	7.3 7.3	7.3	7.3	1.9 1.9	1.9	2.3	4.1 4.2	4.2	5.2
				Middle	3	19.8 19.8	19.8	8.1 8.1	8.1	31.1 31.1	31.1	94.8 94.8	94.8	7.2 7.2	7.2		2.1 2.1	2.1		6.6 6.6	6.6	
				Bottom	5	19.3 19.3	19.3	8.1 8.1	8.1	31.2 31.2	31.2	90.3 89.9	90.1	6.9 6.9	6.9	6.9	2.8 2.8	2.8		4.9 4.8	4.9	
M2	Fine	Moderate	16:35	Surface	1	19.5 19.5	19.5	8.1 8.1	8.1	31.2 31.2	31.2	93.6 93.5	93.6	7.2 7.1	7.2	7.2	2.1 2.1	2.1	2.2	5.2 5.1	5.2	4.9
				Middle	5	19.3 19.3	19.3	8.1 8.1	8.1	31.2 31.2	31.2	93.2 93.3	93.3	7.1 7.1	7.1		2.1 2.1	2.1		5.4 5.3	5.4	
				Bottom	9	19.2 19.2	19.2	8.1 8.1	8.1	31.3 31.3	31.3	92.4 92.2	92.3	7.1 7.1	7.1	7.1	2.4 2.5	2.5		3.9 4.0	4.0	
M3	Fine	Moderate	17:06	Surface	1	20.0 20.0	20.0	8.1 8.1	8.1	31.1 31.1	31.1	93.2 93.1	93.2	7.1 7.1	7.1	7.1	2.0 2.0	2.0	2.5	4.5 4.6	4.6	5.5
				Middle	4	19.3 19.3	19.3	8.1 8.1	8.1	31.2 31.2	31.2	90.8 90.8	90.8	7.0 7.0	7.0		2.4 2.4	2.4		6.4 6.3	6.4	
				Bottom	7	19.3 19.3	19.3	8.1 8.1	8.1	31.2 31.2	31.2	87.1 86.7	86.9	6.7 6.7	6.7	6.7	3.2 3.1	3.2		5.4 5.5	5.5	
M4	Fine	Moderate	16:28	Surface	1	19.8 19.7	19.8	8.1 8.1	8.1	31.1 31.1	31.1	96.4 96.1	96.3	7.3 7.3	7.3	7.3	1.9 1.9	1.9	2.6	3.1 3.2	3.2	4.5
				Middle	4	19.1 19.1	19.1	8.1 8.1	8.1	31.4 31.4	31.4	93.1 93.0	93.1	7.2 7.1	7.2		2.8 2.8	2.8		5.3 5.4	5.4	
				Bottom	7	19.1 19.1	19.1	8.1 8.1	8.1	31.5 31.5	31.5	92.8 92.8	92.8	7.1 7.1	7.1	7.1	3.1 3.1	3.1		4.9 4.8	4.9	
M5	Fine	Moderate	17:25	Surface	1	19.7 19.7	19.7	8.1 8.1	8.1	31.1 31.1	31.1	94.0 93.9	94.0	7.2 7.2	7.2	7.2	1.9 1.9	1.9	2.4	3.7 3.5	3.6	3.9
				Middle	5.5	19.2 19.2	19.2	8.1 8.1	8.1	31.2 31.2	31.2	92.5 92.6	92.6	7.1 7.1	7.1		2.0 2.1	2.1		4.1 4.0	4.1	
				Bottom	10	19.1 19.1	19.1	8.1 8.1	8.1	31.3 31.3	31.3	92.3 92.3	92.3	7.1 7.1	7.1	7.1	3.2 2.9	3.1		4.0 4.1	4.1	
M6	Fine	Moderate	17:20	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.2	- -	-	2.1	- -	-	4.9
				Middle	3	19.4 19.4	19.4	8.1 8.1	8.1	31.2 31.2	31.2	93.8 93.7	93.8	7.2 7.2	7.2		2.0 2.1	2.1		4.8 4.9	4.9	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 19 January 2017 (Mid-Flood Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C1: 4.7 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C1: 5.1 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 6.2 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 6.8 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 6.2 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 6.8 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 7.4 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 8.1 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 19 January 2017

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Fine	Moderate	12:22	Surface	1	19.7 19.6	19.7	8.1 8.1	8.1	31.1 31.1	31.1	92.1 92.0	92.1	7.0 7.0	7.0	7.1	2.0 2.0	2.0	2.6	5.1 5.2	5.2	5.4
				Middle	10	19.2 19.2	19.2	8.1 8.2	8.2	31.2 31.2	31.2	92.9 93.6	93.3	7.1 7.2	7.2		2.0 2.0	2.0		4.7 4.7	4.7	
				Bottom	19	19.1 19.1	19.1	8.2 8.2	8.2	31.3 31.3	31.3	94.2 94.7	94.5	7.2 7.3	7.3	7.3	3.9 3.9	3.9		6.2 6.1	6.2	
C2	Fine	Moderate	11:10	Surface	1	19.4 19.3	19.4	8.1 8.1	8.1	31.1 31.1	31.1	91.4 91.5	91.5	7.0 7.0	7.0	7.1	2.0 2.0	2.0	2.5	3.5 3.5	3.5	5.3
				Middle	18	19.2 19.2	19.2	8.1 8.1	8.1	31.2 31.2	31.2	91.9 92.1	92.0	7.1 7.1	7.1		2.2 2.2	2.2		7.7 7.8	7.8	
				Bottom	35	19.2 19.1	19.2	8.1 8.1	8.1	31.3 31.3	31.3	91.6 91.6	91.6	7.0 7.0	7.0	7.0	3.7 3.1	3.4		4.5 4.4	4.5	
G1	Fine	Moderate	11:43	Surface	1	19.8 19.8	19.8	8.1 8.1	8.1	31.1 31.1	31.1	90.9 90.8	90.9	6.9 6.9	6.9	6.9	2.0 2.0	2.0	2.5	4.4 4.5	4.5	4.2
				Middle	4	19.3 19.3	19.3	8.1 8.1	8.1	31.2 31.2	31.2	89.1 88.8	89.0	6.8 6.8	6.8		2.5 2.6	2.6		5.4 5.4	5.4	
				Bottom	7	19.2 19.2	19.2	8.1 8.1	8.1	31.2 31.2	31.2	87.9 87.6	87.8	6.7 6.7	6.7	6.7	2.8 2.9	2.9		2.8 2.7	2.8	
G2	Fine	Moderate	11:29	Surface	1	19.6 19.6	19.6	8.1 8.1	8.1	31.1 31.1	31.1	91.5 91.5	91.5	7.0 7.0	7.0	7.0	2.1 2.2	2.2	2.2	3.4 3.4	3.4	3.3
				Middle	5	19.3 19.3	19.3	8.1 8.1	8.1	31.2 31.2	31.2	91.3 91.5	91.4	7.0 7.0	7.0		2.2 2.2	2.2		3.9 3.9	3.9	
				Bottom	9	19.3 19.3	19.3	8.1 8.1	8.1	31.2 31.2	31.2	91.5 91.5	91.5	7.0 7.0	7.0	7.0	2.2 2.2	2.2		2.7 2.6	2.7	
G3	Fine	Moderate	11:49	Surface	1	19.5 19.5	19.5	8.1 8.1	8.1	31.2 31.2	31.2	92.1 92.2	92.2	7.0 7.1	7.1	7.1	2.0 2.0	2.0	2.4	3.1 3.0	3.1	4.8
				Middle	4	19.2 19.2	19.2	8.1 8.1	8.1	31.2 31.2	31.2	92.5 92.6	92.6	7.1 7.1	7.1		2.1 2.1	2.1		5.6 5.7	5.7	
				Bottom	7	19.1 19.1	19.1	8.1 8.1	8.1	31.2 31.2	31.2	90.9 90.6	90.8	7.0 7.0	7.0	7.0	3.1 3.0	3.1		5.7 5.6	5.7	
G4	Fine	Moderate	12:02	Surface	1	19.6 19.6	19.6	8.1 8.1	8.1	31.1 31.1	31.1	91.2 91.1	91.2	7.0 7.0	7.0	7.0	2.0 2.0	2.0	2.2	5.3 5.2	5.3	4.6
				Middle	4	19.3 19.3	19.3	8.1 8.1	8.1	31.1 31.1	31.1	90.4 90.4	90.4	6.9 6.9	6.9		2.2 2.2	2.2		4.9 4.9	4.9	
				Bottom	7	19.3 19.3	19.3	8.1 8.1	8.1	31.1 31.1	31.1	90.3 90.2	90.3	6.9 6.9	6.9	6.9	2.2 2.3	2.3		3.5 3.4	3.5	
M1	Fine	Moderate	11:36	Surface	1	19.5 19.6	19.6	8.1 8.1	8.1	31.1 31.1	31.1	92.2 92.3	92.3	7.0 7.1	7.1	7.1	2.0 2.0	2.0	2.4	4.8 4.8	4.8	3.9
				Middle	3	19.3 19.3	19.3	8.1 8.1	8.1	31.2 31.2	31.2	91.1 91.0	91.1	7.0 7.0	7.0		2.5 2.5	2.5		4.3 4.2	4.3	
				Bottom	5	19.2 19.2	19.2	8.1 8.1	8.1	31.2 31.2	31.2	89.3 89.0	89.2	6.9 6.8	6.9	6.9	2.7 2.8	2.8		2.7 2.6	2.7	
M2	Fine	Moderate	11:23	Surface	1	19.5 19.5	19.5	8.1 8.1	8.1	31.1 31.1	31.1	90.6 90.5	90.6	6.9 6.9	6.9	6.9	2.5 2.5	2.5	2.7	4.4 4.3	4.4	4.5
				Middle	5	19.3 19.3	19.3	8.1 8.1	8.1	31.2 31.2	31.2	90.2 90.3	90.3	6.9 6.9	6.9		2.6 2.5	2.6		3.9 3.8	3.9	
				Bottom	9	19.3 19.2	19.3	8.1 8.1	8.1	31.2 31.2	31.2	89.0 88.6	88.8	6.8 6.8	6.8	6.8	2.9 2.9	2.9		5.3 5.2	5.3	
M3	Fine	Moderate	11:55	Surface	1	19.4 19.4	19.4	8.1 8.1	8.1	31.2 31.2	31.2	92.8 92.6	92.7	7.1 7.1	7.1	7.1	2.0 2.0	2.0	2.4	6.0 6.2	6.1	5.7
				Middle	4	19.3 19.3	19.3	8.1 8.1	8.1	31.2 31.2	31.2	92.4 92.4	92.4	7.1 7.1	7.1		2.0 2.0	2.0		4.4 4.4	4.4	
				Bottom	7	19.3 19.3	19.3	8.1 8.1	8.1	31.2 31.2	31.2	92.4 92.5	92.5	7.1 7.1	7.1	7.1	3.2 3.2	3.2		6.7 6.7	6.7	
M4	Fine	Moderate	11:17	Surface	1	19.5 19.5	19.5	8.1 8.1	8.1	31.1 31.1	31.1	92.0 92.1	92.1	7.0 7.0	7.0	7.1	1.9 1.9	1.9	2.3	4.6 4.7	4.7	4.4
				Middle	4	19.2 19.2	19.2	8.1 8.1	8.1	31.2 31.2	31.2	92.6 92.7	92.7	7.1 7.1	7.1		1.9 2.0	2.0		4.0 3.9	4.0	
				Bottom	7	19.1 19.1	19.1	8.1 8.1	8.1	31.2 31.2	31.2	91.8 91.7	91.8	7.1 7.1	7.1	7.1	3.0 3.0	3.0		4.5 4.4	4.5	
M5	Fine	Moderate	12:14	Surface	1	19.6 19.6	19.6	8.1 8.1	8.1	31.1 31.1	31.1	91.5 91.5	91.5	7.0 7.0	7.0	7.1	2.1 2.1	2.1	2.5	2.7 2.6	2.7	3.2
				Middle	5.5	19.2 19.2	19.2	8.2 8.2	8.2	31.2 31.2	31.2	93.5 93.7	93.6	7.2 7.2	7.2		2.0 2.0	2.0		3.7 3.6	3.7	
				Bottom	10	19.1 19.1	19.1	8.2 8.2	8.2	31.5 31.5	31.5	94.3 94.2	94.3	7.2 7.2	7.2	7.2	3.4 3.4	3.4		3.2 3.3	3.3	
M6	Fine	Moderate	12:09	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.0	- -	-	2.1	- -	-	4.7
				Middle	3.1	19.4 19.3	19.4	8.1 8.1	8.1	31.1 31.1	31.1	90.8 90.8	90.8	7.0 7.0	7.0		2.1 2.1	2.1		4.7 4.6	4.7	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 21 January 2017 (Mid-Ebb Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C2: 3.1 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C2: 3.4 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 3.6 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 3.9 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 3.6 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 3.9 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 4.3 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 4.7 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 21 January 2017

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Fine	Moderate	07:21	Surface	1	19.7 19.7	19.7	7.0 7.0	7.0	30.9 30.9	30.9	90.5 90.4	90.5	6.9 6.9	6.9	6.9	2.5 2.6	2.6	1.9	2.5 2.6	2.6	2.3
				Middle	10	19.7 19.7	19.7	6.9 6.9	6.9	31.2 31.2	31.2	89.6 89.4	89.5	6.8 6.8	6.8		1.3 1.1	1.2		2.1 2.1	2.1	
				Bottom	19	19.7 19.7	19.7	6.8 6.8	6.8	31.3 31.3	31.3	89.4 89.4	89.4	6.8 6.8	6.8	6.8	2.1 1.7	1.9		2.0 2.1	2.1	
C2	Fine	Moderate	06:05	Surface	1	19.6 19.7	19.7	7.0 7.0	7.0	31.1 31.0	31.1	87.5 87.2	87.4	6.7 6.6	6.7	6.7	1.4 1.5	1.5	2.1	3.0 2.9	3.0	2.8
				Middle	18	19.8 19.8	19.8	6.6 6.6	6.6	31.1 31.1	31.1	87.2 87.3	87.3	6.6 6.6	6.6		2.2 2.2	2.2		1.7 1.8	1.8	
				Bottom	35	19.8 19.8	19.8	6.8 6.8	6.8	31.2 31.2	31.2	87.4 87.5	87.5	6.6 6.6	6.6	6.6	2.6 2.6	2.6		3.6 3.6	3.6	
G1	Fine	Moderate	06:40	Surface	1	19.4 19.6	19.5	7.0 7.0	7.0	31.4 31.2	31.3	88.5 88.5	88.5	6.8 6.7	6.8	6.8	1.3 1.1	1.2	1.7	1.8 1.7	1.8	2.8
				Middle	4	19.7 19.7	19.7	7.0 7.0	7.0	31.2 31.3	31.3	88.6 88.5	88.6	6.7 6.7	6.7		1.6 1.5	1.6		4.9 4.9	4.9	
				Bottom	7	19.7 19.7	19.7	7.0 7.0	7.0	31.3 31.3	31.3	88.5 88.5	88.5	6.7 6.7	6.7	6.7	2.2 2.5	2.4		1.8 1.8	1.8	
G2	Fine	Moderate	06:28	Surface	1	19.3 19.3	19.3	6.9 6.9	6.9	31.2 31.2	31.2	90.3 90.1	90.2	6.9 6.9	6.9	6.9	0.5 0.4	0.5	1.5	1.9 1.9	1.9	1.8
				Middle	5	19.6 19.6	19.6	6.8 6.8	6.8	31.1 31.1	31.1	89.5 89.6	89.6	6.8 6.8	6.8		1.4 1.7	1.6		1.3 1.3	1.3	
				Bottom	9	19.7 19.7	19.7	6.7 6.7	6.7	31.2 31.2	31.2	89.2 89.3	89.3	6.8 6.8	6.8	6.8	2.3 2.4	2.4		2.2 2.2	2.2	
G3	Fine	Moderate	06:47	Surface	1	19.6 19.6	19.6	7.0 7.0	7.0	31.0 31.0	31.0	89.5 89.4	89.5	6.8 6.8	6.8	6.8	0.6 0.6	0.6	1.3	3.0 3.0	3.0	2.1
				Middle	4	19.7 19.7	19.7	7.0 7.0	7.0	31.1 31.2	31.2	89.8 89.7	89.8	6.8 6.8	6.8		1.5 1.4	1.5		1.7 1.8	1.8	
				Bottom	7	19.7 19.8	19.8	7.0 7.0	7.0	31.4 31.3	31.4	89.3 89.1	89.2	6.8 6.8	6.8	6.8	2.0 1.8	1.9		1.4 1.4	1.4	
G4	Fine	Moderate	07:00	Surface	1	19.6 19.6	19.6	7.1 7.1	7.1	30.8 30.9	30.9	89.1 88.9	89.0	6.8 6.8	6.8	6.8	1.2 1.2	1.2	1.1	1.3 1.2	1.3	1.3
				Middle	4	19.8 19.8	19.8	7.0 7.1	7.1	31.3 31.3	31.3	88.3 88.1	88.2	6.7 6.7	6.7		1.0 1.2	1.1		1.2 1.2	1.2	
				Bottom	7	19.8 19.8	19.8	7.1 7.1	7.1	31.4 31.4	31.4	88.2 88.4	88.3	6.7 6.7	6.7	6.7	0.9 1.0	1.0		1.4 1.3	1.4	
M1	Fine	Moderate	06:34	Surface	1	19.4 19.5	19.5	6.9 6.9	6.9	31.4 31.2	31.3	90.3 90.1	90.2	6.9 6.9	6.9	6.9	0.9 1.1	1.0	1.4	1.4 1.3	1.4	2.3
				Middle	3	19.6 19.7	19.7	6.9 6.9	6.9	31.2 31.1	31.2	89.9 89.8	89.9	6.9 6.8	6.9		1.3 1.3	1.3		1.5 1.6	1.6	
				Bottom	5	19.7 19.7	19.7	6.9 6.9	6.9	31.2 31.3	31.3	89.3 89.1	89.2	6.8 6.8	6.8	6.8	2.0 1.9	2.0		3.7 3.8	3.8	
M2	Fine	Moderate	06:22	Surface	1	19.6 19.6	19.6	6.9 6.9	6.9	30.8 30.8	30.8	88.8 88.6	88.7	6.8 6.8	6.8	6.8	0.8 0.9	0.9	1.7	2.7 2.7	2.7	2.9
				Middle	5	19.7 19.7	19.7	6.9 6.9	6.9	30.9 30.9	30.9	88.6 88.7	88.7	6.8 6.8	6.8		1.6 1.7	1.7		4.4 4.2	4.3	
				Bottom	9	19.7 19.7	19.7	6.8 6.8	6.8	31.0 31.0	31.0	88.9 88.9	88.9	6.8 6.8	6.8	6.8	2.6 2.4	2.5		1.7 1.7	1.7	
M3	Fine	Moderate	06:53	Surface	1	19.5 19.6	19.6	7.0 7.0	7.0	31.3 31.2	31.3	89.1 89.2	89.2	6.8 6.8	6.8	6.8	0.9 1.0	1.0	0.8	1.3 1.2	1.3	2.3
				Middle	4	19.7 19.7	19.7	7.0 7.0	7.0	31.5 31.5	31.5	88.6 88.5	88.6	6.7 6.7	6.7		0.8 0.7	0.8		3.1 3.0	3.1	
				Bottom	7	19.8 19.8	19.8	7.0 7.0	7.0	31.7 31.7	31.7	86.0 85.2	85.6	6.5 6.5	6.5	6.5	0.6 0.6	0.6		2.6 2.5	2.6	
M4	Fine	Moderate	06:14	Surface	1	19.5 19.6	19.6	6.7 6.8	6.8	31.1 31.1	31.1	88.2 88.1	88.2	6.7 6.7	6.7	6.7	0.6 0.5	0.6	1.1	1.6 1.5	1.6	1.8
				Middle	4	19.7 19.7	19.7	6.8 6.8	6.8	31.0 31.0	31.0	87.7 87.6	87.7	6.7 6.7	6.7		1.1 1.2	1.2		1.9 1.9	1.9	
				Bottom	7	19.8 19.8	19.8	6.8 6.8	6.8	31.1 31.1	31.1	87.5 87.5	87.5	6.7 6.7	6.7	6.7	1.5 1.6	1.6		2.0 1.9	2.0	
M5	Fine	Moderate	07:13	Surface	1	19.4 19.4	19.4	7.1 7.1	7.1	31.0 31.1	31.1	90.5 90.3	90.4	6.9 6.9	6.9	6.9	1.1 1.1	1.1	1.6	3.0 3.0	3.0	2.2
				Middle	5.5	19.6 19.6	19.6	7.0 7.1	7.1	31.1 31.1	31.1	89.9 90.0	90.0	6.9 6.9	6.9		1.3 1.2	1.3		1.7 1.6	1.7	
				Bottom	10	19.7 19.7	19.7	7.0 7.0	7.0	31.1 31.1	31.1	89.3 89.4	89.4	6.8 6.8	6.8	6.8	2.5 2.3	2.4		1.8 1.8	1.8	
M6	Fine	Moderate	07:07	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.6	- -	-	2.7	- -	-	1.7
				Middle	3.2	19.6 19.6	19.6	7.0 7.0	7.0	31.3 31.4	31.4	86.4 86.2	86.3	6.6 6.6	6.6		2.7 2.7	2.7		1.7 1.7	1.7	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 21 January 2017 (Mid-Flood Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C1: 2.6 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C1: 2.9 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 6.6 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.2 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 6.6 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.2 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 2.5 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 2.7 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 21 January 2017

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Fine	Moderate	13:10	Surface	1	19.6 19.6	19.6	6.9 6.9	6.9	31.0 31.0	31.0	96.1 96.0	96.1	7.3 7.3	7.3	7.3	1.6 1.3	1.5	2.0	5.5 5.5	5.5	3.1
				Middle	10	19.8 19.8	19.8	6.7 6.7	6.7	31.0 31.0	31.0	94.1 93.9	94.0	7.2 7.1	7.2		2.3 2.5	2.4		1.7 1.7	1.7	
				Bottom	19	19.8 19.8	19.8	6.6 6.6	6.6	31.1 31.1	31.1	92.9 92.4	92.7	7.1 7.0	7.1	7.1	2.4 2.0	2.2		2.1 2.1	2.1	
C2	Fine	Moderate	11:49	Surface	1	20.2 20.2	20.2	6.7 6.7	6.7	30.5 30.5	30.5	87.9 87.9	87.9	6.7 6.7	6.7	6.7	0.5 0.6	0.6	0.9	1.7 1.7	1.7	1.6
				Middle	18	20.0 20.0	20.0	6.5 6.6	6.6	30.7 30.7	30.7	87.8 87.7	87.8	6.7 6.7	6.7		0.8 0.9	0.9		1.7 1.7	1.7	
				Bottom	35	19.9 19.9	19.9	6.5 6.6	6.6	30.8 30.8	30.8	87.5 87.5	87.5	6.7 6.7	6.7	6.7	1.1 1.2	1.2		1.3 1.3	1.3	
G1	Fine	Moderate	12:26	Surface	1	20.3 20.2	20.3	7.1 7.0	7.1	30.8 30.8	30.8	91.8 91.7	91.8	6.9 6.9	6.9	7.0	0.8 0.9	0.9	1.4	1.3 1.4	1.4	1.3
				Middle	4	20.0 20.0	20.0	6.9 7.0	7.0	31.0 31.0	31.0	91.6 91.8	91.7	6.9 7.0	7.0		1.4 1.3	1.4		1.4 1.5	1.5	
				Bottom	7	19.9 19.8	19.9	6.9 6.9	6.9	31.1 31.2	31.2	91.8 91.4	91.6	7.0 6.9	7.0	7.0	1.8 1.7	1.8		0.9 1.0	1.0	
G2	Fine	Moderate	12:11	Surface	1	19.9 19.9	19.9	7.0 7.0	7.0	31.3 31.3	31.3	91.6 91.3	91.5	6.9 6.9	6.9	6.9	0.5 0.5	0.5	1.0	2.0 2.0	2.0	1.2
				Middle	5	19.9 19.9	19.9	6.9 6.9	6.9	31.2 31.2	31.2	91.1 91.1	91.1	6.9 6.9	6.9		0.8 0.9	0.9		1.0 1.0	1.0	
				Bottom	9	19.7 19.7	19.7	6.8 6.8	6.8	31.5 31.6	31.6	90.3 90.2	90.3	6.9 6.9	6.9	6.9	1.4 1.7	1.6		<0.5 <0.5	<0.5	
G3	Fine	Moderate	12:33	Surface	1	19.7 19.8	19.8	7.1 7.1	7.1	31.1 31.0	31.1	91.6 91.5	91.6	7.0 7.0	7.0	7.0	1.3 1.4	1.4	1.4	0.8 0.8	0.8	1.3
				Middle	4	19.9 19.9	19.9	7.0 7.0	7.0	31.0 31.0	31.0	90.5 90.3	90.4	6.9 6.9	6.9		1.6 1.6	1.6		1.9 1.9	1.9	
				Bottom	7	19.8 19.8	19.8	6.9 6.9	6.9	31.1 31.2	31.2	90.2 89.9	90.1	6.9 6.8	6.9	6.9	1.1 1.2	1.2		1.1 1.0	1.1	
G4	Fine	Moderate	12:48	Surface	1	19.9 20.0	20.0	7.0 7.0	7.0	30.6 30.6	30.6	91.7 91.5	91.6	7.0 7.0	7.0	7.0	0.8 0.8	0.8	1.5	2.2 2.1	2.2	1.5
				Middle	4	19.9 19.9	19.9	6.9 6.8	6.9	30.7 30.7	30.7	92.0 91.8	91.9	7.0 7.0	7.0		1.1 1.3	1.2		1.9 1.9	1.9	
				Bottom	7	19.8 19.8	19.8	6.7 6.7	6.7	31.1 31.1	31.1	90.3 89.6	90.0	6.9 6.8	6.9	6.9	2.6 2.3	2.5		0.5 0.5	0.5	
M1	Fine	Moderate	12:19	Surface	1	20.2 20.1	20.2	7.0 7.0	7.0	31.1 31.0	31.1	90.8 90.5	90.7	6.9 6.8	6.9	6.9	0.7 0.8	0.8	1.3	1.2 1.2	1.2	1.5
				Middle	3	20.0 19.9	20.0	6.9 6.9	6.9	31.1 31.2	31.2	90.1 89.7	89.9	6.8 6.8	6.8		1.6 2.0	1.8		1.4 1.4	1.4	
				Bottom	5	19.9 19.9	19.9	6.9 6.9	6.9	31.4 31.4	31.4	89.5 89.3	89.4	6.8 6.8	6.8	6.8	1.3 1.5	1.4		2.0 2.0	2.0	
M2	Fine	Moderate	12:04	Surface	1	19.9 19.9	19.9	7.0 7.0	7.0	30.5 30.5	30.5	90.4 90.4	90.4	6.9 6.9	6.9	6.9	0.4 0.4	0.4	0.6	<0.5 <0.5	<0.5	1.6
				Middle	5	19.8 19.8	19.8	6.9 6.9	6.9	30.7 30.7	30.7	89.9 90.1	90.0	6.9 6.9	6.9		0.5 0.5	0.5		1.9 1.9	1.9	
				Bottom	9	19.8 19.8	19.8	6.8 6.8	6.8	30.8 30.8	30.8	88.9 88.5	88.7	6.8 6.7	6.8	6.8	0.8 0.9	0.9		2.4 2.4	2.4	
M3	Fine	Moderate	12:41	Surface	1	20.1 20.0	20.1	6.8 6.8	6.8	30.7 30.7	30.7	91.5 91.5	91.5	6.9 6.9	6.9	6.9	0.6 0.7	0.7	1.0	2.0 2.0	2.0	1.8
				Middle	4	20.0 20.0	20.0	6.7 6.7	6.7	30.9 30.9	30.9	90.2 90.1	90.2	6.8 6.8	6.8		0.9 0.8	0.9		1.9 1.9	1.9	
				Bottom	7	19.9 19.9	19.9	6.6 6.6	6.6	31.1 31.1	31.1	86.8 86.5	86.7	6.6 6.6	6.6	6.6	1.5 1.5	1.5		1.6 1.6	1.6	
M4	Fine	Moderate	11:57	Surface	1	19.9 19.9	19.9	6.9 7.0	7.0	30.7 30.7	30.7	91.0 90.8	90.9	6.9 6.9	6.9	6.9	0.6 0.7	0.7	1.0	1.2 1.1	1.2	0.8
				Middle	4	19.8 19.8	19.8	6.8 6.8	6.8	30.8 30.9	30.9	90.1 90.0	90.1	6.9 6.9	6.9		0.9 0.9	0.9		0.6 0.5	0.6	
				Bottom	7	19.8 19.8	19.8	6.7 6.7	6.7	31.1 31.1	31.1	88.2 88.0	88.1	6.7 6.7	6.7	6.7	1.4 1.5	1.5		0.6 0.7	0.7	
M5	Fine	Moderate	13:00	Surface	1	19.4 19.5	19.5	6.8 6.8	6.8	31.8 31.2	31.5	92.9 92.4	92.7	7.1 7.1	7.1	7.1	1.4 1.5	1.5	1.8	5.4 5.5	5.5	2.7
				Middle	5.5	19.7 19.7	19.7	6.7 6.7	6.7	31.0 31.0	31.0	92.1 91.9	92.0	7.0 7.0	7.0		2.1 2.4	2.3		0.8 0.8	0.8	
				Bottom	10	19.7 19.7	19.7	6.6 6.7	6.7	31.1 31.1	31.1	91.0 90.9	91.0	6.9 6.9	6.9	6.9	1.6 1.7	1.7		1.9 1.9	1.9	
M6	Fine	Moderate	12:55	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.0	- -	-	1.7	- -	-	3.4
				Middle	3.6	19.4 19.6	19.5	6.9 6.9	6.9	31.2 31.1	31.2	91.1 90.3	90.7	7.0 6.9	7.0		1.8 1.5	1.7		3.4 3.4	3.4	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

The reporting limit for laboratory analysis of suspended solids is 2.5 mg/L. For the results below the reporting limit, the SS level will be taken as 2.5 mg/L.

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 23 January 2017 (Mid-Ebb Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C2: 6.0 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C2: 6.5 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.1 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.6 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.1 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.6 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.0 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 6.5 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 23 January 2017

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Cloudy	Moderate	10:09	Surface	1	19.7 19.7	19.7	8.1 8.1	8.1	31.3 31.4	31.4	93.9 94.2	94.1	7.1 7.2	7.2	7.2	3.5 3.5	3.5	3.9	3.4 3.3	3.4	3.4
				Middle	10	19.5 19.5	19.5	8.1 8.1	8.1	31.3 31.3	31.3	92.9 93.2	93.1	7.1 7.1	7.1		3.9 3.9	3.9		4.2 4.2	4.2	
				Bottom	19	19.3 19.5	19.4	8.1 8.1	8.1	31.5 31.5	31.5	92.2 92.6	92.4	7.1 7.1	7.1	7.1	4.1 4.3	4.2		2.5 2.6	2.6	
C2	Cloudy	Moderate	07:45	Surface	1	19.7 19.7	19.7	8.1 8.1	8.1	31.3 31.2	31.3	92.3 92.6	92.5	7.0 7.0	7.0	7.1	3.6 3.8	3.7	4.4	5.0 5.1	5.1	4.2
				Middle	18	19.6 19.6	19.6	8.1 8.1	8.1	31.4 31.5	31.5	92.6 92.7	92.7	7.1 7.1	7.1		4.4 4.3	4.4		2.4 2.4	2.4	
				Bottom	35	19.4 19.4	19.4	8.1 8.1	8.1	32.1 32.1	32.1	92.9 93.0	93.0	7.1 7.1	7.1	7.1	4.9 5.1	5.0		4.9 5.0	5.0	
G1	Cloudy	Moderate	08:44	Surface	1	20.2 20.1	20.2	8.1 8.1	8.1	31.0 31.0	31.0	95.0 94.6	94.8	7.2 7.2	7.2	7.2	3.0 3.0	3.0	3.4	4.1 4.2	4.2	4.0
				Middle	4	19.5 19.4	19.5	8.1 8.2	8.2	31.5 31.5	31.5	93.4 93.2	93.3	7.1 7.1	7.1		3.2 3.3	3.3		5.0 5.1	5.1	
				Bottom	7	19.3 19.3	19.3	8.1 8.1	8.1	31.7 31.7	31.7	92.8 92.4	92.6	7.1 7.1	7.1	7.1	3.7 3.9	3.8		2.7 2.7	2.7	
G2	Cloudy	Moderate	08:20	Surface	1	20.0 20.1	20.1	8.1 8.1	8.1	31.6 31.5	31.6	94.7 95.0	94.9	7.2 7.2	7.2	7.2	3.1 2.9	3.0	3.3	3.6 3.5	3.6	2.9
				Middle	5	19.9 19.7	19.8	8.1 8.1	8.1	31.2 31.3	31.3	94.2 93.8	94.0	7.1 7.1	7.1		3.2 3.2	3.2		2.6 2.7	2.7	
				Bottom	9	19.6 19.5	19.6	8.1 8.1	8.1	31.2 31.2	31.2	92.9 92.5	92.7	7.1 7.1	7.1	7.1	3.7 3.6	3.7		2.3 2.3	2.3	
G3	Cloudy	Moderate	08:58	Surface	1	20.0 20.0	20.0	8.1 8.1	8.1	31.8 31.8	31.8	95.6 95.1	95.4	7.2 7.2	7.2	7.2	2.9 2.8	2.9	3.5	2.9 3.0	3.0	4.7
				Middle	4	19.7 19.7	19.7	8.1 8.1	8.1	31.5 31.5	31.5	94.2 94.3	94.3	7.2 7.2	7.2		3.3 3.5	3.4		7.8 7.9	7.9	
				Bottom	7	19.5 19.4	19.5	8.2 8.2	8.2	31.4 31.4	31.4	92.7 92.7	92.7	7.1 7.1	7.1	7.1	4.2 4.3	4.3		3.1 3.0	3.1	
G4	Cloudy	Moderate	09:31	Surface	1	19.7 19.6	19.7	8.0 8.0	8.0	31.7 31.7	31.7	95.1 94.7	94.9	7.2 7.2	7.2	7.2	3.0 2.9	3.0	3.4	3.0 2.9	3.0	2.9
				Middle	4	19.5 19.4	19.5	8.0 8.1	8.1	31.7 31.8	31.8	94.5 94.1	94.3	7.2 7.2	7.2		3.3 3.2	3.3		2.2 2.1	2.2	
				Bottom	7	19.5 19.3	19.4	8.1 8.1	8.1	31.6 31.7	31.7	93.0 92.4	92.7	7.1 7.1	7.1	7.1	3.8 3.8	3.8		3.5 3.4	3.5	
M1	Cloudy	Moderate	08:32	Surface	1	20.2 20.1	20.2	8.1 8.1	8.1	32.1 32.1	32.1	94.8 94.8	94.8	7.1 7.1	7.1	7.1	3.1 2.9	3.0	3.2	5.1 5.2	5.2	3.7
				Middle	3	20.0 20.0	20.0	8.1 8.1	8.1	31.8 31.6	31.7	93.8 94.0	93.9	7.1 7.1	7.1		3.2 3.3	3.3		3.3 3.2	3.3	
				Bottom	5	19.7 19.8	19.8	8.2 8.2	8.2	31.4 31.4	31.4	92.8 92.8	92.8	7.1 7.0	7.1	7.1	3.3 3.3	3.3		2.6 2.5	2.6	
M2	Cloudy	Moderate	08:09	Surface	1	19.8 19.7	19.8	8.1 8.0	8.1	31.2 31.3	31.3	95.0 94.7	94.9	7.2 7.2	7.2	7.2	3.3 3.3	3.3	3.4	4.4 4.5	4.5	3.5
				Middle	5	19.6 19.6	19.6	8.1 8.1	8.1	31.6 31.5	31.6	93.6 93.3	93.5	7.1 7.1	7.1		3.4 3.4	3.4		4.2 4.3	4.3	
				Bottom	9	19.3 19.4	19.4	8.1 8.1	8.1	31.9 31.9	31.9	93.7 93.5	93.6	7.2 7.1	7.2	7.2	3.4 3.4	3.4		1.7 1.7	1.7	
M3	Cloudy	Moderate	09:17	Surface	1	20.2 20.2	20.2	8.1 8.1	8.1	32.0 32.1	32.1	95.7 95.6	95.7	7.2 7.2	7.2	7.2	3.2 3.3	3.3	3.8	2.2 2.3	2.3	3.6
				Middle	4	19.8 19.7	19.8	8.1 8.1	8.1	31.3 31.3	31.3	93.3 93.3	93.3	7.1 7.1	7.1		3.3 3.4	3.4		3.8 3.7	3.8	
				Bottom	7	19.6 19.6	19.6	8.1 8.1	8.1	31.4 31.4	31.4	92.7 92.5	92.6	7.1 7.0	7.1	7.1	4.5 4.6	4.6		4.6 4.7	4.7	
M4	Cloudy	Moderate	07:58	Surface	1	19.8 19.8	19.8	8.1 8.1	8.1	31.6 31.6	31.6	96.9 97.7	97.3	7.3 7.4	7.4	7.4	3.1 2.9	3.0	3.7	5.1 5.0	5.1	5.3
				Middle	4	19.5 19.5	19.5	8.1 8.1	8.1	31.2 31.3	31.3	95.4 95.1	95.3	7.3 7.3	7.3		4.1 3.9	4.0		4.8 4.9	4.9	
				Bottom	7	19.4 19.3	19.4	8.1 8.1	8.1	31.3 31.3	31.3	94.8 94.3	94.6	7.3 7.2	7.3	7.3	4.3 4.1	4.2		5.8 5.7	5.8	
M5	Cloudy	Moderate	09:55	Surface	1	19.9 19.8	19.9	8.1 8.1	8.1	31.8 31.8	31.8	96.0 95.5	95.8	7.3 7.2	7.3	7.3	2.9 2.8	2.9	3.5	3.2 3.2	3.2	3.2
				Middle	5.5	19.7 19.6	19.7	8.1 8.1	8.1	31.2 31.3	31.3	94.5 94.3	94.4	7.2 7.2	7.2		3.4 3.2	3.3		4.2 4.3	4.3	
				Bottom	10	19.4 19.4	19.4	8.1 8.1	8.1	31.6 31.6	31.6	93.7 93.8	93.8	7.2 7.2	7.2	7.2	4.1 4.4	4.3		2.2 2.1	2.2	
M6	Cloudy	Moderate	09:42	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.2	- -	-	3.3	- -	-	2.8
				Middle	3	19.6 19.6	19.6	8.1 8.1	8.1	31.6 31.7	31.7	94.5 94.6	94.6	7.2 7.2	7.2		3.2 3.4	3.3		2.8 2.8	2.8	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 23 January 2017 (Mid-Flood Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C1: 5.8 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C1: 6.2 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 4.9 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 5.3 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 4.9 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 5.3 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 5.9 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 6.4 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 23 January 2017

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Cloudy	Moderate	15:47	Surface	1	19.8 19.9	19.9	8.1 8.1	8.1	31.2 31.3	31.3	92.9 93.5	93.2	7.1 7.1	7.1	7.2	3.5 3.5	3.5	4.0	4.0 4.1	4.1	4.3
				Middle	10	19.6 19.5	19.6	8.1 8.1	8.1	31.4 31.3	31.4	94.4 94.0	94.2	7.2 7.2	7.2		3.6 3.7	3.7		3.9 3.8	3.9	
				Bottom	19	19.4 19.3	19.4	8.1 8.1	8.1	31.5 31.5	31.5	95.2 94.7	95.0	7.3 7.3	7.3	7.3	4.7 4.9	4.8		4.9 4.9	4.9	
C2	Cloudy	Moderate	13:15	Surface	1	19.8 19.8	19.8	8.1 8.1	8.1	31.3 31.2	31.3	92.5 92.7	92.6	7.0 7.0	7.0	7.1	3.1 3.0	3.1	3.6	1.9 1.9	1.9	2.1
				Middle	18	19.5 19.4	19.5	8.1 8.1	8.1	31.3 31.4	31.4	92.3 92.3	92.3	7.0 7.1	7.1		3.3 3.4	3.4		2.3 2.2	2.3	
				Bottom	35	19.4 19.3	19.4	8.1 8.1	8.1	31.8 31.7	31.8	93.3 93.2	93.3	7.1 7.1	7.1	7.1	4.3 4.1	4.2		2.0 2.0	2.0	
G1	Cloudy	Moderate	14:19	Surface	1	19.8 19.9	19.9	8.1 8.1	8.1	31.1 31.1	31.1	94.5 94.4	94.5	7.2 7.2	7.2	7.2	3.2 3.1	3.2	3.4	4.2 4.1	4.2	3.3
				Middle	4	19.6 19.5	19.6	8.1 8.1	8.1	31.3 31.2	31.3	93.5 93.2	93.4	7.1 7.1	7.1		3.3 3.3	3.3		2.0 2.0	2.0	
				Bottom	7	19.4 19.4	19.4	8.1 8.1	8.1	31.5 31.6	31.6	92.2 92.4	92.3	7.0 7.1	7.1	7.1	3.8 3.7	3.8		3.8 3.7	3.8	
G2	Cloudy	Moderate	13:55	Surface	1	19.8 19.7	19.8	8.1 8.1	8.1	31.5 31.5	31.5	93.3 92.9	93.1	7.1 7.1	7.1	7.1	3.3 3.2	3.3	3.4	2.3 2.3	2.3	2.4
				Middle	5	19.6 19.5	19.6	8.1 8.1	8.1	31.3 31.3	31.3	93.1 93.0	93.1	7.1 7.1	7.1		3.4 3.3	3.4		2.3 2.3	2.3	
				Bottom	9	19.4 19.4	19.4	8.1 8.1	8.1	31.2 31.3	31.3	93.5 93.6	93.6	7.2 7.2	7.2	7.2	3.4 3.3	3.4		2.7 2.6	2.7	
G3	Cloudy	Moderate	14:33	Surface	1	19.7 19.6	19.7	8.1 8.1	8.1	31.7 31.7	31.7	94.7 94.6	94.7	7.2 7.2	7.2	7.2	3.2 3.0	3.1	3.7	2.2 2.1	2.2	2.6
				Middle	4	19.4 19.4	19.4	8.1 8.1	8.1	31.5 31.5	31.5	93.2 93.4	93.3	7.1 7.1	7.1		3.5 3.4	3.5		2.4 2.5	2.5	
				Bottom	7	19.4 19.3	19.4	8.2 8.2	8.2	31.4 31.4	31.4	92.5 92.1	92.3	7.1 7.1	7.1	7.1	4.4 4.3	4.4		3.1 3.2	3.2	
G4	Cloudy	Moderate	15:10	Surface	1	19.8 19.8	19.8	8.0 8.0	8.0	31.6 31.6	31.6	93.4 93.1	93.3	7.1 7.1	7.1	7.1	3.0 3.1	3.1	3.3	2.4 2.3	2.4	3.6
				Middle	4	19.6 19.5	19.6	8.0 8.1	8.1	31.7 31.8	31.8	92.5 92.2	92.4	7.0 7.0	7.0		3.4 3.3	3.4		4.4 4.3	4.4	
				Bottom	7	19.5 19.4	19.5	8.1 8.1	8.1	31.6 31.7	31.7	91.6 91.6	91.6	7.0 7.0	7.0	7.0	3.5 3.5	3.5		4.1 4.0	4.1	
M1	Cloudy	Moderate	14:08	Surface	1	19.8 19.8	19.8	8.1 8.1	8.1	32.0 32.0	32.0	94.3 94.2	94.3	7.1 7.1	7.1	7.1	3.2 3.3	3.3	3.5	2.8 2.7	2.8	2.8
				Middle	3	19.5 19.5	19.5	8.1 8.1	8.1	31.7 31.7	31.7	93.1 93.0	93.1	7.1 7.1	7.1		3.5 3.5	3.5		2.9 2.8	2.9	
				Bottom	5	19.3 19.4	19.4	8.1 8.1	8.1	31.5 31.5	31.5	92.0 92.3	92.2	7.0 7.1	7.1	7.1	3.7 3.8	3.8		2.6 2.5	2.6	
M2	Cloudy	Moderate	13:42	Surface	1	19.8 19.9	19.9	8.1 8.1	8.1	31.3 31.4	31.4	94.0 94.4	94.2	7.1 7.2	7.2	7.2	3.2 3.1	3.2	3.6	3.5 3.5	3.5	3.0
				Middle	5	19.6 19.5	19.6	8.1 8.1	8.1	31.6 31.6	31.6	93.0 92.7	92.9	7.1 7.1	7.1		3.4 3.5	3.5		2.1 2.1	2.1	
				Bottom	9	19.4 19.3	19.4	8.1 8.1	8.1	31.9 31.8	31.9	92.4 91.9	92.2	7.0 7.0	7.0	7.0	4.1 3.9	4.0		3.2 3.3	3.3	
M3	Cloudy	Moderate	14:55	Surface	1	19.8 19.7	19.8	8.1 8.1	8.1	32.1 32.2	32.2	95.2 94.8	95.0	7.2 7.2	7.2	7.2	3.2 3.2	3.2	3.4	4.5 4.6	4.6	3.8
				Middle	4	19.6 19.5	19.6	8.1 8.1	8.1	31.4 31.5	31.5	93.7 93.4	93.6	7.1 7.1	7.1		3.1 3.1	3.1		3.7 3.8	3.8	
				Bottom	7	19.4 19.5	19.5	8.1 8.1	8.1	31.3 31.3	31.3	92.7 92.9	92.8	7.1 7.1	7.1	7.1	4.1 3.8	4.0		2.9 2.8	2.9	
M4	Cloudy	Moderate	13:29	Surface	1	19.7 19.7	19.7	8.1 8.1	8.1	31.5 31.6	31.6	95.1 95.0	95.1	7.2 7.2	7.2	7.2	3.0 2.9	3.0	3.4	2.6 2.6	2.6	3.0
				Middle	4	19.5 19.6	19.6	8.1 8.1	8.1	31.3 31.3	31.3	94.2 94.4	94.3	7.2 7.2	7.2		3.1 3.1	3.1		4.5 4.4	4.5	
				Bottom	7	19.4 19.4	19.4	8.1 8.1	8.1	31.3 31.3	31.3	94.1 93.8	94.0	7.2 7.2	7.2	7.2	4.1 3.9	4.0		1.9 1.9	1.9	
M5	Cloudy	Moderate	15:35	Surface	1	19.8 19.7	19.8	8.1 8.1	8.1	31.7 31.7	31.7	94.6 94.8	94.7	7.2 7.2	7.2	7.3	3.4 3.3	3.4	3.7	3.3 3.2	3.3	4.2
				Middle	5.5	19.6 19.5	19.6	8.1 8.1	8.1	31.6 31.5	31.6	95.3 95.4	95.4	7.3 7.3	7.3		3.4 3.5	3.5		4.7 4.6	4.7	
				Bottom	10	19.4 19.4	19.4	8.1 8.1	8.1	31.6 31.5	31.6	95.2 95.6	95.4	7.3 7.3	7.3	7.3	4.2 4.1	4.2		4.5 4.5	4.5	
M6	Cloudy	Moderate	15:22	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.1	- -	-	3.3	- -	-	7.6
				Middle	3.5	19.7 19.6	19.7	8.1 8.1	8.1	31.6 31.6	31.6	93.8 93.9	93.9	7.1 7.1	7.1		3.3 3.2	3.3		7.5 7.6	7.6	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 25 January 2017 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C2: 4.4 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C2: 4.8 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.6 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 7.2 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.6 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 7.2 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 5.0 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 5.5 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 25 January 2017

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Cloudy	Moderate	11:40	Surface	1	19.7 19.7	19.7	8.1 8.1	8.1	32.8 32.8	32.8	94.9 95.0	95.0	7.2 7.2	7.2	7.2	3.1 3.2	3.2	3.7	5.1 5.2	5.2	3.8
				Middle	10	19.4 19.4	19.4	8.1 8.1	8.1	32.7 32.6	32.7	93.8 94.0	93.9	7.1 7.1	7.1		3.9 3.9	3.9		3.4 3.4	3.4	
				Bottom	19	19.3 19.4	19.4	8.1 8.1	8.1	32.8 32.9	32.9	93.7 94.3	94.0	7.1 7.1	7.1	7.1	3.9 3.8	3.9		2.8 2.8	2.8	
C2	Cloudy	Moderate	09:31	Surface	1	19.7 19.6	19.7	8.0 8.0	8.0	32.7 32.7	32.7	91.8 91.9	91.9	6.9 6.9	6.9	7.0	3.6 3.8	3.7	3.8	5.4 5.5	5.5	4.4
				Middle	18	19.4 19.4	19.4	8.1 8.1	8.1	32.6 32.8	32.7	92.7 93.0	92.9	7.0 7.1	7.1		3.9 3.9	3.9		3.5 3.4	3.5	
				Bottom	35	19.4 19.3	19.4	8.1 8.1	8.1	32.8 32.9	32.9	94.2 94.3	94.3	7.1 7.2	7.2	7.2	3.6 3.7	3.7		4.2 4.1	4.2	
G1	Cloudy	Moderate	10:20	Surface	1	20.4 20.4	20.4	8.1 8.1	8.1	33.3 33.1	33.2	98.0 97.6	97.8	7.3 7.3	7.3	7.3	3.0 2.9	3.0	3.3	3.9 3.9	3.9	3.7
				Middle	4	19.5 19.5	19.5	8.1 8.2	8.2	32.9 32.8	32.9	95.2 94.7	95.0	7.2 7.2	7.2		3.2 3.1	3.2		4.2 4.2	4.2	
				Bottom	7	19.5 19.3	19.4	8.1 8.1	8.1	32.8 32.9	32.9	93.4 92.1	92.8	7.1 7.0	7.1	7.1	3.7 3.7	3.7		3.1 3.0	3.1	
G2	Cloudy	Moderate	10:02	Surface	1	20.0 20.1	20.1	8.1 8.1	8.1	33.1 33.2	33.2	96.9 97.3	97.1	7.3 7.3	7.3	7.3	2.9 2.9	2.9	3.2	3.3 3.3	3.3	2.6
				Middle	5	19.7 19.7	19.7	8.2 8.1	8.2	33.0 33.0	33.0	96.2 96.1	96.2	7.2 7.2	7.2		2.9 3.0	3.0		3.1 3.2	3.2	
				Bottom	9	19.3 19.3	19.3	8.1 8.1	8.1	32.8 32.7	32.8	94.0 93.7	93.9	7.1 7.1	7.1	7.1	3.7 3.6	3.7		1.4 1.4	1.4	
G3	Cloudy	Moderate	10:34	Surface	1	20.0 20.0	20.0	8.1 8.1	8.1	33.0 33.1	33.1	96.2 96.0	96.1	7.2 7.2	7.2	7.2	3.2 3.2	3.2	3.6	3.5 3.6	3.6	3.0
				Middle	4	19.5 19.5	19.5	8.2 8.2	8.2	32.8 32.7	32.8	94.0 93.3	93.7	7.1 7.1	7.1		3.5 3.6	3.6		1.8 1.8	1.8	
				Bottom	7	19.4 19.4	19.4	8.1 8.1	8.1	32.8 32.8	32.8	92.0 90.8	91.4	7.0 6.9	7.0	7.0	3.8 3.9	3.9		3.6 3.5	3.6	
G4	Cloudy	Moderate	11:08	Surface	1	19.6 19.6	19.6	8.2 8.1	8.2	33.0 32.9	33.0	95.9 95.4	95.7	7.2 7.2	7.2	7.2	3.1 3.2	3.2	3.4	2.7 2.7	2.7	3.3
				Middle	4	19.5 19.4	19.5	8.1 8.2	8.2	32.7 32.8	32.8	95.1 95.4	95.3	7.2 7.2	7.2		3.1 3.2	3.2		3.4 3.4	3.4	
				Bottom	7	19.5 19.4	19.5	8.2 8.1	8.2	32.7 32.8	32.8	93.7 93.3	93.5	7.1 7.1	7.1	7.1	3.9 3.8	3.9		3.7 3.6	3.7	
M1	Cloudy	Moderate	10:11	Surface	1	20.3 20.4	20.4	8.1 8.1	8.1	33.2 33.2	33.2	98.5 99.2	98.9	7.3 7.4	7.4	7.4	3.0 2.9	3.0	3.3	3.0 3.0	3.0	3.1
				Middle	3	20.0 20.0	20.0	8.1 8.1	8.1	33.0 33.0	33.0	97.3 97.4	97.4	7.3 7.3	7.3		3.0 3.1	3.1		3.0 3.1	3.1	
				Bottom	5	19.4 19.4	19.4	8.2 8.1	8.2	32.8 32.8	32.8	92.9 92.0	92.5	7.0 7.0	7.0	7.0	3.8 3.7	3.8		3.1 3.2	3.2	
M2	Cloudy	Moderate	09:54	Surface	1	19.7 19.7	19.7	8.1 8.1	8.1	32.8 32.9	32.9	96.0 95.7	95.9	7.2 7.2	7.2	7.2	3.1 3.1	3.1	3.2	3.5 3.4	3.5	3.1
				Middle	5	19.5 19.5	19.5	8.1 8.1	8.1	32.8 32.8	32.8	95.6 95.3	95.5	7.2 7.2	7.2		3.1 3.1	3.1		2.9 2.9	2.9	
				Bottom	9	19.3 19.4	19.4	8.1 8.2	8.2	32.8 32.9	32.9	94.6 94.4	94.5	7.2 7.2	7.2	7.2	3.4 3.4	3.4		2.8 2.9	2.9	
M3	Cloudy	Moderate	10:54	Surface	1	20.2 20.2	20.2	8.1 8.2	8.2	33.2 33.3	33.3	96.0 95.3	95.7	7.2 7.1	7.2	7.2	2.9 3.0	3.0	3.5	3.5 3.4	3.5	3.3
				Middle	4	19.6 19.5	19.6	8.1 8.1	8.1	32.9 32.9	32.9	92.9 93.4	93.2	7.0 7.1	7.1		3.3 3.4	3.4		2.8 2.9	2.9	
				Bottom	7	19.4 19.4	19.4	8.1 8.1	8.1	32.8 32.8	32.8	89.2 88.9	89.1	6.8 6.7	6.8	6.8	4.2 4.2	4.2		3.6 3.5	3.6	
M4	Cloudy	Moderate	09:45	Surface	1	20.0 19.8	19.9	8.1 8.1	8.1	33.0 33.0	33.0	99.0 98.5	98.8	7.4 7.4	7.4	7.3	2.9 2.9	2.9	3.6	3.9 3.9	3.9	3.1
				Middle	4	19.4 19.3	19.4	8.1 8.1	8.1	32.9 32.9	32.9	95.6 95.3	95.5	7.2 7.2	7.2		3.8 3.9	3.9		2.8 2.7	2.8	
				Bottom	7	19.4 19.3	19.4	8.2 8.1	8.2	33.0 33.0	33.0	95.5 94.9	95.2	7.2 7.2	7.2	7.2	4.0 4.0	4.0		2.7 2.7	2.7	
M5	Cloudy	Moderate	11:32	Surface	1	19.9 19.8	19.9	8.1 8.1	8.1	32.9 33.0	33.0	96.3 96.1	96.2	7.2 7.2	7.2	7.2	2.9 2.9	2.9	3.4	5.9 5.9	5.9	5.3
				Middle	5.5	19.4 19.4	19.4	8.1 8.1	8.1	32.7 32.6	32.7	94.6 94.8	94.7	7.2 7.2	7.2		3.0 3.2	3.1		6.6 6.5	6.6	
				Bottom	10	19.4 19.4	19.4	8.1 8.1	8.1	33.0 32.8	32.9	95.0 94.5	94.8	7.2 7.2	7.2	7.2	4.2 3.9	4.1		3.4 3.3	3.4	
M6	Cloudy	Moderate	11:20	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.3	- -	-	3.1	- -	-	3.7
				Middle	3.3	19.6 19.5	19.6	8.1 8.1	8.1	32.9 32.9	32.9	95.9 95.9	95.9	7.2 7.3	7.3		3.0 3.1	3.1		3.7 3.6	3.7	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 25 January 2017 (Mid-Flood Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C1: 5.9 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C1: 6.4 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 6.7 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.3 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 6.7 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.3 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 7.0 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.5 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 25 January 2017

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Cloudy	Moderate	16:52	Surface	1	19.9 19.8	19.9	8.2 8.1	8.2	32.8 33.0	32.9	94.5 94.5	94.5	7.1 7.1	7.1	7.2	3.1 3.0	3.1	3.7	5.6 5.6	5.6	4.9
				Middle	10	19.5 19.4	19.5	8.2 8.2	8.2	32.7 32.8	32.8	95.7 96.2	96.0	7.2 7.3	7.3		3.0 3.0	3.0		3.4 3.3	3.4	
				Bottom	19	19.4 19.3	19.4	8.2 8.1	8.2	32.8 32.8	32.8	96.5 96.8	96.7	7.3 7.4	7.4	7.4	4.8 4.9	4.9		5.8 5.7	5.8	
C2	Cloudy	Moderate	15:04	Surface	1	19.6 19.6	19.6	8.1 8.1	8.1	32.8 32.7	32.8	93.6 93.8	93.7	7.1 7.1	7.1	7.2	3.1 3.0	3.1	3.5	2.5 2.4	2.5	2.5
				Middle	18	19.3 19.4	19.4	8.1 8.1	8.1	32.9 32.7	32.8	94.1 94.3	94.2	7.1 7.2	7.2		3.2 3.2	3.2		2.4 2.4	2.4	
				Bottom	35	19.4 19.4	19.4	8.1 8.1	8.1	32.7 32.8	32.8	93.8 93.9	93.9	7.1 7.1	7.1	7.1	4.6 4.0	4.3		2.4 2.5	2.5	
G1	Cloudy	Moderate	15:53	Surface	1	20.0 19.9	20.0	8.1 8.1	8.1	33.1 33.0	33.1	93.3 92.8	93.1	7.0 7.0	7.0	7.0	3.0 3.0	3.0	3.5	2.5 2.5	2.5	1.5
				Middle	4	19.5 19.4	19.5	8.2 8.1	8.2	32.8 32.8	32.8	91.5 90.9	91.2	6.9 6.9	6.9		3.4 3.6	3.5		0.8 0.8	0.8	
				Bottom	7	19.4 19.5	19.5	8.1 8.1	8.1	32.8 32.8	32.8	90.3 89.6	90.0	6.8 6.8	6.8	6.8	3.8 3.9	3.9		1.0 1.1	1.1	
G2	Cloudy	Moderate	15:33	Surface	1	19.8 19.7	19.8	8.1 8.1	8.1	33.0 33.0	33.0	93.7 93.5	93.6	7.0 7.0	7.0	7.1	3.1 3.2	3.2	3.3	1.6 1.6	1.6	2.3
				Middle	5	19.5 19.5	19.5	8.2 8.1	8.2	32.8 32.8	32.8	93.3 93.9	93.6	7.1 7.1	7.1		3.2 3.3	3.3		3.0 3.0	3.0	
				Bottom	9	19.5 19.4	19.5	8.1 8.1	8.1	32.8 32.9	32.9	94.2 93.9	94.1	7.1 7.1	7.1	7.1	3.2 3.3	3.3		2.4 2.4	2.4	
G3	Cloudy	Moderate	16:04	Surface	1	19.6 19.6	19.6	8.1 8.1	8.1	32.9 32.8	32.9	94.4 94.7	94.6	7.1 7.2	7.2	7.2	3.0 3.0	3.0	3.4	4.3 4.2	4.3	3.1
				Middle	4	19.4 19.4	19.4	8.1 8.2	8.2	32.7 32.7	32.7	94.7 95.0	94.9	7.2 7.2	7.2		3.1 3.1	3.1		2.4 2.4	2.4	
				Bottom	7	19.4 19.3	19.4	8.1 8.1	8.1	32.6 32.7	32.7	93.2 92.7	93.0	7.1 7.0	7.1	7.1	4.2 4.0	4.1		2.6 2.5	2.6	
G4	Cloudy	Moderate	16:24	Surface	1	19.8 19.8	19.8	8.1 8.1	8.1	32.8 32.9	32.9	93.6 93.1	93.4	7.0 7.0	7.0	7.0	3.0 3.0	3.0	3.2	3.0 3.0	3.0	3.1
				Middle	4	19.5 19.5	19.5	8.1 8.1	8.1	32.7 32.8	32.8	92.8 92.8	92.8	7.0 7.0	7.0		3.2 3.2	3.2		3.0 3.0	3.0	
				Bottom	7	19.4 19.4	19.4	8.1 8.1	8.1	32.6 32.7	32.7	92.1 92.7	92.4	7.0 7.0	7.0	7.0	3.2 3.3	3.3		3.3 3.2	3.3	
M1	Cloudy	Moderate	15:43	Surface	1	19.8 19.7	19.8	8.1 8.1	8.1	32.9 32.8	32.9	94.9 94.4	94.7	7.1 7.1	7.1	7.1	3.0 3.0	3.0	3.4	2.9 2.9	2.9	5.0
				Middle	3	19.5 19.5	19.5	8.1 8.2	8.2	32.7 32.8	32.8	93.3 93.2	93.3	7.1 7.1	7.1		3.5 3.5	3.5		5.4 5.5	5.5	
				Bottom	5	19.4 19.4	19.4	8.2 8.1	8.2	32.8 32.8	32.8	91.2 91.2	91.2	6.9 6.9	6.9	6.9	3.7 3.7	3.7		6.5 6.4	6.5	
M2	Cloudy	Moderate	15:25	Surface	1	19.7 19.7	19.7	8.1 8.2	8.2	32.8 32.9	32.9	93.8 93.3	93.6	7.1 7.0	7.1	7.1	3.4 3.5	3.5	3.7	5.6 5.8	5.7	4.6
				Middle	5	19.5 19.5	19.5	8.1 8.1	8.1	32.8 32.8	32.8	92.7 93.5	93.1	7.0 7.1	7.1		3.6 3.5	3.6		4.4 4.4	4.4	
				Bottom	9	19.5 19.5	19.5	8.1 8.1	8.1	32.7 32.8	32.8	92.0 91.7	91.9	7.0 6.9	7.0	7.0	4.0 3.9	4.0		3.8 3.8	3.8	
M3	Cloudy	Moderate	16:16	Surface	1	19.6 19.6	19.6	8.1 8.1	8.1	32.8 32.8	32.8	95.4 94.7	95.1	7.2 7.2	7.2	7.2	3.0 3.0	3.0	3.4	3.6 3.7	3.7	4.1
				Middle	4	19.6 19.5	19.6	8.2 8.1	8.2	32.8 32.9	32.9	95.0 94.8	94.9	7.2 7.2	7.2		3.0 3.0	3.0		3.2 3.1	3.2	
				Bottom	7	19.4 19.5	19.5	8.1 8.1	8.1	32.9 32.9	32.9	94.5 94.8	94.7	7.2 7.2	7.2	7.2	4.2 4.2	4.2		5.4 5.4	5.4	
M4	Cloudy	Moderate	15:16	Surface	1	19.7 19.7	19.7	8.1 8.1	8.1	32.7 32.9	32.8	94.4 94.3	94.4	7.1 7.1	7.1	7.2	2.9 2.9	2.9	3.3	3.6 3.5	3.6	3.8
				Middle	4	19.5 19.4	19.5	8.1 8.1	8.1	32.6 32.6	32.6	95.2 95.0	95.1	7.2 7.2	7.2		2.8 3.0	2.9		3.4 3.4	3.4	
				Bottom	7	19.3 19.2	19.3	8.2 8.2	8.2	32.7 32.7	32.7	93.6 93.5	93.6	7.1 7.1	7.1	7.1	4.0 3.9	4.0		4.3 4.4	4.4	
M5	Cloudy	Moderate	16:44	Surface	1	19.8 19.7	19.8	8.1 8.1	8.1	32.9 32.8	32.9	93.9 93.7	93.8	7.1 7.1	7.1	7.2	3.2 3.1	3.2	3.5	2.5 2.5	2.5	2.8
				Middle	5.5	19.5 19.4	19.5	8.1 8.2	8.2	32.7 32.8	32.8	96.2 95.9	96.1	7.3 7.3	7.3		3.0 3.0	3.0		3.0 2.9	3.0	
				Bottom	10	19.2 19.2	19.2	8.2 8.2	8.2	33.0 33.0	33.0	96.5 96.4	96.5	7.3 7.3	7.3	7.3	4.4 4.4	4.4		2.8 2.8	2.8	
M6	Cloudy	Moderate	16:33	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.0	- -	-	3.1	- -	-	2.6
				Middle	3.6	19.5 19.5	19.5	8.1 8.1	8.1	32.8 32.8	32.8	92.8 93.1	93.0	7.0 7.0	7.0		3.1 3.1	3.1		2.6 2.6	2.6	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 27 January 2017 (Mid-Ebb Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C2: 8.3 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C2: 9.0 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.8 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 7.4 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.8 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 7.4 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C2: 6.7 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C2: 7.3 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 27 January 2017

