



**Contract No. HY/2012/07
Tuen Mun – Chek Lap Kok Link –
Southern Connection Viaduct Section**

Fifty-sixth Monthly EM&A Report

12 July 2018

Environmental Resources Management
2507, 25/F One Harbourfront
18 Tak Fung Street
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Contract No. HY/2012/07 Tuen Mun – Chek Lap Kok Link – Southern Connection Viaduct Section

**Environmental Resources
Management**

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Fifty-sixth Monthly EM&A Report

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Client: Gammon		Project No: 0215660			
Summary: This document presents the Fifty-sixth Monthly EM&A Report for Tuen Mun – Chek Lap Kok Link – Southern Connection Viaduct Section.		Date: 12 July 2018			
		Approved by: 			
		Mr Craig Reid Partner			
		Certified by: 			
		Mr Jovy Tam ET Leader			
	Fifty-sixth Monthly EM&A Report	VAR	JT	CAR	12/07/18
Revision	Description	By	Checked	Approved	Date
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Ref.: HYDHZMBEEM00_0_6662L.18

16 July 2018

AECOM
Supervising Officer's Representative's Office
780 Cheung Tung Road, Lantau, N.T.

By Fax (3691 2899) and By Post

Attention: Mr. Daniel Ip

Dear Mr. Ip,

**Re: Agreement No. CE 48/2011 (EP)
Environmental Project Office for the
HZMB Hong Kong Link Road, HZMB Hong Kong Boundary Crossing
Facilities, and Tuen Mun-Chek Lap Kok Link – Investigation**

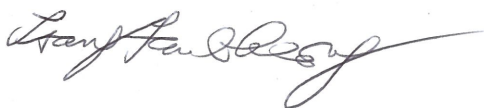
**Contract No. HY/2012/07 TM-CLKL Southern Connection Viaduct
Section
56th Monthly EM&A Report for June 2018 (EP-354/2009/D)**

Reference is made to the Monthly Environmental Monitoring and Audit (EM&A) Report (June 2018) (ET's ref.: "0215660_56th Monthly EM&A_20180712.doc" dated 12 July 2018) certified by the ET Leader and provided to us via e-mail on 16 July 2018.

Please be informed that we have no adverse comments on the captioned Report. We write to verify the captioned submission in accordance with Condition 4.4 of EP-354/2009/D.

Thank you for your attention. Please do not hesitate to contact the undersigned or the ENPO Leader Mr. Y. H. Hui should you have any queries.

Yours sincerely,



F. C. Tsang
Independent Environmental Checker
Tuen Mun – Chek Lap Kok Link

c.c. HyD – Mr. Stephen Chan (By Fax: 3188 6614)
 HyD – Mr. Vico Cheung (By Fax: 3188 6614)
 AECOM – Mr. Conrad Ng (By Fax: 3922 9797)
 ERM – Mr. Jovy Tam (By Fax: 2723 5660)
 Gammon – Mr. Roy Leung (By Fax: 3520 0486)

Internal: DY, YH, DF, ENPO Site

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EXECUTIVE SUMMARY

Under *Contract No. HY/2012/07*, Gammon Construction Limited (GCL) is commissioned by the Highways Department (HyD) to undertake the design and construction of the Southern Connection Viaduct Section of the Tuen Mun – Chek Lap Kok Link Project (TM-CLK Link Project) while AECOM Asia Company Limited was appointed by HyD as the Supervising Officer. For implementation of the environmental monitoring and audit (EM&A) programme under the Contract, ERM-Hong Kong, Limited (ERM) has been appointed as the Environmental Team (ET). Ramboll Hong Kong Ltd. was employed by the HyD as the Independent Environmental Checker (IEC) and Environmental Project Office (ENPO) in accordance with *Environmental Permit No. EP-354/2009/A*. Further applications for variation of environmental permit (VEP), *EP-354/2009/B*, *EP-354/2009/C* and *EP-354/2009/D*, were granted on 28 January 2014, 10 December 2014 and 13 March 2015, respectively.

The southern landfall of TM-CLK Link lies alongside the Hong Kong - Zhuhai - Macao Bridge Hong Kong Boundary Crossing Facilities (HKBCF) where a reclamation area is constructed by *Contract No. HY/2010/02* under *Environmental Permit No. EP-353/2009/K* and *EP-354/2009/D*. Upon the agreement and confirmation between the Supervising Officer Representatives and Contractors of *HY/2010/02* and *HY/2012/07* in September 2015, part of the reclamation area for southern landfall under *EP-353/2009/K* and *EP-354/2009/D* was handed-over to *Contract No. HY/2012/07*. Another part of the southern landfall area under *EP-354/2009/D* was handed-over to *Contract No. HY/2012/07* after completion of reclamation works by *Contract No. HY/2010/02* in June 2016.

The construction phase of the Contract commenced on 31 October 2013 and will be tentatively completed by 2018. The impact monitoring of the EM&A programme, including air quality, noise, water quality and marine ecological monitoring as well as environmental site inspections, commenced on 31 October 2013.

This is the Fifty-sixth Monthly EM&A report presenting the EM&A works carried out during the period from 1 to 30 June 2018 for the Southern Connection Viaduct Section in accordance with the Updated EM&A Manual of the TM-CLK Link Project. As informed by the Contractor, major activities in the reporting period included:

Land-based Works

- Pier construction;
- Re-alignment of Cheung Tung Road;
- Road works along North Lantau Highway;
- Installation of pier head and deck segments;

- Asphalt paving;
- Construction of sign gantries, light poles and street furniture;
- Parapets and barriers installation; and
- Slope work of Viaducts A, B, C & D.

A summary of monitoring and audit activities conducted in the reporting period is listed below:

24-hour TSP Monitoring	5 sessions
1-hour TSP Monitoring	5 sessions
Water Quality Monitoring	11 sessions
Noise Monitoring	5 sessions
Impact Dolphin Monitoring	2 sessions
Joint Environmental Site Inspection	4 sessions

Breaches of Action and Limit Levels for Air Quality

No exceedance of Action and Limit Levels was recorded for construction air quality monitoring in the reporting month.

Breaches of Action and Limit Levels for Noise

Complaint regarding noise nuisance on 16 June 2018 is under investigation.

Breaches of Action and Limit Levels for Water Quality

Two (2) Action Level of Dissolved Oxygen (DO) exceedances and one (1) Action Level of Turbidity exceedance were recorded for water quality impact monitoring in the reporting month.

Impact Dolphin Monitoring

During this month of dolphin monitoring, no unacceptable impact from the construction activities of the TM-CLKL Southern Connection Viaduct Section on Indo-Pacific humpback dolphin *Sousa chinensis* (i.e. Chinese White Dolphin) was noticeable from general observations. Due to monthly variation in dolphin occurrence within the Study Area, it would be more appropriate to draw conclusion on whether any impacts on dolphins have been detected related to the construction activities of the TM-CLKL Southern Connection Viaduct Section in the quarterly EM&A reports, in which comparison on distribution, group size and encounter rates of dolphins between the quarterly impact monitoring period and baseline monitoring period will be made.

Daily marine mammal exclusion zone monitoring was undertaken during the period of marine works under this Contract. No sighting of the Chinese White Dolphin was recorded in June 2018 during the exclusion zone monitoring.

Environmental Complaints, Non-compliance & Summons

There were two (2) complaints received by 1823 regarding discharge of muddy water nearby Hong Kong Boundary Crossing Facilities (HKBCF) on 13 June 2018 and construction noise nuisance nearby the Kowloon-bound lane of the North Lantau Highway on 16 June 2018. Complaint on 16 June 2018 is under investigation.

No notification of summons or successful prosecution recorded in the reporting period.

Reporting Change

There was no reporting change in the reporting period.

Upcoming Works for the Next Reporting Period

Works to be undertaken in the next monitoring period of July 2018 include the following:

Land-based Works

- Pier construction;
- Re-alignment of Cheung Tung Road;
- Road works along North Lantau Highway;
- Installation of pier head and deck segments;
- Asphalt paving;
- Construction of sign gantries, light poles and street furniture;
- Parapets and barriers installation; and
- Slope work of Viaducts A, B, C & D.

Future Key Issues

Potential environmental impacts arising from the above upcoming construction activities in the next reporting month of July 2018 are mainly associated with dust, noise, marine water quality, marine ecology and waste management issues.

1.1

BACKGROUND

According to the findings of the Northwest New Territories (NWNT) Traffic and Infrastructure Review conducted by the Transport Department, Tuen Mun Road, Ting Kau Bridge, Lantau Link and North Lantau Highway would be operating beyond capacity after 2016. This forecast has been based on the estimated increase in cross boundary traffic, developments in the Northwest New Territories (NWNT), and possible developments in North Lantau, including the Airport developments, the Lantau Logistics Park (LLP) and the Hong Kong - Zhuhai - Macao Bridge (HZMB). In order to cope with the anticipated traffic demand, two new road sections between NWNT and North Lantau - Tuen Mun - Chek Lap Kok Link (TM-CLKL) and Tuen Mun Western Bypass (TMWB) are proposed.

An Environmental Impact Assessment (EIA) of TM-CLKL (the Project) was prepared in accordance with the EIA Study Brief (No. ESB-175/2007) and the *Technical Memorandum of the Environmental Impact Assessment Process (EIAO-TM)*. The EIA Report was submitted under the Environmental Impact Assessment Ordinance (EIAO) in August 2009. Subsequent to the approval of the EIA Report (EIAO Register Number AEIAR-146/2009), an Environmental Permit (EP-354/2009) for TM-CLKL was granted by the Director of Environmental Protection (DEP) on 4 November 2009, and EP variation (EP-354/2009/A) was issued on 8 December 2010.

Under *Contract No. HY/2012/07*, Gammon Construction Limited (GCL) is commissioned by the Highways Department (HyD) to undertake the design and construction of the Southern Connection Viaduct Section of TM-CLKL ("the Contract") while AECOM Asia Company Limited was appointed by HyD as the Supervising Officer. For implementation of the environmental monitoring and audit (EM&A) programme under the Contract, ERM-Hong Kong, Limited (ERM) has been appointed as the Environmental Team (ET). Ramboll Hong Kong Ltd. was employed by HyD as the Independent Environmental Checker (IEC) and Environmental Project Office (ENPO) in accordance with *Environmental Permit No. EP-354/2009/A*. Further applications for variation of environmental permit (VEP), *EP-354/2009/B*, *EP-354/2009/C* and *EP-354/2009/D*, were granted on 28 January 2014, 10 December 2014 and 13 March 2015, respectively.

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southern landfall area under *EP-354/2009/D* was handed-over to *Contract No. HY/2012/07* after completion of reclamation works by *Contract No. HY/2010/02* in June 2016.

The construction phase of the Contract commenced on 31 October 2013 and will be tentatively completed by 2018. The impact monitoring phase of the EM&A programme, including air quality, noise, water quality and marine ecological monitoring as well environmental site inspections, commenced on 31 October 2013.

The general layout plan of the Contract components is presented in *Figures 1.1 & 1.2a to l*.

1.2 SCOPE OF REPORT

This is the Fifty-sixth Monthly EM&A Report under the *Contract No. HY/2012/07 Tuen Mun – Chek Lap Kok Link – Southern Connection Viaduct Section*. This report presents a summary of the environmental monitoring and audit works in June 2018.

1.3 ORGANIZATION STRUCTURE

The organization structure of the Contract is shown in *Appendix A*. The key personnel contact names and contact details are summarized in *Table 1.1* below.

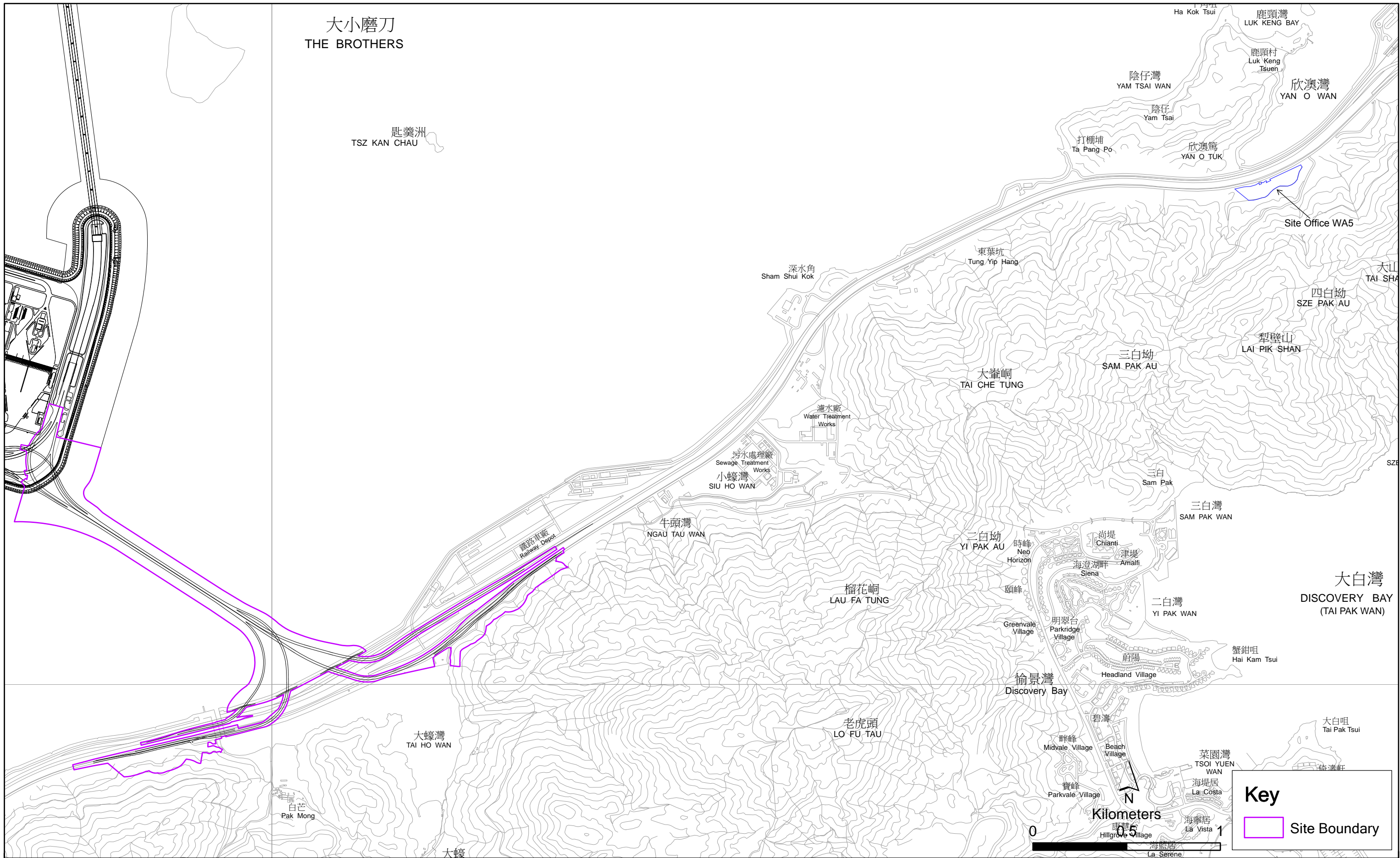
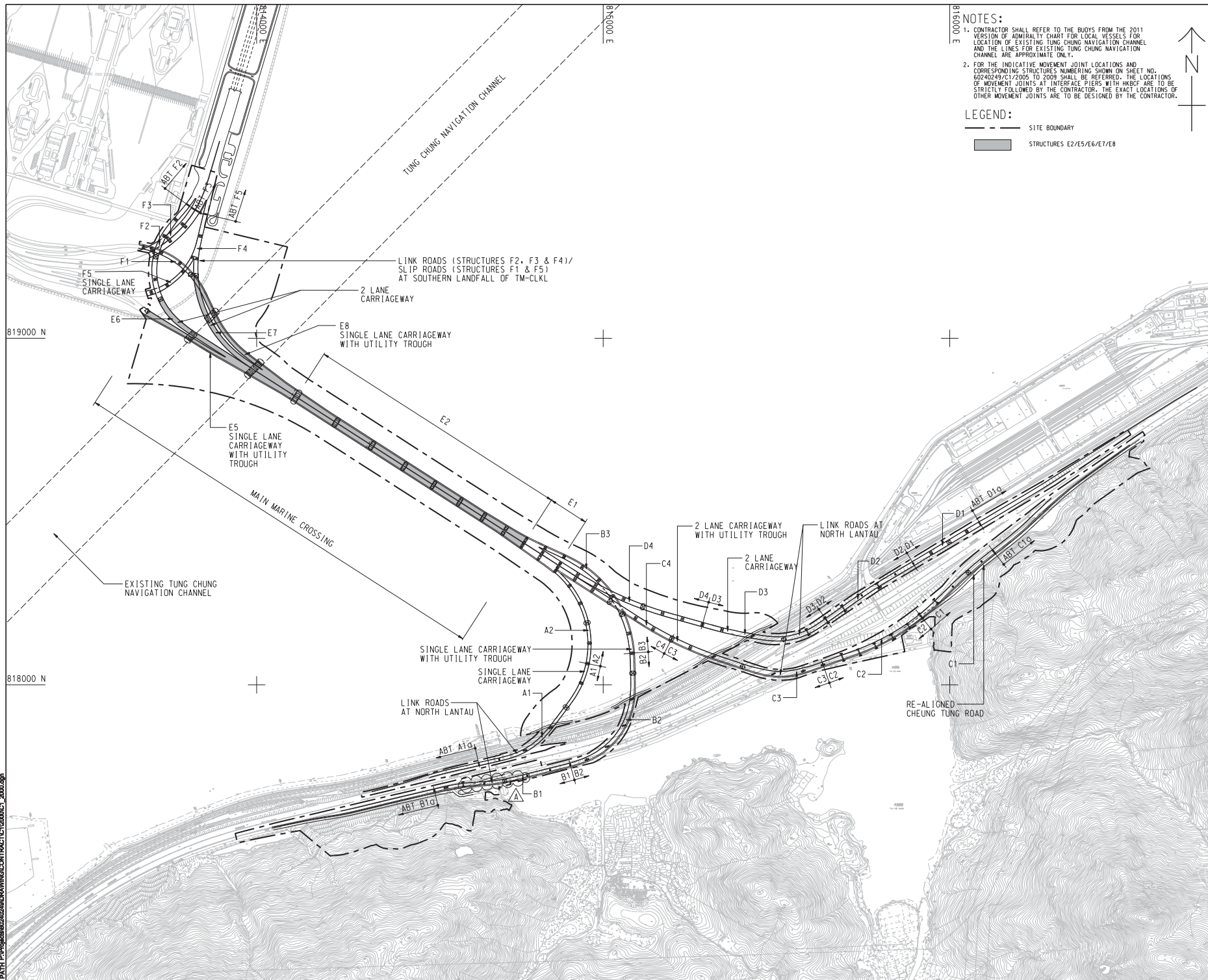


Figure 1.1

General Layout Plan of the Project

Environmental
Resources
Management





NOTES:
 1. CONTRACTOR SHALL REFER TO THE BUOYS FROM THE 2011 VERSION OF ADMIRALTY CHART FOR LOCAL VESSELS FOR LOCATION OF EXISTING TUNG CHUNG NAVIGATION CHANNEL AND THE LINES FOR EXISTING TUNG CHUNG NAVIGATION CHANNEL ARE APPROXIMATE ONLY.
 2. FOR THE INDICATIVE MOVEMENT JOINT LOCATIONS AND CORRESPONDING STRUCTURES NUMBERING SHOWN ON SHEET NO. 60240249/C1/2005 TO 2009 SHALL BE REFERRED. THE LOCATIONS OF MOVEMENT JOINTS AT INTERFACE PIERS WITH HKBCF ARE TO BE STRICTLY FOLLOWED BY THE CONTRACTOR. THE EXACT LOCATIONS OF OTHER MOVEMENT JOINTS ARE TO BE DESIGNED BY THE CONTRACTOR.

LEGEND:
 - - - - - SITE BOUNDARY
 [Grey Box] STRUCTURES E2/E5/E6/E7/E8

AECOM

PROJECT
 TUEN MUN - CHEK LAP KOK LINK

CONTRACT TITLE
 TUEN MUN - CHEK LAP KOK LINK - SOUTHERN CONNECTION VIADUCT SECTION

CLIENT
 路政署
HIGHWAYS DEPARTMENT
 港務局 橋樑工程處
 Hong Kong - Zhuhai - Hainan Bridge
 Hong Kong Project Management Office

CONSULTANT
 AECOM Asia Company Ltd.
 www.aecom.com

SUB-CONSULTANTS

Figure 1.2a

ISSUE/REVISION

NO.	DATE	DESCRIPTION	CHK.

STATUS

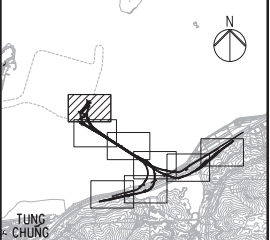
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KEY PLAN

PROJECT NO. 60240249	CONTRACT NO. HY/2012/07
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SHEET NUMBER 60240249/C1/2000A	

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KEY PLAN

NOTES
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- LEGEND
- SITE BOUNDARY
 - GF1 FAULT
 - EXISTING G.I.-STATIONS :
 - ⊕ BOREHOLE BY GIU DATA EXCLUDING VC
 - ⊕ BOREHOLE BY GCL CONTRACT HY/2012/04
 - ⊕ BOREHOLE BY GCL CONTRACT NL8/97
 - ⊕ BOREHOLE BY GCL CONTRACT HY/2009/23
 - ⊕ TRIAL PIT BY GCL CONTRACT HY/2012/04
 - SLOPE STRIPPING BY GCL CONTRACT HY/2012/04
 - PROPOSED G.I.-STATIONS :
 - ⊕ PBH01 PROPOSED BOREHOLE
 - ⊕ TP01 PROPOSED TRIAL PIT
 - ⊕ CH01 PROPOSED COREHOLE
 - SS01 SS02 PROPOSED SLOPE STRIPPING

MATCH LINE
 FOR CONTINUATION
 SEE DRG. J3518/P/OAP/04/01101



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C	SUBMISSION	RC	09/13				

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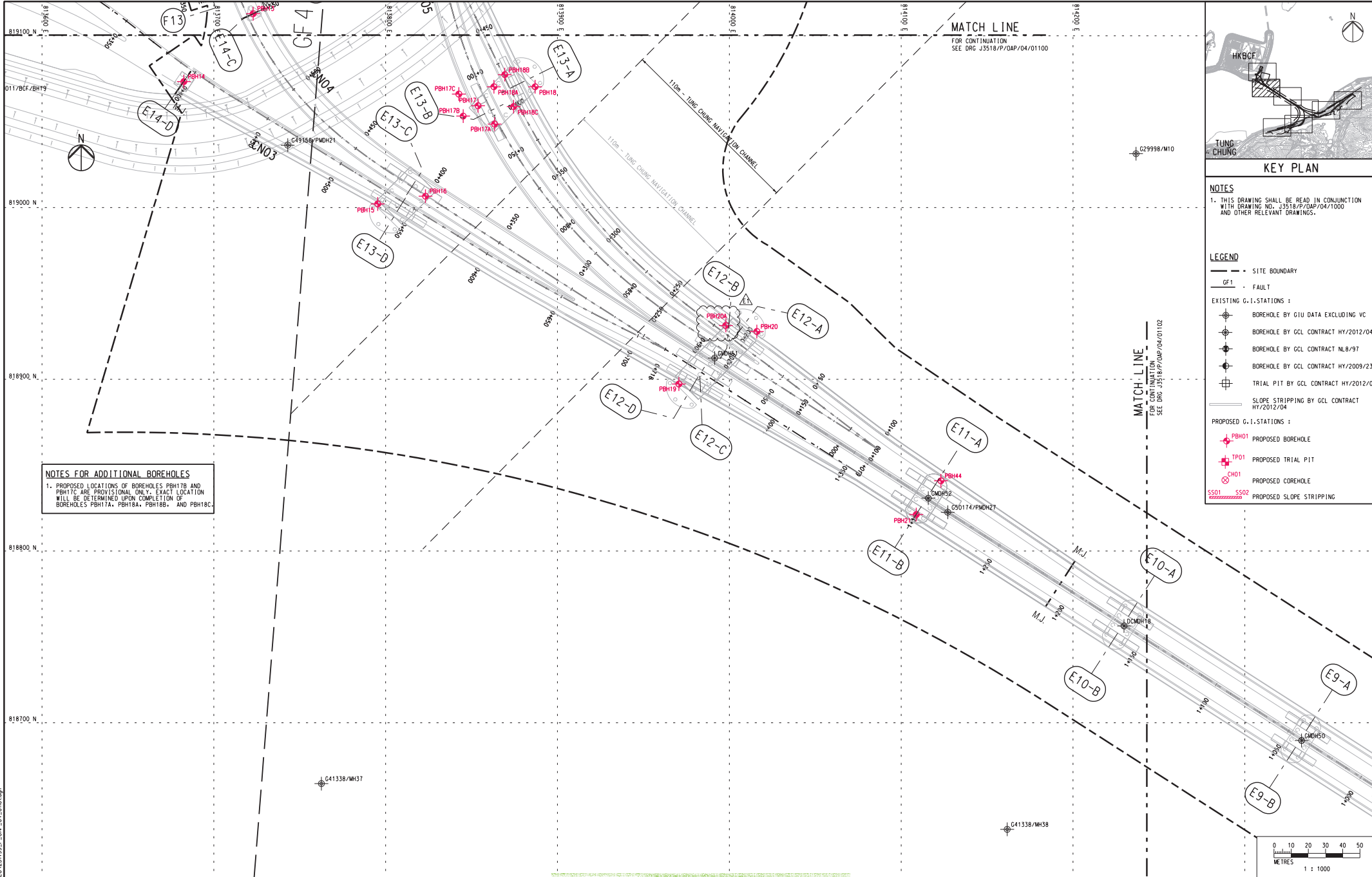
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Contract No. HY/2012/07
Tuen Mun - Chek Lap Kok Link
Southern Connection Viaduct Section

Originator
ARUP

Drawing title
Figure 1.2b

Drawing no. **J3518/P/OAP/04/01100** Rev. **C**

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NOTES FOR ADDITIONAL BOREHOLES
 1. PROPOSED LOCATIONS OF BOREHOLES PBH17B AND PBH17C ARE PROVISIONAL ONLY. EXACT LOCATION WILL BE DETERMINED UPON COMPLETION OF BOREHOLES PBH17A, PBH18A, PBH18B, AND PBH18C.

NOTES
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- LEGEND**
- SITE BOUNDARY
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 - ⊕ BOREHOLE BY GCL CONTRACT HY/2009/23
 - ⊕ TRIAL PIT BY GCL CONTRACT HY/2012/04
 - SLOPE STRIPPING BY GCL CONTRACT HY/2012/04
 - PROPOSED G.I. STATIONS:
 - ⊕ PBH01 PROPOSED BOREHOLE
 - ⊕ TP01 PROPOSED TRIAL PIT
 - ⊕ CH01 PROPOSED COREHOLE
 - SS01 SS02 PROPOSED SLOPE STRIPPING

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D	SUBMISSION	RC	10/13				
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 香港運輸及房屋局
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 Hong Kong Project Management Office

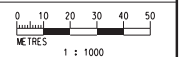
Supervising Officer: **AECOM**
 Contractor: **GAMMON**

Project Title:
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 Southern Connection Viaduct Section

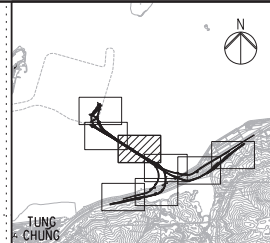
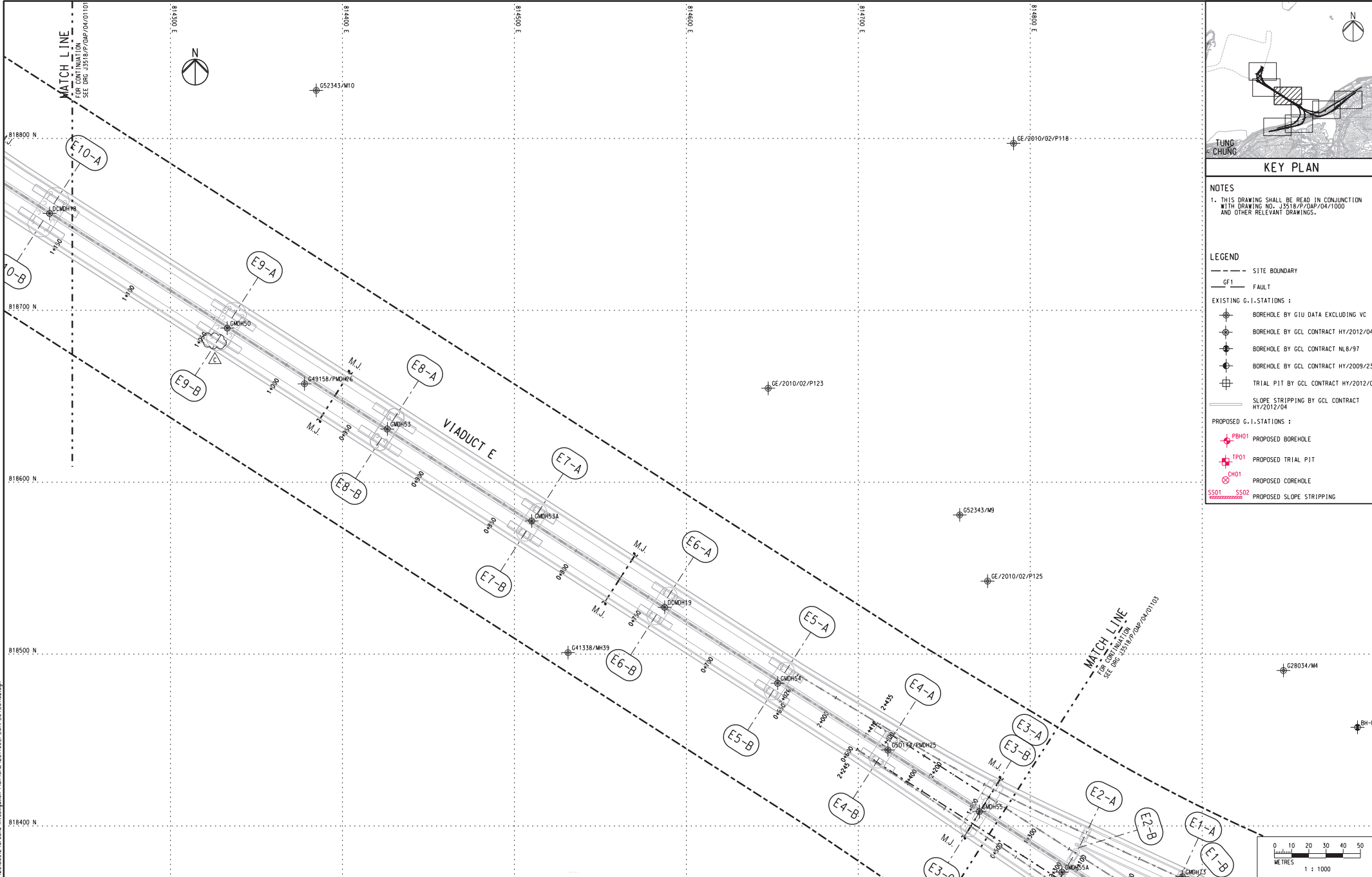
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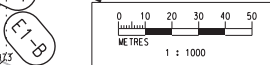
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 - SS01 SS02 PROPOSED SLOPE STRIPPING



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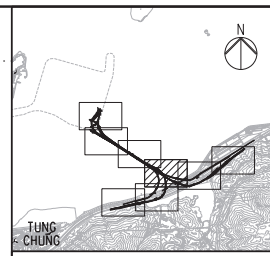
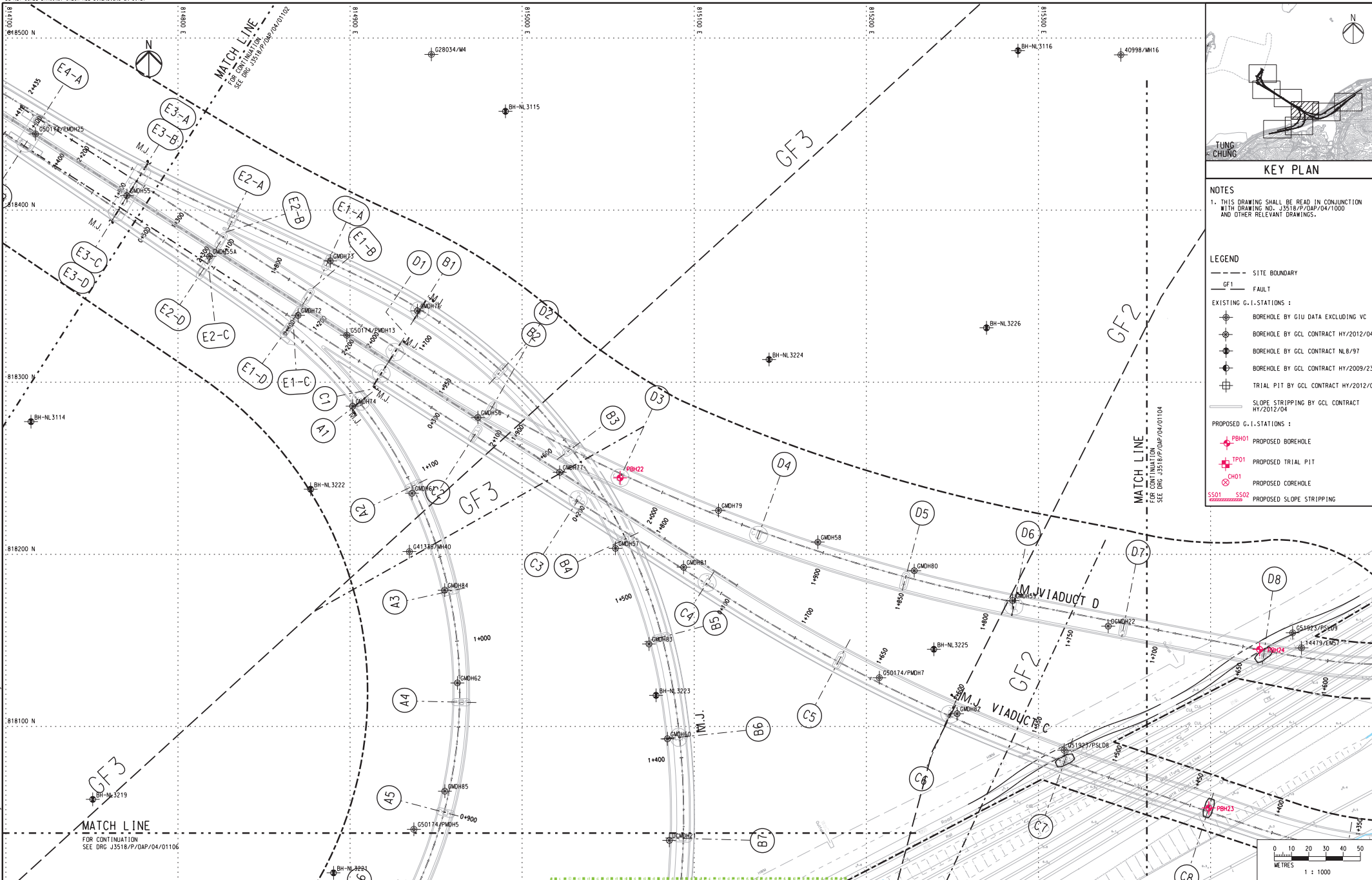
Client

 Supervising Officer

Contract No. HY/2012/07
 Tuen Mun - Chek Lap Kok Link
 Southern Connection Viaduct Section
 Contractor

Project Title
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 Tuen Mun - Chek Lap Kok Link
 Southern Connection Viaduct Section
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 - ⊕ TP01 PROPOSED TRIAL PIT
 - ⊕ CH01 PROPOSED COREHOLE
 - SS01 SS02 PROPOSED SLOPE STRIPPING



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Checked	Approved
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Client
 路政署
 HIGHWAYS DEPARTMENT
 港珠澳大桥香港工程管理局
 Hong Kong - Zhuhai - Macao Bridge
 Hong Kong Project Management Office

Supervising Officer
 AECOM

Contract No. HY/2012/07
 Tuen Mun - Chek Lap Kok Link
 Southern Connection Viaduct Section

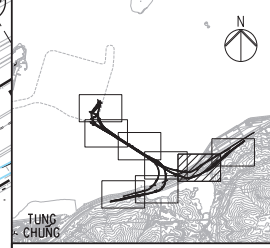
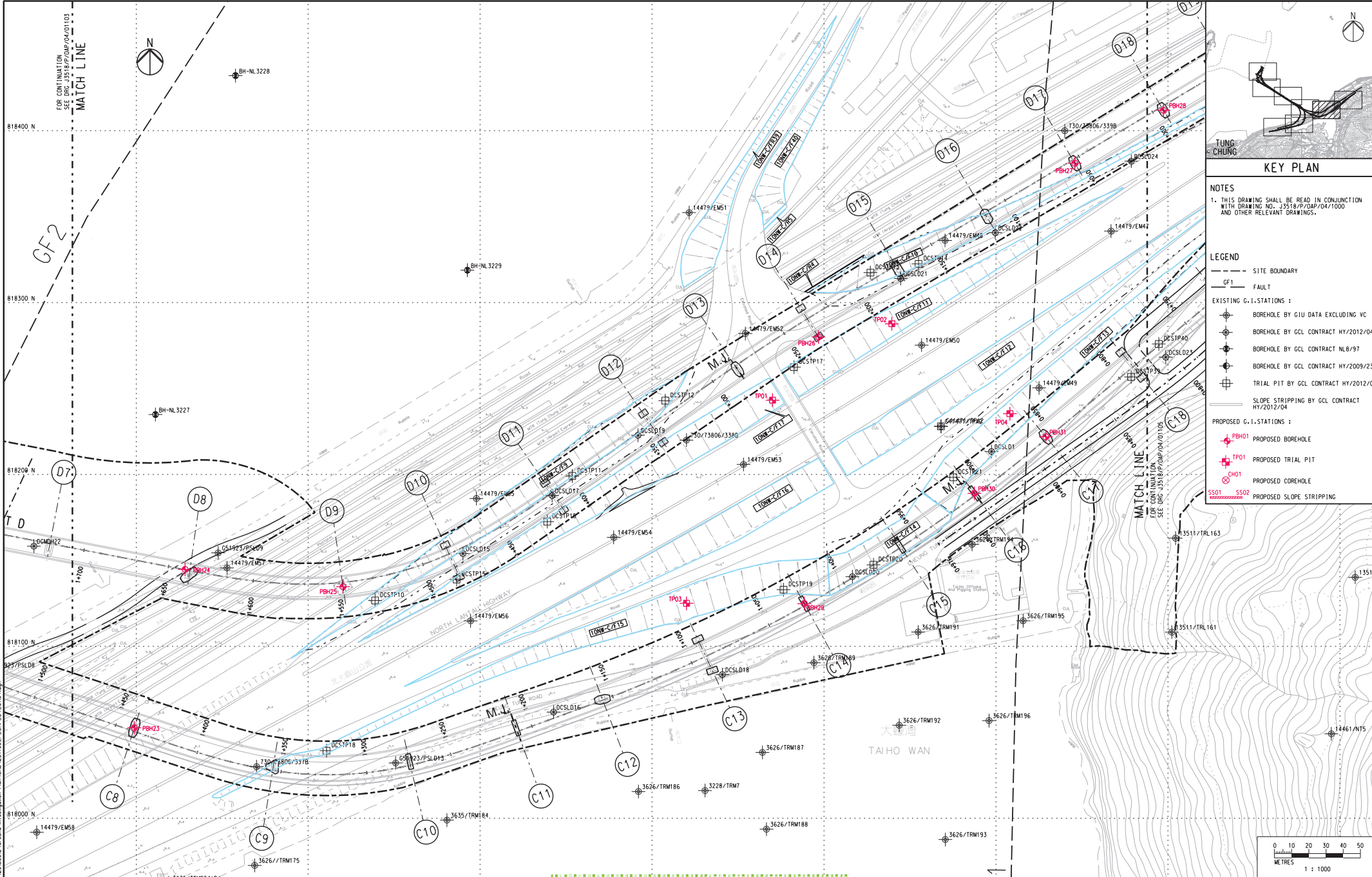
Contractor
 Gammon

Originator
 ARUP

Drawing title
Figure 1.2e

Drawing no. J3518/P/OAP/04/01103 Rev. c

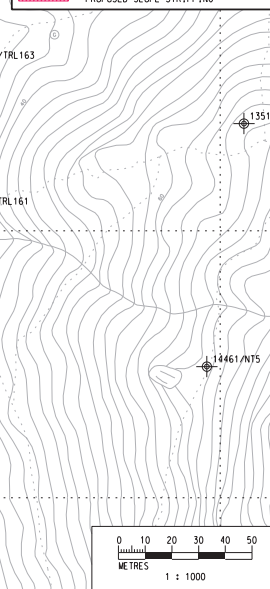
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KEY PLAN

NOTES
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- LEGEND**
- - - SITE BOUNDARY
 - - - FAULT
 - - - GF1
 - EXISTING G.I. STATIONS :
 - ⊕ BOREHOLE BY GIU DATA EXCLUDING VC
 - ⊕ BOREHOLE BY GCL CONTRACT HY/2012/04
 - ⊕ BOREHOLE BY GCL CONTRACT NL6/97
 - ⊕ BOREHOLE BY GCL CONTRACT HY/2009/23
 - ⊕ TRIAL PIT BY GCL CONTRACT HY/2012/04
 - PROPOSED G.I. STATIONS :
 - ⊕ PBH01 PROPOSED BOREHOLE
 - ⊕ TP01 PROPOSED TRIAL PIT
 - ⊕ CH01 PROPOSED COREHOLE
 - SS01 SS02 PROPOSED SLOPE STRIPPING



Printed by : 12/09/2013
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B	SUBMISSION	RC	07/13					Checked	Approved
C	SUBMISSION	RC	09/13					DS	DOP
								Scale	1:1000 @ A1 / 1:2000 @ A3

Client

Supervising Officer

Project Title

Contract No. HY/2012/07
 Tuen Mun - Chek Lap Kok Link
 Southern Connection Viaduct Section

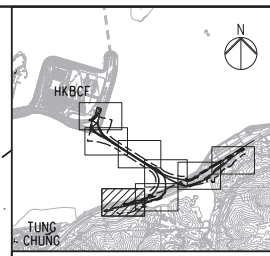
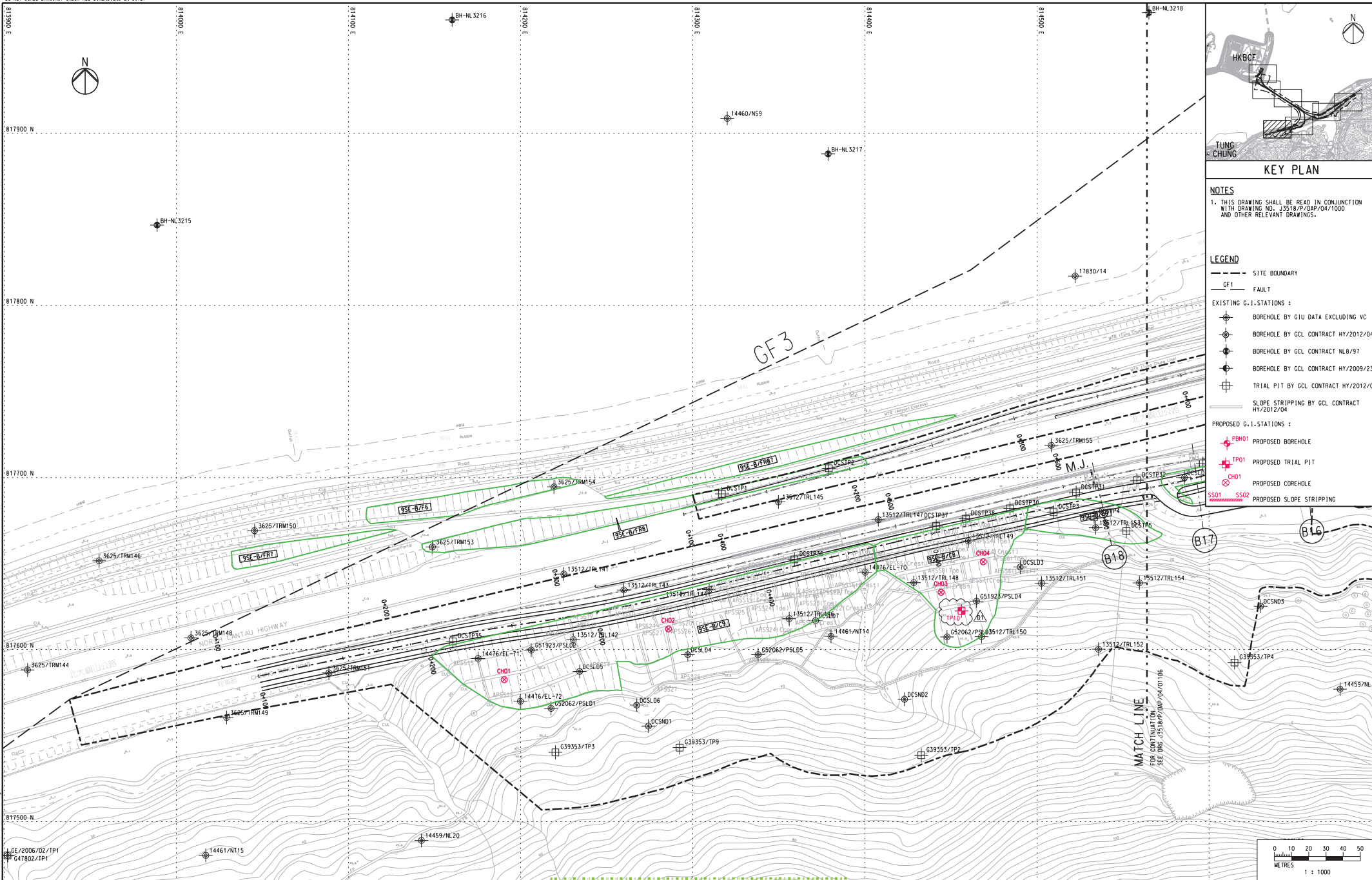
Contractor

Drawing title

Figure 1.2f

Drawing no. J3518/P/OAP/04/01104 Rev. C

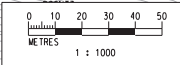
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KEY PLAN

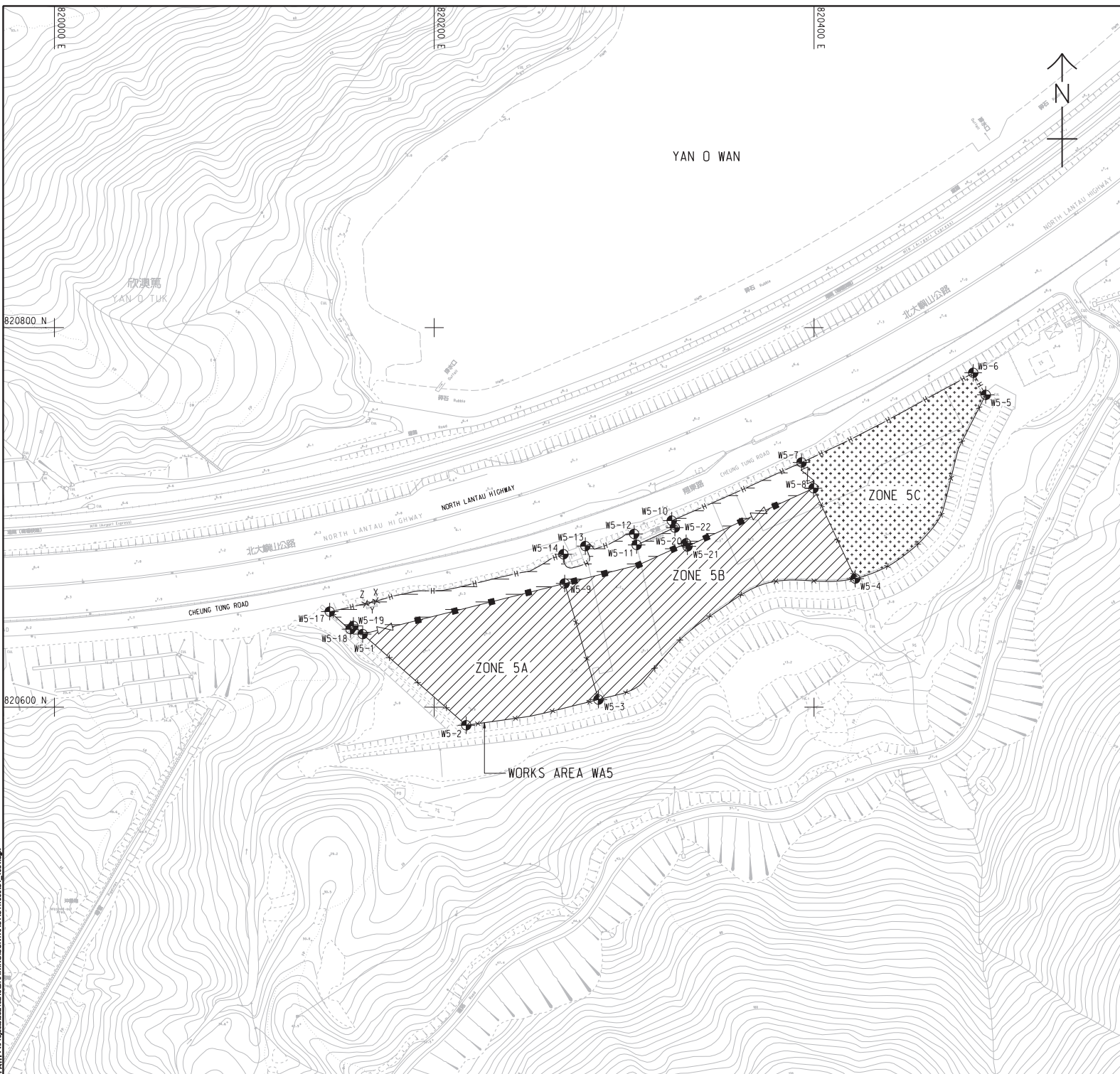
NOTES
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- LEGEND**
- SITE BOUNDARY
 - GF1 FAULT
 - EXISTING G.I. STATIONS:
 - ⊕ BOREHOLE BY GIU DATA EXCLUDING VC
 - ⊕ BOREHOLE BY GCL CONTRACT HY/2012/04
 - ⊕ BOREHOLE BY GCL CONTRACT NL6/97
 - ⊕ BOREHOLE BY GCL CONTRACT HY/2009/23
 - ⊕ TRIAL PIT BY GCL CONTRACT HY/2012/04
 - SLOPE STRIPPING BY GCL CONTRACT HY/2012/04
 - PROPOSED G.I. STATIONS:
 - ⊕ PBH01 PROPOSED BOREHOLE
 - ⊕ TP01 PROPOSED TRIAL PIT
 - ⊕ CH01 PROPOSED COREHOLE
 - SS01 SS02 PROPOSED SLOPE STRIPPING



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NOTES:

- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE WORKS AREA KEY PLAN IN SHEET NO. 60240249/C1/1000.
- THE SETTING OUT INFORMATION AND WORKS AREA CONDITIONS SHOWN IN THIS DRAWING ARE FOR REFERENCE ONLY. THE WORKS AREA BOUNDARY SHALL BE IN ACCORDANCE WITH THE ENGINEERING CONDITIONS FOR TEMPORARY GOVERNMENT LAND ALLOCATION NO. T15 619. IN CASE OF DISCREPANCY BETWEEN THE BOUNDARY SHOWN ON THIS DRAWING AND THE BOUNDARY INDICATED ON THE ENGINEERING CONDITIONS, THE LATTER SHALL PREVAIL.
- DEMARCATION OF THE WORKS AREA SHALL BE DETERMINED ON SITE.
- REFER TO HIGHWAYS DEPARTMENT STANDARD DRAWING NOS. H6110 AND H6111 FOR DETAILS OF HOARDING.
- REFER TO HIGHWAYS DEPARTMENT STANDARD DRAWING NOS. H6121 AND H6122 FOR DETAILS OF CHAIN LINK FENCE.
- REFER TO HIGHWAYS DEPARTMENT STANDARD DRAWING NO. H6121 FOR DETAILS OF GATE.
- CHAIN LINK FENCE SHALL BE ERECTED ALONG THE WORKS AREA BOUNDARY. THE ALIGNMENT AND EXTENT OF CHAIN LINK FENCE SHOWN ARE INDICATIVE ONLY AND SHALL BE CONFIRMED BY THE SUPERVISING OFFICER.
- THE LOCATION AND WIDTH OF GATE SHOWN ARE INDICATIVE ONLY AND SHALL BE CONFIRMED BY THE SUPERVISING OFFICER.
- NO STRUCTURES SHALL BE ERECTED OTHER THAN SUCH STRUCTURES NOT EXCEEDING TWO STOREYS IN HEIGHT, WHICH ARE APPROVED BY THE DISTRICT LANDS OFFICER AS BEING APPROPRIATE FOR THE USE OF THE SITE AS A WORKS AREA.
- THE TENTATIVE OCCUPATION PERIOD SHALL BE REFERRED TO EMPLOYER'S REQUIREMENTS PART 2 AND PART 14 SECTION 1 CLAUSE 1.45A.
- THE WORKS AREAS SHOWN ON THIS DRAWING ARE TO BE SHARE-USED AMONG THE CONTRACTS OF TM-CLK RELATED CONTRACTS. THE AREAS HATCHED WITH ARE TENTATIVELY ALLOCATED FOR THE USE OF THIS CONTRACT.
- THE COMMON AREA SHALL BE CONCRETE PAVED BY THE CONTRACTOR.