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Moderate	13:35	Surface	1	22.7 22.3	22.5	8.1 8.1	8.1	31.4 31.5	31.5	103.3 100.7	102.0	7.4 7.3	7.4	7.0	4.1 4.2	4.2	4.8	4.8 4.9	4.9	5.2
				Middle	10.5	22.6 22.1	22.4	8.1 8.1	8.1	32.5 32.5	32.5	88.7 89.3	89.0	6.4 6.5	6.5		5.7 6.3	6.0		7.1 7.1	7.1	
				Bottom	20	22.3 22.2	22.3	8.1 8.1	8.1	33.2 33.0	33.1	86.0 87.8	86.9	6.2 6.3	6.3	6.3	4.3 4.3	4.3		3.5 3.8	3.7	
C2	Sunny	Moderate	11:36	Surface	1	22.4 21.8	22.1	8.1 8.1	8.1	31.6 31.6	31.6	97.3 100.9	99.1	7.0 7.4	7.2	6.9	3.6 4.1	3.9	5.4	5.7 5.6	5.7	5.5
				Middle	18	22.4 21.6	22.0	8.1 8.1	8.1	32.8 32.8	32.8	88.6 91.4	90.0	6.4 6.7	6.6		5.3 5.3	5.3		5.2 5.4	5.3	
				Bottom	35	21.8 21.6	21.7	8.1 8.1	8.1	33.0 33.1	33.1	82.4 82.9	82.7	6.0 6.0	6.0	6.0	6.8 7.0	6.9		5.6 5.5	5.6	
G1	Sunny	Moderate	12:19	Surface	1	22.2 22.1	22.2	8.1 8.1	8.1	33.0 33.0	33.0	94.3 91.2	92.8	6.8 6.6	6.7	6.7	5.3 4.7	5.0	4.6	5.0 5.1	5.1	5.8
				Middle	4	22.3 22.1	22.2	8.1 8.1	8.1	33.3 33.3	33.3	87.2 95.0	91.1	6.3 6.8	6.6		4.6 4.5	4.6		7.3 7.2	7.3	
				Bottom	7	22.1 22.1	22.1	8.1 8.1	8.1	33.5 33.5	33.5	87.1 88.3	87.7	6.3 6.4	6.4	6.4	4.2 3.9	4.1		5.0 5.1	5.1	
G2	Sunny	Moderate	12:02	Surface	1	22.1 22.1	22.1	8.1 8.1	8.1	33.0 33.0	33.0	97.6 102.2	99.9	7.0 7.4	7.2	6.9	4.5 4.6	4.6	4.2	4.5 4.7	4.6	4.7
				Middle	5	22.1 22.1	22.1	8.1 8.1	8.1	33.3 33.2	33.3	88.4 92.3	90.4	6.4 6.7	6.6		4.3 4.5	4.4		4.5 4.4	4.5	
				Bottom	9	22.1 22.1	22.1	8.2 8.2	8.2	34.1 33.8	34.0	83.3 83.9	83.6	6.0 6.0	6.0	6.0	3.6 3.7	3.7		5.0 4.9	5.0	
G3	Sunny	Moderate	12:32	Surface	1	21.8 21.8	21.8	8.1 8.1	8.1	33.4 33.4	33.4	94.6 94.5	94.6	6.8 6.8	6.8	6.9	3.9 3.6	3.8	3.9	2.5 2.5	2.5	4.9
				Middle	4	21.8 21.7	21.8	8.1 8.1	8.1	33.4 33.4	33.4	94.9 94.5	94.7	6.9 6.8	6.9		4.1 3.9	4.0		5.7 5.8	5.8	
				Bottom	7	21.8 21.7	21.8	8.1 8.1	8.1	33.4 33.4	33.4	95.8 97.2	96.5	6.9 7.0	7.0	7.0	4.1 3.7	3.9		6.4 6.5	6.5	
G4	Sunny	Moderate	13:04	Surface	1	22.7 22.1	22.4	8.0 8.0	8.0	31.4 31.4	31.4	82.6 77.8	80.2	5.9 5.7	5.8	5.8	4.3 3.8	4.1	4.7	4.1 4.2	4.2	4.2
				Middle	4	22.7 22.0	22.4	8.1 8.1	8.1	32.4 32.4	32.4	79.5 79.7	79.6	5.7 5.8	5.8		4.7 5.1	4.9		4.3 4.2	4.3	
				Bottom	7	22.1 22.1	22.1	8.1 8.1	8.1	33.1 32.9	33.0	80.1 75.3	77.7	5.8 5.4	5.6	5.6	5.0 5.1	5.1		4.1 4.3	4.2	
M1	Sunny	Moderate	12:10	Surface	1	21.8 21.8	21.8	8.1 8.0	8.1	33.3 33.3	33.3	91.6 91.9	91.8	6.6 6.7	6.7	6.7	3.8 3.9	3.9	4.2	5.8 5.9	5.9	5.3
				Middle	3	21.8 21.8	21.8	8.1 8.1	8.1	33.4 33.4	33.4	91.3 91.5	91.4	6.6 6.6	6.6		4.0 4.2	4.1		4.1 4.0	4.1	
				Bottom	5	21.8 21.7	21.8	8.1 8.1	8.1	33.6 33.6	33.6	90.6 90.2	90.4	6.6 6.5	6.6	6.6	4.3 4.8	4.6		5.9 5.6	5.8	
M2	Sunny	Moderate	11:56	Surface	1	22.4 21.8	22.1	8.1 8.1	8.1	31.6 31.6	31.6	90.9 90.4	90.7	6.6 6.6	6.6	6.6	3.6 4.1	3.9	5.4	4.7 4.8	4.8	5.3
				Middle	5.5	22.4 21.6	22.0	8.1 8.1	8.1	32.8 32.8	32.8	90.6 89.8	90.2	6.5 6.5	6.5		5.3 5.3	5.3		5.8 5.8	5.8	
				Bottom	10	21.8 21.6	21.7	8.1 8.1	8.1	33.0 33.1	33.1	82.4 81.6	82.0	6.0 5.9	6.0	6.0	6.8 7.0	6.9		5.4 5.3	5.4	
M3	Sunny	Moderate	12:52	Surface	1	22.7 22.3	22.5	8.1 8.1	8.1	31.2 31.1	31.2	88.5 90.3	89.4	6.4 6.6	6.5	6.2	3.5 3.6	3.6	4.0	4.8 4.9	4.9	5.1
				Middle	4.5	22.7 22.1	22.4	8.1 8.1	8.1	31.8 31.8	31.8	79.5 82.7	81.1	5.7 6.0	5.9		3.9 4.1	4.0		5.2 5.1	5.2	
				Bottom	8	22.3 22.1	22.2	8.1 8.1	8.1	32.2 32.2	32.2	80.0 78.6	79.3	5.8 5.7	5.8	5.8	4.3 4.2	4.3		5.1 5.0	5.1	
M4	Sunny	Moderate	11:48	Surface	1	21.8 21.7	21.8	8.1 8.1	8.1	33.4 33.4	33.4	99.2 97.8	98.5	7.2 7.1	7.2	7.0	3.8 3.9	3.9	4.5	5.1 5.2	5.2	5.3
				Middle	4	21.8 21.2	21.5	8.1 8.1	8.1	33.5 33.5	33.5	92.0 91.3	91.7	6.7 6.7	6.7		4.3 4.2	4.3		7.3 7.1	7.2	
				Bottom	7	21.7 21.2	21.5	8.1 8.1	8.1	34.4 34.4	34.4	90.3 89.1	89.7	6.5 6.5	6.5	6.5	5.3 5.3	5.3		3.4 3.4	3.4	
M5	Sunny	Moderate	13:28	Surface	1	22.6 22.3	22.5	8.1 8.1	8.1	31.4 31.4	31.4	85.5 90.8	88.2	6.2 6.6	6.4	6.4	4.3 3.9	4.1	5.5	4.4 4.3	4.4	4.2
				Middle	5.5	22.6 22.1	22.4	8.1 8.1	8.1	32.4 32.5	32.5	86.9 91.4	89.2	6.2 6.6	6.4		6.5 5.8	6.2		3.6 3.6	3.6	
				Bottom	10	22.3 22.1	22.2	8.1 8.1	8.1	33.1 33.1	33.1	88.9 83.7	86.3	6.4 6.0	6.2	6.2	6.2 6.1	6.2		4.4 4.8	4.6	
M6	Sunny	Moderate	13:14	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.0	- -	-	4.9	- -	-	7.7
				Middle	2	22.8 22.3	22.6	8.1 8.1	8.1	31.1 31.2	31.2	96.7 95.5	96.1	7.0 6.9	7.0		4.9 4.8	4.9		7.6 7.8	7.7	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Appendix I - Action and Limit Levels for Marine Water Quality on 27 January 2017 (Mid-Flood Tide)

Parameter (unit)	**Depth**	**Action Level**	**Limit Level**
DO in mg/L (See Note 1 and 4)	**Stations G1-G4, M1-M5**		
	Depth Average	***4.9 mg/L***	***4.6 mg/L***
	Bottom	***4.2 mg/L***	***3.6 mg/L***
	Station M6		
	Intake Level	***5.0 mg/L***	***4.7 mg/L***
Turbidity in NTU (See Note 2 and 4)	**Stations G1-G4, M1-M5**		
	Bottom	***19.3 NTU*** or 120% of upstream control station's Turbidity at the same tide of the same day ***C1: 6.8 NTU***	***22.2 NTU*** or 130% of upstream control station's Turbidity at the same tide of the same day ***C1: 7.4 NTU***
	Station M6		
	Intake Level	***19.0 NTU***	***19.4 NTU***
SS in mg/L (See Note 2 and 4)	**Stations G1-G4**		
	Surface	***6.0 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 5.8 mg/L***	***6.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 6.2 mg/L***
	Stations M1-M5		
	Surface	***6.2 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 5.8 mg/L***	***7.4 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 6.2 mg/L***
	Stations G1-G4, M1-M5		
	Bottom	***6.9 mg/L*** or 120% of upstream control station's SS at the same tide of the same day ***C1: 6.7 mg/L***	***7.9 mg/L*** or 130% of upstream control station's SS at the same tide of the same day ***C1: 7.3 mg/L***
	Station M6		
	Intake Level	***8.3 mg/L***	***8.6 mg/L***

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.

4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

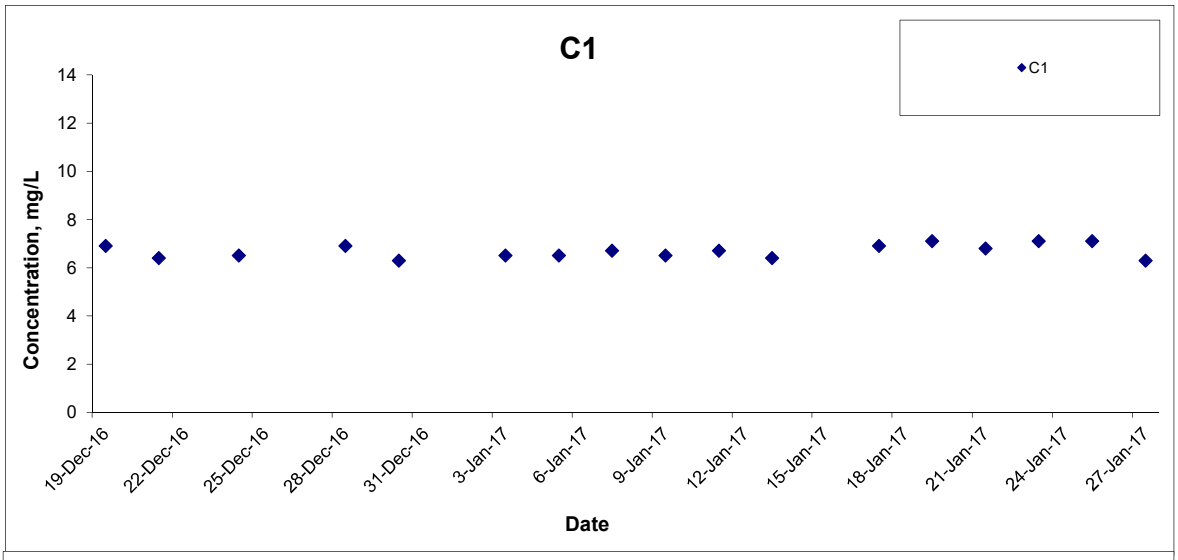
Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 27 January 2017

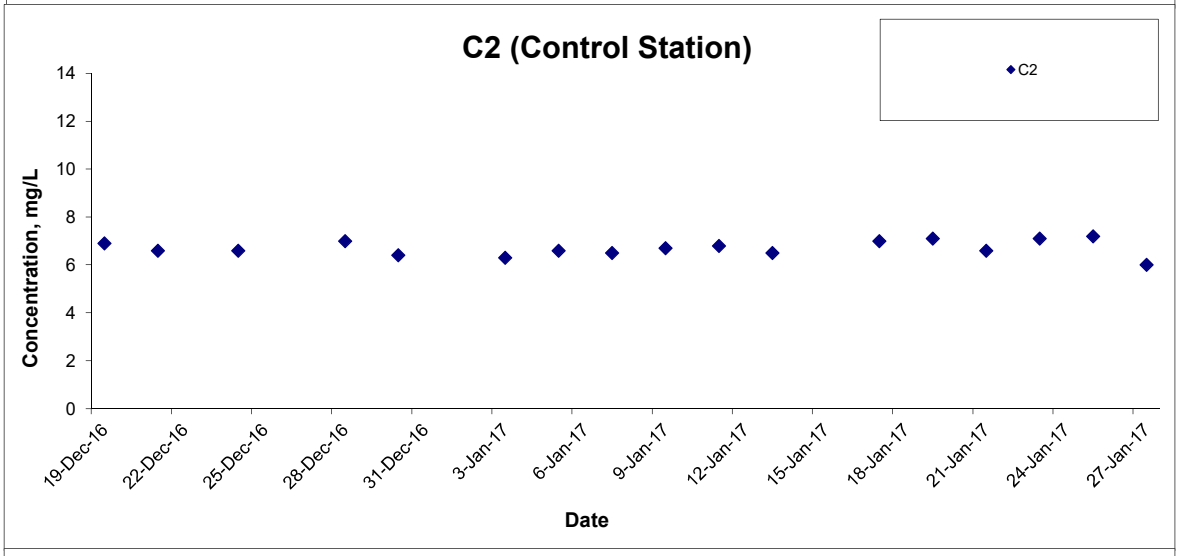
(Mid-Flood Tide)

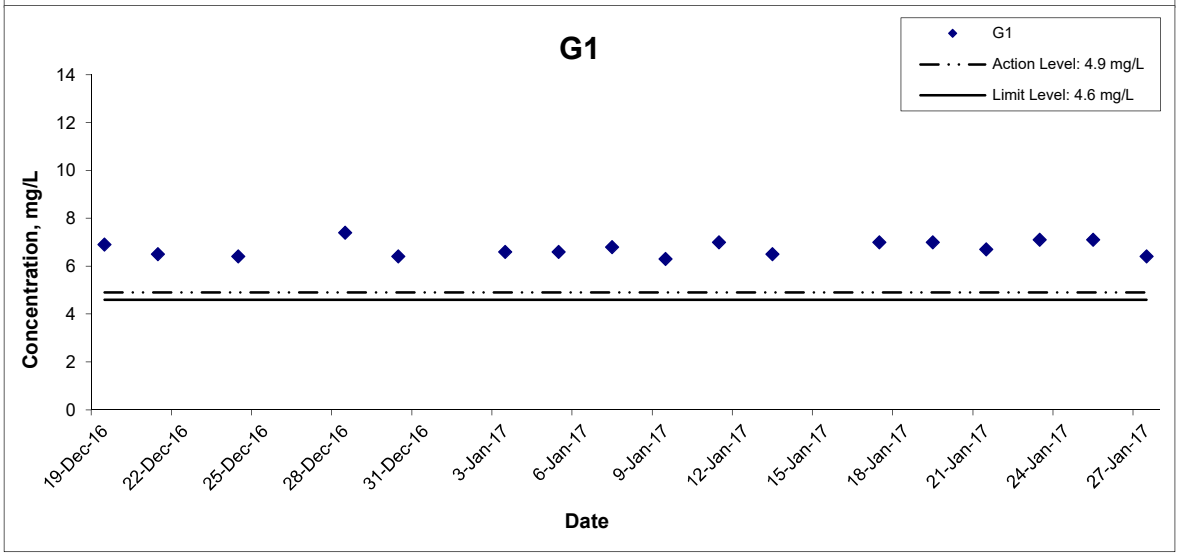
Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Fine	Moderate	18:04	Surface	1	22.6 22.4	22.5	8.1 8.1	8.1	31.5 31.5	31.5	100.8 103.0	101.9	7.3 7.5	7.4	7.0	3.8 4.0	3.9	4.5	4.8 4.8	4.8	4.9
				Middle	10	22.6 22.3	22.5	8.2 8.2	8.2	31.7 31.7	31.7	89.9 90.2	90.1	6.5 6.5	6.5		3.9 4.0	4.0		4.3 4.1	4.2	
				Bottom	19	22.4 22.3	22.4	8.2 8.2	8.2	31.8 31.8	31.8	88.9 88.8	88.9	6.4 6.4	6.4	6.4	5.6 5.7	5.7		5.5 5.6	5.6	
C2	Fine	Moderate	16:26	Surface	1	22.3 22.2	22.3	8.1 8.0	8.1	31.8 31.8	31.8	97.0 98.2	97.6	7.0 7.1	7.1	6.8	4.9 4.6	4.8	5.0	5.1 5.0	5.1	5.3
				Middle	18	22.3 22.3	22.3	8.0 8.0	8.0	31.8 31.8	31.8	90.4 90.4	90.4	6.5 6.5	6.5		5.1 4.9	5.0		4.4 4.3	4.4	
				Bottom	35	22.2 22.3	22.3	8.1 8.1	8.1	31.8 31.9	31.9	90.1 90.1	90.1	6.5 6.5	6.5	6.5	5.2 5.3	5.3		6.5 6.5	6.5	
G1	Fine	Moderate	17:08	Surface	1	22.2 22.1	22.2	8.2 8.2	8.2	31.5 31.6	31.6	96.8 97.3	97.1	7.0 7.1	7.1	6.8	3.9 3.7	3.8	4.7	2.6 2.6	2.6	3.2
				Middle	4	22.2 21.9	22.1	8.2 8.1	8.2	31.7 31.7	31.7	87.8 88.7	88.3	6.4 6.5	6.5		4.4 4.9	4.7		2.9 2.7	2.8	
				Bottom	7	22.1 21.9	22.0	8.1 8.2	8.2	31.8 31.8	31.8	88.2 89.1	88.7	6.4 6.5	6.5	6.5	5.5 5.6	5.6		4.3 4.2	4.3	
G2	Fine	Moderate	16:50	Surface	1	22.2 22.2	22.2	8.2 8.2	8.2	32.1 32.1	32.1	95.8 96.4	96.1	6.9 7.0	7.0	6.8	3.6 3.2	3.4	3.8	4.9 5.0	5.0	3.3
				Middle	5	22.2 22.1	22.2	8.1 8.1	8.1	32.2 32.2	32.2	89.8 88.7	89.3	6.5 6.4	6.5		3.5 3.6	3.6		2.4 2.4	2.4	
				Bottom	9	22.2 22.1	22.2	8.2 8.2	8.2	32.6 32.5	32.6	86.1 84.9	85.5	6.2 6.1	6.2	6.2	4.2 4.3	4.3		2.4 2.4	2.4	
G3	Fine	Moderate	17:18	Surface	1	22.2 22.2	22.2	8.2 8.2	8.2	31.5 31.5	31.5	97.5 98.0	97.8	7.1 7.1	7.1	6.8	3.6 3.4	3.5	4.3	2.7 2.7	2.7	3.3
				Middle	4	22.1 22.0	22.1	8.1 8.2	8.2	31.8 31.8	31.8	88.9 88.7	88.8	6.5 6.5	6.5		3.8 4.1	4.0		3.3 3.4	3.4	
				Bottom	7	22.2 22.0	22.1	8.2 8.2	8.2	32.1 32.1	32.1	87.6 86.8	87.2	6.3 6.3	6.3	6.3	5.2 5.3	5.3		3.7 3.8	3.8	
G4	Fine	Moderate	17:37	Surface	1	22.6 22.4	22.5	8.1 8.1	8.1	31.6 31.6	31.6	97.1 97.1	97.1	7.0 7.0	7.0	6.8	3.9 4.1	4.0	5.0	3.9 3.9	3.9	4.9
				Middle	4	22.6 22.4	22.5	8.2 8.2	8.2	31.9 31.9	31.9	89.4 89.4	89.4	6.4 6.5	6.5		4.9 4.7	4.8		7.1 7.0	7.1	
				Bottom	7	22.4 22.4	22.4	8.2 8.2	8.2	32.3 32.3	32.3	93.0 93.0	93.0	6.7 6.7	6.7	6.7	6.2 6.1	6.2		3.5 3.6	3.6	
M1	Fine	Moderate	16:59	Surface	1	22.2 22.2	22.2	8.1 8.2	8.2	31.8 31.8	31.8	96.0 96.2	96.1	7.0 7.0	7.0	6.9	3.5 3.7	3.6	3.7	3.8 3.6	3.7	4.5
				Middle	3	22.2 22.2	22.2	8.2 8.1	8.2	31.8 31.8	31.8	92.6 92.8	92.7	6.7 6.7	6.7		3.6 3.7	3.7		4.0 5.1	4.6	
				Bottom	5	22.2 22.1	22.2	8.1 8.1	8.1	31.8 31.8	31.8	89.3 88.9	89.1	6.5 6.5	6.5	6.5	3.7 3.9	3.8		5.0 5.1	5.1	
M2	Fine	Moderate	16:43	Surface	1	22.2 22.2	22.2	8.2 8.1	8.2	32.0 32.0	32.0	91.7 92.0	91.9	6.6 6.7	6.7	6.5	3.8 3.7	3.8	3.8	4.9 5.0	5.0	4.9
				Middle	5.5	22.2 22.2	22.2	8.1 8.2	8.2	32.1 32.2	32.2	85.5 85.2	85.4	6.2 6.2	6.2		3.8 3.8	3.8		4.2 4.4	4.3	
				Bottom	10	22.2 22.2	22.2	8.2 8.1	8.2	32.3 32.3	32.3	83.9 83.8	83.9	6.1 6.1	6.1	6.1	3.8 3.8	3.8		5.3 5.2	5.3	
M3	Fine	Moderate	17:30	Surface	1	22.5 22.4	22.5	8.2 8.2	8.2	32.1 32.0	32.1	108.6 104.7	106.7	7.8 7.6	7.7	7.2	4.4 4.4	4.4	4.6	4.1 4.1	4.1	3.7
				Middle	4.5	22.5 22.4	22.5	8.2 8.2	8.2	32.3 32.4	32.4	91.1 91.3	91.2	6.5 6.6	6.6		4.6 4.5	4.6		2.9 2.7	2.8	
				Bottom	8	22.4 22.4	22.4	8.1 8.2	8.2	32.7 32.7	32.7	84.1 83.6	83.9	6.0 6.0	6.0	6.0	4.8 5.0	4.9		4.3 4.2	4.3	
M4	Fine	Moderate	16:35	Surface	1	22.2 22.2	22.2	8.1 8.1	8.1	31.8 31.8	31.8	97.2 97.2	97.2	7.0 7.0	7.0	6.8	3.1 3.0	3.1	4.1	5.3 5.2	5.3	5.0
				Middle	4	22.2 21.5	21.9	8.2 8.1	8.2	31.8 31.8	31.8	90.0 88.5	89.3	6.5 6.5	6.5		3.3 3.6	3.5		4.6 4.7	4.7	
				Bottom	7	22.2 21.5	21.9	8.2 8.2	8.2	32.0 32.0	32.0	86.8 84.4	85.6	6.3 6.2	6.3	6.3	5.8 5.6	5.7		5.1 5.0	5.1	
M5	Fine	Moderate	17:56	Surface	1	22.6 22.4	22.5	8.2 8.2	8.2	31.8 31.8	31.8	96.9 96.5	96.7	7.0 7.0	7.0	6.7	4.7 4.7	4.7	4.9	5.6 5.5	5.6	5.0
				Middle	5.5	22.6 22.4	22.5	8.2 8.2	8.2	31.9 31.9	31.9	88.6 89.0	88.8	6.4 6.4	6.4		3.9 3.8	3.9		4.7 4.8	4.8	
				Bottom	10	22.4 22.4	22.4	8.2 8.2	8.2	32.0 31.9	32.0	85.7 85.5	85.6	6.2 6.2	6.2	6.2	5.8 6.1	6.0		4.4 4.5	4.5	
M6	Fine	Moderate	17:44	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.3	- -	-	4.5	- -	-	5.2
				Middle	2.1	22.6 22.4	22.5	8.1 8.2	8.2	31.5 31.5	31.5	99.4 100.7	100.1	7.2 7.3	7.3		4.4 4.6	4.5		5.2 5.2	5.2	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Dissolved Oxygen (Depth-averaged) at Mid-Ebb Tide

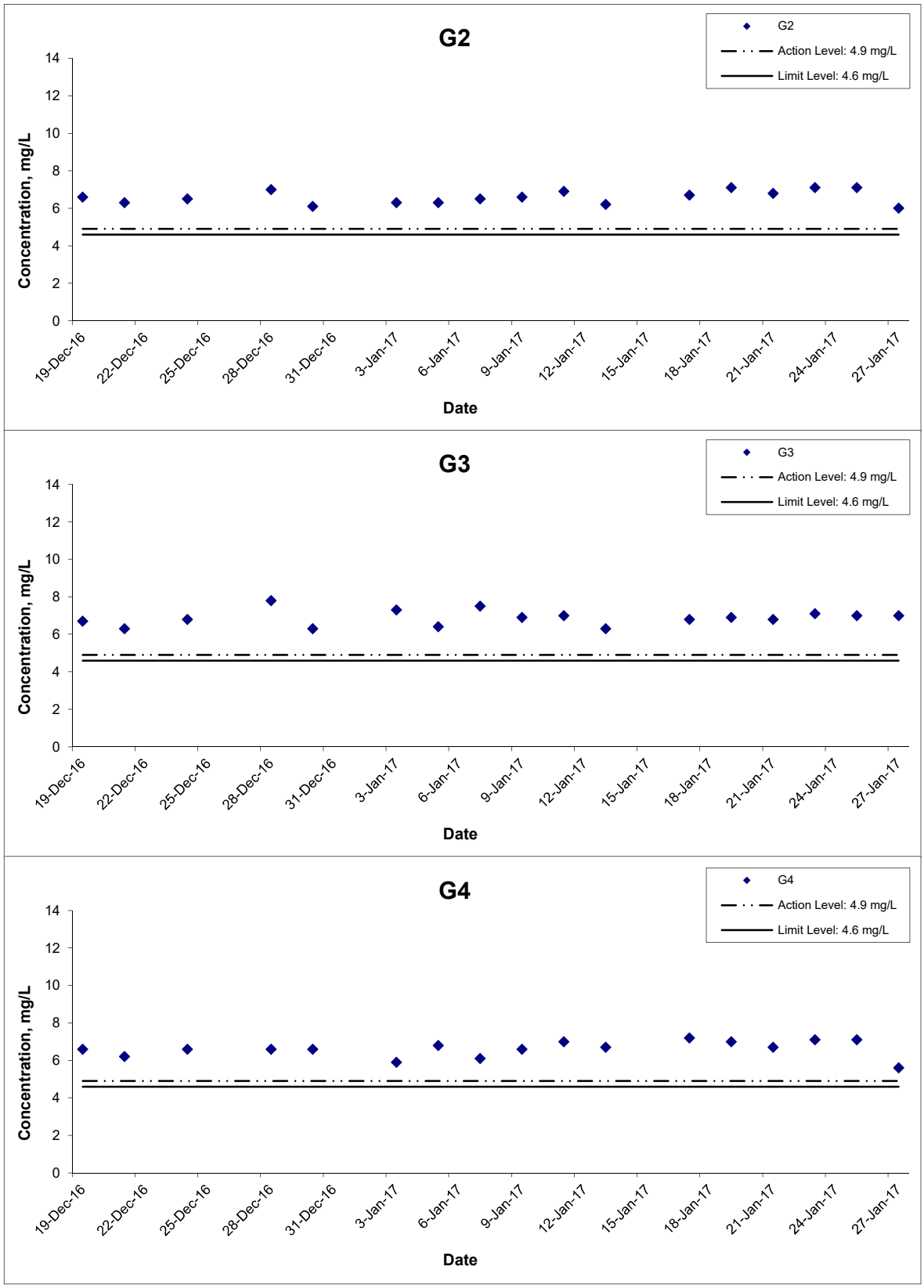






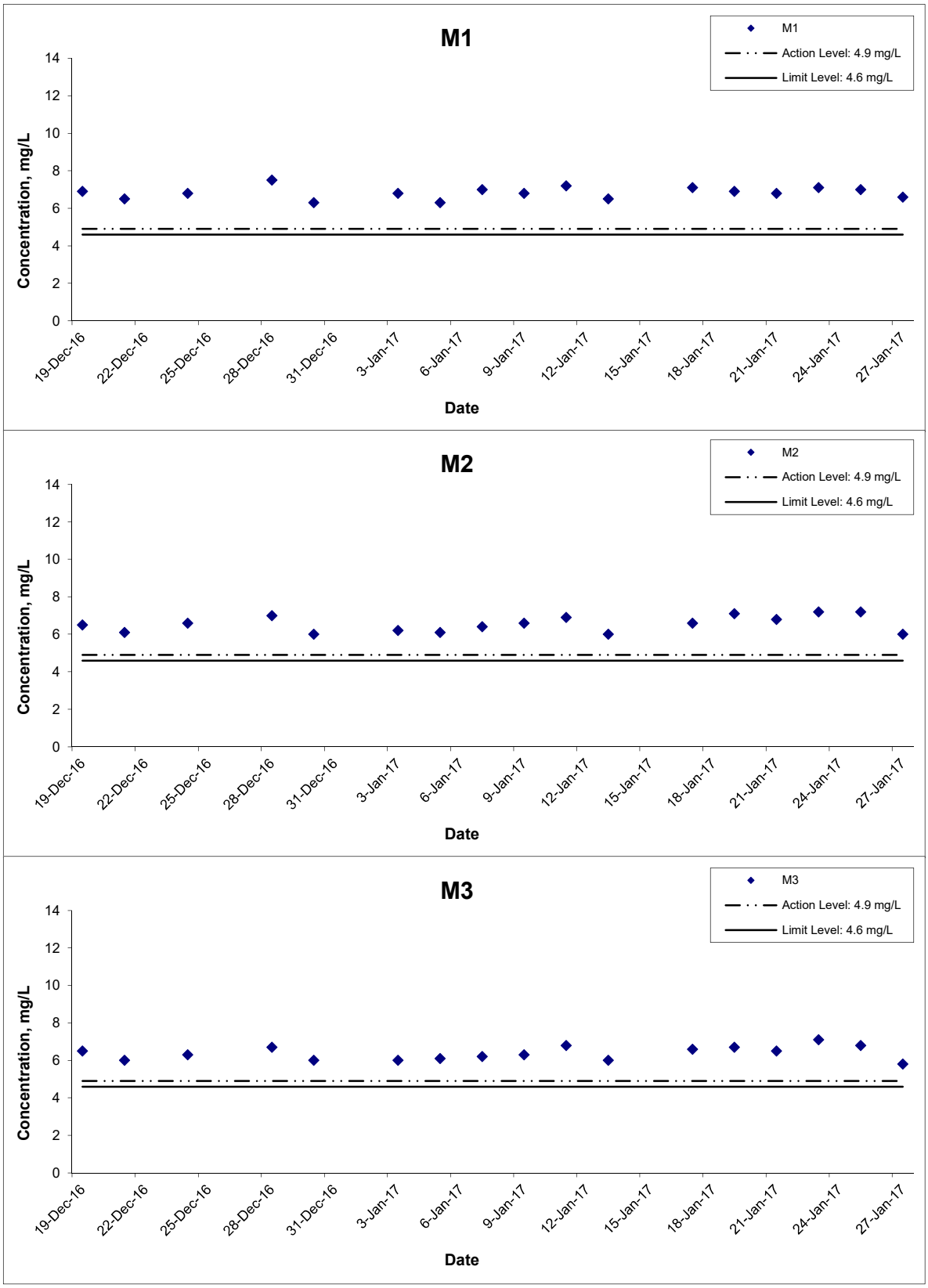
Title		Scale	Project No.
Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction		N.T.S	MA16034
Graphical Presentation of Water Quality Monitoring Results		Date: Jan 17	Appendix: I

Dissolved Oxygen (Depth-averaged) at Mid-Ebb Tide



Title	Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA16034	CINOTECH
		Date: Jan 17	Appendix: I	

Dissolved Oxygen (Depth-averaged) at Mid-Ebb Tide



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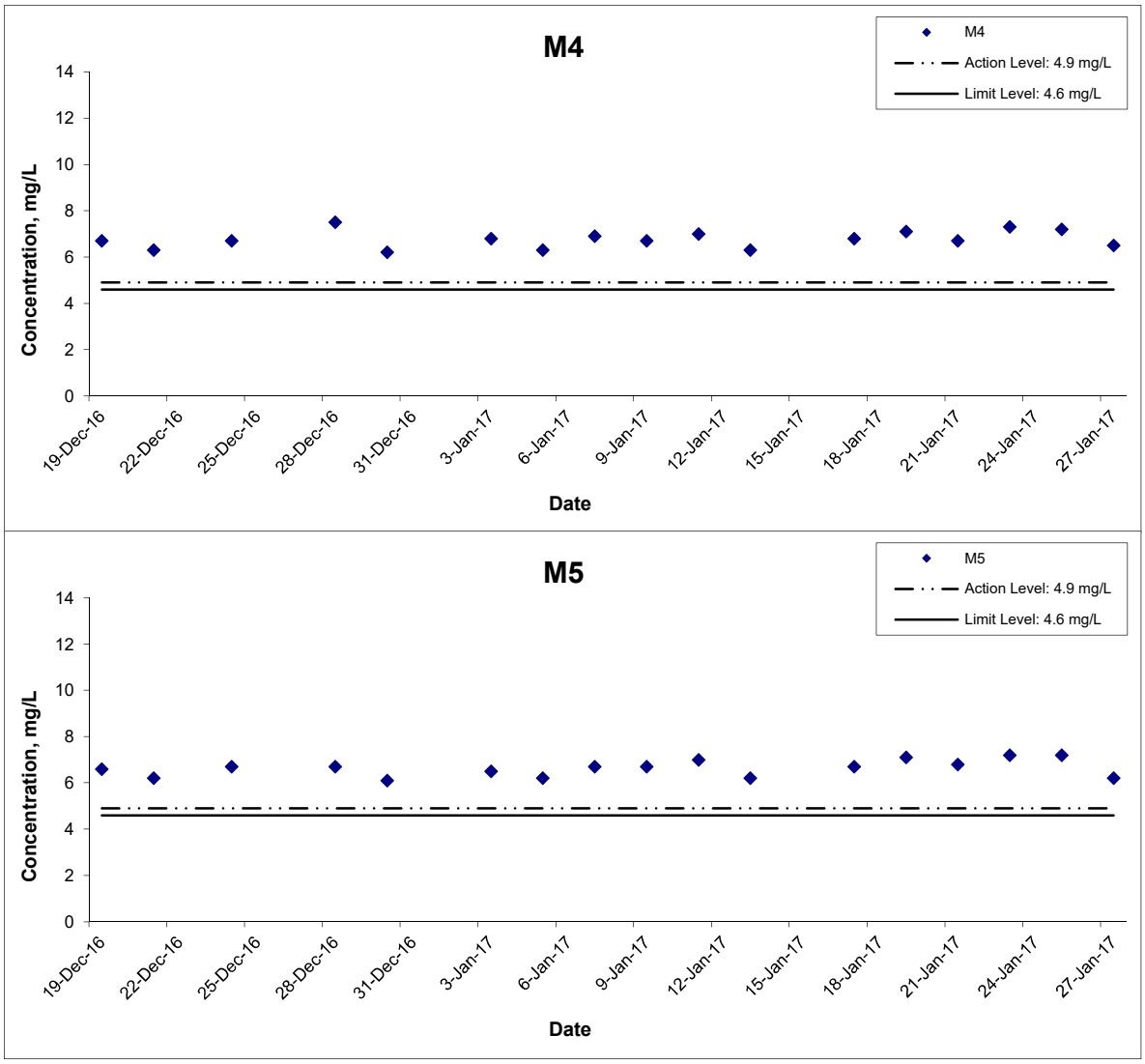
		Date: Jan 17	Appendix: I	

Dissolved Oxygen (Depth-averaged) at Mid-Ebb Tide



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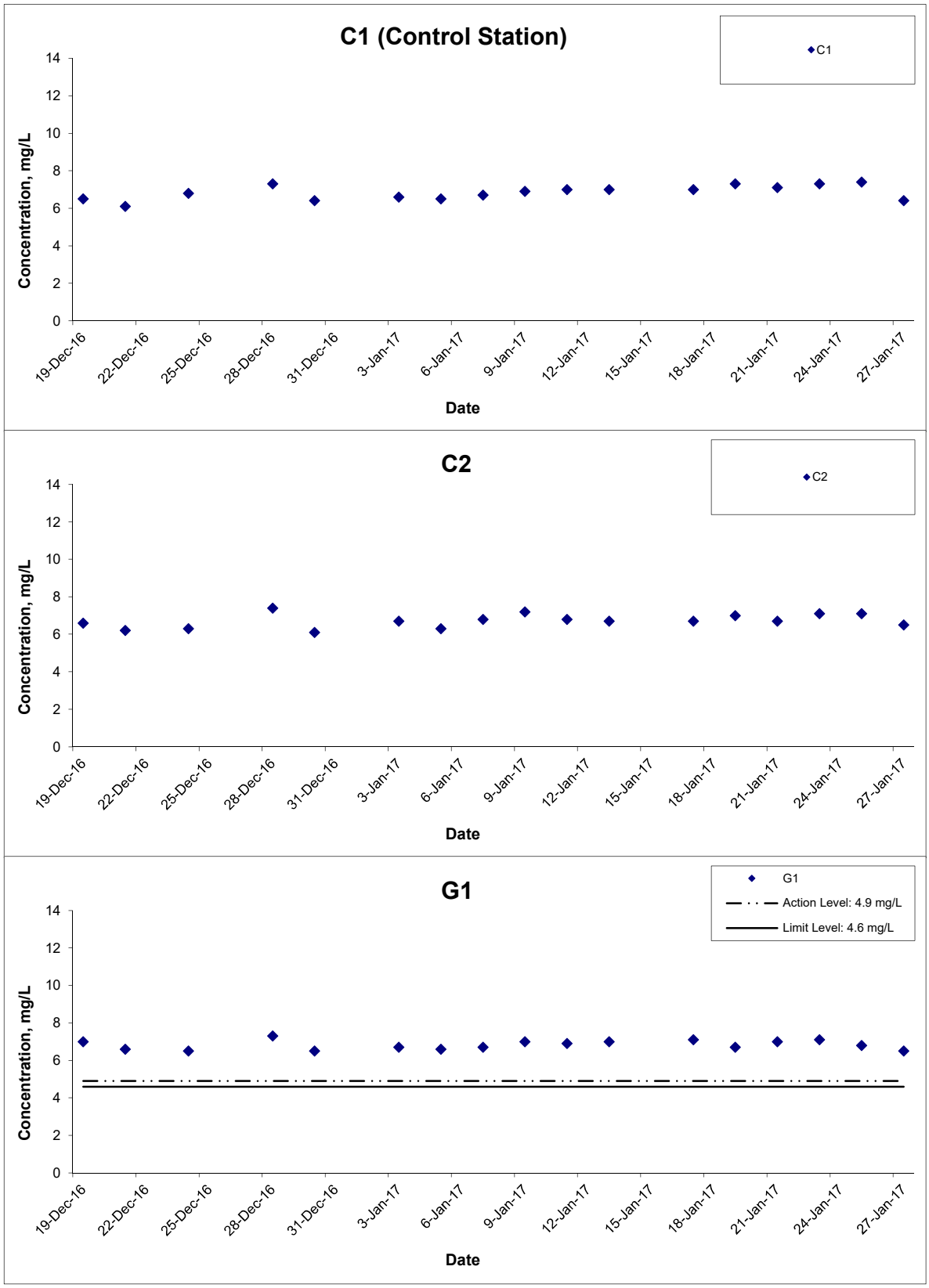
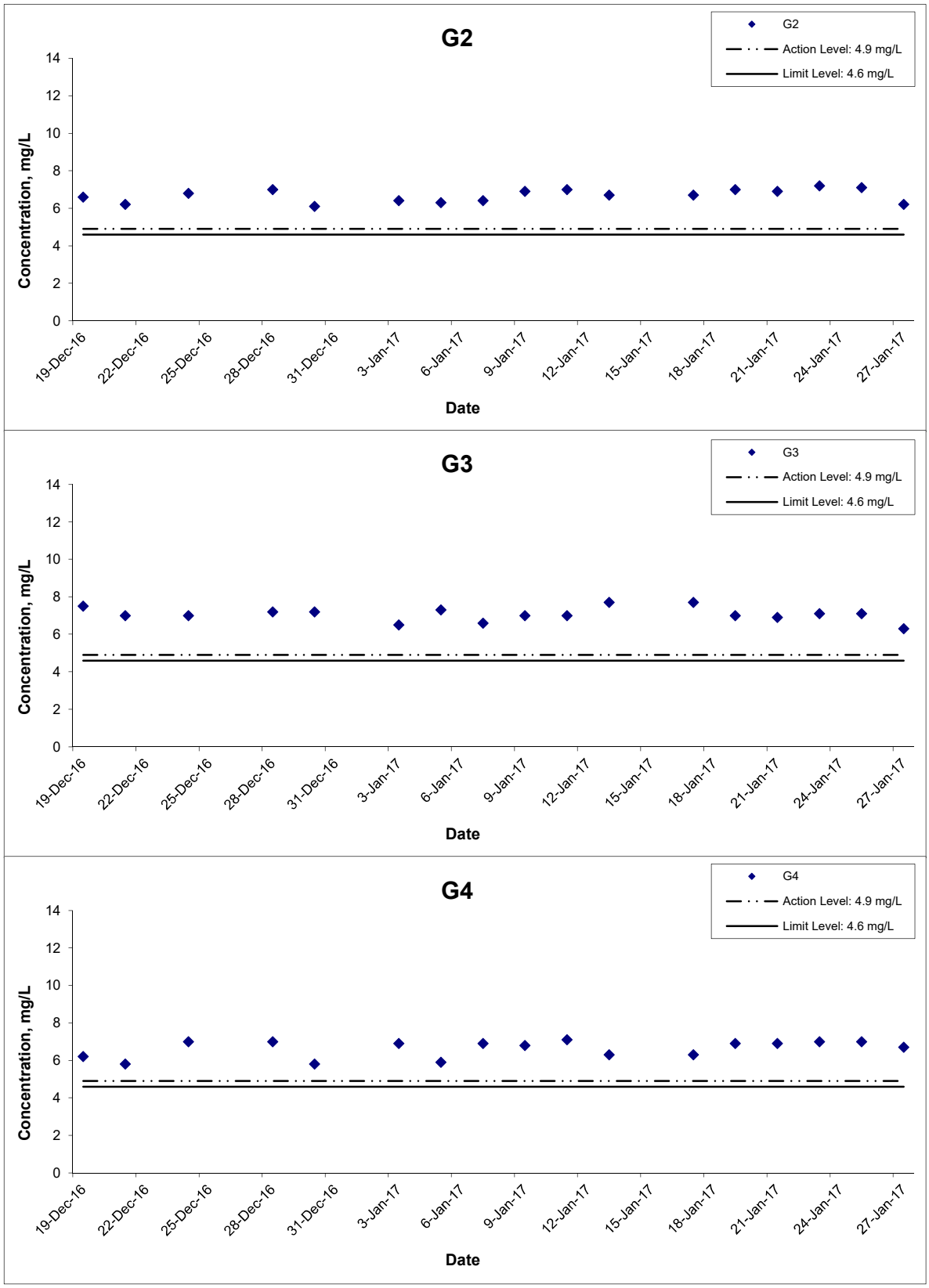
	Date: Jan 17	Appendix: I	

Dissolved Oxygen (Depth-averaged) at Mid-Flood Tide



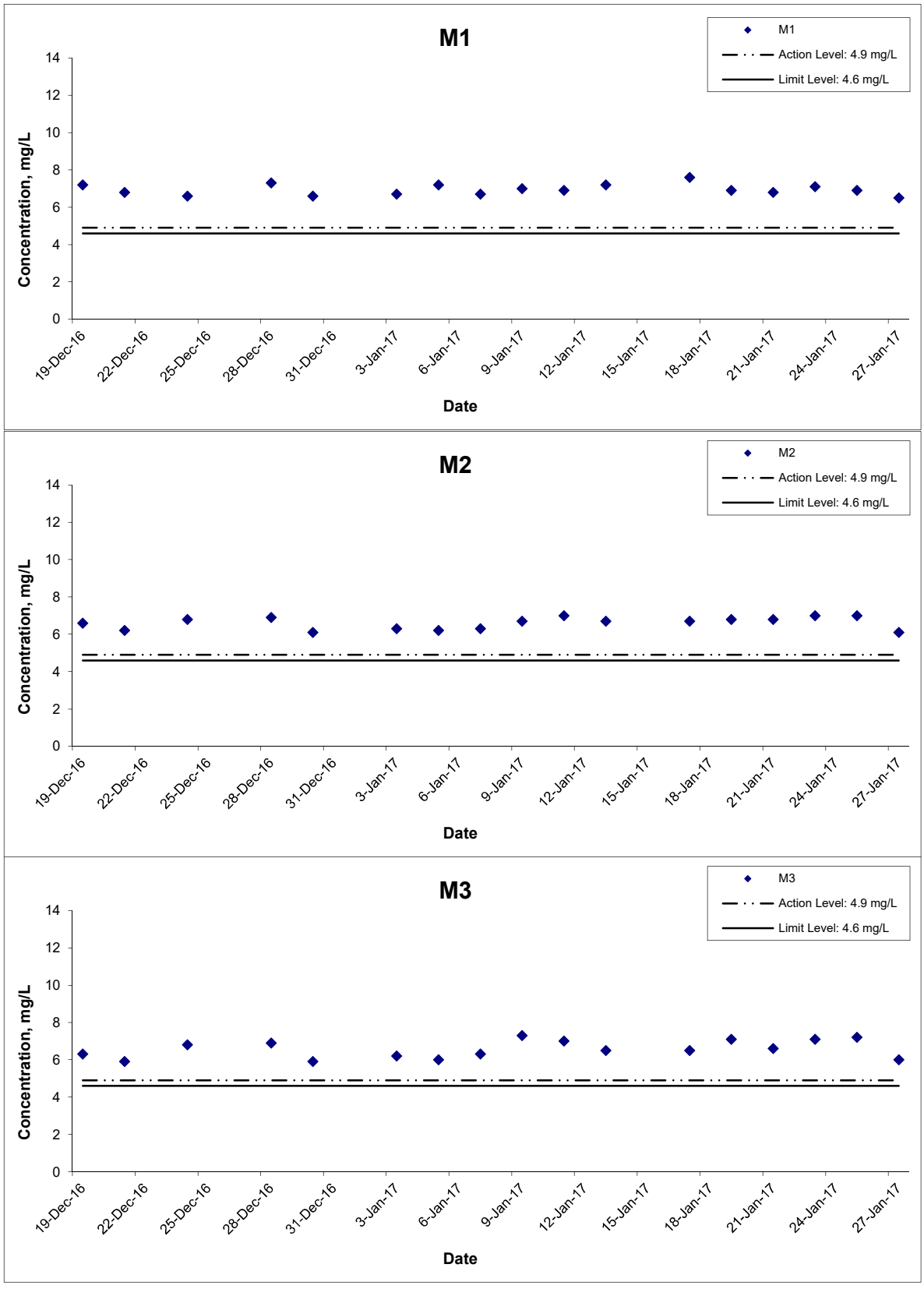
Title	Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA16034	CINOTECH
		Date: Jan 17	Appendix: I	

Dissolved Oxygen (Depth-averaged) at Mid-Flood Tide



Title	Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA16034	CINOTECH
		Date Jan 17	Appendix I	

Dissolved Oxygen (Depth-averaged) at Mid-Flood Tide



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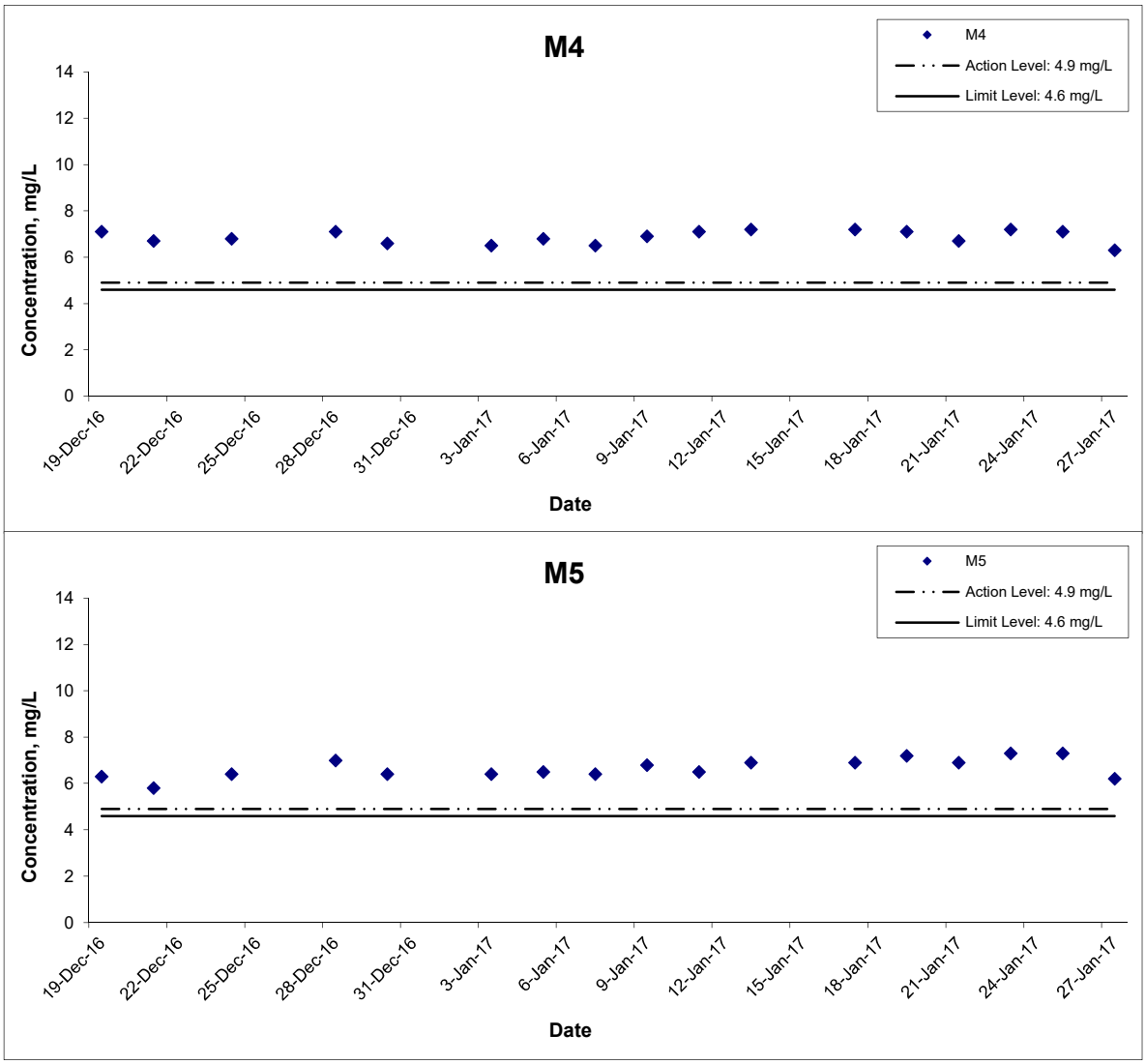
Dissolved Oxygen (Depth-averaged) at Mid-Flood Tide



Title: Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA16034	CINOTECH
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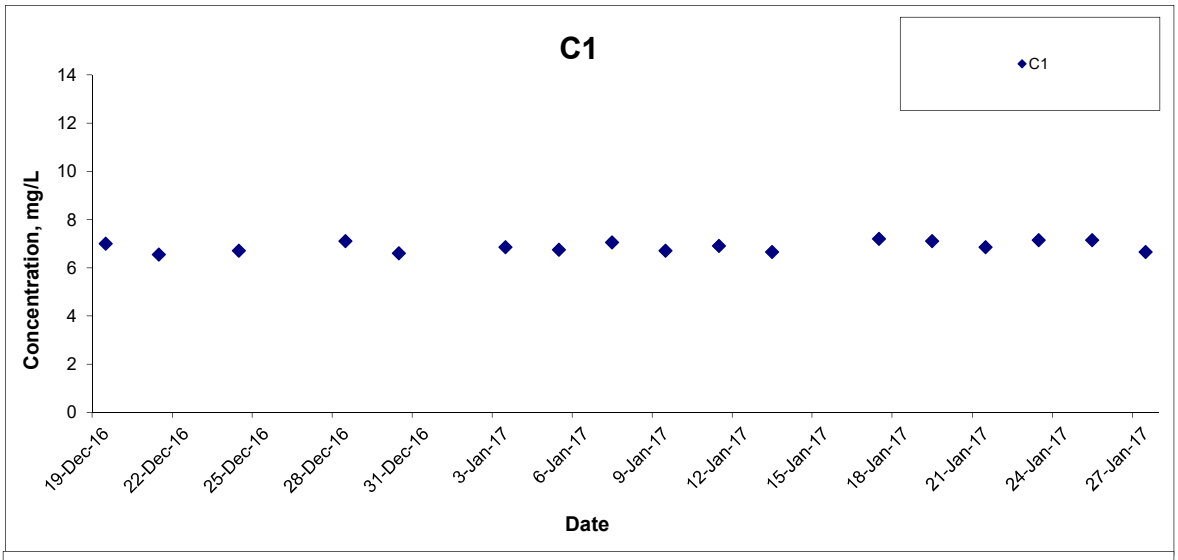
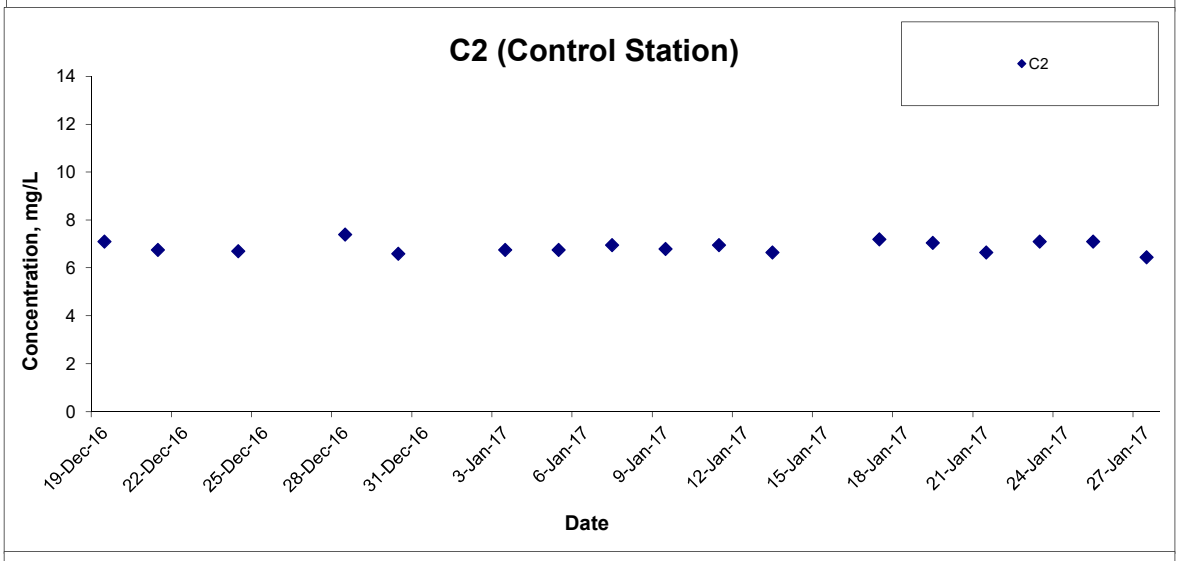
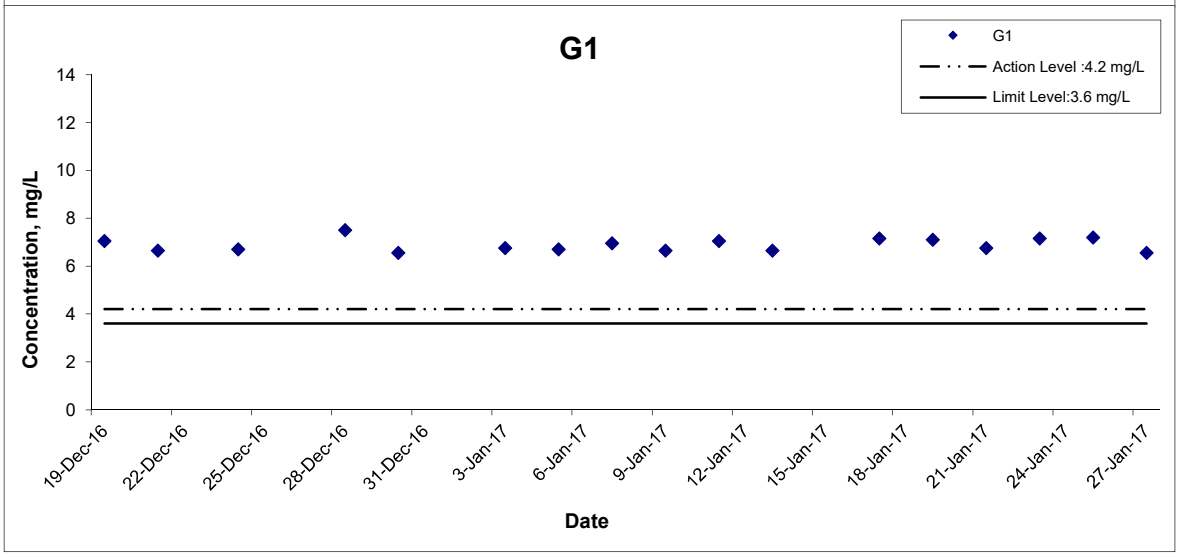
Dissolved Oxygen (Bottom) at Mid-Ebb Tide







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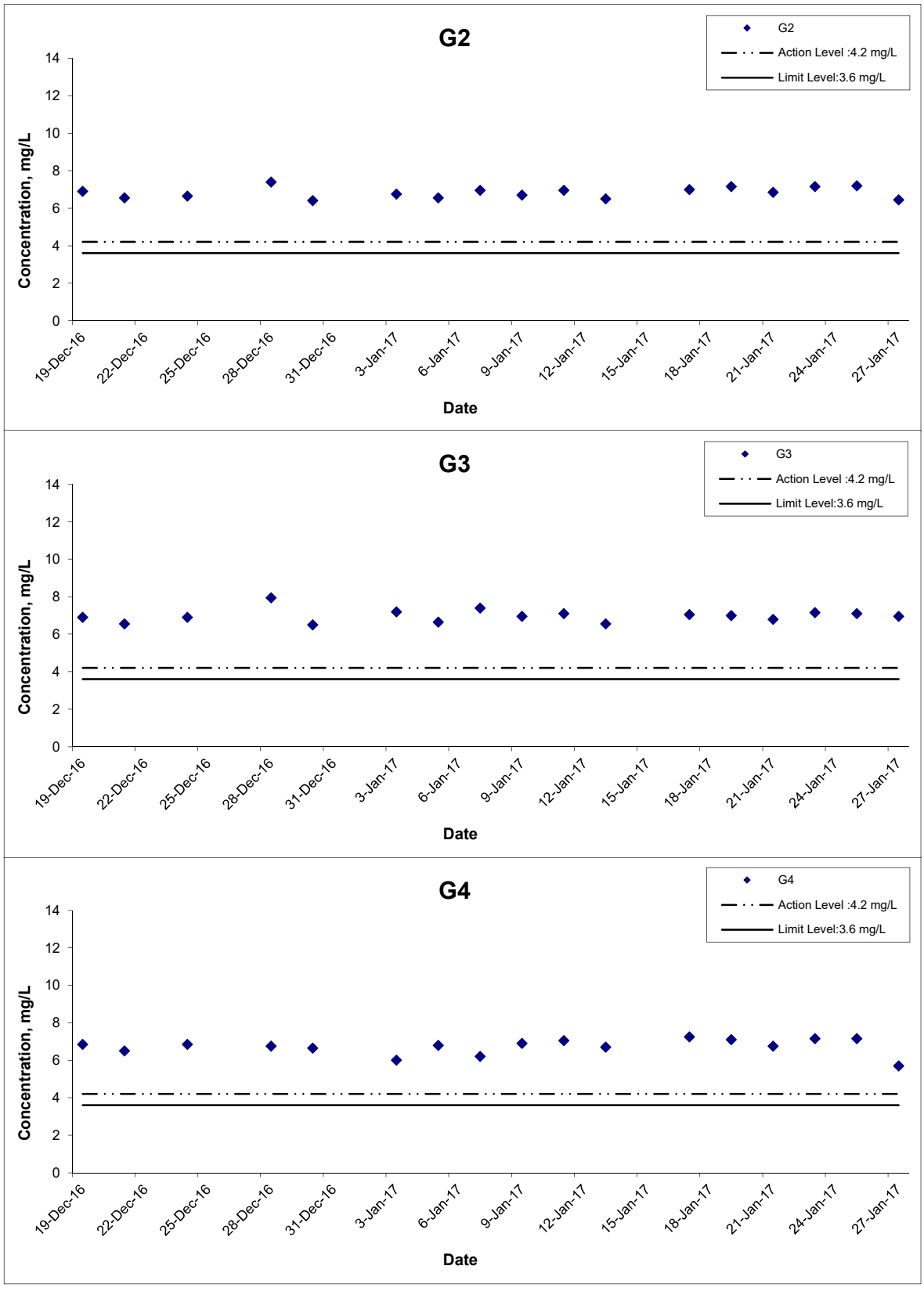
Dissolved Oxygen (Bottom) at Mid-Ebb Tide



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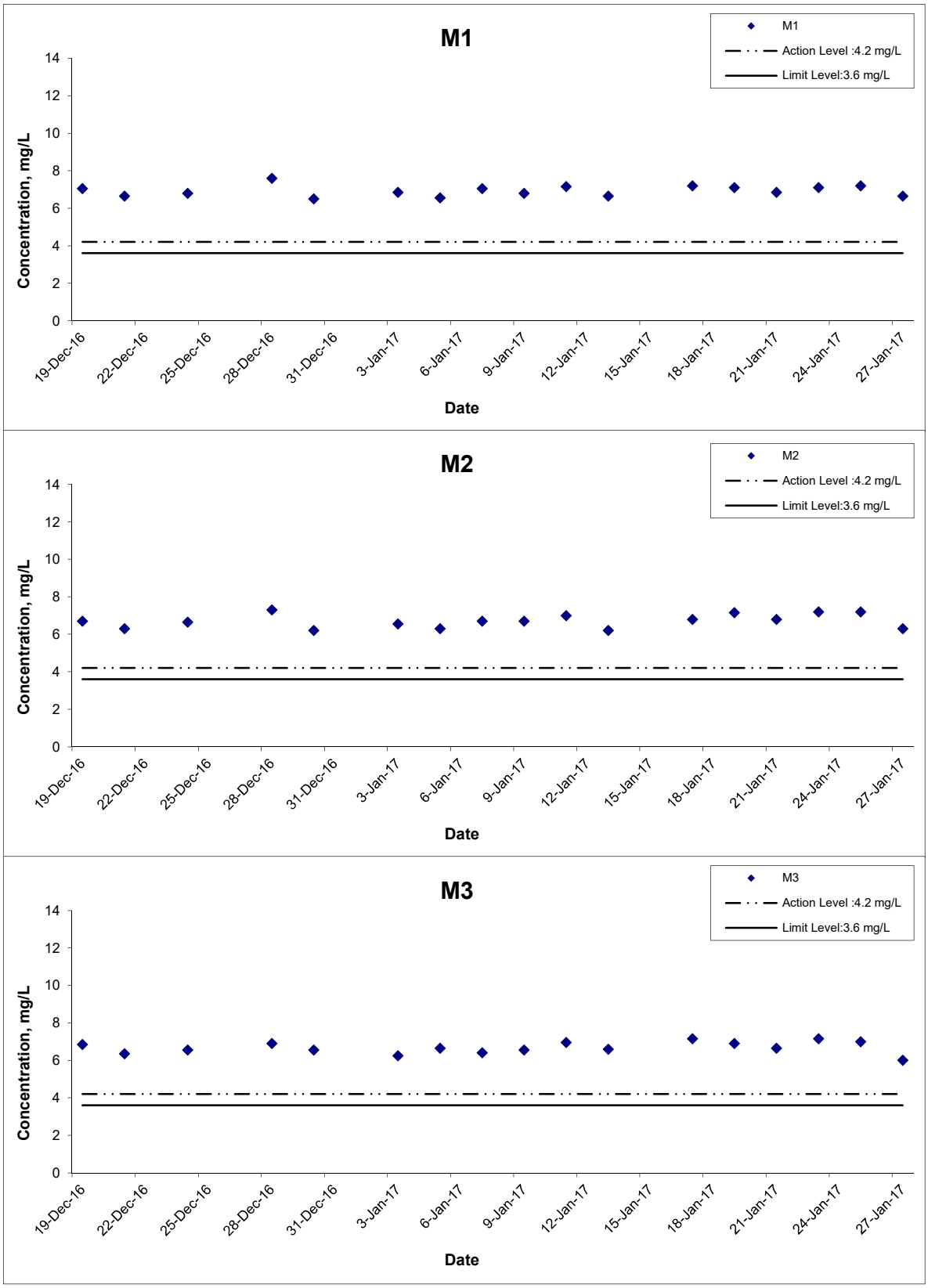
Dissolved Oxygen (Bottom) at Mid-Ebb Tide



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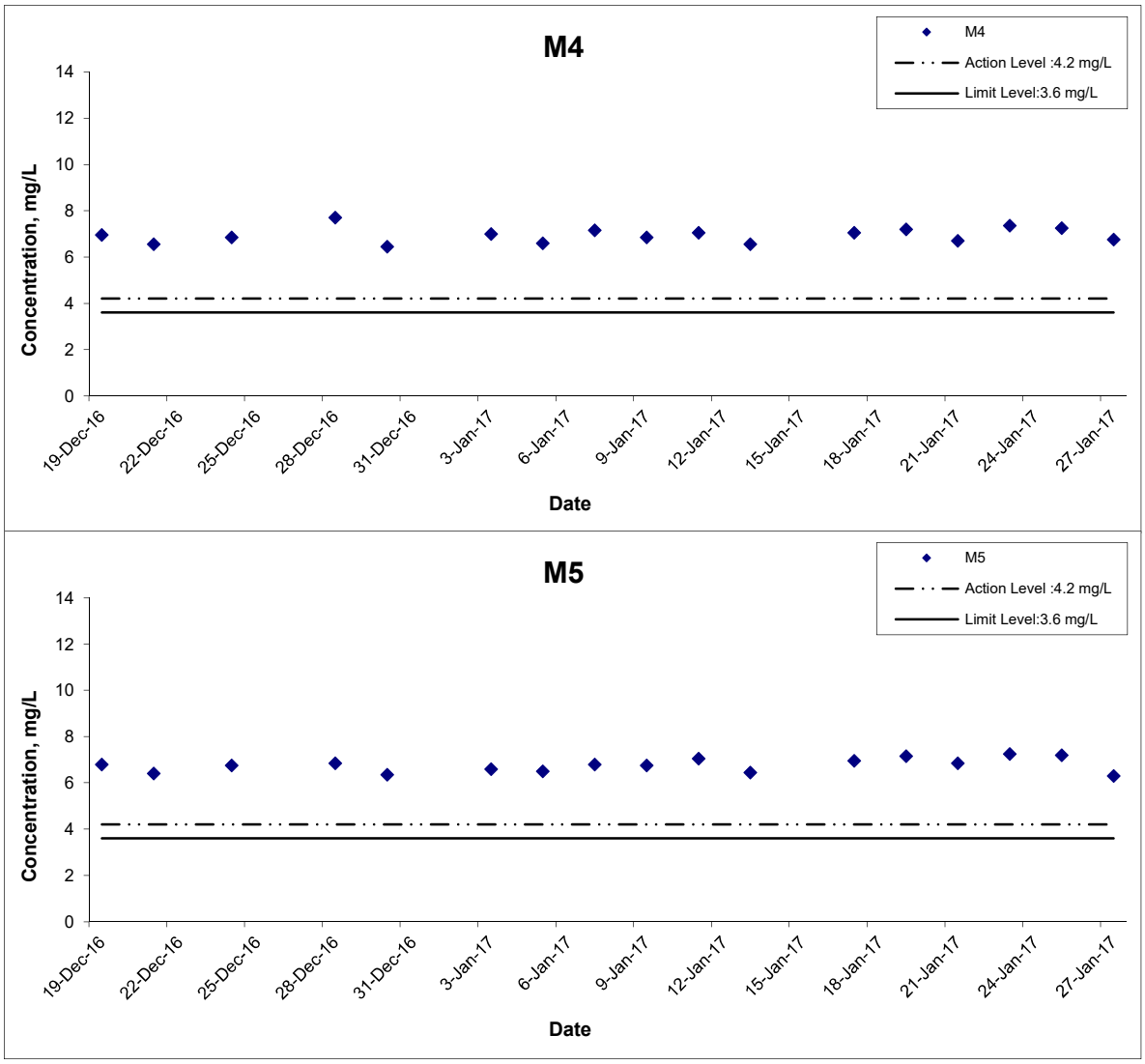
Dissolved Oxygen (Bottom) at Mid-Ebb Tide



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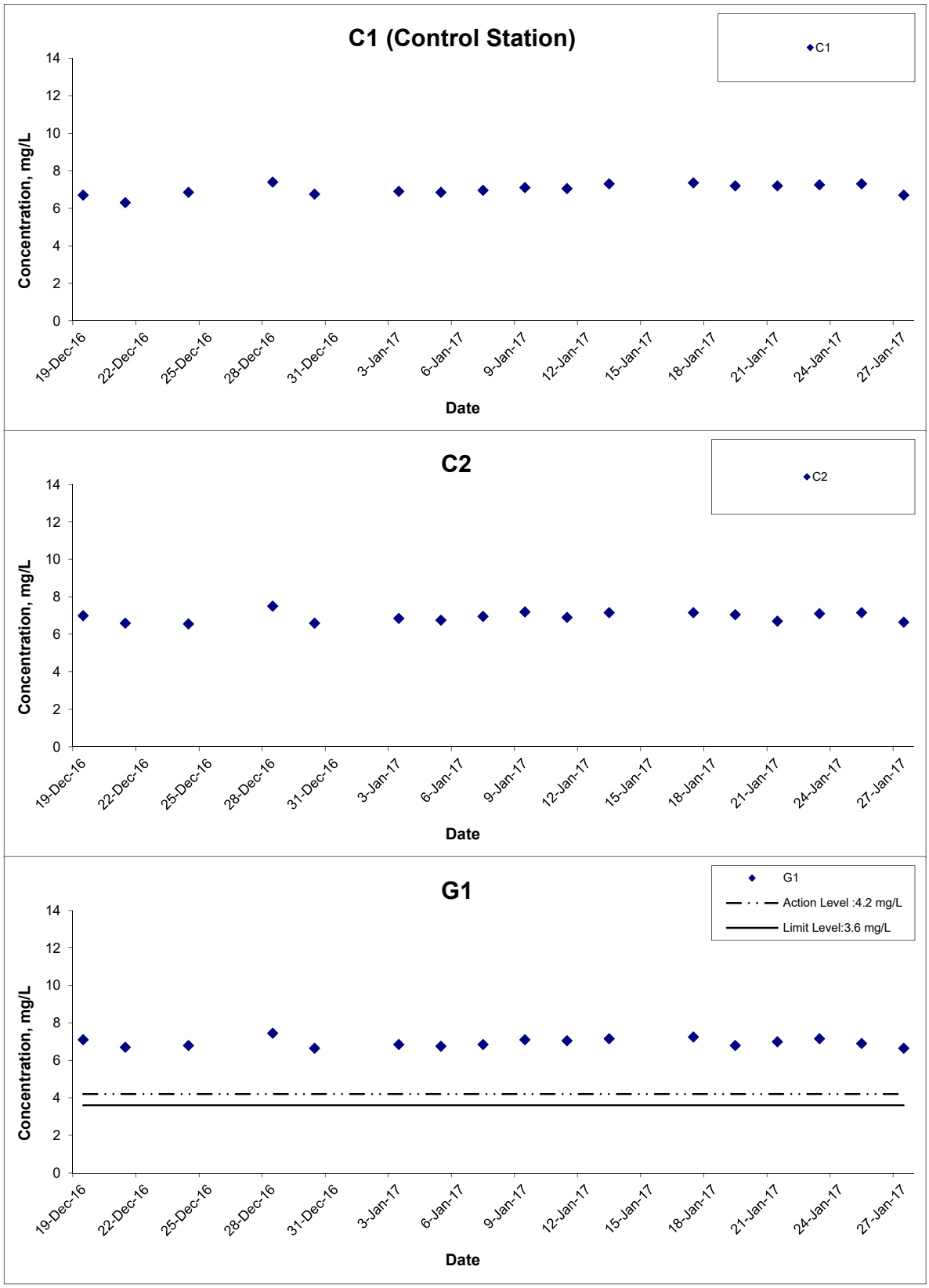
Dissolved Oxygen (Bottom) at Mid-Flood Tide



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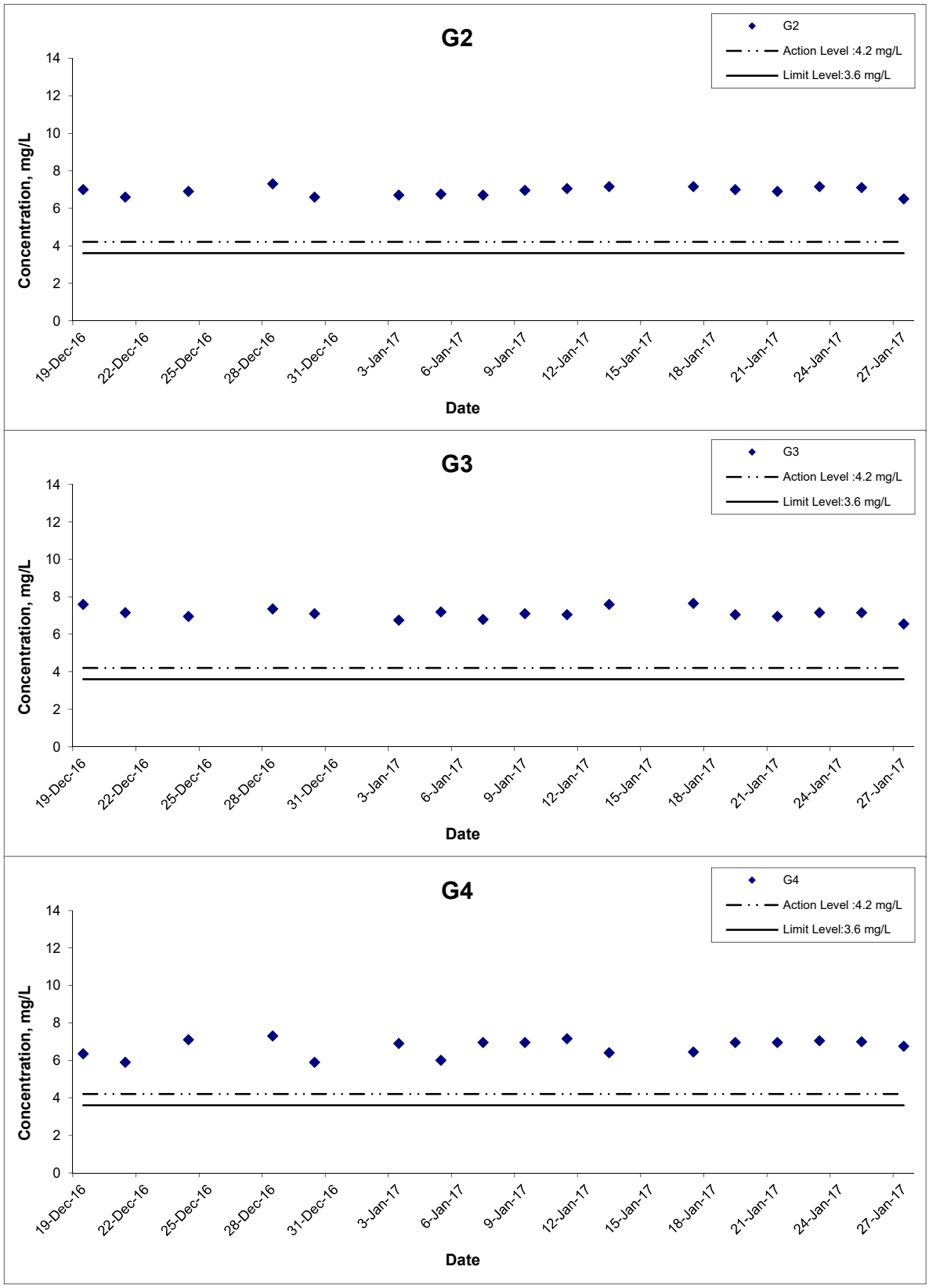
Dissolved Oxygen (Bottom) at Mid-Flood Tide



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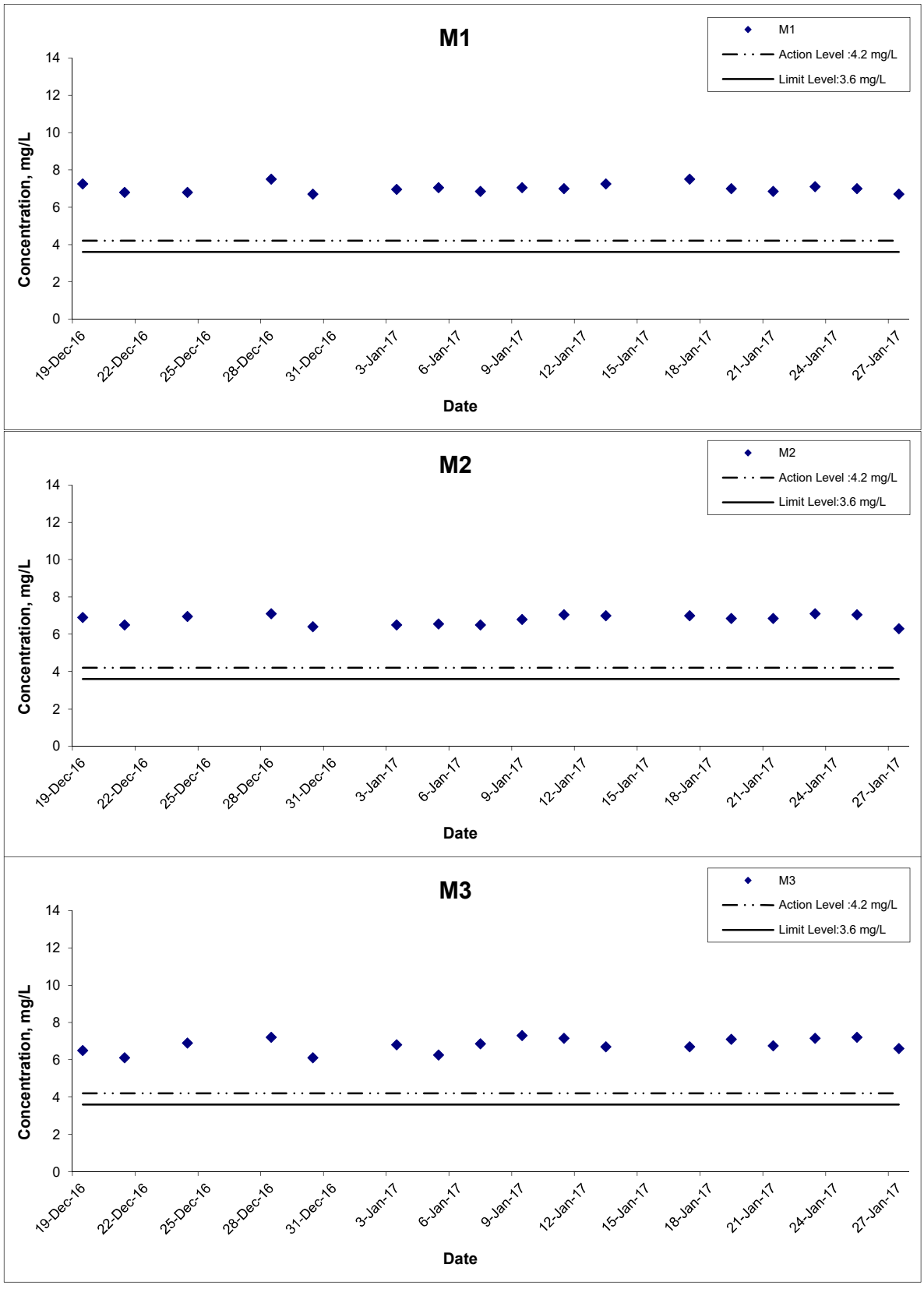
Dissolved Oxygen (Bottom) at Mid-Flood Tide



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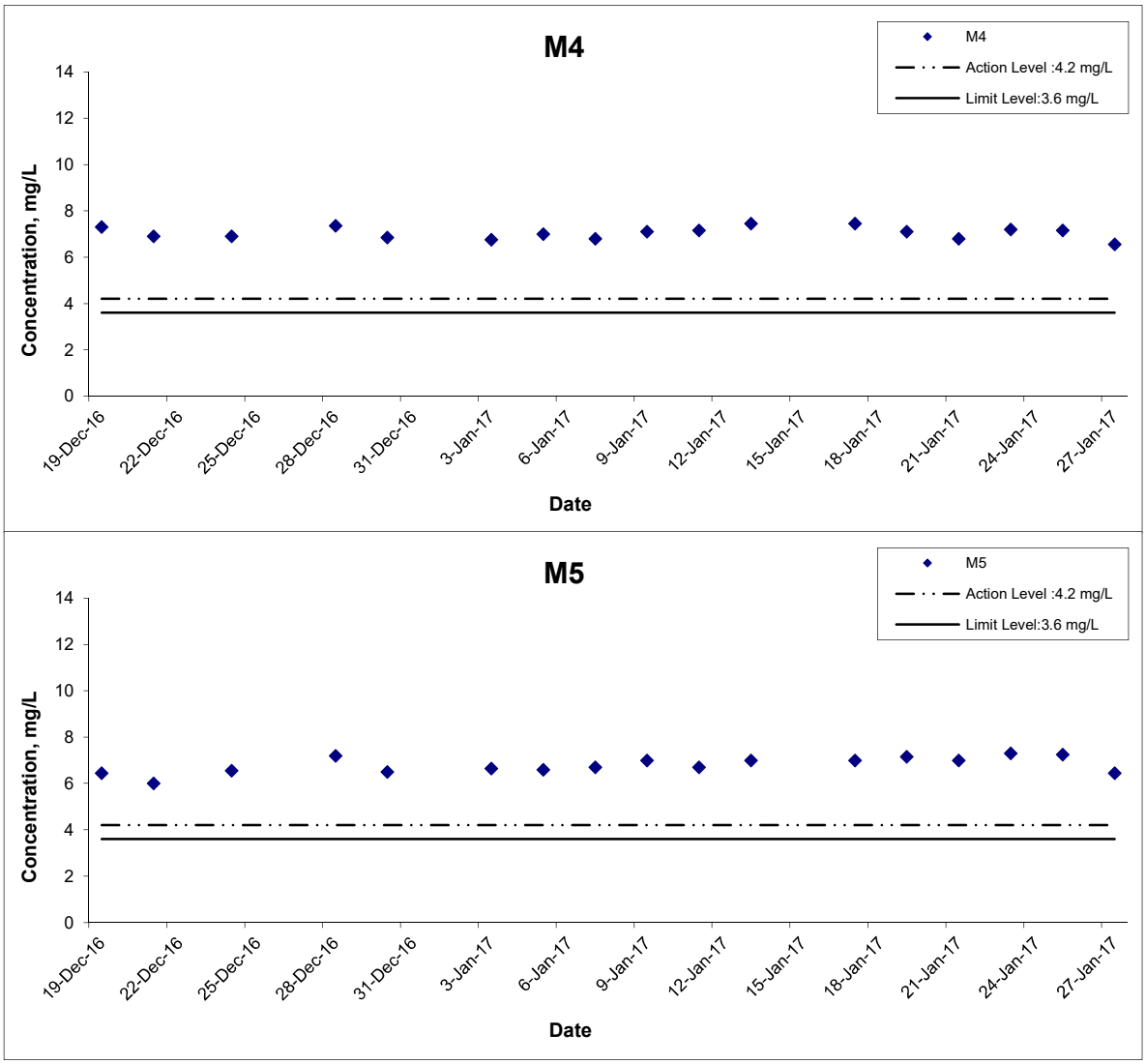
Dissolved Oxygen (Bottom) at Mid-Flood Tide



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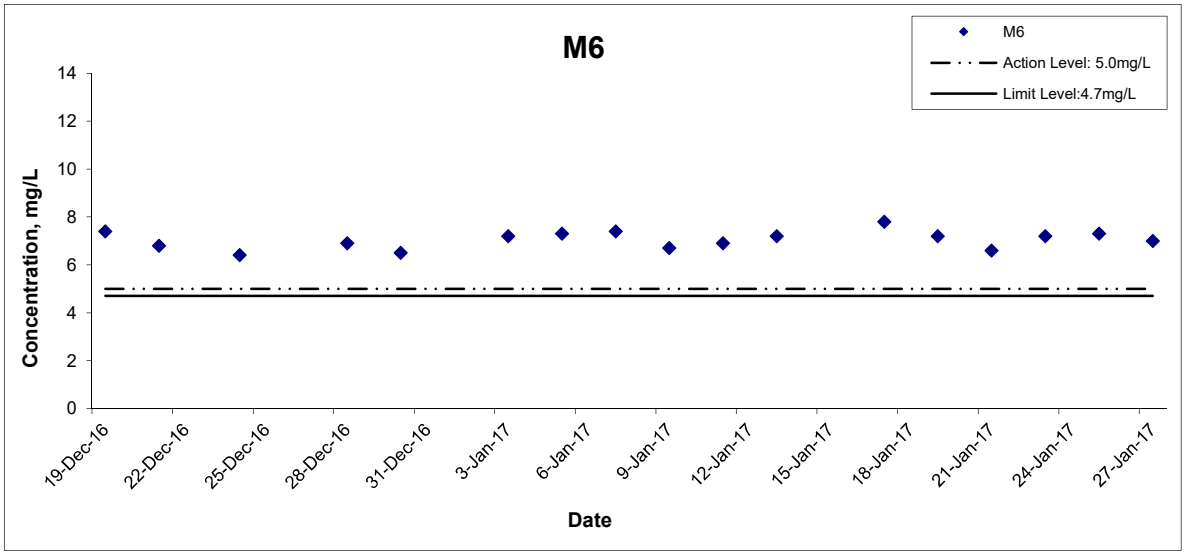
Dissolved Oxygen (Intake Level of WSD Salt Water Intake) at Mid-Ebb Tide



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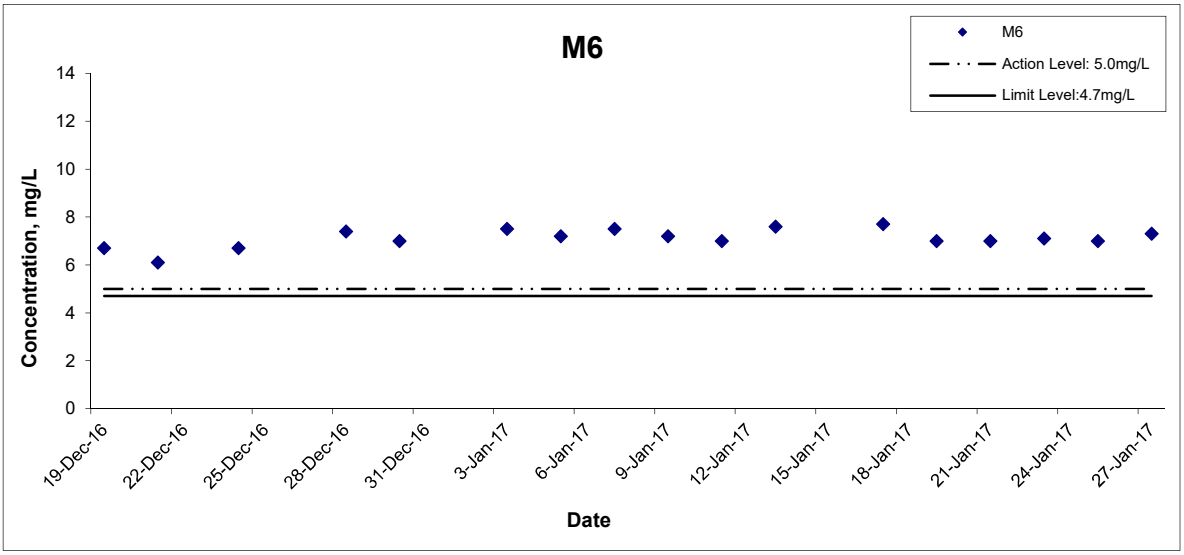
Dissolved Oxygen (Intake Level of WSD Salt Water Intake) at Mid-Flood Tide



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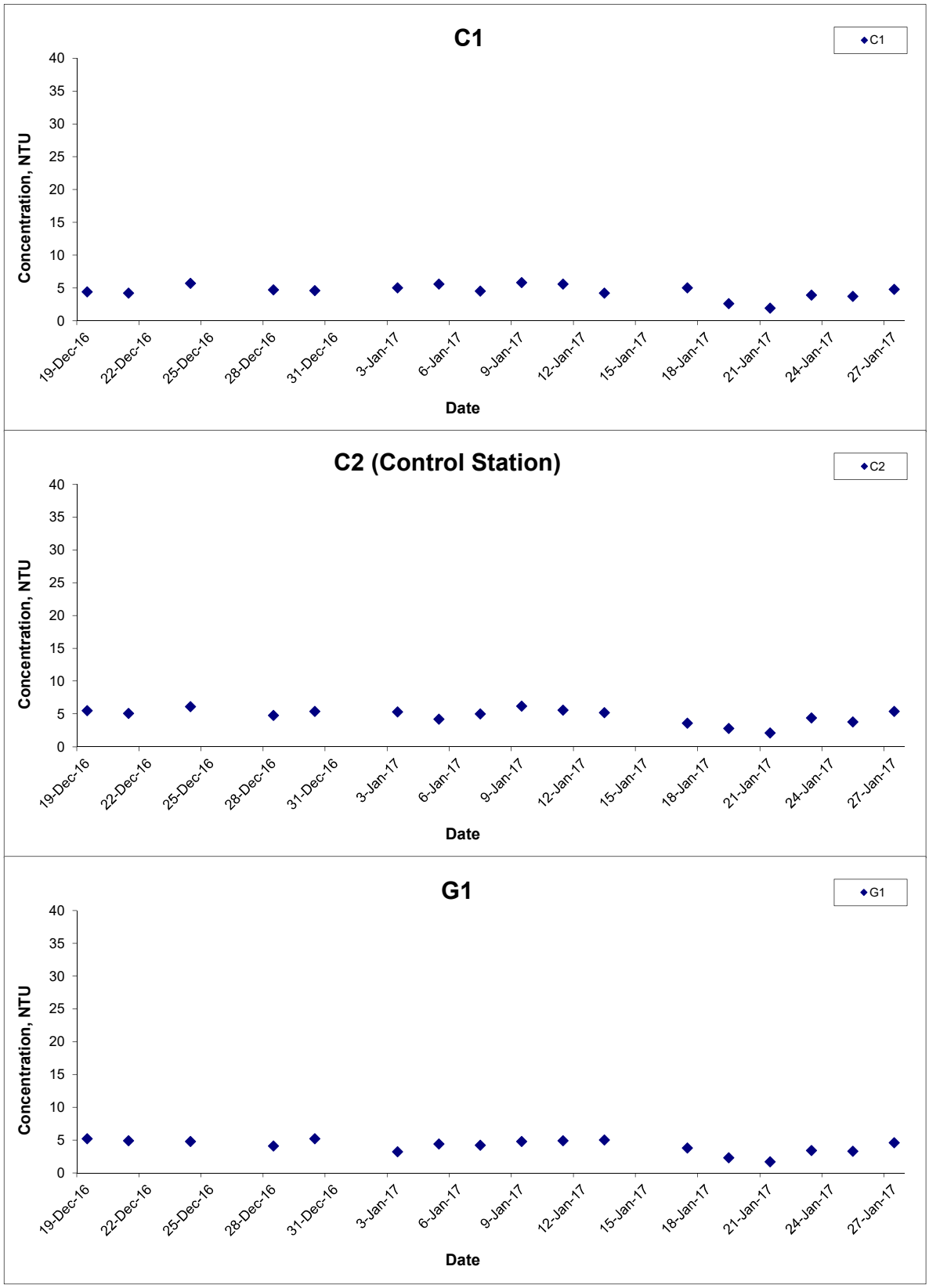
Turbidity (Depth-averaged) at Mid-Ebb Tide



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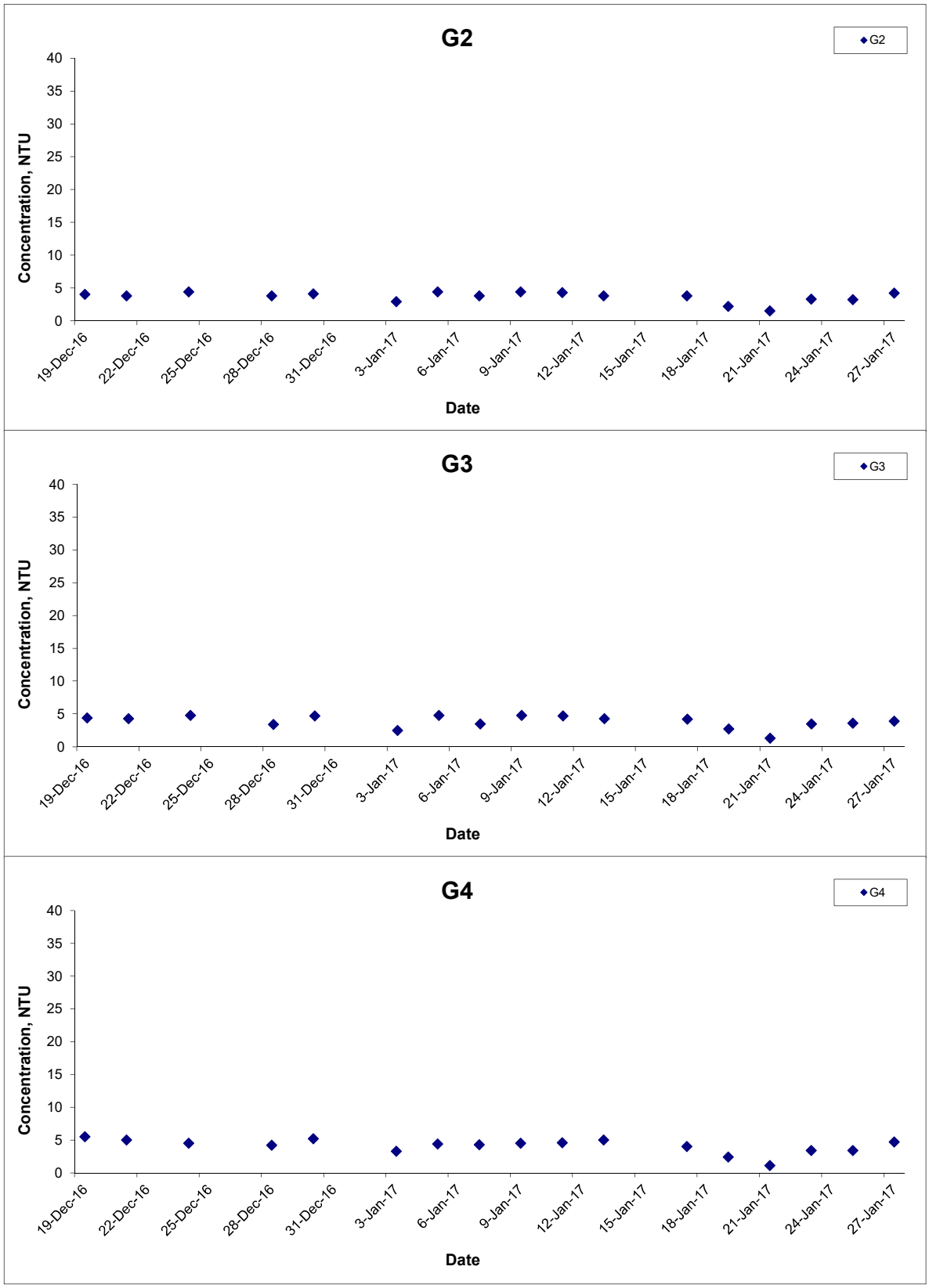
Turbidity (Depth-averaged) at Mid-Ebb Tide



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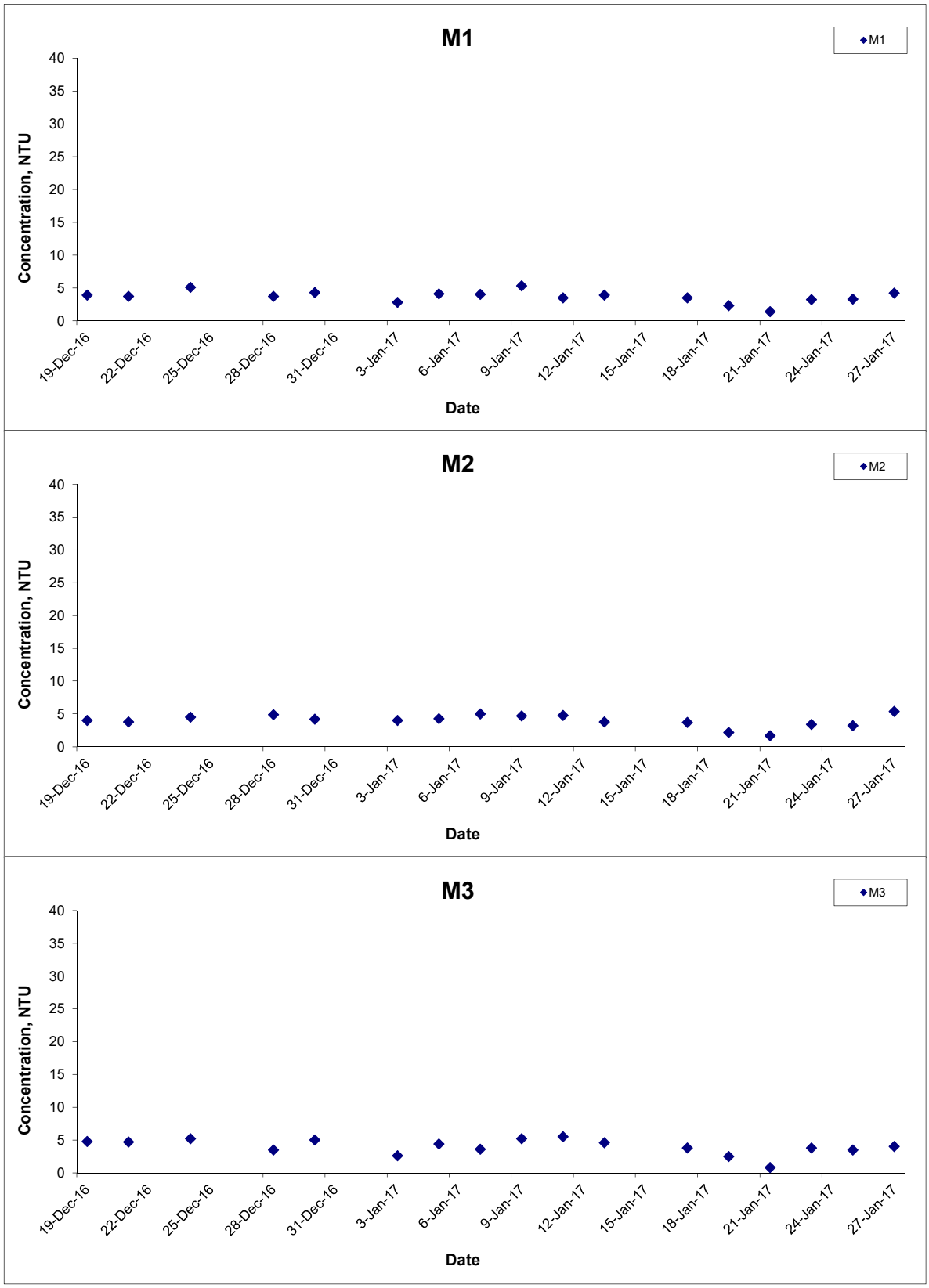
Turbidity (Depth-averaged) at Mid-Ebb Tide



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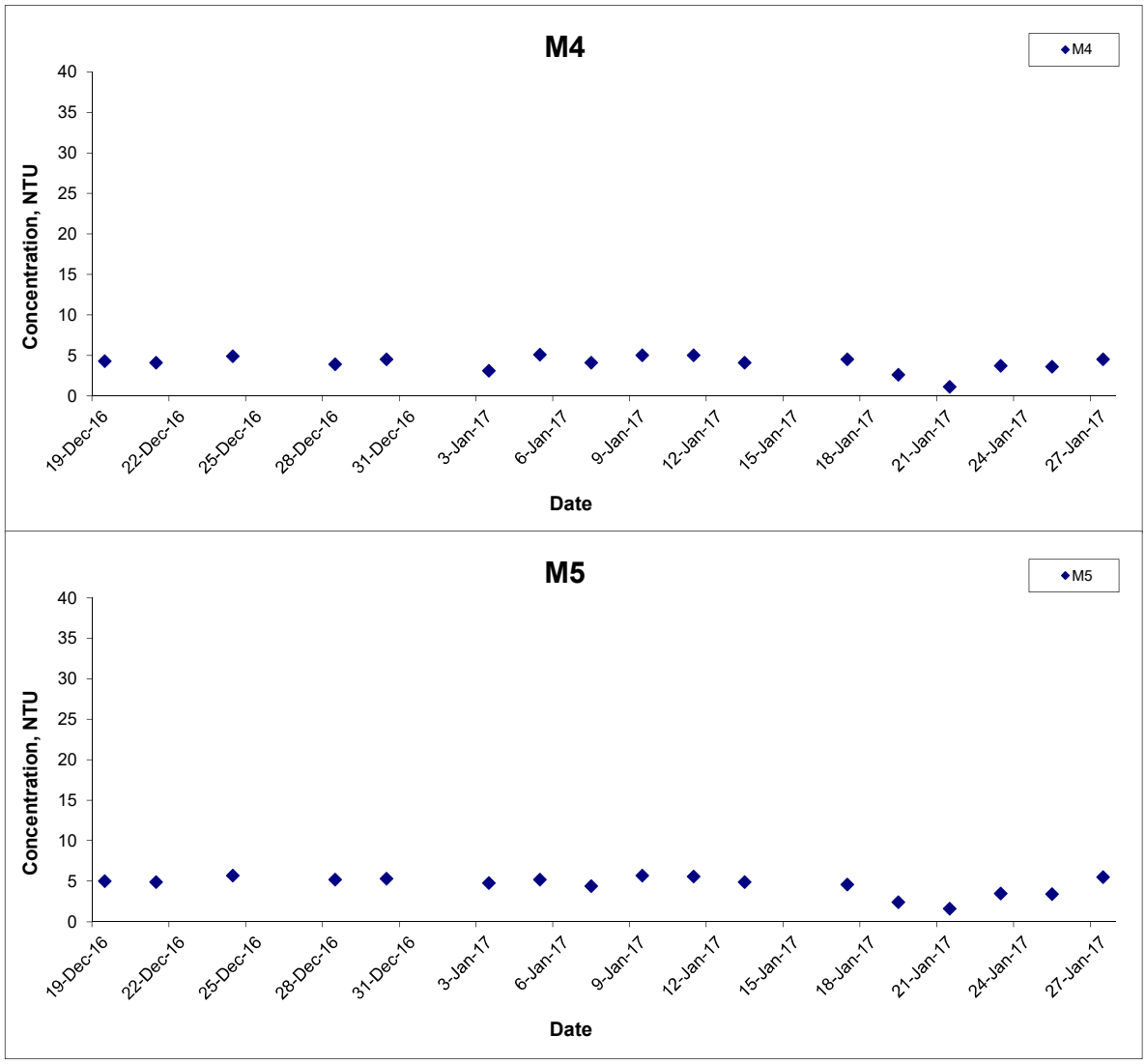
Turbidity (Depth-averaged) at Mid-Ebb Tide



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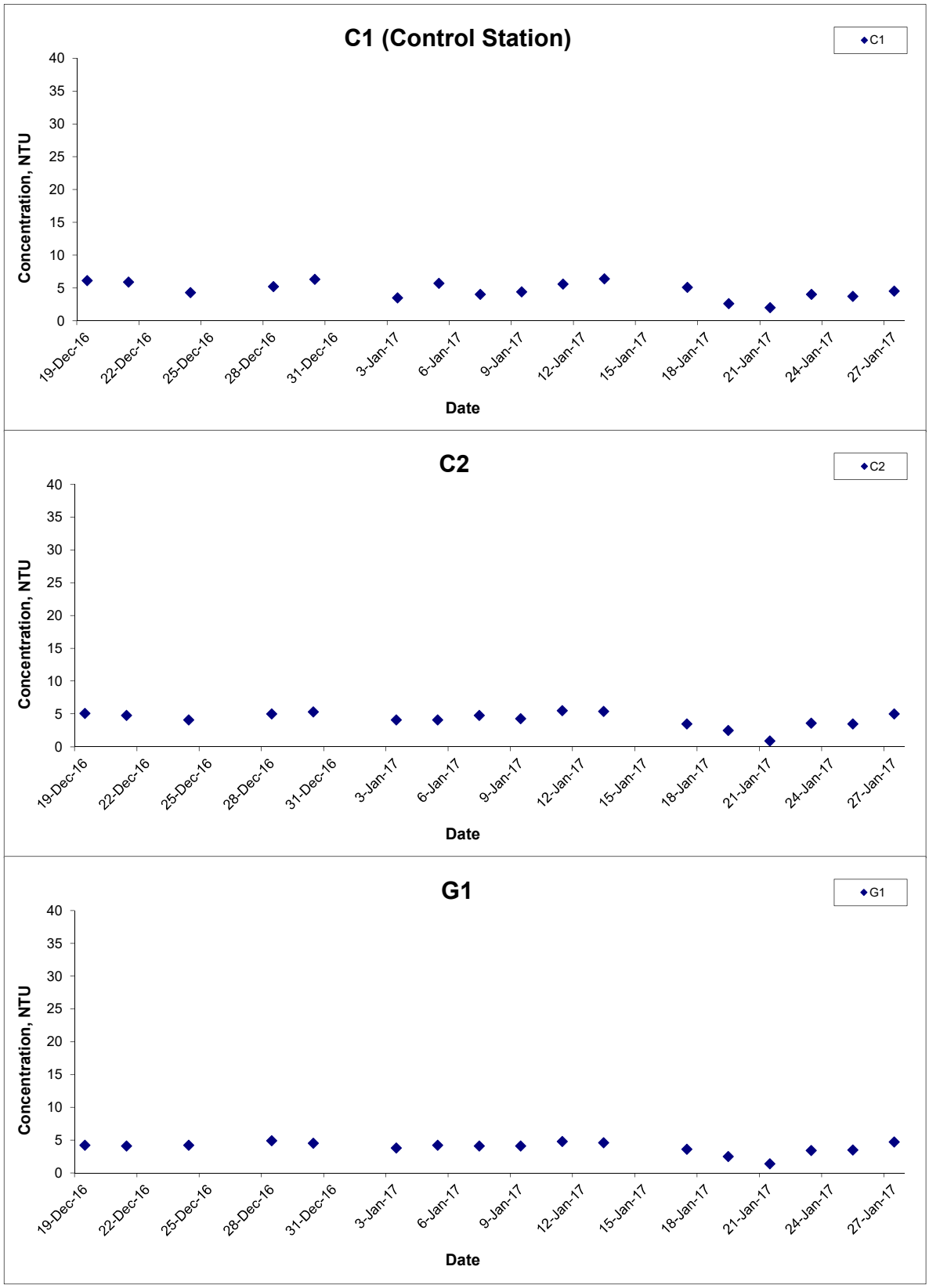
Turbidity (Depth-averaged) at Mid-Flood Tide



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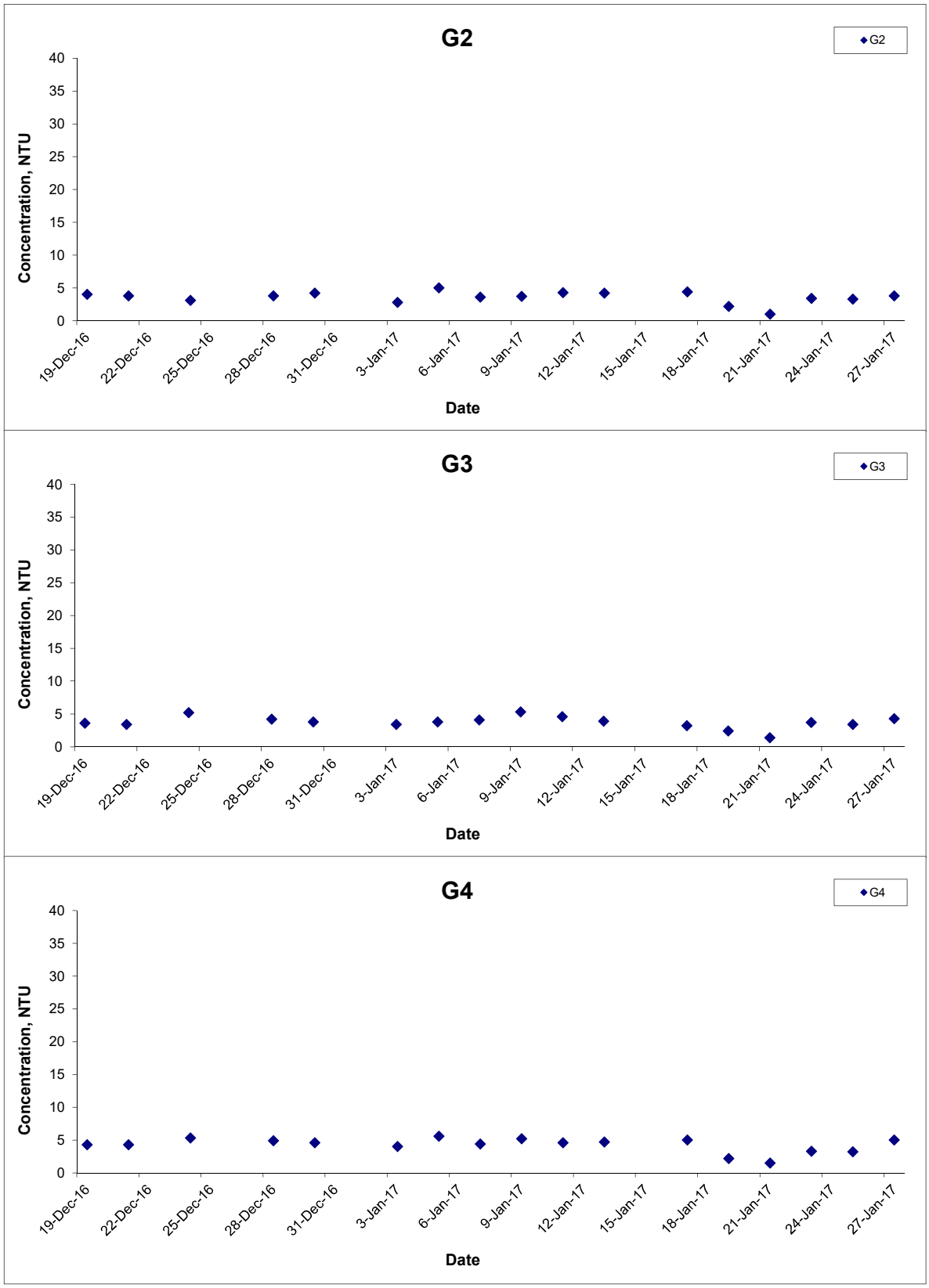
Turbidity (Depth-averaged) at Mid-Flood Tide



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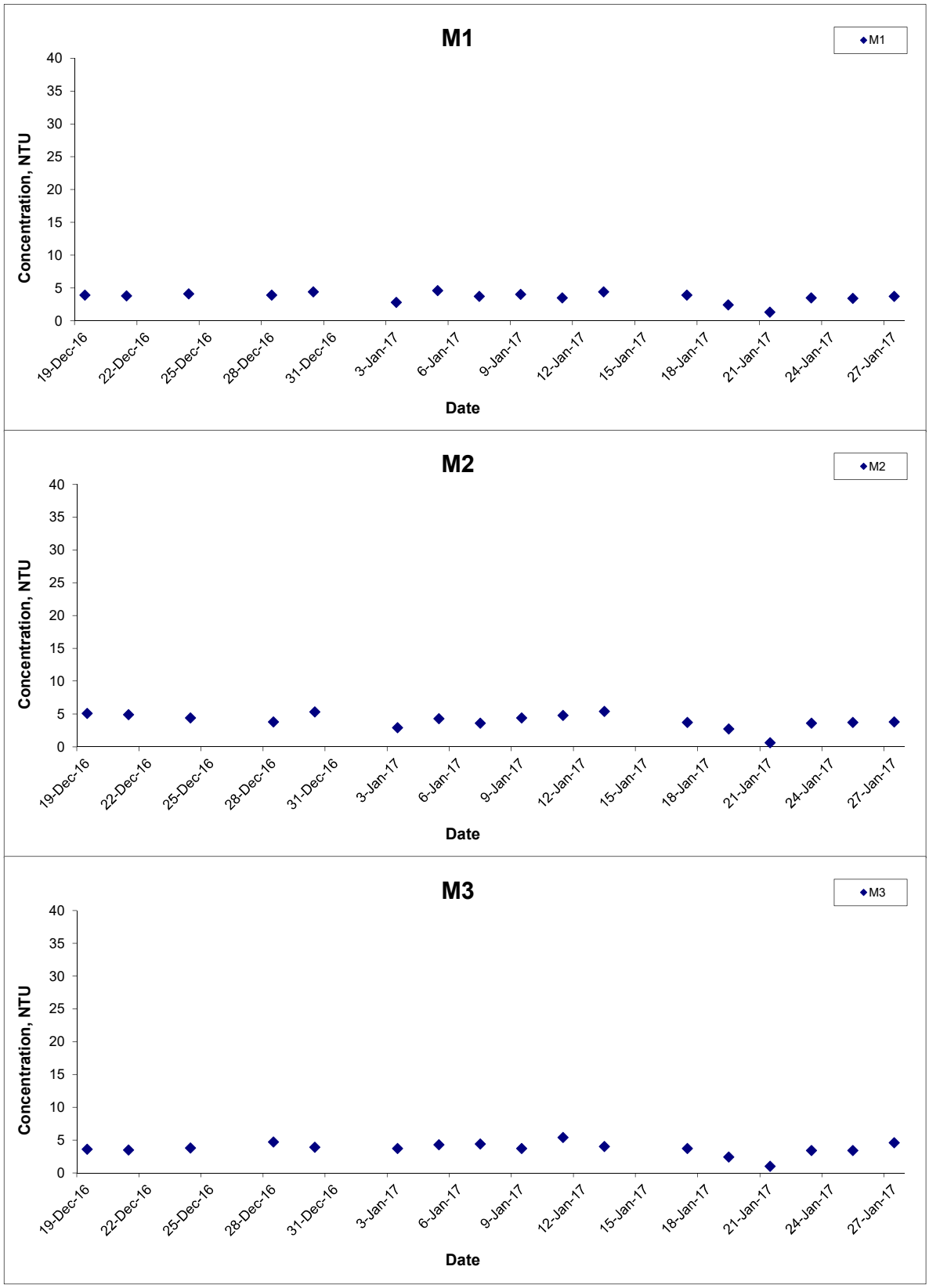
Turbidity (Depth-averaged) at Mid-Flood Tide