LEGEND:

- WORKS AREA UNDER THIS CONTRACT
- COMMON AREA (MAINTAINED UNDER THIS CONTRACT) TO BE SHARE-USED WITH OTHER CONTRACTS
- WORKS AREA FOR THIS CONTRACT TO BE EARLY HANDED OVER BY THE CONTRACTOR.
- HOARDING AND GATE (TO BE ERECTED AND MAINTAINED UNDER THIS CONTRACT)
- CHAIN LINK FENCE AND GATE (TO BE ERECTED AND MAINTAINED BY OTHERS)
- CHAIN LINK FENCE AND GATE (TO BE ERECTED AND MAINTAINED UNDER THIS CONTRACT)

SETTING OUT COORDINATES OF WORKS AREA W5

POINT	COORDINATES	
	EASTING	NORTHING
W5-1	820162.308	820638.492
W5-2	820216.839	820590.455
W5-3	820286.496	820603.985
W5-4	820421.757	820667.742
W5-5	820490.425	820764.554
W5-6	820483.839	820776.180
W5-7	820393.451	820728.958
W5-8	820399.746	820715.343
W5-9	820268.674	820665.173
W5-10	820325.075	820698.276
W5-11	820306.587	820685.458
W5-12	820305.269	820691.287
W5-13	820279.580	820684.863
W5-14	820268.027	820680.572
X	820169.407	820655.859
Y	820166.601	820655.172
Z	820163.794	820654.484
W5-17	820144.957	820650.334
W5-18	820155.899	820641.093
W5-19	820157.432	820642.788
W5-20	820332.642	820686.314
W5-21	820333.350	820684.738
W5-22	820326.723	820694.608

AECOM

PROJECT NO.
60240249

TUEN MUN - CHEK LAP KOK LINK

CONTRACT TITLE
TUEN MUN - CHEK LAP KOK LINK - SOUTHERN CONNECTION VIADUCT SECTION

CLIENT
路政署
HIGHWAYS DEPARTMENT
港務大樓香港工程師學會
Hong Kong - Zhuhai - Hainan Bridge
Hong Kong Project Management Office

CONSULTANT
AECOM Asia Company Ltd.
www.aecom.com

SUB-CONSULTANTS
AECOM

ISSUE/REVISION

NO.	DATE	DESCRIPTION	CHK.

STATUS

SCALE
A1:1000

DIMENSION UNIT
METRES

KEY PLAN

Figure 1.2h

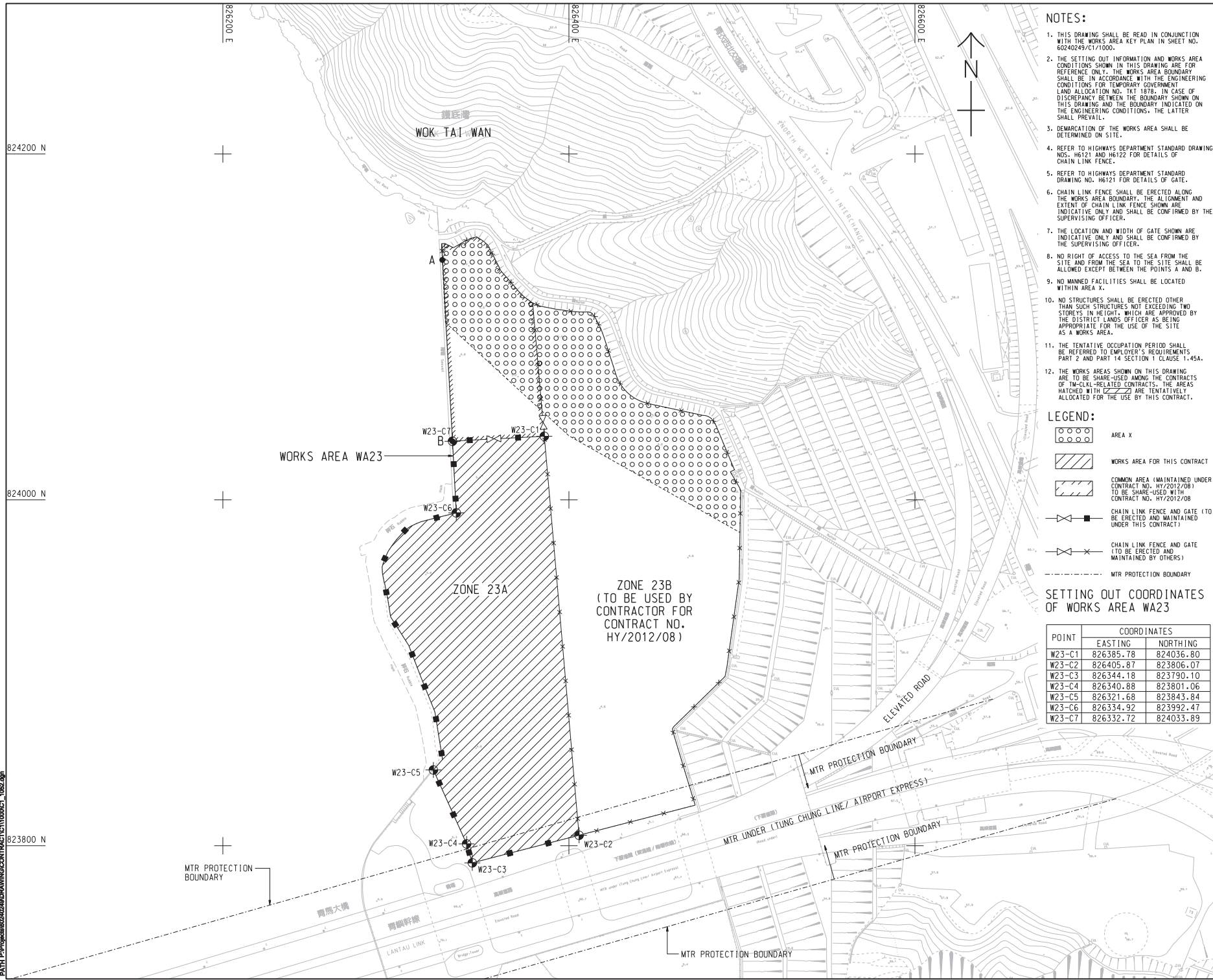
PROJECT NO.
60240249

CONTRACT NO.
HY/2012/07

SHEET TITLE
WORKS AREA AND HOARDING PLAN

SHEET NUMBER
60240249/C1/1051

SHEET 1 OF 2



- NOTES:**
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE WORKS AREA KEY PLAN IN SHEET NO. 60240249/CT1/000.
 - THE SETTING OUT INFORMATION AND WORKS AREA CONDITIONS SHOWN IN THIS DRAWING ARE FOR REFERENCE ONLY. THE WORKS AREA BOUNDARY SHALL BE IN ACCORDANCE WITH THE ENGINEERING CONDITIONS FOR TEMPORARY GOVERNMENT LAND ALLOCATION NO. TKT 1879. IN CASE OF DISCREPANCY BETWEEN THE BOUNDARY SHOWN ON THIS DRAWING AND THE BOUNDARY INDICATED ON THE ENGINEERING CONDITIONS, THE LATTER SHALL PREVAIL.
 - DEMARICATION OF THE WORKS AREA SHALL BE DETERMINED ON SITE.
 - REFER TO HIGHWAYS DEPARTMENT STANDARD DRAWING NOS. H6121 AND H6122 FOR DETAILS OF CHAIN LINK FENCE.
 - REFER TO HIGHWAYS DEPARTMENT STANDARD DRAWING NO. H6121 FOR DETAILS OF GATE.
 - CHAIN LINK FENCE SHALL BE ERECTED ALONG THE WORKS AREA BOUNDARY. THE ALIGNMENT AND EXTENT OF CHAIN LINK FENCE SHOWN ARE INDICATIVE ONLY AND SHALL BE CONFIRMED BY THE SUPERVISING OFFICER.
 - THE LOCATION AND WIDTH OF GATE SHOWN ARE INDICATIVE ONLY AND SHALL BE CONFIRMED BY THE SUPERVISING OFFICER.
 - NO RIGHT OF ACCESS TO THE SEA FROM THE SITE AND FROM THE SEA TO THE SITE SHALL BE ALLOWED EXCEPT BETWEEN THE POINTS A AND B.
 - NO MANNED FACILITIES SHALL BE LOCATED WITHIN AREA X.
 - NO STRUCTURES SHALL BE ERECTED OTHER THAN SUCH STRUCTURES NOT EXCEEDING TWO STOREYS IN HEIGHT, WHICH ARE APPROVED BY THE DISTRICT LANDS OFFICER AS BEING APPROPRIATE FOR THE USE OF THE SITE AS A WORKS AREA.
 - THE TENTATIVE OCCUPATION PERIOD SHALL BE REFERRED TO EMPLOYER'S REQUIREMENTS PART 2 AND PART 14 SECTION 1 CLAUSE 1.45A.
 - THE WORKS AREAS SHOWN ON THIS DRAWING ARE TO BE SHARED AMONG THE CONTRACTS OF TM-CLKL-RELATED CONTRACTS. THE AREAS HATCHED WITH [diagonal lines] ARE TENTATIVELY ALLOCATED FOR THE USE BY THIS CONTRACT.

- LEGEND:**
- AREA X
 - WORKS AREA FOR THIS CONTRACT
 - COMMON AREA (MAINTAINED UNDER CONTRACT NO. HY/2012/08) TO BE SHARED WITH CONTRACT NO. HY/2012/08
 - CHAIN LINK FENCE AND GATE (TO BE ERECTED AND MAINTAINED UNDER THIS CONTRACT)
 - CHAIN LINK FENCE AND GATE (TO BE ERECTED AND MAINTAINED BY OTHERS)
 - MTR PROTECTION BOUNDARY

SETTING OUT COORDINATES OF WORKS AREA WA23

POINT	COORDINATES	
	EASTING	NORTHING
W23-C1	826385.78	824036.80
W23-C2	826405.87	823806.07
W23-C3	826344.18	823790.10
W23-C4	826340.88	823801.06
W23-C5	826321.68	823843.84
W23-C6	826334.92	823992.47
W23-C7	826332.72	824033.89

AECOM

PROJECT NO.
60240249

TUEN MUN - CHEK LAP KOK LINK

CONTRACT TITLE
TUEN MUN - CHEK LAP KOK LINK - SOUTHERN CONNECTION VIADUCT SECTION

CLIENT
路政署 HIGHWAYS DEPARTMENT
港務局 港務工程管理有限公司
Hong Kong - Zhuhai - Hainan Bridge
Hong Kong Project Management Office

CONSULTANT
AECOM Asia Company Ltd.
www.aecom.com

SUB-CONSULTANTS
P&L CONSULTANTS

ISSUE/REVISION

NO.	DATE	DESCRIPTION	CHK.
1	OCT. 12	TENDER DRAWING	CWN

STATUS

SCALE: A1:1000 DIMENSION UNIT: METRES

KEY PLAN

Figure 1.2i

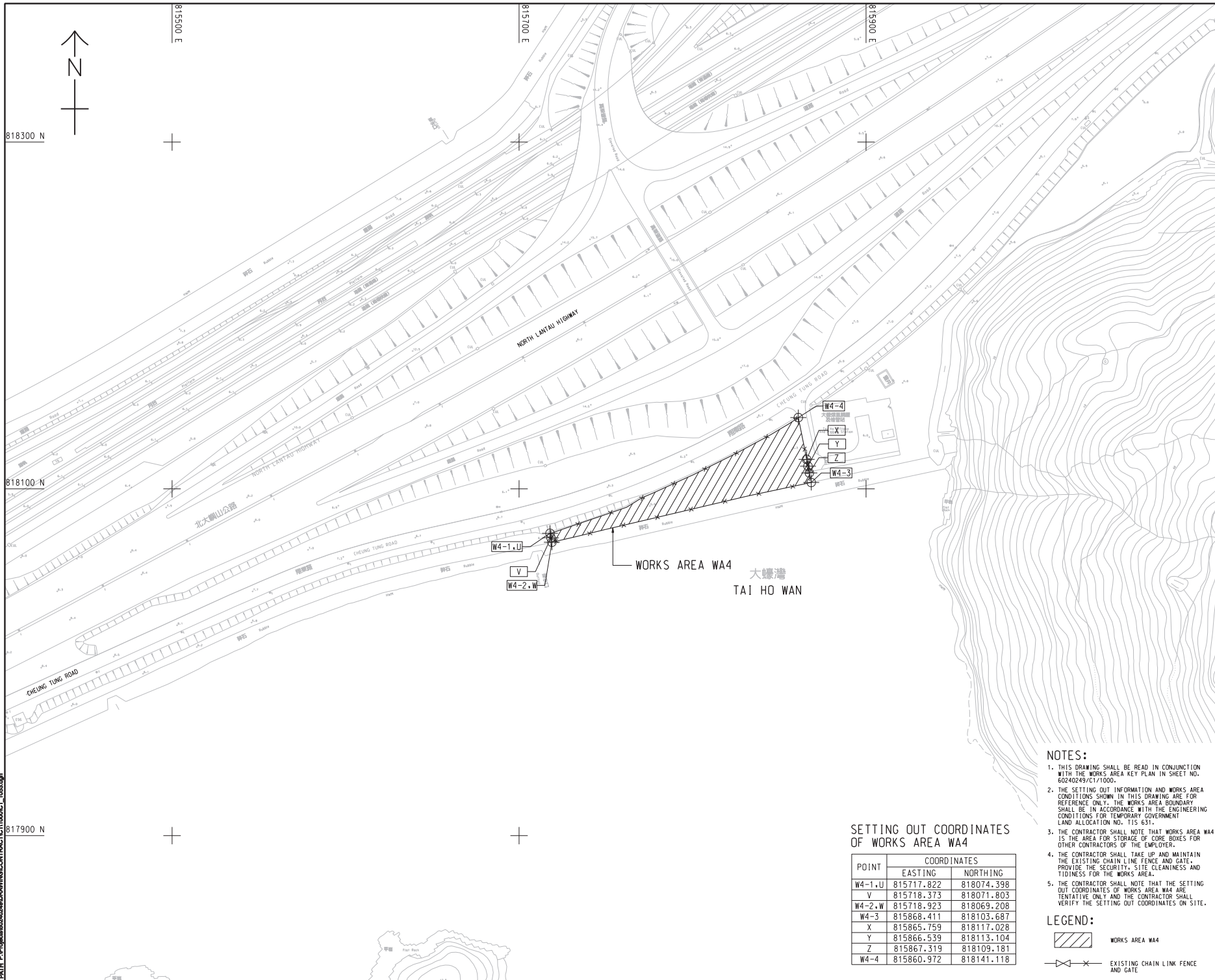
PROJECT NO. 60240249 **CONTRACT NO.** HY/2012/07

SHEET TITLE
WORKS AREA AND HOARDING PLAN

SHEET NUMBER 60240249/CT1/052

SHEET 2 OF 2

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WORKS AREA WA4
 大螺灣
 TAI HO WAN

SETTING OUT COORDINATES OF WORKS AREA WA4

POINT	COORDINATES	
	EASTING	NORTHING
W4-1,U	815717.822	818074.398
V	815718.373	818071.803
W4-2,W	815718.923	818069.208
W4-3	815868.411	818103.687
X	815865.759	818117.028
Y	815866.539	818113.104
Z	815867.319	818109.181
W4-4	815860.972	818141.118

- NOTES:**
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE WORKS AREA KEY PLAN IN SHEET NO. 60240249/C1/100.
 - THE SETTING OUT INFORMATION AND WORKS AREA CONDITIONS SHOWN IN THIS DRAWING ARE FOR REFERENCE ONLY. THE WORKS AREA BOUNDARY SHALL BE IN ACCORDANCE WITH THE ENGINEERING CONDITIONS FOR TEMPORARY GOVERNMENT LAND ALLOCATION NO. T15 631.
 - THE CONTRACTOR SHALL NOTE THAT WORKS AREA WA4 IS THE AREA FOR STORAGE OF CORE BOXES FOR OTHER CONTRACTORS OF THE EMPLOYER.
 - THE CONTRACTOR SHALL TAKE UP AND MAINTAIN THE EXISTING CHAIN LINK FENCE AND GATE. PROVIDE THE SECURITY, SITE CLEANLINESS AND TIDINESS FOR THE WORKS AREA.
 - THE CONTRACTOR SHALL NOTE THAT THE SETTING OUT COORDINATES OF WORKS AREA WA4 ARE TENTATIVE ONLY AND THE CONTRACTOR SHALL VERIFY THE SETTING OUT COORDINATES ON SITE.

LEGEND:

WORKS AREA WA4

EXISTING CHAIN LINK FENCE AND GATE

AECOM

PROJECT
 TUEN MUN - CHEK LAP KOK LINK

CONTRACT TITLE
 TUEN MUN - CHEK LAP KOK LINK - SOUTHERN CONNECTION VIADUCT SECTION

CLIENT
 路政署 DEPARTMENT OF HIGHWAYS
 港務局 港務工程管理局
 Hong Kong + Zhuhai + Hainan Bridge
 Hong Kong Project Management Office

CONSULTANT
 AECOM Asia Company Ltd.
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SUB-CONSULTANTS

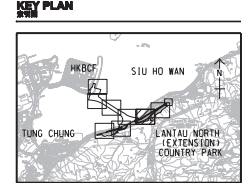
Figure 1.2j

ISSUE/REVISION

NO.	DATE	DESCRIPTION	CHK.
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SCALE
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DIMENSION UNIT
 METRES



PROJECT NO.
 60240249

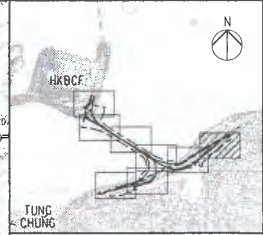
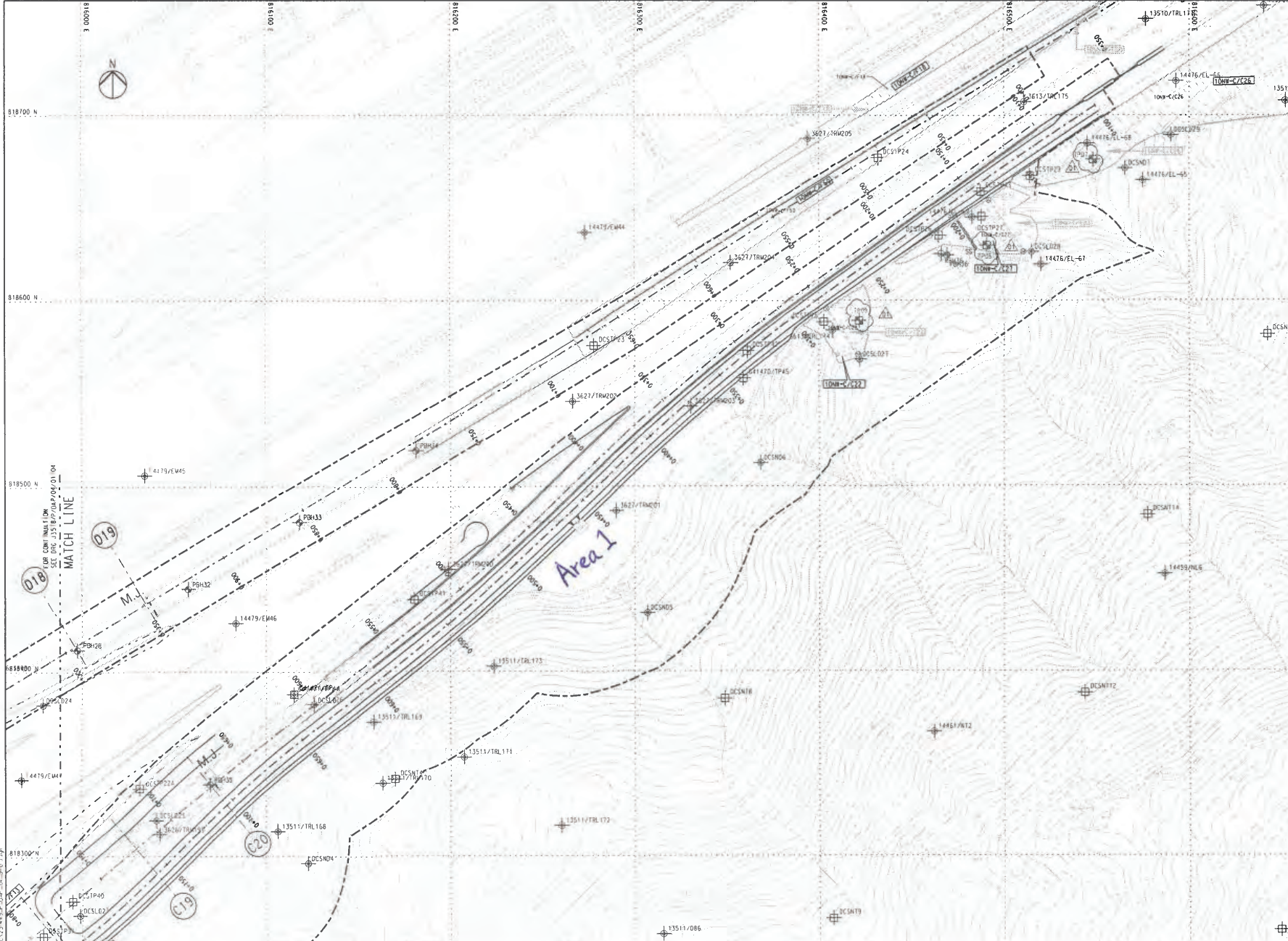
CONTRACT NO.
 HY/2012/07

SHEET TITLE
 WORKS AREA WA4

SHEET NUMBER
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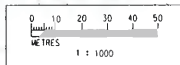
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- - - SITE BOUNDARY
 - GF1 FAULT
- EXISTING G.I. STATIONS :**
- BOREHOLE BY GIU DATA EXCLUDING VC
 - BOREHOLE BY GCL CONTRACT HY/2012/04
 - BOREHOLE BY GCL CONTRACT N6.8/97
 - BOREHOLE BY GCL CONTRACT HY/2009/23
 - TRIAL PIT BY GCL CONTRACT HY/2012/04
 - SLOPE STRIPPING BY GCL CONTRACT HY/2012/04
- PROPOSED G.I. STATIONS :**
- PROPOSED BOREHOLE
 - PROPOSED TRIAL PIT
 - PROPOSED COREHOLE
 - PROPOSED SLOPE STRIPPING



Rev	Description	By	Date	Rev	Description	By	Date
1	FOR CONSTRUCTION	RL	31/7/13				
2	FOR CONSTRUCTION	RL	20/7/13				
3	FOR CONSTRUCTION	RL	29/7/13				
4	FOR INTERNAL REVIEW	RL	19/7/12				

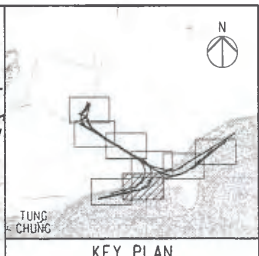
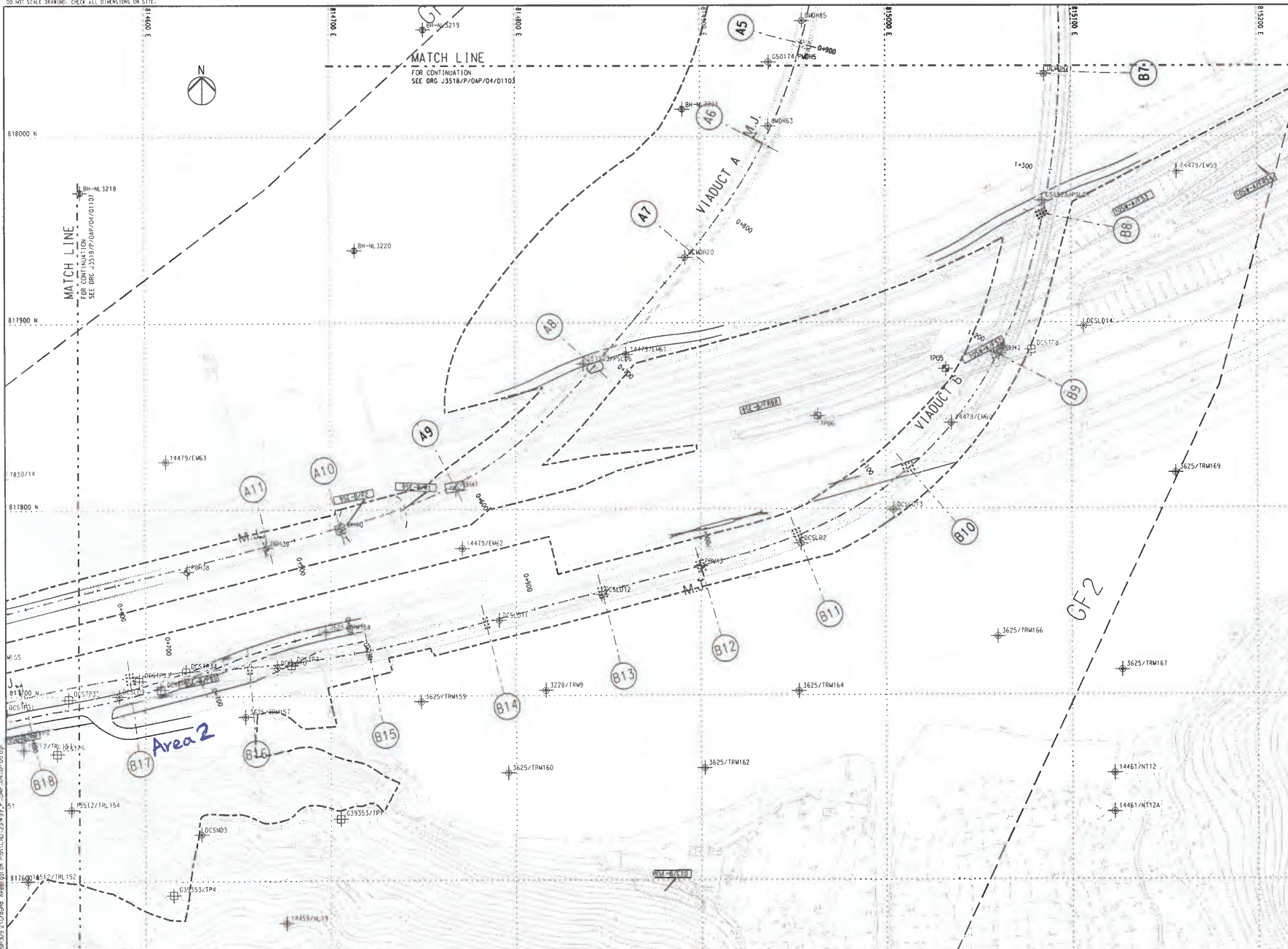
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Supervising Officer	AECOM	Contractor	Gammon
Scale	1:1000 @ A1 / 1:2000 @ A3	Originator	ARUP

Drawing title
Figure 1.2k

Drawing no. J3518/P/OAP/04/01105 Rev. D1

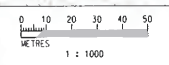
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 - ⊕ BOREHOLE BY GCL CONTRACT NL8/97
 - ⊕ BOREHOLE BY GCL CONTRACT HY/2009/23
 - ⊕ TRIAL PIT BY GCL CONTRACT HY/2012/04
 - SLOPE STRIPPING BY GCL CONTRACT HY/2012/04
 - PROPOSED G.I. STATIONS :
 - ⊕ PROPOSED BOREHOLE
 - ⊕ PROPOSED TRIAL PIT
 - ⊕ E-401 PROPOSED COREHOLE
 - ⊕ PROPOSED SLOPE STRIPPING



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 Plot Time: 11:15:58 AM

Rev	Description	By	Date	Rev	Description	By	Date
1	COMPLETION	RL	07/13				
2	COMPLETION	RL	07/13				
3	COMPLETION	RL	07/13				

Drawn	Date	Client
RL	07/13	路政署 HIGHWAYS DEPARTMENT
Checked	Approved	港珠澳大橋香港工程管理局 Hong Kong - Zhuhai - Macao Bridge Hong Kong Project Management Office
DS	DOP	
Scale	1:1000 @ A1 / 1:2000 @ A3	

 ARUP	 Gammon	Project Title Contract No. HY/2012/07 Tuen Mun - Chek Lap Kok Link Southern Connection Viaduct Section
		Originator
Supervising Officer AECOM	Contractor Gammon	Drawing Title Figure 1.2I

Drawing no. J3518/P/OAP/04/1106	Rev c
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Table 1.1 **Contact Information of Key Personnel**

Party	Position	Name	Telephone	Fax
HyD (Highways Department)	Project Coordinator	Stanley Chan	2762 3406	3188 6614
	Senior Engineer	Steven Shum	2762 4133	3188 6614
SOR (AECOM Asia Company Limited)	Chief Resident Engineer	Daniel Ip	3553 3800	2492 2057
	Resident Engineer	Kingman Chan	3691 3950	3691 2899
ENPO / IEC (Ramboll Hong Kong Ltd.)	ENPO Leader	Y.H. Hui	3465 2850	3465 2899
	IEC	Dr. F.C. Tsang	3465 2851	3465 2899
Contractor (Gammon Construction Limited)	Environmental Officer	Roy Leung	3520 0387	3520 0486
	24-hour Complaint Hotline		9738 4332	
ET (ERM-HK)	ET Leader	Jovy Tam	2271 3113	2723 5660

1.4 **SUMMARY OF CONSTRUCTION WORKS**

The construction phase of the Contract commenced on 31 October 2013. The three-month rolling construction programme is shown in Appendix B.

As informed by the Contractor, details of the major works carried out in this reporting month are listed below:

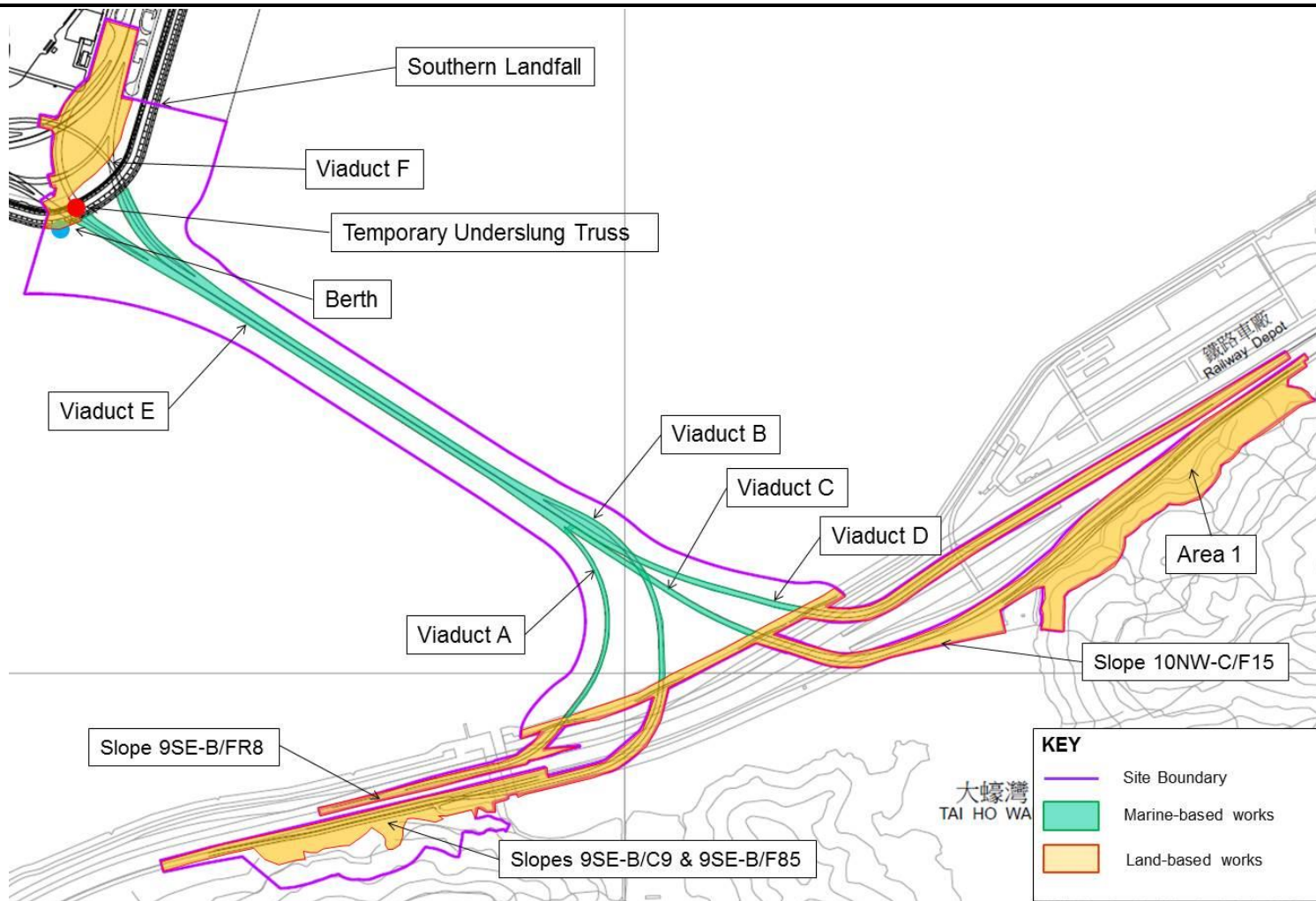
Land-based Works

- Pier construction;
- Re-alignment of Cheung Tung Road;
- Road works along North Lantau Highway;
- Installation of pier head and deck segments;
- Asphalt paving;
- Construction of sign gantries, light poles and street furniture;
- Parapets and barriers installation; and
- Slope work of Viaducts A, B, C & D.

The locations of the construction activities are shown in *Figure 1.3*. The Environmental Sensitive Receivers in the vicinity of the Project are shown in *Figure 1.4*.

The environmental mitigation measures implementation schedule is presented in *Appendix C*.

Figure 1.3 Locations of Major Construction Activities in the Reporting Month



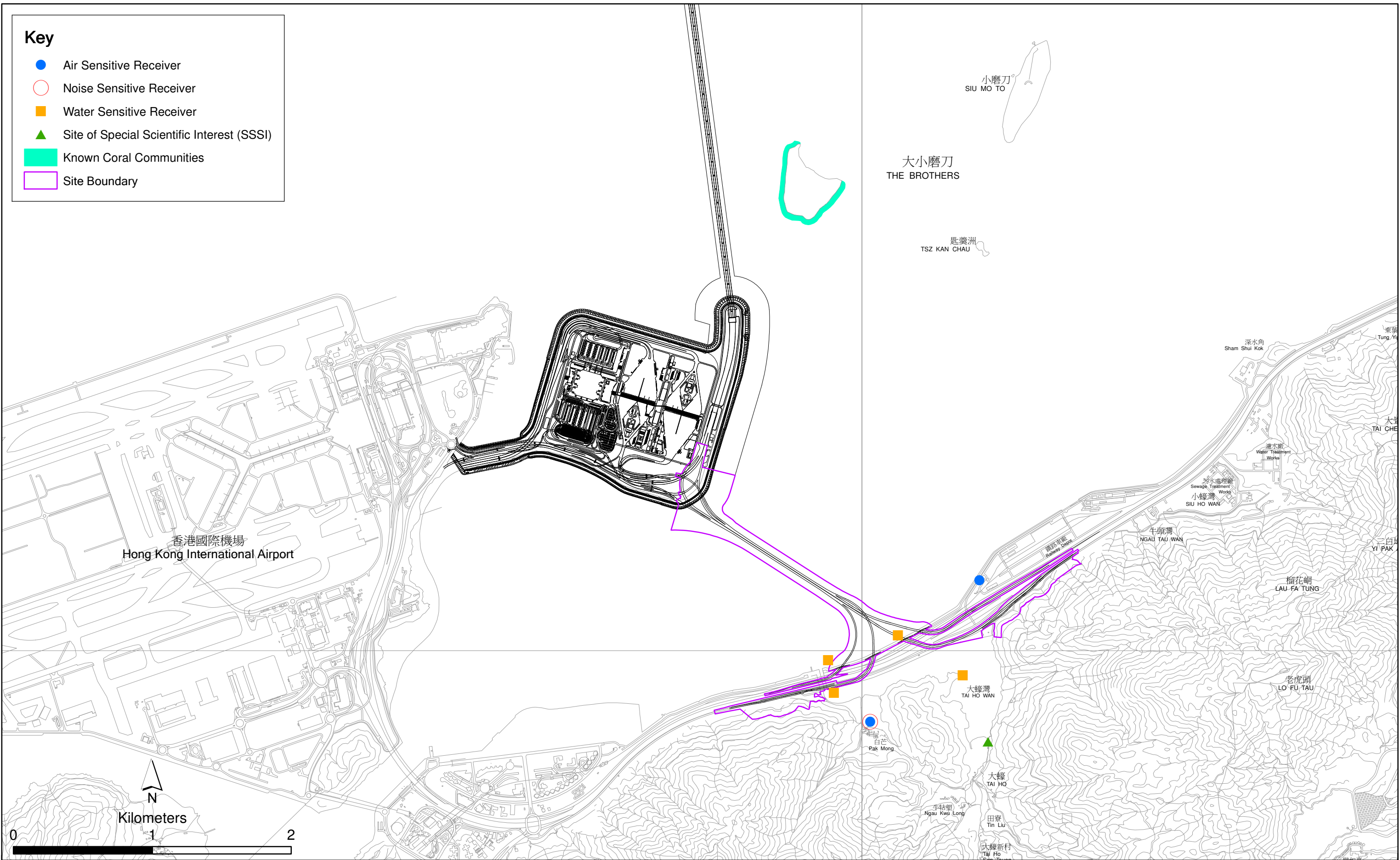


Figure 1.4

Environmental Sensitive Receivers in the Vicinity of Contract No. HY/2012/07
Tuen Mun - Chek Lap Kok Link - Southern Connection Viaduct Section

File: T:\GIS\CONTRACT\0215660\Mxd\0215660_Environmental_Sensitive_Receiver.mxd
Date: 18/5/2015

Environmental
Resources
Management



The EM&A programme required environmental monitoring for air quality, noise, water quality and marine ecology as well as environmental site inspections for air quality, noise, water quality, waste management, marine ecology and landscape and visual impacts. The EM&A requirements and related findings for each component are summarized in the following sections.

2.1 AIR QUALITY

2.1.1 Monitoring Requirements and Equipment

In accordance with the Updated EM&A Manual, impact 1-hour TSP monitoring was conducted three (3) times every six (6) days and impact 24-hour TSP monitoring was carried out once every six (6) days when the highest dust impact was expected. The Action and Limit Levels of the air quality monitoring is provided in *Appendix D*.

Table 2.1 *Locations of Impact Air Quality Monitoring Stations*

Monitoring Station	Location	Description	Monitoring Dates
ASR 9	MTR Depot	On the ground nearby MTR Depot Entrance	6, 12, 15, 21 and 27 June 2018
ASR 8A	Area 4	On ground at the works area, Area 4	6, 12, 15, 21 and 27 June 2018

High Volume Samplers (HVSs) were used for 1-hour TSP and 24-hour TSP monitoring at ASR8A and ASR9 in accordance with the requirements of the Updated EM&A Manual. The TSP monitoring stations are illustrated in *Figure 2.1* and detailed in *Table 2.1*. Wind meter was deployed at Area 4 for logging wind speed and wind direction. Copies of the calibration certificates for the equipment are presented in *Appendix E*. Details of the deployed equipment are given in *Table 2.2*.

Key

- Alternative Air Monitoring Station
- Site Boundary

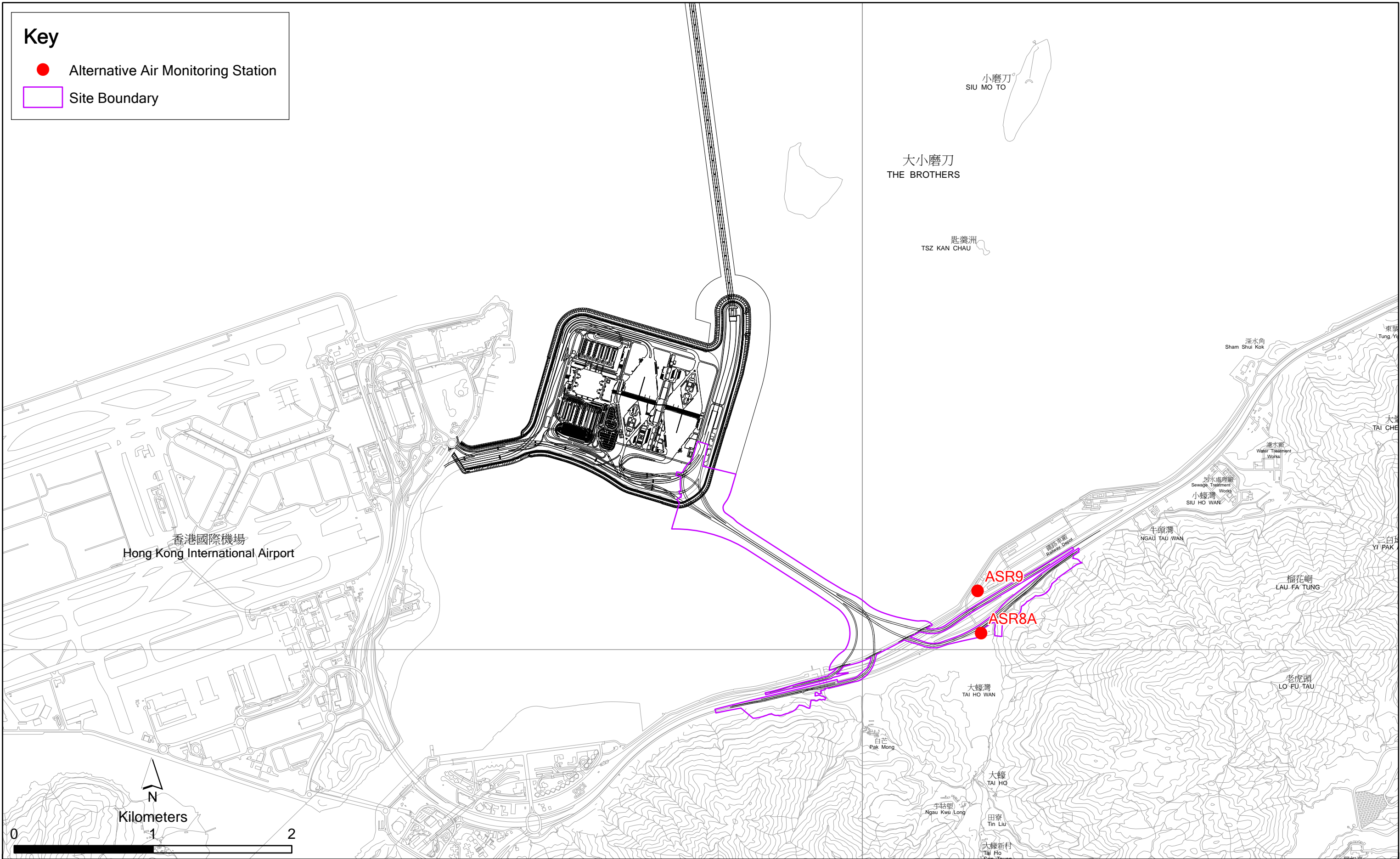


Figure 2.1

Locations of Air Quality Monitoring Stations

Table 2.2 *Air Quality Monitoring Equipment*

Equipment	Brand and Model
High Volume Sampler (1-hour TSP and 24-hour TSP)	Tisch Environmental Mass Flow Controlled Total Suspended Particulate (TSP) High Volume Sampler (Model No. TE-5170)
Wind Sensor	Global Water (Wind Speed Sensor: WE550; Wind Direction Sensor: WE570)
Wind Anemometer for calibration	Lutron (Model No. AM-4201)

2.1.2 *Monitoring Schedule for the Reporting Month*

The schedule for air quality monitoring in June 2018 is provided in *Appendix F*.

2.1.3 *Results and Observations*

The monitoring results for 1-hour TSP and 24-hour TSP are summarized in *Tables 2.3* and *2.4* respectively. Detailed impact air quality monitoring results are presented in *Appendix G*.

Table 2.3 *Summary of 1-hour TSP Monitoring Results in the Reporting Period*

Monitoring Station	Average ($\mu\text{g}/\text{m}^3$)	Range ($\mu\text{g}/\text{m}^3$)	Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)
ASR 8A	62	23-135	394	500
ASR 9	72	13-103	393	500

Table 2.4 *Summary of 24-hour TSP Monitoring Results in the Reporting Period*

Monitoring Station	Average ($\mu\text{g}/\text{m}^3$)	Range ($\mu\text{g}/\text{m}^3$)	Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)
ASR 8A	30	24-39	178	260
ASR 9	31	16-44	178	260

The major dust sources in the reporting period included construction activities under the Contract as well as nearby traffic emissions.

All 1-hour and 24-hour TSP results were below the Action and Limit Levels at all monitoring locations in the reporting period. No action is thus required to be undertaken in accordance with the Event Action Plan presented in *Appendix L*.

Meteorological information collected at ASR8A including wind speed and wind direction is provided in *Appendix H*.

2.2 NOISE MONITORING

2.2.1 Monitoring Requirements and Equipment

In accordance with the Updated EM&A Manual, impact noise monitoring was conducted once per week during the construction phase of the Contract. The Action and Limit Level of the noise monitoring is provided in *Appendix D*.

Noise monitoring was performed on 6, 12, 15, 21 and 27 June 2018 using sound level meter at the designated monitoring station NSR1A (*Figure 2.2; Table 2.5*) in accordance with the requirements stipulated in the Updated EM&A Manual. Acoustic calibrator was deployed to check the sound level meters at a known sound pressure level. Details of the deployed equipment are provided in *Table 2.6*. Copies of the calibration certificates for the equipment are presented in *Appendix E*.