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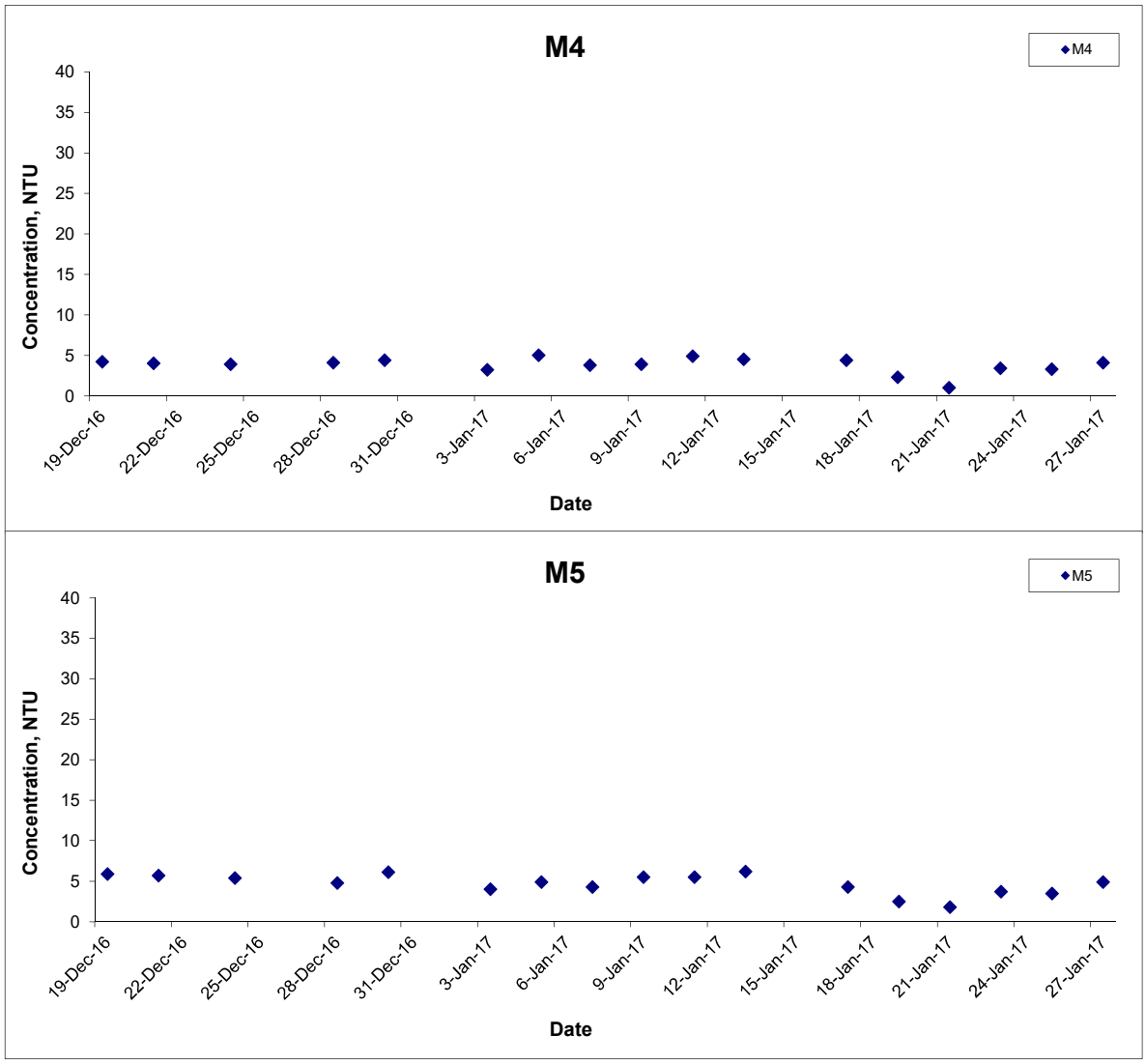
Turbidity (Depth-averaged) at Mid-Flood Tide



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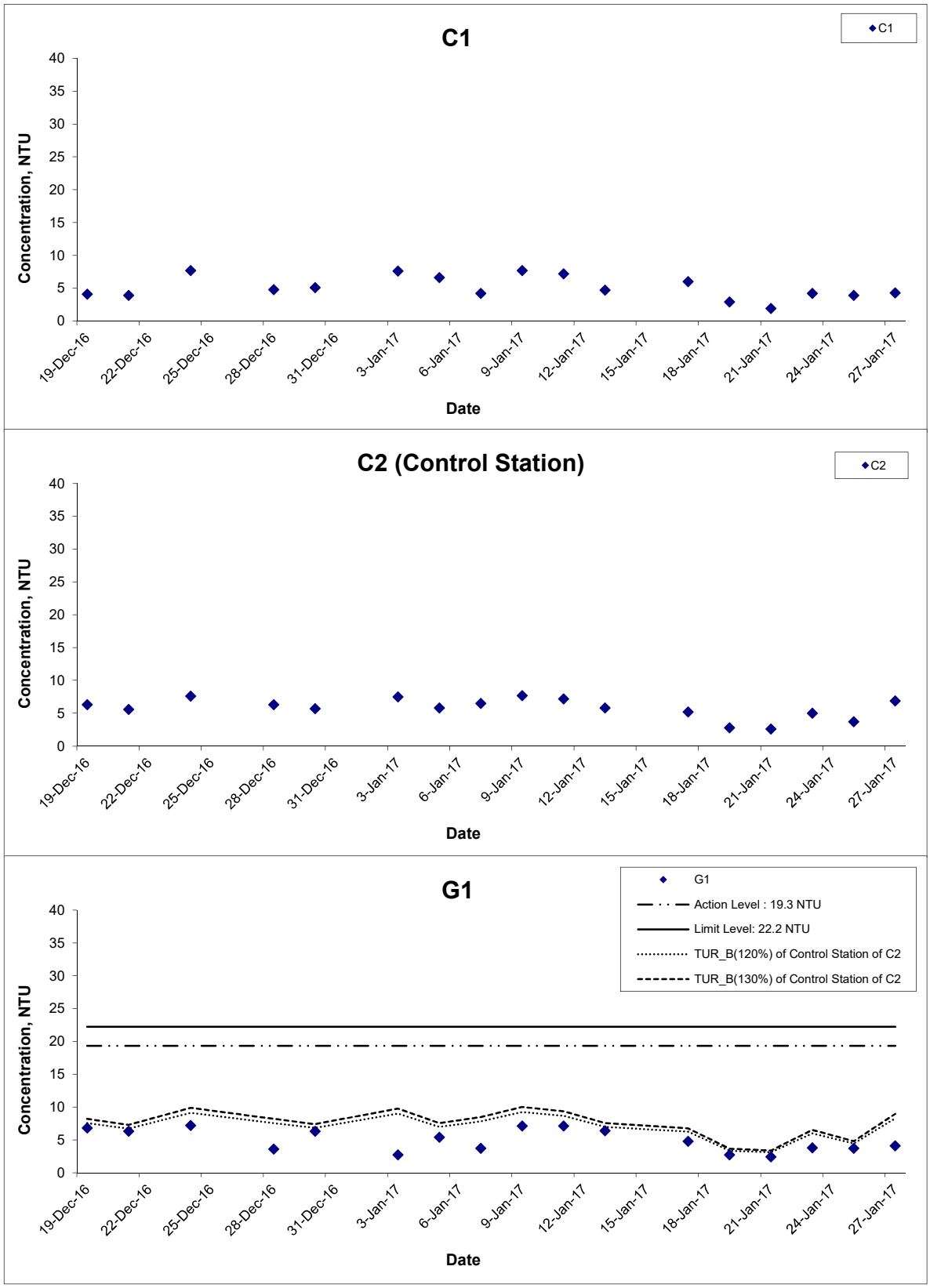
Turbidity (Bottom) at Mid-Ebb Tide



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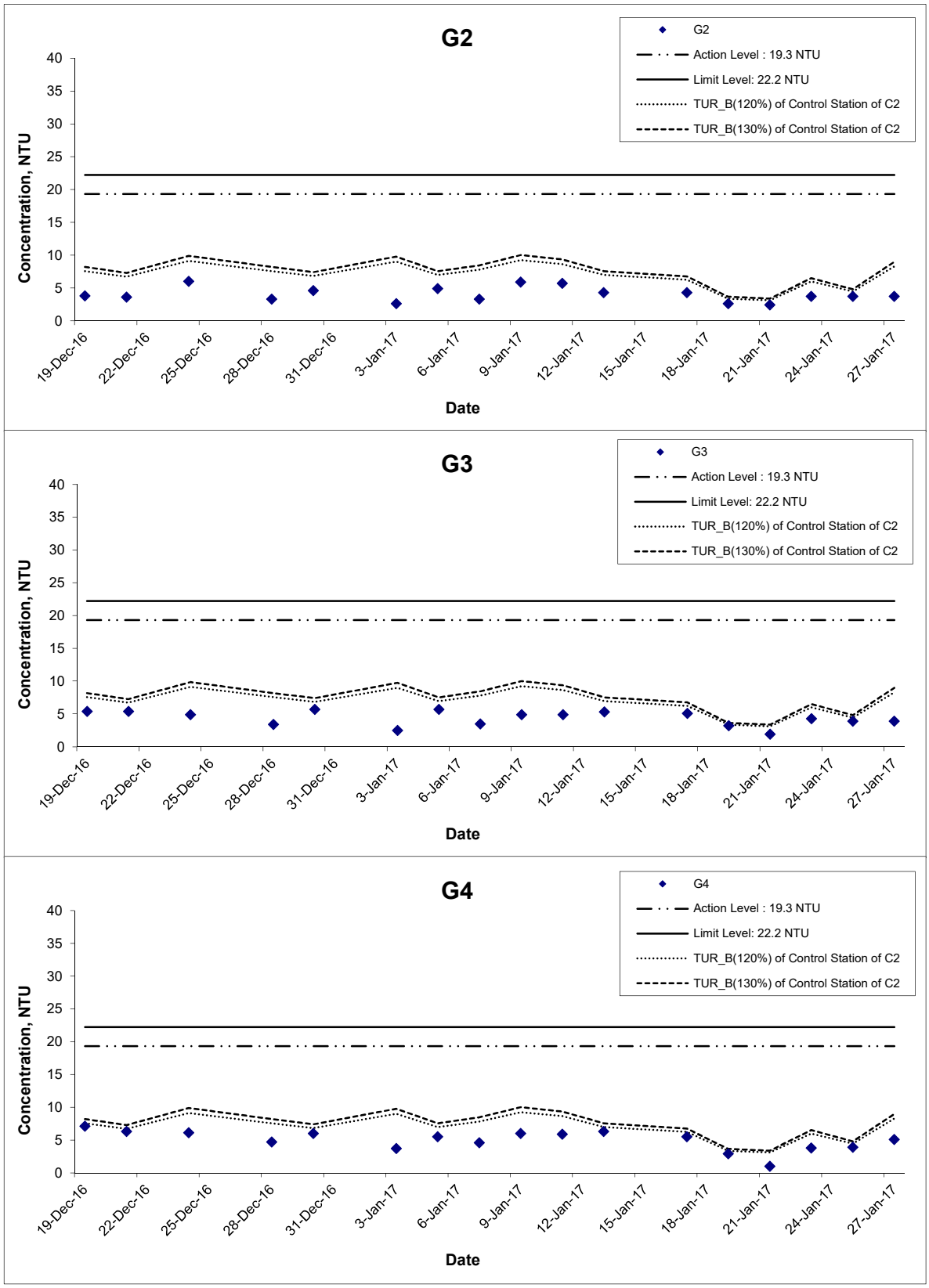
Turbidity (Bottom) at Mid-Ebb Tide



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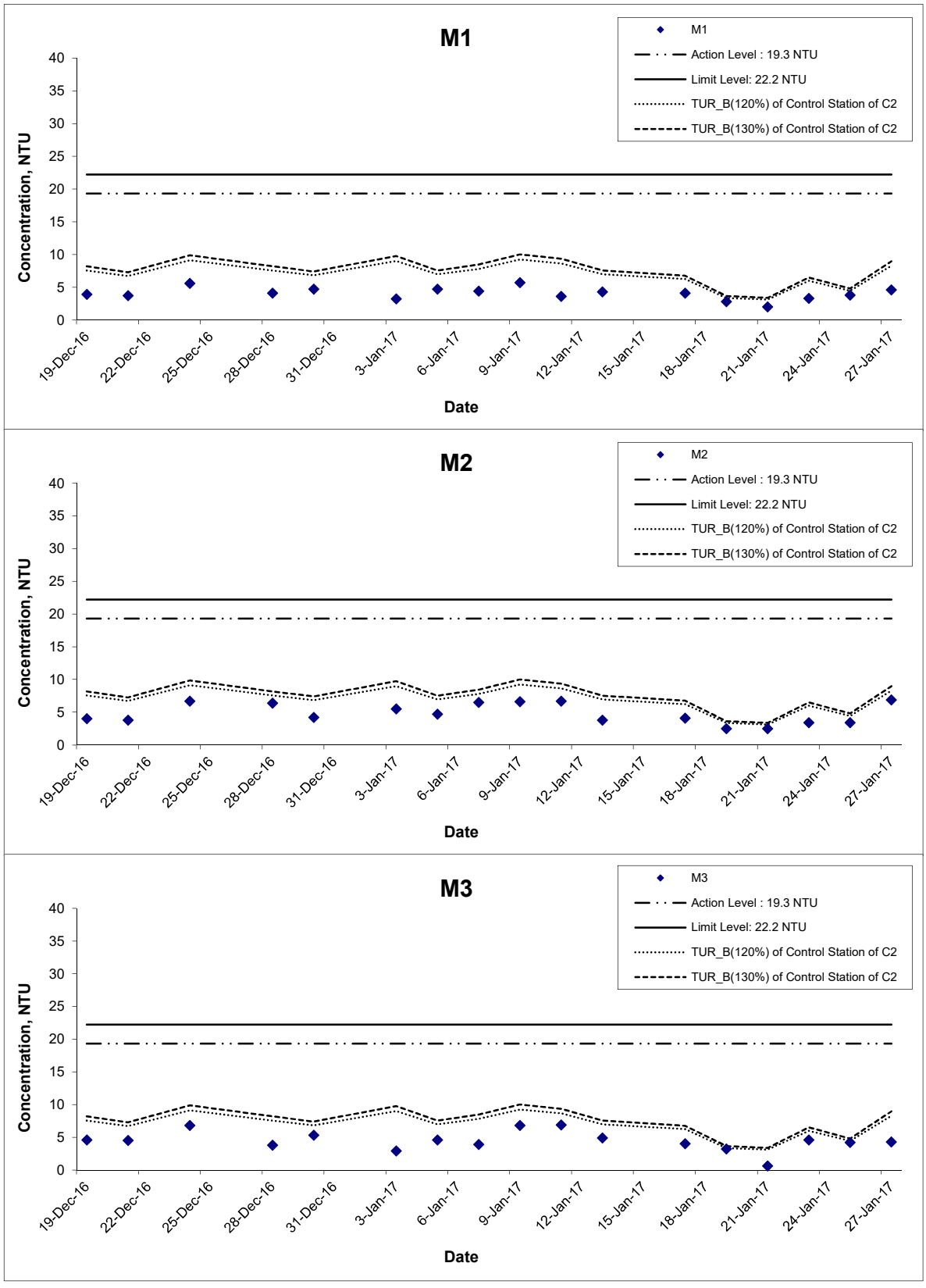
Turbidity (Bottom) at Mid-Ebb Tide



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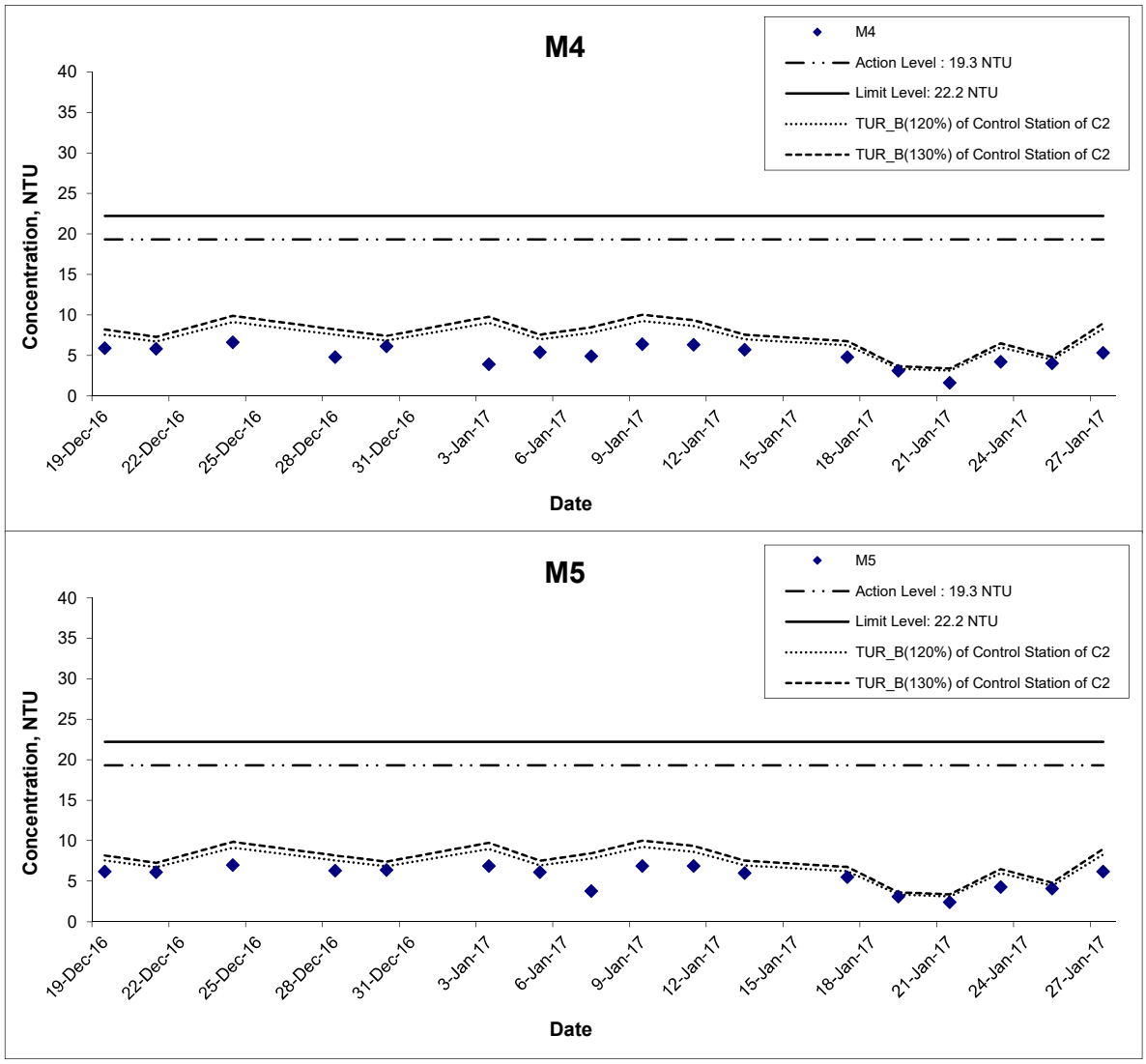
Turbidity (Bottom) at Mid-Ebb Tide



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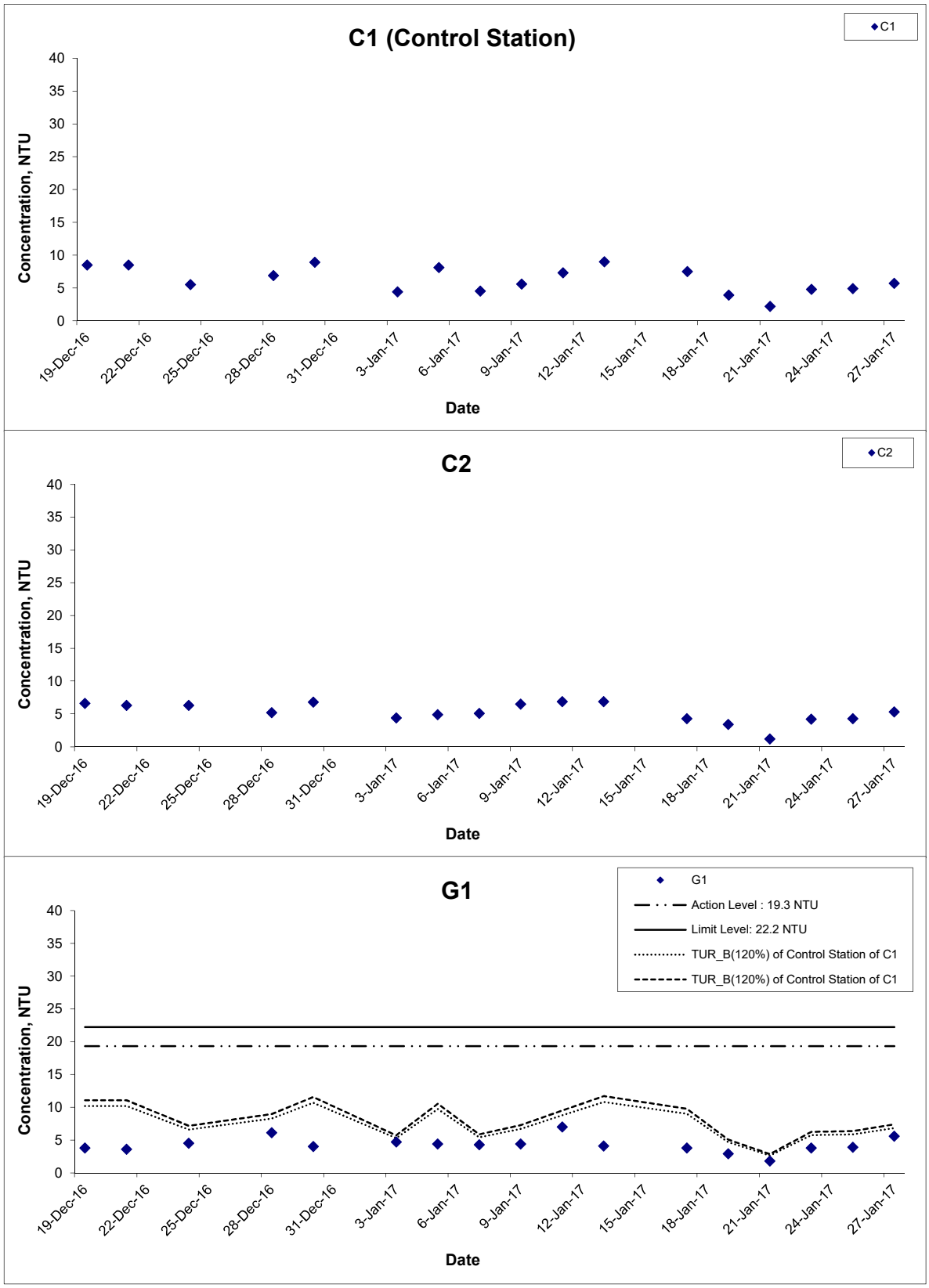
Turbidity (Bottom) at Mid-Flood Tide



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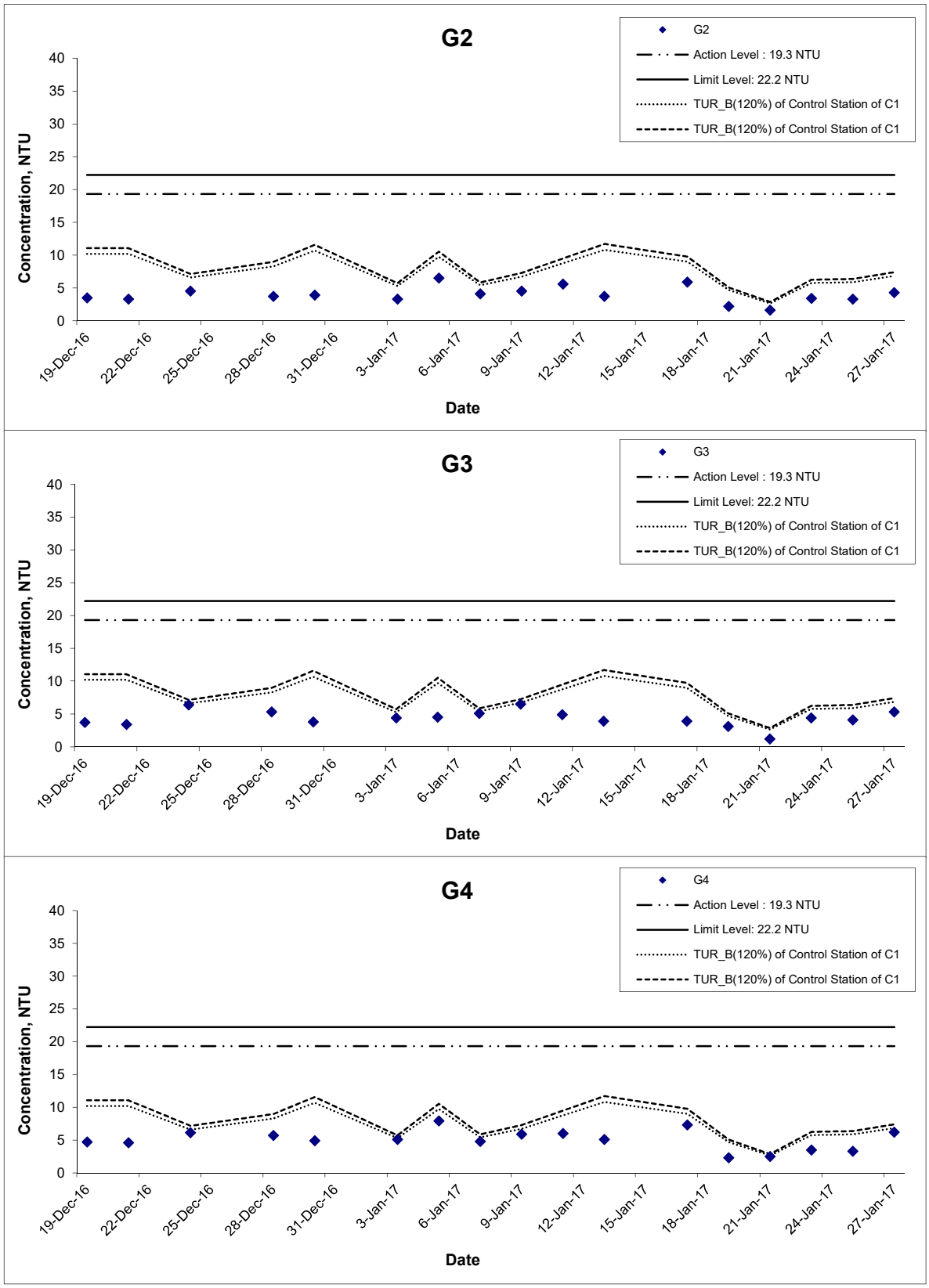
Turbidity (Bottom) at Mid-Flood Tide



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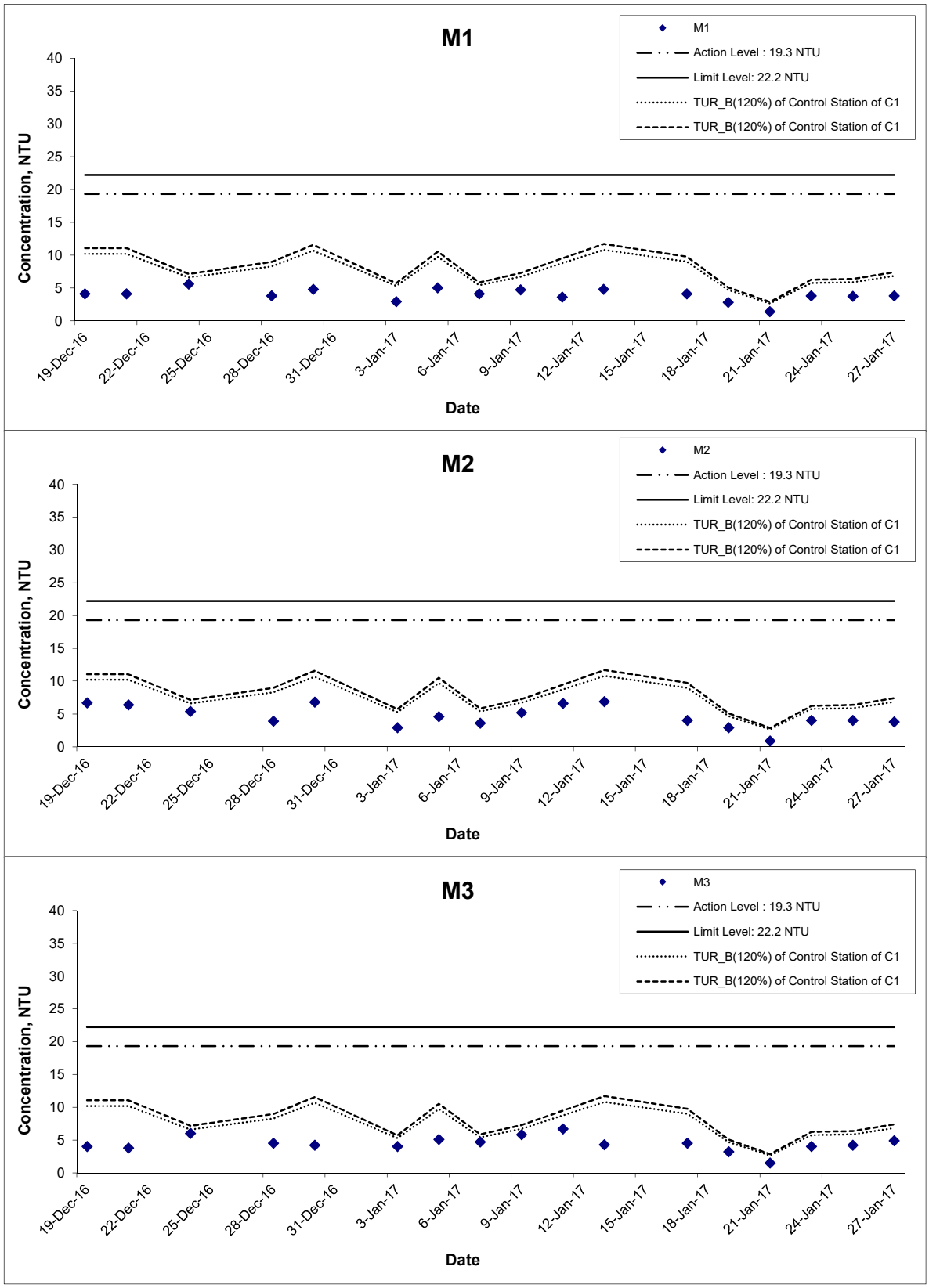
Turbidity (Bottom) at Mid-Flood Tide



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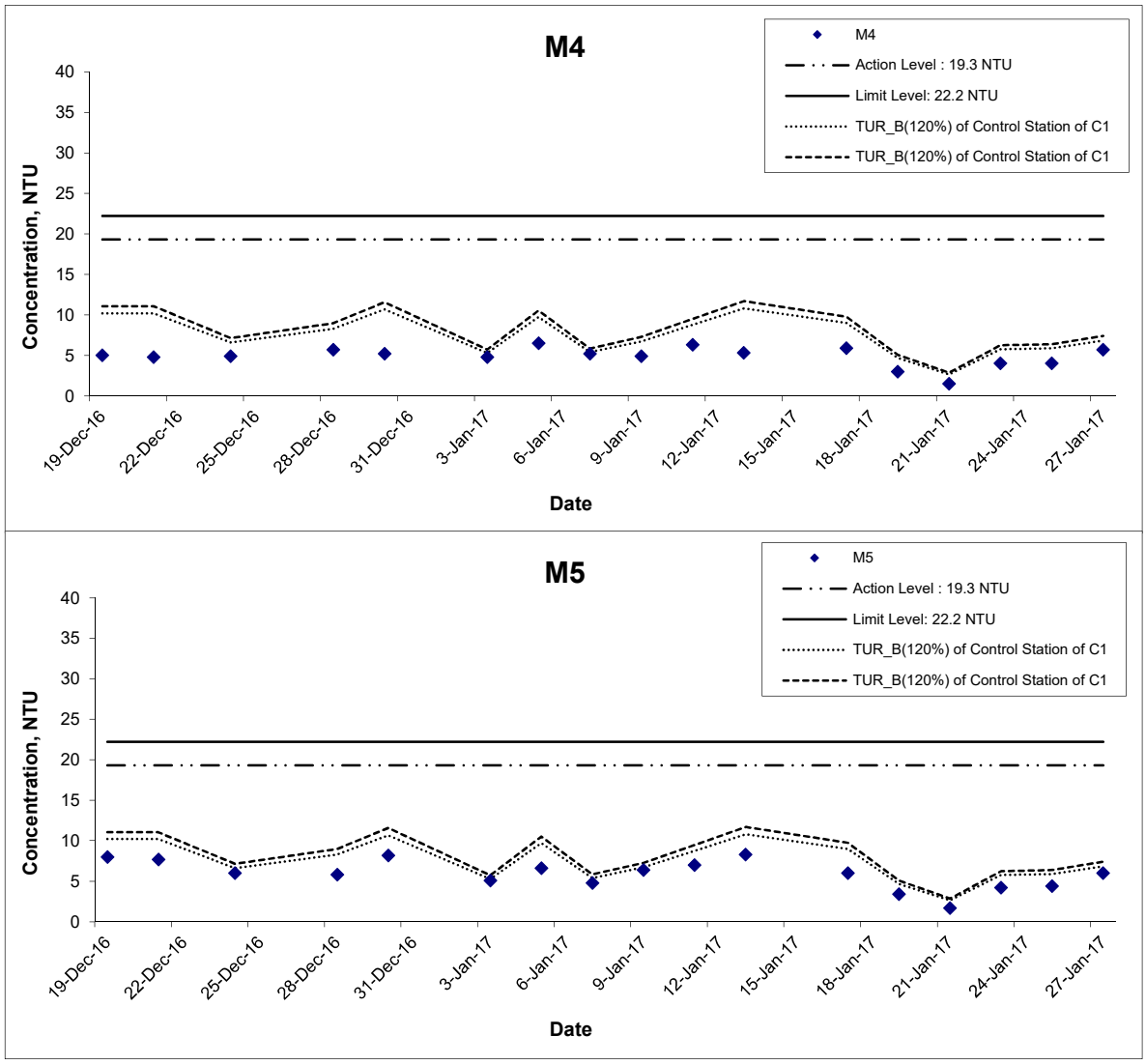
Turbidity (Bottom) at Mid-Flood Tide



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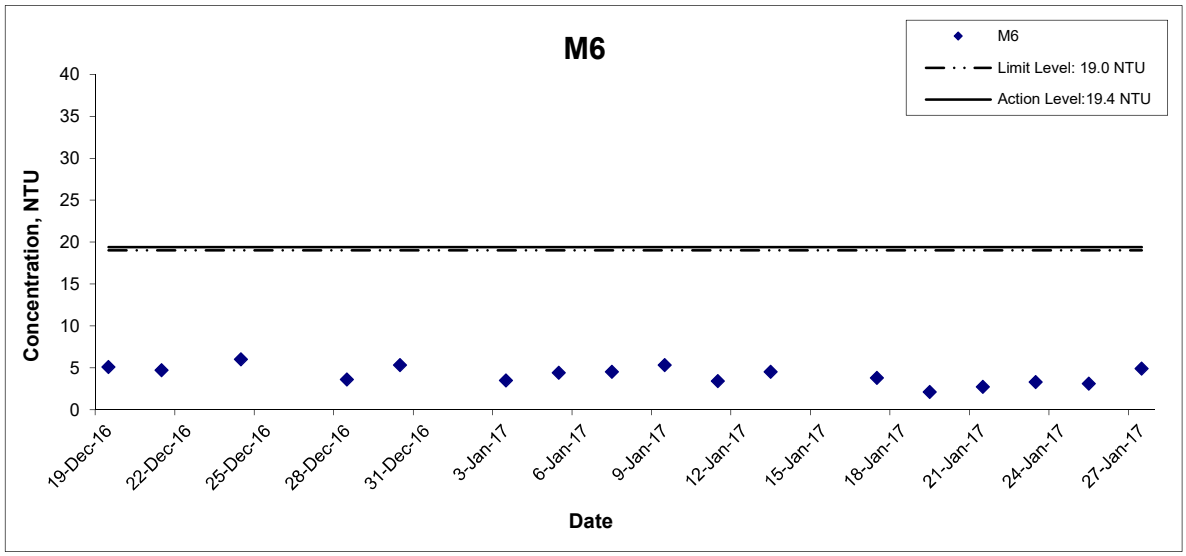
Turbidity (Intake Level of WSD Salt Water Intake) at Mid-Ebb Tide



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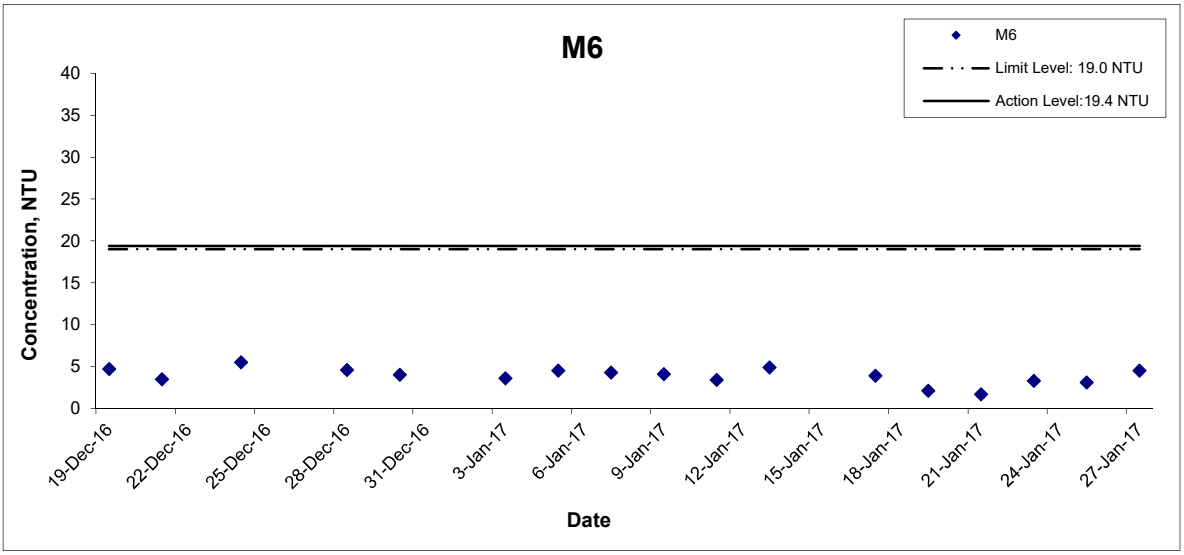
Turbidity (Intake Level of WSD Salt Water Intake) at Mid-Flood Tide



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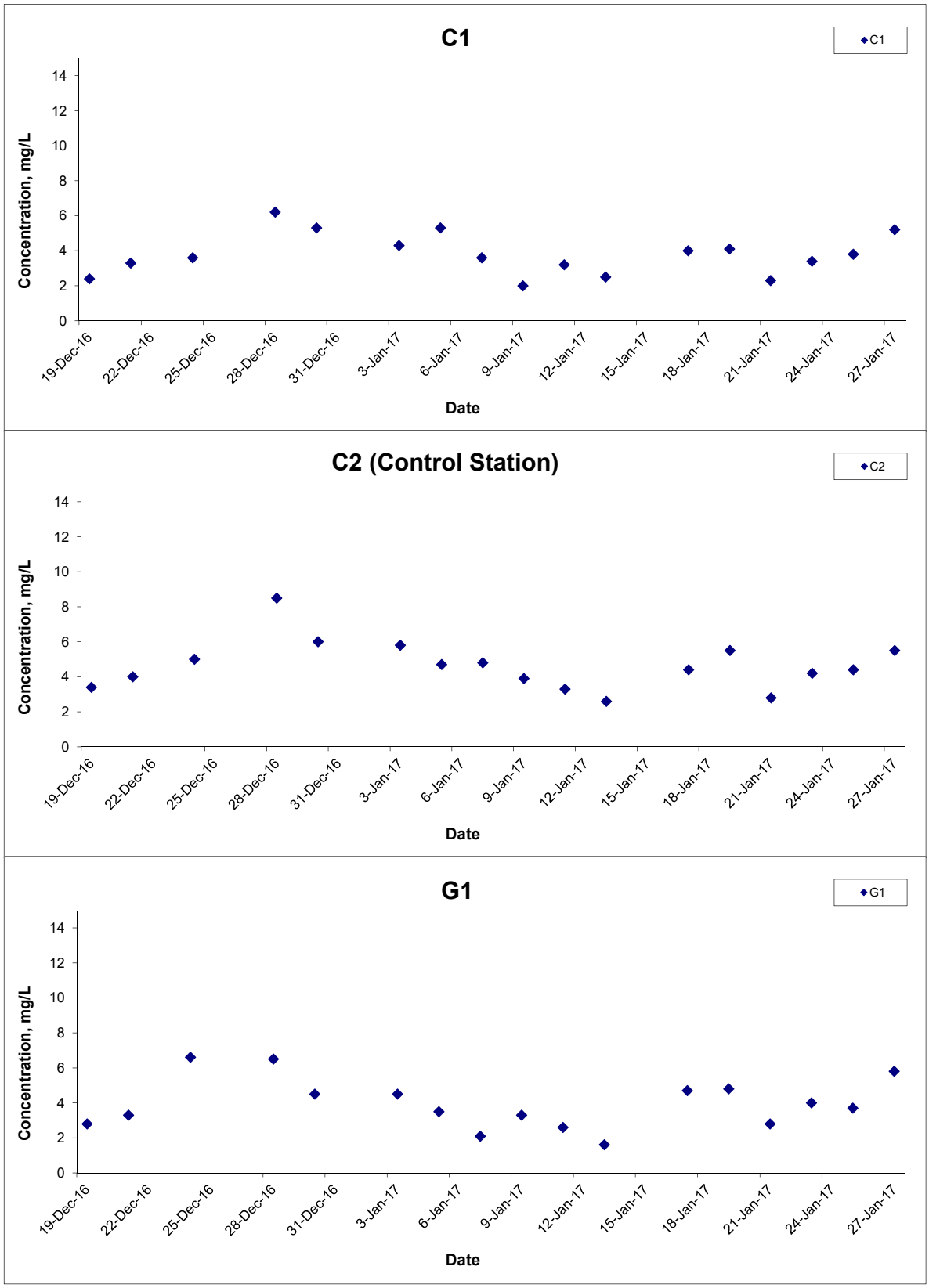
Suspended Solids (Depth-averaged) at Mid-Ebb Tide



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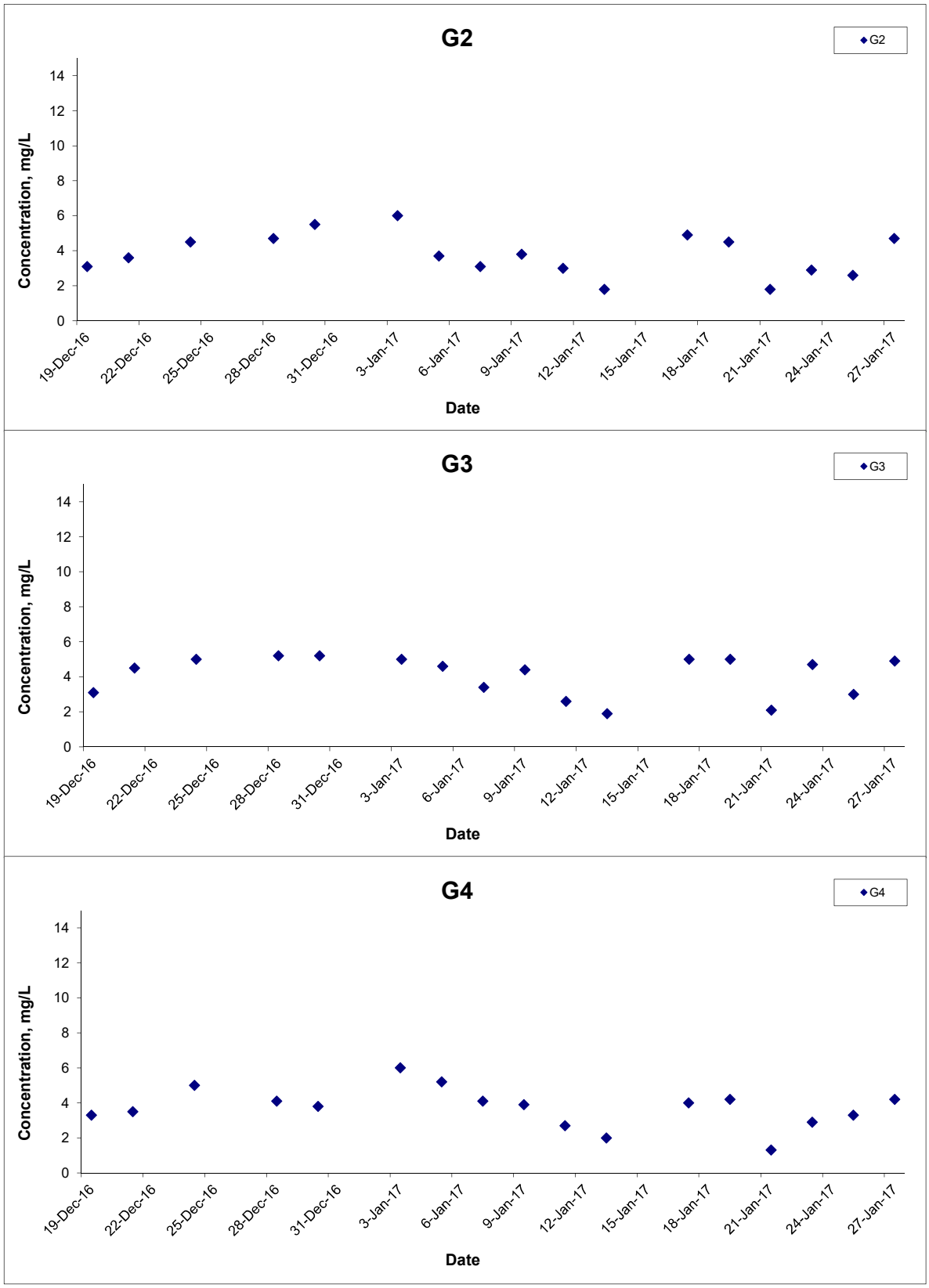

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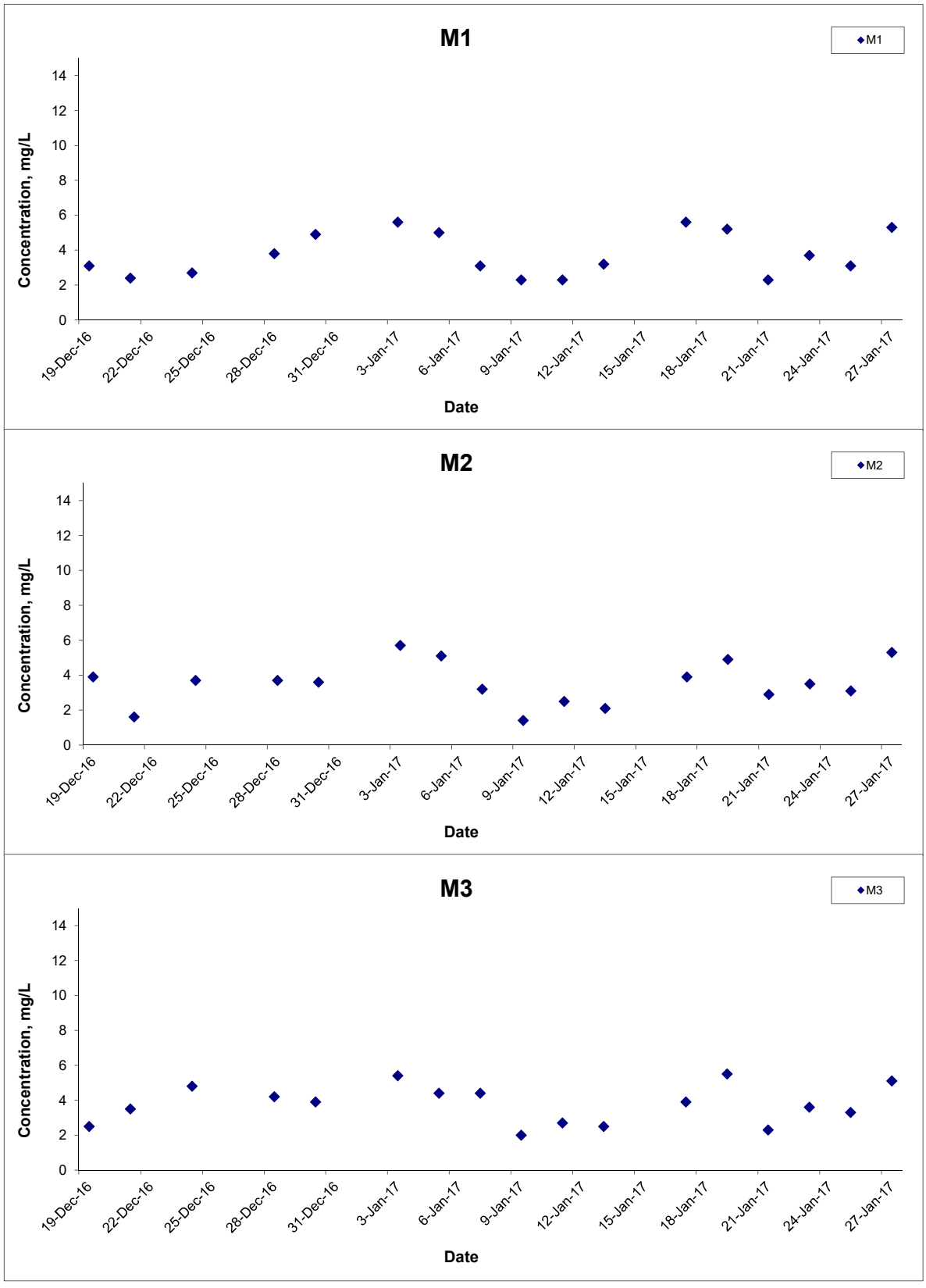
Suspended Solids (Depth-averaged) at Mid-Ebb Tide



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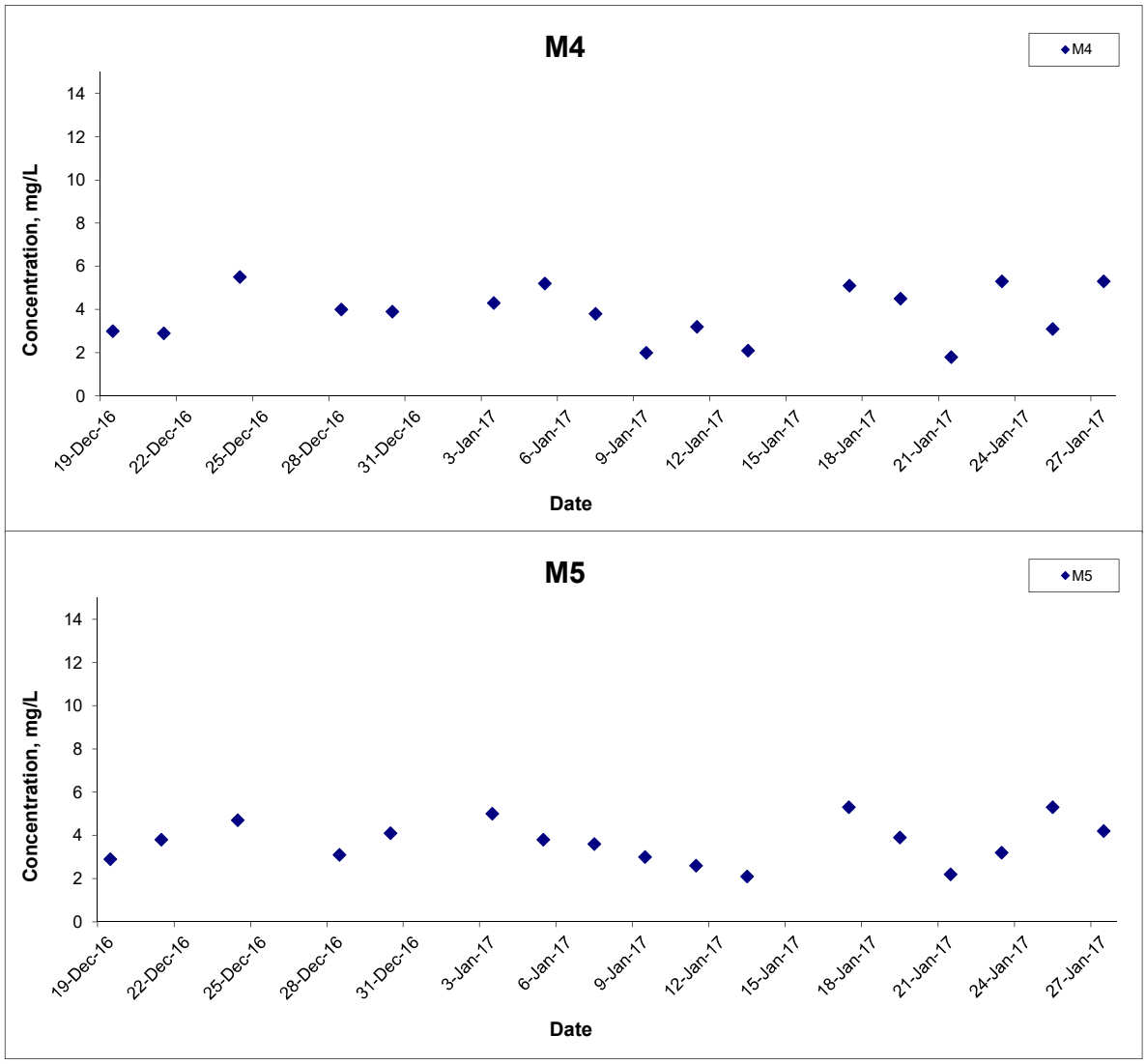

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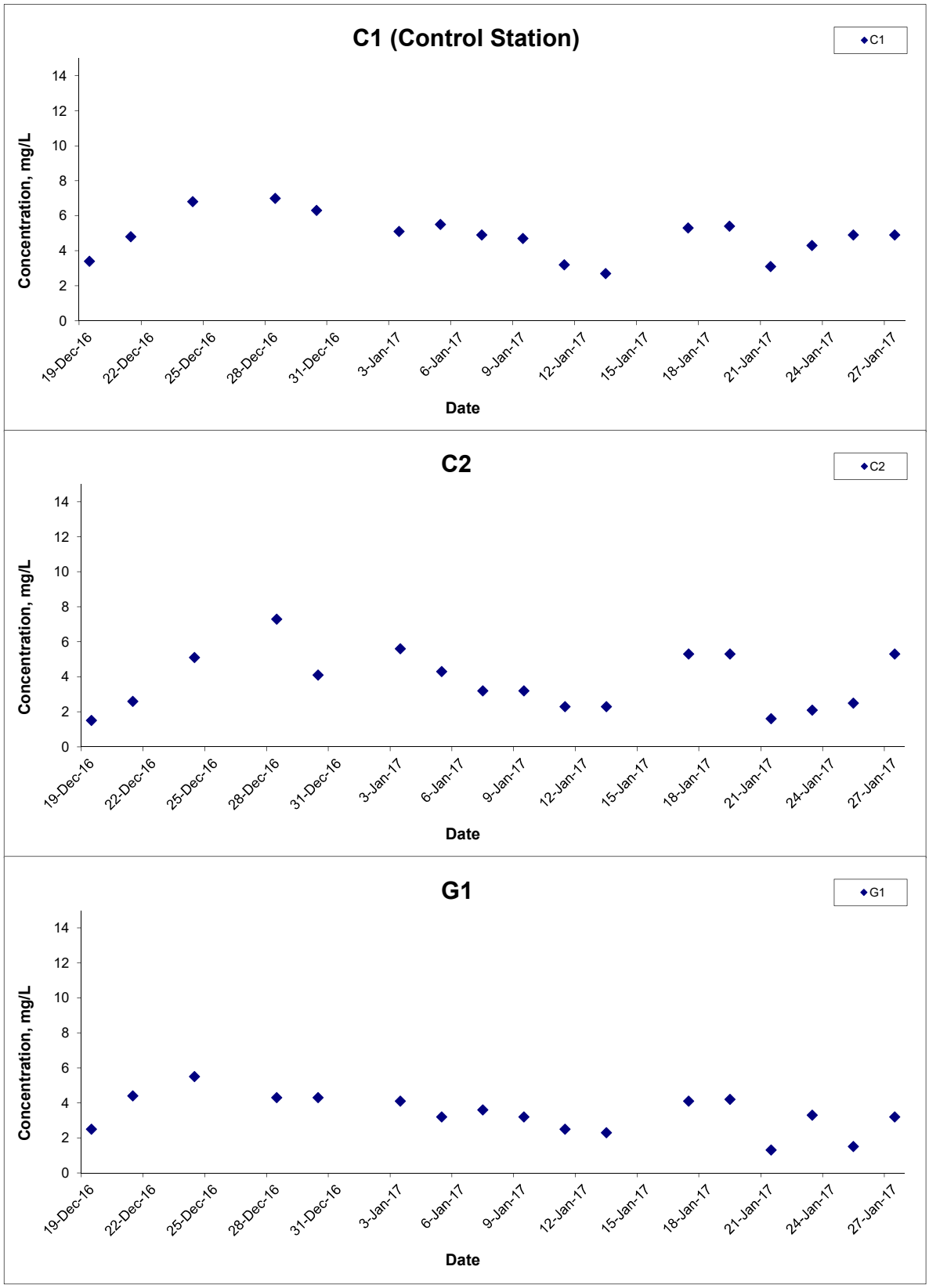