Table 2.5 *Location of Impact Noise Monitoring Station*

Monitoring Station	Location	Description	Parameter	Frequency and Duration	Monitoring Dates
NSR 1A	Pak Mong Village Pavilion	On the ground at the village entrance	30-minute measurement at each monitoring station between 0700 and 1900 on normal weekdays (Monday to Saturday). L_{eq} , L_{10} and L_{90} would be recorded.	At least once per week	6, 12, 15, 21 and 27 June 2018

Table 2.6 *Noise Monitoring Equipment*

Equipment	Brand and Model
Integrated Sound Level Meter	Rion NL-31
Acoustic Calibrator	Rion NC-73

2.2.2 Monitoring Schedule for the Reporting Month

The schedule for construction noise monitoring in the reporting period is provided in *Appendix F*.

2.2.3 Results and Observations

Results for noise monitoring are summarized in *Table 2.7* and the monitoring data is provided in *Appendix I*.

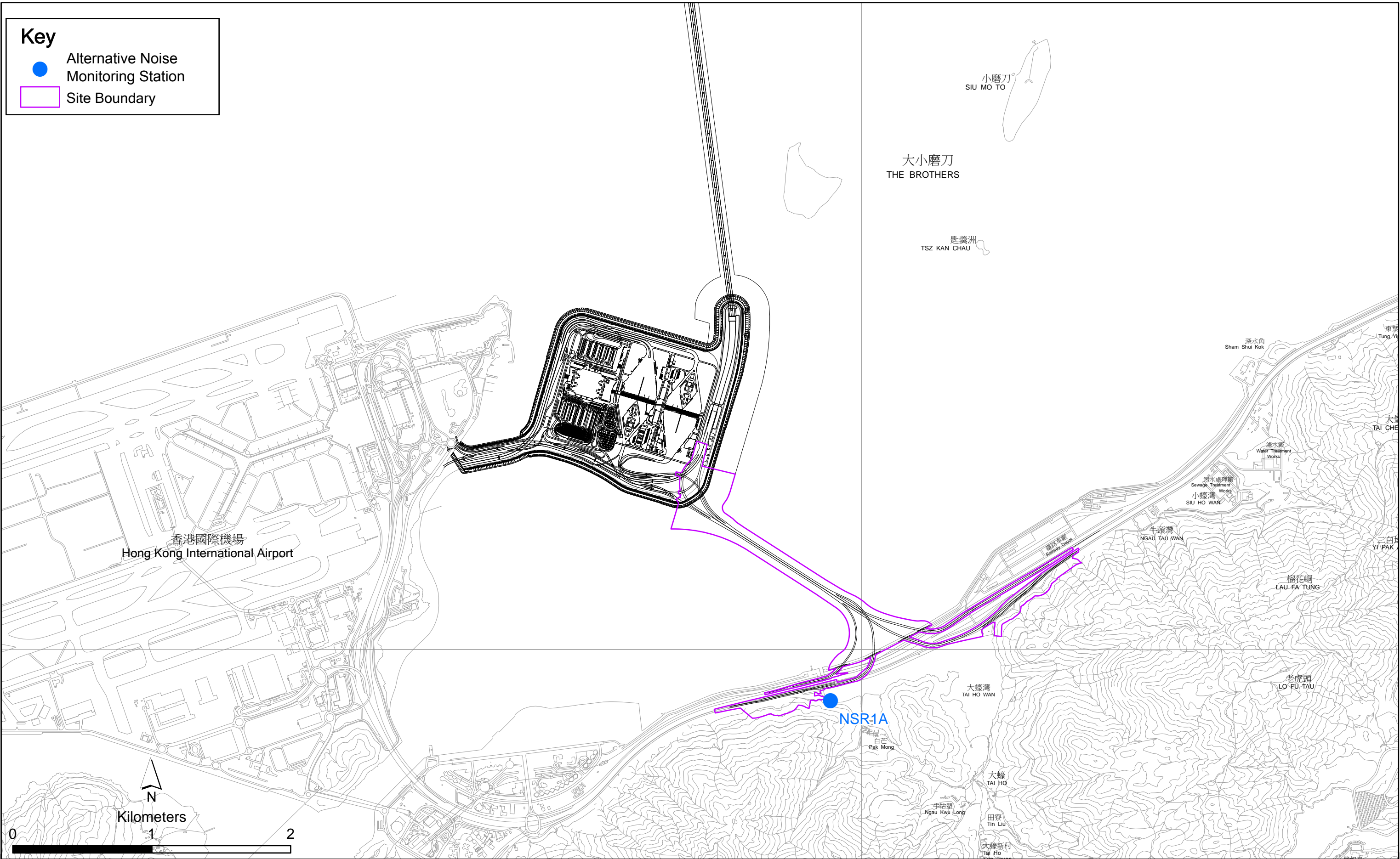


Figure 2.2

Location of Noise Monitoring Station

Table 2.7 Summary of Construction Noise Monitoring Results in the Reporting Period

	Average, dB(A), Leq (30mins)	Range, dB(A), Leq (30mins)	Limit Level, dB(A), Leq (30mins)
NSR 1A	64	62-69	75

Complaint regarding noise nuisance on 16 June 2018 is under investigation.

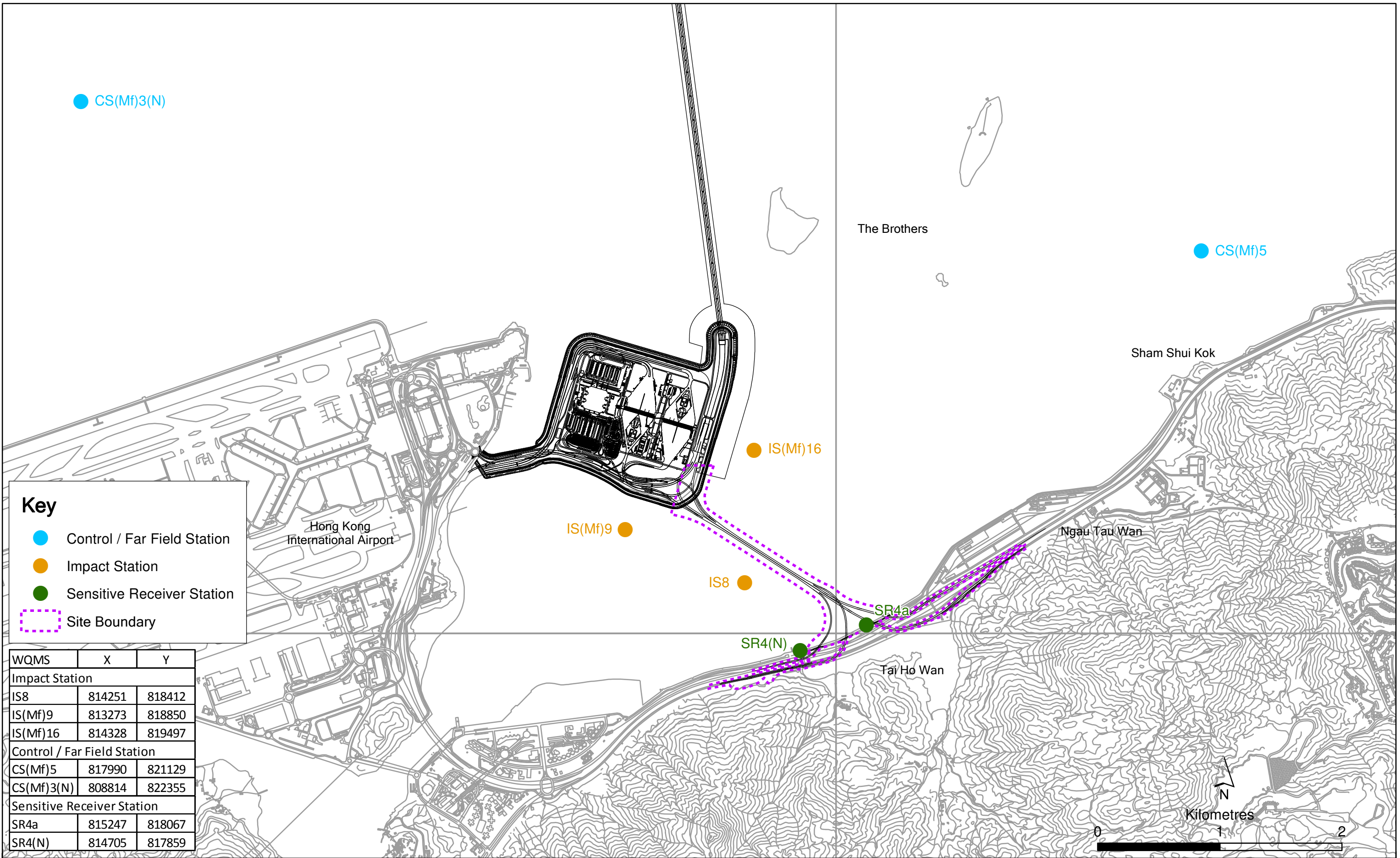
Major noise sources during the noise monitoring included noise from crane and excavator operation, and nearby traffic noise and aircraft noise.

2.3 WATER QUALITY MONITORING

2.3.1 Monitoring Requirements and Equipment

Impact water quality monitoring was carried out to ensure that any deterioration of water quality was detected, and that timely action was taken to rectify the situation. Impact water quality monitoring was undertaken three days per week during the construction period in accordance with the Updated EM&A Manual. The Action and Limit Levels of the water quality monitoring are provided in *Appendix D*.

The locations of the monitoring stations under the Contract are shown in *Figure 2.3* and *Table 2.8*.



Key

- Control / Far Field Station
- Impact Station
- Sensitive Receiver Station
- Site Boundary

WQMS	X	Y
Impact Station		
IS8	814251	818412
IS(Mf)9	813273	818850
IS(Mf)16	814328	819497
Control / Far Field Station		
CS(Mf)5	817990	821129
CS(Mf)3(N)	808814	822355
Sensitive Receiver Station		
SR4a	815247	818067
SR4(N)	814705	817859

Figure 2.3

Locations of Water Quality Monitoring Stations

Table 2.8 Locations of Impact Water Quality Monitoring Stations and its Corresponding Monitoring Requirements

Station ID	Type	Coordinates		*Parameters, unit	Frequency	Depth
		Easting	Northing			
IS(Mf)9	Impact Station (Close to HKBCF construction site)	813273	818850	<ul style="list-style-type: none"> • Temperature(°C) • pH (pH unit) • Turbidity (NTU) 	Impact monitoring: 3 days per week, at mid-flood and mid-ebb tides during the construction period of the Contract	3 water depths: 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted
IS(Mf)16	Impact Station (Close to HKBCF construction site)	814328	819497			
IS8	Impact Station (Close to HKBCF construction site)	814251	818412			
SR4(N)	Sensitive receiver (Tai Ho Inlet)	814705	817859	<ul style="list-style-type: none"> • Suspended Solid (SS) (mg/L) 		
SR4a	Sensitive receiver	815247	818067			
CS(Mf)3(N)	Control Station	808814	822355			
CS(Mf)5	Control Station	817990	821129			

*Notes:

In addition to the parameters presented monitoring location/position, time, water depth, sampling depth, tidal stages, weather conditions and any special phenomena or works underway nearby were also recorded.

Water Quality Monitoring Station CS(Mf)3 was relocated to CS(Mf)3(N) since 2 May 2017.

Water Quality Monitoring Station SR4 was relocated to SR4(N) since 2 March 2018.

Table 2.9 summarises the equipment used in the impact water quality monitoring programme. Copies of the calibration certificates are attached in Appendix E.

Table 2.9 Water Quality Monitoring Equipment

Equipment	Brand and Model
Multi-parameters (Dissolved Oxygen, Salinity, Turbidity, Temperature, pH)	YSI ProDSS / YSI 6920 V2
Positioning Equipment	Furuno GP-170
Water Depth Detector	Lowrance Mark 5x / Garmin Striker 4
Water Sampler	WildCo Vertical Alpha Bottles 1120-2.2L /1120-3.2L Aquatic Research Instrument Vertical/Horizontal Point Water Sampler 2.2L / 3.0L

2.3.2 *Monitoring Schedule for the Reporting Month*

The schedule for water quality monitoring in June 2018 is provided in *Appendix F*. Water quality monitoring during mid-flood tide at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were cancelled due to adverse weather. Water quality monitoring on 18 June 2018 was cancelled due to suspension of works during holiday.

2.3.3 *Results and Observations*

In total of 11 monitoring events for impact water quality monitoring were conducted at all designated monitoring stations in the reporting month. Impact water quality monitoring results and graphical presentations are provided in *Appendix J*.

Two (2) Action Level of Dissolved Oxygen (DO) exceedances and one (1) Action Level of Turbidity exceedance were recorded for water quality impact monitoring in the reporting month. The exceedances were considered not related to this Contract upon further investigation and the investigation report is presented in *Appendix N*. No action is required to be undertaken in accordance with the Event Action Plan as presented in *Appendix L*.

2.4 *DOLPHIN MONITORING*

2.4.1 *Monitoring Requirements*

Impact dolphin monitoring is required to be conducted by a qualified dolphin specialist team to evaluate whether there have been any effects on the Indo-Pacific humpback dolphin *Sousa chinensis* (i.e. Chinese White Dolphin) from the Contract. In order to fulfil the EM&A requirements and make good use of available resources, the on-going impact line transect dolphin monitoring data collected by HyD's *Contract No. HY/2011/03 Hong Kong-Zhuhai-Macao Bridge. Hong Kong Link Road - Section between Scenic Hill and Hong Kong Boundary Crossing Facilities* on the monthly basis is adopted to avoid duplicates of survey effort.

2.4.2 *Monitoring Equipment*

Table 2.10 summarizes the equipment used for the impact dolphin monitoring.

Table 2.10 *Dolphin Monitoring Equipment*

Equipment	Model
Global Positioning System (GPS)	Garmin 18X-PC Geo One Phottix
Camera	Nikon D90 300m 2.8D fixed focus Nikon D90 20-300m zoom lens
Laser Binoculars	Infinitor LRF 1000
Marine Binocular	Bushell 7 × 50 marine binocular with compass and reticules
Vessel for Monitoring	65 foot single engine motor vessel with viewing platform 4.5m above water level

2.4.3 *Monitoring Parameter, Frequencies and Duration*

Dolphin monitoring should cover all transect lines in Northeast Lantau (NEL) and the Northwest Lantau (NWL) survey areas twice per month throughout the entire construction period. The monitoring data should be compatible with, and should be made available for, long-term studies of small cetacean ecology in Hong Kong. In order to provide a suitable long-term dataset for comparison, identical methodology and line transects employed in baseline dolphin monitoring was followed in the impact dolphin monitoring.

2.4.4 *Monitoring Location*

The impact dolphin monitoring was carried out in the NEL and NWL along the line transect as depicted in *Figure 2.4*. The co-ordinates of all transect lines are shown in *Table 2.11* below ⁽¹⁾.

⁽¹⁾ Proposal on the changes of transect lines for dolphin monitoring was approved by EPD on 28 July 2017 (Reference number: (19) in EP2/G/A/129 Pt. 8).

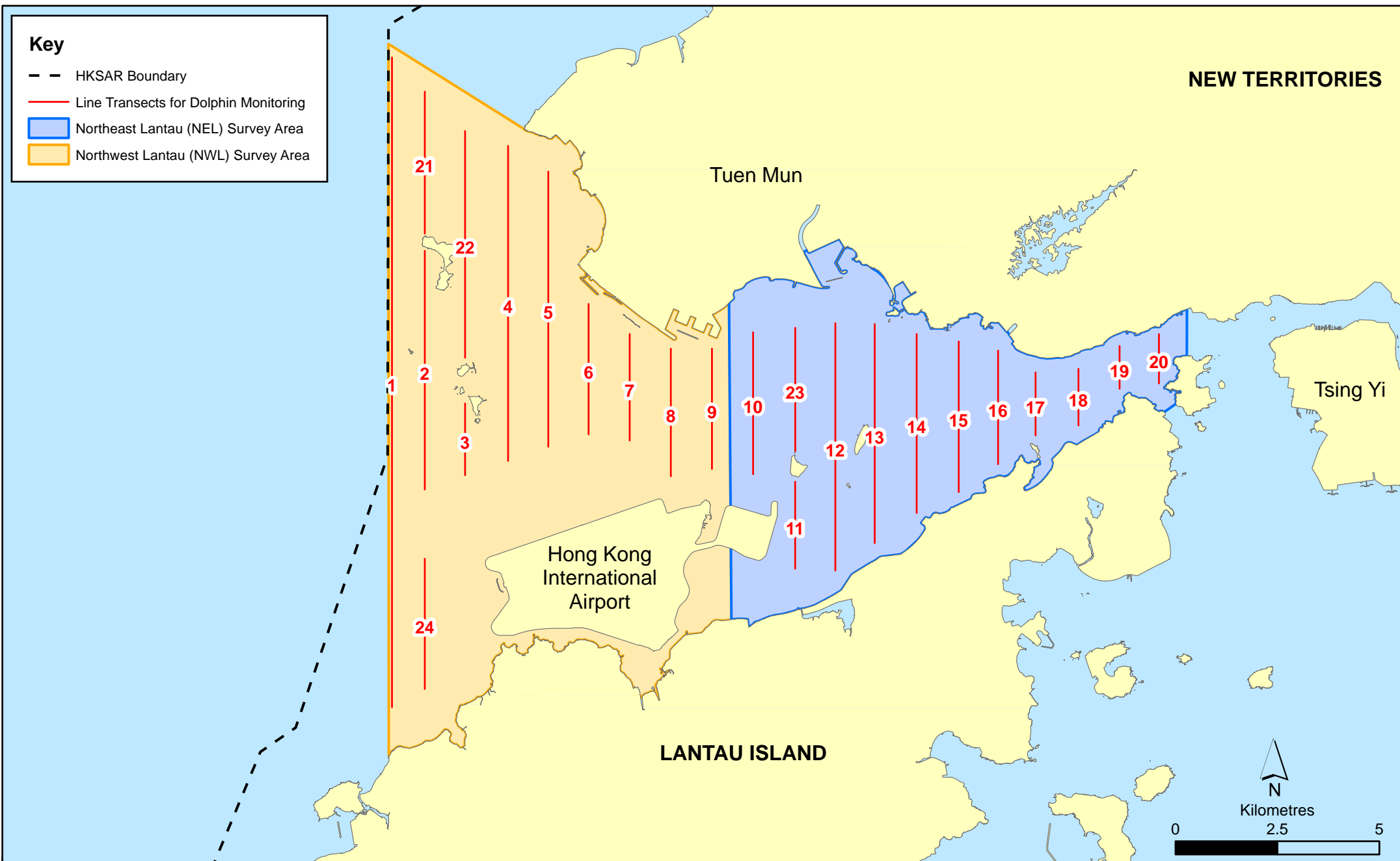


Figure 2.4

Layout of Transect Lines of Dolphin Monitoring in Northwest and Northeast Lantau Areas

Table 2.11 Impact Dolphin Monitoring Line Transect Co-ordinates

Line No.		Easting	Northing	Line No.		Easting	Northing
1	Start Point	804671	815456	13	Start Point	816506	819480
1	End Point	804671	831404	13	End Point	816506	824859
2	Start Point	805476	820800	14	Start Point	817537	820220
2	End Point	805476	826654	14	End Point	817537	824613
3	Start Point	806464	821150	15	Start Point	818568	820735
3	End Point	806464	822911	15	End Point	818568	824433
4	Start Point	807518	821500	16	Start Point	819532	821420
4	End Point	807518	829230	16	End Point	819532	824209
5	Start Point	808504	821850	17	Start Point	820451	822125
5	End Point	808504	828602	17	End Point	820451	823671
6	Start Point	809490	822150	18	Start Point	821504	822371
6	End Point	809490	825352	18	End Point	821504	823761
7	Start Point	810499	822000*	19	Start Point	822513	823268
7	End Point	810499	824613	19	End Point	822513	824321
8	Start Point	811508	821123	20	Start Point	823477	823402
8	End Point	811508	824254	20	End Point	823477	824613
9	Start Point	812516	821303	21	Start Point	805476	827081
9	End Point	812516	824254	21	End Point	805476	830562
10	Start Point	813525	821176	22	Start Point	806464	824033
10	End Point	813525	824657	22	End Point	806464	829598
11	Start Point	814556	818853	23	Start Point	814559	821739
11	End Point	814556	820992	23	End Point	814559	824768
12	Start Point	815542	818807	24	Start Point	805476	815900
12	End Point	815542	824882	24	End Point	805476	819100

2.4.5 Action & Limit Levels

The Action and Limit levels of dolphin impact monitoring are shown in *Appendix D*. The Event and Action plan is presented in *Appendix L*.

2.4.6 *Monitoring Schedule for the Reporting Month*

Dolphin monitoring was carried out on 5, 13, 19 and 27 June 2018 (*Appendix F*).

2.4.7 *Results and Observations*

A total of 254.94 km of survey effort was collected, with 95.8% of the total survey effort being conducted under favourable weather conditions (i.e. Beaufort Sea State 3 or below with good visibility) during the surveys in June 2018. Among the two areas, 93.78 km and 161.16 km of survey effort were collected from NEL and NWL survey areas, respectively. The total survey effort conducted on primary and secondary lines were 190.66 km and 64.28 km, respectively. The survey efforts are summarized in *Appendix K*.

Two (2) groups of 7 Chinese White Dolphins were sighted during the two sets of monitoring surveys in June 2018. All dolphin sightings were made in NWL, while none was sighted in NEL. During the surveys in June 2018, all sightings were made during on-effort search while one of the two on-effort sightings were made on primary lines. None of the dolphin groups was associated with operating fishing vessel and was not sighted in the proximity of the Project's alignment. The distribution of dolphin sighting during the reporting month is shown in *Figure 2.5*.

Encounter rates of Chinese White Dolphins are deduced from the survey effort and on-effort sighting data made under favourable conditions (Beaufort 3 or below) in June 2018 are shown in *Tables 2.12 & 2.13*.

Table 2.12 *Individual Survey Event Encounter Rates*

		Encounter rate (STG) (no. of on-effort dolphin sightings per 100 km of survey effort)	Encounter rate (ANI) (no. of dolphins from all on-effort sightings per 100 km of survey effort)
		Primary Lines Only	Primary Lines Only
NEL	Set 1: June 5 th / 13 th	0.0	0.0
	Set 2: June 19 th / 27 th	0.0	0.0
NWL	Set 1: June 5 th / 13 th	0.0	0.0
	Set 2: June 19 th / 27 th	1.9	3.8

Note: Dolphin Encounter Rates are deduced from the two sets of surveys (two surveys in each set) in June 2018 in Northeast (NEL) and Northwest Lantau (NWL)

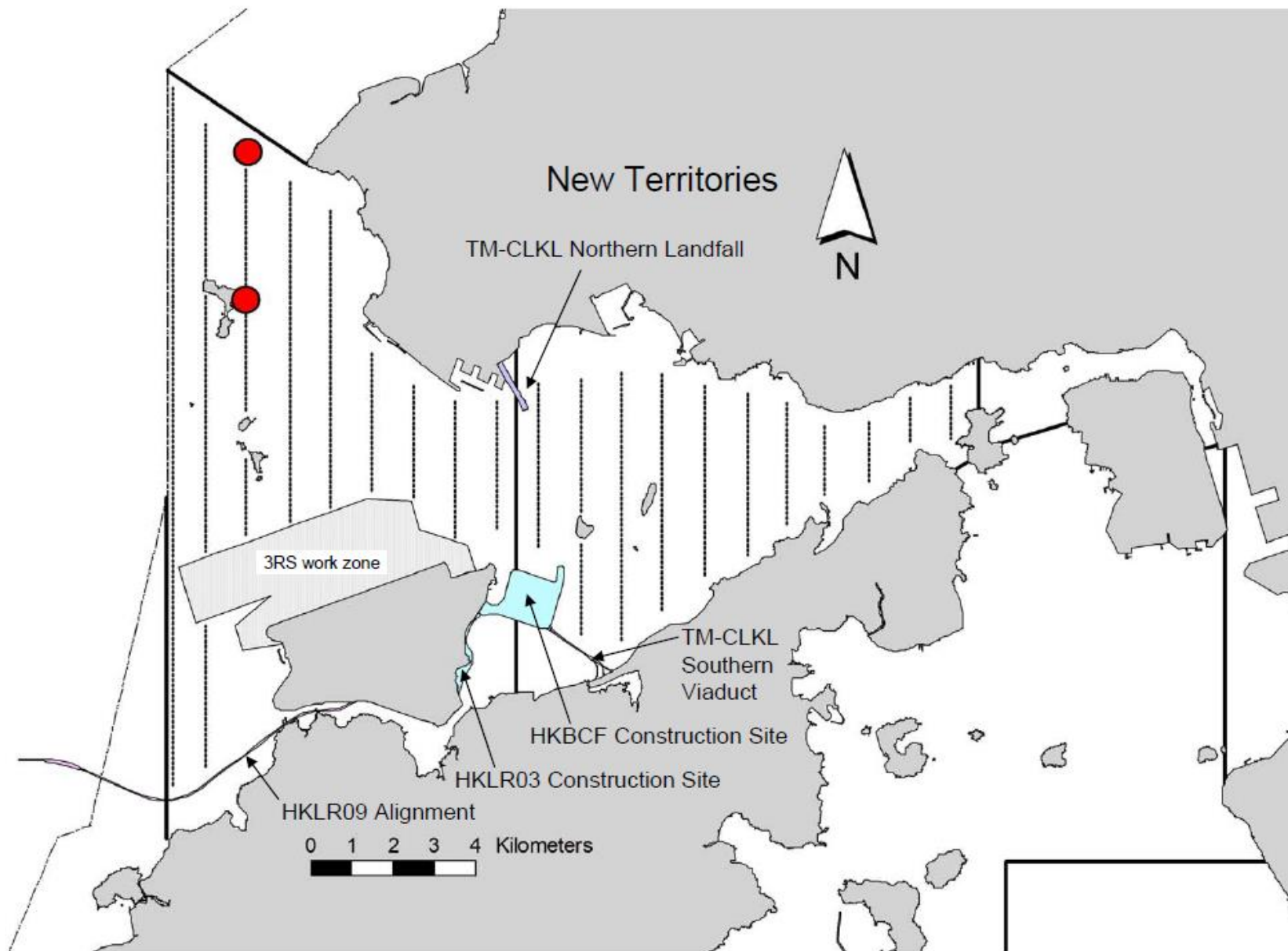


Figure 2.5

Date 01/07/2018

HY/2012/07 TM-CLKL Southern Connection Viaduct Section
 The distribution of dolphin sightings during the reporting period
 (Source: Adopted from HKLR03 Monitoring Survey in June 2018)

Environmental
 Resources
 Management



Table 2.13 Monthly Average Encounter Rates

	Encounter rate (STG) (no. of on-effort dolphin sightings per 100 km of survey effort)		Encounter rate (ANI) (no. of dolphins from all on-effort sightings per 100 km of survey effort)	
	Primary Lines Only	Both Primary and Secondary Lines	Primary Lines Only	Both Primary and Secondary Lines
Northeast Lantau	0.0	0.0	0.0	0.0
Northwest Lantau	0.9	1.3	1.8	4.7

Note: Overall dolphin encounter rates (sightings per 100 km of survey effort) from all four surveys are conducted in June 2018 on primary lines only as well as both primary lines and secondary lines in Northeast and Northwest Lantau

During this month of dolphin monitoring, no unacceptable impact from the construction activities of the TM-CLKL Southern Connection Viaduct Section on Indo-Pacific humpback dolphin *Sousa chinensis* (i.e. Chinese White Dolphin) was noticeable from general observations. Due to monthly variation in dolphin occurrence within the Study Area, it would be more appropriate to draw conclusion on whether any impacts on dolphins have been detected related to the construction activities of the TM-CLKL Southern Connection Viaduct Section in the quarterly EM&A reports, in which comparison on distribution, group size and encounter rates of dolphins between the quarterly impact monitoring period and baseline monitoring period will be made.

2.4.8 Marine Mammal Exclusion Zone Monitoring

Daily 250 m marine mammal exclusion zone monitoring was undertaken during the period of daytime marine works activities. No sighting of Chinese White Dolphin was recorded in June 2018 during the exclusion zone monitoring.

Passive Acoustic Monitoring (PAM) had been decommissioned as no marine piling works was carried out outside the daylight hours since September 2015.

2.5 EM&A SITE INSPECTION

Site inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures under the Contract. In the reporting month, four (4) site inspections were carried out on 6, 13, 20 and 28 June 2018.

Key observations during the site inspections are summarized in *Table 2.14*.

Table 2.14 Specific Observations Identified during the Weekly Site Inspections in this Reporting Month

Inspection Date	Environmental Observations	Recommendations/ Remarks
6 June 2018	<p>Southern Landfall (Pier F1)</p> <ul style="list-style-type: none"> Accumulated general refuse should be disposed of in the skip and cleared regularly. Chemical containers were observed not placed in drip tray. <p>Southern Landfall (Pier E14C)</p> <ul style="list-style-type: none"> Accumulated general refuse should be disposed of in the skip and cleared regularly. <p>Seafront Office at Southern Landfall (Portion A)(Portion S-c)</p> <ul style="list-style-type: none"> Chemical containers were observed not placed in drip tray. 	<p>Southern Landfall (Pier F1)</p> <ul style="list-style-type: none"> The Contractor was reminded to clear accumulated general refuse. The Contractor was reminded to place chemical containers in drip tray. <p>Southern Landfall (Pier E14C)</p> <ul style="list-style-type: none"> The Contractor was reminded to clear accumulated general refuse. <p>Seafront Office at Southern Landfall (Portion A)(Portion S-c)</p> <ul style="list-style-type: none"> The Contractor was reminded to place chemical containers in drip tray.
13 June 2018	<p>Viaduct E (Pier E4)</p> <ul style="list-style-type: none"> Chemical containers were observed not placed in drip tray. <p>Viaduct E (Pier E5)</p> <ul style="list-style-type: none"> Stagnant water in the drip tray near chemical containers should be cleared. <p>Viaduct E (Pier E12)</p> <ul style="list-style-type: none"> Stagnant water in the drip tray near the generator should be cleared. 	<p>Viaduct E (Pier E4)</p> <ul style="list-style-type: none"> The Contractor was reminded to place chemical containers in drip tray. <p>Viaduct E (Pier E5)</p> <ul style="list-style-type: none"> The Contractor was reminded to clear stagnant water in the drip tray. <p>Viaduct E (Pier E12)</p> <ul style="list-style-type: none"> The Contractor was reminded to clear stagnant water in the drip tray.
20 June 2018	<p>Viaduct B</p> <ul style="list-style-type: none"> Chemical container was observed not placed in drip tray. <p>Viaduct B (Pier B2)</p> <ul style="list-style-type: none"> Stagnant water was observed in the drip tray and nearby the generator. Accumulated general refuse should be cleared. 	<p>Viaduct B</p> <ul style="list-style-type: none"> The Contractor was reminded to place chemical container in drip tray. <p>Viaduct B (Pier B2)</p> <ul style="list-style-type: none"> The Contractor was reminded to clear stagnant water in the drip tray and nearby the generator. The Contractor was reminded to clear accumulated general refuse.
28 June 2018	<p>Viaduct C (Pier C16 and Gate 4A)</p> <ul style="list-style-type: none"> Accumulated general refuse should be cleared. <p>Viaduct E (Pier E12)</p> <ul style="list-style-type: none"> Stagnant water in the drip tray should be cleared. Absorption pad should be provided near the drip tray. <p>Viaduct E</p> <ul style="list-style-type: none"> Accumulated general refuse should be disposed of in the skip and cleared regularly. <p>Southern Landfall (Portion A)(Portion S-c)</p> <ul style="list-style-type: none"> Chemical containers were observed not placed in drip tray. 	<p>Viaduct C (Pier C16 and Gate 4A)</p> <ul style="list-style-type: none"> The Contractor was reminded to clear accumulated general refuse. <p>Viaduct E (Pier E12)</p> <ul style="list-style-type: none"> The Contractor was reminded to clear stagnant water in the drip tray and nearby the generator. The Contractor was reminded to provide absorption pad near the drip tray. <p>Viaduct E</p> <ul style="list-style-type: none"> The Contractor was reminded to clear accumulated general refuse. <p>Southern Landfall (Portion A)(Portion S-c)</p> <ul style="list-style-type: none"> The Contractor was reminded to place chemical containers in drip tray.

The Contractor has rectified all of the observations identified during environmental site inspections in the reporting month.

2.6

WASTE MANAGEMENT STATUS

The Contractor has submitted application form for registration as chemical waste producer under the Contract. Sufficient numbers of receptacles were available for general refuse collection and sorting.

Wastes generated during this reporting period include mainly construction wastes (inert and non-inert) and recyclable materials. Reference has been made to the waste flow table prepared by the Contractor (*Appendix M*). The quantities of different types of wastes are summarized in *Table 2.15*.

Table 2.15 Quantities of Different Waste Generated in the Reporting Period

Month/ Year	Inert C&D Materials ^(a) (m ³)	Imported Fill (m ³)	Inert Constructio n Waste Re- used (m ³)	Non-inert Constructio n Waste ^(b) (kg)	Recyclable Materials ^(c) (kg)	Chemical Wastes (kg)	Marine Sediment (m ³)		
							Category L	Category M (M _p & M _f)	Category H
June 2018	2,801	67	1,134	669,690	9,605	0	0	0	0

Notes:

- (a) Inert construction wastes include hard rock and large broken concrete, and materials disposed as public fill.
- (b) Non-inert construction wastes include general refuse disposed at landfill.
- (c) Recyclable materials include metals, paper, cardboard, plastics, timber, felled trees and others.

The Contractor was advised to properly maintain on site C&D materials and waste collection, sorting and recording system, dispose of C&D materials and wastes at designated ground and maximize reuse/ recycle of C&D materials and wastes. The Contractor was also reminded to properly maintain the site tidiness and dispose of the wastes accumulated on site regularly and properly.

For chemical waste containers, the Contractor was reminded to treat properly and store temporarily in designated chemical waste storage area on site in accordance with the *Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes*.

2.7 ENVIRONMENTAL LICENSES AND PERMITS

The status of environmental licensing and permit is summarized in *Table 2.16* below.

Table 2.16 Summary of Environmental Licensing and Permit Status

License/ Permit	License or Permit No.	Date of Issue	Date of Expiry	License/ Permit Holder	Remarks
Environmental Permit	EP-354/2009/D	13 Mar 2015	N/A	HyD	Tuen Mun- Chek Lap Kok Link
Environmental Permit	EP-353/2009/K	11 Apr 2016	N/A	HyD	Hong Kong Boundary Crossing Facilities
Construction Dust Notification	361571	5 Jul 2013	N/A	GCL	
Construction Dust Notification	362093	17 Jul 2013	N/A	GCL	For Area 23
Chemical Waste Registration	5213-961-G2380-13	10 Oct 2013	N/A	GCL	Chemical waste produced in Contract No. HY/2012/07 (Area 1 adjacent to Cheng Tung Road, Siu Ho Wan)
Chemical Waste Registration	5213-961-G2380-14	10 Oct 2013	N/A	GCL	Chemical waste produced in Contract No. HY/2012/07 (Area 2 adjacent to Cheung Tung Road, Pak Mong Village)
Chemical Waste Registration	5213-974-G2588-03	4 Nov 2013	N/A	GCL	Chemical waste produced in Contract No. HY/2012/07 (WA5 adjacent to Cheung Tung Road, Yam O)
Chemical Waste Registration	5213-951-G2380-17	12 Jun 2014	N/A	GCL	Viaducts A, B, C, D & E
Construction Waste Disposal Account	7017735	10 Jul 2013	N/A	GCL	-
Construction Waste Disposal Account	7019470	3 Mar 2014	N/A	GCL	Vessel CHIT Account
Waste Water Discharge License	WT00019017-2014	13 May 2014	31 May 2019	GCL	Discharge for marine portion
Waste Water Discharge License	WT00019018-2014	13 May 2014	31 May 2019	GCL	Discharge for land portion
Construction Noise Permit for night works and works in general holidays	GW-RW0650-17	19 Dec 2017	18 Jun 2018	GCL	General works at WA5
Construction Noise Permit for night works and works in general holidays	GW-RW0235-18	21 Jun 2018	18 Dec 2018	GCL	General works at WA5
Construction Noise Permit for night works and works in general holidays	GW-RS0244-18	30 Mar 2018	29 Sep 2018	GCL	Broad Permit for Whole Site Areas
Construction Noise Permit for night works and works in general holidays	GW-RS0328-18	30 Apr 2018	29 Jun 2018	GCL	Broad Permit for Segment Launching at Land Portion
Construction Noise Permit for night works and works in general holidays	GW-RS0426-18	11 Jun 2018	31 Jul 2018	GCL	Broad Permit for Segment Launching at Land Portion
Construction Noise Permit for night works and works in general holidays	GW-RS0064-18	1 Feb 2018	29 Jul 2018	GCL	Pre-casted pile cap shell installation at E8-E13

2.8 **IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES**

In response to the site audit findings, the Contractors carried out corrective actions.

A summary of the Implementation Schedule of Environmental Mitigation Measures (EMIS) is presented in *Appendix C*. The necessary mitigation measures were implemented properly for this Contract.

The landscape and visual (L&V) mitigation measures were also monitored on weekly basis in the reporting period. The monitoring status is summarized in *Appendix C*.

2.9 **SUMMARY OF EXCEEDANCES OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMIT**

Results for 1-hour TSP and 24-hour TSP complied with the Action/ Limit levels in the reporting period.

Complaint regarding noise nuisance on 16 June 2018 is under investigation.

Two (2) Action Level of Dissolved Oxygen (DO) exceedances and one (1) Action Level of Turbidity exceedance were recorded for water quality impact monitoring in the reporting month. The exceedances were considered not related to this Contract upon further investigation and the investigation report is presented in *Appendix N*.

Cumulative statistics on exceedances is provided in *Appendix N*.

2.10 **SUMMARY OF COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS**

The Environmental Complaint Handling Procedure is provided in *Figure 2.6*.

There were two (2) complaints received by 1823 regarding discharge of muddy water nearby Hong Kong Boundary Crossing Facilities (HKBCF) on 13 June 2018 and construction noise nuisance nearby the Kowloon-bound lane of the North Lantau Highway on 16 June 2018. Complaint on 16 June 2018 is under investigation.

There was no notification of summons or successful prosecution recorded in the reporting period.

Statistics on complaints, notifications of summons, successful prosecutions are summarized in *Appendix N*.

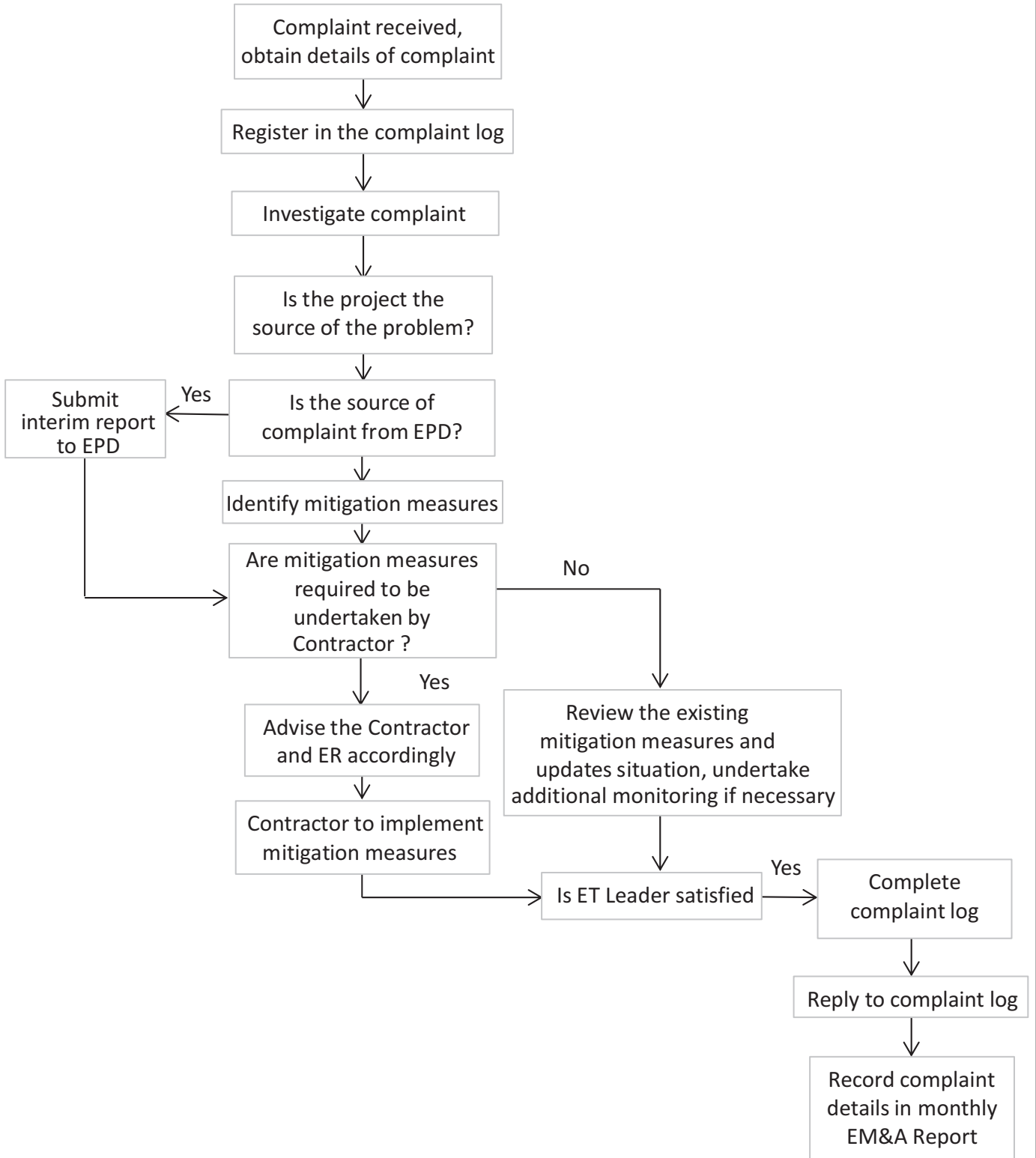


Figure 2.6

Environmental Complaint Handling Procedure

3 *FUTURE KEY ISSUES*

3.1 *CONSTRUCTION PROGRAMME FOR THE COMING MONTH*

As informed by the Contractor, the major works for this Contract in July 2018 will be:

Land-based Works

- Pier construction;
- Re-alignment of Cheung Tung Road;
- Road works along North Lantau Highway;
- Installation of pier head and deck segments;
- Asphalt paving;
- Construction of sign gantries, light poles and street furniture;
- Parapets and barriers installation; and
- Slope work of Viaducts A, B, C & D.

3.2 *KEY ISSUES FOR THE COMING MONTH*

Potential environmental impacts arising from the above upcoming construction activities in the next reporting month of July 2018 are mainly associated with dust, noise, marine water quality, marine ecology and waste management issues.

3.3 *MONITORING SCHEDULE FOR THE COMING MONTH*

The tentative schedules for environmental monitoring in July 2018 are provided in *Appendix F*.

4.1 CONCLUSIONS

This Fifty-sixth Monthly EM&A Report presents the findings of the EM&A activities undertaken during the period from 1 to 30 June 2018 in accordance with the Updated EM&A Manual and the requirements of the Environmental Permits (EP-354/2009/D and EP-353/2009/K).

Air quality (1-hour TSP and 24-hour TSP), noise, water quality (DO, turbidity and SS) and dolphin monitoring were carried out in the reporting month. Results for air quality monitoring complied with the Action and Limit levels in the reporting period.

Two (2) Action Level of Dissolved Oxygen (DO) exceedances and one (1) Action Level of Turbidity exceedance were recorded for water quality impact monitoring in the reporting month.

Two (2) groups of 7 Chinese White Dolphins were sighted during the two sets of monitoring surveys in June 2018. During this month of dolphin monitoring, no unacceptable impact from the construction activities of the TM-CLKL Southern Connection Viaduct Section on Indo-Pacific humpback dolphin *Sousa chinensis* (i.e. Chinese White Dolphin) was noticeable from general observations.

Environmental site inspection was carried out four (4) times in June 2018. Recommendations on remedial actions were given to the Contractor for the deficiencies identified during the site audits.

There were two (2) complaints received by 1823 regarding discharge of muddy water nearby Hong Kong Boundary Crossing Facilities (HKBCF) on 13 June 2018 and construction noise nuisance nearby the Kowloon-bound lane of the North Lantau Highway on 16 June 2018. Complaint on 16 June 2018 is under investigation.

There was no notification of summons or successful prosecution recorded in the reporting period.

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

Appendix A

Project Organization for Environmental Works



↔ Line of Communication

Appendix B

Three-Month Rolling Construction Programme

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Physical % Complete	2018															
										June				July				August				September			
										28	04	11	18	25	02	09	16	23	30	06	13	20	27	03	10

HY/2012/07 Tuen Mun-Chek Lap Kok Link - Southern Connection

Contract Milestones

Key Dates for Completion

Stage of the Works

Completion Date

General		Orig. Durn.	Act. Start / FC Early Start	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Physical % Complete
KD03	KD3 - Stage 3: TCSS Along NLH Near Viaduct C, D (EoT 8-Apr-16)	0		0	21-Jun-18*		08-Apr-16	-803	0%
KD05	KD5 - Stage 5: TCSS at Viaduct A, B (EoT 7-Dec-16)	0		0	22-Jun-18*		07-Dec-16	-562	0%

Section of the Works

Completion Date

General		Orig. Durn.	Act. Start / FC Early Start	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Physical % Complete
KD10	KD10 - Section 4: All Works at Viaduct E1 (EoT 7-Oct-16)	0		0	20-Jun-18 A				100%
KD11	KD11 - Section 5: All Works at Viaduct A (EoT 7-Apr-17)	0		0	22-Jun-18*		07-Apr-17	-441	0%
KD12	KD12 - Section 6: All Works at Viaduct B (EoT 8-Apr-17)	0		0	22-Jun-18*		08-Apr-17	-440	0%

Portion Handover Dates

Possession of the Works Area

Access Dates

General		Orig. Durn.	Act. Start / FC Early Start	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Physical % Complete
POS02-6B	Portion A - Area 6B (To be confirmed)	0	21-Jun-18*	0			18-Sep-20	821	0%

Design

Detailed Design

Slope Works Near Viaduct A

Feature 9SE-B/FR8, B/R1, B/R2

Slope Works Design

ARDD0596-1	IC/SO Approval of Slope Combined AIP/DDA - CP11.01	60	13-Jun-17 A	30	26-Jul-18	12-Sep-16	19-Oct-16	-522	95%
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Procurement

Precast Parapets & Barriers

Viaduct A to F

Precast Parapet Manufacture

General		Orig. Durn.	Act. Start / FC Early Start	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Physical % Complete
PP6011-05	Viaduct E - Precast Parapets/Barriers Production	180	02-Jul-16 A	16	10-Jul-18	07-May-18	25-May-18	-37	98%
PP6011-06	Viaduct F - Precast Parapets/Barriers Production	198	05-Mar-18 A	148	14-Dec-18	21-Dec-17	26-Jun-18	-143	30%

Construction

Foundation & Substructure Works

Ramp A

Abutment & Approach Ramp A

Ramp Finishes, E&M & Roadworks

ARA-C7710	Ramp A - Parapet Panels	66	27-Apr-18 A	2	22-Jun-18	29-Oct-16	31-Oct-16	-484	97%
ARA-C7720	Ramp A - Ducting, Gantry & TCSS Provisions (KD5)	30	21-May-18 A	2	22-Jun-18	29-Oct-16	31-Oct-16	-484	97%
ARA-C7810	Ramp A - Drainage, Fire Main & E&M Services	42	21-May-18 A	2	22-Jun-18	29-Oct-16	31-Oct-16	-484	97%
ARA-C7820	Ramp A - Railings, Light Poles, Signs & Street Furniture	24	21-May-18 A	2	22-Jun-18	17-Sep-20	18-Sep-20	667	97%
ARA-C7830	Ramp A - Deck Paving & Roadmarking (KD11)	18	21-May-18 A	2	22-Jun-18	29-Oct-16	31-Oct-16	-484	97%
ARA-C7840	Ramp A - outstanding works	129	23-Jun-18	129	24-Nov-18	01-Nov-16	07-Apr-17	-484	0%

Ramp B

Abutment & Approach Ramp B

Ramp Finishes, E&M & Roadworks





ARB-C7710	Ramp B - Parapet Panels	76	21-May-18 A	2	22-Jun-18	05-Dec-16	06-Dec-16	-453	97%
ARB-C7720	Ramp B - Ducting, Gantry & TCSS Provisions (KD5)	30	21-May-18 A	2	22-Jun-18	05-Dec-16	06-Dec-16	-453	97%
ARB-C7810	Ramp B - Drainage, Fire Main & E&M Services	42	21-May-18 A	2	22-Jun-18	05-Dec-16	06-Dec-16	-453	97%
ARB-C7820	Ramp B - Railings, Light Poles, Signs & Street Furniture	24	21-May-18 A	2	22-Jun-18	17-Sep-20	18-Sep-20	667	97%
ARB-C7830	Ramp B - Deck Paving & Roadmarking (KD12)	18	21-May-18 A	2	22-Jun-18	05-Dec-16	06-Dec-16	-453	97%
ARB-C7840	Ramp B - Outstanding works	98	23-Jun-18	98	19-Oct-18	07-Dec-16	07-Apr-17	-453	0%

Ramp C

Abutment & Approach Ramp C

Ramp Finishes, E&M & Roadworks

ARC-C7840	Ramp C - outstanding works	124	12-Feb-18 A	23	18-Jul-18	11-Mar-17	07-Apr-17	-376	90%
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	Actual Work
	Planned Bar
	Critical Bar
	Milestone

Project ID: TMCLK-DWPL-M61
 Layout: J3518-DWP-3MRP Submission - M61
 Filter: TASK filters: 3-Month Lookahead, No CC Milestones, No Level of Effort.