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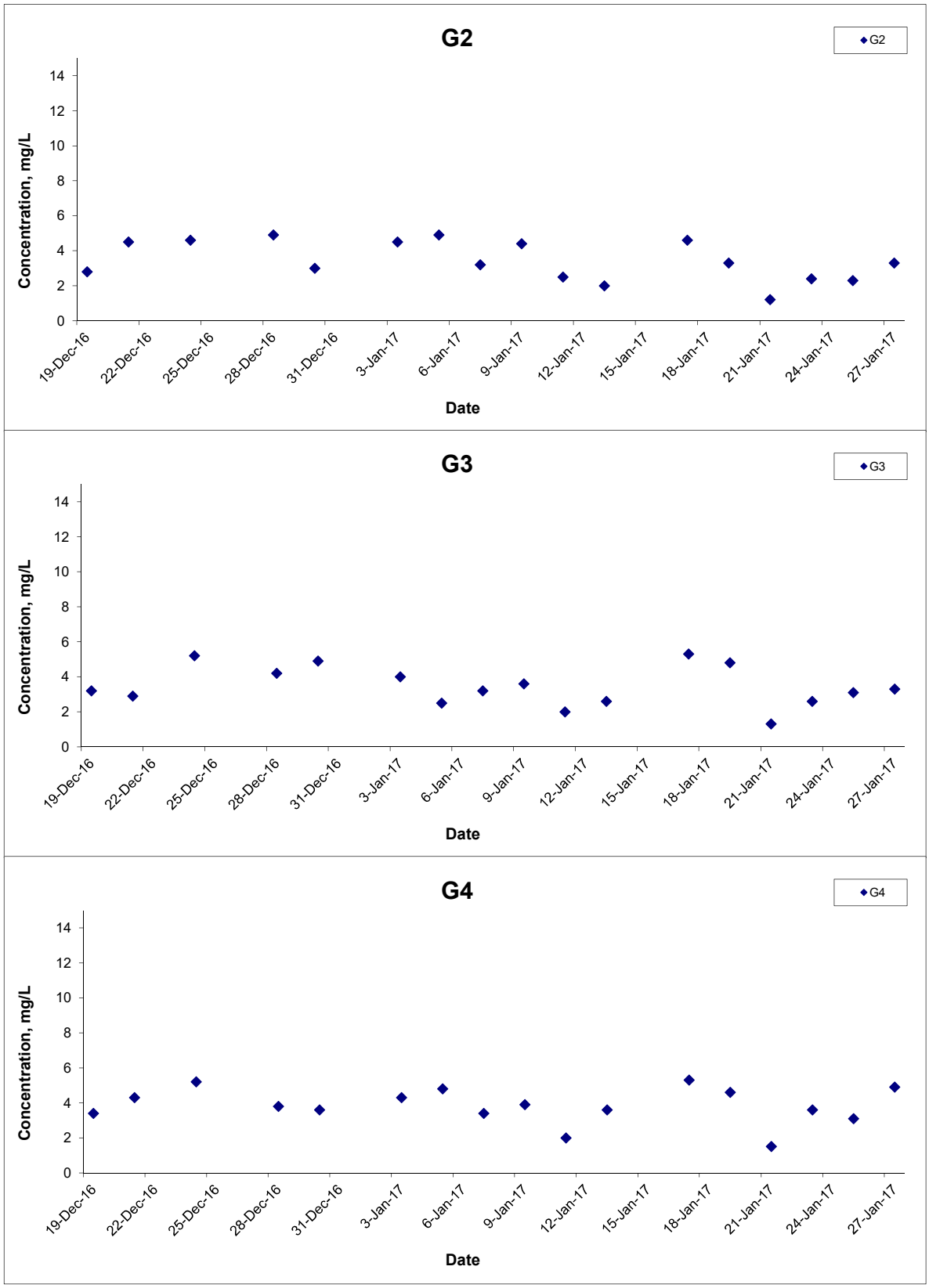
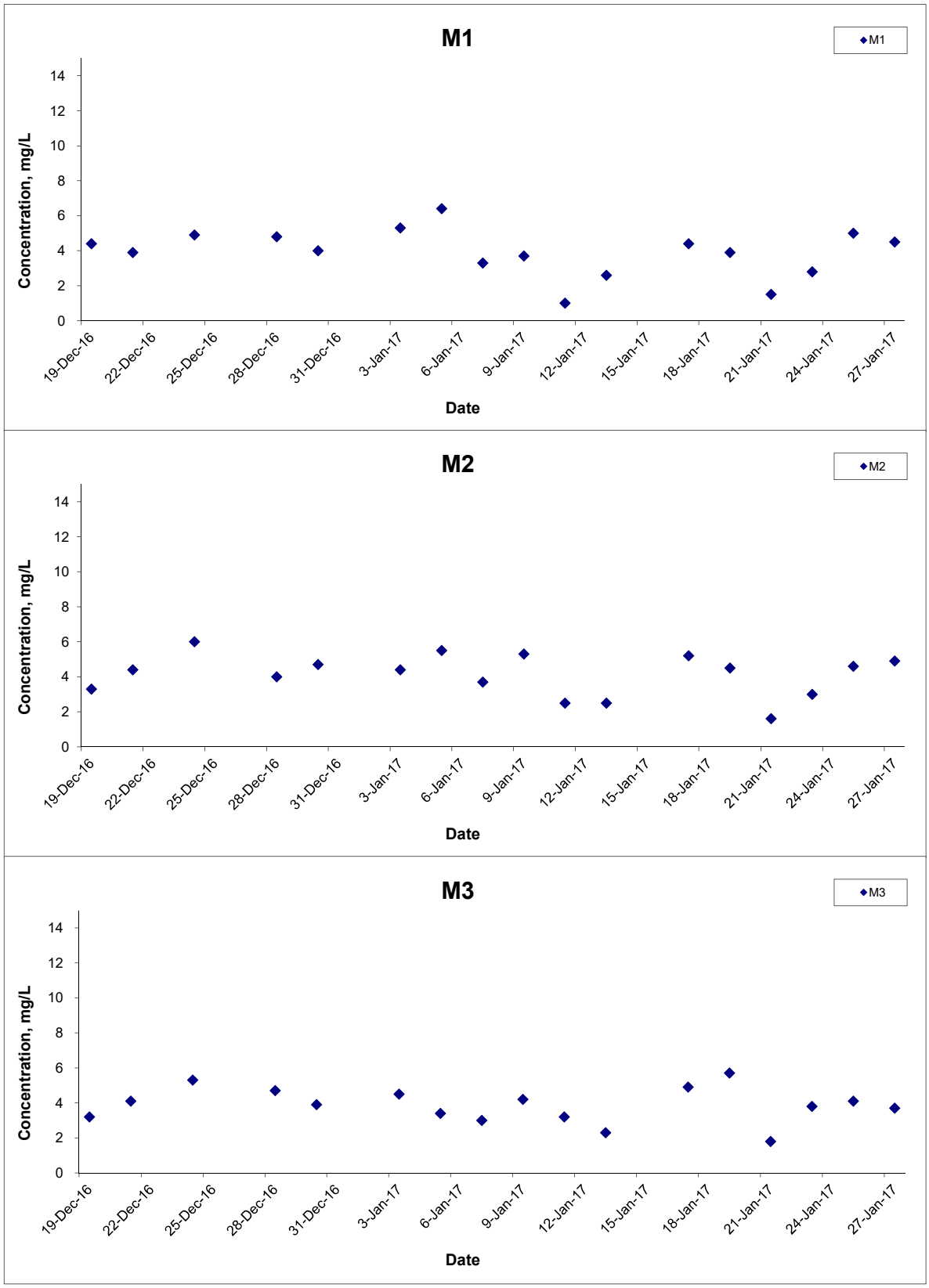
Suspended Solids (Depth-averaged) at Mid-Flood Tide



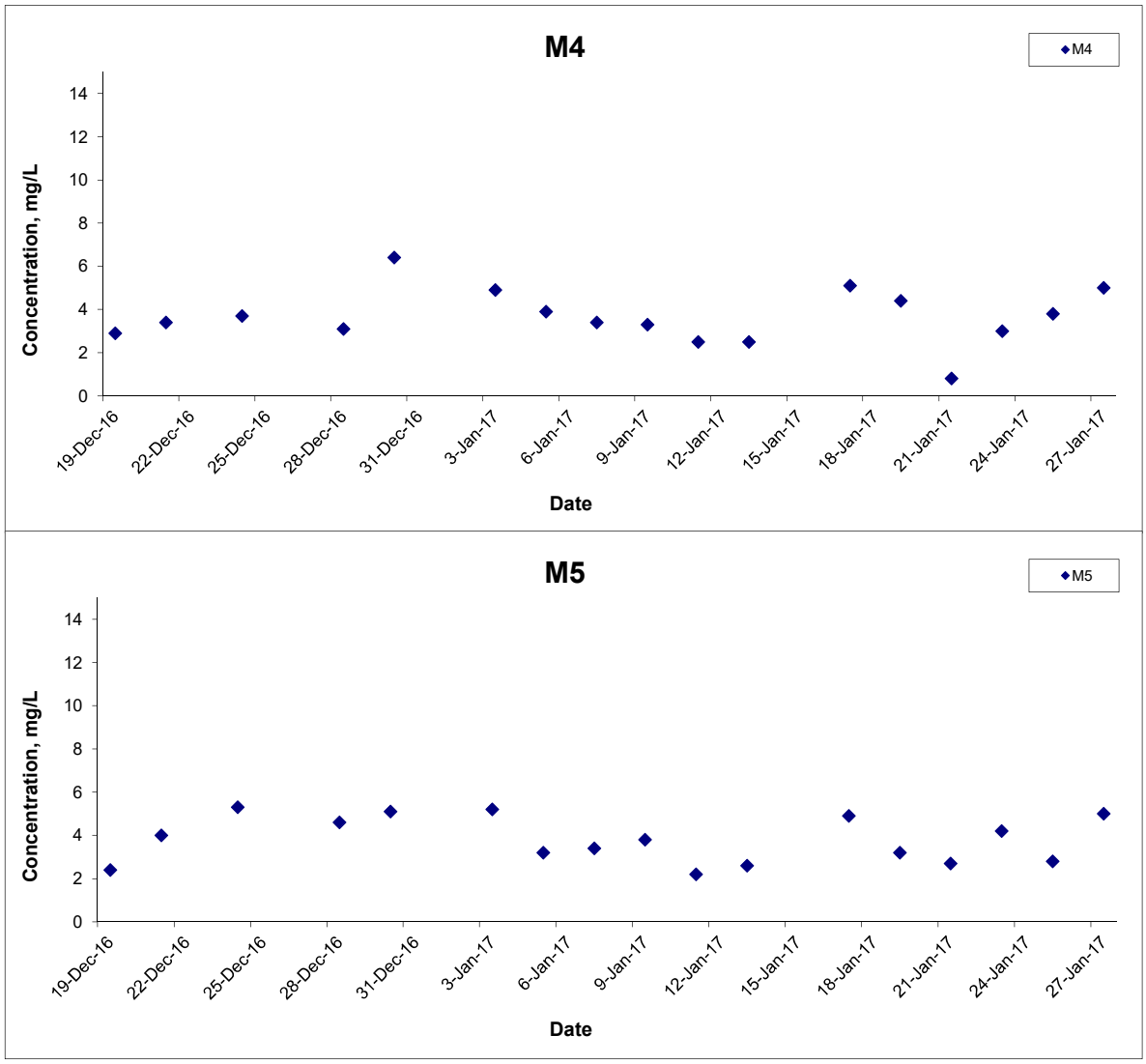
Title: Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA16034	CINOTECH
	Date: Jan 17	Appendix: I	

Suspended Solids (Depth-averaged) at Mid-Flood Tide



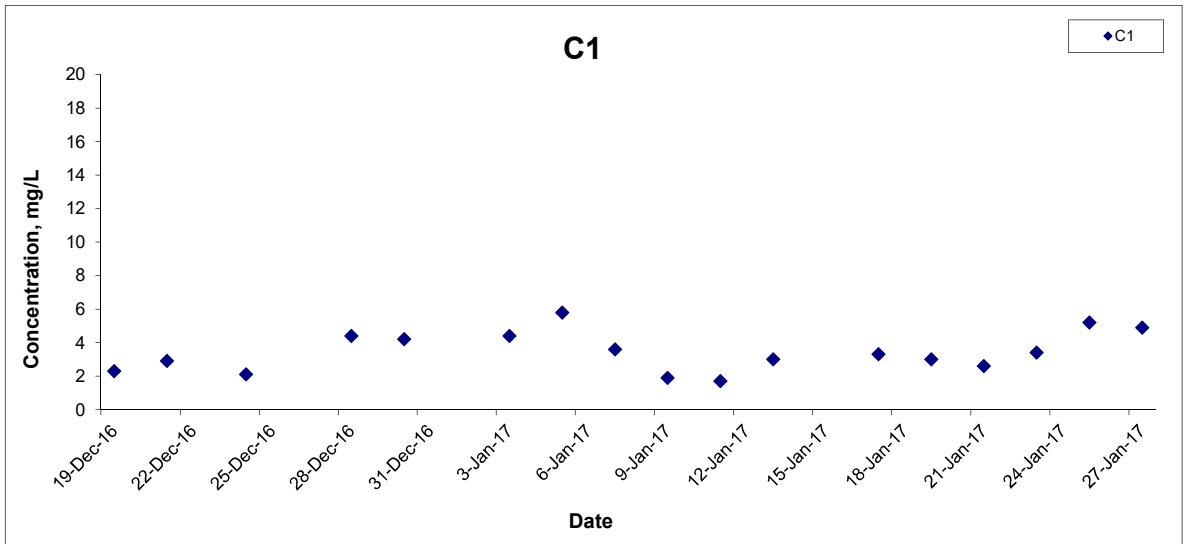
Title: Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA16034	CINOTECH
	Date: Jan 17	Appendix: I	

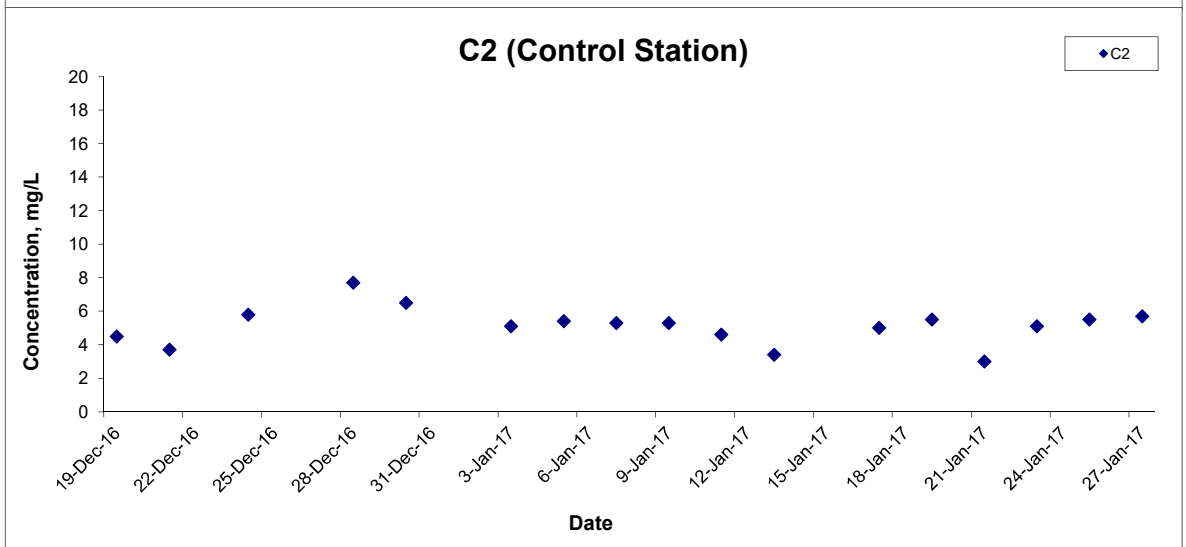
Suspended Solids (Depth-averaged) at Mid-Flood Tide

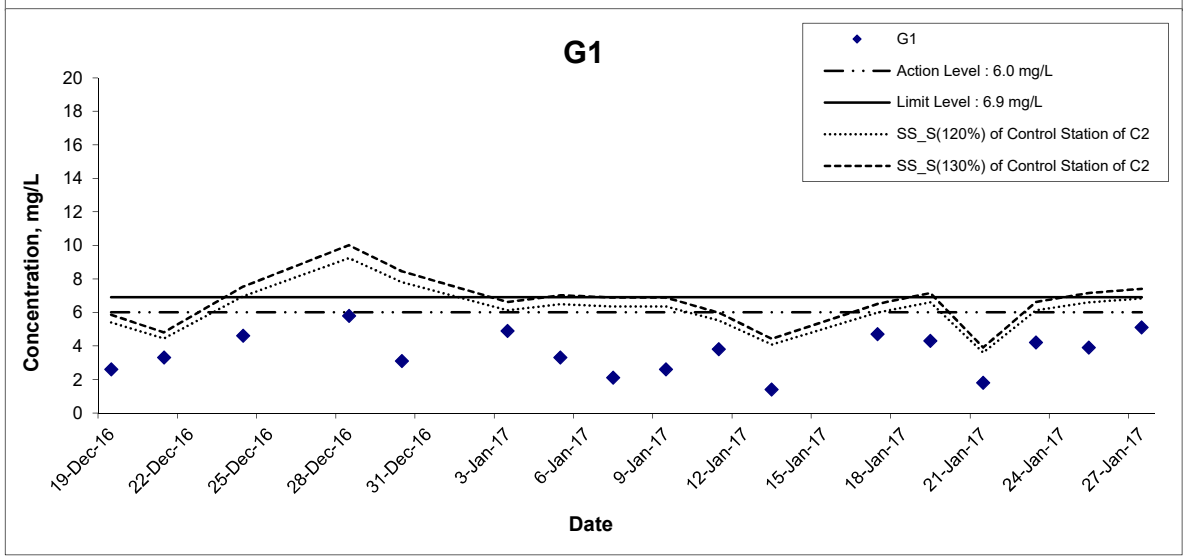


Title	Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA16034	CINOTECH
		Date Jan 17	Appendix I	

Suspended Solids (Surface) at Mid-Ebb Tide

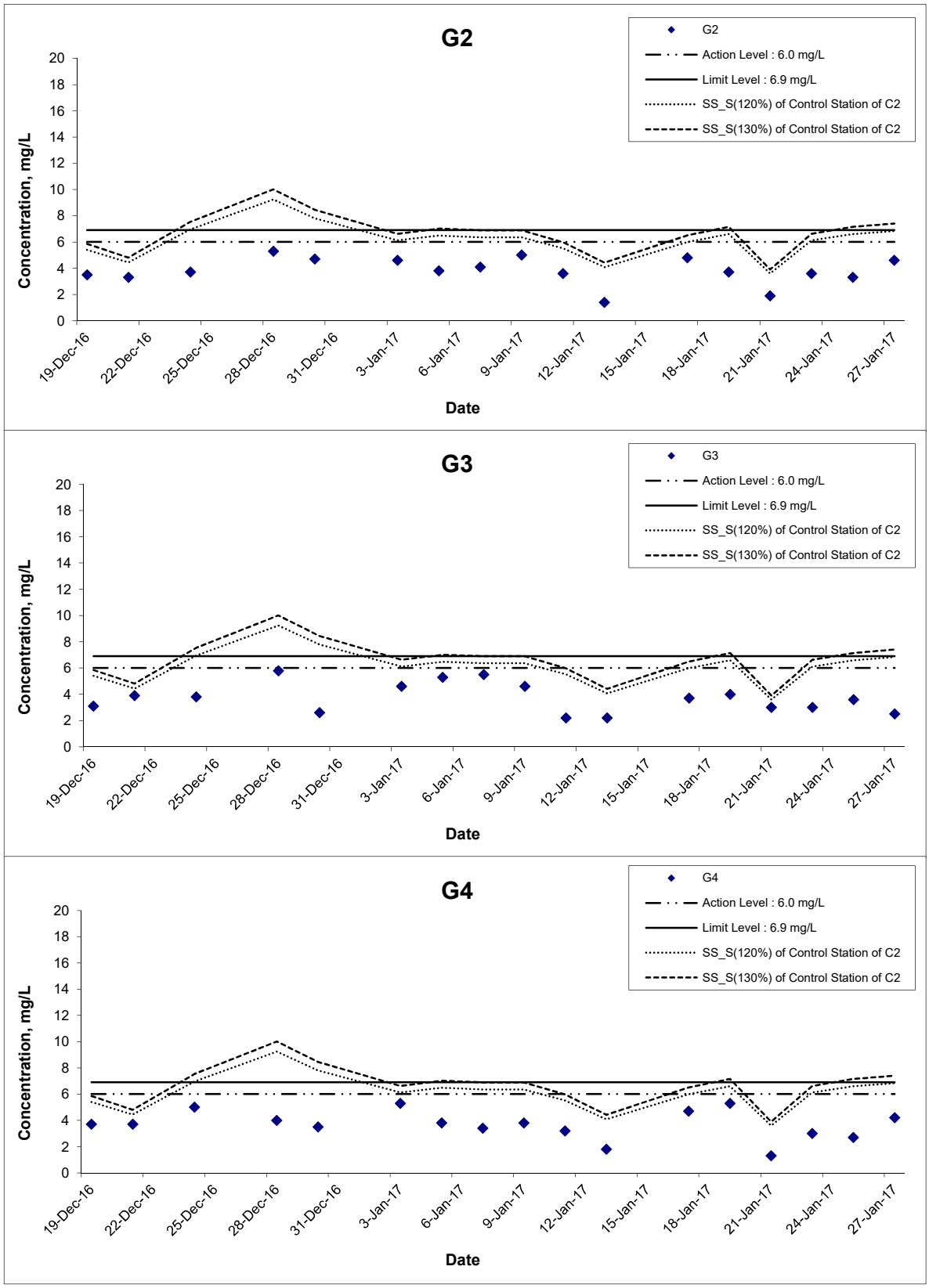






Title: Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA16034	CINOTECH
	Date: Jan 17	Appendix: I	

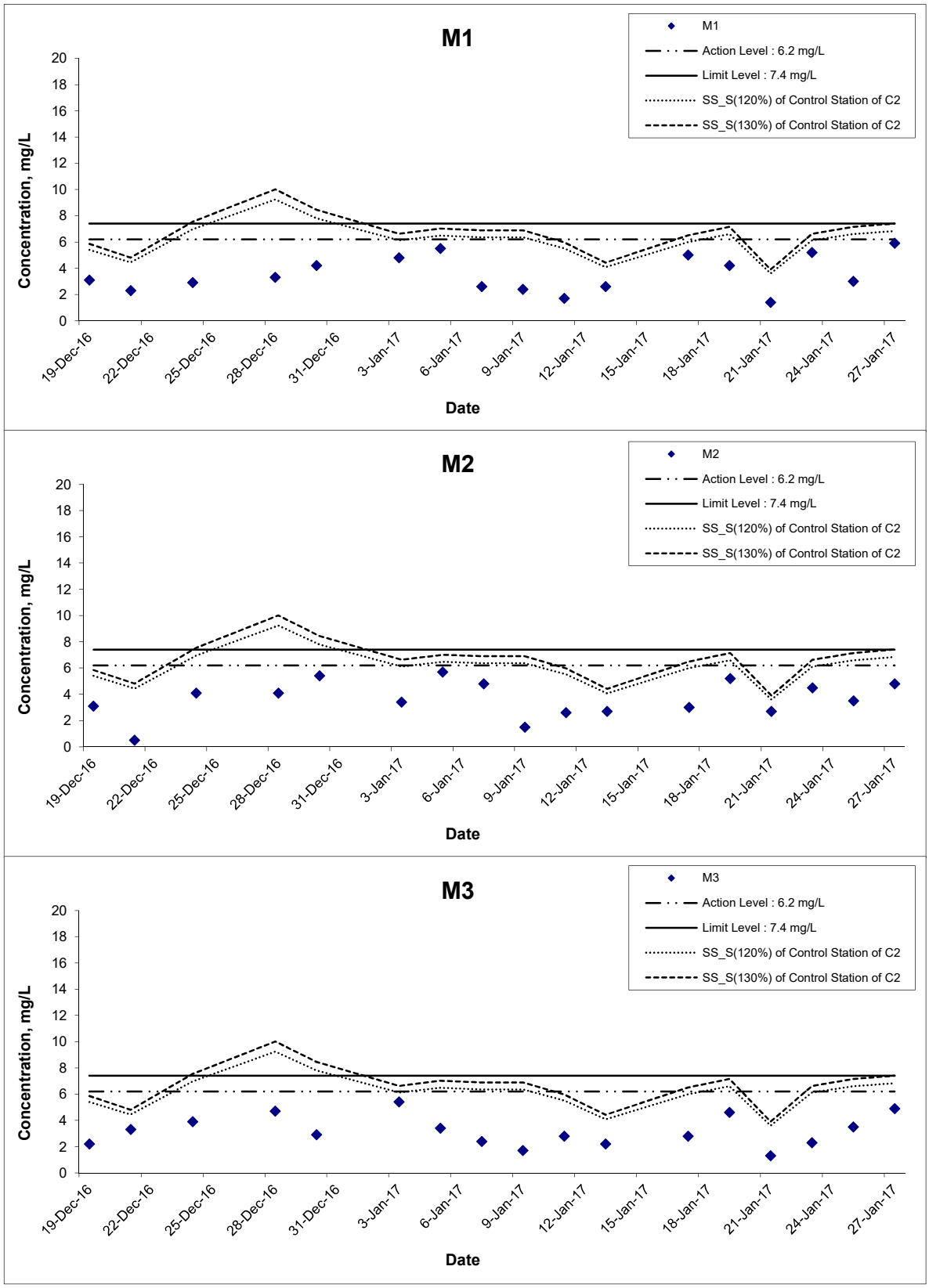
Suspended Solids (Surface) at Mid-Ebb Tide



Title	Scale	Project No.
Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Water Quality Monitoring Results	N.T.S	MA16034
	Date: Jan 17	Appendix: I

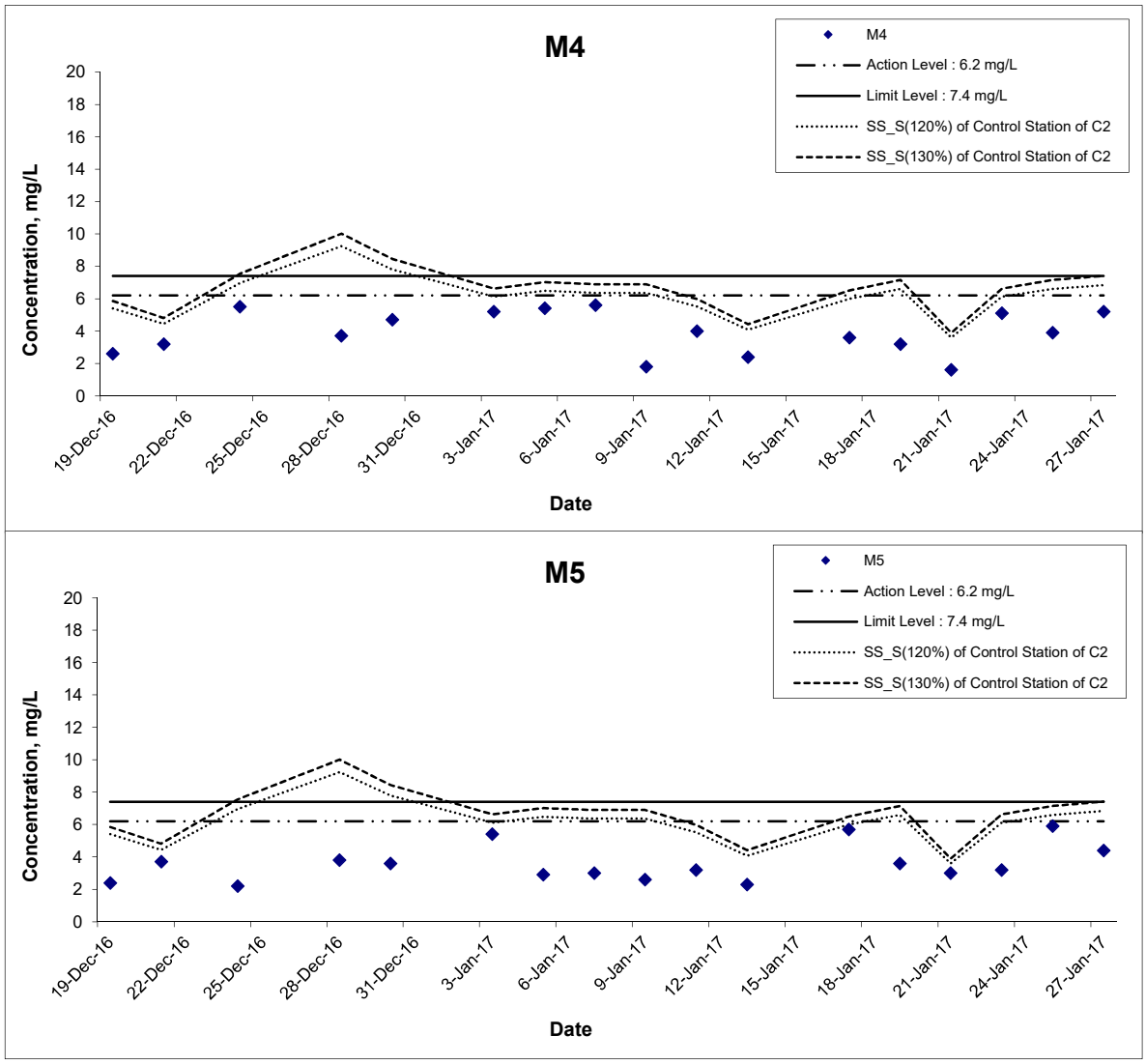
CINOTECH

Suspended Solids (Surface) at Mid-Ebb Tide



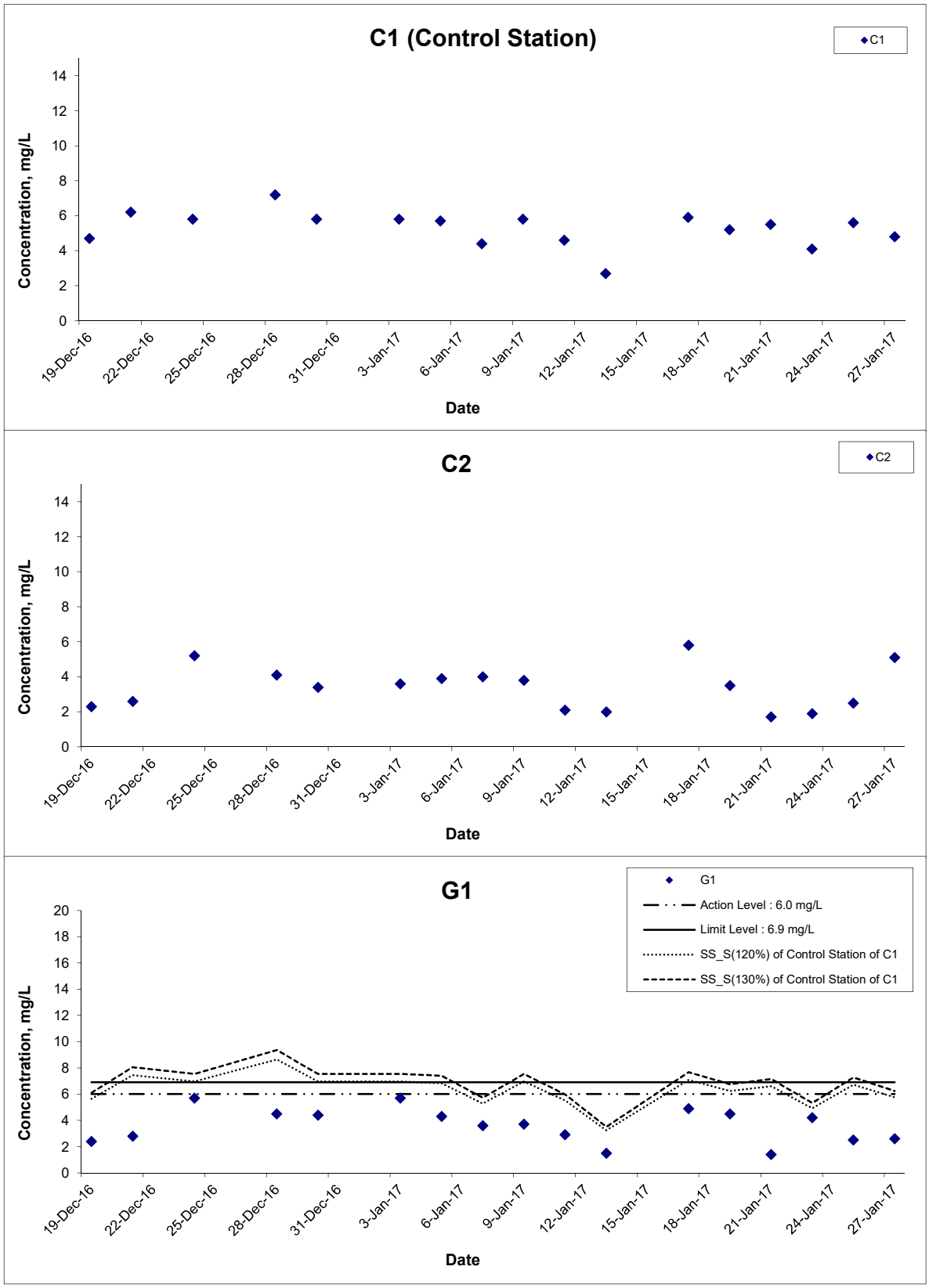
Title: Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA16034	CINOTECH
	Date: Jan 17	Appendix: I	

Suspended Solids (Surface) at Mid-Ebb Tide



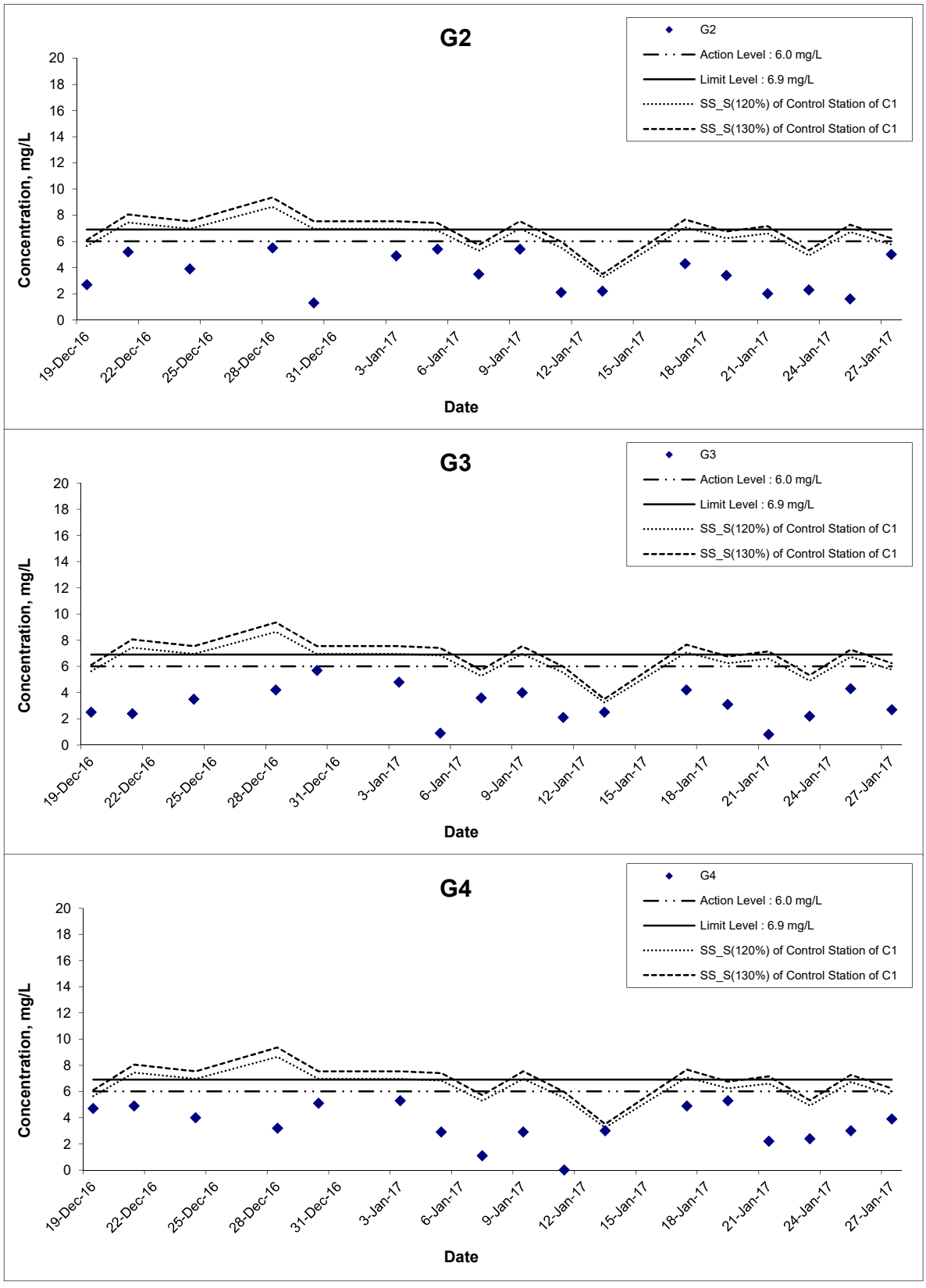
Title: Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S Date: Jan 17	Project No.: MA16034 Appendix: I	CINOTECH

Suspended Solids (Surface) at Mid-Flood Tide



Title	Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA16034	CINOTECH
		Date: Jan 17	Appendix: I	

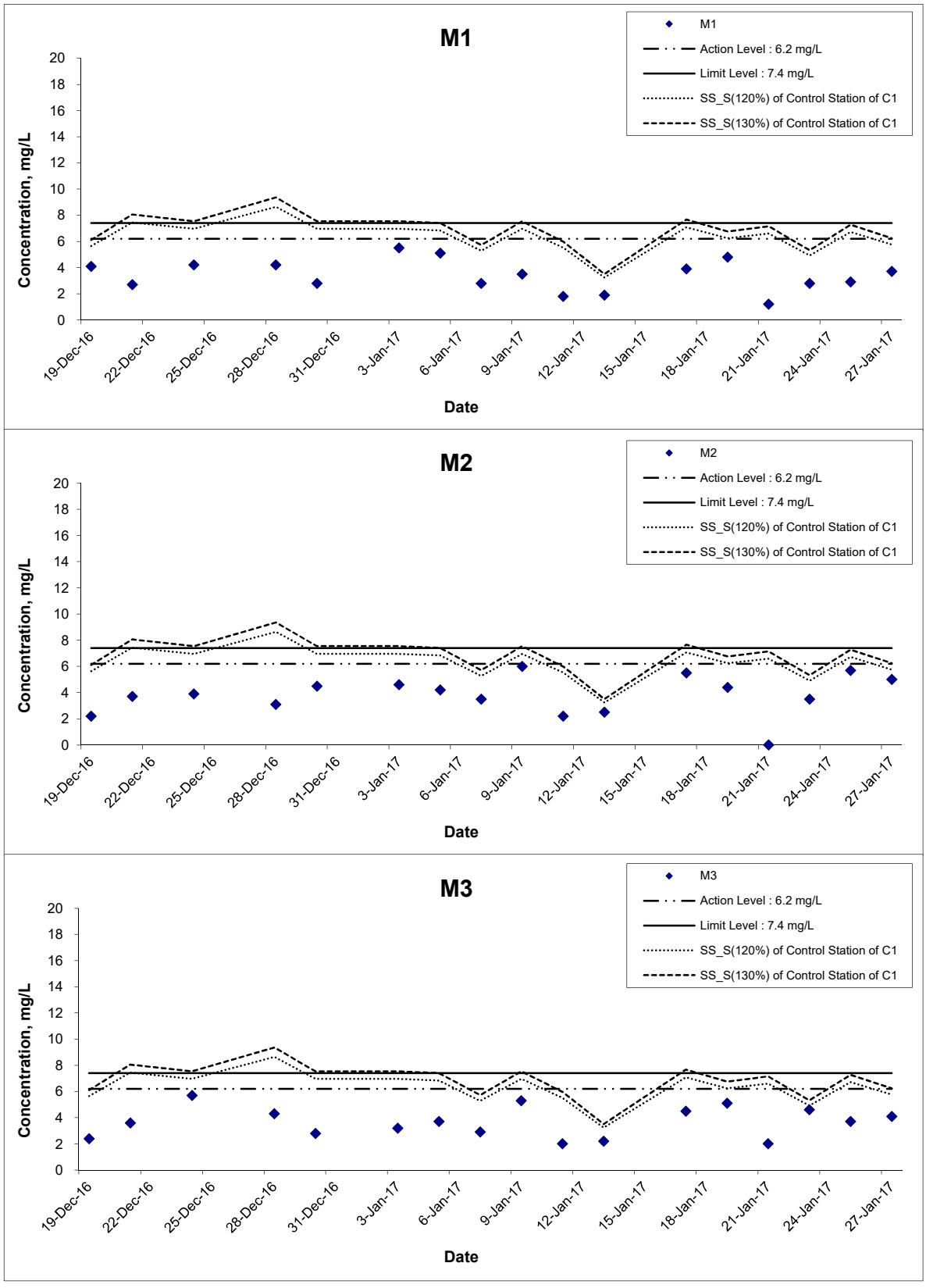
Suspended Solids (Surface) at Mid-Flood Tide



Remarks: The graphical point at zero concentration is presented as <2.5mg/L.

Title: Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA16034	CINOTECH
	Date: Jan 17	Appendix: I	

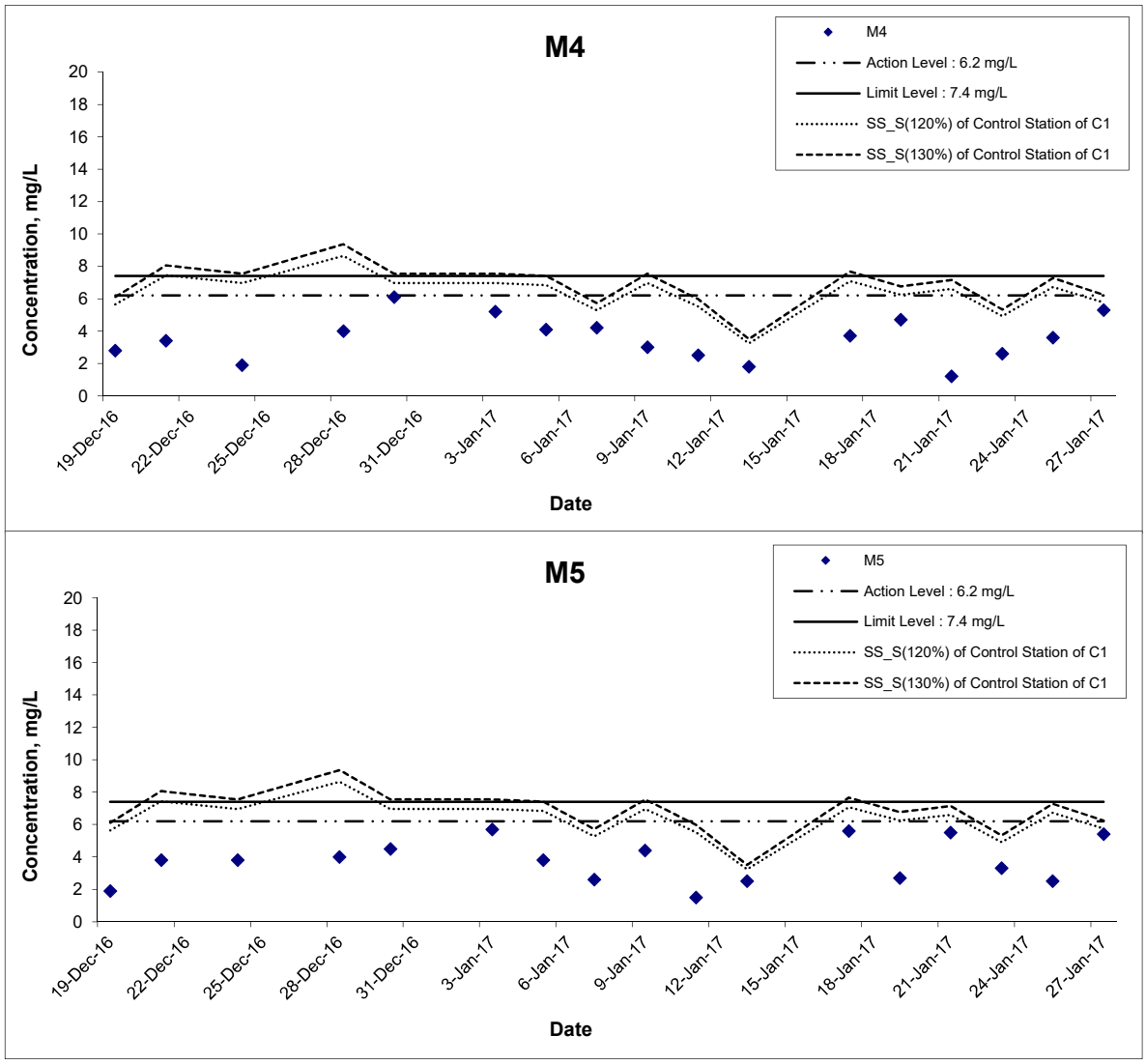
Suspended Solids (Surface) at Mid-Flood Tide



Remarks: The graphical point at zero concentration is presented as <2.5mg/L.

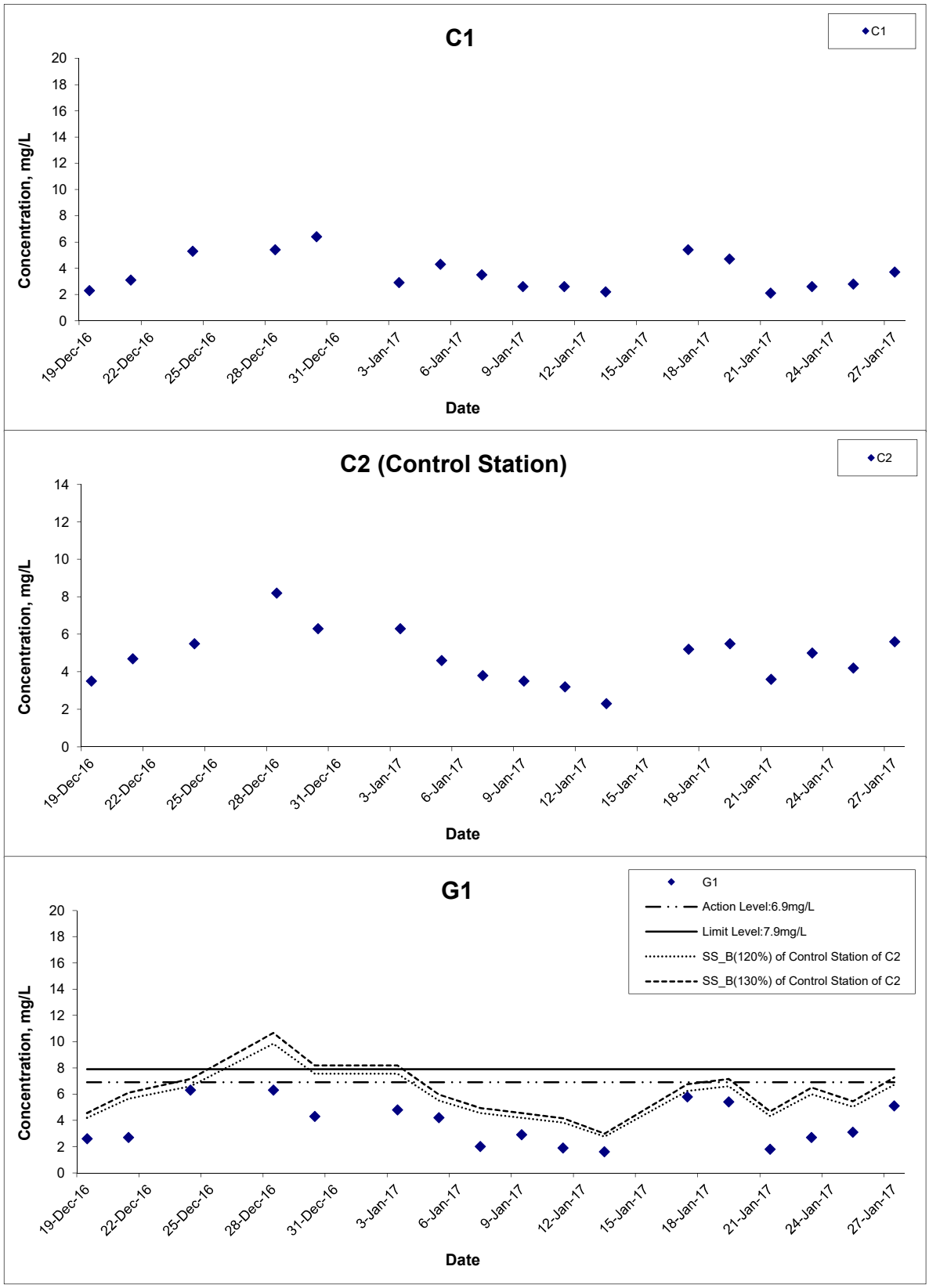
Title: Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA16034	CINOTECH
	Date: Jan 17	Appendix: I	

Suspended Solids (Surface) at Mid-Flood Tide



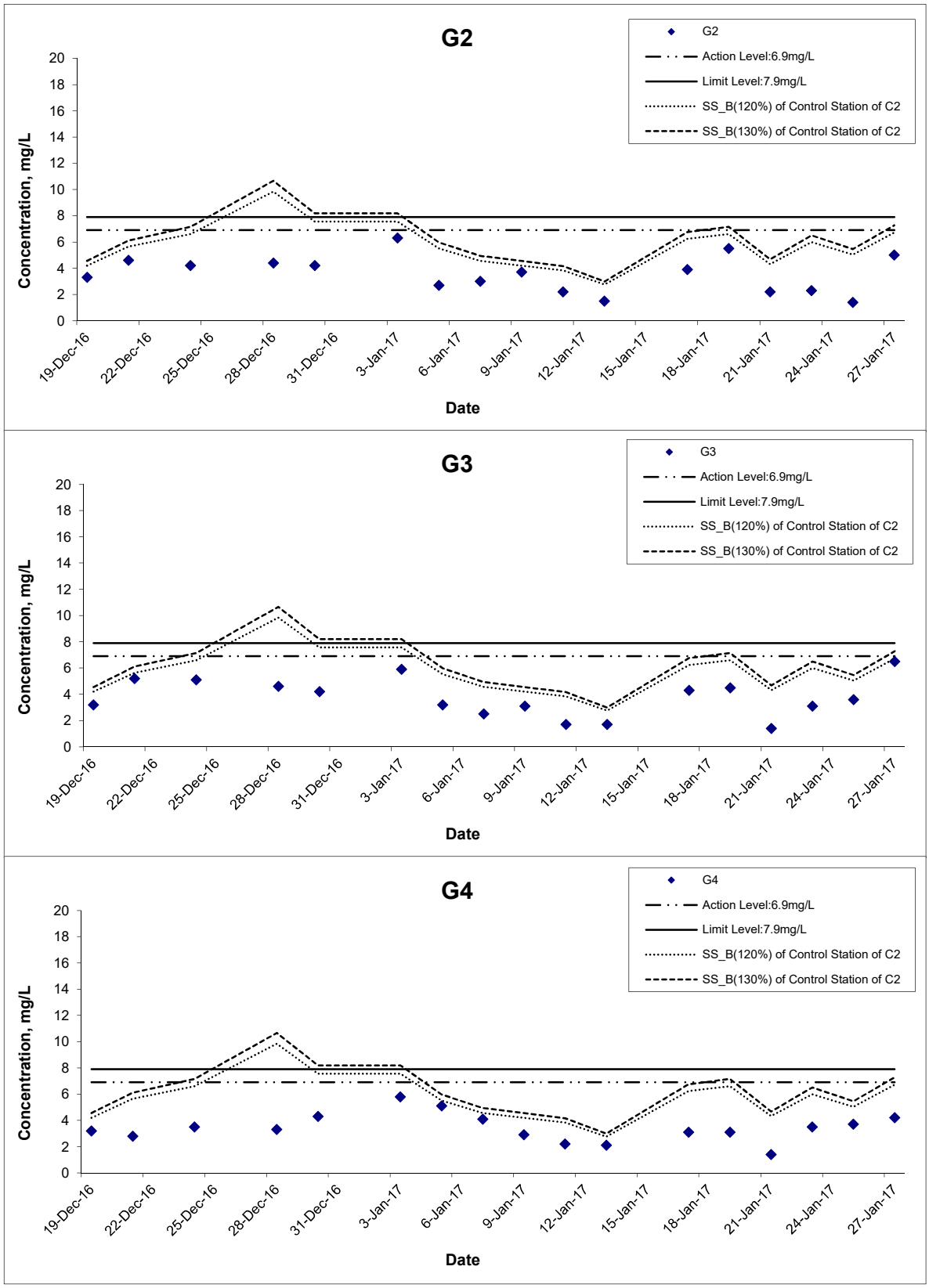
Title: Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S Date: Jan 17	Project No.: MA16034 Appendix: I	CINOTECH

Suspended Solids (Bottom) at Mid-Ebb Tide



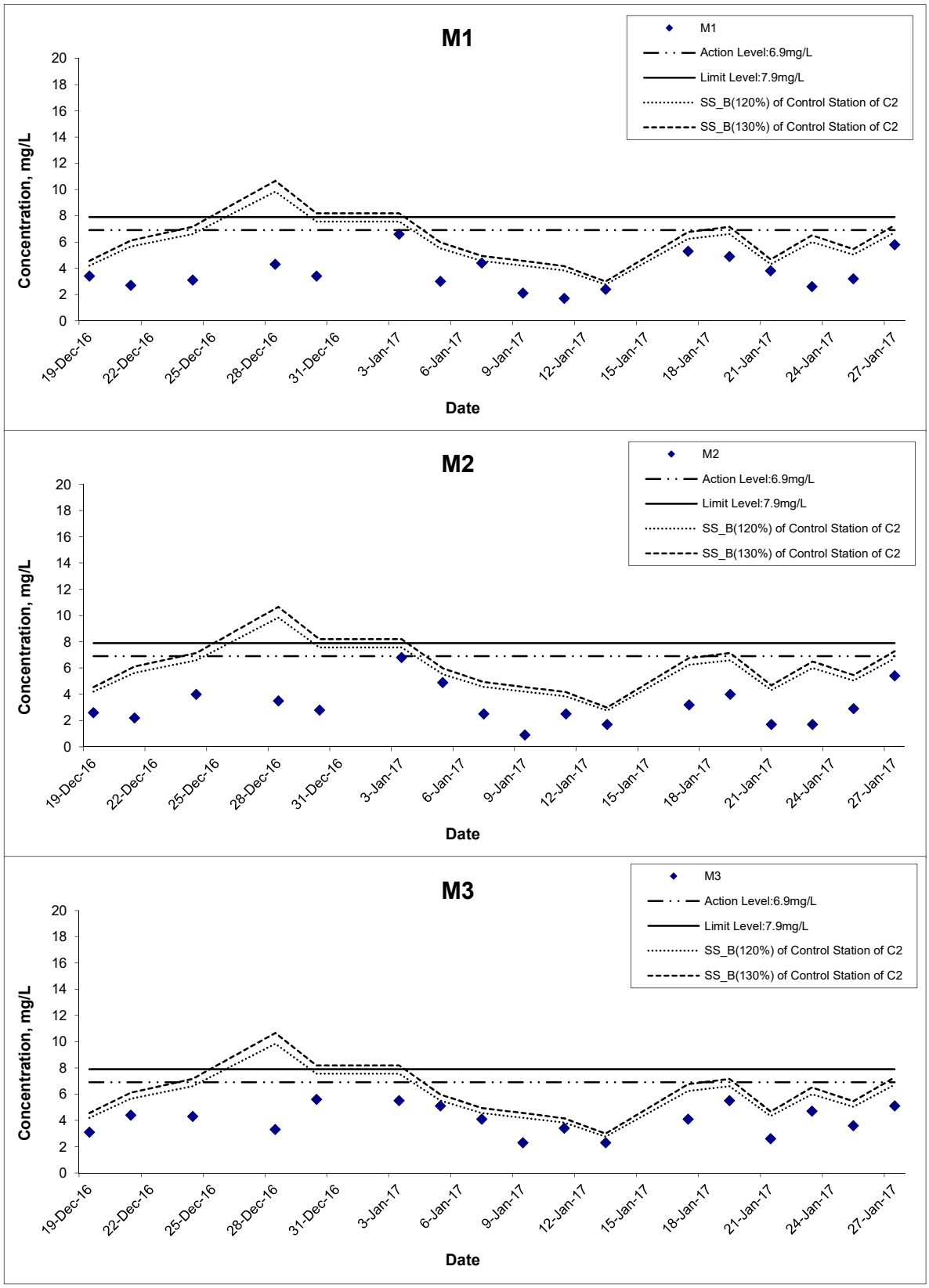
Title: Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA16034	CINOTECH
	Date: Jan 17	Appendix: I	

Suspended Solids (Bottom) at Mid-Ebb Tide



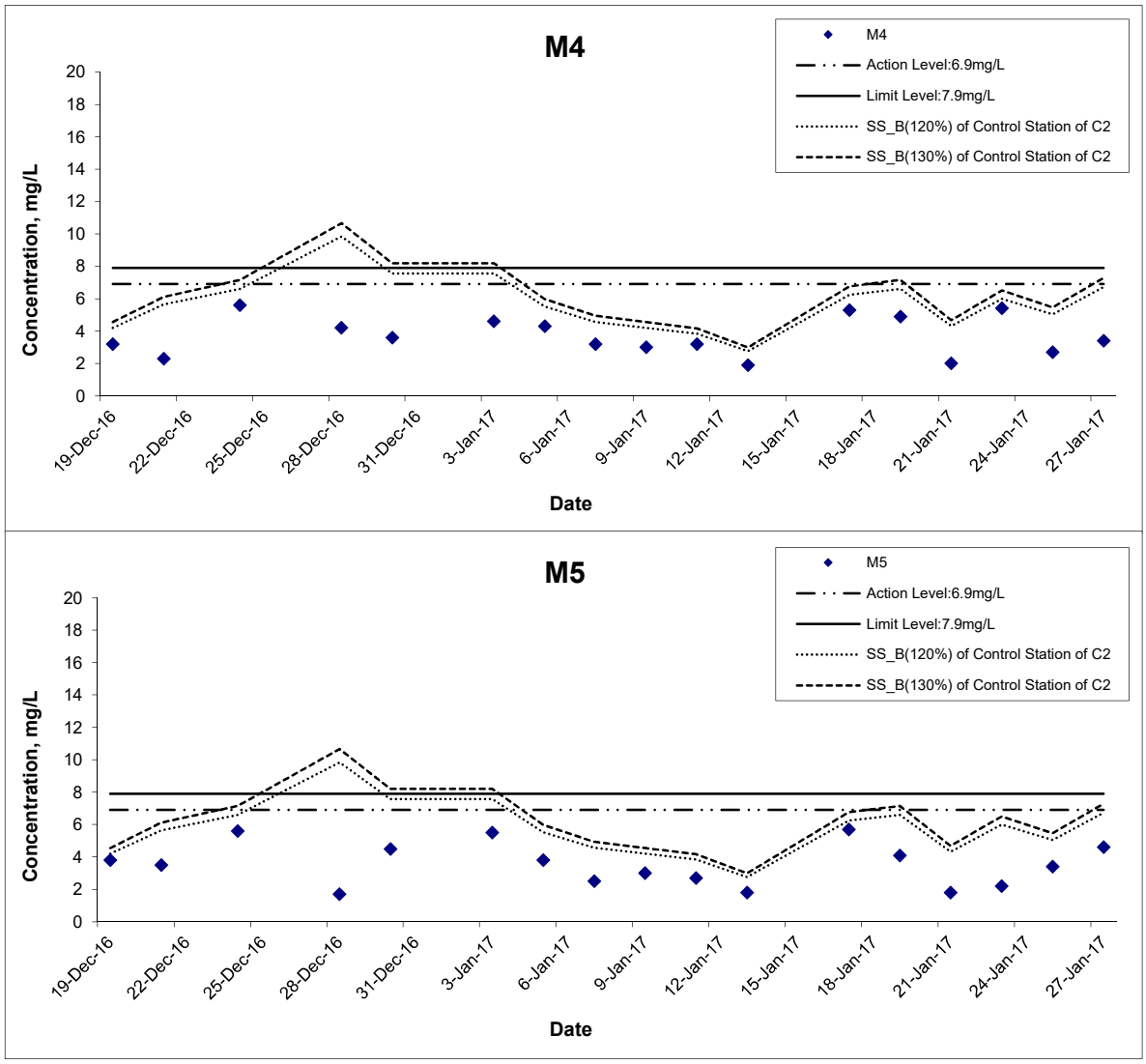
Title: Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA16034	CINOTECH
	Date: Jan 17	Appendix: I	

Suspended Solids (Bottom) at Mid-Ebb Tide



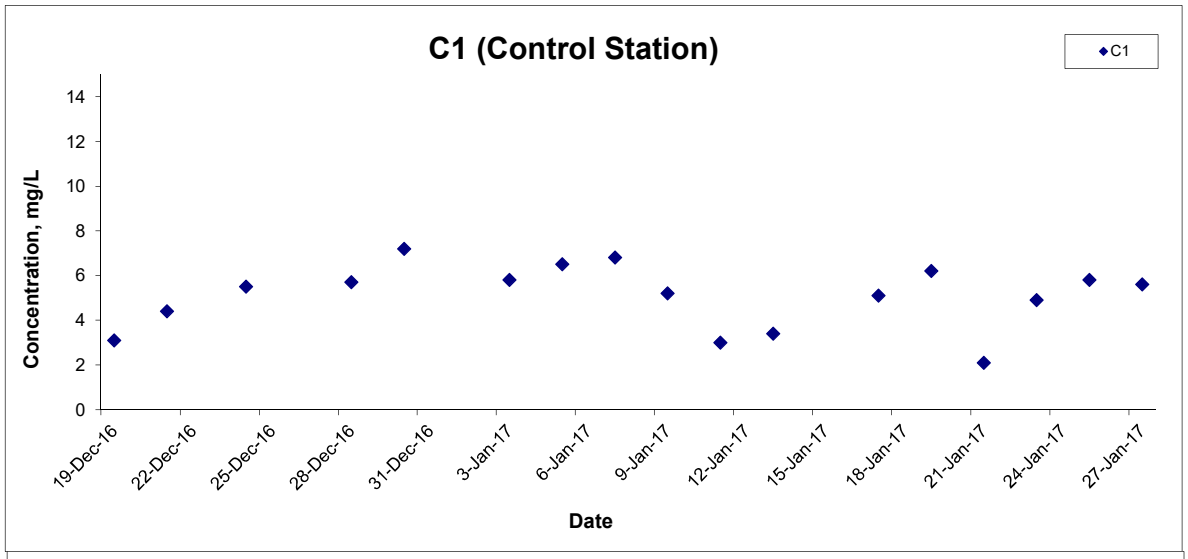
Title: Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA16034	CINOTECH
	Date: Jan 17	Appendix: I	

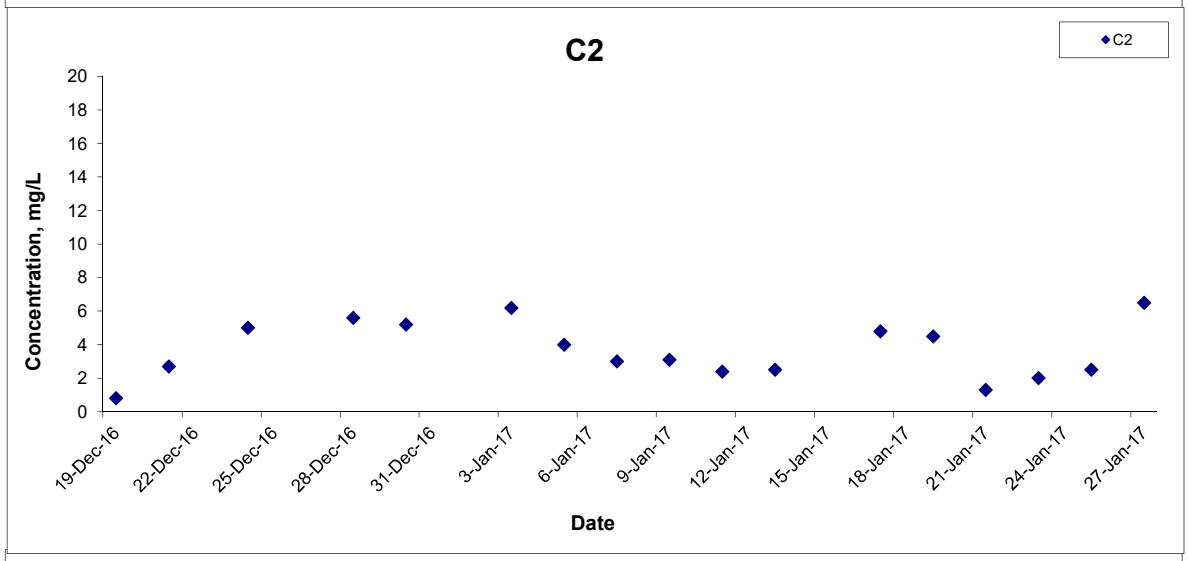
Suspended Solids (Bottom) at Mid-Ebb Tide