Tuen Mun - Chek Lap Kok Link - Southern Connection 3-Month Rolling Programme (Page 1 of 6 Pages) (Progress as of 21-Jun-18)

Date	Revision	Check...	Approved
28-May-...		PKN	HF
03-Jul-18		HF	HF

DWG. No.:
J3518/GCL/PGM/3MRP-M61

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Physical % Complete	2018																							
										June					July				August				September										
										28	04	11	18	25	02	09	16	23	30	06	13	20	27	03	10	17	24						
Ramp D																																	
Abutment & Approach Ramp D																																	
Ramp Finishes, E&M & Roadworks																																	
ARD-C7840	Ramp D - Outstanding works	66	28-Apr-18 A	23	18-Jul-18	11-Mar-17	07-Apr-17	-376	90%	[Gantt bar: 28-Apr to 18-Jul, 90% complete]																							
Viaduct E - Bridge E5, E6, E7, E8																																	
Pier E13A (E8c)																																	
Pile Cap Dolphin																																	
E13A-C3150	E13A Dolphin - Marine Pile Cap - Rebar, Concreting	5	15-Jun-18 A	9	30-Jun-18	30-Jul-18	08-Aug-18	32	25%	[Gantt bar: 15-Jun to 30-Jun, 25% complete]																							
E13A-C3160	E13A Dolphin - Marine Pile Cap - CJ preparation & Curing	3	03-Jul-18	3	05-Jul-18	09-Aug-18	11-Aug-18	32	0%	[Gantt bar: 03-Jul to 05-Jul, 0% complete]																							
Pier E13D (E5c)																																	
Pile Cap Dolphin																																	
E13D-C3150	E13D Dolphin - Marine Pile Cap - Rebar, Concreting	5	12-Apr-18 A	0	31-May-18 A				100%	[Gantt bar: 12-Apr to 31-May, 100% complete]																							
E13D-C3160	E13D Dolphin - Marine Pile Cap - CJ preparation & Curing	3	31-May-18 A	0	01-Jun-18 A				100%	[Gantt bar: 31-May to 01-Jun, 100% complete]																							
Viaduct F - Bridge F3																																	
Pier F10 (F3c)																																	
Pier Head Segment																																	
F10-C5110	F10 Pier Head - Scaffold, Temp Works	30	12-Sep-17 A	28	24-Jul-18	01-Feb-18	08-Mar-18	-110	40%	[Gantt bar: 12-Sep-17 to 24-Jul-18, 40% complete]																							
F10-C5210	F10 Pier Head - Erect last PH segment (1 nr)	1	01-Aug-18	1	01-Aug-18	16-Mar-18	16-Mar-18	-110	0%	[Gantt bar: 01-Aug-18 to 01-Aug-18, 0% complete]																							
Pier F11 (F3b)																																	
Pier Head Segment																																	
F11-C5110	F11 Pier Head - Scaffold, Temp Works	33	15-Mar-18 A	0	21-May-18 A				100%	[Gantt bar: 15-Mar-18 to 21-May-18, 100% complete]																							
F11-C5210	F11 Pier Head - Erect PH Segment (2 nr)	2	06-Apr-18 A	1	21-Jun-18	16-Mar-18	16-Mar-18	-76	90%	[Gantt bar: 06-Apr-18 to 21-Jun-18, 90% complete]																							
Viaduct F - Bridge F4																																	
Pier F16 (F5a/F4a)																																	
Pier Head Segment																																	
F16-C5410	F16 Pier Head - Curing, Remove Formwork	12	21-Mar-18 A	0	21-May-18 A				100%	[Gantt bar: 21-Mar-18 to 21-May-18, 100% complete]																							
Ramp F																																	
Abutment & Approach Ramp F																																	
Ramp Structure																																	
ARF-C6130	Ramp F - Abutment wall (RF-6)	14	09-Jun-18 A	20	14-Jul-18	23-Jan-18	14-Feb-18	-118	50%	[Gantt bar: 09-Jun-18 to 14-Jul-18, 50% complete]																							
ARF-C6140	Ramp F - Column and beam (FB2 & FB3)	54	14-Feb-18 A	23	18-Jul-18	01-Nov-17	27-Nov-17	-186	56%	[Gantt bar: 14-Feb-18 to 18-Jul-18, 56% complete]																							
ARF-C6150	Ramp F - Column and beam (FB1 & FB3)	86	26-Mar-18 A	52	21-Aug-18	20-Jan-18	24-Mar-18	-120	22%	[Gantt bar: 26-Mar-18 to 21-Aug-18, 22% complete]																							
ARF-C6160	Ramp F - Ramp deck	71	18-Jul-18	71	10-Oct-18	15-Feb-18	17-May-18	-120	0%	[Gantt bar: 18-Jul-18 to 10-Oct-18, 0% complete]																							
Superstructure & Associated Works																																	
Viaduct A																																	
Bridge A2																																	
Deck Finishes, E&M and Roadworks																																	
VA2-C7710	Viaduct A2 - Parapet Panels	118	13-Feb-18 A	2	22-Jun-18	29-Oct-16	31-Oct-16	-484	97%	[Gantt bar: 13-Feb-18 to 22-Jun-18, 97% complete]																							
VA2-C7720	Viaduct A2 - Gantry & TCSS Provisions (KD5)	36	21-May-18 A	2	22-Jun-18	29-Oct-16	31-Oct-16	-484	97%	[Gantt bar: 21-May-18 to 22-Jun-18, 97% complete]																							
VA2-C7810	Viaduct A2 - Drainage, Fire Main & E&M Services	60	21-May-18 A	2	22-Jun-18	29-Oct-16	31-Oct-16	-484	97%	[Gantt bar: 21-May-18 to 22-Jun-18, 97% complete]																							
VA2-C7820	Viaduct A2 - Railings, Light Poles, Signs & Street Furniture	30	21-May-18 A	2	22-Jun-18	17-Sep-20	18-Sep-20	667	97%	[Gantt bar: 21-May-18 to 22-Jun-18, 97% complete]																							
VA2-C7830	Viaduct A2 - Deck Paving & Roadmarking (KD11)	18	21-May-18 A	2	22-Jun-18	29-Oct-16	31-Oct-16	-484	97%	[Gantt bar: 21-May-18 to 22-Jun-18, 97% complete]																							
VA2-C7840	New Activity	129	23-Jun-18	129	24-Nov-18	01-Nov-16	07-Apr-17	-484	0%	[Gantt bar: 23-Jun-18 to 24-Nov-18, 0% complete]																							
Bridge A1																																	
Deck Finishes, E&M and Roadworks																																	
VA1-C7710	Viaduct A1 - Parapet Panels	220	10-Feb-18 A	2	22-Jun-18	01-Nov-16	03-Nov-16	-481	97%	[Gantt bar: 10-Feb-18 to 22-Jun-18, 97% complete]																							
VA1-C7715	Viaduct A1 - Parapet Panels (with MTR access)	51	21-May-18 A	2	22-Jun-18	01-Nov-16	03-Nov-16	-481	97%	[Gantt bar: 21-May-18 to 22-Jun-18, 97% complete]																							
VA1-C7720	Viaduct A1 - Gantry & TCSS Provisions (KD5)	36	21-May-18 A	2	22-Jun-18	01-Nov-16	03-Nov-16	-481	97%	[Gantt bar: 21-May-18 to 22-Jun-18, 97% complete]																							
VA1-C7810	Viaduct A1 - Drainage, Fire Main & E&M Services	48	21-May-18 A	2	22-Jun-18	01-Nov-16	03-Nov-16	-481	97%	[Gantt bar: 21-May-18 to 22-Jun-18, 97% complete]																							
VA1-C7820	Viaduct A1 - Railings, Light Poles, Signs & Street Furniture	30	21-May-18 A	2	22-Jun-18	17-Sep-20	18-Sep-20	667	97%	[Gantt bar: 21-May-18 to 22-Jun-18, 97% complete]																							
VA1-C7830	Viaduct A1 - Deck Paving & Roadmarking (KD11)	18	21-May-18 A	2	22-Jun-18	01-Nov-16	03-Nov-16	-481	97%	[Gantt bar: 21-May-18 to 22-Jun-18, 97% complete]																							
VA1-C7840	Viaduct A1 - Outstanding works	155	22-Jun-18	155	24-Nov-18	03-Nov-16	07-Apr-17	-596	0%	[Gantt bar: 22-Jun-18 to 24-Nov-18, 0% complete]																							
Viaduct B																																	
Bridge B3																																	
Deck Finishes, E&M and Roadworks																																	
VB3-C7720	Viaduct B3 - Gantry & TCSS Provisions (KD5)	36	21-Mar-18 A	2	22-Jun-18	05-Dec-16	06-Dec-16	-453	97%	[Gantt bar: 21-Mar-18 to 22-Jun-18, 97% complete]																							
VB3-C7810	Viaduct B3 - Drainage, Fire Main & E&M Services	60	21-May-18 A	2	22-Jun-18	05-Dec-16	06-Dec-16	-453	97%	[Gantt bar: 21-May-18 to 22-Jun-18, 97% complete]																							
VB3-C7820	Viaduct B3 - Railings, Light Poles, Signs & Street Furniture	30	21-May-18 A	2	22-Jun-18	17-Sep-20	18-Sep-20	667	97%	[Gantt bar: 21-May-18 to 22-Jun-18, 97% complete]																							
VB3-C7830	Viaduct B3 - Deck Paving & Roadmarking (KD12)	18	21-May-18 A	2	22-Jun-18	05-Dec-16	06-Dec-16	-453	97%	[Gantt bar: 21-May-18 to 22-Jun-18, 97% complete]																							

■ Actual Work
■ Planned Bar
■ Critical Bar
◆ Milestone

Project ID: TMCLK-DWPL-M61
 Layout: J3518-DWP-3MRP Submission - M61
 Filter: TASK filters: 3-Month Lookahead, No CC
 Milestones, No Level of Effort.

Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 2 of 6 Pages)
(Progress as of 21-Jun-18)

Date	Revision	Check...	Approved
28-May-...		PKN	HF
03-Jul-18		HF	HF

DWG. No.:
J3518/GCL/PGM/3MRP-M61

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Physical % Complete	2018															
										June				July				August				September			
										28	04	11	18	25	02	09	16	23	30	06	13	20	27	03	10
Bridge F3																									
Deck Span Segment																									
F10-C6210	F9-F10 Deck - Erect Falsework (with Sliding System)	21	21-May-18 A	15	09-Jul-18	18-Jan-18	03-Feb-18	-122	25%	[Gantt bar: Blue from 21-May to 09-Jul, Red from 09-Jul to 18-Jan]															
F10-C6310	F9-F10 Deck - Span Segment (33 nr) - Crane	45	10-Jul-18	45	30-Aug-18	06-Feb-18	06-Apr-18	-121	0%	[Gantt bar: Red from 10-Jul to 06-Feb]															
F10-C6410	F9-F10 Deck - Stitching to F9 & Clear Deck (KD2)	21	31-Aug-18	21	24-Sep-18	11-Apr-18	05-May-18	-118	0%	[Gantt bar: Red from 31-Aug to 11-Apr]															
F11-C6210	F10-F11 Deck - Erect Falsework (stage 1)	14	16-Aug-18	14	31-Aug-18	17-Mar-18	06-Apr-18	-122	0%	[Gantt bar: Red from 16-Aug to 17-Mar]															
F11-C6310	F10-F11 Deck - Span Segment (15 nr)stage 1 - Crane	14	01-Sep-18	14	17-Sep-18	07-Apr-18	23-Apr-18	-122	0%	[Gantt bar: Red from 01-Sep to 07-Apr]															
F11-C6320	F10-F11 - Erect Falsework (stage 2)	14	14-Sep-18	14	02-Oct-18	20-Apr-18	07-May-18	-122	0%	[Gantt bar: Red from 14-Sep to 20-Apr]															
F12-C6210	F11-F12 Deck - Soil Platform, Concrete Blocks, I-Beam (stage 1)	14	01-Sep-18	14	17-Sep-18	07-Apr-18	23-Apr-18	-122	0%	[Gantt bar: Red from 01-Sep to 07-Apr]															
F12-C6310	F11-F12 Deck - Span Segment (10 nr)stage 1 - Crane	11	18-Sep-18	11	02-Oct-18	24-Apr-18	07-May-18	-122	0%	[Gantt bar: Red from 18-Sep to 24-Apr]															
Bridge F4																									
Deck Span Segment																									
F16-C6310	F16 Deck - Cantilever Span (5 nr) & stitches - crane	19	20-May-18 A	0	24-May-18 A				100%	[Gantt bar: Blue from 20-May to 24-May]															
F16-C6320	F16 Deck - Construct props with footing	24	25-May-18 A	0	05-Jun-18 A				100%	[Gantt bar: Blue from 25-May to 05-Jun]															
F16-C6330	F16 Deck - Cantilever Span (12 nr) - THB / crane	30	06-Jun-18 A	0	13-Jun-18 A				100%	[Gantt bar: Blue from 06-Jun to 13-Jun]															
F16B-C6410	F16 Deck - Stitching to F15-F16	12	30-Aug-18	12	12-Sep-18	15-May-18	29-May-18	-89	0%	[Gantt bar: Red from 30-Aug to 12-Sep]															
F16B-C6420	F16 Deck - Grout bearing & load transfer at F15	7	13-Sep-18	7	20-Sep-18	30-May-18	06-Jun-18	-89	0%	[Gantt bar: Red from 13-Sep to 20-Sep]															
F17-C6310	F17 Deck - Cantilever Span (12 nr) - crane (Props at 5th Pair)	23	26-Mar-18 A	0	16-Jun-18 A				100%	[Gantt bar: Blue from 26-Mar to 16-Jun]															
F17-C6410	F17 Deck - Stitching to F16-F17	12	19-Jun-18 A	6	27-Jun-18	14-Apr-18	20-Apr-18	-55	50%	[Gantt bar: Blue from 19-Jun to 27-Jun, Red from 14-Apr to 20-Apr]															
F18-C6210	F18 Deck - Falsework for End Span to F17	24	21-May-18 A	0	09-Jun-18 A				100%	[Gantt bar: Blue from 21-May to 09-Jun]															
F18-C6310	F18 Deck - End Span to F17 (9 nr) - Crane	12	20-Jun-18 A	10	03-Jul-18	10-Apr-18	20-Apr-18	-59	10%	[Gantt bar: Red from 20-Jun to 03-Jul, Blue from 10-Apr to 20-Apr]															
F18-C6410	F18 Deck - Stitching to F17-F18	12	04-Jul-18	12	17-Jul-18	21-Apr-18	05-May-18	-59	0%	[Gantt bar: Red from 04-Jul to 17-Jul, Red from 21-Apr to 05-May]															
F18-C6420	F18 Deck - Grout bearing & load transfer at F17 & F18	7	18-Jul-18	7	25-Jul-18	07-May-18	14-May-18	-59	0%	[Gantt bar: Red from 18-Jul to 25-Jul, Red from 07-May to 14-May]															
Deck Finishes, E&M and Roadworks																									
VF4-C7710	Viaduct F4 - Parapet Panels	48	10-Nov-18	48	08-Jan-19	26-Jul-18	19-Sep-18	-89	0%	[Gantt bar: Red from 10-Nov to 08-Jan]															
Bridge F5																									
Deck Span Segment																									
F14-C6410	F14 Deck - Stitching to F13-F14 & Clear Deck (KD2)	12	18-May-18 A	0	23-May-18 A				100%	[Gantt bar: Blue from 18-May to 23-May]															
F14-C6420	F14 Deck - Install, grout permanent bearing and load transfer at F14	7	14-Jun-18 A	2	22-Jun-18	17-May-18	18-May-18	-28	75%	[Gantt bar: Blue from 14-Jun to 22-Jun, Red from 17-May to 18-May]															
F15-C6210	F15 - Falsework for End Span to F14	24	11-Jun-18 A	0	19-Jun-18 A				100%	[Gantt bar: Blue from 11-Jun to 19-Jun]															
F15-C6310	F15 - End Span to F14 (7 nr) - Crane	7	20-Jun-18 A	6	27-Jun-18	12-May-18	18-May-18	-32	15%	[Gantt bar: Red from 20-Jun to 27-Jun, Red from 12-May to 18-May]															
F15-C6410	F15 Deck - Stitching to F14-F15	12	28-Jun-18	12	12-Jul-18	19-May-18	02-Jun-18	-32	0%	[Gantt bar: Red from 28-Jun to 12-Jul, Red from 19-May to 02-Jun]															
F15-C6510	F15 - Falsework for End Span to F16	24	24-Jul-18	24	20-Aug-18	22-Feb-18	21-Mar-18	-122	0%	[Gantt bar: Red from 24-Jul to 20-Aug, Red from 22-Feb to 21-Mar]															
F15-C6610	F15 - End Span to F16 (7 nr) - Crane	8	21-Aug-18	8	29-Aug-18	05-May-18	14-May-18	-89	0%	[Gantt bar: Red from 21-Aug to 29-Aug, Red from 05-May to 14-May]															
VF5-C6910	Viaduct F5 - Final Stressing and stitching to Span	36	30-Aug-18	36	12-Oct-18	04-Jun-18	17-Jul-18	-73	0%	[Gantt bar: Red from 30-Aug to 12-Oct, Red from 04-Jun to 17-Jul]															
Deck Finishes, E&M and Roadworks																									
VF5-C7710	Viaduct F5 - Parapet Panels	48	23-Oct-18	48	17-Dec-18	26-Jul-18	19-Sep-18	-73	0%	[Gantt bar: Red from 23-Oct to 17-Dec]															
CEDD Access Track Re-Provisioning Works																									
Viaduct A to D																									
Access Tracks																									
General																									
PR30060	Construct perm. realignment of CEDD access track at Pier A8	42	14-Jul-18*	42	31-Aug-18	02-Dec-16	23-Jan-17	-474	0%	[Gantt bar: Red from 14-Jul to 31-Aug]															
PR30070	Construct perm. realignment of CEDD access track at Pier B8	42	07-Aug-18	42	24-Sep-18	28-Dec-16	18-Feb-17	-474	0%	[Gantt bar: Red from 07-Aug to 24-Sep]															
PR30080	Construct perm. realignment of CEDD access track at Pier C7	42	30-Aug-18	42	20-Oct-18	21-Jan-17	14-Mar-17	-474	0%	[Gantt bar: Red from 30-Aug to 20-Oct]															
At-Grade Works & Miscellaneous Works																									
At-Grade Works Along North Lantau Highway																									
Slope Works Near Viaduct A																									
Slope 9SE-B/FR8																									
GFXX501	9SE-B/FR8 - Demolish existing wall stem	31	27-Jul-18	31	31-Aug-18	20-Oct-16	24-Nov-16	-522	0%	[Gantt bar: Red from 27-Jul to 31-Aug]															
GFXX541	9SE-B/FR8 - Construct New Wall Stem	90	01-Sep-18	90	18-Dec-18	25-Nov-16	16-Mar-17	-522	0%	[Gantt bar: Red from 01-Sep to 18-Dec]															
Slope Works Near Viaduct B																									
Slope 10SW-A/F52																									
GFXX495	10SW-A/F52 - Slopework - Phase 1	36	30-Jul-18	36	08-Sep-18	09-Nov-16	20-Dec-16	-507	0%	[Gantt bar: Red from 30-Jul to 08-Sep]															
GFXX535	10SW-A/F52 - Slopework - Phase 2	68	10-Sep-18	68	30-Nov-18	21-Dec-16	16-Mar-17	-507	0%	[Gantt bar: Red from 10-Sep to 30-Nov]															
Slope Works Near Viaduct D																									
Slope 10NW-C/F9																									
M201205	10NW-C/F9 - Fill and compact filled material	52	03-Apr-18 A	42	09-Aug-18	10-Jan-17	02-Mar-17	-425	10%	[Gantt bar: Blue from 03-Apr to 09-Aug, Red from 10-Jan to 02-Mar]															
M201210	10NW-C/F9 - Install Geo. Instru. & Baseline Monitoring	30	10-Aug-18	30	13-Sep-18	03-Mar-17	07-Apr-17	-425	0%	[Gantt bar: Red from 10-Aug to 13-Sep, Red from 03-Mar to 07-Apr]															
Slope 10NW-C/F10																									
M201230	10NW-C/F10 - Fill and compact filled material	160	16-Oct-17 A	36	02-Aug-18	20-Feb-17	01-Apr-17	-393	90%	[Gantt bar: Blue from 16-Oct to 02-Aug, Red from 20-Feb to 01-Apr]															
M201300	10NW-C/F10 - Slope drainage	12	27-Jul-18	12	07-Aug-18	26-Mar-17	07-Apr-17	-487	0%	[Gantt bar: Red from 27-Jul to 07-Aug]															

█ Actual Work
█ Planned Bar
█ Critical Bar
◆ Milestone

Project ID: TMCLK-DWPL-M61
 Layout: J3518-DWP-3MRP Submission - M61
 Filter: TASK filters: 3-Month Lookahead, No CC
 Milestones, No Level of Effort.

Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 5 of 6 Pages)
(Progress as of 21-Jun-18)

Date	Revision	Check...	Approved
28-May-...		PKN	HF
03-Jul-18		HF	HF

DWG. No.:
J3518/GCL/PGM/3MRP-M61

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Physical % Complete	2018																								
										June					July				August					September										
										28	04	11	18	25	02	09	16	23	30	06	13	20	27	03	10	17	24							
Slope 10NW-C/F11																																		
M201290	10NW-C/F11 - Fill and compact filled material - Phase 2	72	16-Apr-18 A	42	09-Aug-18	17-Feb-17	07-Apr-17	-395	85%																									
Slope 10NW-C/F17																																		
M201197	10NW-C/F17 - Fill and compact filled material	60	07-May-18 A	48	16-Aug-18	17-Mar-17	18-May-17	-371	40%																									
M201198	10NW-C/F17 - Construct POP	30	07-May-18 A	18	13-Jul-18	17-Mar-17	07-Apr-17	-371	80%																									
Road Works Along NLH Westbound																																		
General																																		
RW11010	NLH W/B (Viaduct B) - Drainage for ramp B tie out	48	15-Dec-17 A	0	16-Jun-18 A				100%																									
RW11020	NLH W/B (Viaduct B) - Profile Barrier and roadwork	36	23-Apr-18 A	18	12-Jul-18	17-Mar-17	07-Apr-17	-371	90%																									
Road Works Along NLH Eastbound																																		
General																																		
RW20084	NLH E/B Viaduct A - Ch200-388 Roadwork (SL & HS) & Reinstale NLH	127	17-Dec-16 A	12	05-Jul-18	24-Mar-17	07-Apr-17	-365	90%																									
RW2096	NLH E/B (Gantries 319 - 322) - Footing & A-Frame at NLH (Central Reser	55	12-Apr-18 A	0	15-Jun-18 A				100%																									
RW21008	NLH E/B (Gantries 319 - 322) - Erection of Gantry beams	6	20-Jun-18 A	1	21-Jun-18	07-Dec-16	07-Dec-16	-451	50%																									
At-Grade Works Along Cheung Tung Road																																		
Slope Works Near Viaduct B																																		
Slope 9SE-B/F85																																		
SWVB4020	9SE-B/F85 - Fill and compact filled material	60	16-Jan-18 A	12	05-Jul-18	06-Mar-18	19-Mar-18	-85	95%																									
SWVB4035	9SE-B/F85 - Install Geo. Instru. & Baseline Monitoring	30	06-Jul-18	30	09-Aug-18	13-Oct-18	17-Nov-18	83	0%																									
SWVB4040	9SE-B/F85 - Hydroseeding	12	10-Aug-18	12	23-Aug-18	19-Nov-18	01-Dec-18	83	0%																									
Slope Works Near Viaduct C																																		
Slope PF1 & PF2																																		
SWVC6990	10NW-PF1 & PF2 complete site site clearance	0	21-Jun-18*	0		21-Dec-17		-182	0%																									
SWVC7000	10NW - PF2 slope works	48	21-Jun-18	48	16-Aug-18	21-Dec-17	21-Feb-18	-143	0%																									
SWVC7010	10NW - PF2 slope works	52	17-Aug-18*	52	19-Oct-18	22-Feb-18	27-Apr-18	-143	0%																									
Slope 10NW-C/F13																																		
SWVC4000	10NW-C/F13 - Slope works	100	25-Jan-18 A	0	31-May-18 A				100%																									
Slope 10NW-C/F14																																		
SWVC5000	10NW-C/F14 - Slope works	100	01-Mar-18 A	0	31-May-18 A				100%																									
SWVC6010	10NW-C/F14 - Install Geo. Instru. & Baseline Monitoring	30	21-Jun-18	30	26-Jul-18	20-Mar-18	27-Apr-18	-73	0%																									
Slope 10NW-C/F15																																		
SWVC6005	10NW-C/F15 - Install Geo. Instru. & Baseline Monitoring	30	06-Jul-18*	30	09-Aug-18	20-Mar-18	27-Apr-18	-85	0%																									
Re-alignment of CTR Along Viaduct B																																		
General																																		
RP00077-1	Ch100-300: Street Lighting, thrie beam, bus stop & water point, etc	48	08-Dec-17 A	12	05-Jul-18	01-Jun-17	14-Jun-17	-313	85%																									
Re-alignment of CTR Along Viaduct C																																		
East Portion																																		
RW60080	CTR Tie in Works	116	18-May-17 A	0	31-May-18 A				100%																									
At-Grade Works at Southern Landfall																																		
HKBCF Area																																		
General																																		
RW30010	South Landfall - Mobilisation for Portion B Works	24	21-May-18 A	0	20-Jun-18 A				100%																									
RW30014	South Landfall - DN300 Fresh water main works installation & connection (f	60	21-Jun-18	60	30-Aug-18	07-Feb-18	25-Apr-18	-105	0%																									
RW30016	South Landfall - Stormwater drainage works (Portion B)	60	17-Aug-18	60	29-Oct-18	12-Apr-18	23-Jun-18	-105	0%																									
RW30030	South Landfall - Stormwater drainage works	60	31-Aug-18	60	12-Nov-18	06-Jul-18	13-Sep-18	-48	0%																									
Watermain from Tung Chung to Southern Landfall																																		
Watermain Works																																		
General																																		
WM00190	Viaduct B1 - Lay DN450 Fresh Water Main	42	21-Apr-18 A	54	23-Aug-18	30-May-18	02-Aug-18	-18	85%																									
WM00200	Viaduct B2 - Lay DN450 Fresh Water Main	48	30-Apr-18 A	48	16-Aug-18	06-Jun-18	02-Aug-18	-12	85%																									
WM00210	Viaduct B3 - Lay DN450 Fresh Water Main	36	07-May-18 A	36	02-Aug-18	21-Jun-18	02-Aug-18	0	85%																									
WM00220	Viaduct E1 - Lay DN450 Fresh Water Main	36	14-May-18 A	36	02-Aug-18	21-Jun-18	02-Aug-18	0	80%																									
WM00230	Viaduct E2 - Lay DN450 Fresh Water Main	60	21-May-18 A	60	30-Aug-18	23-May-18	02-Aug-18	-24	70%																									
WM00240	Viaduct E8 - Lay DN450 Fresh Water Main	48	31-Aug-18	48	29-Oct-18	03-Aug-18	28-Sep-18	-24	0%																									
Landscaping Works & Establishment Works																																		
Landscape Softworks																																		
General																																		
LW00012	Deliver & Stockpile Top Soil (29,000 cu.m) to BCF Near Ramp F	180	18-Aug-18	180	26-Mar-19	28-Nov-17	11-Jul-18	-212	0%																									

Actual Work
 Planned Bar
 Critical Bar
 Milestone

Project ID: TMCLK-DWPL-M61
 Layout: J3518-DWP-3MRP Submission - M61
 Filter: TASK filters: 3-Month Lookahead, No CC
 Milestones, No Level of Effort.

Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 6 of 6 Pages)
(Progress as of 21-Jun-18)

Date	Revision	Check...	Approved
28-May-...		PKN	HF
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DWG. No.:
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Appendix C

Environmental Mitigation and Enhancement Measure Implementation Schedules

(In reference to CINOTECH (2011) Agreement No.
CE35/2011 EP Baseline Environmental Monitoring for
Hong Kong-Zhuhai-Macao Bridge Tuen Mun-Chek Lap
Kok Link - Investigation. Updated EM&A Manual for
Tuen Mun-Chek Lap Kok Link)

*Contract No. HY/2012/07
Tuen Mun – Chek Lap Kok Link
Southern Connection Viaduct Section
Environmental Mitigation and Enhancement Measure Implementation Schedule*

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
AIR QUALITY									
4.8.1	3.8	An effective watering programme of eight daily watering with complete coverage, is estimated to reduce by 50%. This is recommended for all areas in order to reduce dust levels to a minimum;	All areas / throughout construction period	Contractor	TMEIA Avoid smoke impacts and disturbance		Y		<>
4.8.1	3.8	The Contractor shall, to the satisfaction of the Engineer, install effective dust suppression measures and take such other measures as may be necessary to ensure that at the Site boundary and any nearby sensitive receiver, dust levels are kept to acceptable levels.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓
4.8.1	3.8	The Contractor shall not burn debris or other materials on the works areas.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓
4.8.1	3.8	In hot, dry or windy weather, the watering programme shall maintain all exposed road surfaces and dust sources wet.	All unpaved haul roads / throughout construction period in hot, dry or windy weather	Contractor	TMEIA Avoid smoke impacts and disturbance		Y		<>
4.8.1	3.8	Where breaking of oversize rock/concrete is required, watering shall be implemented to control dust. Water spray shall be used during the handling of fill material at the site and at active cuts, excavation and fill sites where dust is likely to be created.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓
4.8.1	3.8	Open dropping heights for excavated materials shall be controlled to a maximum height of 2m to minimise the fugitive dust arising from unloading.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓
4.8.1	3.8	During transportation by truck, materials shall not be loaded to a level higher than the side and tail boards, and shall be dampened or covered before transport.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
4.8.1	3.8	Materials having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin. The tarpaulin shall be properly secured and shall extend at least 300mm over the edges of the side and tail boards.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓
4.8.1	3.8	No earth, mud, debris, dust and the like shall be deposited on public roads. Wheel washing facility shall be usable prior to any earthworks excavation activity on the site.	All site exits / throughout construction period	Contractor	TMEIA Avoid dust		Y		✓
4.8.1	3.8	Areas of exposed soil shall be minimised to areas in which works have been completed shall be restored as soon as is practicable.	All exposed surfaces / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓
4.8.1	3.8	All stockpiles of aggregate or spoil shall be enclosed or covered and water applied in dry or windy condition.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		<>
4.11	Section 3	EM&A in the form of 1 hour and 24 hour dust monitoring and site audit	All representative existing ASRs / throughout construction period	Contractor	EM&A Manual		Y		✓
NOISE									
5.11	Section 4	Noise monitoring	All existing representative sensitive receivers / during North Lantau Viaduct construction	Contractor	EM&A Manual		Y		✓
WATER QUALITY									
<i>General Marine Works</i>									
6.10	-	Bored piling to be undertaken within a metal casing.	Marine viaducts of TM-CLKL and HKLR/ bored piling	Contractor	TM-EIAO		Y		✓
6.10	-	Barges and hopper dredgers shall have tight fitting seals to their bottom openings to prevent leakage of material.	All areas/ throughout construction period	Contractor	Marine Fill Committee Guidelines. DASO permit conditions.		Y		✓

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
6.10	-	Any pipe leakages shall be repaired quickly. Plant should not be operated with leaking pipes.	All areas/ throughout construction period	Contractor	Marine Fill Committee Guidelines. DASO permit conditions.		Y		✓
6.10	-	Loading of barges and hoppers shall be controlled to prevent splashing of dredged material to the surrounding water. Barges or hoppers shall not be filled to a level which will cause overflow of materials or pollution of water during loading or transportation.	All areas/ throughout construction period	Contractor	Marine Fill Committee Guidelines. DASO permit conditions.		Y		✓
6.10	-	Excess material shall be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved	All areas/ throughout construction period	Contractor	Marine Fill Committee Guidelines. DASO permit conditions.		Y		✓
6.10	-	Adequate freeboard shall be maintained on barges to reduce the likelihood of decks being washed by wave action;	All areas/ throughout construction period	Contractor	Marine Fill Committee Guidelines. DASO permit conditions.		Y		✓
6.10	-	All vessels shall be sized such that adequate clearance is maintained between vessels and the sea bed at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash.	All areas/ throughout construction period	Contractor	Marine Fill Committee Guidelines. DASO permit conditions.		Y		✓
6.10	-	The works shall not cause foam, oil, grease, litter or other objectionable matter to be present in the water within and adjacent to the works site.	All areas/ throughout construction period	Contractor	Marine Fill Committee Guidelines. DASO permit conditions.		Y		✓
<i>Temporary Staging work</i>									
	5.2	Regular inspection for the accumulation of floating refuse and collection of floating refuse if required	During temporary staging works	Contractor			Y		✓
	5.2	Provision of temporary drainage system on the temporary staging for collection of construction site runoff to allow appropriate treatment before discharge into the sea	During temporary staging works	Contractor			Y		↔
	5.2	Wastewater generated from construction works such as bored / drilling water will be collected, treated, neutralized and de-silted through silt trap or sedimentation tank before disposal	During temporary staging works	Contractor			Y		✓
	5.2	One additional water quality monitoring station is	During temporary	Contractor			Y		✓

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
		proposed at station SR4a In case elevated SS or turbidity is identified during the water quality monitoring, the source of pollution will be tracked down and be removed as soon as possible. In case depletion of dissolved oxygen is identified, artificial aeration will be arranged at the monitoring station SR4a,	staging works						
<i>Land Works</i>									
6.10	-	Wastewater from temporary site facilities should be controlled to prevent direct discharge to surface or marine waters.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Sewage effluent and discharges from on- site kitchen facilities shall be directed to Government sewer in accordance with the requirements of the WPCO or collected for disposal offsite. The use of soakaways shall be avoided.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Storm drainage shall be directed to storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins. Channels, earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Silt removal facilities, channels and manholes shall be maintained and any deposited silt and grit shall be removed regularly, including specifically at the onset of and after each rainstorm.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Temporary access roads should be surfaced with crushed stone or gravel.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
6.10	-	Open stockpiles of construction materials (e.g. aggregates and sand) on site should be covered with tarpaulin or similar fabric during rainstorms.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		↔
6.10	5.8	Manholes (including any newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	All vehicles and plant should be cleaned before they leave the construction site to ensure that no earth, mud or debris is deposited by them on roads. A wheel washing bay should be provided at every site exit.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Wheel wash overflow shall be directed to silt removal facilities before being discharged to the storm drain.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Section of construction road between the wheel washing bay and the public road should be surfaced with crushed stone or coarse gravel.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Wastewater generated from concreting, plastering, internal decoration, cleaning work and other similar activities, shall be screened to remove large objects.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Vehicle and plant servicing areas, vehicle wash bays and lubrication facilities shall be located under roofed areas. The drainage in these covered areas shall be connected to foul sewers via a petrol interceptor in accordance with the requirements of the WPCO or collected for offsite disposal.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	The Contractor shall prepare an oil / chemical cleanup plan and ensure that leakages or spillages are contained and cleaned up immediately.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Waste oil should be collected and stored for recycling or disposal, in accordance with the Waste Disposal Ordinance.	All areas/ throughout construction period	Contractor	TM-EIAO Waste Disposal Ordinance		Y		✓

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
6.10	-	All fuel tanks and chemical storage areas should be provided with locks and be sited on sealed areas. The storage areas should be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Surface run-off from bunded areas should pass through oil/ grease traps prior to discharge to the stormwater system.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Roadside gullies to trap silt and grit shall be provided prior to discharging the stormwater into the marine environment. The sumps will be maintained and cleaned at regular intervals.	Roadside/ design and operation	Design Consultant/ Contractor	TM-EIAO	Y		Y	✓
6.10	Section 5	All construction works shall be subject to routine audit to ensure implementation of all EIA recommendations and good working practice.	All areas/ throughout construction period	Contractor	EM&A Manual		Y		✓
<i>Water Quality Monitoring</i>									
6.10	Section 5	Water quality monitoring shall be undertaken for suspended solids, turbidity, and dissolved oxygen. Nutrients and metal parameters shall also be measured for Mf sediment operations (only HKBCF and HKLR required handling of Mf sediment) during baseline, backfilling and post construction period. One year operation phase water quality monitoring at designated stations	Designated monitoring stations as defined in EM&A Manual, Section 5/ Before, through-out marine construction period, post construction and monthly operational phase water quality monitoring for a year.	Contractor	EM&A Manual		Y	Y	✓
ECOLOGY									
8.14	6.3	Specification for and implement pre, during and post construction dolphin abundance monitoring.	All Areas/ Detailed Design/ during construction works/ post construction	Design Consultant/ Contractor	TMEIA	Y	Y	Y	✓
8.14	6.3	Specification for bored piling monitoring	Detailed Design	Design Consultant	TMEIA	Y			n/a
8.14	6.3	Implement any recommendations of the bored piling monitoring	Southern marine viaduct/ Throughout	Contractor	TMEIA		Y		✓

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
			construction during bored piling						
8.14	6.3,6.5	Avoidance of peak CWD calving season in May and June for driving of metal caissons during bored piling works	Southern marine viaduct/ May and June during bored piling	Contractor	TMEIA		Y		n/a
8.14	6.3,6.5	Specification and implementation of 250m dolphin exclusion zone.	All marine bored piling and temporary staging works areas/Detailed Design/ during all marine bored piling and temporary staging works	Design Consultant/ Contractor	TMEIA	Y	Y		✓
8.15	6.3, 6.5	Specification and deployment of an artificial reef of an area of 3,600 m ² in an area where fishing activities are prohibited.	Area of prohibited fishing activities/Detailed Design/ towards end of construction period	TM-CLKL/ HKBCF Design Consultant/ TM-CLKL/ HKBCF Contractor	TMEIA	Y		Y	n/a To be enforced by AFCD.
8.14	6.3, 6.5	Specification and implementation of marine vessel control specifications	All areas/Detailed Design/ during construction works	Design Consultant/ Contractor	TMEIA	Y	Y		✓
8.14	6.3, 6.5	Design and implementation of acoustic decoupling methods for marine bored piling and the whole lifespan of temporary staging works.	All areas/ Detailed Design/ during marine bored piling and temporary staging works	Design Consultant/ Contractor	TMEIA	Y	Y		✓
8.15	6.3, 6.4	Pre-construction phase survey and coral translocation	Tai Ho Wan (donor site) and Yam Tsui Wan (receptor site) /Detailed Design/Prior to construction	Design Consultant/ Contractor	TMEIA	Y	Y		n/a
8.15	6.5	Audit coral translocation success	Yam Tsui Wan (receptor site)/Post translocation	Contractor	TMEIA		Y		Completed in October 2014
7.13	6.5	Undertaken gabion wall works in Stream NL1 in the dry season	North Lantau slope works/dry	Contractor	TMEIA		Y		n/a

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
			season/construction phase						
7.13	6.5	The loss of habitat shall be supplemented by enhancement planting in accordance with the landscape mitigation schedule.	All areas / As soon as accessible	Contractor	TMEIA		Y		n/a. To be approved by AFCD/LCSD
7.13	6.5	Spoil heaps shall be covered at all times.	All areas / Throughout construction period	Contractor	TMEIA		Y		✓
7.13	6.5	Avoid damage and disturbance to the remaining and surrounding natural habitat	All areas / Throughout construction period	Contractor	TMEIA		Y		↔
7.13	6.5	Placement of equipment in designated areas within the existing disturbed land	All areas / Throughout construction period	Contractor	TMEIA		Y		↔
7.13	6.5	Disturbed areas to be reinstated immediately after completion of the works.	All areas / Throughout construction period	Contractor	TMEIA		Y		✓
7.13	6.5	Construction activities should be restricted to the proposed works boundary	All areas / Throughout construction period	Contractor	TMEIA		Y		✓
LANDSCAPE AND VISUAL									
10.9	7.6	Round angle, patterned finishes, and oval shaped pier were considered in the viaduct design, and further details will be developed under ACABAS submission (DM3)	All areas/detailed design	Design Consultant	TMEIA	Y			n/a
10.9	7.6	Details of the street furniture will be developed in the detailed design stage (DM4)	All areas/detailed design	Design Consultant	TMEIA	Y			n/a
10.9	7.6	Aesthetic design of the viaduct, retaining wall and other structures will be developed under ACABAS submission (DM5)	All areas/detailed design	Design Consultant	TMEIA	Y			n/a
10.9	7.6	Existing trees on boundary of the Project Area shall be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees	All areas/detailed design/ during construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
		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) (CM1)							
10.9	7.6	Trees unavoidably affected by the works shall be transplanted where practical. Trees will be transplanted straight to their final receptor site and not held in a temporary nursery. A detailed Tree Transplanting Specification shall be provided in the Contract Specification. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme (CM2)	All areas/detailed design/ during construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓ Tree transplanted as Contract Specification
10.9	7.6	Hillside and roadside screen planting to proposed roads, associated structures and slope works (CM3).	All areas/detailed design/ during construction/post construction	Design Consultant/	TMEIA	Y	Y		✓
10.9	7.6	Hydroseeding or sheeting of soil stockpiles with visually unobtrusive material (in earth tone) (CM4)	All areas/detailed design/ during construction/post construction	Design Consultant/ Contractor	TMEIA	Y	Y		↔
10.9	7.6	Screening of construction works by hoardings around works area in visually unobtrusive colours, to screen works (CM5)	All areas/detailed design/ during construction/post construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Control night-time lighting and glare by hooding all lights (CM6)	All areas/detailed design/ during construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Ensure no run-off into water body adjacent to the Project Area (CM7)	All areas/detailed design/ during construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Avoidance of excessive height and bulk of buildings and structures (CM8)	All areas/detailed design/ during construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
10.9	7.6	Recycle/Reuse all felled trees and vegetation, e.g. mulching (CM9)	All areas/ detailed design/ during construction	Design Consultant/ Contractor	TMEIA	Y	Y		n/a No felled trees or vegetation suitable for recycle
10.9	7.6	Compensatory tree planting shall be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Felling Application process under ETWBTC 3/2006 (CM10).	All areas/ detailed design/ during construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Re-vegetation of affected woodland/shrubland with native species (OM1)	All areas/ detailed design/ during construction/ during operation	Design Consultant/ Contractor	TMEIA	Y	Y	Y	n/a. To be implemented by AFCD/HyD/ L CSD
10.9	7.6	Tall buffer screen tree / shrub / climber planting should be incorporated to soften hard engineering structures and facilities (OM2)	All areas/ detailed design/ during construction/ during operation	Design Consultant/ Contractor	TMEIA	Y	Y	Y	n/a To be implemented by HyD/LCSD
10.9	7.6	Streetscape elements (e.g. paving, signage, street furniture, lighting etc.) shall be sensitively designed in a manner that responds to the local context, and minimises potential negative landscape and visual impacts. Lighting units should be directional and minimise unnecessary light spill (OM3)	All areas/ detailed design/ during construction / during operation	Design Consultant/ Contractor	TMEIA	Y	Y	Y	n/a. To be implemented by HyD/LCSD
10.9	7.6	Structure, ornamental tree / shrub / climber planting should be provided along roadside amenity strips, central dividers and newly formed slopes to enhance the townscape quality and further greenery enhancement	All areas/ detailed design/ during construction / during operation	Design Consultant/ Contractor	TMEIA	Y	Y	Y	n/a. To be implemented by

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
		(OM4)							HyD/LCSD
10.9	7.6	Aesthetically pleasing design (visually unobtrusive and non-reflective) as regard to the form, material and finishes	All areas/ detailed design/ during construction / during operation	Design Consultant/ Contractor	TMEIA	Y	Y	Y	n/a. To be implemented by HyD
WASTE									
12.6		The Contractor shall identify a coordinator for the management of waste.	Contract mobilisation	Contractor	TMEIA		Y		✓
12.6		The Contractor shall prepare and implement a Waste Management Plan which specifies procedures such as a ticketing system, to facilitate tracking of loads and to ensure that illegal disposal of wastes does not occur, and protocols for the maintenance of records of the quantities of wastes generated, recycled and disposed. A recording system for the amount of waste generated, recycled and disposed (locations) should be established.	Contract mobilisation	Contractor	TMEIA, Works Branch Technical Circular No. 5/99 for the Trip-ticket System for Disposal of Construction and Demolition Material		Y		✓
12.6		The Contractor shall apply for and obtain the appropriate licenses for the disposal of public fill, chemical waste and effluent discharges.	Contract mobilisation	Contractor	TMEIA, Land (Miscellaneous Provisions) Ordinance (Cap 28); Waste Disposal Ordinance (Cap 354); Dumping at Sea Ordinance (Cap 466); Water Pollution Control Ordinance.		Y		✓
12.6	8.1	Training shall be provided to workers about the concepts of site cleanliness and appropriate waste management procedures including waste reduction, reuse and recycling.	Contract Mobilisation	Contractor	TMEIA		Y		✓
12.6	8.1	The extent of cutting operation should be optimised	All areas / throughout	Contractor	TMEIA		Y		✓

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
		where possible. Earth retaining structures and bored pile walls should be proposed to minimise the extent of cutting.	construction period						
12.6	8.1	Rock armour from the existing seawall should be reused on the new sloping seawall as far as possible	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	The site and surroundings shall be kept tidy and litter free.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	No waste shall be burnt on site.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Provisions to be made in contract documents to allow and promote the use of recycled aggregates where appropriate.	Detailed Design	Design Consultant	TMEIA	Y			n/a
12.6	8.1	The Contractor shall be prohibited from disposing of C&D materials at any sensitive locations. The Contractor should propose the final disposal sites in the EMP and WMP for approval before implementation.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Stockpiled material shall be covered by tarpaulin and /or watered as appropriate to prevent windblown dust/ surface run off.	All areas / throughout construction period	Contractor	TMEIA		Y		↔
12.6	8.1	Excavated material in trucks shall be covered by tarpaulins to reduce the potential for spillage and dust generation.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Wheel washing facilities shall be used by all trucks leaving the site to prevent transfer of mud onto public roads.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Standard formwork or pre-fabrication should be used as far as practicable so as to minimise the C&D materials arising. The use of more durable formwork/plastic facing for construction works should be considered. The use of wooden hoardings should be avoided and metal hoarding should be used to facilitate recycling. Purchasing of construction	All areas / throughout construction period	Contractor	TMEIA		Y		✓

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
		materials should avoid over-ordering and wastage.							
12.6	8.1	The Contractor should recycle as many C&D materials (this is a waste section) as possible on-site. The public fill and C&D waste should be segregated and stored in separate containers or skips to facilitate the reuse or recycling of materials and proper disposal. Where practicable, the concrete and masonry should be crushed and used as fill materials. Steel reinforcement bar should be collected for use by scrap steel mills. Different areas of the sites should be considered for segregation and storage activities.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	All falsework will be steel instead of wood.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Chemical waste producers should register with the EPD. Chemical waste should be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes as follows: <ul style="list-style-type: none"> - suitable for the substance to be held, resistant to corrosion, maintained in good conditions and securely closed; - Having a capacity of <450L unless the specifications have been approved by the EPD; and - Displaying a label in English and Chinese according to the instructions prescribed in Schedule 2 of the Regulations. Clearly labelled and used solely for the storage of chemical wastes; - Enclosed with at least 3 sides; - Impermeable floor and bund with capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in the area, whichever is greatest; 	All areas / throughout construction period	Contractor	TMEIA		Y		↔

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
		<ul style="list-style-type: none"> - Adequate ventilation; - Sufficiently covered to prevent rainfall entering (water collected within the bund must be tested and disposed of as chemical waste, if necessary); and - Incompatible materials are adequately separated. 							
12.6	8.1	Waste oils, chemicals or solvents shall not be disposed of to drain,	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Adequate numbers of portable toilets should be provided for on-site workers. Portable toilets should be maintained in reasonable states, which will not deter the workers from utilising them.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Night soil should be regularly collected by licensed collectors.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	General refuse arising on-site should be stored in enclosed bins or compaction units separately from C&D and chemical wastes. Sufficient dustbins shall be provided for storage of waste as required under the Public Cleansing and Prevention of Nuisances By-laws. In addition, general refuse shall be cleared daily and shall be disposed of to the nearest licensed landfill or refuse transfer station. Burning of refuse on construction sites is prohibited.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	All waste containers shall be in a secure area on hard standing;	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Training shall be provided to workers about the concepts of site cleanliness and appropriate waste management procedure, including waste reduction, reuse and recycling.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Office wastes can be reduced by recycling of	Site Offices/	Contractor	TMEIA		Y		✓

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
		paper if such volume is sufficiently large to warrant collection. Participation in a local collection scheme by the Contractor should be advocated. Waste separation facilities for paper, aluminium cans, plastic bottles, etc should be provided on-site.	throughout construction period						
12.6	Section 8	EM&A of waste handling, storage, transportation, disposal procedures and documentation through the site audit programme shall be undertaken.	All areas / throughout construction period	Contractor	EM&A Manual		Y		✓
CULTURAL HERITAGE									
11.8	Section 9	EM&A in the form of audit of the mitigation measures	All areas / throughout construction period	Highways Department	EIAO-TM		Y		n/a

Notes:

Legend: D=Design, C=Construction, O=Operation

Note: Funding Agent for all mitigation measures will be the Highways Department of the Hong Kong SAR Government

Status:

- ✓ Compliance of Mitigation Measures
- <> Compliance of Mitigation but need improvement
- x Non-compliance of Mitigation Measures
- ▲ Non-compliance of Mitigation Measures but rectified by Contractor
- Δ Deficiency of Mitigation Measures but rectified by Contractor
- n/a Not Applicable in Reporting Period

Appendix D

Summary of Action and Limit Levels

Table D1 *Action and Limit Levels for 1-hour and 24-hour TSP*

Parameters	Action	Limit
24 Hour TSP Level in $\mu\text{g}/\text{m}^3$	ASR9A/ASR8A = 178 ASR9C/ASR8/ASR9 = 178	260
1 Hour TSP Level in $\mu\text{g}/\text{m}^3$	ASR9A/ASR8A = 394 ASR9C/ASR8/ASR9 = 393	500

Table D2 *Action and Limit Levels for Construction Noise (0700-1900 hrs of normal weekdays)*

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

Table D3 *Action and Limit Levels for Water Quality*

Parameter	Action Level#	Limit Level#
DO in mg/L ^(a)	<u>Surface and Middle</u> 5.0 mg/L	<u>Surface and Middle</u> 4.2 mg/L
	<u>Bottom</u> 4.7 mg/L	<u>Bottom</u> 3.6 mg/L
Turbidity in NTU (Depth-averaged ^{(b), (c)})	120% of upstream control station at the same tide of the same day and 95%-ile of baseline data, i.e., 27.5 NTU	130% of upstream control station at the same tide of the same day and 99%-ile of baseline data, i.e., 47.0 NTU
SS in mg/L (Depth-averaged ^{(b), (c)})	120% of upstream control station at the same tide of the same day and 95%-ile of baseline data, i.e., 23.5 mg/L	130% of upstream control station at the same tide of the same day and 10mg/L for WSD Seawater Intakes at Tuen Mun and 99%-ile of baseline data, i.e., 34.4 mg/L

Notes:

Baseline data: data from HKZMB Baseline Water Quality Monitoring between 6 and 31 October 2011.

- (a) For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
- (b) "Depth-averaged" is calculated by taking the arithmetic means of reading of all three depths
- (c) For turbidity and SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
- (d) All figures given in the table are used for reference only, and EPD may amend the figures whenever it is considered as necessary

Parameter	Action Level#	Limit Level#
(e)	The 1%-ile of baseline data for surface and middle DO is 4.2 mg/L, whilst for bottom DO is 3.6 mg/L.	

Table D4 *Action and Limit Levels for Impact Dolphin Monitoring*

	North Lantau Social Cluster	
	NEL	NWL
Action Level	STG < 70% of baseline & ANI < 70% of baseline	STG < 70% of baseline & ANI < 70% of baseline
Limit Level	[STG < 40% of baseline & ANI < 40% of baseline] and STG < 40% of baseline & ANI < 40% of baseline	

Notes:

1. STG means quarterly encounter rate of number of dolphin sightings, which is **6.00 in NEL** and **9.85 in NWL** during the baseline monitoring period
2. ANI means quarterly encounter rate of total number of dolphins, which is **22.19 in NEL** and **44.66 in NWL** during the baseline monitoring period
3. For North Lantau Social Cluster, AL will be trigger if NEL or NWL fall below the criteria; LL will be triggered if both NEL and NWL fall below the criteria.

Table D5 *Derived Value of Action Level (AL) and Limit Level (LL)*

	North Lantau Social Cluster	
	NEL	NWL
Action Level	STG < 4.2 & ANI < 15.5	STG < 6.9 & ANI < 31.3
Limit Level	[STG < 2.4 & ANI < 8.9] and [STG < 3.9 & ANI < 17.9]	

Appendix E

Calibration Certificates of Monitoring Equipments

High-Volume TSP Sampler
5-Point Calibration Record

Location : ASR8(A)
 Calibrated by : P.F. Yeung
 Date : 28/05/2018

Sampler

Model : TE-5170
 Serial Number : S/N 3956

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454
 Service Date : 19 Mar 2018
 Slope (m) : 2.05242
 Intercept (b) : -0.01383
 Correlation Coefficient(r) : 0.99994

Standard Condition

Pstd (hpa) : 1013
 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1010
 Ta(K) : 305

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1	18 holes	11.2	3.303	1.616	56	55.27
2	13 holes	9.0	2.961	1.449	51	50.34
3	10 holes	6.6	2.536	1.242	45	44.41
4	7 holes	4.4	2.070	1.015	38	37.51
5	5 holes	2.6	1.591	0.782	30	29.61

Notes: $Z = \sqrt{dH(Pa/Pstd)(Tstd/Ta)}$, $X = Z/m - b$, $Y(\text{Corrected Flow}) = IC * \{\sqrt{Pa/Pstd}(Tstd/Ta)\}$

Sampler Calibration Relationship (Linear Regression)

Slope(m): 30.570 Intercept(b): 6.100 Correlation Coefficient(r): 0.9945

Checked by: Magnum Fan

Date: 03/06/2018

High-Volume TSP Sampler
5-Point Calibration Record

Location : ASR9
 Calibrated by : P.F. Yeung
 Date : 28/05/2018

Sampler

Model : TE-5170
 Serial Number : S/N 3958

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454
 Service Date : 19 Mar 2018
 Slope (m) : 2.05242
 Intercept (b) : -0.01383
 Correlation Coefficient(r) : 0.99994

Standard Condition

Pstd (hpa) : 1013
 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1010
 Ta(K) : 305

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1	18 holes	11.0	3.273	1.602	54	53.30
2	13 holes	9.0	2.961	1.449	48	47.38
3	10 holes	6.7	2.555	1.251	43	42.44
4	7 holes	4.6	2.117	1.038	38	37.51
5	5 holes	2.6	1.591	0.782	28	27.64

Notes: $Z = \sqrt{dH(Pa/Pstd)(Tstd/Ta)}$, $X = Z/m - b$, $Y(\text{Corrected Flow}) = IC * \{\sqrt{Pa/Pstd}(Tstd/Ta)\}$

Sampler Calibration Relationship (Linear Regression)

Slope(m): 29.893 Intercept(b): 5.045 Correlation Coefficient(r): 0.9950

Checked by: Magnum Fan

Date: 03/06/2018



Certificate of Calibration

Calibration Certification Information			
Cal. Date: March 19, 2018	Rootsmeter S/N: 438320	Ta: 294	°K
Operator: Jim Tisch		Pa: 746.8	mm Hg
Calibration Model #: TE-5025A	Calibrator S/N: 2454		

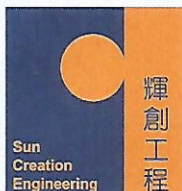
Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4300	3.2	2.00
2	3	4	1	1.0040	6.4	4.00
3	5	6	1	0.9030	7.9	5.00
4	7	8	1	0.8590	8.7	5.50
5	9	10	1	0.7080	12.8	8.00

Data Tabulation					
Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H \left(\frac{Pa}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H \left(\frac{Ta}{Pa} \right)}$ (y-axis)
0.9917	0.6935	1.4113	0.9957	0.6963	0.8874
0.9874	0.9835	1.9959	0.9914	0.9875	1.2549
0.9854	1.0913	2.2315	0.9894	1.0957	1.4030
0.9843	1.1459	2.3405	0.9883	1.1506	1.4715
0.9789	1.3826	2.8227	0.9829	1.3882	1.7747
QSTD	m=	2.05242	QA	m=	1.28519
	b=	-0.01383		b=	-0.00869
	r=	0.99994		r=	0.99994

Calculations	
Vstd= $\Delta Vol \left(\frac{Pa - \Delta P}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)$	Va= $\Delta Vol \left(\frac{Pa - \Delta P}{Pa} \right)$
Qstd= Vstd/ΔTime	Qa= Va/ΔTime
For subsequent flow rate calculations:	
$Qstd = \frac{1}{m} \left(\left(\sqrt{\Delta H \left(\frac{Pa}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)} \right) - b \right)$	$Qa = \frac{1}{m} \left(\left(\sqrt{\Delta H \left(\frac{Ta}{Pa} \right)} \right) - b \right)$

Standard Conditions	
Tstd:	298.15 °K
Pstd:	760 mm Hg
Key	
ΔH: calibrator manometer reading (in H2O)	
ΔP: rootsmeter manometer reading (mm Hg)	
Ta: actual absolute temperature (°K)	
Pa: actual barometric pressure (mm Hg)	
b: intercept	
m: slope	

RECALIBRATION
US EPA recommends annual recalibration per 1998 40 Code of Federal Regulations Part 50 to 51, Appendix B to Part 50, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere, 9.2.17, page 30



Certificate of Calibration 校正證書

Certificate No. : C173478
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC17-1452) Date of Receipt / 收件日期 : 23 June 2017

Description / 儀器名稱 : Sound Level Calibrator
Manufacturer / 製造商 : Rion
Model No. / 型號 : NC-73
Serial No. / 編號 : 10997142
Supplied By / 委託者 : Envirotech Services Co.
Room 113, 1/F, My Loft, 9 Hoi Wing Road, Tuen Mun,
New Territories, Hong Kong

TEST CONDITIONS / 測試條件

Temperature / 溫度 : $(23 \pm 2)^{\circ}\text{C}$ Relative Humidity / 相對濕度 : $(55 \pm 20)\%$
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 28 June 2017

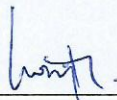
TEST RESULTS / 測試結果

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

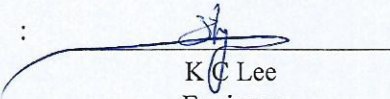
The test equipment used for calibration are traceable to National Standards via :

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

Tested By
測試


H T Wong
Technical Officer

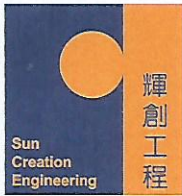
Certified By
核證


K C Lee
Engineer

Date of Issue : 30 June 2017
簽發日期

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

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



輝創工程有限公司

Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration 校正證書

Certificate No. : C173478

證書編號

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

<u>Equipment ID</u>	<u>Description</u>	<u>Certificate No.</u>
CL130	Universal Counter	C163709
CL281	Multifunction Acoustic Calibrator	PA160023
TST150A	Measuring Amplifier	C161175

4. Test procedure : MA100N.

5. Results :

- 5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	93.8	± 0.5	± 0.2

- 5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	0.985	1 kHz ± 2 %	± 1

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

Note :

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

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

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

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

Sun Creation Engineering Limited – Calibration & Testing Laboratory

c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

輝創工程有限公司 – 校正及檢測實驗室

c/o 香港新界屯門興安里一號青山灣機樓四樓

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



Certificate of Calibration 校正證書

Certificate No. : C174092
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC17-1613) Date of Receipt / 收件日期 : 11 July 2017
Description / 儀器名稱 : Sound Level Calibrator
Manufacturer / 製造商 : Rion
Model No. / 型號 : NC-73
Serial No. / 編號 : 10786708
Supplied By / 委託者 : Envirotech Services Co.
Room 113, 1/F, My Loft, 9 Hoi Wing Road, Tuen Mun,
New Territories, Hong Kong

TEST CONDITIONS / 測試條件

Temperature / 溫度 : $(23 \pm 2)^\circ\text{C}$ Relative Humidity / 相對濕度 : $(55 \pm 20)\%$
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

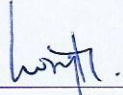
DATE OF TEST / 測試日期 : 22 July 2017

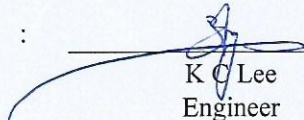
TEST RESULTS / 測試結果

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

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

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

Tested By : 
測試 : _____
H T Wong
Technical Officer

Certified By : 
核證 : _____
K C Lee
Engineer

Date of Issue : 24 July 2017
簽發日期

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

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

Certificate of Calibration

校正證書

Certificate No. : C174092
證書編號

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

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

- Test procedure : MA100N.
- Results :

5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	94.0	± 0.5	± 0.2

5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	0.986	1 kHz ± 2 %	± 1

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

Note :

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

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



Certificate of Calibration 校正證書

Certificate No. : C173884
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC17-1541) Date of Receipt / 收件日期 : 3 July 2017
Description / 儀器名稱 : Sound Level Meter
Manufacturer / 製造商 : Rion
Model No. / 型號 : NL-31
Serial No. / 編號 : 00603867
Supplied By / 委託者 : Envirotech Services Co.
Room 113, 1/F, My Loft, 9 Hoi Wing Road, Tuen Mun,
New Territories, Hong Kong

TEST CONDITIONS / 測試條件

Temperature / 溫度 : $(23 \pm 2)^{\circ}\text{C}$ Relative Humidity / 相對濕度 : $(55 \pm 20)\%$
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration

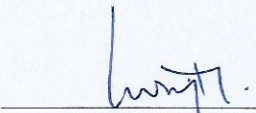
DATE OF TEST / 測試日期 : 16 July 2017

TEST RESULTS / 測試結果

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

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

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

Tested By : 
測試 : H T Wong
Technical Officer

Certified By : 
核證 : K C Lee
Engineer

Date of Issue : 17 July 2017
簽發日期

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

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

Certificate of Calibration

校正證書

Certificate No. : C173884
證書編號

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

<u>Equipment ID</u>	<u>Description</u>	<u>Certificate No.</u>
CL280	40 MHz Arbitrary Waveform Generator	C170048
CL281	Multifunction Acoustic Calibrator	PA160023

- Test procedure : MA101N.

- Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

6.1.1.1 Before Adjustment

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 120	L _A	A	Fast	94.00	1	* 92.5	± 1.1

* Out of IEC 61672 Class 1 Spec.

6.1.1.2 After Adjustment

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 120	L _A	A	Fast	94.00	1	93.9	± 1.1

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
30 - 120	L _A	A	Fast	94.00	1	93.9 (Ref.)
				104.00		104.1
				114.00		114.4

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

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

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

Certificate of Calibration

校正證書

Certificate No. : C173884
證書編號

6.2 Time Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 120	L _A	A	Fast	94.00	1	93.9	Ref.
			Slow			93.8	± 0.3

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 120	L _A	A	Fast	94.00	63 Hz	67.6	-26.2 ± 1.5
					125 Hz	77.6	-16.1 ± 1.5
					250 Hz	85.2	-8.6 ± 1.4
					500 Hz	90.6	-3.2 ± 1.4
					1 kHz	93.9	Ref.
					2 kHz	95.1	+1.2 ± 1.6
					4 kHz	95.0	+1.0 ± 1.6
					8 kHz	92.8	-1.1 (+2.1 ; -3.1)
					12.5 kHz	89.9	-4.3 (+3.0 ; -6.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 120	L _C	C	Fast	94.00	63 Hz	92.9	-0.8 ± 1.5
					125 Hz	93.7	-0.2 ± 1.5
					250 Hz	93.9	0.0 ± 1.4
					500 Hz	93.9	0.0 ± 1.4
					1 kHz	93.9	Ref.
					2 kHz	93.8	-0.2 ± 1.6
					4 kHz	93.2	-0.8 ± 1.6
					8 kHz	90.9	-3.0 (+2.1 ; -3.1)
					12.5 kHz	88.1	-6.2 (+3.0 ; -6.0)

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

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



輝創工程有限公司

Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration

校正證書

Certificate No. : C173884
證書編號

Remarks : - UUT Microphone Model No. : UC-53A & S/N : 316987

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value : 94 dB : 63 Hz - 125 Hz : ± 0.35 dB
250 Hz - 500 Hz : ± 0.30 dB
1 kHz : ± 0.20 dB
2 kHz - 4 kHz : ± 0.35 dB
8 kHz : ± 0.45 dB
12.5 kHz : ± 0.70 dB
104 dB : 1 kHz : ± 0.10 dB (Ref. 94 dB)
114 dB : 1 kHz : ± 0.10 dB (Ref. 94 dB)

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

Note :

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

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

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

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Sun Creation Engineering Limited Calibration & Testing Laboratory

c/o 4/F. Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

輝創工程有限公司 校正及檢測實驗室

c/o 香港新界屯門興安里一號青山灣機樓四樓

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



專業化驗有限公司

QUALITY PRO TEST-CONSULT LIMITED

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

Email: info@qualityprotest.com; Website: www.qualityprotest.com

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

REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : AH040200
Date of Issue : 04 May 2018
Page No. : 1 of 2

PART A – CUSTOMER INFORMATION

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

PART B – DESCRIPTION

Name of Equipment : YSI ProDSS (Multi-Parameters)
Manufacturer : YSI (a xylem brand)
Serial Number : 16H104234
Date of Received : Apr 30, 2018
Date of Calibration : Apr 30, 2018 to Apr 30, 2018
Date of Next Calibration^(a) : Jul 30, 2018

PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

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

PART D – CALIBRATION RESULTS^(b,c)

(1) pH at 25°C

Target (pH unit)	Displayed Reading ^(d) (pH Unit)	Tolerance ^(e) (pH Unit)	Results
4.00	4.05	0.05	Satisfactory
7.42	7.46	0.04	Satisfactory
10.01	10.08	0.07	Satisfactory

Tolerance of pH should be less than ±0.10 (pH unit)

(2) Temperature

Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
13.0	13.1	0.1	Satisfactory
25.0	25.1	0.1	Satisfactory
38.0	38.3	0.3	Satisfactory


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

~ CONTINUED ON NEXT PAGE ~

Remark(s): -

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

APPROVED SIGNATORY:


LAM Ho-ye, Emma
Assistant Laboratory Manager



專業化驗有限公司

QUALITY PRO TEST-CONSULT LIMITED

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

Email: info@qualityprotest.com; Website: www.qualityprotest.com

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

REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : AH040200
Date of Issue : 04 May 2018
Page No. : 2 of 2

PART D – CALIBRATION RESULTS (Cont'd)

(3) Dissolved Oxygen

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
0.00	0.11	0.11	Satisfactory
2.56	2.68	0.12	Satisfactory
4.72	4.69	-0.03	Satisfactory
6.76	6.7	-0.06	Satisfactory

Tolerance limit of dissolved oxygen should be less than ± 0.20 (mg/L)

(4) Conductivity at 25°C

Conc. of KCl (M)	Expected Reading ($\mu\text{S}/\text{cm}$)	Displayed Reading ($\mu\text{S}/\text{cm}$)	Tolerance (%)	Results
0.001	146.9	143.2	-2.5	Satisfactory
0.01	1412	1437	1.8	Satisfactory
0.1	12890	12840	-0.4	Satisfactory
0.5	58670	57789	-1.5	Satisfactory
1.0	111900	108344	-3.2	Satisfactory

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

(5) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	9.87	-1.3	Satisfactory
20	20.23	1.2	Satisfactory
30	30.60	2.0	Satisfactory

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

(6) Turbidity

Expected Reading (NTU)	Displayed Reading ^(f) (NTU)	Tolerance ^(g) (%)	Results
0	0.1	--	--
10	10.1	1.0	Satisfactory
20	19.7	-1.5	Satisfactory
100	103.4	3.4	Satisfactory
800	813.2	1.7	Satisfactory

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

~ END OF REPORT ~

Remark(s): -

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

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



專業化驗有限公司

QUALITY PRO TEST-CONSULT LIMITED

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

Email: info@qualityprotest.com; Website: www.qualityprotest.com

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

REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : AH040201
Date of Issue : 04 May 2018
Page No. : 1 of 2

PART A – CUSTOMER INFORMATION

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

PART B – DESCRIPTION

Name of Equipment : YSI ProDSS (Multi-Parameters)
Manufacturer : YSI (a xylem brand)
Serial Number : 17H105557
Date of Received : Apr 30, 2018
Date of Calibration : Apr 30, 2018 to Apr 30, 2018
Date of Next Calibration^(a) : Jul 30, 2018

PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

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

PART D – CALIBRATION RESULTS^(b,c)

(1) pH at 25°C

Target (pH unit)	Displayed Reading ^(d) (pH Unit)	Tolerance ^(e) (pH Unit)	Results
4.00	4.04	0.04	Satisfactory
7.42	7.45	0.03	Satisfactory
10.01	10.07	0.06	Satisfactory

Tolerance of pH should be less than ± 0.10 (pH unit)

(2) Temperature

Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
13.0	13.2	0.2	Satisfactory
25.0	25.2	0.2	Satisfactory
38.0	38.1	0.1	Satisfactory

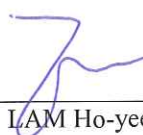
Tolerance limit of temperature should be less than ± 2.0 (°C)

~ CONTINUED ON NEXT PAGE ~

Remark(s): -

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

APPROVED SIGNATORY:


LAM Ho-ye, Emma
Assistant Laboratory Manager



專業化驗有限公司

QUALITY PRO TEST-CONSULT LIMITED

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

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REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : AH040201
Date of Issue : 04 May 2018
Page No. : 2 of 2

PART D – CALIBRATION RESULTS (Cont'd)

(3) Dissolved Oxygen

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
0.00	0.14	0.14	Satisfactory
2.56	2.64	0.08	Satisfactory
4.72	4.66	-0.06	Satisfactory
6.76	6.67	-0.09	Satisfactory

Tolerance limit of dissolved oxygen should be less than ± 0.20 (mg/L)

(4) Conductivity at 25°C

Conc. of KCl (M)	Expected Reading ($\mu\text{S}/\text{cm}$)	Displayed Reading ($\mu\text{S}/\text{cm}$)	Tolerance (%)	Results
0.001	146.9	150.1	2.2	Satisfactory
0.01	1412	1439	1.9	Satisfactory
0.1	12890	12876	-0.1	Satisfactory
0.5	58670	57766	-1.5	Satisfactory
1.0	111900	108629	-2.9	Satisfactory

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

(5) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	9.9	-1.0	Satisfactory
20	20.34	1.7	Satisfactory
30	30.54	1.8	Satisfactory

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

(6) Turbidity

Expected Reading (NTU)	Displayed Reading ^(f) (NTU)	Tolerance ^(g) (%)	Results
0	0.1	--	--
10	10.2	2.0	Satisfactory
20	19.6	-2.0	Satisfactory
100	103	3.0	Satisfactory
800	808.3	1.0	Satisfactory

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

~ END OF REPORT ~

Remark(s): -

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

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



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REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : AH060035
Date of Issue : 06 June 2018
Page No. : 1 of 2

PART A – CUSTOMER INFORMATION

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

PART B – DESCRIPTION

Name of Equipment : YSI ProDSS (Multi-Parameters)
Manufacturer : YSI (a xylem brand)
Serial Number : 16H104233
Date of Received : Mar 27, 2018
Date of Calibration : Mar 27, 2018 to Mar 27, 2018
Date of Next Calibration^(a) : Jun 27, 2018

PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

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

PART D – CALIBRATION RESULTS^(b,c)

(1) pH at 25°C

Target (pH unit)	Displayed Reading ^(d) (pH Unit)	Tolerance ^(e) (pH Unit)	Results
4.00	3.98	-0.02	Satisfactory
7.42	7.39	-0.03	Satisfactory
10.01	9.96	-0.05	Satisfactory

Tolerance of pH should be less than ± 0.10 (pH unit)

(2) Temperature

Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
16.5	16.3	-0.2	Satisfactory
26.5	26.4	-0.1	Satisfactory
34.0	33.9	-0.1	Satisfactory


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

~ CONTINUED ON NEXT PAGE ~

Remark(s): -

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

APPROVED SIGNATORY:


LAM Ho-ye, Emma
Assistant Laboratory Manager



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REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : AH060035
Date of Issue : 06 June 2018
Page No. : 2 of 2

PART D – CALIBRATION RESULTS (Cont'd)

(3) Dissolved Oxygen

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
0.00	0.13	+0.13	Satisfactory
4.39	4.29	-0.10	Satisfactory
5.84	5.74	-0.10	Satisfactory
7.31	7.27	-0.04	Satisfactory

Tolerance limit of dissolved oxygen should be less than ± 0.20 (mg/L)

(4) Conductivity at 25°C

Conc. of KCl (M)	Expected Reading ($\mu\text{S}/\text{cm}$)	Displayed Reading ($\mu\text{S}/\text{cm}$)	Tolerance (%)	Results
0.001	146.9	150.8	+2.7	Satisfactory
0.01	1412	1442	+2.1	Satisfactory
0.1	12890	12708	-1.4	Satisfactory
0.5	58670	58072	-1.0	Satisfactory
1.0	111900	107309	-4.1	Satisfactory

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

(5) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	10.15	+1.5	Satisfactory
20	20.19	+1.0	Satisfactory
30	30.09	+0.3	Satisfactory

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

(6) Turbidity

Expected Reading (NTU)	Displayed Reading ^(f) (NTU)	Tolerance ^(g) (%)	Results
0	0.1	--	--
10	9.5	-5.0	Satisfactory
20	19.4	-3.0	Satisfactory
100	97.2	-2.8	Satisfactory
800	781	-2.4	Satisfactory

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

~ END OF REPORT ~

Remark(s): -

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

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



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REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : AH060169
Date of Issue : 28 June 2018
Page No. : 1 of 2

PART A – CUSTOMER INFORMATION

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

PART B – DESCRIPTION

Name of Equipment : YSI ProDSS (Multi-Parameters)
Manufacturer : YSI (a xylem brand)
Serial Number : 16H104233
Date of Received : Jun 27, 2018
Date of Calibration : Jun 27, 2018 to Jun 27, 2018
Date of Next Calibration^(a) : Sep 27, 2018

PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

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

PART D – CALIBRATION RESULTS^(b,c)

(1) pH at 25°C

Target (pH unit)	Displayed Reading ^(d) (pH Unit)	Tolerance ^(e) (pH Unit)	Results
4.00	3.96	-0.04	Satisfactory
7.42	7.44	0.02	Satisfactory
10.01	10.11	0.10	Satisfactory

Tolerance of pH should be less than ± 0.10 (pH unit)

(2) Temperature

Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
12.6	12.5	-0.1	Satisfactory
37.4	37.5	0.1	Satisfactory
62.7	61.5	-1.2	Satisfactory

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

~ CONTINUED ON NEXT PAGE ~

Remark(s): -

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

APPROVED SIGNATORY:

LAM Ho-ye, Emma
Assistant Laboratory Manager



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REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : AH060169
Date of Issue : 28 June 2018
Page No. : 2 of 2

PART D – CALIBRATION RESULTS (Cont'd)

(3) Dissolved Oxygen

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
0.00	0.03	0.03	Satisfactory
4.37	4.46	0.09	Satisfactory
5.96	6.10	0.14	Satisfactory
7.34	7.36	0.02	Satisfactory

Tolerance limit of dissolved oxygen should be less than ± 0.20 (mg/L)

(4) Conductivity at 25°C

Conc. of KCl (M)	Expected Reading ($\mu\text{S}/\text{cm}$)	Displayed Reading ($\mu\text{S}/\text{cm}$)	Tolerance (%)	Results
0.001	146.9	150.0	2.1	Satisfactory
0.01	1412	1398	-1.0	Satisfactory
0.1	12890	12724	-1.3	Satisfactory
0.5	58670	58012	-1.1	Satisfactory
1.0	111900	110847	-0.9	Satisfactory

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

(5) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	9.97	-0.3	Satisfactory
20	20.14	0.7	Satisfactory
30	30.28	0.9	Satisfactory

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

(6) Turbidity

Expected Reading (NTU)	Displayed Reading ^(f) (NTU)	Tolerance ^(g) (%)	Results
0	0.1	--	--
10	10.16	1.6	Satisfactory
20	20.19	1.0	Satisfactory
100	98.84	-1.2	Satisfactory
800	793.16	-0.9	Satisfactory

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

~ END OF REPORT ~

Remark(s): -

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

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



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REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : AH060034
Date of Issue : 06 June 2018
Page No. : 1 of 2

PART A – CUSTOMER INFORMATION

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

PART B – DESCRIPTION

Name of Equipment : YSI ProDSS (Multi-Parameters)
Manufacturer : YSI (a xylem brand)
Serial Number : 17E100747
Date of Received : Mar 27, 2018
Date of Calibration : Mar 27, 2018 to Mar 27, 2018
Date of Next Calibration^(a) : Jun 27, 2018

PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

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

PART D – CALIBRATION RESULTS^(b,c)

(1) pH at 25°C

Target (pH unit)	Displayed Reading ^(d) (pH Unit)	Tolerance ^(e) (pH Unit)	Results
4.00	4.04	+0.04	Satisfactory
7.42	7.44	+0.02	Satisfactory
10.01	10.09	+0.08	Satisfactory

Tolerance of pH should be less than ± 0.10 (pH unit)

(2) Temperature

Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
16.5	16.3	-0.2	Satisfactory
26.5	26.3	-0.2	Satisfactory
34.0	33.8	-0.2	Satisfactory


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

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Remark(s): -

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

APPROVED SIGNATORY:


LAM Ho-ye, Emma
Assistant Laboratory Manager



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QUALITY PRO TEST-CONSULT LIMITED

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REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : AH060034
Date of Issue : 06 June 2018
Page No. : 2 of 2

PART D – CALIBRATION RESULTS (Cont'd)

(3) Dissolved Oxygen

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
0.00	0.16	+0.16	Satisfactory
4.39	4.31	-0.08	Satisfactory
5.84	5.76	-0.08	Satisfactory
7.31	7.25	-0.06	Satisfactory

Tolerance limit of dissolved oxygen should be less than ± 0.20 (mg/L)

(4) Conductivity at 25°C

Conc. of KCl (M)	Expected Reading ($\mu\text{S}/\text{cm}$)	Displayed Reading ($\mu\text{S}/\text{cm}$)	Tolerance (%)	Results
0.001	146.9	151.8	+3.3	Satisfactory
0.01	1412	1398	-1.0	Satisfactory
0.1	12890	12690	-1.6	Satisfactory
0.5	58670	58110	-1.0	Satisfactory
1.0	111900	107658	-3.8	Satisfactory

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

(5) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	10.13	+1.3	Satisfactory
20	20.11	+0.5	Satisfactory
30	30.12	+0.4	Satisfactory

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

(6) Turbidity

Expected Reading (NTU)	Displayed Reading ^(f) (NTU)	Tolerance ^(g) (%)	Results
0	0.1	--	--
10	9.8	-2.0	Satisfactory
20	19.7	-1.5	Satisfactory
100	95.7	-4.3	Satisfactory
800	787	-1.6	Satisfactory

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

~ END OF REPORT ~

Remark(s): -

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

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



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REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : AH060170
Date of Issue : 28 June 2018
Page No. : 1 of 2

PART A – CUSTOMER INFORMATION

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

PART B – DESCRIPTION

Name of Equipment : YSI ProDSS (Multi-Parameters)
Manufacturer : YSI (a xylem brand)
Serial Number : 17E100747
Date of Received : Jun 27, 2018
Date of Calibration : Jun 27, 2018 to Jun 27, 2018
Date of Next Calibration^(a) : Sep 27, 2018

PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

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

PART D – CALIBRATION RESULTS^(b,c)

(1) pH at 25°C

Target (pH unit)	Displayed Reading ^(d) (pH Unit)	Tolerance ^(e) (pH Unit)	Results
4.00	3.97	-0.03	Satisfactory
7.42	7.40	-0.02	Satisfactory
10.01	10.00	-0.01	Satisfactory

Tolerance of pH should be less than ±0.10 (pH unit)

(2) Temperature

Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
12.6	12.3	-0.3	Satisfactory
37.4	37.5	0.1	Satisfactory
62.7	61.4	-1.3	Satisfactory

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

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Remark(s): -

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

APPROVED SIGNATORY:

LAM Ho-ye, Emma
Assistant Laboratory Manager



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QUALITY PRO TEST-CONSULT LIMITED

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REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : AH060170
Date of Issue : 28 June 2018
Page No. : 2 of 2

PART D – CALIBRATION RESULTS (Cont'd)

(3) Dissolved Oxygen

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
0.00	0.02	0.02	Satisfactory
4.37	4.41	0.04	Satisfactory
5.96	6.12	0.16	Satisfactory
7.34	7.41	0.07	Satisfactory

Tolerance limit of dissolved oxygen should be less than ± 0.20 (mg/L)

(4) Conductivity at 25°C

Conc. of KCl (M)	Expected Reading ($\mu\text{S}/\text{cm}$)	Displayed Reading ($\mu\text{S}/\text{cm}$)	Tolerance (%)	Results
0.001	146.9	148.0	0.7	Satisfactory
0.01	1412	1438	1.8	Satisfactory
0.1	12890	12696	-1.5	Satisfactory
0.5	58670	57876	-1.4	Satisfactory
1.0	111900	111059	-0.8	Satisfactory

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

(5) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	9.99	-0.1	Satisfactory
20	20.09	0.4	Satisfactory
30	30.22	0.7	Satisfactory

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

(6) Turbidity

Expected Reading (NTU)	Displayed Reading ^(f) (NTU)	Tolerance ^(g) (%)	Results
0	0.00	--	--
10	10.14	1.4	Satisfactory
20	20.30	1.5	Satisfactory
100	101.67	1.7	Satisfactory
800	818.83	2.4	Satisfactory

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

~ END OF REPORT ~

Remark(s): -

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

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



專業化驗有限公司

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REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : AH060002
Date of Issue : 01 June 2018
Page No. : 1 of 2

PART A – CUSTOMER INFORMATION

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

PART B – DESCRIPTION

Name of Equipment : YSI 6920 v2 (Multi-Parameters)
Manufacturer : YSI (a xylem brand)
Serial Number : 000109DF
Date of Received : May 23, 2018
Date of Calibration : May 23, 2018 to May 23, 2018
Date of Next Calibration^(a) : Aug 23, 2018

PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

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

PART D – CALIBRATION RESULTS^(b,e)

(1) pH at 25°C

Target (pH unit)	Displayed Reading ^(d) (pH Unit)	Tolerance ^(e) (pH Unit)	Results
4.00	4.06	0.06	Satisfactory
7.42	7.46	0.04	Satisfactory
10.01	10.07	0.06	Satisfactory

Tolerance of pH should be less than ±0.10 (pH unit)

(2) Temperature

Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
19.5	19.8	0.3	Satisfactory
26.4	26.2	-0.2	Satisfactory
38.5	38.8	0.3	Satisfactory

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

~ CONTINUED ON NEXT PAGE ~

Remark(s): -

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

APPROVED SIGNATORY:

LAM Ho-ye, Emma
Assistant Laboratory Manager



專業化驗有限公司

QUALITY PRO TEST-CONSULT LIMITED

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

Email: info@qualityprotest.com; Website: www.qualityprotest.com

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PART D – CALIBRATION RESULTS (Cont'd)

(3) Dissolved Oxygen

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
0.00	0.13	0.13	Satisfactory
2.98	3.06	0.08	Satisfactory
5.04	5.10	0.06	Satisfactory
6.78	6.83	0.05	Satisfactory

Tolerance limit of dissolved oxygen should be less than ± 0.20 (mg/L)

(4) Conductivity at 25°C

Conc. of KCl (M)	Expected Reading ($\mu\text{S}/\text{cm}$)	Displayed Reading ($\mu\text{S}/\text{cm}$)	Tolerance (%)	Results
0.001	146.9	142.5	-3.0	Satisfactory
0.01	1412	1384	-2.0	Satisfactory
0.1	12890	12116	-6.0	Satisfactory
0.5	58670	57188	-2.5	Satisfactory
1.0	111900	106439	-4.9	Satisfactory

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

(5) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	9.84	-1.6	Satisfactory
20	19.79	-1.1	Satisfactory
30	29.72	-0.9	Satisfactory

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

(6) Turbidity

Expected Reading (NTU)	Displayed Reading ^(f) (NTU)	Tolerance ^(g) (%)	Results
0	0.1	--	--
10	10.7	7.0	Satisfactory
20	20.5	2.5	Satisfactory
100	98.6	-1.4	Satisfactory
800	788.6	-1.4	Satisfactory

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

~ END OF REPORT ~

Remark(s): -

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

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



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REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

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PART A – CUSTOMER INFORMATION

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

PART B – DESCRIPTION

Name of Equipment : YSI 6920 v2 (Multi-Parameters)
Manufacturer : YSI (a xylem brand)
Serial Number : 0001C6A7
Date of Received : May 23, 2018
Date of Calibration : May 23, 2018 to May 23, 2018
Date of Next Calibration^(a) : Aug 23, 2018

PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

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

PART D – CALIBRATION RESULTS^(b,c)

(1) pH at 25°C

Target (pH unit)	Displayed Reading ^(d) (pH Unit)	Tolerance ^(e) (pH Unit)	Results
4.00	4.08	0.08	Satisfactory
7.42	7.48	0.06	Satisfactory
10.01	10.06	0.05	Satisfactory

Tolerance of pH should be less than ± 0.10 (pH unit)

(2) Temperature

Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
19.5	19.7	0.2	Satisfactory
26.4	26.3	-0.1	Satisfactory
38.5	38.6	0.1	Satisfactory


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

~ CONTINUED ON NEXT PAGE ~

Remark(s): -

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

APPROVED SIGNATORY:


LAM Ho-ye, Emma
Assistant Laboratory Manager



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REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

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PART D – CALIBRATION RESULTS (Cont'd)

(3) Dissolved Oxygen

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
0.00	0.11	0.11	Satisfactory
2.98	3.02	0.04	Satisfactory
5.04	5.15	0.11	Satisfactory
6.78	6.85	0.07	Satisfactory

Tolerance limit of dissolved oxygen should be less than ± 0.20 (mg/L)

(4) Conductivity at 25°C

Conc. of KCl (M)	Expected Reading ($\mu\text{S}/\text{cm}$)	Displayed Reading ($\mu\text{S}/\text{cm}$)	Tolerance (%)	Results
0.001	146.9	142.8	-2.8	Satisfactory
0.01	1412	1380	-2.3	Satisfactory
0.1	12890	12293	-4.6	Satisfactory
0.5	58670	57462	-2.1	Satisfactory
1.0	111900	109408	-2.2	Satisfactory

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

(5) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	9.79	-2.1	Satisfactory
20	19.68	-1.6	Satisfactory
30	29.67	-1.1	Satisfactory

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

(6) Turbidity

Expected Reading (NTU)	Displayed Reading ^(f) (NTU)	Tolerance ^(g) (%)	Results
0	0.1	--	--
10	10.6	6.0	Satisfactory
20	20.7	3.5	Satisfactory
100	98.4	-1.6	Satisfactory
800	789.1	-1.4	Satisfactory

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

~ END OF REPORT ~

Remark(s): -

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

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



輝創工程有限公司

Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration 校正證書

Certificate No. : C175727
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC17-2277) Date of Receipt / 收件日期 : 3 October 2017

Description / 儀器名稱 : Anemometer
Manufacturer / 製造商 : Lutron
Model No. / 型號 : AM-4201
Serial No. / 編號 : AF.27513
Supplied By / 委託者 : Envirotech Services Co.
Room 113, 1/F, My Loft, 9 Hoi Wing Road, Tuen Mun,
New Territories, Hong Kong

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Relative Humidity / 相對濕度 : (55 ± 20)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範


Calibration check


DATE OF TEST / 測試日期 : 13 October 2017

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- Testo Industrial Services GmbH, Germany

Tested By : 
測試 H C Chan
Engineer

Certified By : 
核證 K C Lee
Engineer

Date of Issue : 16 October 2017
簽發日期

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗室書面批准。

Certificate of Calibration

校正證書

Certificate No. : C175727

證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.
2. The results presented are the mean of 10 measurements at each calibration point.
3. Test equipment :

<u>Equipment ID</u>	<u>Description</u>	<u>Certificate No.</u>
CL386	Multi-function Measuring Instrument	S16493

4. Test procedure : MA130N.

5. Results :

Air Velocity

Applied Value (m/s)	UUT Reading (m/s)	Measured Correction		
		Value (m/s)	Measurement Uncertainty	
			Expanded Uncertainty (m/s)	Coverage Factor
1.9	1.7	+0.2	0.2	2.0
4.0	3.8	+0.2	0.2	2.0
6.0	5.9	+0.1	0.3	2.0
8.0	8.0	0.0	0.3	2.0
10.0	10.1	-0.1	0.4	2.0

Remarks : - The Measured Corrections are defined as :
Value = Applied Value - UUT Reading

- The expanded uncertainties are for a level of confidence of 95 %.

Note :

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

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

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

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

Sun Creation Engineering Limited Calibration & Testing Laboratory

c/o 4F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

輝創工程有限公司 校正及檢測實驗室

c/o 香港新界屯門興安里一號青山灣機樓四樓

Tel 電話: 2927 2606

Fax 傳真: 2744 8986

E-mail 電郵: callab@suncreation.com

Website 網址: www.suncreation.com

ENVIROTECH SERVICES CO.

Calibration Report of Wind Meter

Date of Calibration : 01 April 2018

Brand of Test Meter: Global Water

Model: Speed Sensor: WE550 (S/N:E1337005099)

Direction Sensor: WE570 (S/N:153500564)

Location : Pak Mong, Siu Ho Wan

Procedures :

- 1. Wind Still Test: The wind speed sensor was hold by hand until it keep still
- 2. Wind Speed Test: The wind meter was on-site calibrated against the Anemometer
- 3. Wind Direction Test : The wind meter was on-site calibrated against the marine compass at four directions

Results:

Wind Still Test


Wind Speed (m/s)
0.00


Wind Speed Test

Global Wate: (m/s)	Anemometer (m/s)
1.71	1.6
1.19	1.1
0.47	0.4

Wind Direction Test

Global Wate: (o)	Marine Compass (o)
271.10	270
0.04	0
90.25	90
180.66	180

Calibrated by: 
Yeung Ping Fai
(Technical Officer)

Checked by : 
Ho Kam Fat
(Senior Technical Officer)

Appendix F

EM&A Monitoring Schedules

**HY/2012/07 Tuen Mun - Chek Lap Kok Link - Southern Connection Viaduct Section
Impact Noise Monitoring Schedule (1 to 30 June 2018)**

Alternative Noise Monitoring at Pak Mong Village Entrance

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					01-Jun	02-Jun
03-Jun	04-Jun	05-Jun	06-Jun	07-Jun	08-Jun	09-Jun
			Noise Impact Monitoring			
10-Jun	11-Jun	12-Jun	13-Jun	14-Jun	15-Jun	16-Jun
		Noise Impact Monitoring			Noise Impact Monitoring	
17-Jun	18-Jun	19-Jun	20-Jun	21-Jun	22-Jun	23-Jun
				Noise Impact Monitoring		
24-Jun	25-Jun	26-Jun	27-Jun	28-Jun	29-Jun	30-Jun
			Noise Impact Monitoring			

**HY/2012/07 Tuen Mun - Chek Lap Kok Link - Southern Connection Viaduct Section
Impact Air Quality Monitoring Schedule (1 to 30 June 2018)**

Alternative Air Quality Monitoring at WA4 and MTRC Depot Entrance

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					01-Jun	02-Jun
03-Jun	04-Jun	05-Jun	06-Jun	07-Jun	08-Jun	09-Jun
			1-hr TSP Monitoring 24-hr TSP Monitoring			
10-Jun	11-Jun	12-Jun	13-Jun	14-Jun	15-Jun	16-Jun
		1-hr TSP Monitoring 24-hr TSP Monitoring			1-hr TSP Monitoring 24-hr TSP Monitoring	
17-Jun	18-Jun	19-Jun	20-Jun	21-Jun	22-Jun	23-Jun
				1-hr TSP Monitoring 24-hr TSP Monitoring		
24-Jun	25-Jun	26-Jun	27-Jun	28-Jun	29-Jun	30-Jun
			1-hr TSP Monitoring 24-hr TSP Monitoring			

**HY/2012/07 Tuen Mun - Chek Lap Kok Link - Southern Connection Viaduct Section
Impact Noise Monitoring Schedule (1 to 31 July 2018)**

Alternative Noise Monitoring at Pak Mong Village Entrance

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
01-Jul	02-Jul	03-Jul	04-Jul	05-Jul	06-Jul	07-Jul
		Noise Impact Monitoring				
08-Jul	09-Jul	10-Jul	11-Jul	12-Jul	13-Jul	14-Jul
	Noise Impact Monitoring			Noise Impact Monitoring		
15-Jul	16-Jul	17-Jul	18-Jul	19-Jul	20-Jul	21-Jul
			Noise Impact Monitoring			
22-Jul	23-Jul	24-Jul	25-Jul	26-Jul	27-Jul	28-Jul
		Noise Impact Monitoring				
29-Jul	30-Jul	31-Jul				
	Noise Impact Monitoring					

The schedule is subject to agreement from the EPD on the monitoring times. The schedule will be revised after reviewing the progress of the construction works or due to adverse (safety, weather etc) conditions. Additional weekly noise impact monitoring for construction works undertaken between 19:00-07:00 will be supplemented after confirmation of construction schedule.

**HY/2012/07 Tuen Mun - Chek Lap Kok Link - Southern Connection Viaduct Section
Impact Air Quality Monitoring Schedule (1 to 31 July 2018)**

Alternative Air Quality Monitoring at WA4 and MTRC Depot Entrance

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
01-Jul	02-Jul	03-Jul	04-Jul	05-Jul	06-Jul	07-Jul
		1-hr TSP Monitoring 24-hr TSP Monitoring				
08-Jul	09-Jul	10-Jul	11-Jul	12-Jul	13-Jul	14-Jul
	1-hr TSP Monitoring 24-hr TSP Monitoring			1-hr TSP Monitoring 24-hr TSP Monitoring		
15-Jul	16-Jul	17-Jul	18-Jul	19-Jul	20-Jul	21-Jul
			1-hr TSP Monitoring 24-hr TSP Monitoring			
22-Jul	23-Jul	24-Jul	25-Jul	26-Jul	27-Jul	28-Jul
		1-hr TSP Monitoring 24-hr TSP Monitoring				
29-Jul	30-Jul	31-Jul				01-Jan
	1-hr TSP Monitoring 24-hr TSP Monitoring					

The schedule is subject to agreement from the EPD on the monitoring times. The schedule will be revised after reviewing the progress of the construction works or due to adverse (safety, weather etc) conditions.

**HY/2012/07 - Tuen Mun - Chek Lap Kok Link - Southern Connection Viaduct Section
Impact Marine Water Quality Monitoring (WQM) Schedule (June 2018)**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1-Jun	2-Jun
					ebb tide 12:57 - 16:27 flood tide 20:09 - 23:39	
3-Jun	4-Jun	5-Jun	6-Jun	7-Jun	8-Jun	9-Jun
	ebb tide 14:49 - 18:19 flood tide 7:42 - 11:12		ebb tide 16:26 - 19:56 flood tide 9:37 - 13:07 WQM at all monitoring stations except CS(Mf)5 during mid-flood tide was canceled due to adverse		WQM at all monitoring stations during mid-flood and mid-ebb tides was canceled due to adverse weather.	
10-Jun	11-Jun	12-Jun	13-Jun	14-Jun	15-Jun	16-Jun
	ebb tide 9:29 - 12:59 flood tide 15:51 - 19:21		ebb tide 10:50 - 14:20 flood tide 17:43 - 21:13		ebb tide 12:20 - 15:50 flood tide 19:31 - 23:01	
17-Jun	18-Jun	19-Jun	20-Jun	21-Jun	22-Jun	23-Jun
	WQM at all monitoring stations during mid-flood and mid-ebb tides was canceled due to suspension of works during holiday.		ebb tide 16:55 - 19:40 flood tide 10:15 - 13:45		ebb tide 7:40 - 10:49 flood tide 13:11 - 16:41	
24-Jun	25-Jun	26-Jun	27-Jun	28-Jun	29-Jun	30-Jun
	ebb tide 9:42 - 13:12 flood tide 16:33 - 20:03		ebb tide 10:55 - 14:25 flood tide 18:01 - 21:31		ebb tide 12:05 - 15:35 flood tide 19:16 - 22:46	

**HY/2012/07 - Tuen Mun - Chek Lap Kok Link - Southern Connection Viaduct Section
Impact Marine Water Quality Monitoring (WQM) Schedule (July 2018)**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1-Jul	2-Jul	3-Jul	4-Jul	5-Jul	6-Jul	7-Jul
	ebb tide 13:47 - 17:17 flood tide 6:51 - 10:21		ebb tide 15:03 - 18:33 flood tide 8:17 - 11:47		ebb tide 16:41 - 20:11 flood tide 10:31 - 14:01	
8-Jul	9-Jul	10-Jul	11-Jul	12-Jul	13-Jul	14-Jul
	ebb tide 8:10 - 11:40 flood tide 14:37 - 18:07		ebb tide 9:46 - 13:16 flood tide 16:45 - 20:15		ebb tide 11:21 - 14:51 flood tide 18:31 - 22:01	
15-Jul	16-Jul	17-Jul	18-Jul	19-Jul	20-Jul	21-Jul
	ebb tide 13:47 - 17:17 flood tide 6:50 - 10:20		ebb tide 15:27 - 18:57 flood tide 8:44 - 12:14		ebb tide 17:26 - 20:56 flood tide 11:20 - 14:50	
22-Jul	23-Jul	24-Jul	25-Jul	26-Jul	27-Jul	28-Jul
	ebb tide 8:38 - 12:08 flood tide 15:43 - 19:13		ebb tide 10:00 - 13:30 flood tide 17:13 - 20:43		ebb tide 11:12 - 14:42 flood tide 18:21 - 21:51	
29-Jul	30-Jul	31-Jul				
	ebb tide 12:51 - 16:21 flood tide 6:02 - 9:32					

The schedule is subject to agreement from the EPD on the monitoring times. The schedule will be revised after reviewing the progress of the construction works or due to adverse (safety, weather etc) conditions.

**HY/2012/07 Tuen Mun - Chek Lap Kok Link - Southern Connection Viaduct Section
Impact Dolphin Monitoring Survey Schedule (1 to 30 June 2018)**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					01-Jun	02-Jun
03-Jun	04-Jun	05-Jun	06-Jun	07-Jun	08-Jun	09-Jun
		Impact Dolphin Monitoring				
10-Jun	11-Jun	12-Jun	13-Jun	14-Jun	15-Jun	16-Jun
			Impact Dolphin Monitoring			
17-Jun	18-Jun	19-Jun	20-Jun	21-Jun	22-Jun	23-Jun
		Impact Dolphin Monitoring				
24-Jun	25-Jun	26-Jun	27-Jun	28-Jun	29-Jun	30-Jun
			Impact Dolphin Monitoring			

**HY/2012/07 Tuen Mun - Chek Lap Kok Link - Southern Connection Viaduct Section
Impact Dolphin Monitoring Survey Schedule (1 to 31 July 2018)**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
01-Jul	02-Jul	03-Jul	04-Jul	05-Jul	06-Jul	07-Jul
		Impact Dolphin Monitoring				
08-Jul	09-Jul	10-Jul	11-Jul	12-Jul	13-Jul	14-Jul
	Impact Dolphin Monitoring			Impact Dolphin Monitoring		
15-Jul	16-Jul	17-Jul	18-Jul	19-Jul	20-Jul	21-Jul
		Impact Dolphin Monitoring				
22-Jul	23-Jul	24-Jul	25-Jul	26-Jul	27-Jul	28-Jul
29-Jul	30-Jul	31-Jul				

The schedule is subject to agreement from the EPD on the monitoring times. The schedule will be revised after reviewing the progress of the construction works or due to adverse (safety, weather etc) conditions.