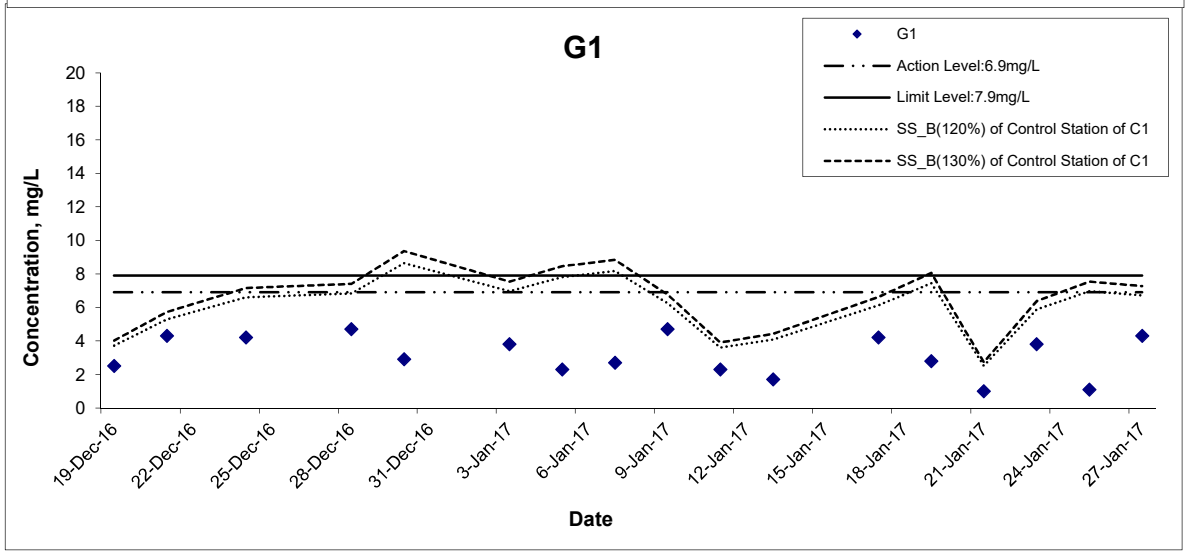


Title		Scale	Project No.
Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction		N.T.S	MA16034
Graphical Presentation of Water Quality Monitoring Results		Date: Jan 17	Appendix: I

Suspended Solids (Bottom) at Mid-Flood Tide



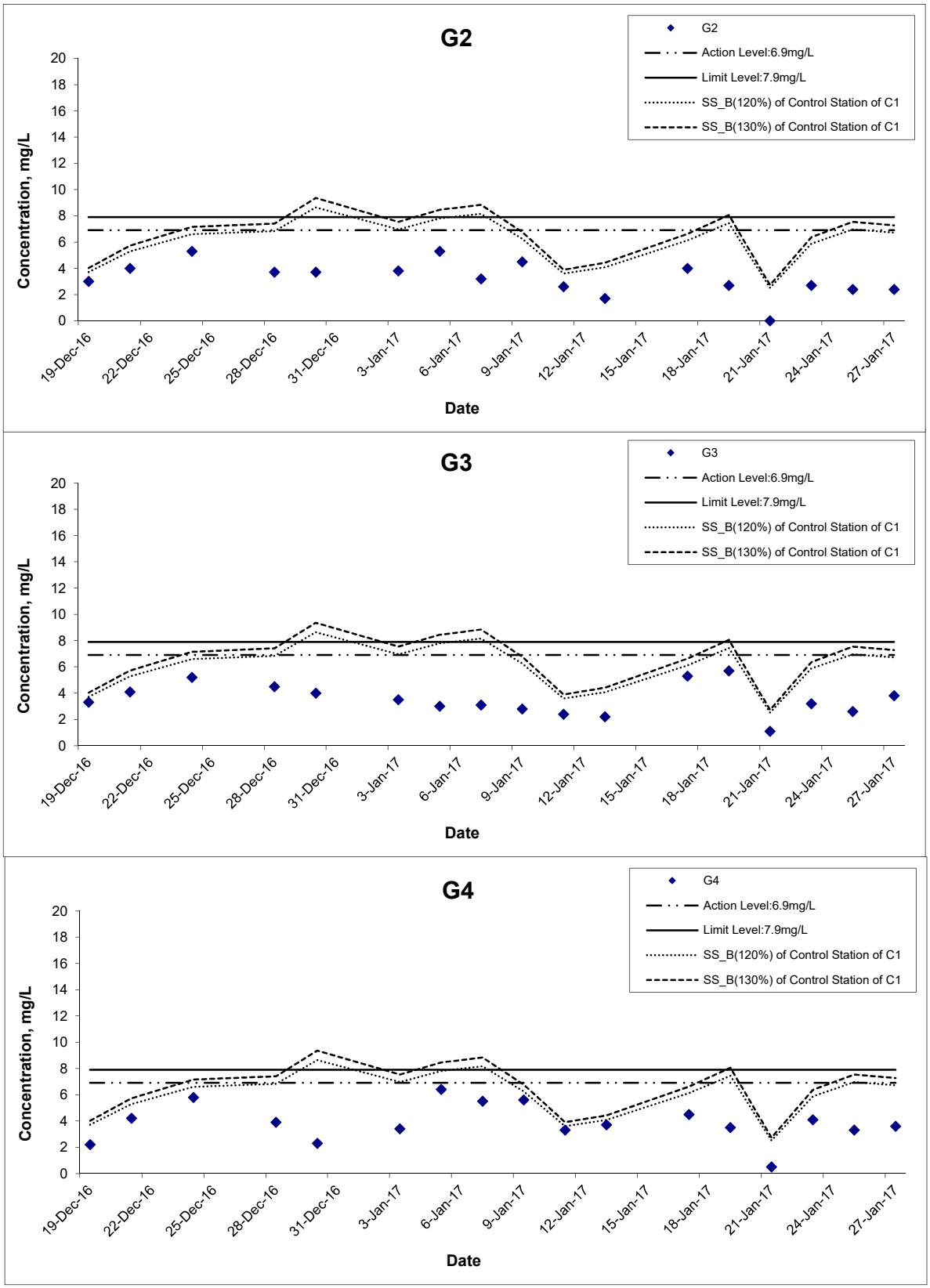




Title	Scale	Project No.
Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Water Quality Monitoring Results	N.T.S	MA16034
	Date: Jan 17	Appendix: I

CINOTECH

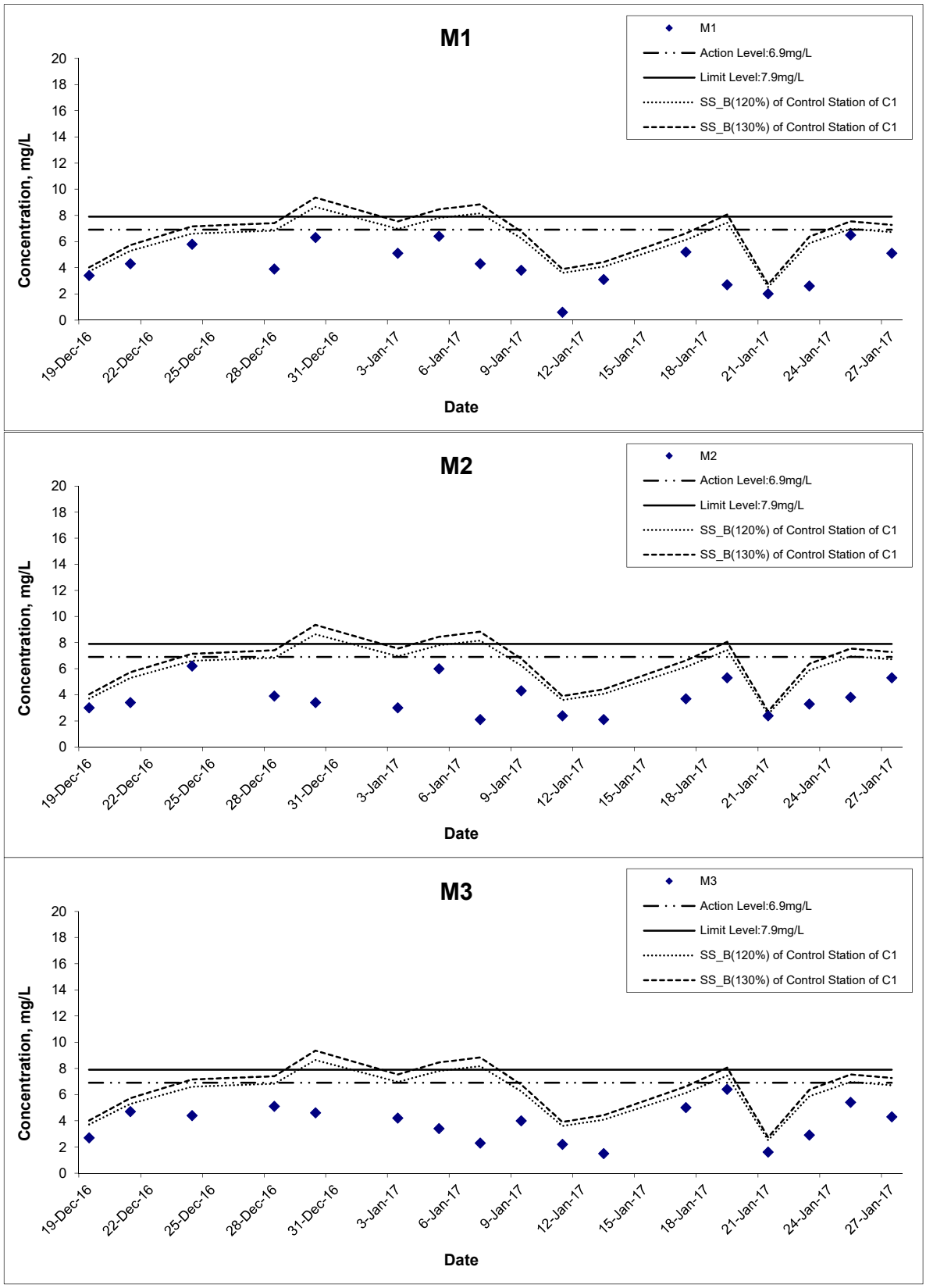
Suspended Solids (Bottom) at Mid-Flood Tide



Remarks: The graphical point at zero concentration is presented as <2.5mg/L.

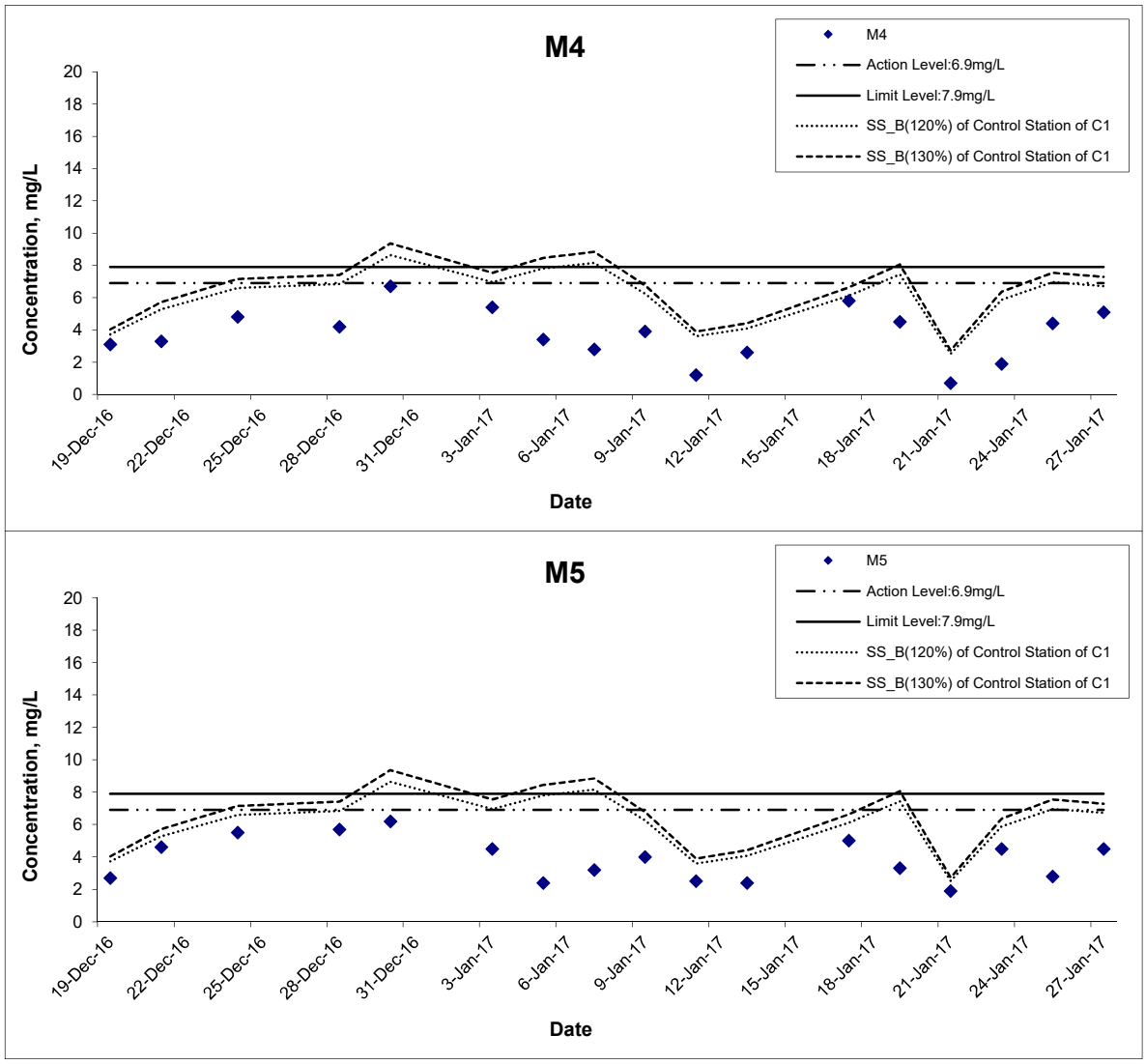
Title: Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA16034	CINOTECH
	Date: Jan 17	Appendix: I	

Suspended Solids (Bottom) at Mid-Flood Tide



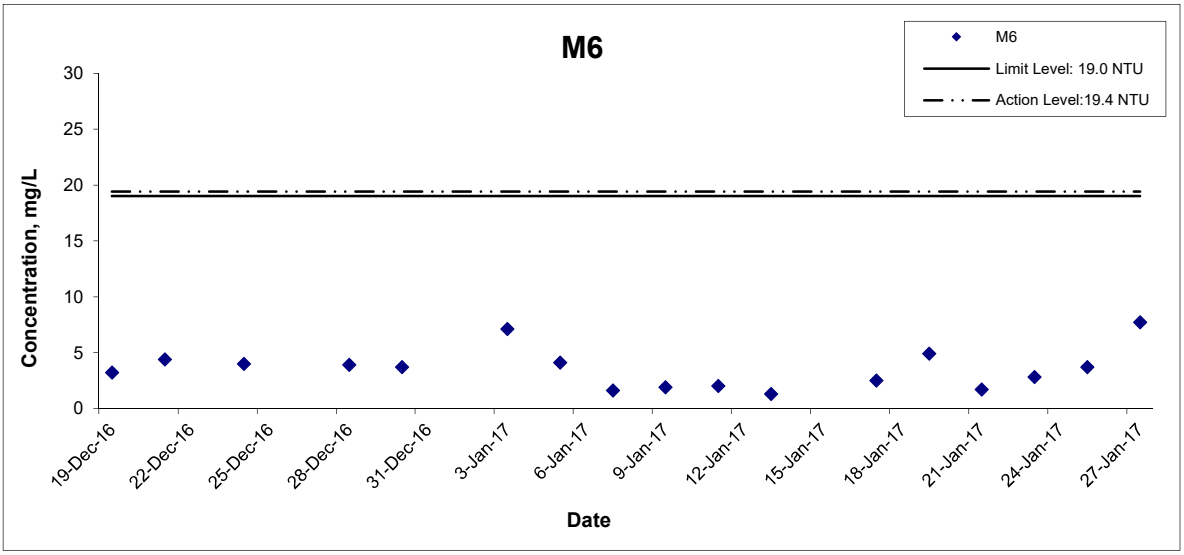
Title: Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA16034	CINOTECH
	Date: Jan 17	Appendix: I	

Suspended Solids (Bottom) at Mid-Flood Tide



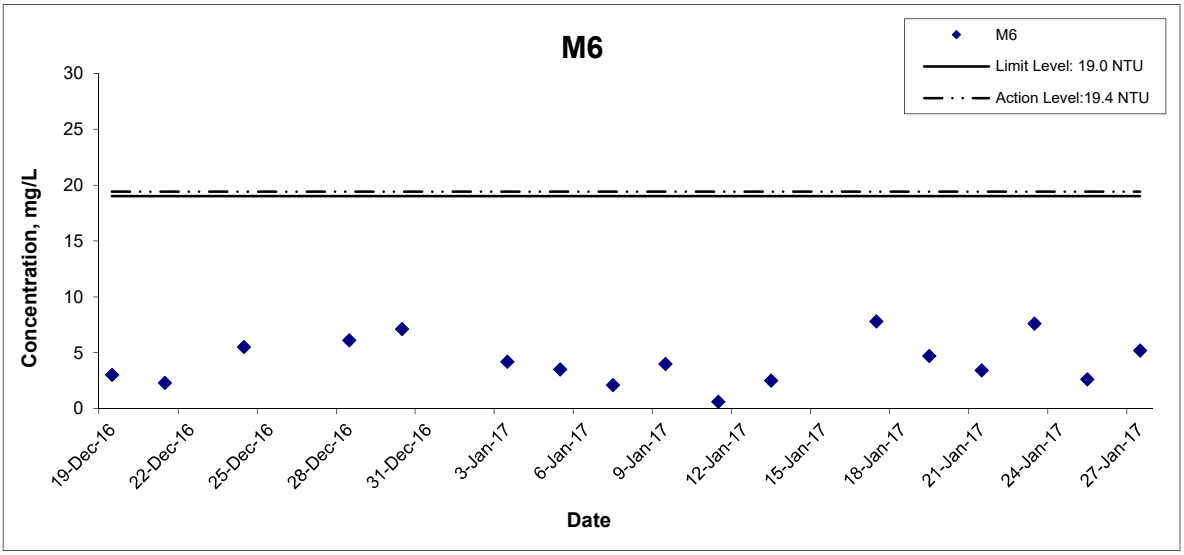
Title: Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S Date: Jan 17	Project No.: MA16034 Appendix: I	CINOTECH

Suspended Solids (Intake Level of WSD Salt Water Intake) at Mid-Ebb Tide



Title	Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S Date Jan 17	Project No. MA16034 Appendix I	CINOTECH

Suspended Solids (Intake Level of WSD Salt Water Intake) at Mid-Flood Tide



Title: Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA16034	CINOTECH
	Date: Jan 17	Appendix: I	

APPENDIX J
QUALITY CONTROL REPORTS FOR LABORATORY ANALYSIS

WELLAB LIMITED
Rms 1214, 1502, 1516, 1701 & 1716,
Technology Park, 18 On Lai Street,
Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
1710, Technology Park,
18 On Lai Street,
Shatin, N.T.

Report No.:	QC26334
Date of Issue:	2017-01-12
Date Received:	2017-01-04
Date Tested:	2017-01-04
Date Completed:	2017-01-12

ATTN: **Ms. Mei Ling Tang**

Page: 1 of 2

QC report:

Method Blank

Parameter	MB 1	Acceptance
Suspended Solids (SS) (mg/L)	<0.5	<0.5
Biochemical Oxygen Demand	N/A	N/A
Total Organic Carbon (mg-TOC/L)	<0.2	<0.2
Total Nitrogen	N/A	N/A
Ammonia (mg NH_3-N/L)	<0.01	<0.01
Total Phosphorus (mg-P/L)	<0.01	<0.01

Method QC

Parameter	MQC1	Acceptance
Suspended Solids (SS) (%)	100	80-120
Biochemical Oxygen Demand (mg O_2/L)	210	170-220
Total Organic Carbon (%)	98	80-120
Total Nitrogen	N/A	N/A
Ammonia (%)	98	80-120
Total Phosphorus (%)	101	80-120

Remarks: 1) < = less than

2) N/A = Not applicable

3) This report is the summary of quality control data for report number 26334.

****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

WELLAB LIMITED
Rms 1214, 1502, 1516, 1701 & 1716,
Technology Park, 18 On Lai Street,
Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

Report No.:	QC26334
Date of Issue:	2017-01-12
Date Received:	2017-01-04
Date Tested:	2017-01-04
Date Completed:	2017-01-12

QC report:

Sample Duplicate

Parameter	26334-3 chk	Acceptance
Suspended Solids (SS) (%)	4	RPD≤20%
Biochemical Oxygen Demand (%)	N/A	RPD≤20%
Total Organic Carbon (%)	2	RPD≤20%
Total Nitrogen	N/A	N/A
Ammonia (%)	N/A	RPD≤20%
Total Phosphorus (%)	N/A	RPD≤20%

Sample Spike

Parameter	26334-3 spk	Acceptance
Suspended Solids (SS) (%)	N/A	N/A
Biochemical Oxygen Demand (%)	N/A	N/A
Total Organic Carbon (%)	101	80-120
Total Nitrogen	N/A	N/A
Ammonia (%)	100	80-120
Total Phosphorus (%)	97	80-120

Remarks: 1) < = less than

2) N/A = Not applicable

3) This report is the summary of quality control data for report number 26334.

**********END OF REPORT**********

WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 1214, 1502, 1516, 1701 & 1716,
Technology Park, 18 On Lai Street,
Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
1710, Technology Park,
18 On Lai Street,
Shatin, N.T.

Report No.:	QC26409
Date of Issue:	2017-01-27
Date Received:	2017-01-19
Date Tested:	2017-01-19
Date Completed:	2017-01-27

ATTN: **Ms. Mei Ling Tang** Page: 1 of 2

QC report:

Method Blank

Parameter	MB 1	Acceptance
Suspended Solids (SS) (mg/L)	<0.5	<0.5
Biochemical Oxygen Demand	N/A	N/A
Total Organic Carbon (mg-TOC/L)	<0.2	<0.2
Total Nitrogen	N/A	N/A
Ammonia (mg NH_3-N/L)	<0.01	<0.01
Total Phosphorus (mg-P/L)	<0.01	<0.01

Method QC

Parameter	MQC1	Acceptance
Suspended Solids (SS) (%)	99	80-120
Biochemical Oxygen Demand (mg O_2/L)	194	170-220
Total Organic Carbon (%)	96	80-120
Total Nitrogen	N/A	N/A
Ammonia (%)	102	80-120
Total Phosphorus (%)	98	80-120

Remarks: 1) < = less than
2) N/A = Not applicable
3) This report is the summary of quality control data for report number 26409.

****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

WELLAB 匯力
Testing & Research

WELLAB LIMITED
Rms 1214, 1502, 1516, 1701 & 1716,
Technology Park, 18 On Lai Street,
Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

Report No.:	QC26409
Date of Issue:	2017-01-27
Date Received:	2017-01-19
Date Tested:	2017-01-19
Date Completed:	2017-01-27

QC report:

Sample Duplicate

Parameter	26409-3 chk	Acceptance
Suspended Solids (SS) (%)	4	RPD≤20%
Biochemical Oxygen Demand (%)	N/A	RPD≤20%
Total Organic Carbon (%)	9	RPD≤20%
Total Nitrogen	N/A	N/A
Ammonia (%)	N/A	RPD≤20%
Total Phosphorus (%)	0	RPD≤20%

Sample Spike

Parameter	26409-3 spk	Acceptance
Suspended Solids (SS) (%)	N/A	N/A
Biochemical Oxygen Demand (%)	N/A	N/A
Total Organic Carbon (%)	98	80-120
Total Nitrogen	N/A	N/A
Ammonia (%)	93	80-120
Total Phosphorus (%)	105	80-120

Remarks: 1) < = less than

2) N/A = Not applicable

3) This report is the summary of quality control data for report number 26409.

**********END OF REPORT**********

WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

QC REPORT

APPLICANT: Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Report No.:	26320
Date of Issue:	2017/01/06
Date Received:	2017/01/05
Date Tested:	2017/01/05
Date Completed:	2017/01/06
Page:	1 of 1

ATTN: Ms. Mei Ling Tang

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Agreement No. CE/59/2015 (EP)
Project No.: MA16034
Sampling Date: 2017/01/05
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)/170105

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	5	5	1	103

**********END OF REPORT**********

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

QC REPORT

APPLICANT: Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Report No.:	26321
Date of Issue:	2017/01/04
Date Received:	2017/01/03
Date Tested:	2017/01/03
Date Completed:	2017/01/04
Page:	1 of 1

ATTN: Ms. Mei Ling Tang

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Agreement No. CE/59/2015 (EP)
Project No.: MA16034
Sampling Date: 2017/01/03
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)/170103

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	5	5	13	105

**********END OF REPORT**********

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

QC REPORT

APPLICANT: Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Report No.:	26345
Date of Issue:	2017/01/09
Date Received:	2017/01/07
Date Tested:	2017/01/07
Date Completed:	2017/01/09
Page:	1 of 1

ATTN: Ms. Mei Ling Tang

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Agreement No. CE/59/2015 (EP)
Project No.: MA16034
Sampling Date: 2017/01/07
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)/170107

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	6	6	2	101

**********END OF REPORT**********

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

WELLAB LIMITED
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18 On Lai Street, Shatin, N.T, Hong Kong.
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Website: www.wellab.com.hk

TEST REPORT

QC REPORT

APPLICANT: Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Report No.:	26348
Date of Issue:	2017/01/10
Date Received:	2017/01/09
Date Tested:	2017/01/09
Date Completed:	2017/01/10
Page:	1 of 1

ATTN: Ms. Mei Ling Tang

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Agreement No. CE/59/2015 (EP)
Project No.: MA16034
Sampling Date: 2017/01/09
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)/170109

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
C2se	5	5	2	101

**********END OF REPORT**********

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
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Website: www.wellab.com.hk

TEST REPORT

QC REPORT

APPLICANT: Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Report No.:	26359
Date of Issue:	2017/01/12
Date Received:	2017/01/11
Date Tested:	2017/01/11
Date Completed:	2017/01/12
Page:	1 of 1

ATTN: Ms. Mei Ling Tang

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Agreement No. CE/59/2015 (EP)
Project No.: MA16034
Sampling Date: 2017/01/11
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)/170111

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	4	4	3	94

**********END OF REPORT**********

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
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Website: www.wellab.com.hk

TEST REPORT

QC REPORT

APPLICANT: Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Report No.:	26377
Date of Issue:	2017/01/16
Date Received:	2017/01/13
Date Tested:	2017/01/13
Date Completed:	2017/01/16
Page:	1 of 1

ATTN: Ms. Mei Ling Tang

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Agreement No. CE/59/2015 (EP)
Project No.: MA16034
Sampling Date: 2017/01/13
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)/170113

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
C2se	3	3	2	97

**********END OF REPORT**********

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
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TEST REPORT

QC REPORT

APPLICANT: Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Report No.:	26386
Date of Issue:	2017/01/18
Date Received:	2017/01/17
Date Tested:	2017/01/17
Date Completed:	2017/01/18
Page:	1 of 1

ATTN: Ms. Mei Ling Tang

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Agreement No. CE/59/2015 (EP)
Project No.: MA16034
Sampling Date: 2017/01/17
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)/170117

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	4	3	3	100

**********END OF REPORT**********

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
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TEST REPORT

QC REPORT

APPLICANT: Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Report No.:	26398
Date of Issue:	2017/01/20
Date Received:	2017/01/19
Date Tested:	2017/01/19
Date Completed:	2017/01/20
Page:	1 of 1

ATTN: Ms. Mei Ling Tang

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Agreement No. CE/59/2015 (EP)
Project No.: MA16034
Sampling Date: 2017/01/19
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)/170119

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	3	3	0	105

**********END OF REPORT**********

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

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Website: www.wellab.com.hk

TEST REPORT

QC REPORT

APPLICANT: Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Report No.:	26414
Date of Issue:	2017/01/23
Date Received:	2017/01/20
Date Tested:	2017/01/20
Date Completed:	2017/01/23
Page:	1 of 1

ATTN: Ms. Mei Ling Tang

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Agreement No. CE/59/2015 (EP)
Project No.: MA16034
Sampling Date: 2017/01/21
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)/170120

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M6mf	3	3	2	101

**********END OF REPORT**********

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

Patrick Tse

PATRICK TSE
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TEST REPORT

QC REPORT

APPLICANT: Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Report No.:	26417
Date of Issue:	2017/01/24
Date Received:	2017/01/23
Date Tested:	2017/01/23
Date Completed:	2017/01/24
Page:	1 of 1

ATTN: Ms. Mei Ling Tang

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Agreement No. CE/59/2015 (EP)
Project No.: MA16034
Sampling Date: 2017/01/23
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)/170123

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	5	5	1	99

**********END OF REPORT**********

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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TEST REPORT

QC REPORT

APPLICANT: Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Report No.:	26432
Date of Issue:	2017/01/26
Date Received:	2017/01/25
Date Tested:	2017/01/25
Date Completed:	2017/01/26
Page:	1 of 1

ATTN: Ms. Mei Ling Tang

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Agreement No. CE/59/2015 (EP)
Project No.: MA16034
Sampling Date: 2017/01/25
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)/170125

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	4	4	2	105

**********END OF REPORT**********

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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TEST REPORT

QC REPORT

APPLICANT: Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Report No.:	26443
Date of Issue:	2017/02/01
Date Received:	2017/01/27
Date Tested:	2017/01/27
Date Completed:	2017/02/01
Page:	1 of 1

ATTN: Ms. Mei Ling Tang

Project Name: Enviromental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Agreement No. CE/59/2015 (EP)
Project No.: MA16034
Sampling Date: 2017/01/27
Number of Sample: 136
Custody No.: MA16034-CE/59/2015(EP)/170127

****

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
M4se	5	5	5	102

**********END OF REPORT**********

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

Patrick Tse

PATRICK TSE
Laboratory Manager

APPENDIX K
SUMMARY OF EXCEEDANCE

Agreement No. CE 59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel – Design and Construction

Appendix K – Summary of Exceedance

Reporting Period: January 2017

(A) Exceedance Report for Air Quality
(NIL in the reporting month)

(B) Exceedance Report for Construction Noise

Action Level for Construction Noise

(Eleven Action Level exceedance was recorded due to the documented complaints received from monitoring station in the reporting month. Please refer to the complaint log in Appendix O.)

Limit Level for Construction Noise

(One Limit Level exceedance was recorded on 23 January 2017 at CM3)

Station	Location	Time	Measured Level (L_{eq} dB(A))	Baseline Noise Level (L_{eq} dB(A))	Construction Noise Level (L_{eq} dB(A))	Action Level	Limit Level (L_{eq} dB(A))	Level exceeded
CM3	Block S (Cheuk Lai House), Yau Lai Estate Phase 5, Yau Tong	09:05	77.3	65.6	*77.0*	When one documented complaint is received	75.0	Limit
		13:20(1)	76.7	65.6	*76.3*	When one documented complaint is received	75.0	Limit

(1) Repeated measurement according to Event and Action Plan for Construction Noise of the EM&A Manual

According to information provided by the Contractor, during excavation for tunnel adit at Lam Tin Interchange, necessary rock breaking works by hydraulic or pneumatic breakers was conducted. It is considered that source of Noise Limit Level Exceedance is due to the high noise level emission during use of hydraulic or pneumatic breakers.

The Contractor has proposed and implemented the following noise mitigation measures to avoid further exceedance including:

1. Noise absorbing materials were being hanged on the hill side of Lam Tin Site;
2. Temporary Noise Barriers was placed properly on site so that there will be no gaps between the barriers during rock-breaking works; and
3. Chemical expansion material, which is non-toxic to the environment, would be used for rock splitting. During the process, the expansion material will be solidified and the rock will be spitted by the expansion effect of the said material. As such, amount of time using noisy hydraulic or pneumatic breakers will be shortened for these spitted rock.

According to the Event and Action Plan for Construction Noise in the EM&A Manual, ET has increased noise monitoring frequency to check the effectiveness of Contractor's remedial action. Monitoring frequency was increased from weekly to twice a week and additional noise monitoring was carried out on 25 January 2017 at Station CM3. The results are presented as below:

Agreement No. CE 59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel – Design and Construction

Appendix K – Summary of Exceedance
Monitoring Date: 25 Jan 2017

Station	Location	Time	Measured Level (L_{eq} dB(A))	Baseline Noise Level (L_{eq} dB(A))	Construction Noise Level (L_{eq} dB(A))	Action Level	Limit Level (L_{eq} dB(A))	Level exceeded
CM3	Block S (Cheuk Lai House), Yau Lai Estate Phase 5, Yau Tong	15:35	72.3	65.6	71.3	When one documented complaint is received	75.0	No exceedance

No Limit Level Exceedance are recorded during the additional noise monitoring.

The Contractor is recommended to further minimize noise nuisance by implementing mitigation measures as below:

1. Proper noise acoustic materials (such as a minimum of 10mm thick plywood or 1mm thick steel outer skin and a minimum of 50mm thick sound absorbing lining) should be selected and deployed as noise barrier as appropriate;
2. To adopt Cantilever noise barriers to screen noise effectively;
3. To continue to properly implement noise mitigation measures as recommended in the Environmental Monitoring & Audit Manual and approved Noise Mitigation Plan; and
4. To continue to strictly follow the requirements in the approved Noise Mitigation Plan.

(C) Exceedance Report for Water Quality
(One Action Level and Six Limit Level exceedance in groundwater quality monitoring as followed:

Date	Monitoring Location	Monitoring Parameter	Monitoring Results	Action Level	Limit Level
4 Jan 2017	Stream 2	Total Organic Compound	5 mg-TOC/L	4.3	4.9
19 Jan 2017	Stream 1	Suspended Solids	7.8 mg/L	5.5	6.2
	Stream 1	Total Organic Compound	6 mg-TOC/L	4.3	4.9
	Stream 1	Ammonia-N	0.15 mg NH_3-N/L	0.05	0.06
	Stream 1	Total Phosphorus	0.07 mg-P/L	0.05	0.05
	Stream 2	Suspended Solids	5.8 mg/L	5.5	6.2
	Stream 2	Total Nitrogen	2.0 mg/L	1.7	1.7

According to the information provided by the Contractor, no tunnel boring or tunnel construction works were carried out in both Lam Tin side and Tseung Kwan O side in January 2017. Therefore, it is considered that the exceedance is not project-related.)

(D) Exceedance Report for Ecology
(NIL in the reporting month)

(E) Exceedance Report for Cultural Heritage
(NIL in the reporting month)

(F) Exceedance Report for Landfill Gas
(NIL in the reporting month)

APPENDIX L
SITE AUDIT SUMMARY

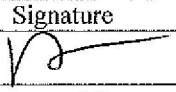
Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	170104
Date	04 January 2017 (Wednesday)
Time	8:45-11:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
170104-R02	***B. Water Quality*** • To remove the sand accumulated in catchpit in TKO.	B7
	C. Ecology • No environmental deficiency was identified during site inspection.	
	D. Landscape & Visual • No environmental deficiency was identified during site inspection.	
170104-R03	***E. Air Quality*** • The contractor is reminded to provide cover by impervious material to exposed slope in Cha Kwo Ling after works.	E6
	F. Construction Noise Impact • No environmental deficiency was identified during site inspection.	
170104-O01	***G. Waste / Chemical Management*** • Chemical oil observed floating on stagnant water near generator-set at Cha Kwo Ling. The contractor is reminded to clear the oily water properly as "chemical waste".	G9
	H. Permits/Licences • No environmental deficiency was identified during site inspection.	
	I. Impact on Cultural Heritage • No environmental deficiency was identified during site inspection.	
	J. Others • Follow-up on previous audit section (Ref. No.: 161228), item 161228-R02 and 161228-R04 are remarked as 170104-O01 and 170104-R03. Follow up action is needed to reviewed during the next site inspection.	

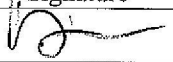
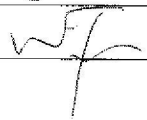
	Name	Signature	Date
Recorded by	Johnny Fung		04 January 2017
Checked by	Dr. Priscilla Choy		04 January 2017

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	170111
Date	11 January 2017 (Wednesday)
Time	9:00-11:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	B. Water Quality	
170111-R01	• To remove the sand accumulated in catchpit in TKO.	B7
170111-R03	• The contractor is reminded to provide cover by impervious materials to exposed slope at CKL after works.	B9
	C. Ecology	
	• No environmental deficiency was identified during site inspection.	
	D. Landscape & Visual	
	• No environmental deficiency was identified during site inspection.	
	E. Air Quality	
170111-R03	• The contractor is reminded to provide cover by impervious material to exposed slope in Cha Kwo Ling after works.	E6
170111-R02	• The contractor is reminded to provide sufficient water spraying to the exposed at TKO.	E5
	F. Construction Noise Impact	
	• No environmental deficiency was identified during site inspection.	
	G. Waste / Chemical Management	
	• No environmental deficiency was identified during site inspection.	
	H. Permits/Licences	
	• No environmental deficiency was identified during site inspection.	
	I. Impact on Cultural Heritage	
	• No environmental deficiency was identified during site inspection.	
	J. Others	
	• Follow-up on previous audit section (Ref. No.: 170104), item 170104-R02 and 170104-R03 are remarked as 170111-R01 and 170111-R03 respectively. Follow up action is needed to reviewed during the next site inspection.	

	Name	Signature	Date
Recorded by	Johnny Fung		11 January 2017
Checked by	Dr. Priscilla Choy		11 January 2017

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	170118
Date	18 January 2017 (Wednesday)
Time	9:00-10:45

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	B. Water Quality	
170118-O01	• Sand and mud accumulated in catch point near discharge point in TKO. The Contractor is reminded to remove the mud and sand to prevent muddy discharge.	B6iii,7
170118-R03	• The contractor is reminded to provide cover by impervious materials to exposed slope at CKL after works.	B9
	C. Ecology	
	• No environmental deficiency was identified during site inspection.	
	D. Landscape & Visual	
	• No environmental deficiency was identified during site inspection.	
	E. Air Quality	
170118-R03	• The contractor is reminded to provide cover by impervious materials to exposed slope at CKL after works.	E6
	F. Construction Noise Impact	
170118-R02	• To repair the noise enclosure at the breaker in TKO.	F7
170118-R04	• The contractor is reminded to provide additional noise mitigation measures during breaking works at CKL.	F5
	G. Waste / Chemical Management	
	• No environmental deficiency was identified during site inspection.	
	H. Permits/Licences	
	• No environmental deficiency was identified during site inspection.	
	I. Impact on Cultural Heritage	
	• No environmental deficiency was identified during site inspection.	
	J. Others	
	• Follow-up on previous audit section (Ref. No.: 170111), item 170111-R01 and 170104-R03 are remarked as 170118-O01 and 170118-R03 respectively. Follow up action is needed to reviewed during the next site inspection.	

	Name	Signature	Date
Recorded by	Johnny Fung		18 January 2017
Checked by	Dr. Priscilla Choy		18 January 2017

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	170125
Date	25 January 2017 (Wednesday)
Time	9:00-11:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
170125-O02	***B. Water Quality*** • Sandy mud and general refuse accumulated in catchpit in TKO. The contractor is reminded to remove the material regularly.	B7
	C. Ecology • No environmental deficiency was identified during site inspection.	
	D. Landscape & Visual • No environmental deficiency was identified during site inspection.	
170125-O01	***E. Air Quality*** • Part of open slope at TKO observed dry. The contractor is reminded to provide water spray to prevent dust generation.	E5
170125-R03	***F. Construction Noise Impact*** • To provide mitigation measures to PME as proposed in the approved NMP in Cha Kwo Ling.	F11
	G. Waste / Chemical Management • No environmental deficiency was identified during site inspection.	
	H. Permits/Licences • No environmental deficiency was identified during site inspection.	
	I. Impact on Cultural Heritage • No environmental deficiency was identified during site inspection.	
	J. Others • Follow-up on previous audit section (Ref. No.: 170118), item 170118-O01 and 170118-R04 are remarked as 170125-O02 and 170125-R03 respectively. Follow up action is needed to reviewed during the next site inspection.	

	Name	Signature	Date
Recorded by	Johnny Fung		25 January 2017
Checked by	Dr. Priscilla Choy		25 January 2017

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	170105
Date	05 January 2017 (Thursday)
Time	14:00-15:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
170105-R01	*B. Water Quality* • No environmental deficiency was identified during site inspection. *C. Ecology* • No environmental deficiency was identified during site inspection. *D. Landscape & Visual* • No environmental deficiency was identified during site inspection. *E. Air Quality* • No environmental deficiency was identified during site inspection. *F. Construction Noise Impact* • No environmental deficiency was identified during site inspection. *G. Waste / Chemical Management* • No environmental deficiency was identified during site inspection. *H. Permits/Licences* • To display the Environmental Permit on hopper barge. *I. Others* Follow-up on previous audit section (Ref. No.: 161228), all identified environmental deficiency was observed improved/rectified by the Contractor.	H5

	Name	Signature	Date
Recorded by	Johnny Fung		05 January 2017
Checked by	Dr. Priscilla Choy		05 January 2017

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	170112
Date	12 January 2017 (Thursday)
Time	14:00-15:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	B. Water Quality	
170112-O01	• To clear the sand accumulated in gullies in Area A and provide sand bag bunds to gullies to prevent discharge of surface runoff.	B20
170112-R02	• To provide sand bag bunds to footing of temporary hoarding in Area A.	B20
	C. Ecology	
	• No environmental deficiency was identified during site inspection.	
	D. Landscape & Visual	
170112-R04	• To remove construction material waste from tree protection area in Portion 1.	D3
	E. Air Quality	
170112-R03	• To properly cover stockpile of dusty materials in Area A.	E6
	F. Construction Noise Impact	
	• No environmental deficiency was identified during site inspection.	
	G. Waste / Chemical Management	
	• No environmental deficiency was identified during site inspection.	
	H. Permits/Licences	
	• No environmental deficiency was identified during site inspection.	
	I. Others	
	Follow-up on previous audit section (Ref. No.: 170105), all identified environmental deficiency was observed improved/rectified by the Contractor.	

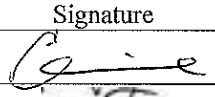
	Name	Signature	Date
Recorded by	Johnny Fung		12 January 2017
Checked by	Dr. Priscilla Choy		12 January 2017

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	170117
Date	17 January 2017 (Tuesday)
Time	09:00-10:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
170117-R01	***B. Water Quality*** • No environmental deficiency was identified during site inspection. ***C. Ecology*** • No environmental deficiency was identified during site inspection. ***D. Landscape & Visual*** • No environmental deficiency was identified during site inspection. ***E. Air Quality*** • No environmental deficiency was identified during site inspection. ***F. Construction Noise Impact*** • No environmental deficiency was identified during site inspection. ***G. Waste / Chemical Management*** • To provide skip or container for the disposal of general refuse next to site office. ***H. Permits/Licences*** • No environmental deficiency was identified during site inspection. ***I. Others*** Follow-up on previous audit section (Ref. No.: 170112), all identified environmental deficiency was observed improved/rectified by the Contractor.	G 1ii

	Name	Signature	Date
Recorded by	Carrie Leung		17 January 2017
Checked by	Dr. Priscilla Choy		17 January 2017

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	170126
Date	26 January 2017 (Thursday)
Time	09:00-10:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
170126-R01	***B. Water Quality*** • To provide sand bag bunds near access gate of Area A. ***C. Ecology*** • No environmental deficiency was identified during site inspection. ***D. Landscape & Visual*** • No environmental deficiency was identified during site inspection.	B20
170126-R02	***E. Air Quality*** • To cover stockpile of dusty material by impervious sheets before CNY holidays at Portion 5. ***F. Construction Noise Impact*** • No environmental deficiency was identified during site inspection. ***G. Waste / Chemical Management*** • No environmental deficiency was identified during site inspection. ***H. Permits/Licences*** • No environmental deficiency was identified during site inspection. ***I. Others*** Follow-up on previous audit section (Ref. No.: 170117), all identified environmental deficiency was observed improved/rectified by the Contractor.	E6

	Name	Signature	Date
Recorded by	Johnny Fung		26 January 2017
Checked by	Dr. Priscilla Choy		26 January 2017

APPENDIX M
EVENT AND ACTION PLANS

Event and Action Plan for Air Quality (Dust)

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
Action level being exceeded by one sampling	1. Identify source, investigate the causes of complaint and propose remedial measures; 2. Inform IEC and ER; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
Action level being exceeded by two or more consecutive sampling	1. Identify source; 2. Inform IEC and ER; 3. Advise the ER on the effectiveness of the proposed remedial measures; 4. Repeat measurements to confirm findings; 5. Increase monitoring frequency to daily; 6. Discuss with IEC and Contractor on remedial actions required;	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ET on the effectiveness of the proposed remedial measures; 5. Supervise Implementation of remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	1. Submit proposals for remedial actions to IEC within three working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate.

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	7. If exceedance continues, arrange meeting with IEC and ER; 8. If exceedance stops, cease additional monitoring.			
Limit level being exceeded by one sampling	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform Contractor ,IEC, ER, and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within three working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.
Limit level being exceeded by two or more	1. Notify IEC, ER, Contractor and EPD; 2. Identify source;	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions;	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor;	1. Take immediate action to avoid further exceedance;

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
consecutive sampling	3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Ensure remedial measures properly implemented; 5. 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.	2. Submit proposals for remedial actions to IEC within three working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event and Action Plan for Construction Noise

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level	1. Notify IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the Contractor and formulate remedial measures; 5. Increase monitoring frequency to check mitigation effectiveness.	1. Review the analysed results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures are properly implemented.	1. Submit noise mitigation proposals to IEC; 2. Implement noise mitigation proposals.
Limit Level	1. Identify source; 2. Inform IEC, ER, EPD and Contractor; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

	6. Inform IEC, ER and EPD the causes and actions taken for the exceedances; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.		Contractor to stop that portion of work until the exceedance is abated.	

Event and Action Plan for Marine Water Quality

Event	Action			
	ET	**IEC**	**ER**	**CONTRACTOR**
Action level being exceeded by one sampling day at water sensitive receiver(s)	• Identify the source(s) of impact by comparing the results with those collected at the control stations as appropriate; • If exceedance is found to be caused by the reclamation activities, repeat *in-situ* measurement to confirm findings; • Inform IEC and contractor; • Check monitoring data, all plant, equipment and Contractor's working methods; • If exceedance occurs at WSD salt water intake, inform WSD; • Discuss mitigation measures with IEC and Contractor; • Repeat measurement on next day of exceedance.	• Discuss with ET and Contractor on the mitigation measures; • Review proposal on mitigation measures submitted by Contractor and advise the ER accordingly; • Assess the effectiveness of the implemented mitigation measures.	• Discuss with IEC on the proposed mitigation measures; • Make agreement on the mitigation proposal.	• Inform the ER and confirm notification of the non-compliance in writing; • Rectify unacceptable practice; • Check all plant and equipment; • Amend working methods if appropriate; • Discuss with ET and IEC and propose mitigation measures to IEC and ER; • Implement the agree mitigation measures.
Action level being exceeded by two or	• Identify the source(s) of impact by comparing the results with those	• Discuss with ET and Contractor on the mitigation measures;	• Discuss with IEC on the proposed mitigation measures;	• Inform the Engineer and confirm notification of the non-compliance in writing;

Event	Action			
	ET	**IEC**	**ER**	**CONTRACTOR**
more consecutive sampling days at water sensitive receiver(s)	collected at the control stations as appropriate; • If exceedance is found to be caused by the reclamation activities, repeat in-situ measurement to confirm findings; • Inform IEC and contractor; • Check monitoring data, all plant, equipment and Contractor's working methods; • Discuss mitigation measures with IEC and Contractor; • Ensure mitigation measures are implemented; • Prepare to increase the monitoring frequency to daily; • If exceedance occurs at WSD salt water intake, inform WSD; • Repeat measurement on next day of exceedance.	• Review proposal on mitigation measures submitted by Contractor and advise the ER accordingly; • Assess the effectiveness of the implemented mitigation measures.	• Make agreement on the mitigation proposal; • Assess the effectiveness of the implemented mitigation measures.	• Rectify unacceptable practice; • Check all plant and equipment and consider changes of working methods; • Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within 3 working days; • Implement the agreed mitigation measures.

Event	Action			
	ET	**IEC**	**ER**	**CONTRACTOR**
Limit level being exceeded by one sampling day at water sensitive receiver(s)	• Identify the source(s) of impact by comparing the results with those collected at the control stations as appropriate; • If exceedance is found to be caused by the reclamation activities, repeat *in-situ* measurement to confirm findings; • Inform IEC, contractor, AFCD and EPD • Check monitoring data, all plant, equipment and Contractor's working methods; • Discuss mitigation measures with IEC, ER and Contractor; • Ensure mitigation measures are implemented; • Increase the monitoring frequency to daily until no exceedance of Limit level; • If exceedance occurs at WSD salt water intake, inform WSD.	• Discuss with ET and Contractor on the mitigation measures; • Review proposal on mitigation measures submitted by Contractor and advise the ER accordingly; • Assess the effectiveness of the implemented mitigation measures.	• Discuss with IEC, ET and Contractor on the proposed mitigation measures; • Request Contractor to critically review the working methods; • Make agreement on the mitigation measures to be implemented; • Assess the effectiveness of the implemented mitigation measures.	• Inform the ER and confirm notification of the non-compliance in writing; • Rectify unacceptable practice; • Check all plant and equipment and consider changes of working methods; • Discuss with ET, IEC and ER and submit proposal of mitigation measures to IEC and ER within 3 working days of notification; • Implement the agreed mitigation measures.

Event	Action			
	ET	**IEC**	**ER**	**CONTRACTOR**
Limit level being exceeded by two or more consecutive sampling days at water sensitive receiver(s)	• Identify the source(s) of impact by comparing the results with those collected at the control stations as appropriate; • If exceedance is found to be caused by the reclamation activities, repeat in-situ measurement to confirm findings; • Inform IC(E), AFCD, contractor and EPD; • Check monitoring data, all plant, equipment and Contractor's working methods; • Discuss mitigation measures with IC(E), ER and Contractor; • Ensure mitigation measures are implemented; • Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days; • If exceedance occurs at WSD salt water intake, inform WSD.	• Discuss with ET and Contractor on the mitigation measures; • Review proposal on mitigation measures submitted by Contractor and advise the ER accordingly; • Assess the effectiveness of the implemented mitigation measures.	• Discuss with IC(E), ET and Contractor on the proposed mitigation measures; • Request Contractor to critically review the working methods; • Make agreement on the mitigation measures to be implemented; • Assess the effectiveness of the implemented 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 and consider changes of working methods; • Discuss with ET, IC(E) and ER and submit proposal of mitigation measures to IC(E) and ER within 3 working days of notification; • Implement the agreed mitigation measures; • As directed by the Engineer, to slow down or to stop all or part of the construction activities.

Limit Levels and Action Plan for Landfill Gas

Parameter	Limit Level	Action
Oxygen	<19%	• Ventilate to restore oxygen to >19%
	<18%	• Stop works • Evacuate personnel/prohibit entry • Increase ventilation to restore oxygen to >19%
Methane	>10% LEL (i.e. > 0.5% by volume)	• Prohibit hot works • Ventilate to restore methane to <10% LEL
	>20% LEL (i.e. > 1% by volume)	• Stop works • Evacuate personnel / prohibit entry • Increase ventilation to restore methane to <10% LEL
Carbon Dioxide	>0.5%	• Ventilate to restore carbon dioxide to < 0.5%
	>1.5%	• Stop works • Evacuate personnel / prohibit entry • Increase ventilation to restore carbon dioxide to < 0.5%

APPENDIX N
ENVIRONMENTAL MITIGATION
IMPLEMENTATION SCHEDULE (EMIS)

App N - IMPLEMENTATION SCHEDULE AND RECOMMENDED MITIGATION MEASURES

EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
Air Quality Impact							
S3.8.1	Watering eight times a day on active works areas, exposed areas and paved haul roads	To minimize the dust impact	Contractor	All Active Work Sites	Construction phase	APCO	*
S3.8.1	Enclosing the unloading process at barging point by a 3-sided screen with top tipping hall, provision of water spraying and flexible dust curtains	To minimize the dust impact	Contractor	Barging Points	Construction phase	APCO	N/A
S3.8.7	Dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices: - Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather. - Use of frequent watering for particularly dusty construction areas and areas close to ASRs. - Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines. - Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs. - Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations. - Establishment and use of vehicle wheel and body washing facilities at the exit points of the site. - Provision of wind shield and dust extraction units or similar dust mitigation measures at the loading area of barging point, and use of water sprinklers at	To minimize the dust impact	Contractor	All Construction Work Sites	Construction phase	APCO and Air Pollution Control (Construction Dust) Regulation	# ^ * * ^ N/A N/A

App N - IMPLEMENTATION SCHEDULE AND RECOMMENDED MITIGATION MEASURES

EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
	the loading area where dust generation is likely during the loading process of loose material, particularly in dry seasons/ periods. - Provision of not less than 2.4m high hoarding from ground level along site boundary where adjoins a road, streets or other accessible to the public except for a site entrance or exit. - Imposition of speed controls for vehicles on site haul roads. - Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs - Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides. - Instigation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.						^ ^ ^ N/A ^
/	Emission from Vehicles and Plants • All vehicles shall be shut down in intermittent use. • Only well-maintained plant should be operated on-site and plant should be serviced regularly to avoid emission of black smoke. • All diesel fuelled construction plant within the works areas shall be powered by ultra low sulphur diesel fuel (ULSD)	Reduce air pollution emission from construction vehicles and plants	Contractor	All construction sites	Construction stage	• APCO	^ ^ ^
/	Valid No-road Mobile Machinery (NRMM) labels should be provided to regulated machines	Reduce air pollution emission from	Contractor	All construction	Construction stage	• APCO	^

EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		construction vehicles and plants		sites			
Noise Impact (Construction Phase)							
S4.8	- Use of quiet PME. Use of movable noise barriers for Excavator, Lorry, Dump Truck, Mobile Crane, Compactor, Concrete Mixer Truck, Concrete Lorry Mixer, Breaker, Mobile Crusher, Backhoe, Vibratory Poker, Saw, Asphalt Paver, Vibratory Roller, Vibrolance, Hydraulic Vibratory Lance and Piling (Vibration Hammer). Use of full enclosure for Air Compressor, Compressor, Bar Bender, Generator, Drilling Rig, Chisel, Large Diameter Bore Piling, Grout Mixer & Pump and Concrete Pump.	To minimize construction noise impact arising from the Project at the affected NSRs	Contractor	Work Sites	Construction phase	EIAO-TM, NCO	*
S4.9	Good Site Practice - Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program - Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program. - Mobile plant, if any, should be sited as far away from NSRs as possible. - Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum. - Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs. - Material stockpiles and other structures should be effectively utilized,	To minimize construction noise impact arising from the Project at the affected NSRs	Project Proponent	Work sites	Construction Period	EIAO-TM, NCO	^ ^ ^ ^ ^ ^

App N - IMPLEMENTATION SCHEDULE AND RECOMMENDED MITIGATION MEASURES

EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
	wherever practicable, in screening noise from on-site construction activities.						
S4.9	Scheduling of Construction Works during School Examination Period	To minimize construction noise impact arising from the Project at the affected NSRs	Contractor	Work site near school	Construction phase	EIAO-TM, NCO	N/A
Water Quality Impact (Construction Phase)							
S5.6.24	The dry density of filling material for the TKO-LT Tunnel reclamation should be 1,900kg/m^3, with fine content of 25% or less	Control potential impacts from filling activities	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO	N/A
S5.8.1	Non-dredged method by constructing steel cellular caisson structure with stone column shall be adopted for construction of seawall foundation. During the stone column installation (also including the installation of steel cellular caisson), silt curtain shall be employed around the active stone column installation points.	Control potential impacts from filling activities	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO	N/A
S5.8.2	Formation of seawall enclosing the reclamation for Road P2 (notwithstanding an opening of about 50m for marine access) shall be completed prior to the filling activities. The seawall opening of about 50m wide for marine access shall be selected at a location as indicatively shown in Appendix 5.10. No more than 3 filling barge trips per day shall be made with a maximum daily rate of 3,000m^3 (i.e. 1,000 m^3 per trip) for the filling operation at the reclamation area for Road P2. All filling works shall be carried out behind the seawall with the use of single silt curtain at the marine access.	Control potential impacts from filling activities	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO	N/A

App N - IMPLEMENTATION SCHEDULE AND RECOMMENDED MITIGATION MEASURES

EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
S5.8.3	Other good site practices should be undertaken during filling operations include: - all marine works should adopt the environmental friendly construction methods as far as practically possible including the use of cofferdams to cover the construction area to separate the construction works from the sea; - floating single silt curtain shall be employed for all marine works; - all vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash; - all hopper barges should be fitted with tight fitting seals to their bottom openings to prevent leakage of material; - excess material shall be cleaned from the decks and exposed fittings of barges before the vessel is moved; - adequate freeboard shall be maintained on barges to reduce the likelihood of decks being washed by wave action; - loading of barges and hoppers should be controlled to prevent splashing of filling material into the surrounding water. Barges or hoppers should not be filled to a level that will cause the overflow of materials or polluted water during loading or transportation; - any pipe leakages shall be repaired quickly. Plant should not be operated with leaking pipes; - construction activities should not cause foam, oil, grease, scum, litter or other	Control potential impacts from filling activities and marine-based construction	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO, Waste Disposal Ordinance (WDO)	N/A N/A N/A N/A N/A N/A N/A N/A N/A

App N - IMPLEMENTATION SCHEDULE AND RECOMMENDED MITIGATION MEASURES

EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
	objectionable matter to be present on the water within the site or dumping grounds; and - before commencement of the reclamation works, the holder of Environmental Permit has to submit plans showing the phased construction of the reclamation, design and operation of the silt curtain.						^
S5.8.4	Site specific mitigation plan for reclamation areas using public fill materials should be submitted for EPD agreement before commencement of construction phase with due consideration of good site practices.	Control potential impacts from filling activities and marinebased construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	N/A
S5.8.5	It is important that appropriate measures are implemented to control runoff and drainage and prevent high loading of SS from entering the marine environment. Proper site management is essential to minimise surface water runoff, soil erosion and sewage effluents.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^
S5.8.6	Any practical options for the diversion and realignment of drainage should comply with both engineering and environmental requirements in order to ensure adequate hydraulic capacity of all drains.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Design Stage and Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO, TM-DSS	^
S5.8.7	Construction site runoff and drainage should be prevented or minimised in	Control potential	CEDD's	Work site	Construction	ProPECC PN 1/94,	^

EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
	accordance with the guidelines stipulated in the EPD's Practice Note for Professional Persons, Construction Site Drainage (ProPECC PN 1/94). Good housekeeping and stormwater best management practices, as detailed in below, should be implemented to ensure that all construction runoff complies with WPCO standards and no unacceptable impact on the WSRs arises due to construction of the TKO-LT Tunnel. All discharges from the construction site should be controlled to comply with the standards for effluents discharged into the corresponding WCZ under the TM-DSS.	impacts from construction site runoff and land-based construction	Contractors		Phase	EIAOTM, WPCO, TM-DSS	
S5.8.8	Exposed soil areas should be minimised to reduce the potential for increased siltation, contamination of runoff, and erosion. Construction runoff related impacts associated with the above ground construction activities can be readily controlled through the use of appropriate mitigation measures which include: - use of sediment traps; and - adequate maintenance of drainage systems to prevent flooding and overflow.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	N/A #
S5.8.9	Construction site should be provided with adequately designed perimeter channel and pretreatment facilities and proper maintenance. The boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. Temporary ditches should be provided to facilitate runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities should be	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	*

EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
	based on the guidelines in Appendix A1 of ProPECC PN 1/94.						
S5.8.10	Ideally, construction works should be programmed to minimise surface excavation works during the rainy season (April to September). 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 other means.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^
S5.8.11	Sedimentation tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8m^3 capacity, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity is flexible and able to handle multiple inputs from a variety of sources and particularly suited to applications where the influent is pumped.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO S5	^
S5.8.12	Earthworks final surfaces should be well compacted and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided where necessary.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO S5	N/A
S5.8.13	Measures should be taken to minimize the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they should be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.	Control potential impacts from construction site runoff and land-based	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO S5	^

EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		construction					
S5.8.14	Open stockpiles of construction materials (for examples, aggregates, sand and fill material) of more than 50m^3 should be 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.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^
S5.8.15	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 and storm runoff being directed into foul sewers. Discharge of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^
S5.8.16	Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^
S5.8.17	Oil interceptors should be provided in the drainage system and regularly cleaned to prevent the release of oils 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.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	N/A

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EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
S5.8.18	All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and located wheel washing bay should be provided at every site exit, and washwater should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheelwash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^
S5.8.19	Silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be removed regularly, at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^
S5.8.20	It is recommended that on-site drainage system should be installed prior to the commencement of other construction activities. Sediment traps should be installed in order to minimise the sediment loading of the effluent prior to discharge into foul sewers. There shall be no direct discharge of effluent from the site into the sea.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^
S5.8.21	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 control measures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly	Control potential impacts from construction site runoff and land-based	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^

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	following rain storms. The temporarily diverted drainage should be reinstated to its original condition when the construction work has finished or the temporary diversion is no longer required.	construction					
S5.8.22	All fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^
S5.8.23	Minimum distances of 100m shall be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes during construction and operational phases	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO, TMDSS	^
S5.8.24	Under normal circumstances, groundwater pumped out of wells, etc. for the lowering of ground water level in basement or foundation construction, and groundwater seepage pumped out of tunnels or caverns under construction should be discharged into storm drains after the removal of silt in silt removal facilities.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^
S5.8.25 - S5.8.27 & Table 5.18	Grouting would be adopted as measure to reduce the groundwater inflow into the tunnel. During the tunnel excavation, the inflow rate of groundwater into the tunnel will be measured during the excavation. The groundwater levels above the tunnel will also be monitored by piezometers. If the inflow rate exceeds the	Control potential impacts from construction site runoff and land-based	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO, Buildings Ordinance	N/A

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	pre-determined groundwater control criteria or the groundwater drawdown exceeds the required limit, pre-excavation grouting will be required to reduce the groundwater inflow. No significant change of groundwater levels would therefore be expected. Any chemicals/ foaming agents which would be entrained to the groundwater should be biodegradable and non-toxic throughout the tunnel construction. Potential groundwater quality impact would be minimal as the used material is non-toxic and biodegradable. No adverse groundwater quality would therefore be expected. Prescriptive measures in the form of an Action Plan with pre-emptive and re-active to preserve the groundwater levels at all times during the tunnel construction are set out in Table 5.18.	construction					
S5.8.28	Water used in ground boring and drilling for site investigation or rock / soil anchoring should as far as practicable be recirculated after sedimentation. When there is a need for final disposal, the wastewater should be discharged into storm drains via silt removal facilities.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Design Stage and Construction Phas	ProPECC PN 1/94, EIAOTM, WPCO	N/A
S5.8.29 - S5.8.31	Wastewater generated from the washing down of mixing trucks and drum mixers and similar equipment should whenever practicable be recycled. The discharge of wastewater should be kept to a minimum. To prevent pollution from wastewater overflow, the pump sump of any water recycling system should be provided with an online standby pump of adequate capacity and with automatic alternating devices. Under normal circumstances, surplus wastewater may be discharged into foul sewers after treatment in silt removal and pH adjustment facilities (to within	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^

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	the pH range of 6 to 10). Disposal of wastewater into storm drains will require more elaborate treatment.						
S5.8.32	All vehicles and plant should be cleaned before they leave a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. A wheel washing bay should be provided at every site exit if practicable and wash-water should have sand and silt settled out or removed before discharging into storm drains. The section of construction road between the wheel washing bay and the public road should be paved with backfall to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^
S5.8.33	Bentonite slurries used in diaphragm wall and borepile construction should be reconditioned and reused wherever practicable. If the disposal of a certain residual quantity cannot be avoided, the used slurry may be disposed of at the marine spoil grounds subject to obtaining a marine dumping licence from EPD on a case-by-case basis.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	N/A
S5.8.34	If the used bentonite slurry is intended to be disposed of through the public drainage system, it should be treated to the respective effluent standards applicable to foul sewer, storm drains or the receiving waters as set out in the WPCO Technical Memorandum on Effluent Standards.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	N/A
S5.8.35	Water used in water testing to check leakage of structures and pipes should be reused for other purposes as far as practicable. Surplus unpolluted water could be discharged into storm drains.	Control potential impacts from construction site runoff	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	N/A

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		and land-based construction					
S5.8.36	Sterilization is commonly accomplished by chlorination. Specific advice from EPD should be sought during the design stage of the works with regard to the disposal of the sterilizing water. The sterilizing water should be reused wherever practicable.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Design Stage and Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	N/A
S5.8.37	Before commencing any demolition works, all sewer and drainage connections should be sealed to prevent building debris, soil, sand etc. from entering public sewers/drains.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	N/A
S5.8.38	Wastewater generated from building construction activities including concreting, plastering, internal decoration, cleaning of works and similar activities should not be discharged into the stormwater drainage system. If the wastewater is to be discharged into foul sewers, it should undergo the removal of settleable solids in a silt removal facility, and pH adjustment as necessary	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^
S5.8.39	Acidic wastewater generated from acid cleaning, etching, pickling and similar activities should be neutralized to within the pH range of 6 to 10 before discharging into foul sewers. If there is no public foul sewer in the vicinity, the neutralized wastewater should be tinkered off site for disposal into foul sewers or treated to a standard acceptable to storm drains and the receiving waters	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^

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S5.8.40	Wastewater collected from canteen kitchens, including that from basins, sinks and floor drains, should be discharged into foul sewer via grease traps capable of providing at least 20 minutes retention during peak flow.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	N/A
S5.8.41	Drainage serving an open oil filling point should be connected to storm drains via a petrol interceptor with peak storm bypass.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^
S5.8.42	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. 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 Waste Disposal Ordinance.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^
S5.8.43	Construction work force sewage discharges on site are expected to be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage may need to be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers of portable toilets shall be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor shall also be responsible for waste disposal and	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO	^

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	maintenance practices.						
S5.8.44	Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	Control potential impacts from accidental spillage of chemicals	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO, WDO	^
S5.8.45	Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.	Control potential impacts from accidental spillage of chemicals	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO	^
S5.8.46	Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The "Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes" published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows: - suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport; - chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents; and - storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.	Control potential impacts from accidental spillage of chemicals	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO, WDO	^ ^ ^

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S5.8.47	Collection and removal of floating refuse should be performed at regular intervals on a daily basis. The contractor should be responsible for keeping the water within the site boundary and the neighbouring water free from rubbish.	Control potential impacts from floating refuse and debris	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO,	
Ecological Impact							
S6.8.4	***Measures to Minimize Disturbance*** - Use of Quiet Mechanical Plant during the construction phase should be adopted wherever possible. - Hoarding or fencing should be erected around the works area boundaries during the construction phase. The hoarding would screen adjacent habitats from construction phase activities, reduce noise disturbance to these habitats and also to restrict access to habitats adjacent to works areas by site workers; - Regular spraying of haul roads to minimize impacts of dust deposition on adjacent vegetation and habitats during the construction activities	Minimize noise, human and traffic disturbance to terrestrial habitat and wildlife; and reduce dust generation	Design Team / Contractor	Land-based works are	Construction Phase	N/A	^ ^ ^
S6.8.5	***Standard Good Site Practice*** - Placement of equipment or stockpile in designated works areas and access routes selected on existing disturbed land to minimise disturbance to natural habitats. - Construction activities should be restricted to works areas that should be clearly demarcated. The works areas should be reinstated after completion of the works. - Waste skips should be provided to collect general refuse and construction	Reduce disturbance to surrounding habitats	Contractor	Land-based works are	Construction Phase	N/A	^ ^ ^

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	wastes. The wastes should be properly disposed off-site in a timely manner. - General drainage arrangements should include sediment and oil traps to collect and control construction site run-off. - Open burning on works sites is illegal, and should be strictly prohibited. - Measures should also be put into place so that litter, fuel and solvents do not enter the nearby watercourses.						^ ^ ^
S6.8.6	***Measure to Minimize Groundwater Inflow*** - The drained tunnel construction method with groundwater inflow control measures would generally be adopted. - During the tunnel excavation, pre-excavation grouting could be adopted to reduce the groundwater inflow and ensure that the tunnel would meet the long term water tightness requirements.	Minimize groundwater inflow	Contractor	Tunnel	Construction Phase	N/A	N/A N/A
S6.8.8	***Measure to Minimize Impact on Corals*** <u>Coral translocation</u> - It is recommended to translocate the affected coral colonies, except the locally common *Oulastrea crispata*, within the reclamation area and bridge footprint to the other suitable locations as far as practicable. - The coral translocation should be conducted during the winter months (November-March) in order to avoid disturbance during their spawning period (i.e. July to October). - A detailed coral translocation plan with a description on the methodology for pretranslocation coral survey, translocation methodology,	Minimize loss of coral	Design team, contractor, project operator	Within reclamation areas and pier footprint	Prior construction	N/A	^ ^ ^

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	identification/proposal of coral recipient site, monitoring methodology for posttranslocation should be prepared during the detailed design stage. - The coral translocation plan should be subject to approval by relevant authorities (e.g. EPD and AFCD) before commencement of the coral translocation. All the translocation exercises should be conducted by experienced marine ecologist(s) who is/are approved by AFCD prior to commencement of coral translocation. <u>Post translocation Monitoring</u> - A coral monitoring programme is recommended to assess any adverse and unacceptable impacts to the translocated coral communities - Information gathered during each posttranslocation monitoring survey should include observations on the presence, survival, health condition and growth of the translocated coral colonies. These parameters should then be compared with the baseline results collected from the pre-translocation survey.						^ ^ ^
S6.8.9 S6.8.10	***Measure to Control Water Quality Impact*** - Deployment of silt curtains around the active stone column installation points, opening of newly installed seawall and marine works area. - Diverting of the site runoff to silt trap facilities before discharging into storm drain; - Proper waste and dumping management; and - Standard good-site practice for land-based construction.	Control water quality impact, especially on suspended solid level; minimize the contamination of wastewater discharge, accidental chemical spillage and	Design Team, contractor	Marine and landbased works area	Construction phase	WQO	N/A ^ ^ ^

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		construction site runoff to the receiving water bodies					
S6.8.11	***Compensation for Vegetation Loss*** - Felling of mature trees should be compensated by planting of standard or heavy standard trees within or in vicinity of the affected area as far as practicable. Such compensatory planting for trees should be provided with at least a 1:1 ratio. In addition, vegetation at the temporarily affected area should be reinstated with species similar to the existing condition.	Compensate for the vegetation loss	Design Team, contractor	Land-based works area	Construction phase	N/A	^
Fishery Impact							
S7.7.3	***Measure to Control Water Quality Impact*** - Deployment of silt curtains around the active stone column installation points, opening of newly installed seawall and marine works area.	Control water quality impact, especially on suspended solid level	Design Team / Contractor	Marine work area	Construction phase	WQO	N/A
Waste Management (Construction Phase)							
S8.6.3	***Good Site Practices and Waste Reduction Measures*** - Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; - Training of site personnel in site cleanliness, proper waste management and chemical handling procedures;	To reduce waste management impacts	Contractor	All work sites	Construction Phase	Waste Disposal Ordinance (Cap. 354) Land (Miscellaneous Provisions)	^ ^

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	- Provision of sufficient waste disposal points and regular collection of waste; - Appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; and - Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors.					Ordinance (Cap. 28)	^ ^ *
S8.6.4	***Good Site Practices and Waste Reduction Measures (con't)*** - Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal; - Encourage collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the workforce; - Proper storage and site practices to minimize the potential for damage or contamination of construction materials; and - Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste.	To achieve waste reduction	Contractor	All work sites	Construction Phase	Waste Disposal Ordinance (Cap. 354) Land (Miscellaneous Provisions) Ordinance (Cap. 28)	^ ^ ^ ^
S8.6.5	***Good Site Practices and Waste Reduction Measures (con't)*** The Contractor shall prepare and implement a WMP as part of the EMP in accordance with ETWB TCW No. 19/2005 which describes the arrangements for avoidance, reuse, recovery, recycling, storage, collection, treatment and disposal of different categories of waste to be generated from the construction activities.	To achieve waste reduction	Contractor	All work sites	Construction Phase	ETWB TCW No. 19/2005	^

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	Such a management plan should incorporate site specific factors, such as the designation of areas for segregation and temporary storage of reusable and recyclable materials. The EMP should be submitted to the Engineer for approval. The Contractor should implement the waste management practices in the EMP throughout the construction stage of the Project. The EMP should be reviewed regularly and updated by the Contractor.						
S8.6.6	***Good Site Practices and Waste Reduction Measures (con't)*** - C&D materials would be reused in the project and other local concurrent projects as far as possible.	To achieve waste reduction	Contractor	All work sites	Construction Phase	ETWB TCW No. 19/2005	^
S8.6.7	***Storage, Collection and Transportation of Waste*** Should any temporary storage or stockpiling of waste is required, recommendations to minimize the impacts include: - Waste, such as soil, should be handled and stored well to ensure secure containment, thus minimizing the potential of pollution; - Maintain and clean storage areas routinely; - Stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and - Different locations should be designated to stockpile each material to enhance reuse.	To minimize potential adverse environmental impacts arising from waste storage	Contractor	All work sites	Construction Phase	-	^ ^ ^ ^
S8.6.8	***Storage, Collection and Transportation of Waste (con't)*** - Remove waste in timely manner; - Waste collectors should only collect wastes prescribed by their permits;	To minimize potential adverse environmental impacts arising from	Contractor	All work sites	Construction Phase		^ ^

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	- Impacts during transportation, such as dust and odour, should be mitigated by the use of covered trucks or in enclosed containers; - Obtain relevant waste disposal permits from the appropriate authorities, in accordance with the Waste Disposal Ordinance (Cap. 354), Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 345) and the Land (Miscellaneous Provisions) Ordinance (Cap. 28); - Waste should be disposed of at licensed waste disposal facilities; and - Maintain records of quantities of waste generated, recycled and disposed.	waste collection and disposal					^ ^ ^ ^
S8.6.9	***Storage, Collection and Transportation of Waste (con't)*** - Implementation of trip ticket system with reference to DEVB TC(W) No. 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials, to monitor disposal of waste and to control fly-tipping at PFRFs or landfills. A recording system for the amount of waste generated, recycled and disposed (including disposal sites) should be proposed.	To minimize potential adverse environmental impacts arising from waste collection and disposal	Contractor	All work sites	Construction Phase	DEVB TCW No. 6/2010	^
S8.6.11 - S8.6.13	***Sorting of C&D Materials*** - Sorting to be performed to recover the inert materials, reusable and recyclable materials before disposal off-site. - Specific areas shall be provided by the Contractors for sorting and to provide temporary storage areas for the sorted materials. - The C&D materials should at least be segregated into inert and non-inert materials, in which the inert portion could be reused and recycled in the reclamation as far as practicable before delivery to PFRFs. While	To minimize potential adverse environmental	Contractor	All work sites	Construction Phase	DEVB TCW No. 6/2010 ETWB TCW No. 33/2002 ETWB TCW No. 19/2005	^ ^ ^

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	opportunities for reusing the non-inert portion should be investigated before disposal of at designated landfills						
S8.6.15 – S8.6.16	***Sediments*** - Sediment encountered may be reused as filling material on-site after cement stabilization. Cement-stabilization process is undertaken by mixing sediment and cement and will convert sediment to earth filling material. The treated sediment has to comply with Risk-Based Remediation Goals (RBRGs) before being reused in order not to raise any land contamination issue. The adoption of RBRGs to assess stabilized sediment has been proposed in the current C&DMMP. MFC has no adverse comment on the current C&DMMP. The sediment quality indicates that all sediments comply with most stringent RBRGs except for one sediment sample (TKO-EBH501 3-3.95m) with lead exceeding the RBRG. Except for the sediment sample (TKO-EBH501 3-3.95m), the chemical screening results do not indicate sediment as contaminated soil. It is anticipated that reuse of sediment except sediment sample (TKO-EBH501 3-3.95m) will not lead to land contamination. - Despite exceedance of RBRG, onsite reuse of sediment under sample (TKO-EBH501 33.95m) as filling material after cement stabilization is also a suitable treatment. Sediment quality indicates the sediment sample (TKO-EBH501 3-3.95m) exceed RBRG for lead. While cement stabilization will immobilize metal contaminants, it is capable to treat the exceedance on lead. The stabilized material should comply with UTS of Lead and UCS. If the	To ensure the sediment to be disposed of in an authorized and least impacted way	contractor	All works areas with sediments concern	Construction Phase	RBRG	N/A N/A

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	treated material do not comply with UTS or UCS, re-stabilization have to be undertaken to meet compliance of UTS and UCS before reusing the treated sediment as filling material. However, further agreement on final disposal/treatment on sediment under sample (TKO-EBH501 3-3.95m) has to be sought from DEP						
S8.6.17 – S8.6.20	***Sediments (con't)*** - Requirements of the Air Pollution Control (Construction Dust) Regulation, where relevant, shall be adhered to during boring, excavation, transportation and disposal of sediments or cement stabilization of sediment. - A treatment area should be confined for carrying out the cement stabilization mixing and temporary stockpile. The area should be designed to prevent leachate from entering the ground. Leachate, if any, should be collected and discharged according to the Water Pollution Control Ordinance (WPCO). - In order to minimise the potential odour / dust emissions during boring, excavation and transportation of the sediment, the excavated sediments should be kept wet during excavation/boring and should be properly covered when placed on barges/trucks. Loading of the excavated sediment to the barge should be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water. - In order to minimise the exposure to contaminated materials, workers should, when necessary, wear appropriate personal protective equipments (PPE) when handling contaminated sediments. Adequate washing and cleaning	To determine the best handling and treatment of sediment	Contractor	All works areas with sediments concern	Construction Phase		N/A N/A N/A N/A

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	facilities should also be provided on site.						
S8.6.21	***Sediments (con't)*** - Alternatively, excavated sediment can be treated with marine disposal. The basic requirements and procedures for excavated sediment disposal specified under ETWB TC(W) No. 34/2002 shall be followed. MFC is responsible for the provision and management of disposal capacity and facilities for the excavated sediment, while the permit of marine dumping is required under the Dumping at Sea Ordinance and is the responsibility of the DEP.	To ensure the sediment to be disposed of in an authorized and least impacted way	contractor	All works areas with sediments concern	Construction Phase	ETWB TC(W) No. 34/2002 & Dumping at Sea Ordinance	N/A
S8.6.23	***Sediments (con't)*** - For allocation of sediment disposal sites and application of marine dumping permit, separate SSTP has to be submitted to EPD for agreement under DASO. Additional site investigation, based on the SSTP, maybe carried out in order to confirm the disposal arrangements for the proposed sediments removal. A Sediment Quality Report (SQR) shall then be required for EPD agreement under DASO prior to the tendering of the construction contract, discussing in details the site investigation, testing results as well as the delineation of each of the categories of excavated materials and the corresponding types of disposal.	To determine the best handling and disposal option of sediment	Contractor	All works areas with sediments concern	Construction Phase	ETWB TC(W) No. 34/2002 & Dumping at Sea Ordinance	N/A
S8.6.24 - S8.6.28	***Sediments (con't)*** - The excavated sediments is expected to be loaded onto the barge and transported to the designated disposal sites allocated by the MFC. The	To ensure handling of sediments are in accordance to	Contractor	All works areas with sediments	Construction Phase	ETWB TC(W) No. 34/2002 & Dumping at Sea Ordinance	N/A

EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
	excaveted sediment would be disposed of according to its determined disposal options and ETWB TC(W) No. 34/2002.	statutory requirements		concern			
	- Stockpiling of contaminated sediments should be avoided as far as possible. If temporary stockpiling of contaminated sediments is necessary, the excavated sediment should be covered by tarpaulin and the area should be placed within earth bunds or sand bags to prevent leachate from entering the ground, nearby drains and surrounding water bodies. The stockpiling areas should be completely paved or covered by linings in order to avoid contamination to underlying soil or groundwater. Separate and clearly defined areas should be provided for stockpiling of contaminated and uncontaminated materials. Leachate, if any, should be collected and discharged according to the Water Pollution Control Ordinance (WPCO).						N/A
	- In order to minimise the potential odour / dust emissions during boring and transportation of the sediment, the excavated sediments should be kept wet during excavation/boring and should be properly covered when placed on barges. Loading of the excavated sediment to the barge should be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water.						N/A
	- The barge transporting the sediments to the designated disposal sites should be equipped with tight fitting seals to prevent leakage and should not be filled to a level that would cause overflow of materials or laden water during loading or transportation. In addition, monitoring of the barge loading shall be						N/A

EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
	conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the DEP. - In order to minimise the exposure to contaminated materials, workers should, when necessary, wear appropriate personal protective equipments (PPE) when handling contaminated sediments. Adequate washing and cleaning facilities should also be provided on site. - Another possible arrangement for Type 3 disposal is by geosynthetic containment. A geosynthetic containment method is a method whereby the sediments are sealed in geosynthetic containers and, at the disposal site, the containers would be dropped into the designated contaminated mud pit where they would be covered by further mud disposal and later by the mud pit capping, thereby meeting the requirements for fully confined mud disposal.						N/A N/A
S8.6.26	***Chemical Wastes.*** - If chemical wastes are produced at the construction site, the Contractor would be required to register with the EPD as a Chemical Waste Producer and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the	To ensure proper management of chemical waste	Contractor	All works sites	Construction Phase	Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes Waste Disposal (Chemical Waste)	*

EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
	corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the Chemical Waste Treatment Centre at Tsing Yi, or other licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.					(General) Regulation	
S8.6.27	***General Refuse*** - General refuse should be stored in enclosed bins or compaction units separate from C&D material. A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. Preferably an enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.	To ensure proper management of general refuse	Contractor	All works sites	Construction Phase	Public Health and Municipal Services Ordinance (Cap. 132)	^
Impact on Cultural Heritage (Construction Phase)							
S9.6.4	Dust and visual impacts - Temporarily fenced off buffer zone with allowance for public access (minimum 1 m) should be provided; - The open yard in front of the temple should be kept as usual for annual Tin Hau festival; - Monitoring of vibration impacts should be conducted when the construction works are less than 100m from the temple.	To prevent dust and visual impacts	Contractors	Work areas	Construction Phase	EIAO; GCHIA; AMO	N/A N/A N/A
S9.6.4	Indirect vibration impact - Vibration level is suggest to be controlled within a peak particle velocity (ppv)	To prevent indirect vibration impact	Contractors	Work areas	Construction Phase	Vibration Limits on Heritage Buildings by	N/A

EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
	limit of 5mm/s measured inside the historical buildings; - Monitoring of vibration should be carried out during construction phase. - Tilting and settlement monitoring should will be applied on the Cha Kwo Ling Tin Hau Temple as well. - A proposal with details for the mitigation measures and monitoring of impacts on built heritage shall be submitted to AMO for comments before commencement of work.					CEDD; GCHIA; AMO.	N/A N/A N/A
Landscape and Visual Impact (Construction Phase)							
Table 10.8.1	CM1 - Construction area and contractor's temporary works areas to be minimised to avoid impacts on adjacent landscape.	Avoid impact on adjacent landscape areas	CEDD (via Contractor)	General	Construction planning and during construction period	N/A	^
Table 10.8.1	CM2 - Reduction of construction period to practical minimum.	Minimise duration of impact	CEDD (via Contractor)	N/A	Construction planning	N/A	^
Table 10.8.1	CM3 - Topsoil, where the soil material meets acceptable criteria and where practical, to be stripped and stored for re-use in the construction of the soft landscape works. The Contract Specification shall include storage and reuse of topsoil as appropriate.	To allow re-use of topsoil	CEDD (via Contractor)	General	Site clearance	As per the Particular Specification	^
Table 10.8.1	CM4 - Existing trees at boundary of site and retained trees within site boundary to be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification, under which the Contractor shall	To minimize tree loss	CEDD (via Contractor)	As per approved Tree Removal	Site clearance and throughout construction	ETWB TC 3/2006 and as per tree protection measures	*

EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
	be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas. (Tree protection measures will be detailed at Tree Removal Application stage).			Application(s)	period	in Particular Specification	
Table 10.8.1	CM5 - Trees unavoidably affected by the works shall be transplanted where practicable. Where possible, trees should be transplanted direct to permanent locations rather than temporary holding nurseries. A detailed tree transplanting specification shall be provided in the Contract Specification and sufficient time for preparation shall be allowed in the construction programme.	To maximize preservation of existing trees	CEDD (via Contractor)	As per approved Tree Removal Application(s)	Site clearance	ETWB TC 3/2006 and as per tree protection measures in Particular Specification	^
Table 10.8.1	CM6 - Advance screen planting of fast growing tree and shrub species to noise barriers and hoardings. Trees shall be capable of reaching a height >10m within 10 years.	To maximize screening of the works	CEDD (via Contractor)	At Lam Tin Interchange and edge of Road P2 landscape deck, TKO	Beginning of construction period	N/A	^
Table 10.8.1	CM7 - Hydroseeding or sheeting of soil stockpiles with visually unobtrusive material	To reduce visual intrusion	CEDD (via Contractor)	General	Throughout construction period	As per Particular Specification	N/A
Table 10.8.1	CM8 - Control of night-time lighting by hooding all lights and through minimisation of night working periods.	To reduce visual intrusion	CEDD (via Contractor)	General	Throughout construction period	N/A	^
Table	CM9 - Screening of works areas with hoardings with appropriate colours	Reduction of visual	CEDD (via	Project site	Excretion of site	N/A	^

EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
10.8.1	compatible with the surrounding area	intrusion	Contractor)	Boundary	hoarding		
Table 10.8.1	CM10 - Avoidance of excessive height and bulk of site buildings and structure	Reduction of visual intrusion and integration with environment	CEDD (via Contractor)	Built structures	Design and construction stage	N/A	^
Table 10.8.1	CM11 - Limitation of run-off into freshwater streams, ponds and sea areas	Avoidance of contamination of water courses and water bodie	CEDD (via Contractor)	TKO reclamation, TKO tunnel portal, Cha Kwo Ling roadworks	Throughout construction period	N/A	^
Table 10.8.1	CM12 - Minimise area of reclamation and design the edges sensitively to tie in with adjacent coastline characte	Minimise loss of Junk Bay and integration with existing coastlin	CEDD (via Contractor)	Temporary reclamation for barging points at TKO and Lam Tin and permanent reclamation for TKO Interchange slip roads and Road P2	Construction planning and reclamation stages	N/A	N/A

App N - IMPLEMENTATION SCHEDULE AND RECOMMENDED MITIGATION MEASURES

EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
Landfill Gas Hazard (Design and Construction Phase)							
S11.5.9	A Safety Officer, trained in the use of gas detection equipment and landfill gas-related hazards, should be present on site throughout the groundworks phase. The Safety Officer should be provided with an intrinsically safe portable instrument, which is appropriately calibrated and able to measure the following gases in the ranges indicated below: Methane 0-100% LEL and 0100% v/v Carbon dioxide 0-100% Oxygen 0-21%	Protect the workers from landfill gas hazards	Contractor	Project sites within the Sai Tso Wan Landfill Consultation Zone	Construction phase	EPD's Landfill Gas Hazard Assessment Guidance Note	^
S11.5.10 S11.5.25	***Safety Measures*** - For staff who work in, or have responsibility for "at risk" area, such as all excavation workers, supervisors and engineers working within the Consultation Zone, should receive appropriate training on working in areas susceptible to landfill gas, fire and explosion hazards. - An excavation procedure or code of practice to minimize landfill gas related risk should be devised and carried out. - No worker should be allowed to work alone at any time in or near to any excavation. At least one other worker should be available to assist with a rescue if needed. - Smoking, naked flames and all other sources of ignition should be prohibited within 15m of any excavation or ground-level confined space. "No	Protect the workers from landfill gas hazards	Contractor	Project sites within the Sai Tso Wan Landfill Consultation Zone	Construction phase	EPD's Landfill Gas Hazard Assessment Guidance Note Labour Department's Code of Practice for Safety and Health at Work in Confined Space	N/A N/A N/A N/A

EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
	smoking" and "No naked flame" notices should be posted prominently on the construction site and, if necessary, special areas should be designed for smoking.						
	- Welding, flame-cutting or other hot works should be confined to open areas at least 15m from any trench or excavation.						N/A
	- Welding, flame-cutting or other hot works may only be carried out in trenches or confined spaces when controlled by a "permit to work" procedure, properly authorized by the Safety Officer (or, in the case of small developments, other appropriately qualified person).						N/A
	- The permit to work procedure should set down clearly the requirements for continuous monitoring for methane, carbon dioxide and oxygen throughout the period during which the hot works are in progress. The procedure should also require the presence of an appropriately qualified person, in attendance outside the 'confined area', who should be responsible for reviewing the gas measurements as they are made, and who should have executive responsibility for suspending the work in the event of unacceptable or hazardous conditions. Only those workers who are appropriately trained and fully aware of the potentially hazardous conditions which may arise should be permitted to carry out hot works in confined areas.						N/A
	- Where there are any temporary site offices, or any other buildings located within the Sai Tso Wan Landfill Consultation Zone which have enclosed spaces with the capacity to accumulate landfill gas, then they should either						N/A

EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
	be located in an area which has been proven to be free of landfill gas (by survey using portable gas detectors); or be raised clear of the ground by a minimum of 500mm. This aims to create a clear void under the structure which is ventilated by natural air movement such that emission of gas from the ground are mixed and diluted by air.						
	- Any electrical equipment, such as motors and extension cords, should be intrinsically safe. During piping assembly or conduiting construction, all valves/seals should be closed immediately after installation. As construction progresses, all valves/seals should be closed to prevent the migration of gases through the pipeline/conduit. All piping /conduiting should be capped at the end of each working day.						N/A
	- During construction, adequate fire extinguishing equipment, fire-resistant clothing and breathing apparatus (BA) sets should be made available on site.						N/A
	- Fire drills should be organized at not less than six monthly intervals.						N/A
	- The contractor should formulate a health and safety policy, standards and instructions for site personnel to follow.						N/A
	- All personnel who work on the site and all visitors to the site should be made aware of the possibility of ignition of gas in the vicinity of excavations. Safety notices (in Chinese and English) should be posted at prominent position around the site warning danger of the potential hazards.						N/A
	- Service runs within the Consultation Zone should be designated as “special routes”; utilities companies should be informed of this and precautionary						N/A

EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
	measures should be implemented. Precautionary measures should include ensuring that staff members are aware of the potential hazards of working in confined spaces such as manholes and service chambers, and that appropriate monitoring procedures are in place to prevent hazards due to asphyxiating atmospheres in confined spaces. Detailed guidance on entry into confined spaces is given in Code of Practice on Safety and Health at Work in Confined Spaces (Labour Department, Hong Kong). - Periodically during ground-works construction within the 250m Consultation Zone, the works area should be monitored for methane, carbon dioxide and oxygen using appropriately calibrated portable gas detection equipment. The monitoring frequency and areas to be monitored should be set down prior to commencement of ground-works either by the Safety Officer or an approved and appropriately qualified person.						N/A
S11.5.26 - S11.5.31	***Monitoring*** ● Routine monitoring should be carried out in all excavations, manholes, chambers, relocation of monitoring wells and any other confined spaces that may have been created. All measurements in excavations should be made with the extended monitoring tube located not more than 10 mm from the exposed ground surface. Monitoring should be performed properly to make sure that the area is free of landfill gas before any man enters into the area. ● For excavations **deeper than 1m**, measurements should be carried out:	Protect the workers from landfill gas hazards	Contractor	Project sites within the Sai Tso Wan Landfill Consultation Zone	Construction phase	EPD's Landfill Gas Hazard Assessment Guidance Note	N/A N/A

EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
	- at the ground surface before excavation commences;- - immediately before any worker enters the excavation; - at the beginning of each working day for the entire period the excavation remains open; and - periodically throughout the working day whilst workers are in the excavation.						
	● For excavations **between 300mm and 1m deep**, measurements should be carried out: - directly after the excavation has been completed; and - periodically whilst the excavation remains open.						N/A
	● For excavations less than 300mm deep, monitoring may be omitted, at the discretion of the Safety Officer or other appropriately qualified person.						N/A
	● Depending on the results of the measurements, actions required will vary and should be set down by the Safety Officer or other appropriately qualified person.						N/A
	● The exact frequency of monitoring should be determined prior to the commencement of works, but should be at least once per day, and be carried out by a suitably qualified or qualified person before starting the work of the day. Measurements shall be recorded and kept as a record of safe working conditions with copies of the site diary and submitted to the Engineer for approval. The Contractor may elect to carry out monitoring via an automated monitoring system.						N/A

App N - IMPLEMENTATION SCHEDULE AND RECOMMENDED MITIGATION MEASURES

EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
S11.5.32	The hazards from landfill gas during the construction stage within the Sai Tso Wan Landfill Consultation Zone should be minimized by suitable precautionary measures recommended in Chapter 8 of the Landfill Gas Hazard Assessment Guidance Note.	construction stage within the Sai Tso Wan Protect the workers from landfill gas hazards	Contractor	Project sites within the Sai Tso Wan Landfill Consultation Zone	Construction phase	EPD's Landfill Gas Hazard Assessment Guidance Note	N/A

Remarks: ^ Compliance of mitigation measure X Non-compliance of mitigation measure

- Non-compliance but rectified by the contractor

* Observation/reminder was made during site audit but improved/rectified by the contractor.

\# Observation/reminder was made during site audit but not yet improved/rectified by the contractor.

N/A Not Applicable

APPENDIX O
SUMMARIES OF ENVIRONMENTAL COMPLAINT, WARNING, SUMMON AND NOTIFICATION OF SUCCESSFUL PROSECUTION

Appendix O - Cumulative Log for Complaints, Notifications of Summons and Successful Prosecutions

Cumulative Complaint Log in the Reporting Period

Received Date	Date/Location	Complainant	Details of Complaint	Investigation/ Mitigation Action	File Closed
Follow up for complaints received in the previous Reporting Period					
9th December 2016	Not Specified / Construction of Road P2	Sai Kung District Committee Member Mr. Chan Kai Wai	The complainant complained about the noise nuisance during transportation of construction materials on haul road and dust generation during construction activities.	No construction activities were carried out for both construction of Road P2 and TKO portal during night time or at about 7am. Therefore, no construction noise nuisance were generated during night-time or at about 7am under this Project and it is considered that these noise nuisance is not project- related. The Contractors of this Project had implemented environmental mitigation measures for air quality, noise and visual impact (night-time lighting) in accordance with the "Implementation Schedule of Proposed Mitigation Measures" of EM&A Manual. The Contractors had taken the initiative to provide additional noise mitigation measures to works since the complaints were received including: - Temporary noise barrier had been installed to reduce noise nuisance from	Closed
20th December 2016	Not Specified / Construction of Road P2	Resident of Ocean Shore	The complainant complained about the lighting and noise nuisance on construction vessels moored near Ocean Shores during night time.		
22nd December 2016	21 Dec 2016 at night / Construction of TKO portal	Resident of Block 3, Ocean Shores	The complainant concerned the noise generated by the construction works at hillside near Block 3 of Ocean Shores in daytime.		
22nd December 2016	Not specified / Construction of TKO portal	Public	The complainant complained about the noise generated by the construction works at hillside in daytime.		

Received Date	Date/Location	Complainant	Details of Complaint	Investigation/ Mitigation Action	File Closed
22nd December 2016	Not specified / Construction of Road P2	Resident from Ocean Shore	The complainant complained about the noise nuisance of broadcast on construction vessel near Ocean Shores at 7am and the noise generated by the construction works outside Tseung Kwan O Chinese Permanent Cemetery.	piling works in construction of Road P2 Provision of noise enclosure to cover generators for reducing its noise nuisance in TKO portal; and - Provision of portable noise enclosures at breakers and generators to reduce noise emission from works in TKO portal According to the regular air quality and noise monitoring for this Project, no Action or Limit Level Exceedance was recorded in December 2016. With the implementation of environmental mitigation measures by Contractors on site, it is considered that no adverse air quality and noise impact was brought to the nearby sensitive receivers by the works of this Project. According to the ET's ad-hoc site inspection during night-time, no unacceptable noise nuisance from this Project was heard. No strong light emission from all the construction vessels near Ocean Shores was observed yet minimum lighting for marine safety purpose was observed from the construction vessel and anchors.	
22nd December 2016	Not specified / Construction of Road P2 and TKO portal	Resident from Ocean Shore	The complainant complained about the noise nuisance generated by construction works of Tseung Kwan O portal in daytime and noise nuisance of "loud speaker" on construction vessel near Ocean Shores.		

Received Date	Date/Location	Complainant	Details of Complaint	Investigation/ Mitigation Action	File Closed
Received in this Reporting Period					
7th December 2016	Not Specified / construction of Lam Tin Interchange	Resident of Yau Lai Estate Bik Lai House	The complainant complained about the construction noise and dust near Yau Lai Estate.	Under Investigation	On-going.
9th December 2016	Not Specified / construction of Lam Tin Interchange	Resident of Yau Lai Estate Block A Nga Lai House	The complainant complained about the construction noise near Yau Lai Estate.		
23rd December 2016	Not Specified / near Cha Kwo Ling Tsuen	Cha Kwo Ling Tsuen	The complainant complaint about the Soil/muddy water from construction site near Cha Kwo Ling Tsuen.		
6th January 2017	Not Specified / construction of Lam Tin Interchange	Resident of Yau Lai Estate Block A Nga Lai House	The complainant complained about the noise nuisance during rock breaking at the Eastern Harbour Crossing (EHC) portal and lack of noise mitigation measures during the construction works.	After investigation, it was found out that necessary rock breaking works by hydraulic or pneumatic breakers was conducted during excavation for tunnel adit at Lam Tin Interchange. Noise nuisance from the works area is considered due to the high noise level	Closed

Received Date	Date/Location	Complainant	Details of Complaint	Investigation/ Mitigation Action	File Closed
6th January 2017	Not Specified / Cha Kwo Ling Road	Resident of Yau Lai Estate	The complainant complained about the noise nuisance generated by the excavation works at Cha Kwo Ling Road on 6 January 2017 just after 7 a.m.	emission during use of hydraulic or pneumatic breakers. The Contractor had implemented environmental mitigation measures in accordance with the "Implementation Schedule of Proposed Mitigation Measures" of EM&A Manual as below: <u>Air Quality</u> Use of frequent watering during construction of Lam Tin Interchange, including watering of eight times a day on active work area, exposed area and paved haul roads to mitigate air quality impacts to the nearby Air Sensitive Receivers (ASRs) <u>Noise</u> • Provision of portable noise enclosures to head of breakers to reduce noise emission during rock breaking works in Lam Tin Interchange; • Provision of portable noise enclosures to reduce noise nuisance from drilling works and generator in Lam Tin Interchange; and • Use of Quiet PME on-site including generator and hydraulic excavator.	
6th January 2017	Not Specified / Construction site near Yau Lai Estate	Resident of Yau Lai Estate Bik Lai House	The complainant complained about the noise nuisance during the construction works near Yau Lai Estate at 7:15am. He requested to erect noise barriers and set up water spraying system to minimize the noise and air nuisances to the nearby residents.		
6th January 2017	Not Specified / Construction site near Yau Lai Estate	Resident of Yau Lai Estate Bik Lai House	The Yau Lai Estate Property Services Management Office mentioned that one of the resident of Yau Lai Estate had complained to Hong Kong Housing Authority (HKHA) about the noise generated by the construction works.		
12th January 2017	Not Specified / Construction of Lam Tin Interchange	Resident of Yau Lai Estate	The complainant complained the noise generated from rock breaking at Lam Tin Interchange. He requested concrete actions to		

Received Date	Date/Location	Complainant	Details of Complaint	Investigation/ Mitigation Action	File Closed
			improve the situation.	The Contractor has taken the initiative to implement additional noise mitigation measures in order to further minimize noise nuisance to the nearby sensitive receivers, including the followings: ● Provision and installation of additional temporary noise barrier during rock breaking works for construction of Lam Tin Interchange; ● Commencement time of daily construction works for construction of Lam Tin Interchange has been postponed from 7am to 8am each day. According to the regular air quality and noise monitoring for this Project, no Action or Limit Level Exceedance was recorded from 16 December 2016 to 19 January 2017. With the implementation of environmental mitigation measures by Contractors on site, it is considered that no adverse air quality and noise impact was brought to the nearby sensitive receivers by the works of this Project. Nevertheless, the Contractor was	
12th January 2017	Not Specified / Construction of Lam Tin Interchange	Resident of Yau Lai Estate Bik Lai House	The complainant complained the noise generated from rock breaking at Lam Tin Interchange.		
13th January 2017	Not Specified / Construction of Lam Tin Interchange	Resident of Yau Lai Estate Bik Lai House	The complainant complained the construction noise generated at Lam Tin Interchange at 7am in the morning.		
16th January 2017	Not Specified / Construction of Lam Tin Interchange	Resident of Yau Lai Estate	The complainant complained the construction noise generated at Lam Tin Interchange at 7am in the morning.		
17th January 2017	Not Specified / construction of Lam Tin Interchange	Resident of Yau Lai Estate Bik Lai House	The complainant complained the construction noise generated at Lam Tin Interchange.		

Received Date	Date/Location	Complainant	Details of Complaint	Investigation/ Mitigation Action	File Closed
				recommended to continue to properly implement and strictly follow the air quality and noise mitigation measures as recommended in the Environmental Monitoring & Audit Manual and approved Noise Mitigation Plan to minimize environmental impact on the construction site.	
27th January 2017	Not Specified / Construction of Lam Tin Interchange	Resident of Yau Lai Estate Bik Lai House	The complainant complained the construction noise generated at Lam Tin Interchange at 7am in the morning.	Under Investigation	On-going
16th December 2016	Not Specified / near Ocean Shores	DC member	The complainant complained that they noticed about 2 work vessels were being used at 00:00-01:00 and also moored there overnight which caused light pollution and affecting the residents.	According to the findings of investigation, minimum lighting on the construction vessel was required for guard watching the works site. Adverse night-time light and noise nuisance from the marine works area near Ocean Shores as alleged by the complainant are considered not caused by this Project. The Contractor had continuously implemented environmental mitigation measures in accordance with the "Implementation Schedule of Proposed Mitigation Measures" of EM&A Manual. To avoid strong light emission towards the sensitive receivers, night-time lighting is	Closed
17th January 2017	5 January 2017 / near Ocean Shores	DC member	The complainant complained that marine vessels were used at about 22:00 and around 01:00 on 5 Jan 2017, again causing noise and light nuisance to the residents.		

Received Date	Date/Location	Complainant	Details of Complaint	Investigation/ Mitigation Action	File Closed
				properly controlled by hooding all lights (except necessary lighting for safety purpose and guard watching); According to the ET's ad-hoc site inspection during night-time, no unacceptable noise nuisance from this Project was heard. No strong light emission from all the construction vessels near Ocean Shores was observed yet minimum lighting for marine safety and guard watching purpose was observed from the construction vessel and anchors. The Contractor was recommended to continuously implement the following visual impact mitigation measures: • necessary lighting on construction vessels should be oriented as much as possible such that direct strong lighting towards the sensitive receivers is avoided. • Strong lighting that may be in intermittent use should be shut down between works periods	

Cumulative Log for Notifications of Summons

Contract No. NE/2015/01

Log Ref.	Date/Location	Subject	Status	Total no. Received in this reporting month	Total no. Received since project commencement
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Contract No. NE/2015/02

Log Ref.	Date/Location	Subject	Status	Total no. Received in this reporting month	Total no. Received since project commencement
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Cumulative Log for Successful Prosecutions

Contract No. NE/2015/01

Log Ref.	Date/Location	Subject	Status	Total no. Received in this reporting month	Total no. Received since the commencement of the project
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Contract No. NE/2015/02

Log Ref.	Date/Location	Subject	Status	Total no. Received in this reporting month	Total no. Received since the commencement of the project
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APPENDIX P
WASTE GENERATION IN THE REPORTING MONTH

Name of Department: Civil Engineering Development Department

Contract No.: NE/2015/01

Leighton - China State Joint Venture

Monthly Summary Waste Flow Table for 2017

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	a.Total Quantity Generated (see Note 8)	b. Hard Rock and Large Broken Concrete (see Note 9)	c. Reused in the Contract	d. Reused in Other Projects	e. Disposed as Public Fill (see Note 10)	f. Imported Fill	g. Metals (see Note 5)	h. Paper / Cardboard Packaging (see Note 5)	i. Plastics (see Note 3) (see Note 5)	j. Chemical Waste	k. Others, e.g. general refuse
	(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)
January	40.484	0.000	22.688	5.063	12.733	0.000	TBC	TBC	0.000	0.000	0.292
February											
March											
April											
May											
June											
Sub-total	40.484	0.000	22.688	5.063	12.733	0.000	0.000	0.000	0.000	0.000	0.292
July											
August											
September											
October											
November											
December											
Total	40.484	0.000	22.688	5.063	12.733	0.000	0.000	0.000	0.000	0.000	0.292

Total C&D waste generated = a+b+f+g+h+i+j+k

Total C&D waste generated (excluded excavated material) = g+h+i+j+k

Total C&D waste recycled = c+d+g+h+i

% of recycled C&D waste = (Total C&D waste generated - Total C&D waste recycled) / Total C&D waste generated

Monthly Summary Waste Flow Table for 2017 Year

Contract No.: NE/2015/02

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity [in '000m^3]	Hard Rock and [in '000m^3]	Reused in the [in '000m^3]	Reused in other [in '000m^3]	Disposal as [in '000m^3]	Imported Fill [in '000m^3]	Metals [in '000kg]	Paper / [in '000kg]	Plastics [in '000kg]	Chemical Waste [in '000kg]	Other, e.g. [in '000m^3]
Jan	1.02115	0.00000	0.00000	0.00000	1.02115	0.00000	0.00000	0.00000	0.00000	0.00000	0.02306
Feb											
Mar											
Apr											
May											
June											
SUB-TOTAL											
Jul											
Aug											
Sep											
Oct											
Nov											
Dec											
TOTAL	1.02115	0.00000	0.00000	0.00000	1.02115	0.00000	0.00000	0.00000	0.00000	0.00000	0.02306

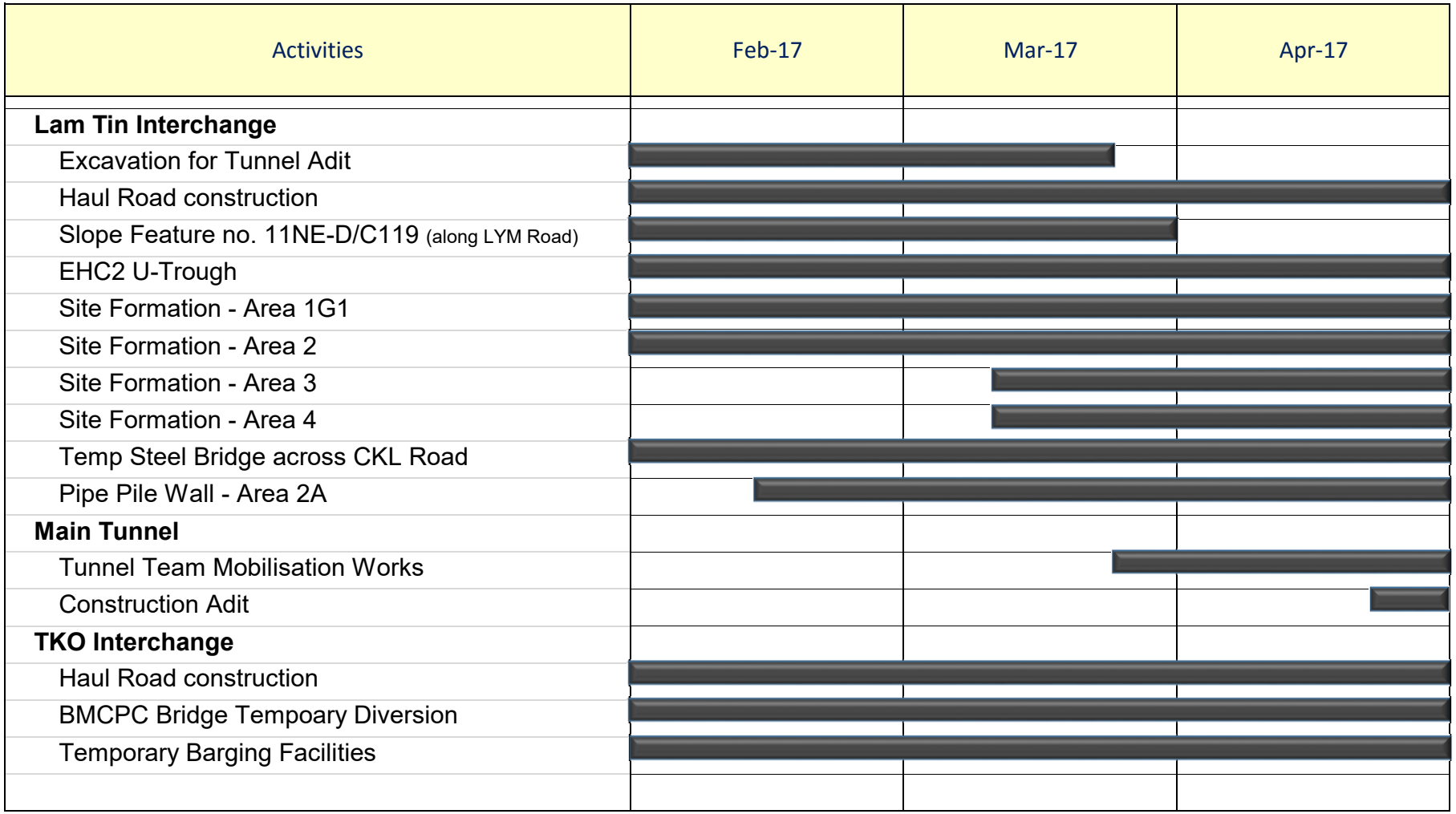
Note: Conversion to 1000m^3 for general refuse is weight in 1000kg multiply by 0.002

Conversion to 1000m^3 for Inert C&D is weight in 1000kg multiply by 0.0005

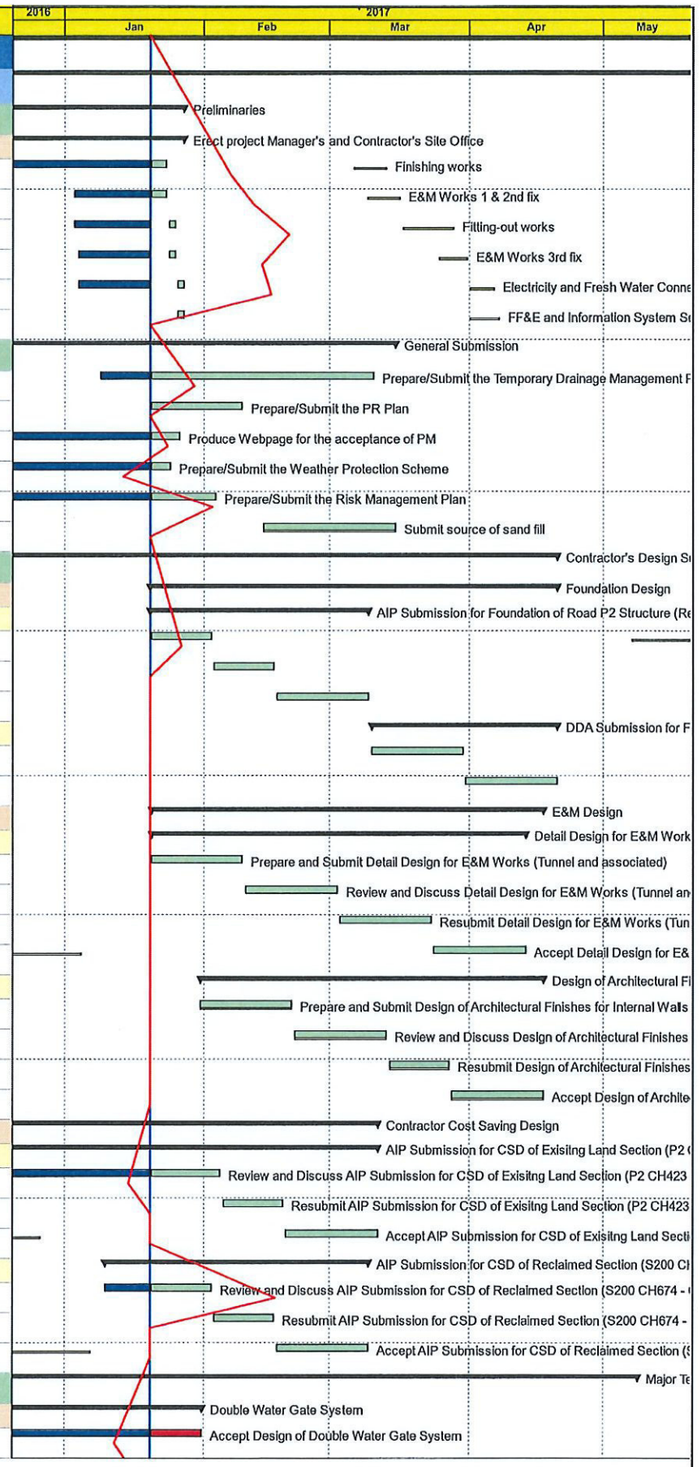
Plastics refer to plastic bottles / containers, plastic sheets / foam from packaging material

APPENDIX Q
TENTATIVE CONSTRUCTION PROGRAMME

High Level 3 Months Look Ahead Programme



Activity ID	Activity Name	Calendar	Original Duration	Remaining Duration	Start	Finish	Total Float	Activity % Complete	Variance - BL1 Finish Date	TRA
NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2 and Associated Works			1447	1340	17-Aug-16 A	20-Sep-20	7		0	
Preliminaries, Submission, Contractor's Design Submission and Approval			1015	984	17-Aug-16 A	30-Sep-19	220		0	
Preliminaries		P2-Cal.B	31	7	29-Nov-16 A	27-Jan-17	96		56	
Erect project Manager's and Contractor's Site Office		P2-Cal.B	31	7	29-Nov-16 A	27-Jan-17	96		56	
LC10340	Finishing works	P2-Cal.B	7	3	29-Nov-16 A	23-Jan-17	96	57.14%	39	0
LC10360	E&M Works 1 & 2nd fix	P2-Cal.B	7	3	03-Jan-17 A	23-Jan-17	96	57.14%	42	0
LC10380	Fitting-out works	P2-Cal.B	10	2	03-Jan-17 A	25-Jan-17	96	80%	50	0
LC10400	E&M Works 3rd fix	P2-Cal.B	6	2	04-Jan-17 A	25-Jan-17	96	66.67%	53	0
LC10420	Electricity and Fresh Water Connection	P2-Cal.B	4	2	04-Jan-17 A	27-Jan-17	96	50%	55	0
LC10440	FF&E and Information System Setup	P2-Cal.B	2	2	26-Jan-17	27-Jan-17	96	0%	56	0
General Submission		P2-Cal.A	91	55	17-Aug-16 A	15-Mar-17	71		0	
S10040	Prepare/Submit the Temporary Drainage Management Plan to DSD (DSD)	P2-Cal.A	60	50	09-Jan-17 A	10-Mar-17	68	16.67%	-104	0
S10060	Prepare/Submit the PR Plan	P2-Cal.A	21	21	20-Jan-17	09-Feb-17	9	0%	-175	0
S10120	Produce Webpage for the acceptance of PM	P2-Cal.A	14	7	09-Sep-16 A	26-Jan-17	23	50%	-122	0
S10240	Prepare/Submit the Weather Protection Scheme	P2-Cal.A	30	5	17-Aug-16 A	24-Jan-17	25	83.33%	-143	0
S10280	Prepare/Submit the Risk Management Plan	P2-Cal.A	60	15	17-Aug-16 A	03-Feb-17	15	75%	-130	0
S10780	Submit source of sand fill	P2-Cal.A	30	30	14-Feb-17	15-Mar-17	71	0%	0	0
Contractor's Design Submission and Approval		P2-Cal.A	101	91	19-Nov-16 A	20-Apr-17	1008		107	
Foundation Design		P2-Cal.A	84	91	20-Jan-17 A	20-Apr-17	364		107	
AIP Submission for Foundation of Road P2 Structure (Reclaimed Section)		P2-Cal.A	42	49	20-Jan-17 A	09-Mar-17	364		107	
S11240	Resubmit AIP Submission for Foundation of Road P2 Structure (Reclaimed Section)	P2-Cal.A	14	14	20-Jan-17 A	02-Feb-17	364	0%	107	0
S11250	Review and comment by GEO	P2-Cal.A	14	14	03-Feb-17	16-Feb-17	364	0%	107	0
S11260	Accept AIP Submission for Foundation of Road P2 Structure (Reclaimed Section)	P2-Cal.A	21	21	17-Feb-17	09-Mar-17	364	0%	107	0
DDA Submission for Foundation of Road P2 Structure (Reclaimed Section)		P2-Cal.A	42	42	10-Mar-17	20-Apr-17	364		107	
S11360	Prepare and Submit DDA Submission for Foundation of Road P2 Structure (Reclaimed Section)	P2-Cal.A	21	21	10-Mar-17	30-Mar-17	364	0%	107	0
S11380	Review and Discuss DDA Submission for Foundation of Road P2 Structure (Reclaimed Section)	P2-Cal.A	21	21	31-Mar-17	20-Apr-17	364	0%	107	0
E&M Design		P2-Cal.A	88	88	20-Jan-17	17-Apr-17	1011		0	
Detail Design for E&M Works (Tunnel and associated)		P2-Cal.A	84	84	20-Jan-17	13-Apr-17	703		-99	
S11580	Prepare and Submit Detail Design for E&M Works (Tunnel and associated)	P2-Cal.A	21	21	20-Jan-17	09-Feb-17	703	0%	-99	0
S11600	Review and Discuss Detail Design for E&M Works (Tunnel and associated)	P2-Cal.A	21	21	10-Feb-17	02-Mar-17	703	0%	-99	0
S11620	Resubmit Detail Design for E&M Works (Tunnel and associated)	P2-Cal.A	21	21	03-Mar-17	23-Mar-17	703	0%	-99	0
S11640	Accept Detail Design for E&M Works (Tunnel and associated)	P2-Cal.A	21	21	24-Mar-17	13-Apr-17	703	0%	-99	0
Design of Architectural Finishes for Internal Walls of U-Trough Structures		P2-Cal.A	77	77	31-Jan-17	17-Apr-17	1011		0	
S11660	Prepare and Submit Design of Architectural Finishes for Internal Walls of U-Trough Structures	P2-Cal.A	21	21	31-Jan-17	20-Feb-17	1011	0%	0	0
S11680	Review and Discuss Design of Architectural Finishes for Internal Walls of U-Trough Structures	P2-Cal.A	21	21	21-Feb-17	13-Mar-17	1011	0%	0	0
S11700	Resubmit Design of Architectural Finishes for Internal Walls of U-Trough Structures	P2-Cal.A	14	14	14-Mar-17	27-Mar-17	1011	0%	0	0
S11720	Accept Design of Architectural Finishes for Internal Walls of U-Trough Structures	P2-Cal.A	21	21	28-Mar-17	17-Apr-17	1011	0%	0	0
Contractor Cost Saving Design		P2-Cal.A	61	51	19-Nov-16 A	11-Mar-17	715		-64	
AIP Submission for CSD of Exisitng Land Section (P2 CH423 - CH500)		P2-Cal.A	61	51	19-Nov-16 A	11-Mar-17	715		-75	
S11840	Review and Discuss AIP Submission for CSD of Exisitng Land Section (P2 CH423 - CH500)	P2-Cal.A	21	16	19-Nov-16 A	04-Feb-17	715	23.81%	-75	0
S11860	Resubmit AIP Submission for CSD of Exisitng Land Section (P2 CH423 - CH500)	P2-Cal.A	14	14	05-Feb-17	18-Feb-17	715	0%	-75	0
S11880	Accept AIP Submission for CSD of Exisitng Land Section (P2 CH423 - CH500)	P2-Cal.A	21	21	19-Feb-17	11-Mar-17	715	0%	-75	0
AIP Submission for CSD of Reclaimed Section (S200 CH674 - CH755, S300 CH326-CH355)		P2-Cal.A	35	49	10-Jan-17 A	09-Mar-17	711		-62	
S11920	Review and Discuss AIP Submission for CSD of Reclaimed Section (S200 CH674 - CH755, S300 CH326-CH355)	P2-Cal.A	21	14	10-Jan-17 A	02-Feb-17	711	33.33%	-62	0
S11940	Resubmit AIP Submission for CSD of Reclaimed Section (S200 CH674 - CH755, S300 CH326-CH355)	P2-Cal.A	14	14	03-Feb-17	16-Feb-17	711	0%	-62	0
S11960	Accept AIP Submission for CSD of Reclaimed Section (S200 CH674 - CH755, S300 CH326-CH355)	P2-Cal.A	21	21	17-Feb-17	09-Mar-17	711	0%	-62	0
Major Temporary Works Design		P2-Cal.A	126	109	11-Dec-16 A	08-May-17	622		0	
Double Water Gate System		P2-Cal.A	21	12	11-Dec-16 A	31-Jan-17	1		-57	
S12120	Accept Design of Double Water Gate System	P2-Cal.A	21	12	11-Dec-16 A	31-Jan-17	1	42.86%	-57	0