Appendix G

Impact Air Quality
Monitoring Results and
Graphical Presentation

1-hour TSP Monitoring Results at Air Quality Monitoring Station ASR8A

Project	Works	Date(yyyy-mm-dd)	Station	Time (hh:mm, 24hour)	Parameter	Results (ug/m3)	Action Level (ug/m3)	Limit Level (ug/m3)		
TMCLKL	HY/2012/07	2018-06-06	ASR8A	8:05	1-hr TSP	58	394	500		
TMCLKL	HY/2012/07	2018-06-06	ASR8A	9:07	1-hr TSP	23				
TMCLKL	HY/2012/07	2018-06-06	ASR8A	10:09	1-hr TSP	40				
TMCLKL	HY/2012/07	2018-06-12	ASR8A	8:40	1-hr TSP	84				
TMCLKL	HY/2012/07	2018-06-12	ASR8A	9:42	1-hr TSP	54				
TMCLKL	HY/2012/07	2018-06-12	ASR8A	10:53	1-hr TSP	64				
TMCLKL	HY/2012/07	2018-06-15	ASR8A	8:00	1-hr TSP	135				
TMCLKL	HY/2012/07	2018-06-15	ASR8A	9:02	1-hr TSP	87				
TMCLKL	HY/2012/07	2018-06-15	ASR8A	10:06	1-hr TSP	77				
TMCLKL	HY/2012/07	2018-06-21	ASR8A	8:30	1-hr TSP	47				
TMCLKL	HY/2012/07	2018-06-21	ASR8A	9:32	1-hr TSP	50				
TMCLKL	HY/2012/07	2018-06-21	ASR8A	10:41	1-hr TSP	27				
TMCLKL	HY/2012/07	2018-06-27	ASR8A	8:35	1-hr TSP	60				
TMCLKL	HY/2012/07	2018-06-27	ASR8A	9:37	1-hr TSP	54				
TMCLKL	HY/2012/07	2018-06-27	ASR8A	10:45	1-hr TSP	66				
				Average		62				
				Min.		23				
				Max.		135				

1-hour TSP Monitoring Results at Air Quality Monitoring Station ASR9

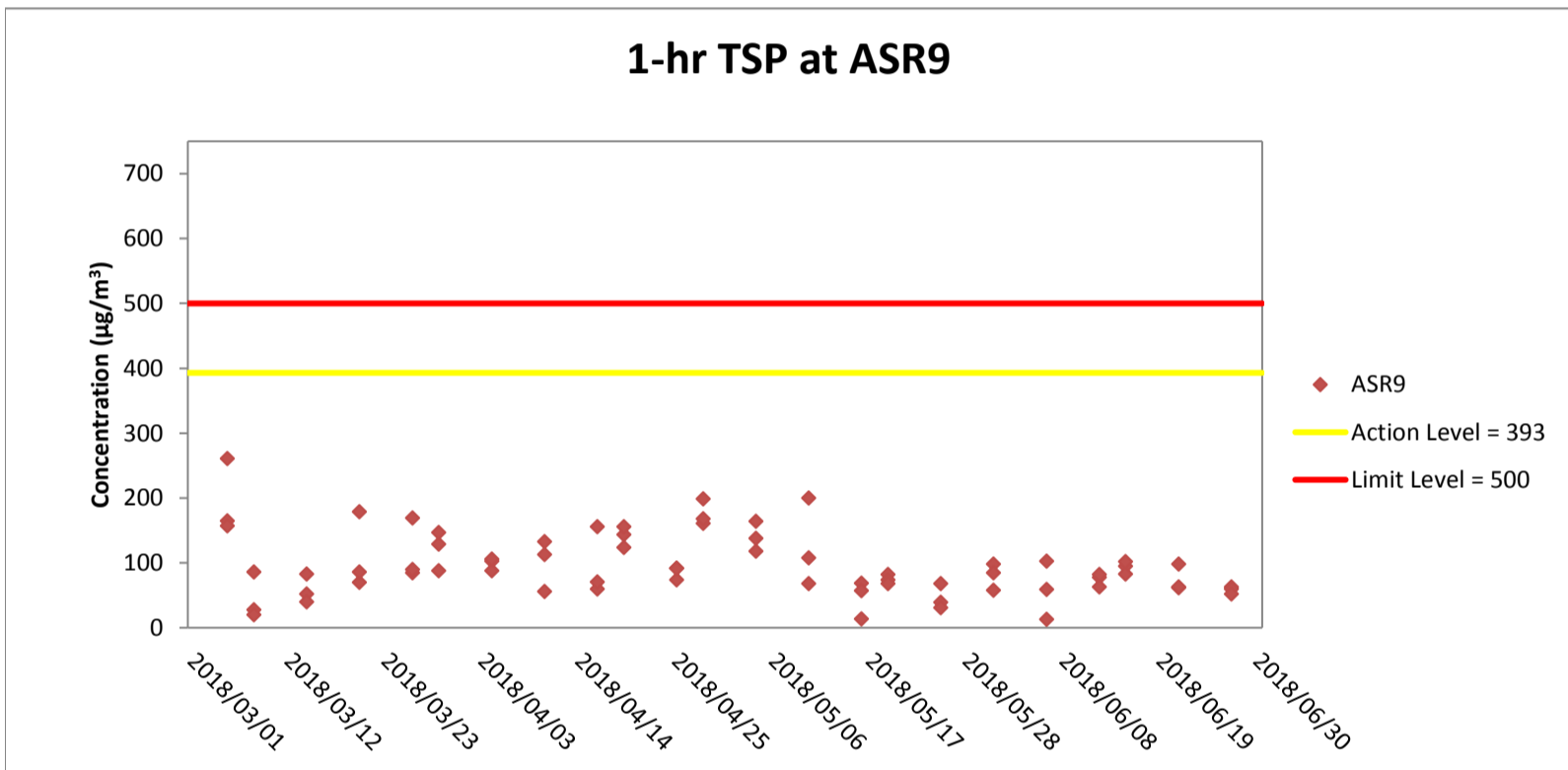
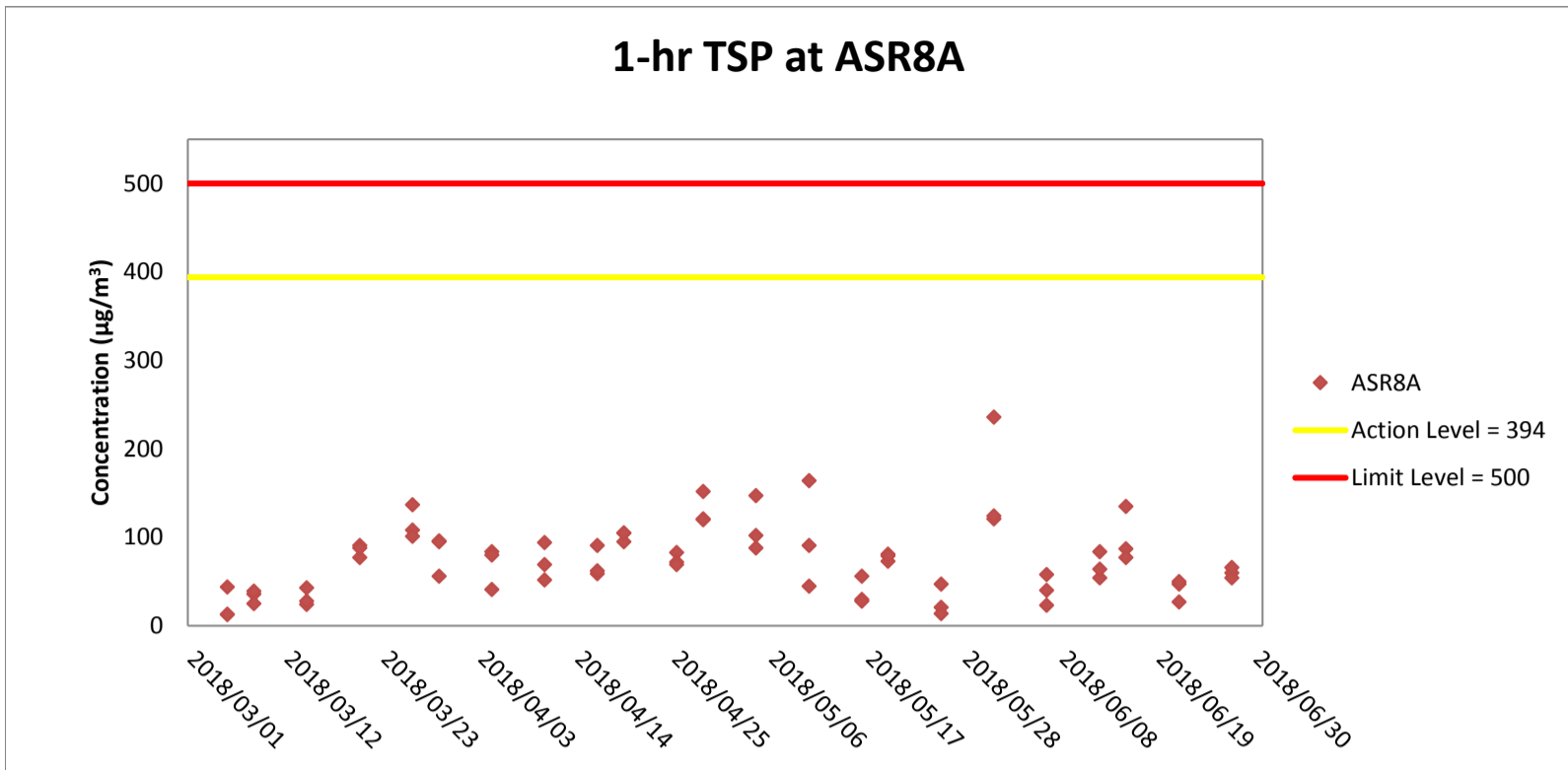
Project	Works	Date(yyyy-mm-dd)	Station	Time (hh:mm, 24hour)	Parameter	Results (ug/m3)	Action Level (ug/m3)	Limit Level (ug/m3)		
TMCLKL	HY/2012/07	2018-06-06	ASR9	8:17	1-hr TSP	59	393	500		
TMCLKL	HY/2012/07	2018-06-06	ASR9	9:19	1-hr TSP	13				
TMCLKL	HY/2012/07	2018-06-06	ASR9	10:21	1-hr TSP	103				
TMCLKL	HY/2012/07	2018-06-12	ASR9	8:50	1-hr TSP	78				
TMCLKL	HY/2012/07	2018-06-12	ASR9	9:52	1-hr TSP	63				
TMCLKL	HY/2012/07	2018-06-12	ASR9	11:04	1-hr TSP	82				
TMCLKL	HY/2012/07	2018-06-15	ASR9	8:10	1-hr TSP	95				
TMCLKL	HY/2012/07	2018-06-15	ASR9	9:12	1-hr TSP	83				
TMCLKL	HY/2012/07	2018-06-15	ASR9	10:20	1-hr TSP	102				
TMCLKL	HY/2012/07	2018-06-21	ASR9	8:42	1-hr TSP	98				
TMCLKL	HY/2012/07	2018-06-21	ASR9	9:44	1-hr TSP	62				
TMCLKL	HY/2012/07	2018-06-21	ASR9	10:52	1-hr TSP	63				
TMCLKL	HY/2012/07	2018-06-27	ASR9	8:46	1-hr TSP	63				
TMCLKL	HY/2012/07	2018-06-27	ASR9	9:48	1-hr TSP	60				
TMCLKL	HY/2012/07	2018-06-27	ASR9	10:56	1-hr TSP	52				
				Average		72				
				Min.		13				
				Max.		103				

24-hour TSP Monitoring Results at Air Quality Monitoring Station ASR8A

Project	Works	Date(yyyy-mm-dd)	Station	Time (hh:mm, 24hour)	Parameter	Results (ug/m3)	Action Level (ug/m3)	Limit Level (ug/m3)
TMCLKL	HY/2012/07	2018-06-06	ASR8A	11:14	24-hr TSP	30	178	260
TMCLKL	HY/2012/07	2018-06-12	ASR8A	11:55	24-hr TSP	26		
TMCLKL	HY/2012/07	2018-06-15	ASR8A	11:08	24-hr TSP	39		
TMCLKL	HY/2012/07	2018-06-21	ASR8A	11:43	24-hr TSP	29		
TMCLKL	HY/2012/07	2018-06-27	ASR8A	11:47	24-hr TSP	24		
						Average	30	
						Min.	24	
						Max.	39	

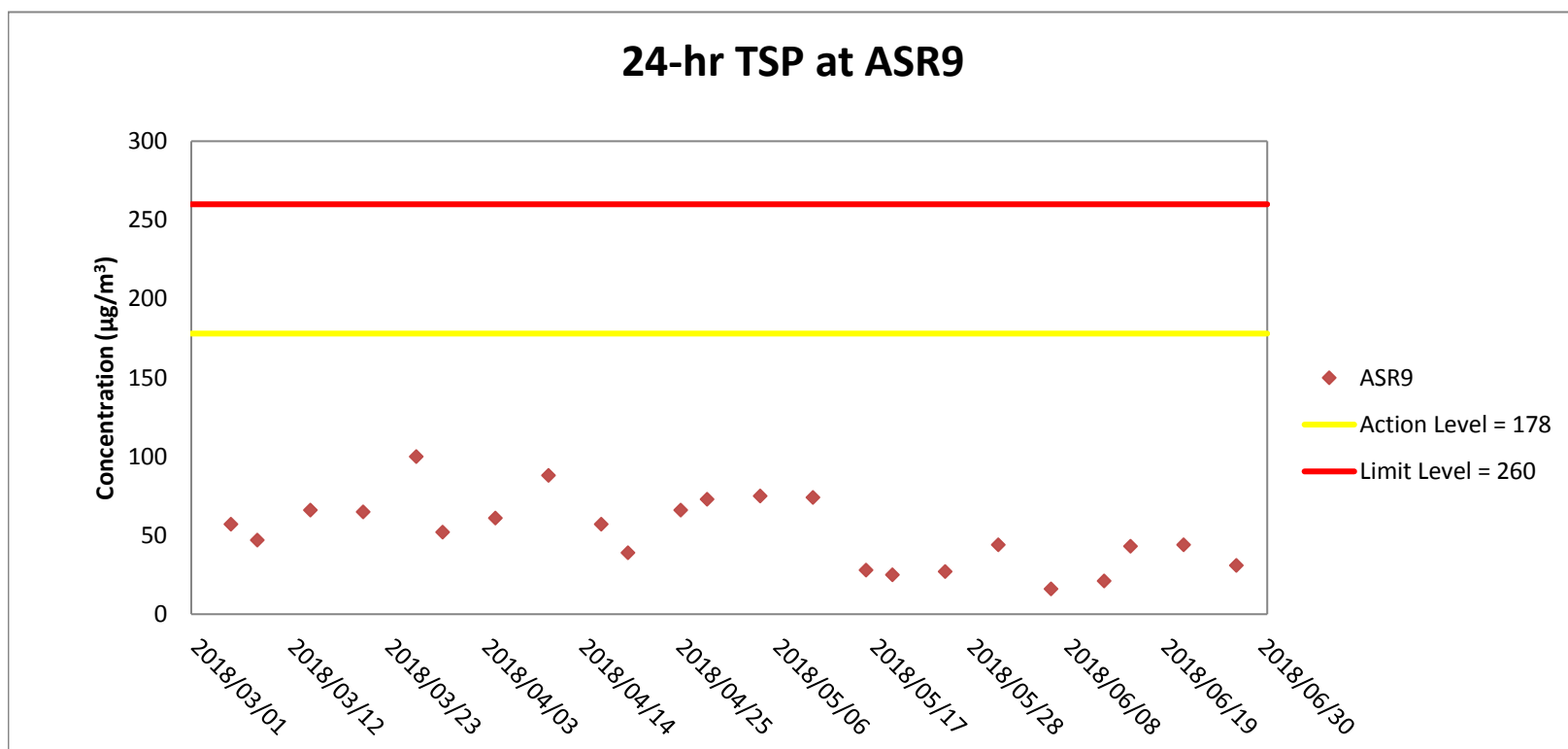
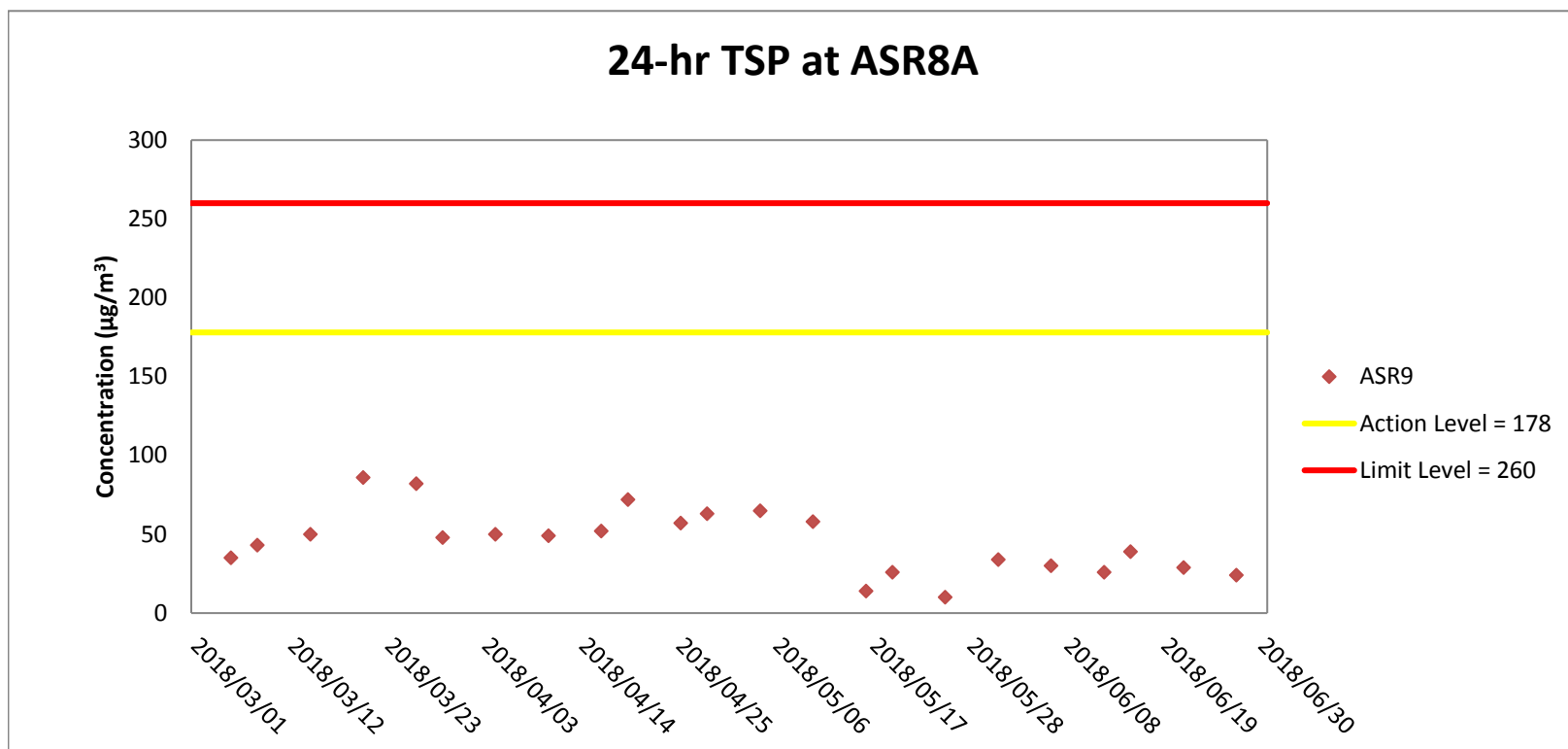
24-hour TSP Monitoring Results at Air Quality Monitoring Station ASR9

Project	Works	Date(yyyy-mm-dd)	Station	Time (hh:mm, 24hour)	Parameter	Results (ug/m3)	Action Level (ug/m3)	Limit Level (ug/m3)
TMCLKL	HY/2012/07	2018-06-06	ASR9	11:26	24-hr TSP	16	178	260
TMCLKL	HY/2012/07	2018-06-12	ASR9	12:06	24-hr TSP	21		
TMCLKL	HY/2012/07	2018-06-15	ASR9	11:22	24-hr TSP	43		
TMCLKL	HY/2012/07	2018-06-21	ASR9	11:54	24-hr TSP	44		
TMCLKL	HY/2012/07	2018-06-27	ASR9	11:58	24-hr TSP	31		
						Average	31	
						Min.	16	
						Max.	44	



Weather condition within the reporting period varied between sunny to rainy.

Major construction works undertaken within the reporting period include Pier construction; Re-alignment of Cheung Tung Road; Road works along North Lantau Highway; Installation of pier head and deck segments; Asphalt paving; Sign gantries construction; Parapet installation; and Slope work of Viaducts A, B, C & D.



Weather condition within the reporting period varied between sunny to rainy.

Major construction works undertaken within the reporting period include Pier construction; Re-alignment of Cheung Tung Road; Road works along North Lantau Highway; Installation of pier head and deck segments; Asphalt paving; Sign gantries construction; Parapet installation; and Slope work of Viaducts A, B,C & D.

Appendix H

Meteorological Data for the Reporting Month

Date	Time (HH)	Wind speed (m/s)	Wind direction (deg)
2018/6/6	0	0.48	69
2018/6/6	1	0.24	77
2018/6/6	2	0.41	90
2018/6/6	3	0.25	94
2018/6/6	4	0.30	84
2018/6/6	5	0.55	91
2018/6/6	6	0.87	133
2018/6/6	7	1.05	137
2018/6/6	8	1.07	147
2018/6/6	9	0.86	151
2018/6/6	10	0.10	128
2018/6/6	11	0.02	130
2018/6/6	12	0.06	205
2018/6/6	13	0.06	120
2018/6/6	14	0.02	244
2018/6/6	15	0.07	218
2018/6/6	16	0.20	190
2018/6/6	17	0.06	139
2018/6/6	18	0.10	114
2018/6/6	19	0.07	162
2018/6/6	20	0.23	171
2018/6/6	21	0.24	139
2018/6/6	22	0.93	163
2018/6/6	23	0.64	124
2018/6/7	0	0.54	132
2018/6/7	1	0.96	167
2018/6/7	2	1.13	188
2018/6/7	3	2.30	191
2018/6/7	4	0.78	183
2018/6/7	5	0.43	153
2018/6/7	6	1.82	175
2018/6/7	7	0.70	174
2018/6/7	8	0.83	129
2018/6/7	9	1.68	134
2018/6/7	10	0.52	201
2018/6/7	11	0.82	230
2018/6/7	12	1.38	177
2018/6/7	13	0.59	169
2018/6/7	14	0.44	164
2018/6/7	15	0.73	149
2018/6/7	16	0.74	164
2018/6/7	17	0.37	163
2018/6/7	18	0.88	149
2018/6/7	19	0.74	154
2018/6/7	20	0.30	143
2018/6/7	21	0.51	140
2018/6/7	22	0.43	149
2018/6/7	23	0.91	163
2018/6/12	0	1.01	214
2018/6/12	1	0.16	227
2018/6/12	2	0.06	206
2018/6/12	3	0.19	220
2018/6/12	4	0.04	218
2018/6/12	5	0.40	201
2018/6/12	6	0.12	234
2018/6/12	7	0.45	217
2018/6/12	8	1.00	199
2018/6/12	9	0.86	210
2018/6/12	10	0.02	177
2018/6/12	11	1.18	201
2018/6/12	12	1.72	234
2018/6/12	13	0.21	245
2018/6/12	14	2.11	213
2018/6/12	15	3.16	212
2018/6/12	16	3.24	202
2018/6/12	17	3.80	209
2018/6/12	18	3.40	217
2018/6/12	19	2.91	215
2018/6/12	20	2.56	223
2018/6/12	21	0.64	208
2018/6/12	22	0.02	156
2018/6/12	23	0.06	206

Date	Time (HH)	Wind speed (m/s)	Wind direction (deg)
2018/6/13	0	0.47	226
2018/6/13	1	0.02	228
2018/6/13	2	0.09	150
2018/6/13	3	0.02	260
2018/6/13	4	0.03	132
2018/6/13	5	0.02	232
2018/6/13	6	0.02	144
2018/6/13	7	0.04	117
2018/6/13	8	0.08	95
2018/6/13	9	0.02	169
2018/6/13	10	0.02	161
2018/6/13	11	0.06	197
2018/6/13	12	0.03	179
2018/6/13	13	0.06	127
2018/6/13	14	0.14	126
2018/6/13	15	0.05	211
2018/6/13	16	0.03	178
2018/6/13	17	0.02	158
2018/6/13	18	0.02	155
2018/6/13	19	0.02	155
2018/6/13	20	0.02	129
2018/6/13	21	0.02	132
2018/6/13	22	0.02	226
2018/6/13	23	0.02	222
2018/6/15	0	0.02	308
2018/6/15	1	0.04	267
2018/6/15	2	0.02	206
2018/6/15	3	0.02	100
2018/6/15	4	0.02	82
2018/6/15	5	0.02	128
2018/6/15	6	0.02	136
2018/6/15	7	0.02	191
2018/6/15	8	0.03	141
2018/6/15	9	0.02	187
2018/6/15	10	0.02	237
2018/6/15	11	0.02	285
2018/6/15	12	0.02	294
2018/6/15	13	0.02	313
2018/6/15	14	0.02	160
2018/6/15	15	0.40	213
2018/6/15	16	0.32	208
2018/6/15	17	0.83	209
2018/6/15	18	0.16	193
2018/6/15	19	0.10	175
2018/6/15	20	0.02	159
2018/6/15	21	0.07	193
2018/6/15	22	0.05	175
2018/6/15	23	0.04	166
2018/6/16	0	0.04	149
2018/6/16	1	0.02	231
2018/6/16	2	0.02	167
2018/6/16	3	0.02	135
2018/6/16	4	0.02	137
2018/6/16	5	0.02	205
2018/6/16	6	0.02	209
2018/6/16	7	0.05	153
2018/6/16	8	0.02	195
2018/6/16	9	0.15	157
2018/6/16	10	0.56	169
2018/6/16	11	1.37	187
2018/6/16	12	1.37	193
2018/6/16	13	3.93	205
2018/6/16	14	3.51	194
2018/6/16	15	2.36	195
2018/6/16	16	2.15	197
2018/6/16	17	3.75	197
2018/6/16	18	2.49	198
2018/6/16	19	1.53	207
2018/6/16	20	1.36	213
2018/6/16	21	0.97	168
2018/6/16	22	0.02	165
2018/6/16	23	0.06	174

Date	Time (HH)	Wind speed (m/s)	Wind direction (deg)
2018/6/21	0	0.26	202
2018/6/21	1	0.28	211
2018/6/21	2	0.21	218
2018/6/21	3	0.07	195
2018/6/21	4	0.02	185
2018/6/21	5	0.05	175
2018/6/21	6	0.04	211
2018/6/21	7	0.02	192
2018/6/21	8	0.37	185
2018/6/21	9	0.22	172
2018/6/21	10	0.89	204
2018/6/21	11	0.69	228
2018/6/21	12	0.18	218
2018/6/21	13	0.20	209
2018/6/21	14	1.48	207
2018/6/21	15	0.32	198
2018/6/21	16	0.12	240
2018/6/21	17	0.02	183
2018/6/21	18	0.02	154
2018/6/21	19	0.10	196
2018/6/21	20	0.85	185
2018/6/21	21	1.36	194
2018/6/21	22	2.22	211
2018/6/21	23	0.62	189
2018/6/22	0	0.36	205
2018/6/22	1	0.38	208
2018/6/22	2	0.33	204
2018/6/22	3	0.11	205
2018/6/22	4	0.22	219
2018/6/22	5	0.59	201
2018/6/22	6	2.30	205
2018/6/22	7	2.56	202
2018/6/22	8	2.14	197
2018/6/22	9	2.87	207
2018/6/22	10	2.95	216
2018/6/22	11	1.49	203
2018/6/22	12	0.36	177
2018/6/22	13	0.04	205
2018/6/22	14	0.04	234
2018/6/22	15	0.02	141
2018/6/22	16	0.16	202
2018/6/22	17	0.16	205
2018/6/22	18	0.15	200
2018/6/22	19	0.40	208
2018/6/22	20	1.46	220
2018/6/22	21	0.70	214
2018/6/22	22	2.02	200
2018/6/22	23	1.92	210
2018/6/27	0	1.15	193
2018/6/27	1	0.32	188
2018/6/27	2	0.07	211
2018/6/27	3	0.04	193
2018/6/27	4	0.12	197
2018/6/27	5	0.09	207
2018/6/27	6	0.02	205
2018/6/27	7	0.07	185
2018/6/27	8	0.02	274
2018/6/27	9	0.01	240
2018/6/27	10	0.01	190
2018/6/27	11	0.01	169
2018/6/27	12	0.01	156
2018/6/27	13	1.16	191
2018/6/27	14	1.97	203
2018/6/27	15	1.31	208
2018/6/27	16	2.05	209
2018/6/27	17	1.39	195
2018/6/27	18	0.87	168
2018/6/27	19	0.49	197
2018/6/27	20	0.15	160
2018/6/27	21	0.29	203
2018/6/27	22	0.41	208
2018/6/27	23	0.33	213

Date	Time (HH)	Wind speed (m/s)	Wind direction (deg)
2018/6/28	0	0.32	208
2018/6/28	1	0.31	208
2018/6/28	2	0.45	205
2018/6/28	3	0.11	212
2018/6/28	4	0.15	210
2018/6/28	5	0.11	207
2018/6/28	6	0.02	204
2018/6/28	7	0.01	129
2018/6/28	8	0.01	192
2018/6/28	9	0.02	228
2018/6/28	10	0.03	103
2018/6/28	11	0.01	137
2018/6/28	12	0.01	144
2018/6/28	13	0.00	120
2018/6/28	14	0.01	178
2018/6/28	15	0.62	202
2018/6/28	16	0.97	186
2018/6/28	17	0.11	177
2018/6/28	18	0.43	154
2018/6/28	19	0.15	202
2018/6/28	20	0.09	198
2018/6/28	21	0.02	200
2018/6/28	22	0.16	193
2018/6/28	23	0.18	197

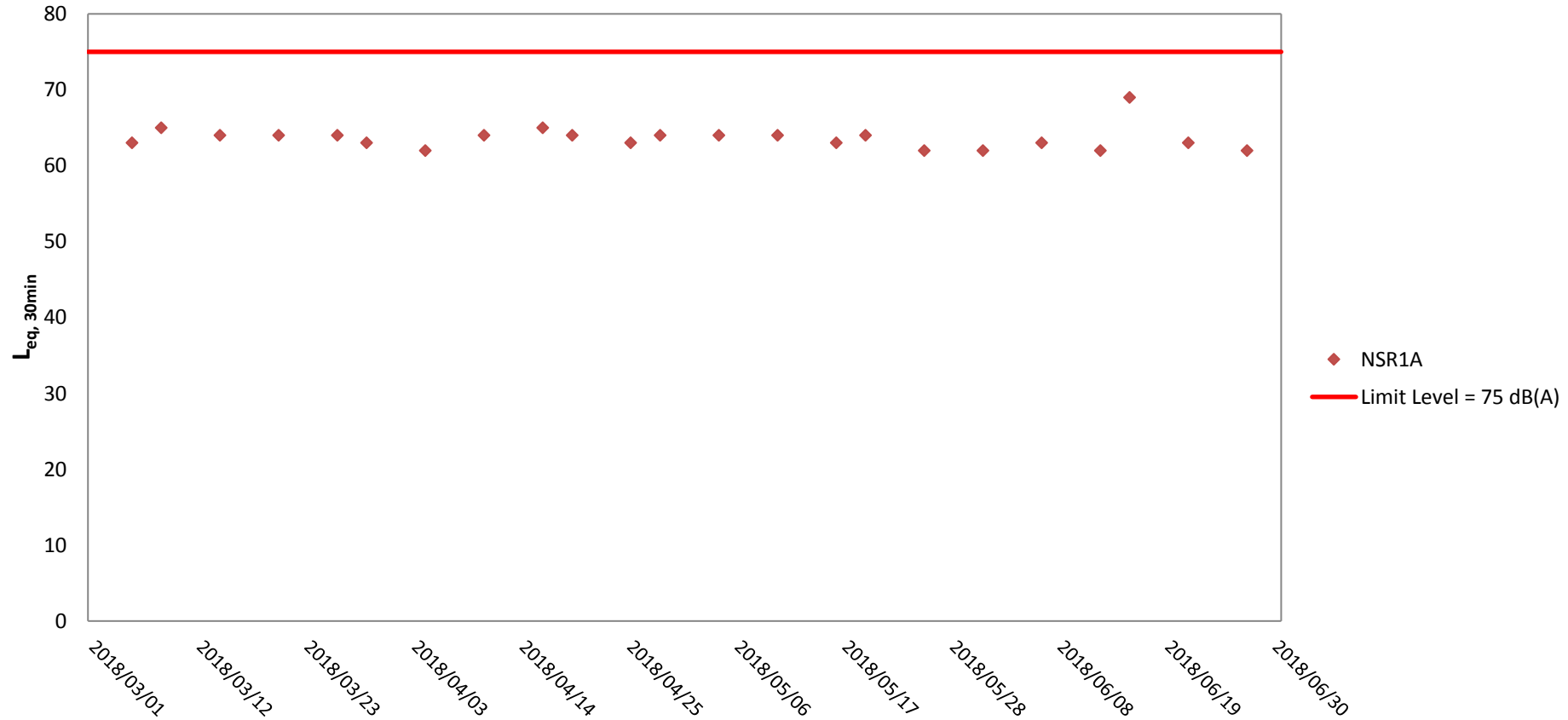
Appendix I

Impact Noise Monitoring
Results and Graphical
Presentation

Appendix I-1 Noise Monitoring Results

Project	Works	Date (yyyy-mm-dd)	Station	Weather Condition	Time (hh:mm, 24hour)	Noise Level for 30-min, dB(A)			Limit Level dB(A)	Wind Speed (m/s)	Noise Meter Model/ID	Calibrator Model/ID
						Leq	L10	L90				
TMCLKL	HY/2012/07	2018-06-06	NSR1A	Cloudy	10:33	63	65	61	75	0.6	RION NL31 (S/N 00603867)	RION NC73 (S/N 10997142)
TMCLKL	HY/2012/07	2018-06-12	NSR1A	Cloudy	10:15	62	63	60	75	0.4	RION NL31 (S/N 00603867)	RION NC73 (S/N 10997142)
TMCLKL	HY/2012/07	2018-06-15	NSR1A	Sunny	9:25	69	69	67	75	0.2	RION NL31 (S/N 00603867)	RION NC73 (S/N 10997142)
TMCLKL	HY/2012/07	2018-06-21	NSR1A	Sunny	10:00	63	64	60	75	0.3	RION NL31 (S/N 00603867)	RION NC73 (S/N 10997142)
TMCLKL	HY/2012/07	2018-06-27	NSR1A	Sunny	10:05	62	64	60	75	0.2	RION NL31 (S/N 00603867)	RION NC73 (S/N 10786708)
						Min.	62					
						Max.	69					
						Average	64					

Noise Monitoring Results at NSR 1A ($L_{eq, 30min}$)



Weather condition within the reporting period varied between sunny to rainy.

Major construction works undertaken within the reporting period include Pier construction; Re-alignment of Cheung Tung Road; Road works along North Lantau Highway; Installation of pier head and deck segments; Asphalt paving; Sign gantries construction; Parapet installation; and Slope work of Viaducts A, B, C & D.

Appendix J

Impact Water Quality Monitoring Results and Graphical Presentation

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Start Time	Depth (m)	Level	Level Code	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	CS(Mf)5	13:56	13.4	Surface	1	1	29.5	8.0	24.7	7.1	6.2	3.0	3.8	2.7	4.4
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	CS(Mf)5	13:56	13.4	Surface	1	2	29.5	8.1	24.9	7.1		2.9		3.1	
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	CS(Mf)5	13:56	13.4	Middle	2	1	27.4	7.9	28.8	5.4		3.6		5.1	
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	CS(Mf)5	13:56	13.4	Middle	2	2	27.5	8.0	29.0	5.3		3.5		4.8	
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	CS(Mf)5	13:56	13.4	Bottom	3	1	26.8	7.9	30.2	5.1		4.9		4.7	
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	CS(Mf)5	13:56	13.4	Bottom	3	2	26.8	8.0	30.5	5.0	5.1	4.9	5.9		
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	CS(Mf)3(N)	15:09	7.2	Surface	1	1	30.3	7.9	21.5	7.7	6.4	7.1	6.5	7.6	7.1
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	CS(Mf)3(N)	15:09	7.2	Surface	1	2	30.0	8.0	21.5	7.4		7.1		6.7	
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	CS(Mf)3(N)	15:09	7.2	Middle	2	1	29.1	7.8	24.2	5.2		4.1		7.3	
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	CS(Mf)3(N)	15:09	7.2	Middle	2	2	28.7	7.9	24.2	5.2		4.1		6.4	
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	CS(Mf)3(N)	15:09	7.2	Bottom	3	1	28.9	7.8	24.7	5.2		8.3		7.8	
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	CS(Mf)3(N)	15:09	7.2	Bottom	3	2	28.6	7.9	24.7	5.2	5.2	8.2	6.7		
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	IS(Mf)16	14:31	6.3	Surface	1	1	30.1	8.1	23.9	8.6	7.7	4.4	3.6	4.8	6.0
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	IS(Mf)16	14:31	6.3	Surface	1	2	30.1	8.2	23.9	8.7		4.4		4.4	
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	IS(Mf)16	14:31	6.3	Middle	2	1	28.3	8.0	26.7	6.7		3.2		5.7	
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	IS(Mf)16	14:31	6.3	Middle	2	2	28.3	8.1	26.9	6.8		3.1		5.2	
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	IS(Mf)16	14:31	6.3	Bottom	3	1	28.5	8.0	26.5	6.2		6.2		6.8	
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	IS(Mf)16	14:31	6.3	Bottom	3	2	28.4	8.1	26.9	6.1	6.2	3.1	8.8		
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	SR4a	14:43	5.3	Surface	1	1	29.6	8.0	24.2	8.0	8.0	5.6	6.3	4.9	6.0
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	SR4a	14:43	5.3	Surface	1	2	29.7	8.2	24.4	8.0		5.5		6.0	
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	SR4a	14:43	5.3	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	SR4a	14:43	5.3	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	SR4a	14:43	5.3	Bottom	3	1	29.2	8.0	24.9	5.9		5.8		7.0	
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	SR4a	14:43	5.3	Bottom	3	2	29.2	8.0	25.2	5.7	5.8	6.9	6.8		
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	SR4(N)	14:49	3.8	Surface	1	1	30.5	8.1	22.9	8.3	8.3	8.1	8.0	7.1	7.9
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	SR4(N)	14:49	3.8	Surface	1	2	30.5	8.2	23.1	8.2		8.0		9.0	
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	SR4(N)	14:49	3.8	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	SR4(N)	14:49	3.8	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	SR4(N)	14:49	3.8	Bottom	3	1	30.6	8.1	22.9	8.4		8.4		8.0	
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	SR4(N)	14:49	3.8	Bottom	3	2	30.6	8.2	23.1	8.3	8.4	7.9	8.1		
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	IS8	14:56	4.3	Surface	1	1	30.2	8.1	23.5	8.8	8.8	6.6	8.3	3.9	6.0
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	IS8	14:56	4.3	Surface	1	2	30.2	8.3	23.7	8.8		6.5		4.9	
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	IS8	14:56	4.3	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	IS8	14:56	4.3	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	IS8	14:56	4.3	Bottom	3	1	30.0	8.0	23.8	7.6		7.6		10.0	
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	IS8	14:56	4.3	Bottom	3	2	30.0	8.1	24.0	7.5	7.6	10.0	6.9		
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	IS(Mf)9	15:15	3.1	Surface	1	1	30.1	8.1	23.6	9.4	9.4	7.1	7.7	7.5	7.7
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	IS(Mf)9	15:15	3.1	Surface	1	2	30.1	8.3	23.9	9.4		7.0		6.0	
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	IS(Mf)9	15:15	3.1	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	IS(Mf)9	15:15	3.1	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	IS(Mf)9	15:15	3.1	Bottom	3	1	30.1	8.1	23.7	8.5		8.5		8.4	
TMCLKL	HY/2012/07	2018-06-01	Mid-Ebb	IS(Mf)9	15:15	3.1	Bottom	3	2	30.1	8.2	24.0	8.4	8.5	8.4	7.9		

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Start Time	Depth (m)	Level	Level Code	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	CS(Mf)5	21:43	12.7	Surface	1	1	28.0	8.0	27.7	5.8	5.5	2.1	4.3	7.0	7.3
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	CS(Mf)5	21:43	12.7	Surface	1	2	27.9	7.9	27.5	5.8		2.1		7.1	
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	CS(Mf)5	21:43	12.7	Middle	2	1	27.4	8.0	28.9	5.1		5.0		7.4	
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	CS(Mf)5	21:43	12.7	Middle	2	2	27.4	7.9	28.7	5.1		5.0		5.7	
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	CS(Mf)5	21:43	12.7	Bottom	3	1	27.5	8.0	29.0	5.1		5.7		7.8	
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	CS(Mf)5	21:43	12.7	Bottom	3	2	27.5	8.0	28.7	5.1	5.1	5.7	8.8		
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	CS(Mf)3(N)	20:27	7.3	Surface	1	1	30.3	7.8	20.1	6.0	5.7	2.3	3.4	4.9	5.9
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	CS(Mf)3(N)	20:27	7.3	Surface	1	2	30.0	7.8	20.2	5.9		2.4		5.4	
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	CS(Mf)3(N)	20:27	7.3	Middle	2	1	29.9	7.8	22.2	5.5		2.8		5.8	
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	CS(Mf)3(N)	20:27	7.3	Middle	2	2	29.5	7.8	22.3	5.5		2.4		4.6	
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	CS(Mf)3(N)	20:27	7.3	Bottom	3	1	29.8	7.8	22.7	5.6		5.3		6.9	
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	CS(Mf)3(N)	20:27	7.3	Bottom	3	2	29.5	7.8	22.7	5.5	5.6	5.2	7.9		
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	IS(Mf)16	21:19	5.3	Surface	1	1	29.6	8.1	23.5	7.3	7.4	2.4	2.5	7.3	8.0
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	IS(Mf)16	21:19	5.3	Surface	1	2	29.6	8.0	23.2	7.4		2.4		6.7	
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	IS(Mf)16	21:19	5.3	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	IS(Mf)16	21:19	5.3	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	IS(Mf)16	21:19	5.3	Bottom	3	1	29.6	8.1	23.5	7.3		7.4		2.6	
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	IS(Mf)16	21:19	5.3	Bottom	3	2	29.6	8.0	23.2	7.4	7.4	2.7	10.1		
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	SR4a	20:59	4.1	Surface	1	1	29.6	8.1	22.8	7.3	7.4	5.5	5.6	8.2	8.8
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	SR4a	20:59	4.1	Surface	1	2	29.7	8.0	22.6	7.4		5.6		8.0	
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	SR4a	20:59	4.1	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	SR4a	20:59	4.1	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	SR4a	20:59	4.1	Bottom	3	1	29.6	8.1	22.9	7.2		7.3		5.7	
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	SR4a	20:59	4.1	Bottom	3	2	29.6	8.0	22.7	7.3	7.3	5.7	8.8		
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	SR4(N)	20:56	3.1	Surface	1	1	29.7	8.1	23.7	7.4	7.5	5.7	5.1	9.2	10.2
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	SR4(N)	20:56	3.1	Surface	1	2	29.7	8.0	23.4	7.5		5.7		10.2	
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	SR4(N)	20:56	3.1	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	SR4(N)	20:56	3.1	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	SR4(N)	20:56	3.1	Bottom	3	1	29.7	8.1	23.6	7.5		7.6		4.4	
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	SR4(N)	20:56	3.1	Bottom	3	2	29.7	8.0	23.4	7.6	7.6	4.5	11.4		
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	IS8	20:50	2.9	Surface	1	1					7.2		6.1		7.6
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	IS8	20:50	2.9	Surface	1	2									
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	IS8	20:50	2.9	Middle	2	1	29.6	8.1	23.9	7.1		6.0		7.8	
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	IS8	20:50	2.9	Middle	2	2	29.6	8.0	23.6	7.2		6.1		7.4	
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	IS8	20:50	2.9	Bottom	3	1									
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	IS8	20:50	2.9	Bottom	3	2									
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	IS(Mf)9	20:41	2.6	Surface	1	1					8.0		3.4		9.6
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	IS(Mf)9	20:41	2.6	Surface	1	2									
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	IS(Mf)9	20:41	2.6	Middle	2	1	29.8	8.2	24.0	7.9		3.3		10.0	
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	IS(Mf)9	20:41	2.6	Middle	2	2	29.8	8.1	23.7	8.0		3.4		9.1	
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	IS(Mf)9	20:41	2.6	Bottom	3	1									
TMCLKL	HY/2012/07	2018-06-01	Mid-Flood	IS(Mf)9	20:41	2.6	Bottom	3	2									

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Start Time	Depth (m)	Level	Level Code	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	CS(Mf)5	16:27	12.2	Surface	1	1	28.8	8.2	25.8	8.4	7.2	2.4	4.2	4.5	5.6
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	CS(Mf)5	16:27	12.2	Surface	1	2	28.8	8.0	25.6	8.5		2.4		5.1	
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	CS(Mf)5	16:27	12.2	Middle	2	1	28.1	8.0	27.3	5.9		2.8		5.7	
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	CS(Mf)5	16:27	12.2	Middle	2	2	28.1	7.9	27.0	6.0		2.7		5.4	
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	CS(Mf)5	16:27	12.2	Bottom	3	1	26.8	8.0	30.5	4.9	4.9	7.4	5.6	7.4	5.6
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	CS(Mf)5	16:27	12.2	Bottom	3	2	26.8	7.8	30.1	4.8		7.4		5.6	
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	CS(Mf)3(N)	15:45	7.1	Surface	1	1	29.0	8.2	23.8	6.9	6.6	5.4	5.6	5.3	6.6
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	CS(Mf)3(N)	15:45	7.1	Surface	1	2	29.0	8.2	24.6	6.8		5.4		5.7	
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	CS(Mf)3(N)	15:45	7.1	Middle	2	1	28.5	8.1	25.3	6.4		5.9		6.6	
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	CS(Mf)3(N)	15:45	7.1	Middle	2	2	28.5	8.1	26.2	6.4		5.9		7.5	
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	CS(Mf)3(N)	15:45	7.1	Bottom	3	1	28.5	8.1	25.5	6.4	6.4	5.6	7.5	7.1	7.5
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	CS(Mf)3(N)	15:45	7.1	Bottom	3	2	28.5	8.1	26.4	6.4		5.6		7.5	
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	IS(Mf)16	15:58	5.5	Surface	1	1	29.1	8.2	25.7	9.7	9.8	3.2	3.9	8.4	8.2
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	IS(Mf)16	15:58	5.5	Surface	1	2	29.1	8.2	25.4	9.9		3.3		7.5	
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	IS(Mf)16	15:58	5.5	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	IS(Mf)16	15:58	5.5	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	IS(Mf)16	15:58	5.5	Bottom	3	1	28.6	8.1	26.4	7.3	7.4	4.4	9.0	7.9	9.0
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	IS(Mf)16	15:58	5.5	Bottom	3	2	28.6	8.0	26.2	7.5		4.6		9.0	
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	SR4a	15:47	4.2	Surface	1	1	28.9	8.2	25.7	8.1	8.1	3.9	4.7	10.4	10.6
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	SR4a	15:47	4.2	Surface	1	2	28.9	8.0	25.5	8.1		3.8		9.4	
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	SR4a	15:47	4.2	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	SR4a	15:47	4.2	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	SR4a	15:47	4.2	Bottom	3	1	28.8	8.1	26.0	6.8	6.9	5.5	11.7	11.7	11.7
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	SR4a	15:47	4.2	Bottom	3	2	28.7	7.9	25.8	6.9		5.6		11.0	
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	SR4(N)	15:43	4.1	Surface	1	1	29.2	8.1	25.5	8.9	9.0	4.4	4.4	8.1	7.7
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	SR4(N)	15:43	4.1	Surface	1	2	29.2	8.1	25.2	9.0		4.4		7.2	
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	SR4(N)	15:43	4.1	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	SR4(N)	15:43	4.1	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	SR4(N)	15:43	4.1	Bottom	3	1	29.3	8.1	25.5	8.9	9.0	4.3	7.0	8.6	7.0
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	SR4(N)	15:43	4.1	Bottom	3	2	29.2	8.1	25.2	9.0		4.4		7.0	
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	IS8	15:35	3.6	Surface	1	1	29.0	8.2	25.5	9.0	9.1	3.4	4.6	7.7	9.2
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	IS8	15:35	3.6	Surface	1	2	29.0	8.0	25.2	9.1		3.5		8.5	
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	IS8	15:35	3.6	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	IS8	15:35	3.6	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	IS8	15:35	3.6	Bottom	3	1	28.7	8.1	26.2	7.5	7.6	5.7	10.9	10.9	10.9
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	IS8	15:35	3.6	Bottom	3	2	28.7	8.0	25.9	7.6		5.6		9.6	
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	IS(Mf)9	15:25	3.8	Surface	1	1	29.0	8.2	25.6	9.9	10.0	3.2	3.7	9.0	10.2
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	IS(Mf)9	15:25	3.8	Surface	1	2	29.0	8.1	25.5	10.0		3.3		9.6	
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	IS(Mf)9	15:25	3.8	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	IS(Mf)9	15:25	3.8	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	IS(Mf)9	15:25	3.8	Bottom	3	1	29.0	8.1	25.9	9.8	9.7	4.0	12.0	10.3	12.0
TMCLKL	HY/2012/07	2018-06-04	Mid-Ebb	IS(Mf)9	15:25	3.8	Bottom	3	2	29.0	8.1	25.5	9.6		4.1		12.0	