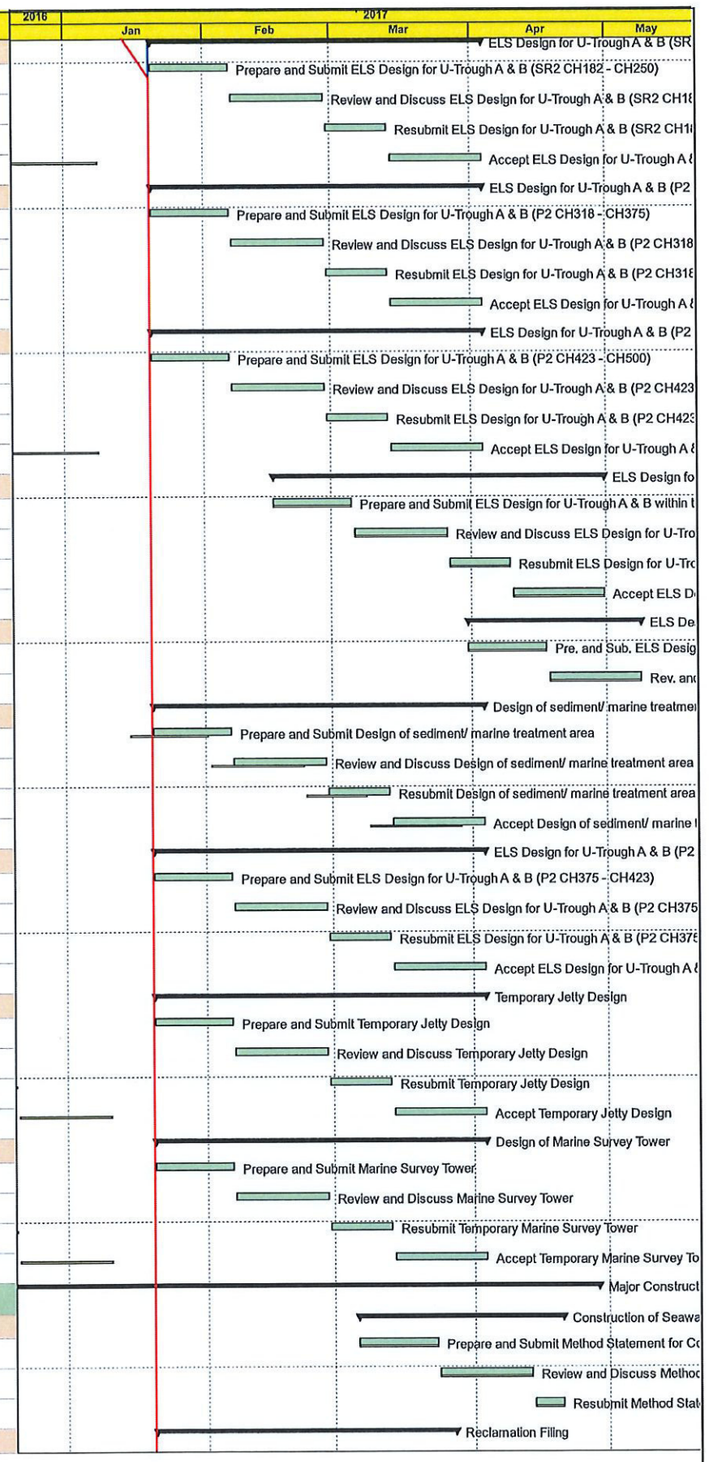
Primary Baseline
Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2 and Associated Works

3 Months Rolling Programme
(20 Jan 2017)

Date	Revision	Checked	Approved
20-Jan-17			

Activity ID	Activity Name	Calendar	Original Duration	Remaining Duration	Start	Finish	Total Float	Activity % Complete	Variance - BL1 Finish Date	TRA
ELS Design for U-Trough A & B (SR2 CH182 - CH250)		P2-Cal.A	74	74	20-Jan-17	03-Apr-17	221		-85	
S12380	Prepare and Submit ELS Design for U-Trough A & B (SR2 CH182 - CH250)	P2-Cal.A	18	18	20-Jan-17	06-Feb-17	221	0%	-85	0
S12400	Review and Discuss ELS Design for U-Trough A & B (SR2 CH182 - CH250)	P2-Cal.A	21	21	07-Feb-17	27-Feb-17	221	0%	-85	0
S12420	Resubmit ELS Design for U-Trough A & B (SR2 CH182 - CH250)	P2-Cal.A	14	14	28-Feb-17	13-Mar-17	221	0%	-85	0
S12440	Accept ELS Design for U-Trough A & B (SR2 CH182 - CH250)	P2-Cal.A	21	21	14-Mar-17	03-Apr-17	221	0%	-85	0
ELS Design for U-Trough A & B (P2 CH318 - CH375)		P2-Cal.A	74	74	20-Jan-17	03-Apr-17	221		-138	
S12460	Prepare and Submit ELS Design for U-Trough A & B (P2 CH318 - CH375)	P2-Cal.A	18	18	20-Jan-17	06-Feb-17	221	0%	-175	0
S12480	Review and Discuss ELS Design for U-Trough A & B (P2 CH318 - CH375)	P2-Cal.A	21	21	07-Feb-17	27-Feb-17	221	0%	-175	0
S12500	Resubmit ELS Design for U-Trough A & B (P2 CH318 - CH375)	P2-Cal.A	14	14	28-Feb-17	13-Mar-17	221	0%	-138	0
S12520	Accept ELS Design for U-Trough A & B (P2 CH318 - CH375)	P2-Cal.A	21	21	14-Mar-17	03-Apr-17	221	0%	-138	0
ELS Design for U-Trough A & B (P2 CH423 - CH500)		P2-Cal.A	74	74	20-Jan-17	03-Apr-17	221		-85	
S12540	Prepare and Submit ELS Design for U-Trough A & B (P2 CH423 - CH500)	P2-Cal.A	18	18	20-Jan-17	06-Feb-17	221	0%	-85	0
S12560	Review and Discuss ELS Design for U-Trough A & B (P2 CH423 - CH500)	P2-Cal.A	21	21	07-Feb-17	27-Feb-17	221	0%	-85	0
S12580	Resubmit ELS Design for U-Trough A & B (P2 CH423 - CH500)	P2-Cal.A	14	14	28-Feb-17	13-Mar-17	221	0%	-85	0
S12600	Accept ELS Design for U-Trough A & B (P2 CH423 - CH500)	P2-Cal.A	21	21	14-Mar-17	03-Apr-17	221	0%	-85	0
ELS Design for U-Trough A & B within the Reclaimed Section		P2-Cal.A	74	74	16-Feb-17	30-Apr-17	630		0	
S12620	Prepare and Submit ELS Design for U-Trough A & B within the Reclaimed Section	P2-Cal.A	18	18	16-Feb-17	05-Mar-17	630	0%	0	0
S12640	Review and Discuss ELS Design for U-Trough A & B within the Reclaimed Section	P2-Cal.A	21	21	06-Mar-17	26-Mar-17	630	0%	0	0
S12660	Resubmit ELS Design for U-Trough A & B within the Reclaimed Section	P2-Cal.A	14	14	27-Mar-17	09-Apr-17	630	0%	0	0
S12680	Accept ELS Design for U-Trough A & B within the Reclaimed Section	P2-Cal.A	21	21	10-Apr-17	30-Apr-17	630	0%	0	0
ELS Design for Road P2 Underpass including Plant Rooms		P2-Cal.A	39	39	31-Mar-17	08-May-17	444		0	
S12700	Pre. and Sub. ELS Design for Road P2 Underpass (Incl.Stom.W Pt Rm, Sump Pit Rm & Fixed Foam Tk Rm) & U-T. A&B CH305-318	P2-Cal.A	18	18	31-Mar-17	17-Apr-17	444	0%	0	0
S12720	Rev. and Disc. ELS Design for Road P2 Underpass (Incl.Stom.W Pt Rm, Sump Pit Rm & Fixed Foam Tk Rm) & U-T. A&B CH305-318	P2-Cal.A	21	21	18-Apr-17	08-May-17	444	0%	0	0
Design of sediment/ marine treatment area		P2-Cal.A	74	74	20-Jan-17	03-Apr-17	38		-5	
S12860	Prepare and Submit Design of sediment/ marine treatment area	P2-Cal.A	18	18	20-Jan-17	06-Feb-17	38	0%	-5	0
S12880	Review and Discuss Design of sediment/ marine treatment area	P2-Cal.A	21	21	07-Feb-17	27-Feb-17	38	0%	-5	0
S12900	Resubmit Design of sediment/ marine treatment area	P2-Cal.A	14	14	28-Feb-17	13-Mar-17	38	0%	-5	0
S12920	Accept Design of sediment/ marine treatment area	P2-Cal.A	21	21	14-Mar-17	03-Apr-17	38	0%	-5	0
ELS Design for U-Trough A & B (P2 CH375 - CH423)		P2-Cal.A	74	74	20-Jan-17	03-Apr-17	221		-138	
S12940	Prepare and Submit ELS Design for U-Trough A & B (P2 CH375 - CH423)	P2-Cal.A	18	18	20-Jan-17	06-Feb-17	221	0%	-175	0
S12960	Review and Discuss ELS Design for U-Trough A & B (P2 CH375 - CH423)	P2-Cal.A	21	21	07-Feb-17	27-Feb-17	221	0%	-175	0
S12980	Resubmit ELS Design for U-Trough A & B (P2 CH375 - CH423)	P2-Cal.A	14	14	28-Feb-17	13-Mar-17	221	0%	-138	0
S13000	Accept ELS Design for U-Trough A & B (P2 CH375 - CH423)	P2-Cal.A	21	21	14-Mar-17	03-Apr-17	221	0%	-138	0
Temporary Jetty Design		P2-Cal.A	74	74	20-Jan-17	03-Apr-17	38		-83	
S13020	Prepare and Submit Temporary Jetty Design	P2-Cal.A	18	18	20-Jan-17	06-Feb-17	38	0%	-83	0
S13040	Review and Discuss Temporary Jetty Design	P2-Cal.A	21	21	07-Feb-17	27-Feb-17	38	0%	-83	0
S13060	Resubmit Temporary Jetty Design	P2-Cal.A	14	14	28-Feb-17	13-Mar-17	38	0%	-83	0
S13080	Accept Temporary Jetty Design	P2-Cal.A	21	21	14-Mar-17	03-Apr-17	38	0%	-83	0
Design of Marine Survey Tower		P2-Cal.A	74	74	20-Jan-17	03-Apr-17	192		-83	
S13100	Prepare and Submit Marine Survey Tower	P2-Cal.A	18	18	20-Jan-17	06-Feb-17	192	0%	-83	0
S13120	Review and Discuss Marine Survey Tower	P2-Cal.A	21	21	07-Feb-17	27-Feb-17	192	0%	-83	0
S13140	Resubmit Temporary Marine Survey Tower	P2-Cal.A	14	14	28-Feb-17	13-Mar-17	192	0%	-83	0
S13160	Accept Temporary Marine Survey Tower	P2-Cal.A	21	21	14-Mar-17	03-Apr-17	192	0%	-83	0
Major Construction Works Method Statement		P2-Cal.A	130	99	07-Oct-16 A	28-Apr-17	720		178	
Construction of Seawall Foundation for Road P2		P2-Cal.A	46	46	06-Mar-17	20-Apr-17	47		0	
S13260	Prepare and Submit Method Statement for Construction of Seawall Foundation for Road P2	P2-Cal.A	18	18	06-Mar-17	23-Mar-17	47	0%	0	0
S13280	Review and Discuss Method Statement for Construction of Seawall Foundation for Road P2	P2-Cal.A	21	21	24-Mar-17	13-Apr-17	47	0%	0	0
S13300	Resubmit Method Statement for Construction of Seawall Foundation for Road P2	P2-Cal.A	7	7	14-Apr-17	20-Apr-17	47	0%	0	0
Reclamation Filling		P2-Cal.A	67	67	20-Jan-17	27-Mar-17	79		-15	



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NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2 and Associated Works

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(20 Jan 2017)

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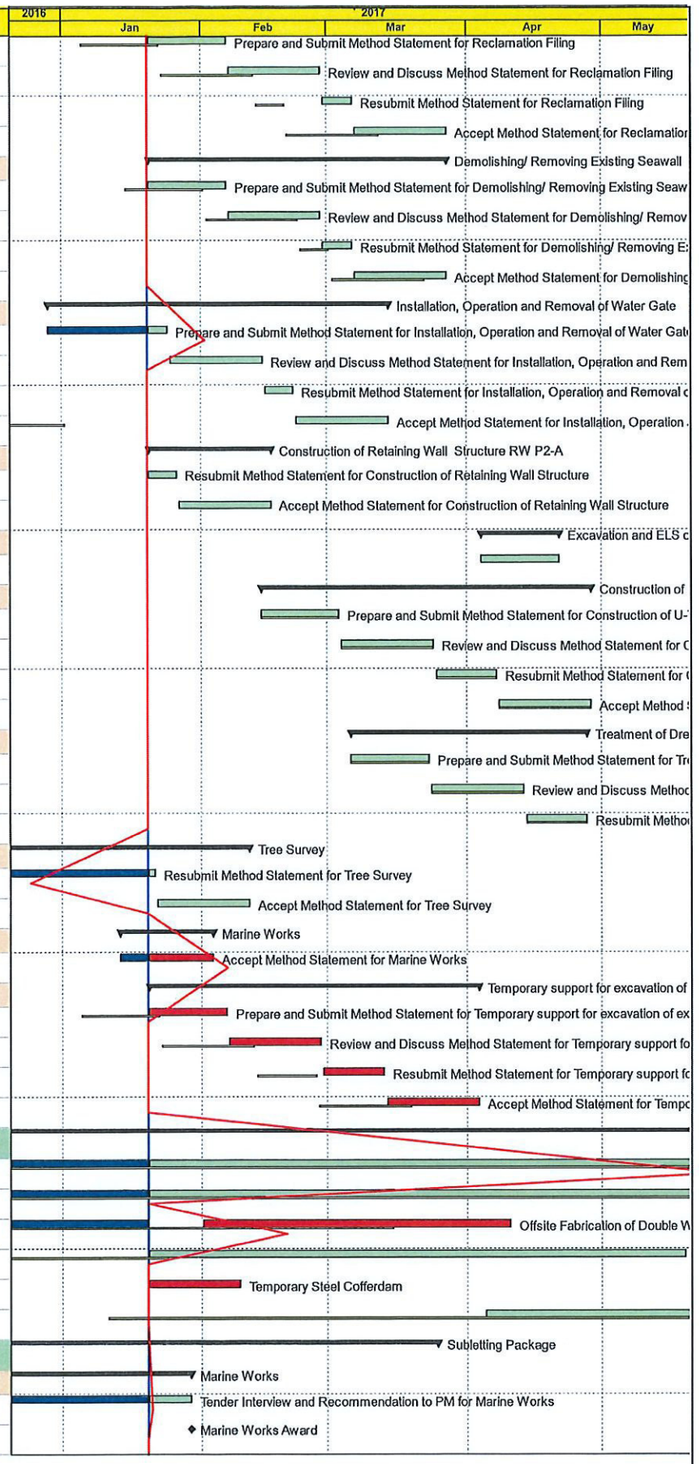
S13340	Prepare and Submit Method Statement for Reclamation Filing	P2-Cal.A	18	18	20-Jan-17	06-Feb-17	79	0%	-15	0
S13360	Review and Discuss Method Statement for Reclamation Filing	P2-Cal.A	21	21	07-Feb-17	27-Feb-17	79	0%	-15	0
S13380	Resubmit Method Statement for Reclamation Filing	P2-Cal.A	7	7	28-Feb-17	06-Mar-17	79	0%	-15	0
S13400	Accept Method Statement for Reclamation Filing	P2-Cal.A	21	21	07-Mar-17	27-Mar-17	79	0%	-15	0
Demolishing/ Removing Existing Seawall		P2-Cal.A	67	67	20-Jan-17	27-Mar-17	45		-5	
S13580	Prepare and Submit Method Statement for Demolishing/ Removing Existing Seawall	P2-Cal.A	18	18	20-Jan-17	06-Feb-17	45	0%	-5	0
S13600	Review and Discuss Method Statement for Demolishing/ Removing Existing Seawall	P2-Cal.A	21	21	07-Feb-17	27-Feb-17	45	0%	-5	0
S13620	Resubmit Method Statement for Demolishing/ Removing Existing Seawall	P2-Cal.A	7	7	28-Feb-17	06-Mar-17	45	0%	-5	0
S13640	Accept Method Statement for Demolishing/ Removing Existing Seawall	P2-Cal.A	21	21	07-Mar-17	27-Mar-17	45	0%	-5	0
Installation, Operation and Removal of Water Gate		P2-Cal.A	54	54	29-Dec-16 A	14-Mar-17	10		-72	
S13820	Prepare and Submit Method Statement for Installation, Operation and Removal of Water Gate	P2-Cal.A	18	5	29-Dec-16 A	24-Jan-17	10	72.22%	-72	0
S13840	Review and Discuss Method Statement for Installation, Operation and Removal of Water Gate	P2-Cal.A	21	21	25-Jan-17	14-Feb-17	10	0%	-72	0
S13860	Resubmit Method Statement for Installation, Operation and Removal of Water Gate	P2-Cal.A	7	7	15-Feb-17	21-Feb-17	10	0%	-72	0
S13880	Accept Method Statement for Installation, Operation and Removal of Water Gate	P2-Cal.A	21	21	22-Feb-17	14-Mar-17	10	0%	-72	0
Construction of Retaining Wall Structure RW P2-A		P2-Cal.A	28	28	20-Jan-17	16-Feb-17	791			
S14043	Resubmit Method Statement for Construction of Retaining Wall Structure	P2-Cal.A	7	7	20-Jan-17	26-Jan-17	791	0%		0
S14044	Accept Method Statement for Construction of Retaining Wall Structure	P2-Cal.A	21	21	27-Jan-17	16-Feb-17	791	0%		0
Excavation and ELS of U-Troughs		P2-Cal.A	18	18	04-Apr-17	21-Apr-17	221		185	
S14060	Prepare and Submit Method Statement for Excavation and ELS of U-Troughs	P2-Cal.A	18	18	04-Apr-17	21-Apr-17	221	0%	185	0
Construction of U-Troughs Structure		P2-Cal.A	74	74	14-Feb-17	28-Apr-17	417		0	
S14140	Prepare and Submit Method Statement for Construction of U-Troughs Structure	P2-Cal.A	18	18	14-Feb-17	03-Mar-17	417	0%	0	0
S14160	Review and Discuss Method Statement for Construction of U-Troughs Structure	P2-Cal.A	21	21	04-Mar-17	24-Mar-17	417	0%	0	0
S14180	Resubmit Method Statement for Construction of U-Troughs Structure	P2-Cal.A	14	14	25-Mar-17	07-Apr-17	417	0%	0	0
S14200	Accept Method Statement for Construction of U-Troughs Structure	P2-Cal.A	21	21	08-Apr-17	28-Apr-17	417	0%	0	0
Treatment of Dredged Marine Sediment of Type 1		P2-Cal.A	53	53	06-Mar-17	27-Apr-17	424		0	
S14300	Prepare and Submit Method Statement for Treatment of Dredging Marine Sediment of Type 1	P2-Cal.A	18	18	06-Mar-17	23-Mar-17	424	0%	0	0
S14320	Review and Discuss Method Statement for Treatment of Dredging Marine Sediment of Type 1	P2-Cal.A	21	21	24-Mar-17	13-Apr-17	424	0%	0	0
S14340	Resubmit Method Statement for Treatment of Dredging Marine Sediment of Type 1	P2-Cal.A	14	14	14-Apr-17	27-Apr-17	424	0%	0	0
Tree Survey		P2-Cal.A	54	23	07-Oct-16 A	11-Feb-17	7		-142	
S14740	Resubmit Method Statement for Tree Survey	P2-Cal.A	7	2	07-Oct-16 A	21-Jan-17	7	71.43%	-142	0
S14760	Accept Method Statement for Tree Survey	P2-Cal.A	21	21	22-Jan-17	11-Feb-17	7	0%	-142	0
Marine Works		P2-Cal.A	21	15	14-Jan-17 A	03-Feb-17	-17		-102	
S14840	Accept Method Statement for Marine Works	P2-Cal.A	21	15	14-Jan-17 A	03-Feb-17	-17	28.57%	-102	0
Temporary support for excavation of existing seawall		P2-Cal.A	74	74	20-Jan-17	03-Apr-17	-4		-15	
S14940	Prepare and Submit Method Statement for Temporary support for excavation of existing seawall	P2-Cal.A	18	18	20-Jan-17	06-Feb-17	-4	0%	-15	0
S14960	Review and Discuss Method Statement for Temporary support for excavation of existing seawall	P2-Cal.A	21	21	07-Feb-17	27-Feb-17	-4	0%	-15	0
S14980	Resubmit Method Statement for Temporary support for excavation of existing seawall	P2-Cal.A	14	14	28-Feb-17	13-Mar-17	-4	0%	-15	0
S15000	Accept Method Statement for Temporary support for excavation of existing seawall	P2-Cal.A	21	21	14-Mar-17	03-Apr-17	-4	0%	-15	0
Procurement of Major Material			984	984	07-Oct-16 A	30-Sep-19	19		0	
S15020	Procurement and Delivery of Steel H-Pile	P2-Cal.A	800	684	07-Oct-16 A	04-Dec-18	122	14.5%	38	0
S15040	Procurement and Delivery of ELS Walling & Struts Members	P2-Cal.A	984	984	07-Oct-16 A	30-Sep-19	19	0%	0	0
S15060	Offsite Fabrication of Double Water Gate System	P2-Cal.A	100	69	20-Dec-16 A	10-Apr-17	1	31%	-26	0
S15100	Cast-in gantry for Road Works	P2-Cal.A	120	120	20-Jan-17	19-May-17	789	0%	-115	0
S15140	Temporary Steel Cofferdam	P2-Cal.A	21	21	20-Jan-17	09-Feb-17	-23	0%	-65	0
S15180	Fabrication of Marine Survey Tower	P2-Cal.B	120	120	05-Apr-17	30-Aug-17	155	0%	-68	0
Subletting Package		P2-Cal.A	75	65	04-Nov-16 A	25-Mar-17	1139		0	
Marine Works		P2-Cal.A	21	10	04-Nov-16 A	29-Jan-17	102		-79	
S16920	Tender Interview and Recommendation to PM for Marine Works	P2-Cal.A	21	10	04-Nov-16 A	29-Jan-17	102	52.38%	-79	0
S16940	Marine Works Award	P2-Cal.A	0	0		29-Jan-17	102	0%	-79	0



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(20 Jan 2017)

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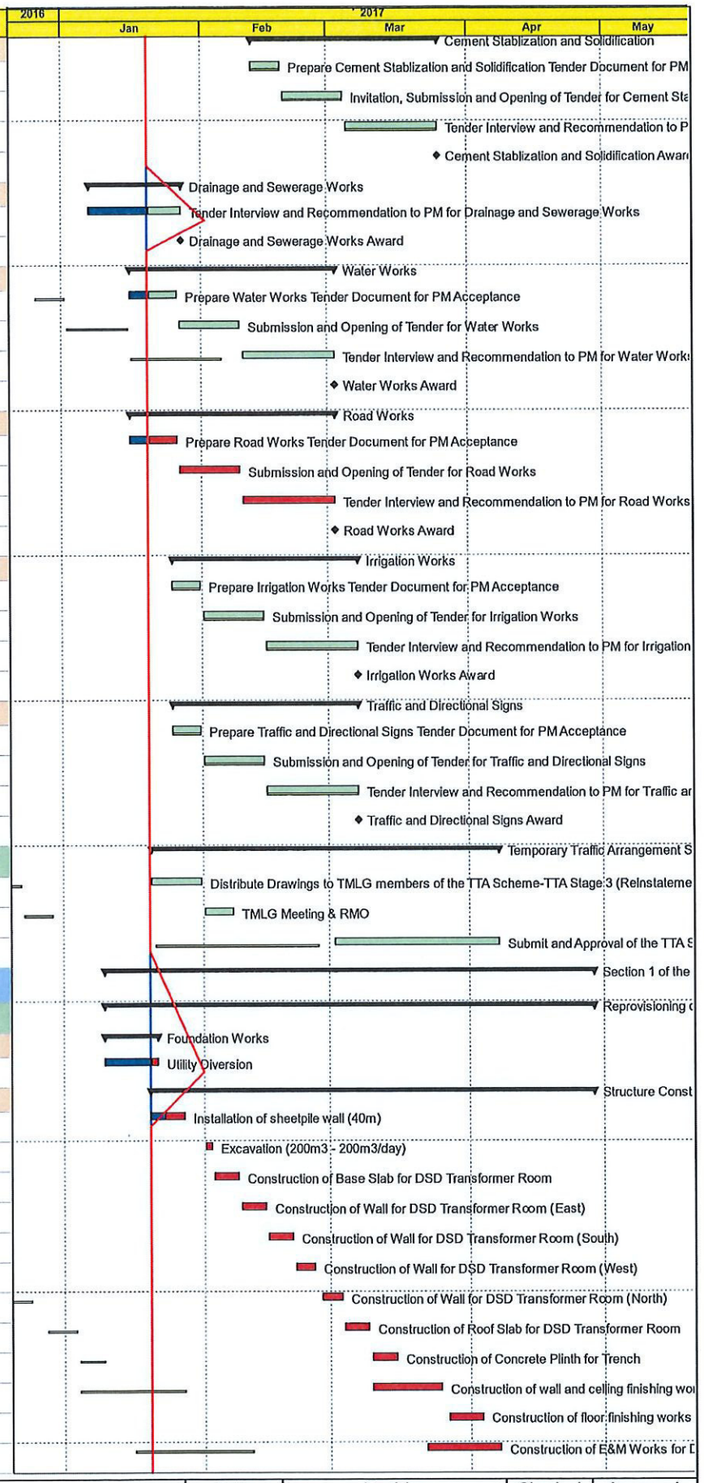
Activity ID	Activity Name	Calendar	Original Duration	Remaining Duration	Start	Finish	Total Float	Activity % Complete	Variance - BL1 Finish Date	TRA
Cement Stablization and Solidification		P2-Cal.A	42	42	12-Feb-17	25-Mar-17	478		0	
S16960	Prepare Cement Stablization and Solidification Tender Document for PM Acceptance	P2-Cal.A	7	7	12-Feb-17	18-Feb-17	478	0%	0	0
S16980	Invitation, Submission and Opening of Tender for Cement Stablization and Solidification	P2-Cal.A	14	14	19-Feb-17	04-Mar-17	478	0%	0	0
S17000	Tender Interview and Recommendation to PM for Cement Stablization and Solidification	P2-Cal.A	21	21	05-Mar-17	25-Mar-17	478	0%	0	0
S17020	Cement Stablization and Solidification Award	P2-Cal.A	0	0		25-Mar-17	478	0%	0	0
Drainage and Sewerage Works		P2-Cal.A	21	8	07-Jan-17 A	27-Jan-17	110		-53	
S17080	Tender Interview and Recommendation to PM for Drainage and Sewerage Works	P2-Cal.A	21	8	07-Jan-17 A	27-Jan-17	110	61.9%	-53	0
S17100	Drainage and Sewerage Works Award	P2-Cal.A	0	0		27-Jan-17	110	0%	-53	0
Water Works		P2-Cal.A	42	42	16-Jan-17 A	02-Mar-17	123		-25	
S17120	Prepare Water Works Tender Document for PM Acceptance	P2-Cal.A	7	7	16-Jan-17 A	26-Jan-17	123	0%	-25	0
S17140	Submission and Opening of Tender for Water Works	P2-Cal.A	14	14	27-Jan-17	09-Feb-17	123	0%	-25	0
S17160	Tender Interview and Recommendation to PM for Water Works	P2-Cal.A	21	21	10-Feb-17	02-Mar-17	123	0%	-25	0
S17180	Water Works Award	P2-Cal.A	0	0		02-Mar-17	123	0%	-25	0
Road Works		P2-Cal.A	42	42	16-Jan-17 A	02-Mar-17	-11		-100	
S17200	Prepare Road Works Tender Document for PM Acceptance	P2-Cal.A	7	7	16-Jan-17 A	26-Jan-17	-11	0%	-100	0
S17220	Submission and Opening of Tender for Road Works	P2-Cal.A	14	14	27-Jan-17	09-Feb-17	-11	0%	-100	0
S17240	Tender Interview and Recommendation to PM for Road Works	P2-Cal.A	21	21	10-Feb-17	02-Mar-17	-11	0%	-100	0
S17260	Road Works Award	P2-Cal.A	0	0		02-Mar-17	-11	0%	-100	0
Irrigation Works		P2-Cal.A	42	42	25-Jan-17	07-Mar-17	1157		0	
S17280	Prepare Irrigation Works Tender Document for PM Acceptance	P2-Cal.A	7	7	25-Jan-17	31-Jan-17	1157	0%	0	0
S17300	Submission and Opening of Tender for Irrigation Works	P2-Cal.A	14	14	01-Feb-17	14-Feb-17	1157	0%	0	0
S17320	Tender Interview and Recommendation to PM for Irrigation Works	P2-Cal.A	21	21	15-Feb-17	07-Mar-17	1157	0%	0	0
S17340	Irrigation Works Award	P2-Cal.A	0	0		07-Mar-17	1157	0%	0	0
Traffic and Directional Signs		P2-Cal.A	42	42	25-Jan-17	07-Mar-17	957		0	
S17440	Prepare Traffic and Directional Signs Tender Document for PM Acceptance	P2-Cal.A	7	7	25-Jan-17	31-Jan-17	957	0%	0	0
S17460	Submission and Opening of Tender for Traffic and Directional Signs	P2-Cal.A	14	14	01-Feb-17	14-Feb-17	957	0%	0	0
S17480	Tender Interview and Recommendation to PM for Traffic and Directional Signs	P2-Cal.A	21	21	15-Feb-17	07-Mar-17	957	0%	0	0
S17500	Traffic and Directional Signs Award	P2-Cal.A	0	0		07-Mar-17	957	0%	0	0
Temporary Traffic Arrangement Schemes		P2-Cal.A	78	78	20-Jan-17	07-Apr-17	678		-40	
S17840	Distribute Drawings to TMLG members of the TTA Scheme-TTA Stage 3 (Reinstatement of Tong Yin St.)	P2-Cal.A	12	12	20-Jan-17	31-Jan-17	678	0%	-40	0
S17860	TMLG Meeting & RMO	P2-Cal.A	7	7	01-Feb-17	07-Feb-17	678	0%	-40	0
S17880	Submit and Approval of the TTA Scheme - TTA Stage 3 (Reinstatement of Tong Yin Street)	P2-Cal.A	37	37	02-Mar-17	07-Apr-17	678	0%	-40	30
Section 1 of the Works		P2-Cal.B	78	78	10-Jan-17 A	28-Apr-17	-25		-61	
Reprovisioning of DSD Transformer Room		P2-Cal.B	78	78	10-Jan-17 A	28-Apr-17	-25		-61	
Foundation Works		P2-Cal.B	14	2	10-Jan-17 A	21-Jan-17	-53		-113	
LC10530	Utility Diversion	P2-Cal.B	14	2	10-Jan-17 A	21-Jan-17	-53	85.71%	-113	0
Structure Construction		P2-Cal.B	76	76	20-Jan-17 A	28-Apr-17	-25		-61	
LC10720	Installation of sheetpile wall (40m)	P2-Cal.B	5	5	20-Jan-17 A	27-Jan-17	-53	0%	-53	0
LC10740	Excavation (200m3 - 200m3/day)	P2-Cal.B	2	2	01-Feb-17	02-Feb-17	-53	0%	-53	0
LC10760	Construction of Base Slab for DSD Transformer Room	P2-Cal.B	5	5	03-Feb-17	08-Feb-17	-53	0%	-53	0
LC10780	Construction of Wall for DSD Transformer Room (East)	P2-Cal.B	5	5	09-Feb-17	14-Feb-17	-53	0%	-53	0
LC10800	Construction of Wall for DSD Transformer Room (South)	P2-Cal.B	5	5	15-Feb-17	20-Feb-17	-53	0%	-53	0
LC10820	Construction of Wall for DSD Transformer Room (West)	P2-Cal.B	5	5	21-Feb-17	25-Feb-17	-53	0%	-53	0
LC10840	Construction of Wall for DSD Transformer Room (North)	P2-Cal.B	5	5	27-Feb-17	03-Mar-17	-53	0%	-53	0
LC10860	Construction of Roof Slab for DSD Transformer Room	P2-Cal.B	5	5	04-Mar-17	09-Mar-17	-53	0%	-53	0
LC10880	Construction of Concrete Plinth for Trench	P2-Cal.B	5	5	10-Mar-17	15-Mar-17	-53	0%	-53	0
LC10900	Construction of wall and celling finishing works for DSD Transformer Room	P2-Cal.B	14	14	10-Mar-17	25-Mar-17	-53	0%	-46	0
LC10905	Construction of floor finishing works for DSD Transformer Room	P2-Cal.B	7	7	27-Mar-17	03-Apr-17	-50	0%		0
LC10920	Construction of E&M Works for DSD Transformer Room 1st and 2nd fixing	P2-Cal.B	14	14	22-Mar-17	07-Apr-17	-53	0%	-46	0



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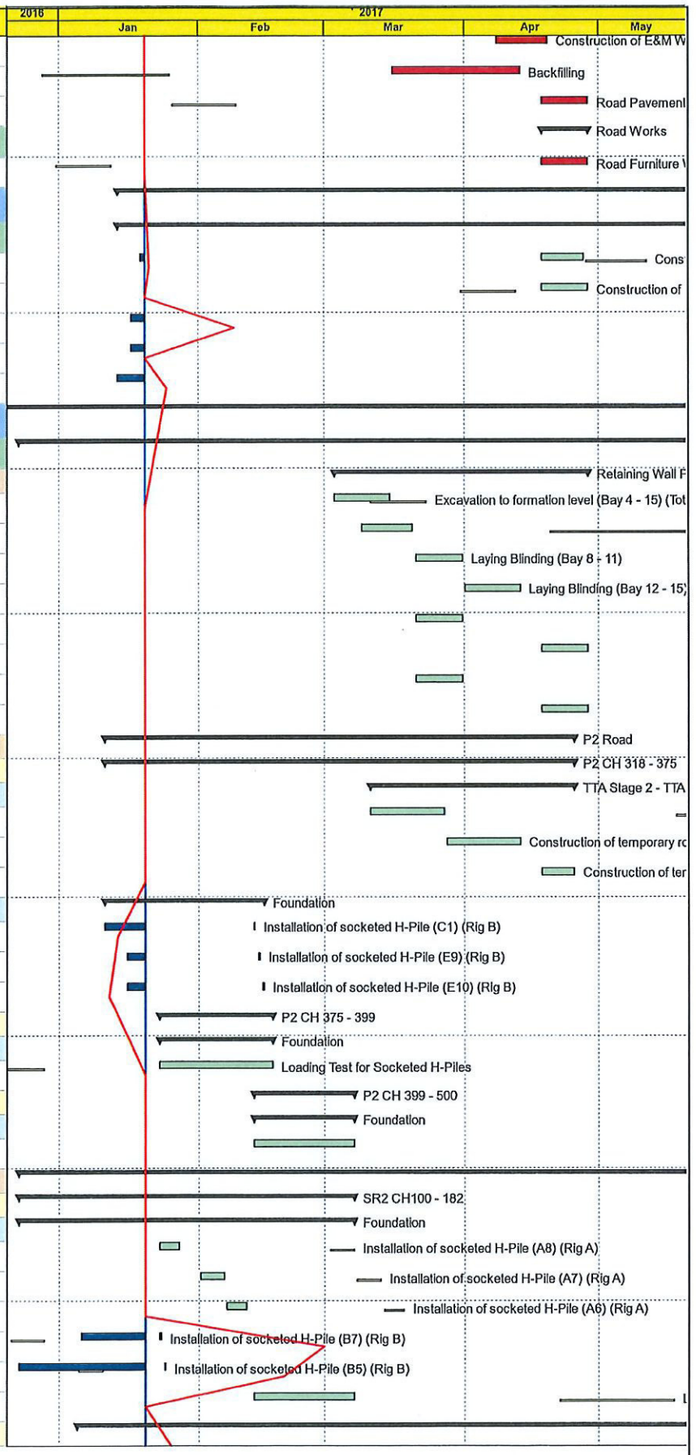
LC10925	Construction of E&M Works for DSD Transformer Room 3rd fixing	P2-Cal.B	7	7	08-Apr-17	19-Apr-17	-53	0%		0
LC10940	Backfilling	P2-Cal.B	24	24	16-Mar-17	13-Apr-17	-45	0%	-63	10
LC10960	Road Pavement Works	P2-Cal.B	10	10	18-Apr-17	28-Apr-17	-25	0%	-63	0
Road Works		P2-Cal.B	10	10	18-Apr-17	28-Apr-17	-45		-84	
LC11000	Road Furniture Works	P2-Cal.B	10	10	18-Apr-17	28-Apr-17	-45	0%	-84	0
Section 2 of the Works		P2-Cal.B	90	85	14-Jan-17 A	29-Jul-17	569		34	
RW P2-B		P2-Cal.B	90	85	14-Jan-17 A	29-Jul-17	569		34	
LC11260	Construction of RW P2-B Wall Stem - Bay 13 (Team A)	P2-Cal.B	10	9	19-Jan-17 A	27-Apr-17	595	10%	10	0
LC11300	Construction of RW P2-B Wall Stem - Bay 12 (Team B)	P2-Cal.B	10	10	18-Apr-17	28-Apr-17	569	0%	-11	0
LC11600	Construction of RW P2-B Base Slab - Bay 4 (Team B)	P2-Cal.B	10	10	17-Jan-17 A	17-Jun-17	569	0%	19	0
LC11640	Construction of RW P2-B Base Slab - Bay 3 (Team B)	P2-Cal.B	10	10	17-Jan-17 A	12-Jul-17	569	0%	19	0
LC11740	Construction of RW P2-B Wall Stem - Bay 1 (Team B)	P2-Cal.B	10	5	14-Jan-17 A	29-Jul-17	569	50%	34	0
Section 3 of the Works		P2-Cal.B	177	120	08-Dec-16 A	20-Jun-17	722		48	
Existing Land Section		P2-Cal.B	154	120	23-Dec-16 A	20-Jun-17	722		48	
Retaining Wall P2-A CH 500 - 650		P2-Cal.B	45	45	03-Mar-17	28-Apr-17	689		42	
LC11940	Excavation to formation level (Bay 4 - 15) (Total: 2054m3 - 200m3/day)	P2-Cal.B	11	11	03-Mar-17	15-Mar-17	639	0%	7	0
LC11980	Laying Blinding (Bay 4 - 7)	P2-Cal.B	10	10	09-Mar-17	20-Mar-17	639	0%	52	0
LC11985	Laying Blinding (Bay 8 - 11)	P2-Cal.B	10	10	21-Mar-17	31-Mar-17	669	0%		0
LC11990	Laying Blinding (Bay 12 - 15)	P2-Cal.B	10	10	01-Apr-17	13-Apr-17	699	0%		0
LC12000	Construction of RW P2-A Base Slab - Bay 4 (Team C)	P2-Cal.B	10	10	21-Mar-17	31-Mar-17	639	0%	52	0
LC12020	Construction of RW P2-A Wall Stem - Bay 4 (Team C)	P2-Cal.B	10	10	18-Apr-17	28-Apr-17	629	0%	42	0
LC12080	Construction of RW P2-A Base Slab - Bay 6 (Team D)	P2-Cal.B	10	10	21-Mar-17	31-Mar-17	639	0%	52	0
LC12100	Construction of RW P2-A Wall Stem - Bay 6 (Team D)	P2-Cal.B	10	10	18-Apr-17	28-Apr-17	629	0%	42	0
P2 Road		P2-Cal.B	73	73	11-Jan-17 A	25-Apr-17	218		52	
P2 CH 318 - 375		P2-Cal.B	68	68	11-Jan-17 A	25-Apr-17	140		52	
TTA Stage 2 - TTA for Temp Road Construction at P2 CH375 - 399		P2-Cal.B	35	35	11-Mar-17	25-Apr-17	90		52	
LC12680	Construction of temporary road base	P2-Cal.B	14	14	11-Mar-17	27-Mar-17	90	0%	73	10
LC12682	Construction of temporary road pavement	P2-Cal.B	14	14	28-Mar-17	13-Apr-17	90	0%		10
LC12684	Construction of temporary road funiture	P2-Cal.B	7	7	18-Apr-17	25-Apr-17	90	0%		10
Foundation		P2-Cal.B	5	3	11-Jan-17 A	15-Feb-17	195			
LC12865	Installation of socketed H-Pile (C1) (Rig B)	P2-Cal.B	5	1	11-Jan-17 A	13-Feb-17	195	80%		0
LC12866	Installation of socketed H-Pile (E9) (Rig B)	P2-Cal.B	5	1	16-Jan-17 A	14-Feb-17	195	80%		0
LC12867	Installation of socketed H-Pile (E10) (Rig B)	P2-Cal.B	5	1	16-Jan-17 A	15-Feb-17	195	80%		0
P2 CH 375 - 399		P2-Cal.B	20	20	23-Jan-17	17-Feb-17	108		-40	
Foundation		P2-Cal.B	20	20	23-Jan-17	17-Feb-17	108		-40	
LC13780	Loading Test for Socketed H-Piles	P2-Cal.B	20	20	23-Jan-17	17-Feb-17	108	0%	-40	10
P2 CH 399 - 500		P2-Cal.B	20	20	13-Feb-17	07-Mar-17	256		85	
Foundation		P2-Cal.B	20	20	13-Feb-17	07-Mar-17	256		85	
LC14640	Loading Test for Socketed H-Pile	P2-Cal.B	20	20	13-Feb-17	07-Mar-17	256	0%	85	10
SR2		P2-Cal.B	154	118	23-Dec-16 A	20-Jun-17	722		48	
SR2 CH100 - 182		P2-Cal.B	41	35	23-Dec-16 A	07-Mar-17	93		55	
Foundation		P2-Cal.B	41	35	23-Dec-16 A	07-Mar-17	93		55	
LC15620	Installation of socketed H-Pile (A8) (Rig A)	P2-Cal.B	5	5	23-Jan-17	27-Jan-17	93	0%	30	0
LC15640	Installation of socketed H-Pile (A7) (Rig A)	P2-Cal.B	5	5	01-Feb-17	06-Feb-17	93	0%	30	0
LC15660	Installation of socketed H-Pile (A6) (Rig A)	P2-Cal.B	5	5	07-Feb-17	11-Feb-17	93	0%	30	0
LC15800	Installation of socketed H-Pile (B7) (Rig B)	P2-Cal.B	5	1	06-Jan-17 A	23-Jan-17	106	80%	-21	0
LC15840	Installation of socketed H-Pile (B5) (Rig B)	P2-Cal.B	5	1	23-Dec-16 A	24-Jan-17	106	80%	-12	0
LC15940	Loading Test for Socketed H-Pile	P2-Cal.B	20	20	13-Feb-17	07-Mar-17	93	0%	55	10
Retaining Wall SR2-A & B CH250 - 310		P2-Cal.B	108	80	05-Jan-17 A	20-Jun-17	722		48	



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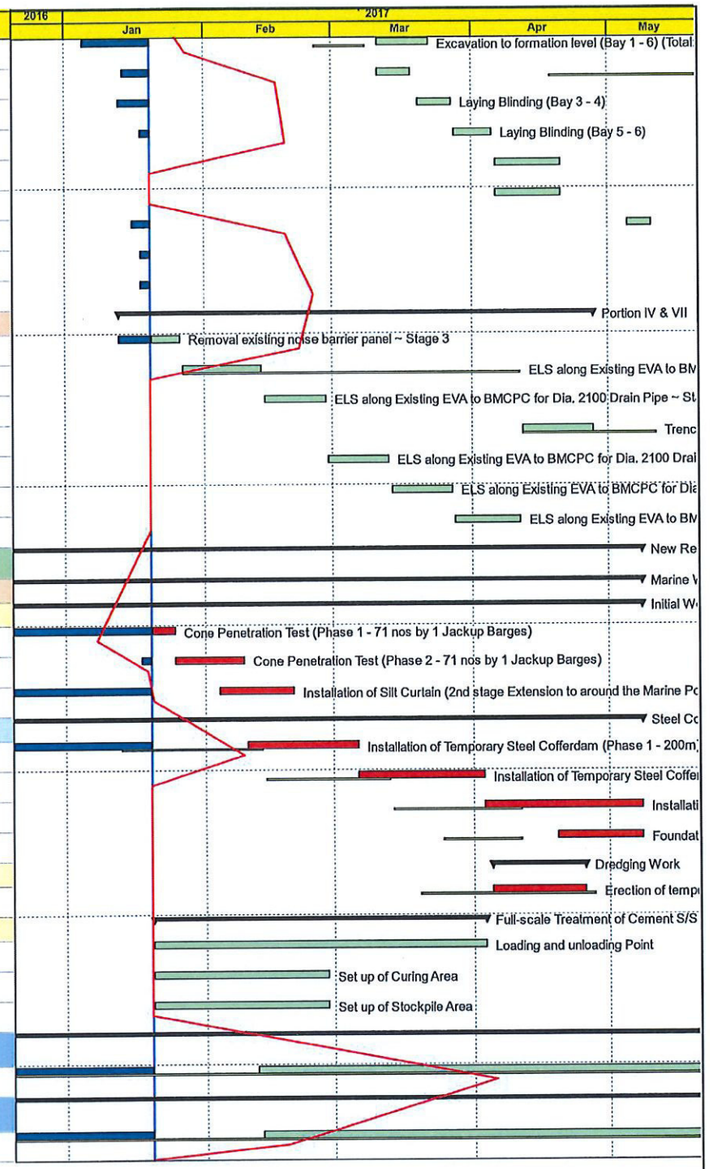
LC16580	Excavation to formation level (Bay 1 - 6) (Total: 1805m3 - 200m3/day)	P2-Cal.B	10	10	05-Jan-17 A	22-Mar-17	711	0%	-12	0
LC16620	Laying Blinding (Bay 1 - 2)	P2-Cal.B	10	7	14-Jan-17 A	18-Mar-17	711	30%	51	0
LC16622	Laying Blinding (Bay 3 - 4)	P2-Cal.B	10	7	13-Jan-17 A	27-Mar-17	711	30%		0
LC16624	Laying Blinding (Bay 5 - 6)	P2-Cal.B	10	7	18-Jan-17 A	05-Apr-17	711	30%		0
LC16640	Construction of Base Slab (SR2-A Bay 1) (Team E)	P2-Cal.B	10	10	06-Apr-17	20-Apr-17	711	0%	37	0
LC16880	Construction of Base Slab (SR2-B Bay 1) (Team F)	P2-Cal.B	10	10	06-Apr-17	20-Apr-17	722	0%	37	0
LC16920	Construction of Base Slab (SR2-B Bay 2) (Team F)	P2-Cal.B	10	5	16-Jan-17 A	10-May-17	722	50%	42	0
LC16960	Construction of Base Slab (SR2-B Bay 3) (Team F)	P2-Cal.B	10	7	18-Jan-17 A	31-May-17	722	30%	45	0
LC17000	Construction of Base Slab (SR2-B Bay 4) (Team F)	P2-Cal.B	10	7	18-Jan-17 A	20-Jun-17	722	30%	48	0
Portion IV & VII		P2-Cal.B	71	77	13-Jan-17 A	27-Apr-17	5		10	
LC17650	Removal existing noise barrier panel ~ Stage 3	P2-Cal.B	12	6	13-Jan-17 A	26-Jan-17	5	50%		0
LC17660	ELS along Existing EVA to BMCPC for Dia. 2100 Drain Pipe ~ Stage 1	P2-Cal.B	12	12	27-Jan-17	13-Feb-17	5	0%	48	0
LC17665	ELS along Existing EVA to BMCPC for Dia. 2100 Drain Pipe ~ Stage 2	P2-Cal.B	12	12	14-Feb-17	27-Feb-17	5	0%		0
LC17680	Trench Excavation for Constrcution of Dia. 2100 Drain Pipe ~ Stage 1	P2-Cal.B	11	11	12-Apr-17	27-Apr-17	5	0%	10	0
LC25580	ELS along Existing EVA to BMCPC for Dia. 2100 Drain Pipe ~ Stage 3	P2-Cal.B	12	12	28-Feb-17	13-Mar-17	5	0%		0
LC25600	ELS along Existing EVA to BMCPC for Dia. 2100 Drain Pipe ~ Stage 4	P2-Cal.B	12	12	14-Mar-17	27-Mar-17	5	0%		0
LC25620	ELS along Existing EVA to BMCPC for Dia. 2100 Drain Pipe ~ Stage 5	P2-Cal.B	12	12	28-Mar-17	11-Apr-17	5	0%		0
New Reclaimed Section		P2-Cal.B	104	83	08-Dec-16 A	08-May-17	375		-6	
Marine Works		P2-Cal.B	104	83	08-Dec-16 A	08-May-17	375		-6	
Initial Works		P2-Cal.B	104	83	08-Dec-16 A	08-May-17	-17		-17	
MC10220	Cone Penetration Test (Phase 1 - 71 nos by 1 Jackup Barges)	P2-Cal.B	13	4	08-Dec-16 A	25-Jan-17	-6	69.01%	-45	0
MC10225	Cone Penetration Test (Phase 2 - 71 nos by 1 Jackup Barges)	P2-Cal.B	12	11	18-Jan-17 A	09-Feb-17	-6	12%		0
MC10260	Installation of Silt Curtain (2nd stage Extension to around the Marine Portion)	P2-Cal.B	14	13	19-Dec-16 A	20-Feb-17	-12	5%	-54	0
Steel Cofferdam and Water Gate		P2-Cal.B	51	68	20-Dec-16 A	08-May-17	-17		-17	
MC10280	Installation of Temporary Steel Cofferdam (Phase 1 - 200m)	P2-Cal.B	24	20	20-Dec-16 A	06-Mar-17	-17	15%	-17	0
MC10300	Installation of Temporary Steel Cofferdam (Phase 2 - 200m)	P2-Cal.B	24	24	06-Mar-17	03-Apr-17	-17	0%	-17	0
MC10320	Installation of Temporary Steel Cofferdam (Phase 3 - 200m)	P2-Cal.B	24	24	03-Apr-17	08-May-17	-17	0%	-17	0
MC10340	Foundation Preparation of Water Gate System	P2-Cal.B	14	14	19-Apr-17	08-May-17	-17	0%	-17	0
Dredging Work		P2-Cal.B	15	15	05-Apr-17	25-Apr-17	-3		2	
MC10500	Erection of temporary support ~ Stage 1	P2-Cal.B	15	15	05-Apr-17	25-Apr-17	-3	0%	2	0
Full-scale Treatment of Cement S/S of Marine Sediment		P2-Cal.B	60	60	20-Jan-17	03-Apr-17	398		-144	
MC14120	Loading and unloading Point	P2-Cal.B	60	60	20-Jan-17	03-Apr-17	398	0%	-144	0
MC14140	Set up of Curing Area	P2-Cal.B	30	30	20-Jan-17	27-Feb-17	428	0%	-144	0
MC14160	Set up of Stockpile Area	P2-Cal.B	30	30	20-Jan-17	27-Feb-17	428	0%	-144	0
Section 4 of the Works - Preservation and Protection of Existing Trees		P2-Cal.A	1424	1317	08-Oct-16 A	20-Sep-20	7		0	
LC25260	Preservation and Protection of Existing Trees	P2-Cal.A	1424	1317	08-Oct-16 A	20-Sep-20	7	7.51%	0	0
Section 5 of the Works - Landscaping Works		P2-Cal.B	180	126	08-Dec-16 A	18-Jul-17	9		3	
LC25320	Tree Transplanting Preparation Works	P2-Cal.B	180	126	08-Dec-16 A	18-Jul-17	9	30%	3	0



Primary Baseline
Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2 and Associated Works

3 Months Rolling Programme
(20 Jan 2017)

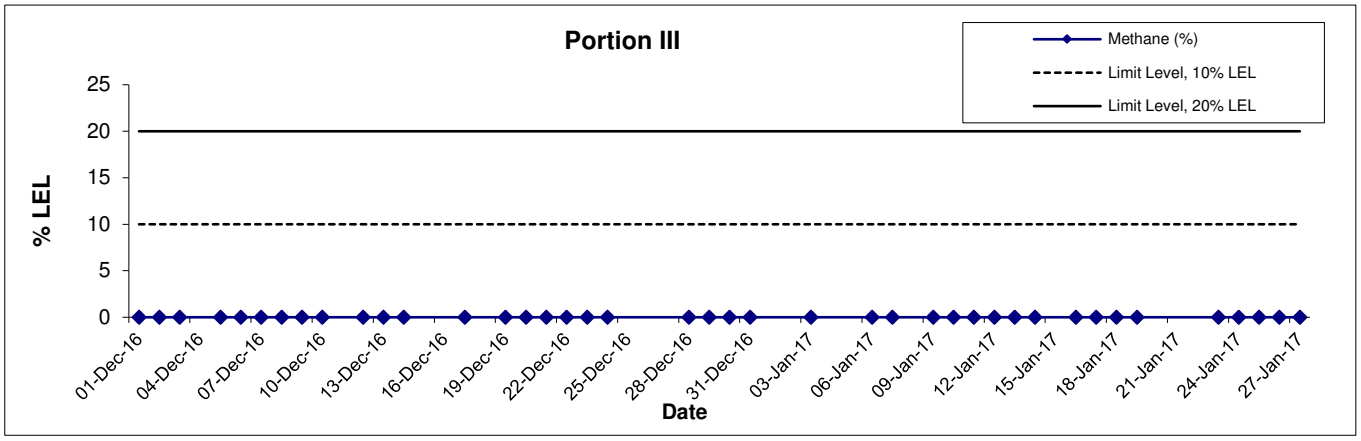
Date	Revision	Checked	Approved
20-Jan-17			

APPENDIX R
RECORD OF LANDFILL GAS MONITORING BY CONTRACTOR

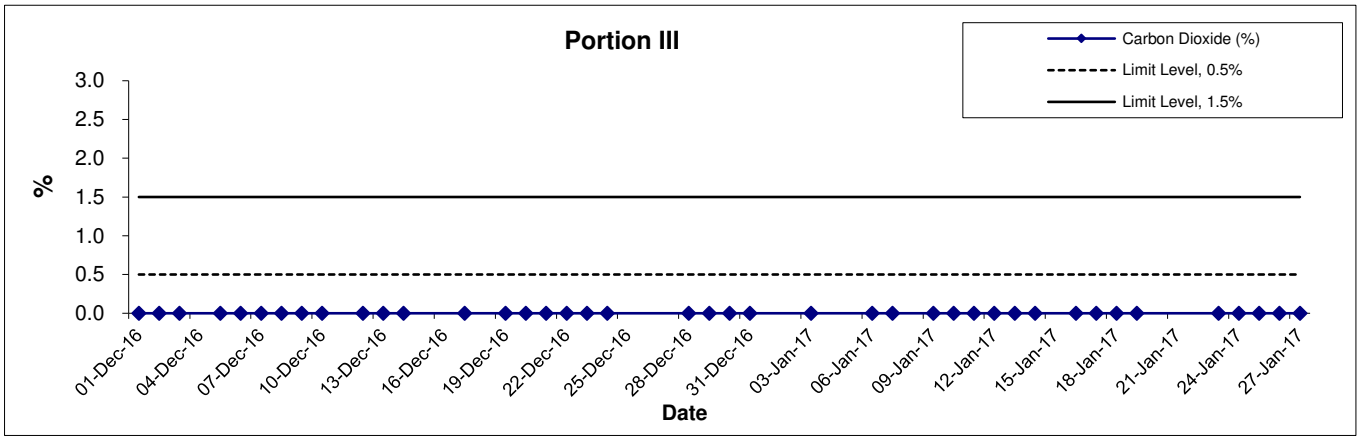
APPENDIX R - RECORD OF LANDFILL GAS MONITORING BY THE CONTRACTOR

Location	Date of Measurement	Sampling time	Weather Condition	Temperature (°C)	Methane (%)	Carbon dioxide (%)	Oxygen (%)
Portion III	3-Jan-17	8:30 AM	Sunny	23	0	0	20.9
	4-Jan-17	8:30 AM	Sunny	24	0	0	20.9
	5-Jan-17	8:30 AM	Sunny	22	0	0	20.9
	6-Jan-17	8:25 AM	Sunny	23	0	0	20.9
	7-Jan-17	8:28 AM	Sunny	20	0	0	20.9
	9-Jan-17	8:25 AM	Sunny	25	0	0	20.9
	10-Jan-17	8:28 AM	Sunny	25	0	0	20.9
	11-Jan-17	8:28 AM	Cloudy	24	0	0	20.9
	12-Jan-17	8:28 AM	Cloudy	25	0	0	20.9
	13-Jan-17	8:28 AM	Sunny	24	0	0	20.9
	14-Jan-17	8:30 AM	Cloudy	22	0	0	20.9
	16-Jan-17	8:28 AM	Cloudy	22	0	0	20.9
	17-Jan-17	8:28 AM	Cloudy	23	0	0	20.9
	18-Jan-17	8:29 AM	Sunny	23	0	0	20.9
	19-Jan-17	8:30 AM	Cloudy	21	0	0	20.9
	20-Jan-17	8:28 AM	Sunny	23	0	0	20.9
	21-Jan-17	8:28 AM	Sunny	21	0	0	20.9
	23-Jan-17	8:30 AM	Sunny	22	0	0	20.9
	24-Jan-17	8:30 AM	Sunny	21	0	0	20.9
	25-Jan-17	8:29 AM	Sunny	21	0	0	20.9
	26-Jan-17	8:27 AM	Sunny	24	0	0	20.9
	27-Jan-17	8:30 AM	Sunny	23	0	0	20.9

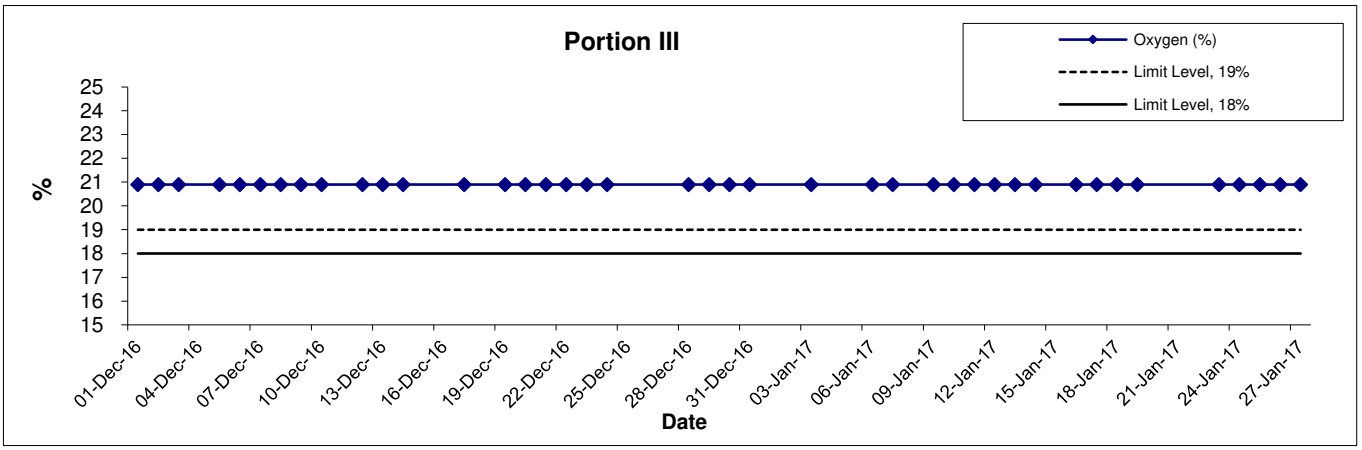
Methane



Carbon Dioxide



Oxygen



Title	Agreement No. CE 59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel – Design and Construction Graphical Presentation of Landfill Gas Measurement	Scale N.T.S Date Jan 17	Project No. MA16034 Appendix R	CINOTECH