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Start Time	Depth (m)	Level	Level Code	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	CS(Mf)5	9:03	11.9	Surface	1	1	28.4	8.1	26.1	6.3	5.8	2.9	3.5	4.6	5.5
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	CS(Mf)5	9:03	11.9	Surface	1	2	28.4	7.9	25.8	6.3		2.9		5.5	
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	CS(Mf)5	9:03	11.9	Middle	2	1	28.0	8.0	27.6	5.3		3.9		4.6	
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	CS(Mf)5	9:03	11.9	Middle	2	2	28.0	7.9	27.3	5.4		3.6		5.9	
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	CS(Mf)5	9:03	11.9	Bottom	3	1	27.0	8.0	30.1	4.8		4.0		7.0	
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	CS(Mf)5	9:03	11.9	Bottom	3	2	27.0	7.8	29.7	4.8	4.8	3.6	5.2		
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	CS(Mf)3(N)	9:47	7.3	Surface	1	1	29.1	8.1	23.0	6.4	6.3	6.6	7.1	2.1	2.6
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	CS(Mf)3(N)	9:47	7.3	Surface	1	2	29.1	8.1	23.7	6.3		6.9		2.1	
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	CS(Mf)3(N)	9:47	7.3	Middle	2	1	28.8	8.1	23.9	6.2		7.0		2.4	
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	CS(Mf)3(N)	9:47	7.3	Middle	2	2	28.8	8.1	24.6	6.1		7.2		2.1	
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	CS(Mf)3(N)	9:47	7.3	Bottom	3	1	28.7	8.1	24.4	6.2		7.3		4.3	
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	CS(Mf)3(N)	9:47	7.3	Bottom	3	2	28.7	8.1	25.2	6.1	6.2	7.3	2.5		
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	IS(Mf)16	9:32	5.7	Surface	1	1	28.8	8.1	25.0	7.3	7.4	6.0	4.4	4.4	4.6
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	IS(Mf)16	9:32	5.7	Surface	1	2	28.8	8.0	24.8	7.4		6.1		3.9	
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	IS(Mf)16	9:32	5.7	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	IS(Mf)16	9:32	5.7	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	IS(Mf)16	9:32	5.7	Bottom	3	1	28.6	8.2	25.8	7.4		7.4		2.8	
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	IS(Mf)16	9:32	5.7	Bottom	3	2	28.6	8.0	25.6	7.4	7.4	2.7	5.2		
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	SR4a	9:42	4.6	Surface	1	1	28.8	8.1	25.0	6.7	6.7	2.2	4.1	2.1	3.6
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	SR4a	9:42	4.6	Surface	1	2	28.8	7.9	24.8	6.7		2.2		2.8	
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	SR4a	9:42	4.6	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	SR4a	9:42	4.6	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	SR4a	9:42	4.6	Bottom	3	1	28.4	8.1	25.3	6.5		6.6		5.8	
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	SR4a	9:42	4.6	Bottom	3	2	28.4	7.9	25.0	6.6	6.6	6.1	4.1		
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	SR4(N)	9:48	4.2	Surface	1	1	28.7	8.1	25.4	6.7	6.8	3.5	3.5	5.0	6.1
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	SR4(N)	9:48	4.2	Surface	1	2	28.7	7.9	25.1	6.8		3.5		5.9	
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	SR4(N)	9:48	4.2	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	SR4(N)	9:48	4.2	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	SR4(N)	9:48	4.2	Bottom	3	1	28.7	8.1	25.4	6.8		6.8		3.5	
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	SR4(N)	9:48	4.2	Bottom	3	2	28.7	7.9	25.1	6.8	6.8	3.5	7.3		
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	IS8	9:56	4.1	Surface	1	1	28.8	8.1	25.3	7.2	7.3	3.7	4.4	3.4	4.7
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	IS8	9:56	4.1	Surface	1	2	28.8	8.0	25.1	7.3		3.7		4.5	
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	IS8	9:56	4.1	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	IS8	9:56	4.1	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	IS8	9:56	4.1	Bottom	3	1	28.6	8.1	26.2	6.8		6.8		5.0	
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	IS8	9:56	4.1	Bottom	3	2	28.6	7.9	25.9	6.8	6.8	5.0	6.1		
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	IS(Mf)9	10:06	3.7	Surface	1	1	28.8	8.2	26.0	7.9	7.9	3.4	4.7	7.0	7.5
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	IS(Mf)9	10:06	3.7	Surface	1	2	28.7	8.0	25.7	7.9		3.9		7.8	
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	IS(Mf)9	10:06	3.7	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	IS(Mf)9	10:06	3.7	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	IS(Mf)9	10:06	3.7	Bottom	3	1	28.7	8.2	26.0	7.3		7.3		6.0	
TMCLKL	HY/2012/07	2018-06-04	Mid-Flood	IS(Mf)9	10:06	3.7	Bottom	3	2	28.6	8.0	25.8	7.3	7.3	5.5	8.0		

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Start Time	Depth (m)	Level	Level Code	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	CS(Mf)5	17:54	12.4	Surface	1	1	28.0	8.1	24.6	6.9	6.1	1.5	2.1	6.4	8.5
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	CS(Mf)5	17:54	12.4	Surface	1	2	28.0	7.9	24.3	7.0		1.5		7.3	
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	CS(Mf)5	17:54	12.4	Middle	2	1	27.8	8.0	27.8	5.2		1.4		8.1	
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	CS(Mf)5	17:54	12.4	Middle	2	2	27.7	7.8	27.5	5.3		1.4		8.7	
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	CS(Mf)5	17:54	12.4	Bottom	3	1	27.2	8.0	29.6	4.8		3.3		9.8	
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	CS(Mf)5	17:54	12.4	Bottom	3	2	27.1	7.8	29.3	4.9	4.9	3.3	10.9		
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	CS(Mf)3(N)	17:23	7.3	Surface	1	1	28.8	7.9	23.2	6.6	6.5	3.8	4.8	3.4	4.1
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	CS(Mf)3(N)	17:23	7.3	Surface	1	2	28.5	7.9	23.2	6.5		3.9		4.3	
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	CS(Mf)3(N)	17:23	7.3	Middle	2	1	28.7	7.9	23.7	6.4		4.3		3.8	
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	CS(Mf)3(N)	17:23	7.3	Middle	2	2	28.5	7.9	23.7	6.3		4.3		4.4	
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	CS(Mf)3(N)	17:23	7.3	Bottom	3	1	28.5	7.9	25.9	5.8		5.8		3.8	
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	CS(Mf)3(N)	17:23	7.3	Bottom	3	2	28.2	7.9	26.1	5.8	5.8	6.2	4.6		
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	IS(Mf)16	17:26	5.8	Surface	1	1	27.9	8.1	25.3	6.6	6.6	1.8	1.8	6.9	7.1
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	IS(Mf)16	17:26	5.8	Surface	1	2	28.0	8.1	25.0	6.6		1.8		6.5	
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	IS(Mf)16	17:26	5.8	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	IS(Mf)16	17:26	5.8	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	IS(Mf)16	17:26	5.8	Bottom	3	1	27.6	8.0	28.5	5.2		5.2		1.7	
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	IS(Mf)16	17:26	5.8	Bottom	3	2	27.5	8.0	28.3	5.2	5.2	1.7	7.1		
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	SR4a	17:16	4.6	Surface	1	1	28.2	8.0	25.4	6.0	6.1	1.8	2.8	11.7	11.6
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	SR4a	17:16	4.6	Surface	1	2	28.2	7.9	25.2	6.2		1.8		10.6	
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	SR4a	17:16	4.6	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	SR4a	17:16	4.6	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	SR4a	17:16	4.6	Bottom	3	1	28.2	8.0	26.2	5.4		5.4		3.7	
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	SR4a	17:16	4.6	Bottom	3	2	28.2	8.0	26.2	5.4	5.4	3.7	12.1		
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	SR4(N)	17:11	3.5	Surface	1	1	28.1	7.9	25.2	5.3	5.4	4.6	4.6	10.1	10.2
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	SR4(N)	17:11	3.5	Surface	1	2	28.1	7.8	24.9	5.4		4.5		9.0	
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	SR4(N)	17:11	3.5	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	SR4(N)	17:11	3.5	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	SR4(N)	17:11	3.5	Bottom	3	1	28.2	7.9	25.4	5.3		5.4		4.6	
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	SR4(N)	17:11	3.5	Bottom	3	2	28.2	7.8	25.2	5.4	5.4	4.6	11.2		
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	IS8	17:05	4.1	Surface	1	1	28.2	8.1	25.3	6.8	6.8	1.6	2.9	8.2	8.7
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	IS8	17:05	4.1	Surface	1	2	28.2	7.9	24.9	6.8		1.6		8.2	
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	IS8	17:05	4.1	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	IS8	17:05	4.1	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	IS8	17:05	4.1	Bottom	3	1	28.2	8.0	26.1	6.0		6.1		4.1	
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	IS8	17:05	4.1	Bottom	3	2	28.2	7.9	25.8	6.1	6.1	4.1	8.8		
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	IS(Mf)9	16:56	3.5	Surface	1	1	28.1	8.1	24.9	7.2	7.3	1.5	1.7	4.5	5.5
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	IS(Mf)9	16:56	3.5	Surface	1	2	28.1	7.9	24.6	7.4		1.5		5.3	
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	IS(Mf)9	16:56	3.5	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	IS(Mf)9	16:56	3.5	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	IS(Mf)9	16:56	3.5	Bottom	3	1	28.1	8.1	25.3	7.1		7.2		1.9	
TMCLKL	HY/2012/07	2018-06-06	Mid-Ebb	IS(Mf)9	16:56	3.5	Bottom	3	2	28.1	7.9	25.2	7.2	7.2	1.9	6.5		

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Start Time	Depth (m)	Level	Level Code	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	CS(Mf)5	11:56	13.5	Surface	1	1	28.2	7.8	21.1	5.4	5.3	5.0	6.6	3.8	5.1
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	CS(Mf)5	11:56	13.5	Surface	1	2	28.3	7.9	21.3	5.4		4.7		5.1	
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	CS(Mf)5	11:56	13.5	Middle	2	1	28.2	7.8	21.7	5.2		5.3		6.3	
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	CS(Mf)5	11:56	13.5	Middle	2	2	28.2	7.9	21.9	5.2		5.3		4.1	
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	CS(Mf)5	11:56	13.5	Bottom	3	1	28.2	7.8	24.4	4.9		4.9		5.2	
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	CS(Mf)5	11:56	13.5	Bottom	3	2	28.2	7.9	24.8	4.9	4.9	9.5	5.8		
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	CS(Mf)3(N)	13:21	7	Surface	1	1	28.5	7.9	17.1	5.7	5.6	2.0	5.8	2.6	3.0
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	CS(Mf)3(N)	13:21	7	Surface	1	2	28.7	8.1	17.1	5.8		2.2		3.3	
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	CS(Mf)3(N)	13:21	7	Middle	2	1	28.4	7.9	18.0	5.4		5.7		3.0	
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	CS(Mf)3(N)	13:21	7	Middle	2	2	28.6	8.0	18.0	5.5		5.4		2.9	
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	CS(Mf)3(N)	13:21	7	Bottom	3	1	28.3	7.9	20.5	4.9		4.9		3.0	
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	CS(Mf)3(N)	13:21	7	Bottom	3	2	28.6	8.0	20.6	4.9	4.9	9.6	3.4		
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	IS(Mf)16	12:37	5.8	Surface	1	1	28.4	7.8	21.4	5.4	5.4	4.0	3.2	1.2	1.8
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	IS(Mf)16	12:37	5.8	Surface	1	2	28.4	7.9	21.7	5.4		4.4		1.9	
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	IS(Mf)16	12:37	5.8	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	IS(Mf)16	12:37	5.8	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	IS(Mf)16	12:37	5.8	Bottom	3	1	28.2	7.8	23.8	5.0		5.0		2.2	
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	IS(Mf)16	12:37	5.8	Bottom	3	2	28.2	7.9	24.2	5.0	5.0	2.2	2.1		
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	SR4a	12:46	4.5	Surface	1	1	28.3	7.8	20.7	5.1	5.2	7.7	10.4	3.5	3.2
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	SR4a	12:46	4.5	Surface	1	2	28.3	7.9	21.0	5.2		8.2		3.9	
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	SR4a	12:46	4.5	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	SR4a	12:46	4.5	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	SR4a	12:46	4.5	Bottom	3	1	28.3	7.8	23.5	5.1		5.1		12.9	
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	SR4a	12:46	4.5	Bottom	3	2	28.3	7.8	23.8	5.1	5.1	12.7	2.4		
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	SR4(N)	12:53	3.4	Surface	1	1	28.2	7.7	19.4	5.5	5.5	6.8	6.8	2.4	2.9
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	SR4(N)	12:53	3.4	Surface	1	2	28.2	7.8	19.7	5.4		6.5		2.8	
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	SR4(N)	12:53	3.4	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	SR4(N)	12:53	3.4	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	SR4(N)	12:53	3.4	Bottom	3	1	28.4	7.7	19.8	5.1		5.1		7.2	
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	SR4(N)	12:53	3.4	Bottom	3	2	28.4	7.8	20.0	5.1	5.1	6.7	3.6		
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	IS8	13:00	4.5	Surface	1	1	28.4	7.8	20.8	5.7	5.7	2.2	3.7	2.3	2.4
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	IS8	13:00	4.5	Surface	1	2	28.4	7.9	21.0	5.7		2.5		2.2	
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	IS8	13:00	4.5	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	IS8	13:00	4.5	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	IS8	13:00	4.5	Bottom	3	1	28.4	7.8	21.4	5.1		5.1		4.9	
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	IS8	13:00	4.5	Bottom	3	2	28.4	7.8	21.7	5.1	5.1	5.2	2.4		
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	IS(Mf)9	13:08	2.8	Surface	1	1					6.6		6.6		1.6
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	IS(Mf)9	13:08	2.8	Surface	1	2									
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	IS(Mf)9	13:08	2.8	Middle	2	1	28.3	7.8	20.2	6.6		6.6		1.8	
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	IS(Mf)9	13:08	2.8	Middle	2	2	28.3	7.8	20.6	6.6		6.5		1.3	
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	IS(Mf)9	13:08	2.8	Bottom	3	1									
TMCLKL	HY/2012/07	2018-06-13	Mid-Ebb	IS(Mf)9	13:08	2.8	Bottom	3	2									

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Start Time	Depth (m)	Level	Level Code	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	CS(Mf)5	19:36	12.1	Surface	1	1	28.2	7.8	20.5	5.2	5.1	4.2	10.5	3.6	4.1
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	CS(Mf)5	19:36	12.1	Surface	1	2	28.2	7.9	20.7	5.2		4.7		4.7	
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	CS(Mf)5	19:36	12.1	Middle	2	1	28.2	7.8	25.4	4.9		11.3		3.9	
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	CS(Mf)5	19:36	12.1	Middle	2	2	28.2	7.9	25.7	4.9		11.6		4.2	
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	CS(Mf)5	19:36	12.1	Bottom	3	1	28.2	7.8	25.6	4.9		15.7		4.4	
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	CS(Mf)5	19:36	12.1	Bottom	3	2	28.2	7.9	25.8	4.9	4.9	15.2	3.7		
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	CS(Mf)3(N)	18:38	7	Surface	1	1	28.4	7.9	13.1	4.7	4.7	4.6	4.7	7.7	7.3
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	CS(Mf)3(N)	18:38	7	Surface	1	2	28.6	7.7	13.1	4.7		4.4		6.7	
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	CS(Mf)3(N)	18:38	7	Middle	2	1	28.4	7.9	13.4	4.6		4.7		6.9	
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	CS(Mf)3(N)	18:38	7	Middle	2	2	28.6	7.8	13.4	4.7		4.7		6.6	
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	CS(Mf)3(N)	18:38	7	Bottom	3	1	28.4	7.9	13.7	4.7		4.9		7.6	
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	CS(Mf)3(N)	18:38	7	Bottom	3	2	28.6	7.8	13.8	4.7	4.7	4.6	8.0		
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	IS(Mf)16	19:04	5.1	Surface	1	1	28.3	7.7	19.1	5.6	5.6	4.8	5.2	5.2	5.4
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	IS(Mf)16	19:04	5.1	Surface	1	2	28.3	7.8	19.3	5.6		5.0		5.5	
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	IS(Mf)16	19:04	5.1	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	IS(Mf)16	19:04	5.1	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	IS(Mf)16	19:04	5.1	Bottom	3	1	28.3	7.7	19.2	5.6		5.6		5.3	
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	IS(Mf)16	19:04	5.1	Bottom	3	2	28.3	7.8	19.4	5.6	5.6	5.7	5.9		
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	SR4a	18:53	4	Surface	1	1	28.2	7.7	18.4	5.8	5.8	5.7	7.1	7.3	6.6
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	SR4a	18:53	4	Surface	1	2	28.2	7.8	18.6	5.8		6.0		6.4	
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	SR4a	18:53	4	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	SR4a	18:53	4	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	SR4a	18:53	4	Bottom	3	1	28.2	7.7	18.6	5.9		5.9		8.1	
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	SR4a	18:53	4	Bottom	3	2	28.2	7.8	18.8	5.9	5.9	8.4	6.7		
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	SR4(N)	18:47	3.2	Surface	1	1	28.2	7.8	18.9	5.8	5.8	11.2	11.0	13.2	13.4
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	SR4(N)	18:47	3.2	Surface	1	2	28.2	7.8	19.1	5.7		11.3		13.4	
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	SR4(N)	18:47	3.2	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	SR4(N)	18:47	3.2	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	SR4(N)	18:47	3.2	Bottom	3	1	28.2	7.8	18.9	5.8		5.8		10.4	
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	SR4(N)	18:47	3.2	Bottom	3	2	28.2	7.8	19.1	5.7	5.8	10.9	13.0		
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	IS8	18:41	3.6	Surface	1	1	28.3	7.8	19.0	5.6	5.6	8.2	9.6	9.6	9.9
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	IS8	18:41	3.6	Surface	1	2	28.3	7.8	19.2	5.6		8.6		9.0	
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	IS8	18:41	3.6	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	IS8	18:41	3.6	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	IS8	18:41	3.6	Bottom	3	1	28.3	7.8	20.2	5.6		5.6		10.8	
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	IS8	18:41	3.6	Bottom	3	2	28.3	7.8	20.4	5.6	5.6	10.8	10.3		
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	IS(Mf)9	18:33	2.7	Surface	1	1					5.9		7.6		6.8
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	IS(Mf)9	18:33	2.7	Surface	1	2									
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	IS(Mf)9	18:33	2.7	Middle	2	1	28.2	7.8	20.0	5.9		7.6		7.4	
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	IS(Mf)9	18:33	2.7	Middle	2	2	28.2	7.9	20.2	5.9		7.5		6.2	
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	IS(Mf)9	18:33	2.7	Bottom	3	1									
TMCLKL	HY/2012/07	2018-06-13	Mid-Flood	IS(Mf)9	18:33	2.7	Bottom	3	2									

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Start Time	Depth (m)	Level	Level Code	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	CS(Mf)5	13:23	12.9	Surface	1	1	28.4	7.9	22.5	5.1	4.9	4.1	8.0	8.6	8.3
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	CS(Mf)5	13:23	12.9	Surface	1	2	28.4	8.0	22.3	5.1		3.8		8.2	
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	CS(Mf)5	13:23	12.9	Middle	2	1	28.1	7.9	24.9	4.7		8.8		8.2	
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	CS(Mf)5	13:23	12.9	Middle	2	2	28.1	8.0	24.8	4.7		9.3		7.0	
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	CS(Mf)5	13:23	12.9	Bottom	3	1	28.1	7.9	27.8	4.6	4.7	10.9	4.2	9.3	6.4
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	CS(Mf)5	13:23	12.9	Bottom	3	2	28.1	8.0	27.5	4.7		11.0		8.7	
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	CS(Mf)3(N)	14:18	7.1	Surface	1	1	28.6	8.1	21.1	5.1	5.0	2.3	4.2	4.8	6.4
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	CS(Mf)3(N)	14:18	7.1	Surface	1	2	28.3	8.1	21.1	5.1		2.3		5.8	
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	CS(Mf)3(N)	14:18	7.1	Middle	2	1	28.3	8.2	25.5	5.0		4.7		6.0	
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	CS(Mf)3(N)	14:18	7.1	Middle	2	2	28.1	8.2	25.5	4.9		4.7		8.3	
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	CS(Mf)3(N)	14:18	7.1	Bottom	3	1	28.3	8.1	26.2	4.9	4.9	5.5	8.2	7.5	7.9
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	CS(Mf)3(N)	14:18	7.1	Bottom	3	2	28.1	8.1	26.1	4.9		5.5		5.9	
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	IS(Mf)16	13:57	5.8	Surface	1	1	28.2	7.9	22.8	5.1	5.1	13.5	8.2	7.8	7.9
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	IS(Mf)16	13:57	5.8	Surface	1	2	28.2	8.0	22.7	5.1		13.3		8.0	
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	IS(Mf)16	13:57	5.8	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	IS(Mf)16	13:57	5.8	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	IS(Mf)16	13:57	5.8	Bottom	3	1	28.1	7.9	24.5	4.8	4.8	3.0	11.5	7.5	8.6
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	IS(Mf)16	13:57	5.8	Bottom	3	2	28.1	8.0	24.3	4.8		2.9		8.1	
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	SR4a	14:06	4.5	Surface	1	1	28.1	7.8	21.2	5.1	5.2	8.2	7.5	8.2	7.5
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	SR4a	14:06	4.5	Surface	1	2	28.2	8.0	20.9	5.3		8.6		8.5	
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	SR4a	14:06	4.5	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	SR4a	14:06	4.5	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	SR4a	14:06	4.5	Bottom	3	1	28.2	7.8	22.0	4.9	4.9	14.5	7.5	7.9	7.5
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	SR4a	14:06	4.5	Bottom	3	2	28.2	8.0	22.2	4.9		14.6		9.7	
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	SR4(N)	14:14	4.1	Surface	1	1	28.5	7.8	19.0	5.0	5.0	7.8	6.7	6.5	7.0
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	SR4(N)	14:14	4.1	Surface	1	2	28.4	7.9	17.5	5.0		7.8		8.2	
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	SR4(N)	14:14	4.1	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	SR4(N)	14:14	4.1	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	SR4(N)	14:14	4.1	Bottom	3	1	28.4	7.8	19.6	5.1	5.1	7.1	5.4	7.8	5.2
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	SR4(N)	14:14	4.1	Bottom	3	2	28.4	7.9	19.4	5.1		7.4		7.5	
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	IS8	14:20	3.9	Surface	1	1	28.4	7.9	21.7	5.1	5.1	6.5	6.7	7.4	7.0
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	IS8	14:20	3.9	Surface	1	2	28.4	8.0	21.4	5.1		7.0		6.7	
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	IS8	14:20	3.9	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	IS8	14:20	3.9	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	IS8	14:20	3.9	Bottom	3	1	28.4	7.8	21.5	5.2	5.2	6.5	5.4	7.0	5.2
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	IS8	14:20	3.9	Bottom	3	2	28.4	8.0	21.6	5.2		6.8		6.8	
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	IS(Mf)9	14:30	3.1	Surface	1	1	28.3	7.8	21.6	5.0	5.0	4.3	5.4	4.4	5.2
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	IS(Mf)9	14:30	3.1	Surface	1	2	28.2	8.0	21.4	5.0		4.2		5.7	
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	IS(Mf)9	14:30	3.1	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	IS(Mf)9	14:30	3.1	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	IS(Mf)9	14:30	3.1	Bottom	3	1	28.1	7.8	21.9	5.3	5.3	6.5	5.4	5.5	5.2
TMCLKL	HY/2012/07	2018-06-15	Mid-Ebb	IS(Mf)9	14:30	3.1	Bottom	3	2	28.1	8.0	21.7	5.3		6.5		5.1	

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Start Time	Depth (m)	Level	Level Code	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS	
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	CS(Mf)5	21:10	12.7	Surface	1	1	28.2	7.9	24.0	5.1	5.0	6.1	7.4	9.6	11.4	
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	CS(Mf)5	21:10	12.7	Surface	1	2	28.2	8.1	23.8	5.0		6.0		8.8		
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	CS(Mf)5	21:10	12.7	Middle	2	1	28.1	7.9	24.8	5.0		6.8		11.7		
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	CS(Mf)5	21:10	12.7	Middle	2	2	28.1	8.1	24.6	5.0		6.7		12.3		
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	CS(Mf)5	21:10	12.7	Bottom	3	1	28.1	7.9	26.1	4.7		9.3		11.8		
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	CS(Mf)5	21:10	12.7	Bottom	3	2	28.1	8.1	25.8	4.7	4.7	9.3	14.1			
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	CS(Mf)3(N)	20:25	7.1	Surface	1	1	28.5	7.9	16.1	4.7	4.7	3.4	4.6	12.1	11.6	
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	CS(Mf)3(N)	20:25	7.1	Surface	1	2	28.7	7.9	16.1	4.7		3.4		11.8		
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	CS(Mf)3(N)	20:25	7.1	Middle	2	1	28.5	7.9	17.2	4.6		5.1		12.1		
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	CS(Mf)3(N)	20:25	7.1	Middle	2	2	28.8	7.9	17.3	4.6		5.1		10.1		
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	CS(Mf)3(N)	20:25	7.1	Bottom	3	1	28.5	7.9	17.8	4.5		4.6		5.2		11.7
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	CS(Mf)3(N)	20:25	7.1	Bottom	3	2	28.7	7.9	17.8	4.6	4.6	5.1	11.7			
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	IS(Mf)16	20:38	5.3	Surface	1	1	28.2	7.9	22.0	5.1	5.1	4.9	6.0	9.3	10.0	
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	IS(Mf)16	20:38	5.3	Surface	1	2	28.2	8.0	21.8	5.1		4.7		8.6		
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	IS(Mf)16	20:38	5.3	Middle	2	1										
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	IS(Mf)16	20:38	5.3	Middle	2	2										
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	IS(Mf)16	20:38	5.3	Bottom	3	1	28.3	7.9	22.8	4.9		5.0		7.2		10.1
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	IS(Mf)16	20:38	5.3	Bottom	3	2	28.3	8.0	22.5	5.0	5.0	7.2	12.0			
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	SR4a	20:27	3.2	Surface	1	1	28.2	7.9	22.1	5.1	5.1	8.5	9.2	10.5	13.0	
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	SR4a	20:27	3.2	Surface	1	2	28.2	8.0	21.9	5.1		8.3		9.8		
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	SR4a	20:27	3.2	Middle	2	1										
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	SR4a	20:27	3.2	Middle	2	2										
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	SR4a	20:27	3.2	Bottom	3	1	28.2	7.9	22.3	5.2		5.2		9.9		15.3
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	SR4a	20:27	3.2	Bottom	3	2	28.2	8.0	22.1	5.2	5.2	10.0	16.2			
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	SR4(N)	20:22	2.7	Surface	1	1					5.1		10.5		23.3	
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	SR4(N)	20:22	2.7	Surface	1	2										
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	SR4(N)	20:22	2.7	Middle	2	1	28.2	7.8	22.6	5.1		5.1		10.5		23.0
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	SR4(N)	20:22	2.7	Middle	2	2	28.2	8.0	22.4	5.1		5.1		10.5		23.6
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	SR4(N)	20:22	2.7	Bottom	3	1										
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	SR4(N)	20:22	2.7	Bottom	3	2										
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	IS8	20:16	3.1	Surface	1	1	28.2	7.9	22.6	5.0	5.0	11.2	11.9	16.6	16.3	
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	IS8	20:16	3.1	Surface	1	2	28.2	8.0	22.4	5.0		5.0		11.1		15.8
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	IS8	20:16	3.1	Middle	2	1										
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	IS8	20:16	3.1	Middle	2	2										
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	IS8	20:16	3.1	Bottom	3	1	28.2	7.9	22.7	4.9		5.0		12.5		16.0
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	IS8	20:16	3.1	Bottom	3	2	28.2	8.0	22.5	5.0	5.0	12.7	16.7			
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	IS(Mf)9	20:08	2.3	Surface	1	1					5.5		5.0		7.9	
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	IS(Mf)9	20:08	2.3	Surface	1	2										
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	IS(Mf)9	20:08	2.3	Middle	2	1	28.2	7.9	21.8	5.5		5.5		5.0		8.0
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	IS(Mf)9	20:08	2.3	Middle	2	2	28.2	8.0	21.6	5.5		5.5		5.0		7.7
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	IS(Mf)9	20:08	2.3	Bottom	3	1										
TMCLKL	HY/2012/07	2018-06-15	Mid-Flood	IS(Mf)9	20:08	2.3	Bottom	3	2										

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Start Time	Depth (m)	Level	Level Code	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	CS(Mf)5	18:23	12	Surface	1	1	29.4	7.9	17.9	6.2	6.0	5.8	5.6	6.6	6.2
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	CS(Mf)5	18:23	12	Surface	1	2	29.4	8.0	17.7	6.2		5.6		6.3	
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	CS(Mf)5	18:23	12	Middle	2	1	29.2	7.9	19.2	5.7		5.0		5.8	
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	CS(Mf)5	18:23	12	Middle	2	2	29.2	8.0	19.4	5.7		4.8		6.8	
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	CS(Mf)5	18:23	12	Bottom	3	1	28.6	7.9	25.3	5.0	5.0	6.2	5.6	6.6	6.2
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	CS(Mf)5	18:23	12	Bottom	3	2	28.6	8.0	25.0	5.0		6.3		5.2	
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	CS(Mf)3(N)	17:43	7.3	Surface	1	1	29.3	7.7	16.9	6.1	5.9	4.4	6.7	6.5	7.2
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	CS(Mf)3(N)	17:43	7.3	Surface	1	2	29.3	7.8	17.0	6.2		4.5		6.8	
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	CS(Mf)3(N)	17:43	7.3	Middle	2	1	29.1	7.7	17.3	5.6		4.5		7.0	
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	CS(Mf)3(N)	17:43	7.3	Middle	2	2	29.0	7.7	17.5	5.7		4.5		8.4	
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	CS(Mf)3(N)	17:43	7.3	Bottom	3	1	28.9	7.6	18.8	5.2	5.2	11.1	6.7	7.4	7.2
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	CS(Mf)3(N)	17:43	7.3	Bottom	3	2	28.8	7.7	18.7	5.2		11.2		7.0	
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	IS(Mf)16	18:00	5.9	Surface	1	1	29.5	8.0	19.4	6.7	6.7	7.1	7.7	5.6	8.0
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	IS(Mf)16	18:00	5.9	Surface	1	2	29.5	8.0	19.2	6.7		7.0		6.2	
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	IS(Mf)16	18:00	5.9	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	IS(Mf)16	18:00	5.9	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	IS(Mf)16	18:00	5.9	Bottom	3	1	28.8	7.9	21.9	5.5	5.5	8.4	7.7	10.5	8.0
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	IS(Mf)16	18:00	5.9	Bottom	3	2	28.8	8.0	21.6	5.4		8.1		9.6	
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	SR4a	17:50	5.4	Surface	1	1	29.2	7.9	18.6	6.1	6.1	5.2	9.6	4.8	6.6
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	SR4a	17:50	5.4	Surface	1	2	29.2	8.0	18.5	6.0		5.2		5.8	
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	SR4a	17:50	5.4	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	SR4a	17:50	5.4	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	SR4a	17:50	5.4	Bottom	3	1	28.8	7.8	20.1	5.2	5.3	14.1	9.6	8.3	6.6
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	SR4a	17:50	5.4	Bottom	3	2	28.8	8.0	19.8	5.3		13.7		7.3	
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	SR4(N)	17:43	3.5	Surface	1	1	29.7	8.1	19.0	8.3	8.3	6.8	7.5	4.9	7.7
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	SR4(N)	17:43	3.5	Surface	1	2	29.7	8.1	18.8	8.3		6.6		6.1	
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	SR4(N)	17:43	3.5	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	SR4(N)	17:43	3.5	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	SR4(N)	17:43	3.5	Bottom	3	1	29.5	7.9	19.3	7.2	7.2	8.5	7.5	9.0	7.7
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	SR4(N)	17:43	3.5	Bottom	3	2	29.5	8.1	19.1	7.2		8.1		10.9	
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	IS8	17:36	4.4	Surface	1	1	29.5	8.0	18.9	7.0	7.0	6.2	9.4	6.7	8.7
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	IS8	17:36	4.4	Surface	1	2	29.5	8.1	18.7	7.0		6.2		8.8	
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	IS8	17:36	4.4	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	IS8	17:36	4.4	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	IS8	17:36	4.4	Bottom	3	1	29.2	7.8	20.0	6.0	6.1	12.5	9.4	10.2	8.7
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	IS8	17:36	4.4	Bottom	3	2	29.2	8.0	19.8	6.1		12.7		9.1	
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	IS(Mf)9	17:27	3.8	Surface	1	1	29.6	8.0	19.1	7.0	7.1	5.7	9.2	8.1	7.5
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	IS(Mf)9	17:27	3.8	Surface	1	2	29.5	8.1	19.1	7.1		5.7		7.1	
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	IS(Mf)9	17:27	3.8	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	IS(Mf)9	17:27	3.8	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	IS(Mf)9	17:27	3.8	Bottom	3	1	29.4	7.9	20.2	6.7	6.8	12.5	9.2	7.5	7.5
TMCLKL	HY/2012/07	2018-06-20	Mid-Ebb	IS(Mf)9	17:27	3.8	Bottom	3	2	29.4	8.1	20.0	6.8		12.9		7.2	

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Start Time	Depth (m)	Level	Level Code	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS	
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	CS(Mf)5	11:04	12.5	Surface	1	1	29.0	8.0	16.8	5.9	5.6	5.5	6.7	8.1	8.4	
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	CS(Mf)5	11:04	12.5	Surface	1	2	29.0	7.8	17.0	5.9		5.3		8.4		
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	CS(Mf)5	11:04	12.5	Middle	2	1	28.7	8.0	20.3	5.4		6.4		8.0		
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	CS(Mf)5	11:04	12.5	Middle	2	2	28.8	7.9	20.6	5.3		6.2		8.7		
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	CS(Mf)5	11:04	12.5	Bottom	3	1	28.6	8.0	25.1	5.1		8.6		8.2		
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	CS(Mf)5	11:04	12.5	Bottom	3	2	28.6	7.9	25.3	5.1	5.1	8.0	9.1			
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	CS(Mf)3(N)	12:15	7.2	Surface	1	1	29.2	7.6	16.1	6.0	6.0	4.6	6.3	7.3	8.0	
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	CS(Mf)3(N)	12:15	7.2	Surface	1	2	29.2	7.7	16.2	6.1		4.6		7.6		
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	CS(Mf)3(N)	12:15	7.2	Middle	2	1	29.1	7.6	16.4	5.8		4.9		8.4		
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	CS(Mf)3(N)	12:15	7.2	Middle	2	2	29.0	7.7	16.5	5.9		4.8		8.2		
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	CS(Mf)3(N)	12:15	7.2	Bottom	3	1	28.8	7.6	17.4	5.4		5.5		9.3		8.9
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	CS(Mf)3(N)	12:15	7.2	Bottom	3	2	28.8	7.7	17.5	5.5	5.5	9.4	7.5			
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	IS(Mf)16	11:31	5.9	Surface	1	1	29.1	8.0	18.9	6.1	6.1	4.3	9.8	6.9	7.8	
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	IS(Mf)16	11:31	5.9	Surface	1	2	29.1	7.9	19.1	6.1		4.2		6.1		
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	IS(Mf)16	11:31	5.9	Middle	2	1										
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	IS(Mf)16	11:31	5.9	Middle	2	2										
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	IS(Mf)16	11:31	5.9	Bottom	3	1	28.9	8.0	19.6	5.6		5.6		15.1		8.8
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	IS(Mf)16	11:31	5.9	Bottom	3	2	28.9	7.9	19.8	5.6	5.6	15.4	9.5			
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	SR4a	11:41	5.8	Surface	1	1	29.1	8.0	17.0	6.1	6.1	7.2	8.7	7.7	9.0	
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	SR4a	11:41	5.8	Surface	1	2	29.1	7.9	17.2	6.0		7.2		6.8		
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	SR4a	11:41	5.8	Middle	2	1										
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	SR4a	11:41	5.8	Middle	2	2										
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	SR4a	11:41	5.8	Bottom	3	1	28.9	8.0	18.0	5.7		5.8		10.4		10.3
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	SR4a	11:41	5.8	Bottom	3	2	28.9	7.8	18.3	5.8	5.8	9.9	11.0			
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	SR4(N)	11:50	4.2	Surface	1	1	29.1	8.0	17.7	6.0	6.0	9.9	10.3	10.9	12.3	
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	SR4(N)	11:50	4.2	Surface	1	2	29.1	7.9	17.9	5.9		9.2		12.5		
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	SR4(N)	11:50	4.2	Middle	2	1										
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	SR4(N)	11:50	4.2	Middle	2	2										
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	SR4(N)	11:50	4.2	Bottom	3	1	29.1	8.0	18.1	5.9		5.9		11.4		13.1
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	SR4(N)	11:50	4.2	Bottom	3	2	29.1	7.9	18.3	5.9	5.9	10.8	12.7			
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	IS8	12:00	4.3	Surface	1	1	29.1	8.0	17.6	6.0	6.0	9.4	15.2	9.8	12.5	
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	IS8	12:00	4.3	Surface	1	2	29.1	7.9	17.7	6.0		8.9		10.2		
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	IS8	12:00	4.3	Middle	2	1										
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	IS8	12:00	4.3	Middle	2	2										
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	IS8	12:00	4.3	Bottom	3	1	28.9	7.9	20.1	5.0		5.0		21.9		15.4
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	IS8	12:00	4.3	Bottom	3	2	28.9	7.8	20.3	5.0	5.0	20.4	14.5			
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	IS(Mf)9	12:09	3.2	Surface	1	1	29.3	8.1	18.7	6.4	6.4	5.7	5.7	6.9	8.9	
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	IS(Mf)9	12:09	3.2	Surface	1	2	29.3	7.9	18.9	6.3		6.1		8.8		
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	IS(Mf)9	12:09	3.2	Middle	2	1										
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	IS(Mf)9	12:09	3.2	Middle	2	2										
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	IS(Mf)9	12:09	3.2	Bottom	3	1	29.3	8.1	19.5	6.7		6.7		5.3		9.6
TMCLKL	HY/2012/07	2018-06-20	Mid-Flood	IS(Mf)9	12:09	3.2	Bottom	3	2	29.3	7.9	19.7	6.7	6.7	5.6	10.1			

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Start Time	Depth (m)	Level	Level Code	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	CS(Mf)5	8:56	14.3	Surface	1	1	29.1	7.9	17.2	6.2	5.9	3.1	3.6	5.1	4.6
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	CS(Mf)5	8:56	14.3	Surface	1	2	29.2	7.8	17.1	6.2		3.2		3.2	
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	CS(Mf)5	8:56	14.3	Middle	2	1	28.9	7.9	22.5	5.5		3.1		4.7	
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	CS(Mf)5	8:56	14.3	Middle	2	2	29.0	7.8	22.3	5.5		3.3		5.4	
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	CS(Mf)5	8:56	14.3	Bottom	3	1	28.5	7.9	27.7	5.3		4.7		3.6	
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	CS(Mf)5	8:56	14.3	Bottom	3	2	28.6	7.8	27.5	5.2	5.3	4.2	5.4		
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	CS(Mf)3(N)	10:10	7.2	Surface	1	1	29.6	8.2	15.2	7.5	7.2	9.4	12.4	5.9	5.2
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	CS(Mf)3(N)	10:10	7.2	Surface	1	2	29.6	8.2	15.9	7.5		9.8		5.9	
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	CS(Mf)3(N)	10:10	7.2	Middle	2	1	29.4	8.1	16.6	6.8		11.2		5.5	
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	CS(Mf)3(N)	10:10	7.2	Middle	2	2	29.4	8.2	17.1	6.8		11.3		5.0	
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	CS(Mf)3(N)	10:10	7.2	Bottom	3	1	28.6	8.2	26.4	5.7		5.7		16.5	
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	CS(Mf)3(N)	10:10	7.2	Bottom	3	2	28.5	8.2	28.4	5.7	5.7	16.4	4.2		
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	IS(Mf)16	9:31	5.9	Surface	1	1	29.2	7.9	19.1	6.0	6.0	5.3	5.1	7.1	6.7
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	IS(Mf)16	9:31	5.9	Surface	1	2	29.3	7.8	18.9	5.9		5.2		6.7	
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	IS(Mf)16	9:31	5.9	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	IS(Mf)16	9:31	5.9	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	IS(Mf)16	9:31	5.9	Bottom	3	1	28.9	7.9	22.4	5.7		5.6		4.8	
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	IS(Mf)16	9:31	5.9	Bottom	3	2	29.0	7.8	22.2	5.5	5.6	5.0	7.0		
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	SR4a	9:41	5.7	Surface	1	1	29.3	7.9	18.3	5.7	5.7	4.6	8.2	10.8	10.7
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	SR4a	9:41	5.7	Surface	1	2	29.3	7.8	18.2	5.7		4.9		10.0	
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	SR4a	9:41	5.7	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	SR4a	9:41	5.7	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	SR4a	9:41	5.7	Bottom	3	1	28.8	7.9	22.9	5.1		5.1		11.7	
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	SR4a	9:41	5.7	Bottom	3	2	28.9	7.8	22.7	5.0	5.1	11.7	10.1		
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	SR4(N)	9:48	4.3	Surface	1	1	29.4	7.8	17.6	6.1	6.1	5.7	6.2	6.3	7.0
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	SR4(N)	9:48	4.3	Surface	1	2	29.5	7.7	17.5	6.0		6.1		6.4	
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	SR4(N)	9:48	4.3	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	SR4(N)	9:48	4.3	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	SR4(N)	9:48	4.3	Bottom	3	1	29.5	7.9	17.7	6.1		6.1		6.8	
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	SR4(N)	9:48	4.3	Bottom	3	2	29.5	7.7	17.6	6.0	6.1	6.2	7.9		
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	IS8	9:52	4.7	Surface	1	1	29.4	7.9	17.9	6.5	6.5	3.6	4.2	5.2	5.4
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	IS8	9:52	4.7	Surface	1	2	29.5	7.8	17.8	6.4		4.0		5.0	
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	IS8	9:52	4.7	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	IS8	9:52	4.7	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	IS8	9:52	4.7	Bottom	3	1	29.4	7.9	18.2	6.5		6.5		4.7	
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	IS8	9:52	4.7	Bottom	3	2	29.5	7.8	18.1	6.4	6.5	4.3	5.4		
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	IS(Mf)9	10:05	3.9	Surface	1	1	29.4	7.9	17.7	6.5	6.5	3.2	5.8	8.4	8.6
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	IS(Mf)9	10:05	3.9	Surface	1	2	29.5	7.8	17.6	6.4		3.4		7.3	
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	IS(Mf)9	10:05	3.9	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	IS(Mf)9	10:05	3.9	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	IS(Mf)9	10:05	3.9	Bottom	3	1	29.3	7.9	18.6	5.7		5.7		7.8	
TMCLKL	HY/2012/07	2018-06-22	Mid-Ebb	IS(Mf)9	10:05	3.9	Bottom	3	2	29.4	7.8	18.4	5.6	5.7	8.8	9.2		

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Start Time	Depth (m)	Level	Level Code	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS	
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	CS(Mf)5	15:21	12.9	Surface	1	1	29.2	7.8	17.0	6.1	5.6	2.7	3.7	4.0	5.4	
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	CS(Mf)5	15:21	12.9	Surface	1	2	29.1	8.0	17.2	6.1		2.7		6.2		
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	CS(Mf)5	15:21	12.9	Middle	2	1	28.8	7.8	24.4	5.1		3.3		5.7		
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	CS(Mf)5	15:21	12.9	Middle	2	2	28.7	7.9	24.7	5.2		3.3		5.2		
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	CS(Mf)5	15:21	12.9	Bottom	3	1	28.5	7.8	28.2	5.0		5.2		5.3		
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	CS(Mf)5	15:21	12.9	Bottom	3	2	28.4	7.9	28.4	5.1	5.1	5.2	5.7			
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	CS(Mf)3(N)	14:06	7.1	Surface	1	1	29.3	8.0	13.6	7.0	6.8	11.1	13.9	10.8	10.2	
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	CS(Mf)3(N)	14:06	7.1	Surface	1	2	29.3	8.0	13.0	7.0		11.2		10.4		
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	CS(Mf)3(N)	14:06	7.1	Middle	2	1	29.5	8.0	14.7	6.5		11.7		10.1		
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	CS(Mf)3(N)	14:06	7.1	Middle	2	2	29.5	7.9	14.1	6.6		11.6		9.9		
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	CS(Mf)3(N)	14:06	7.1	Bottom	3	1	29.4	8.0	17.5	6.1		6.2		18.7		10.0
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	CS(Mf)3(N)	14:06	7.1	Bottom	3	2	29.4	8.0	16.5	6.2	6.2	18.9	10.2			
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	IS(Mf)16	14:50	5.4	Surface	1	1	29.3	7.8	17.9	6.1	6.2	3.1	3.9	4.5	4.9	
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	IS(Mf)16	14:50	5.4	Surface	1	2	29.2	7.9	18.0	6.2		2.6		4.4		
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	IS(Mf)16	14:50	5.4	Middle	2	1										
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	IS(Mf)16	14:50	5.4	Middle	2	2										
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	IS(Mf)16	14:50	5.4	Bottom	3	1	29.3	7.8	18.6	6.0		6.1		5.3		5.2
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	IS(Mf)16	14:50	5.4	Bottom	3	2	29.2	7.9	18.7	6.1	6.1	4.6	5.3			
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	SR4a	14:37	4.8	Surface	1	1	29.2	7.8	16.9	6.4	6.5	6.1	5.7	5.7	6.1	
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	SR4a	14:37	4.8	Surface	1	2	29.1	7.9	17.0	6.5		5.3		5.1		
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	SR4a	14:37	4.8	Middle	2	1										
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	SR4a	14:37	4.8	Middle	2	2										
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	SR4a	14:37	4.8	Bottom	3	1	29.3	7.8	18.0	6.1		6.2		5.9		7.5
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	SR4a	14:37	4.8	Bottom	3	2	29.3	7.9	18.1	6.2	6.2	5.3	6.0			
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	SR4(N)	14:28	3.2	Surface	1	1	29.1	7.8	17.1	6.5	6.6	7.1	6.9	4.9	4.8	
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	SR4(N)	14:28	3.2	Surface	1	2	29.0	7.9	17.2	6.6		6.9		5.9		
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	SR4(N)	14:28	3.2	Middle	2	1										
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	SR4(N)	14:28	3.2	Middle	2	2										
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	SR4(N)	14:28	3.2	Bottom	3	1	29.0	7.8	17.0	6.5		6.6		6.8		4.5
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	SR4(N)	14:28	3.2	Bottom	3	2	29.0	7.9	17.1	6.6	6.6	6.7	4.0			
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	IS8	14:21	4.1	Surface	1	1	29.3	7.8	17.4	6.7	6.7	2.9	2.7	4.5	5.2	
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	IS8	14:21	4.1	Surface	1	2	29.3	7.9	17.5	6.7		2.5		6.1		
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	IS8	14:21	4.1	Middle	2	1										
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	IS8	14:21	4.1	Middle	2	2										
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	IS8	14:21	4.1	Bottom	3	1	29.5	7.8	18.0	6.7		6.8		2.8		4.9
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	IS8	14:21	4.1	Bottom	3	2	29.4	7.9	18.1	6.8	6.8	2.6	5.1			
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	IS(Mf)9	14:07	2.9	Surface	1	1					6.6		3.1		14.8	
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	IS(Mf)9	14:07	2.9	Surface	1	2										
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	IS(Mf)9	14:07	2.9	Middle	2	1	29.4	7.8	18.1	6.5		6.6		3.2		14.5
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	IS(Mf)9	14:07	2.9	Middle	2	2	29.3	7.9	18.2	6.6		6.6		3.0		15.0
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	IS(Mf)9	14:07	2.9	Bottom	3	1										
TMCLKL	HY/2012/07	2018-06-22	Mid-Flood	IS(Mf)9	14:07	2.9	Bottom	3	2										

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Start Time	Depth (m)	Level	Level Code	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	CS(Mf)5	10:50	14	Surface	1	1	28.8	7.9	20.8	5.7	5.3	6.4	10.2	4.5	8.1
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	CS(Mf)5	10:50	14	Surface	1	2	28.8	8.0	20.8	5.8		7.0		4.7	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	CS(Mf)5	10:50	14	Middle	2	1	28.3	7.9	25.4	4.8		9.8		9.2	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	CS(Mf)5	10:50	14	Middle	2	2	28.3	8.0	25.3	4.8		9.2		9.7	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	CS(Mf)5	10:50	14	Bottom	3	1	27.8	7.9	28.1	4.6		14.6		9.9	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	CS(Mf)5	10:50	14	Bottom	3	2	27.9	7.9	28.0	4.7	4.7	14.4	10.3		
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	CS(Mf)3(N)	12:17	6.7	Surface	1	1	28.9	8.0	16.6	6.2	5.9	4.1	7.2	5.0	5.7
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	CS(Mf)3(N)	12:17	6.7	Surface	1	2	28.9	8.1	16.5	6.3		4.7		5.8	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	CS(Mf)3(N)	12:17	6.7	Middle	2	1	29.0	8.0	19.0	5.5		2.6		6.2	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	CS(Mf)3(N)	12:17	6.7	Middle	2	2	28.9	8.0	18.9	5.6		3.3		6.5	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	CS(Mf)3(N)	12:17	6.7	Bottom	3	1	28.8	8.0	22.6	4.7		4.8		13.3	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	CS(Mf)3(N)	12:17	6.7	Bottom	3	2	28.7	8.0	22.4	4.8	4.8	15.2	5.6		
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS(Mf)16	11:30	5.8	Surface	1	1	28.5	7.9	20.1	5.8	5.9	7.4	8.3	6.0	7.1
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS(Mf)16	11:30	5.8	Surface	1	2	28.6	7.9	20.1	5.9		7.3		5.3	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS(Mf)16	11:30	5.8	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS(Mf)16	11:30	5.8	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS(Mf)16	11:30	5.8	Bottom	3	1	28.4	7.9	23.7	5.2		5.3		9.2	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS(Mf)16	11:30	5.8	Bottom	3	2	28.5	8.0	23.7	5.3	5.3	9.3	9.0		
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	SR4a	11:42	5.4	Surface	1	1	28.7	7.9	21.0	5.0	5.1	10.0	31.0	7.8	9.8
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	SR4a	11:42	5.4	Surface	1	2	28.8	7.9	20.9	5.1		10.5		8.0	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	SR4a	11:42	5.4	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	SR4a	11:42	5.4	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	SR4a	11:42	5.4	Bottom	3	1	28.5	7.9	23.9	4.4		4.4		56.9	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	SR4a	11:42	5.4	Bottom	3	2	28.6	7.9	23.8	4.4	4.4	46.5	12.0		
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	SR4(N)	11:51	3.3	Surface	1	1	28.7	7.8	18.2	5.7	5.7	10.5	14.2	8.0	9.0
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	SR4(N)	11:51	3.3	Surface	1	2	28.8	7.9	18.1	5.7		10.5		7.2	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	SR4(N)	11:51	3.3	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	SR4(N)	11:51	3.3	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	SR4(N)	11:51	3.3	Bottom	3	1	28.7	7.9	19.6	5.4		5.4		18.1	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	SR4(N)	11:51	3.3	Bottom	3	2	28.8	7.9	19.5	5.4	5.4	17.8	10.6		
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS8	12:01	4.3	Surface	1	1	28.7	7.8	20.5	5.6	5.6	7.4	9.3	6.5	7.6
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS8	12:01	4.3	Surface	1	2	28.8	7.9	20.3	5.6		7.1		5.9	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS8	12:01	4.3	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS8	12:01	4.3	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS8	12:01	4.3	Bottom	3	1	28.6	7.8	21.4	5.0		5.0		11.5	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS8	12:01	4.3	Bottom	3	2	28.7	7.9	21.2	5.0	5.0	11.1	9.2		
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS(Mf)9	12:14	3.4	Surface	1	1	28.7	7.9	19.7	6.0	6.0	5.4	5.3	4.8	6.8
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS(Mf)9	12:14	3.4	Surface	1	2	28.8	8.0	19.6	6.0		5.5		5.8	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS(Mf)9	12:14	3.4	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS(Mf)9	12:14	3.4	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS(Mf)9	12:14	3.4	Bottom	3	1	28.7	7.9	19.7	6.0		6.0		5.1	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS(Mf)9	12:14	3.4	Bottom	3	2	28.8	8.0	19.6	6.0	6.0	5.2	8.0		

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Start Time	Depth (m)	Level	Level Code	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS	
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	CS(Mf)5	18:20	11	Surface	1	1	28.8	8.0	19.5	6.0	5.4	3.5	6.5	4.0	4.7	
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	CS(Mf)5	18:20	11	Surface	1	2	28.8	7.9	19.6	6.1		2.9		4.7		
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	CS(Mf)5	18:20	11	Middle	2	1	28.3	8.0	25.6	4.7		7.5		4.5		
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	CS(Mf)5	18:20	11	Middle	2	2	28.3	7.9	25.7	4.7		6.9		4.6		
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	CS(Mf)5	18:20	11	Bottom	3	1	28.2	8.0	26.7	4.7		9.1		5.3		
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	CS(Mf)5	18:20	11	Bottom	3	2	28.1	7.9	26.8	4.7	4.7	8.8	4.8			
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	CS(Mf)3(N)	17:27	6.8	Surface	1	1	29.3	8.0	12.1	6.4	6.1	4.1	5.2	3.8	3.9	
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	CS(Mf)3(N)	17:27	6.8	Surface	1	2	29.3	8.0	12.1	6.4		4.1		3.7		
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	CS(Mf)3(N)	17:27	6.8	Middle	2	1	29.1	8.0	15.2	5.7		5.5		3.9		
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	CS(Mf)3(N)	17:27	6.8	Middle	2	2	29.1	8.0	15.2	5.7		5.5		3.7		
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	CS(Mf)3(N)	17:27	6.8	Bottom	3	1	29.0	8.0	18.4	5.2		5.2		3.8		
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	CS(Mf)3(N)	17:27	6.8	Bottom	3	2	29.0	8.0	18.4	5.2	5.2	5.9	4.2			
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS(Mf)16	17:47	5.8	Surface	1	1	28.9	8.0	19.4	6.4	6.4	4.7	7.1	9.7	7.0	
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS(Mf)16	17:47	5.8	Surface	1	2	28.8	7.9	19.5	6.3		4.4		10.0		
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS(Mf)16	17:47	5.8	Middle	2	1										
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS(Mf)16	17:47	5.8	Middle	2	2										
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS(Mf)16	17:47	5.8	Bottom	3	1	28.8	8.0	21.2	5.7		5.7		10.0		4.1
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS(Mf)16	17:47	5.8	Bottom	3	2	28.7	7.9	21.3	5.7	5.7	9.4	4.0			
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	SR4a	17:36	4.6	Surface	1	1	29.0	8.0	19.6	6.3	6.3	9.3	11.9	7.6	8.5	
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	SR4a	17:36	4.6	Surface	1	2	28.9	7.9	19.8	6.3		8.2		7.3		
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	SR4a	17:36	4.6	Middle	2	1										
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	SR4a	17:36	4.6	Middle	2	2										
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	SR4a	17:36	4.6	Bottom	3	1	29.0	8.0	20.5	5.9		5.9		15.6		9.2
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	SR4a	17:36	4.6	Bottom	3	2	28.9	7.9	20.5	5.9	5.9	14.4	9.7			
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	SR4(N)	17:29	3.1	Surface	1	1	29.0	8.0	20.5	6.1	6.1	15.2	14.9	11.9	12.5	
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	SR4(N)	17:29	3.1	Surface	1	2	28.9	7.9	20.7	6.1		6.1		14.8		12.6
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	SR4(N)	17:29	3.1	Middle	2	1										
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	SR4(N)	17:29	3.1	Middle	2	2										
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	SR4(N)	17:29	3.1	Bottom	3	1	29.0	8.0	20.5	6.1		6.1		14.9		13.0
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	SR4(N)	17:29	3.1	Bottom	3	2	28.9	7.9	20.7	6.1	6.1	14.5	12.4			
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS8	17:22	3.3	Surface	1	1	29.0	8.0	20.0	6.4	6.4	8.9	14.4	6.7	8.0	
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS8	17:22	3.3	Surface	1	2	28.9	7.9	20.1	6.3		6.4		8.7		7.5
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS8	17:22	3.3	Middle	2	1										
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS8	17:22	3.3	Middle	2	2										
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS8	17:22	3.3	Bottom	3	1	29.0	8.0	20.7	5.9		5.9		20.7		8.7
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS8	17:22	3.3	Bottom	3	2	28.9	7.9	20.8	5.9	5.9	19.3	9.0			
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS(Mf)9	17:11	2.9	Surface	1	1					5.9		10.7		5.9	
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS(Mf)9	17:11	2.9	Surface	1	2										
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS(Mf)9	17:11	2.9	Middle	2	1	28.9	7.9	20.8	5.9		5.9		11.0		5.8
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS(Mf)9	17:11	2.9	Middle	2	2	28.8	7.9	20.9	5.9				10.3		6.0
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS(Mf)9	17:11	2.9	Bottom	3	1										
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS(Mf)9	17:11	2.9	Bottom	3	2										

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Start Time	Depth (m)	Level	Level Code	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	CS(Mf)5	12:17	13.1	Surface	1	1	29.4	8.1	17.1	6.2	5.8	13.2	14.8	7.4	6.5
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	CS(Mf)5	12:17	13.1	Surface	1	2	29.4	8.1	17.2	6.2		13.4		7.4	
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	CS(Mf)5	12:17	13.1	Middle	2	1	28.7	8.1	20.7	5.3		14.5		6.5	
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	CS(Mf)5	12:17	13.1	Middle	2	2	28.7	8.1	20.8	5.3		14.8		6.5	
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	CS(Mf)5	12:17	13.1	Bottom	3	1	27.7	8.1	25.8	5.0	5.0	16.5	9.3	5.2	8.1
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	CS(Mf)5	12:17	13.1	Bottom	3	2	27.7	8.1	25.9	5.0		16.2		5.8	
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	CS(Mf)3(N)	13:30	7	Surface	1	1	29.5	8.1	15.2	5.2	5.0	5.5	9.3	4.9	8.1
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	CS(Mf)3(N)	13:30	7	Surface	1	2	29.5	8.1	15.2	5.2		5.5		4.4	
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	CS(Mf)3(N)	13:30	7	Middle	2	1	28.9	8.1	19.2	4.7		4.4		9.4	
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	CS(Mf)3(N)	13:30	7	Middle	2	2	28.9	8.1	19.2	4.7		4.4		9.7	
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	CS(Mf)3(N)	13:30	7	Bottom	3	1	28.8	8.1	21.2	4.4	4.4	18.0	10.7	11.0	6.1
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	CS(Mf)3(N)	13:30	7	Bottom	3	2	28.8	8.1	21.2	4.4		17.8		9.2	
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	IS(Mf)16	13:03	5.8	Surface	1	1	29.7	8.1	18.5	6.4	6.4	10.2	20.4	5.5	8.2
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	IS(Mf)16	13:03	5.8	Surface	1	2	29.7	8.2	18.5	6.4		11.1		6.1	
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	IS(Mf)16	13:03	5.8	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	IS(Mf)16	13:03	5.8	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	IS(Mf)16	13:03	5.8	Bottom	3	1	28.9	8.1	20.5	6.0	6.0	10.2	13.3	6.6	9.9
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	IS(Mf)16	13:03	5.8	Bottom	3	2	28.9	8.1	20.5	5.9		11.2		6.3	
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	SR4a	13:12	5	Surface	1	1	30.1	8.1	16.9	6.7	6.7	12.0	11.8	7.9	5.5
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	SR4a	13:12	5	Surface	1	2	30.1	8.1	16.9	6.6		12.4		8.4	
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	SR4a	13:12	5	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	SR4a	13:12	5	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	SR4a	13:12	5	Bottom	3	1	29.0	8.0	20.3	5.5	5.5	29.2	13.3	8.7	9.9
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	SR4a	13:12	5	Bottom	3	2	29.0	8.1	20.3	5.4		27.9		7.8	
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	SR4(N)	13:20	3.2	Surface	1	1	30.3	8.1	16.4	7.3	7.3	12.1	11.8	8.7	5.5
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	SR4(N)	13:20	3.2	Surface	1	2	30.3	8.2	16.4	7.2		12.8		9.0	
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	SR4(N)	13:20	3.2	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	SR4(N)	13:20	3.2	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	SR4(N)	13:20	3.2	Bottom	3	1	30.2	8.1	16.6	7.1	7.1	14.0	11.8	11.7	5.5
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	SR4(N)	13:20	3.2	Bottom	3	2	30.2	8.1	16.6	7.0		14.4		10.2	
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	IS8	13:30	3.8	Surface	1	1	30.4	8.2	16.6	7.8	7.8	9.3	11.8	5.5	5.5
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	IS8	13:30	3.8	Surface	1	2	30.4	8.2	16.6	7.7		10.1		5.6	
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	IS8	13:30	3.8	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	IS8	13:30	3.8	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	IS8	13:30	3.8	Bottom	3	1	29.6	8.1	17.7	7.1	7.1	13.8	11.8	5.1	5.5
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	IS8	13:30	3.8	Bottom	3	2	29.6	8.2	17.7	7.0		14.1		5.8	
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	IS(Mf)9	13:41	2.9	Surface	1	1					7.3		9.4		5.9
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	IS(Mf)9	13:41	2.9	Surface	1	2									
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	IS(Mf)9	13:41	2.9	Middle	2	1	29.6	8.2	17.1	7.3		8.9		5.5	
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	IS(Mf)9	13:41	2.9	Middle	2	2	29.5	8.2	17.2	7.2		9.8		6.3	
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	IS(Mf)9	13:41	2.9	Bottom	3	1							9.4		5.9
TMCLKL	HY/2012/07	2018-06-27	Mid-Ebb	IS(Mf)9	13:41	2.9	Bottom	3	2									

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Start Time	Depth (m)	Level	Level Code	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	CS(Mf)5	13:11	13.7	Surface	1	1	29.4	7.9	17.6	5.9	5.4	10.4	10.8	10.6	12.2
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	CS(Mf)5	13:11	13.7	Surface	1	2	29.6	7.9	17.4	5.9		10.2		11.3	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	CS(Mf)5	13:11	13.7	Middle	2	1	28.6	7.9	21.2	4.9		12.0		12.0	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	CS(Mf)5	13:11	13.7	Middle	2	2	28.7	7.9	21.1	4.9		11.4		11.4	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	CS(Mf)5	13:11	13.7	Bottom	3	1	27.0	7.9	27.3	4.1		10.7		13.3	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	CS(Mf)5	13:11	13.7	Bottom	3	2	27.1	7.9	27.0	4.0	4.1	10.2	14.8		
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	CS(Mf)3(N)	14:18	6.7	Surface	1	1	30.2	8.0	14.0	6.7	6.0	8.1	13.5	4.7	4.8
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	CS(Mf)3(N)	14:18	6.7	Surface	1	2	30.2	8.1	14.1	6.6		8.0		5.2	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	CS(Mf)3(N)	14:18	6.7	Middle	2	1	29.2	8.0	17.8	5.3		11.8		5.2	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	CS(Mf)3(N)	14:18	6.7	Middle	2	2	29.2	8.0	17.9	5.3		11.4		5.1	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	CS(Mf)3(N)	14:18	6.7	Bottom	3	1	28.6	8.0	21.7	5.1		5.1		4.0	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	CS(Mf)3(N)	14:18	6.7	Bottom	3	2	28.6	8.0	21.8	5.1	5.1	21.3	4.6		
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS(Mf)16	13:50	5.8	Surface	1	1	29.4	8.0	19.3	6.3	6.3	9.4	7.1	11.3	10.5
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS(Mf)16	13:50	5.8	Surface	1	2	29.5	8.0	19.1	6.3		9.4		10.6	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS(Mf)16	13:50	5.8	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS(Mf)16	13:50	5.8	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS(Mf)16	13:50	5.8	Bottom	3	1	28.6	7.9	21.4	5.3		5.3		4.9	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS(Mf)16	13:50	5.8	Bottom	3	2	28.7	7.9	21.4	5.2	5.3	4.6	10.1		
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	SR4a	13:58	5.1	Surface	1	1	29.9	8.0	17.6	6.6	6.6	9.9	16.3	11.7	11.9
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	SR4a	13:58	5.1	Surface	1	2	30.0	8.0	17.4	6.6		9.9		11.3	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	SR4a	13:58	5.1	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	SR4a	13:58	5.1	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	SR4a	13:58	5.1	Bottom	3	1	28.8	7.9	21.0	4.8		4.8		25.0	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	SR4a	13:58	5.1	Bottom	3	2	28.9	7.9	20.8	4.7	4.8	20.4	12.7		
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	SR4(N)	14:07	4.2	Surface	1	1	30.7	8.2	16.4	9.7	9.7	13.5	15.2	10.4	10.1
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	SR4(N)	14:07	4.2	Surface	1	2	30.8	8.2	16.3	9.6		13.1		9.9	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	SR4(N)	14:07	4.2	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	SR4(N)	14:07	4.2	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	SR4(N)	14:07	4.2	Bottom	3	1	30.5	8.2	16.5	9.2		9.1		17.3	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	SR4(N)	14:07	4.2	Bottom	3	2	30.6	8.2	16.4	9.0	9.1	17.0	9.8		
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS8	14:16	4.5	Surface	1	1	30.2	8.1	17.7	8.1	8.1	9.0	12.8	11.8	13.3
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS8	14:16	4.5	Surface	1	2	30.3	8.1	17.6	8.1		9.0		12.3	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS8	14:16	4.5	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS8	14:16	4.5	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS8	14:16	4.5	Bottom	3	1	29.6	8.1	18.1	6.9		7.0		16.6	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS8	14:16	4.5	Bottom	3	2	29.7	8.1	18.0	7.0	7.0	16.6	15.0		
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS(Mf)9	14:30	3.3	Surface	1	1	30.2	8.2	17.2	9.2	9.2	5.4	6.1	5.6	5.4
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS(Mf)9	14:30	3.3	Surface	1	2	30.3	8.2	17.0	9.1		5.4		5.4	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS(Mf)9	14:30	3.3	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS(Mf)9	14:30	3.3	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS(Mf)9	14:30	3.3	Bottom	3	1	29.9	8.2	17.5	8.9		8.9		6.8	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS(Mf)9	14:30	3.3	Bottom	3	2	29.9	8.2	17.4	8.8	8.9	6.8	5.6		

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Start Time	Depth (m)	Level	Level Code	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	CS(Mf)5	21:13	12.6	Surface	1	1	29.6	7.9	16.5	5.8	5.1	3.7	10.8	5.8	8.4
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	CS(Mf)5	21:13	12.6	Surface	1	2	29.7	8.0	16.3	5.8		4.2		7.4	
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	CS(Mf)5	21:13	12.6	Middle	2	1	27.8	7.9	22.9	4.4		6.4		8.3	
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	CS(Mf)5	21:13	12.6	Middle	2	2	27.9	7.9	22.7	4.3		7.3		8.5	
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	CS(Mf)5	21:13	12.6	Bottom	3	1	27.1	7.9	27.0	4.0		20.9		10.6	
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	CS(Mf)5	21:13	12.6	Bottom	3	2	27.2	7.9	26.7	3.9	4.0	22.0	9.5		
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	CS(Mf)3(N)	20:09	7.2	Surface	1	1	30.4	8.0	9.9	6.9	6.8	11.9	13.5	8.9	9.6
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	CS(Mf)3(N)	20:09	7.2	Surface	1	2	30.4	8.0	9.7	7.0		11.6		9.2	
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	CS(Mf)3(N)	20:09	7.2	Middle	2	1	30.5	8.0	11.6	6.6		13.8		10.8	
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	CS(Mf)3(N)	20:09	7.2	Middle	2	2	30.5	7.9	11.4	6.6		12.7		10.1	
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	CS(Mf)3(N)	20:09	7.2	Bottom	3	1	29.8	8.0	14.1	5.9		15.3		9.5	
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	CS(Mf)3(N)	20:09	7.2	Bottom	3	2	29.8	7.9	13.9	5.9	5.9	15.8	8.9		
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS(Mf)16	20:43	5.8	Surface	1	1	29.6	8.1	17.8	6.8	6.8	11.2	14.4	10.3	13.2
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS(Mf)16	20:43	5.8	Surface	1	2	29.7	8.1	17.7	6.8		11.8		10.1	
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS(Mf)16	20:43	5.8	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS(Mf)16	20:43	5.8	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS(Mf)16	20:43	5.8	Bottom	3	1	29.2	8.0	19.1	5.9		5.9		16.4	
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS(Mf)16	20:43	5.8	Bottom	3	2	29.3	8.0	18.9	5.9	5.9	18.1	16.4		
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	SR4a	20:33	5.4	Surface	1	1	29.8	8.0	16.4	6.8	6.9	8.2	11.7	10.1	14.4
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	SR4a	20:33	5.4	Surface	1	2	29.9	8.1	16.3	6.9		9.1		10.5	
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	SR4a	20:33	5.4	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	SR4a	20:33	5.4	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	SR4a	20:33	5.4	Bottom	3	1	28.8	7.9	21.1	4.4		4.4		15.3	
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	SR4a	20:33	5.4	Bottom	3	2	28.9	7.9	20.9	4.4	4.4	14.1	18.4		
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	SR4(N)	20:26	3.2	Surface	1	1	29.9	8.2	17.3	8.3	8.3	15.6	16.4	13.8	14.3
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	SR4(N)	20:26	3.2	Surface	1	2	30.0	8.2	17.1	8.2		17.1		14.8	
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	SR4(N)	20:26	3.2	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	SR4(N)	20:26	3.2	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	SR4(N)	20:26	3.2	Bottom	3	1	29.9	8.2	17.3	8.3		8.3		15.8	
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	SR4(N)	20:26	3.2	Bottom	3	2	30.1	8.2	17.1	8.2	8.3	17.1	14.1		
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS8	20:19	3.1	Surface	1	1	29.6	8.1	17.1	6.8	6.8	12.2	14.0	10.2	12.4
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS8	20:19	3.1	Surface	1	2	29.7	8.1	16.9	6.8		13.1		10.7	
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS8	20:19	3.1	Middle	2	1									
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS8	20:19	3.1	Middle	2	2									
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS8	20:19	3.1	Bottom	3	1	29.7	8.0	17.7	7.1		7.1		15.3	
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS8	20:19	3.1	Bottom	3	2	29.8	8.0	17.4	7.1	7.1	15.2	14.1		
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS(Mf)9	20:08	2.8	Surface	1	1					9.8		9.4		14.6
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS(Mf)9	20:08	2.8	Surface	1	2									
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS(Mf)9	20:08	2.8	Middle	2	1	30.1	8.3	17.8	9.8		9.0		15.0	
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS(Mf)9	20:08	2.8	Middle	2	2	30.3	8.3	17.6	9.8		9.8		14.1	
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS(Mf)9	20:08	2.8	Bottom	3	1									
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS(Mf)9	20:08	2.8	Bottom	3	2									

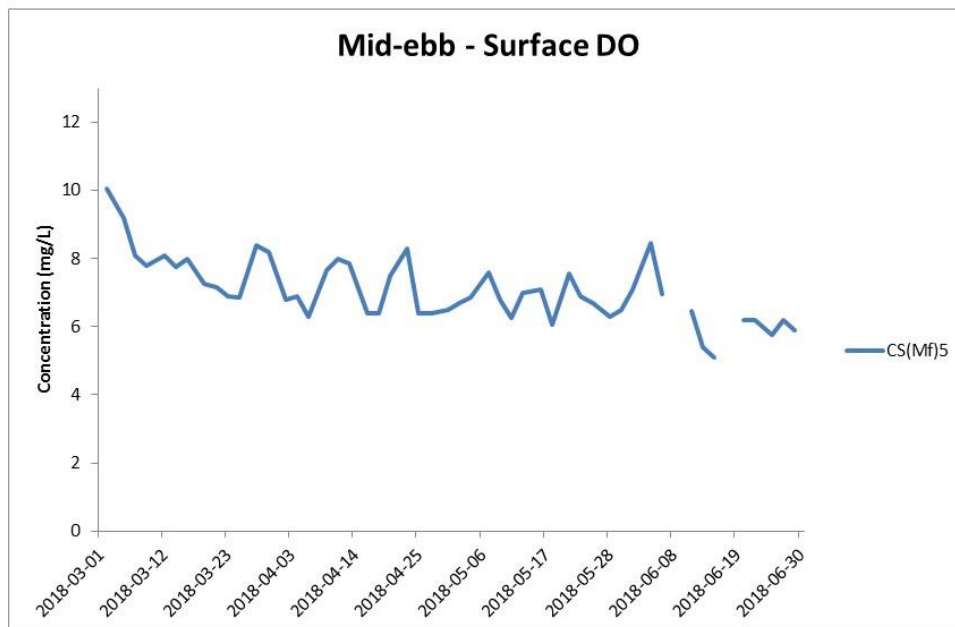
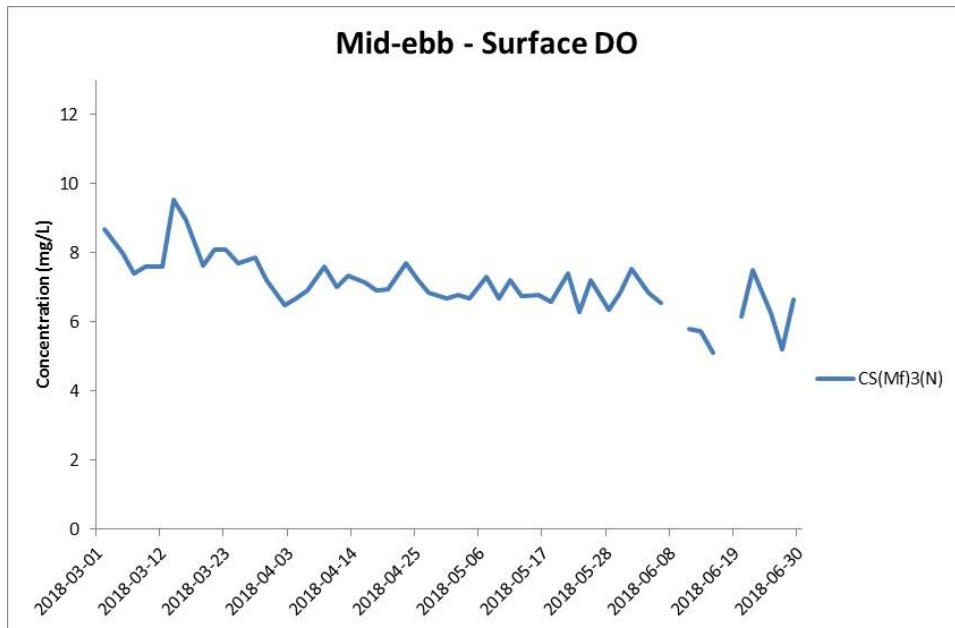


Figure J1 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in surface waters during mid-ebb tide between 1 March and 30 June 2018 at CS(Mf)3(N) and CS(Mf)5.

(Weather condition varied between sunny to rainy within the reporting period.) WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

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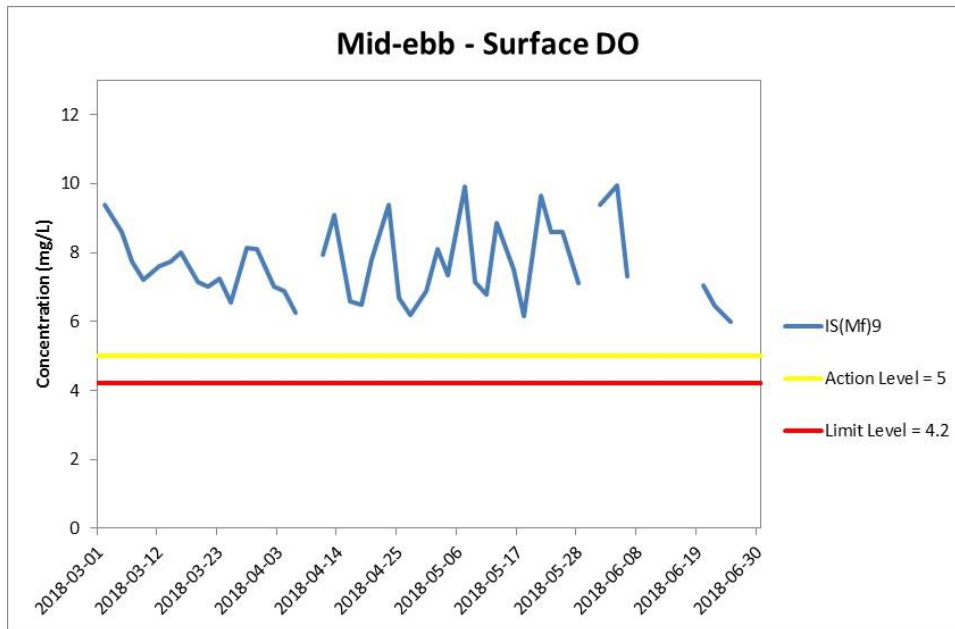
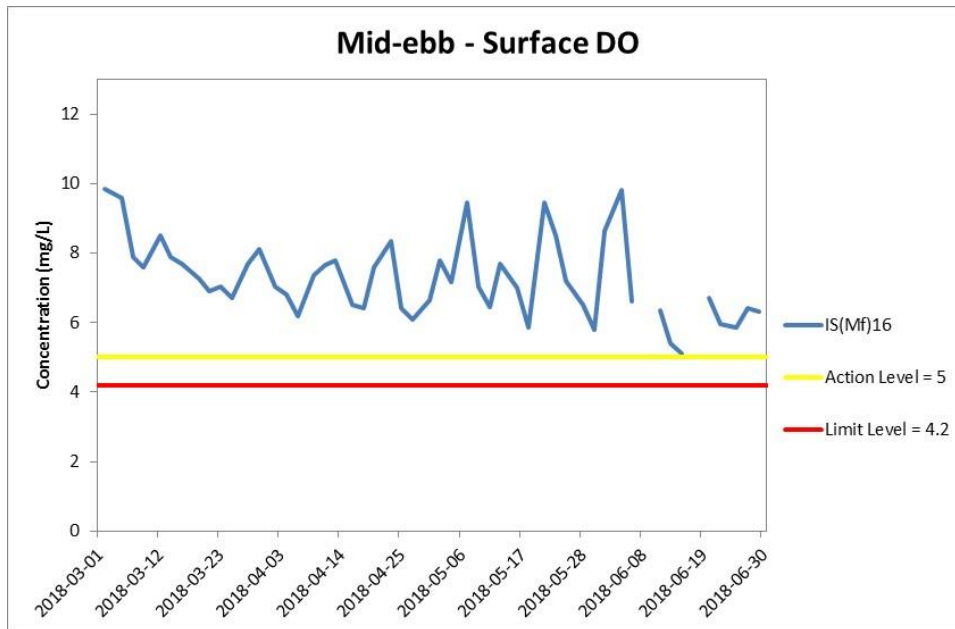


Figure J2 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in surface waters during mid-ebb tide between 1 March and 30 June 2018 at IS(Mf)16 and IS(Mf)9.

(Weather condition varied between sunny to rainy within the reporting period.)
 WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

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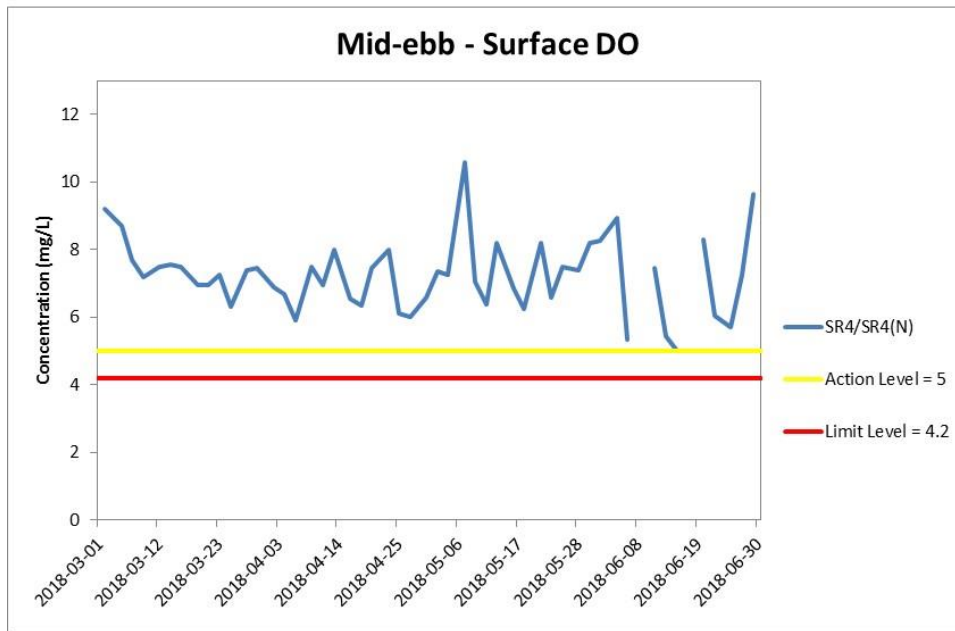
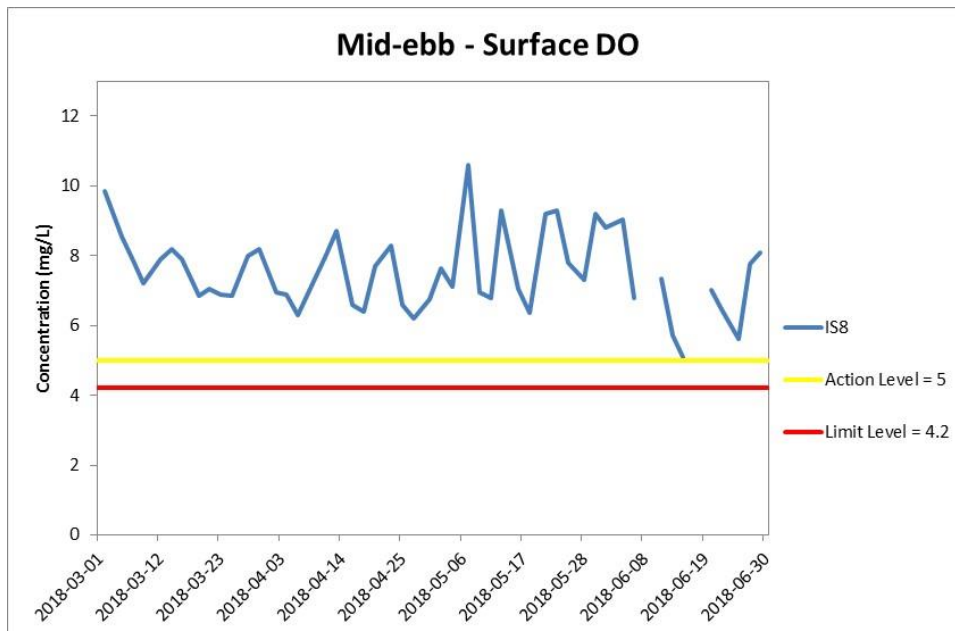


Figure J3 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in surface waters during mid-ebb tide between 1 March and 30 June 2018 at IS8 and SR4/SR4(N).

(Weather condition varied between sunny to rainy within the reporting period.) WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

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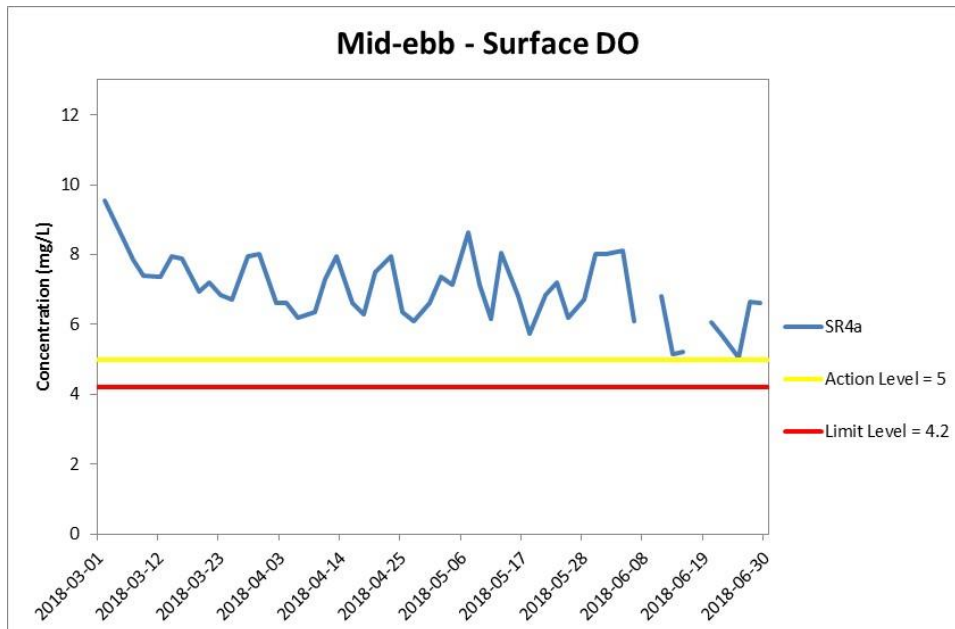


Figure J4 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in surface waters during mid-ebb tide between 1 March and 30 June 2018 at SR4a.

(Weather condition varied between sunny to rainy within the reporting period.) WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

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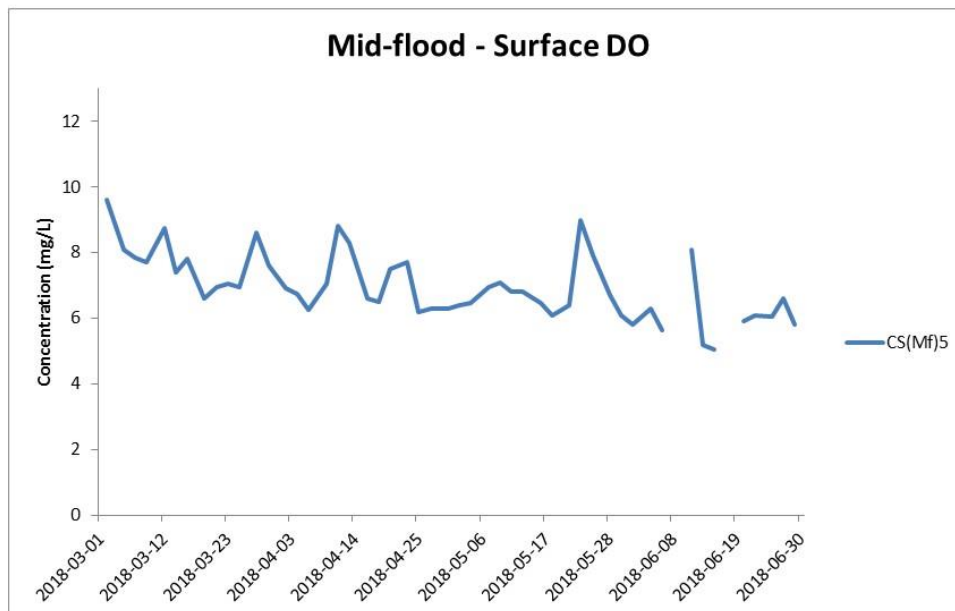
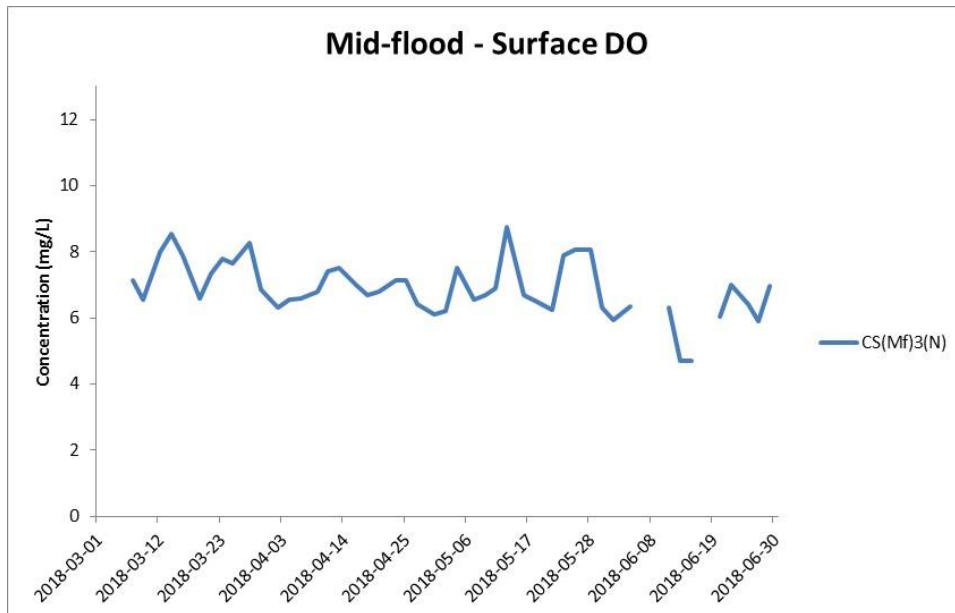


Figure J5 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in surface waters during mid-flood tide between 1 March and 30 June 2018 at CS(Mf)3(N) and CS(Mf)5.

(Weather condition varied between sunny to rainy within the reporting period.)
 WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

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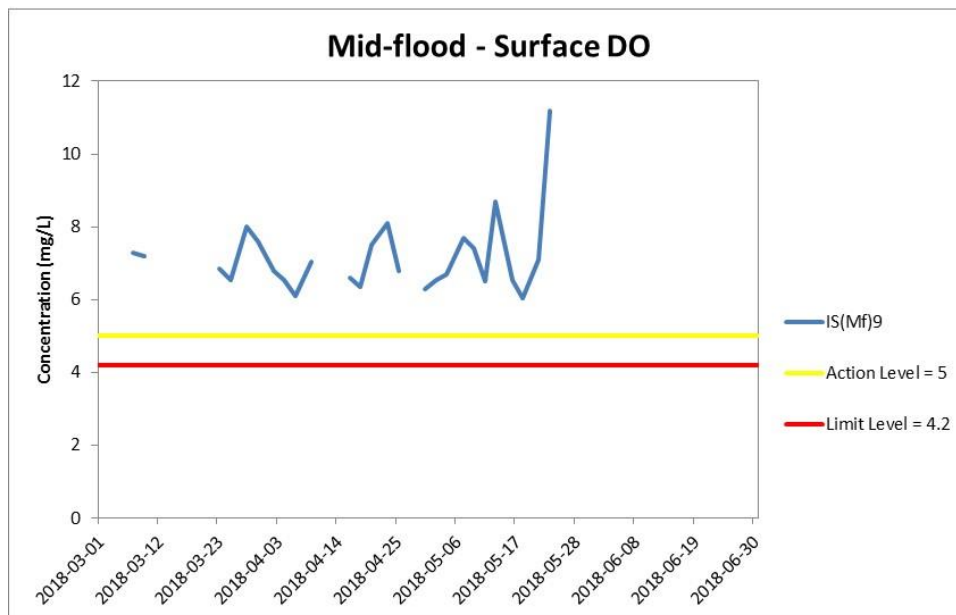
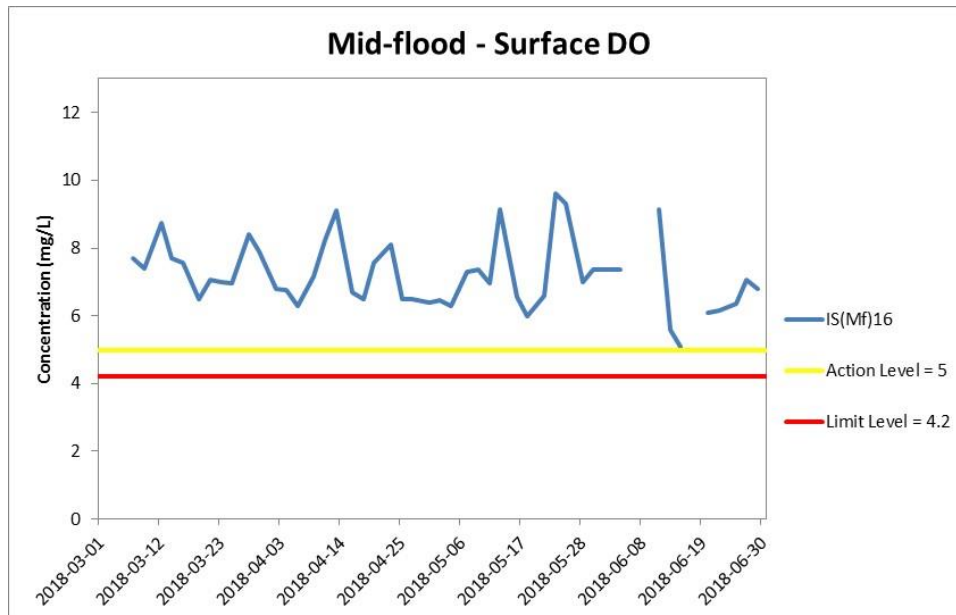


Figure J6 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in surface waters during mid-flood tide between 1 March and 30 June 2018 at IS(Mf)16 and IS(Mf)9.

(Weather condition varied between sunny to rainy within the reporting period.)

WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

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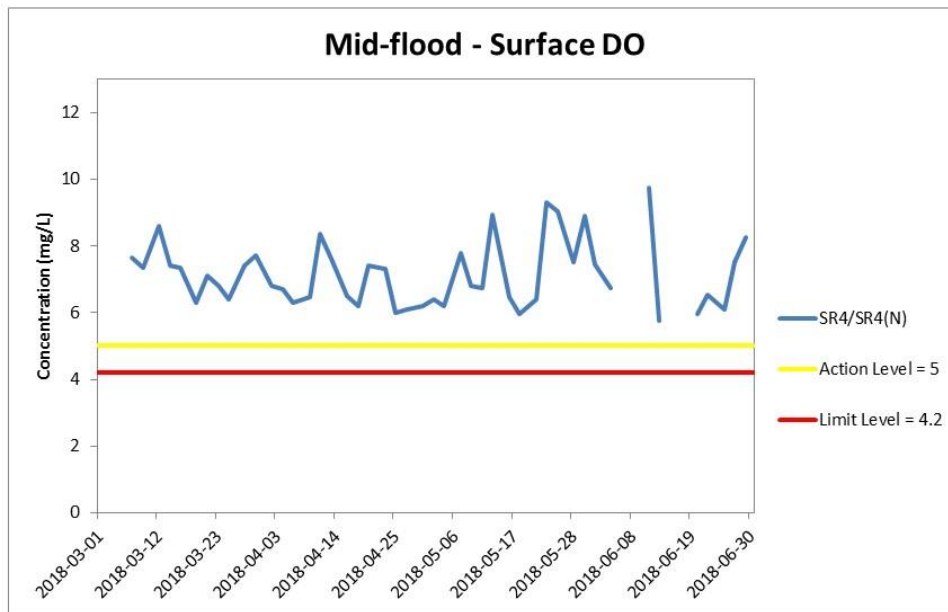
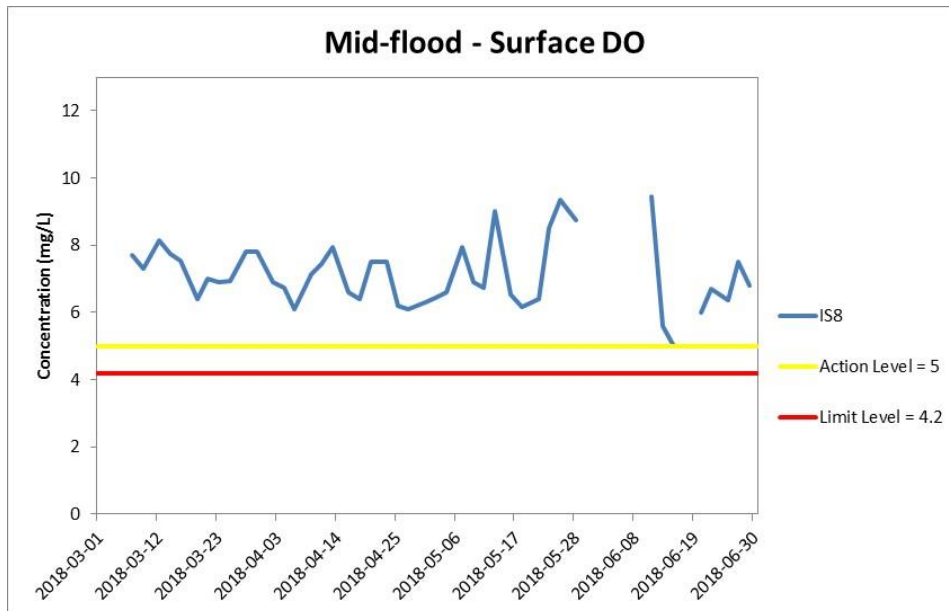


Figure J7 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in surface waters during mid-flood tide between 1 March and 30 June 2018 at IS8 and SR4/SR4(N).

(Weather condition varied between sunny to rainy within the reporting period.)
 WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

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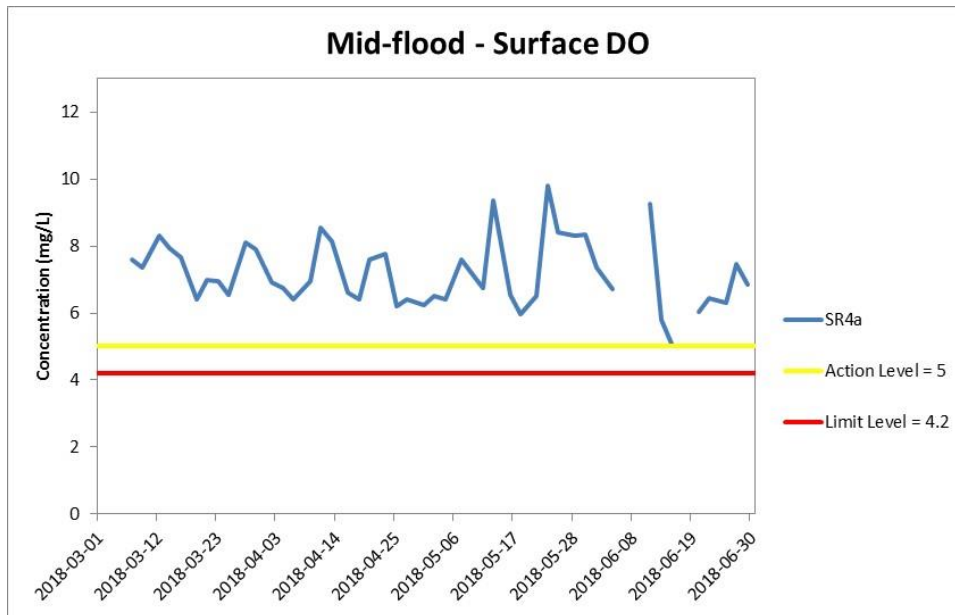


Figure J8 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in surface waters during mid-flood tide between 1 March and 30 June 2018 at SR4a.

(Weather condition varied between sunny to rainy within the reporting period.) WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

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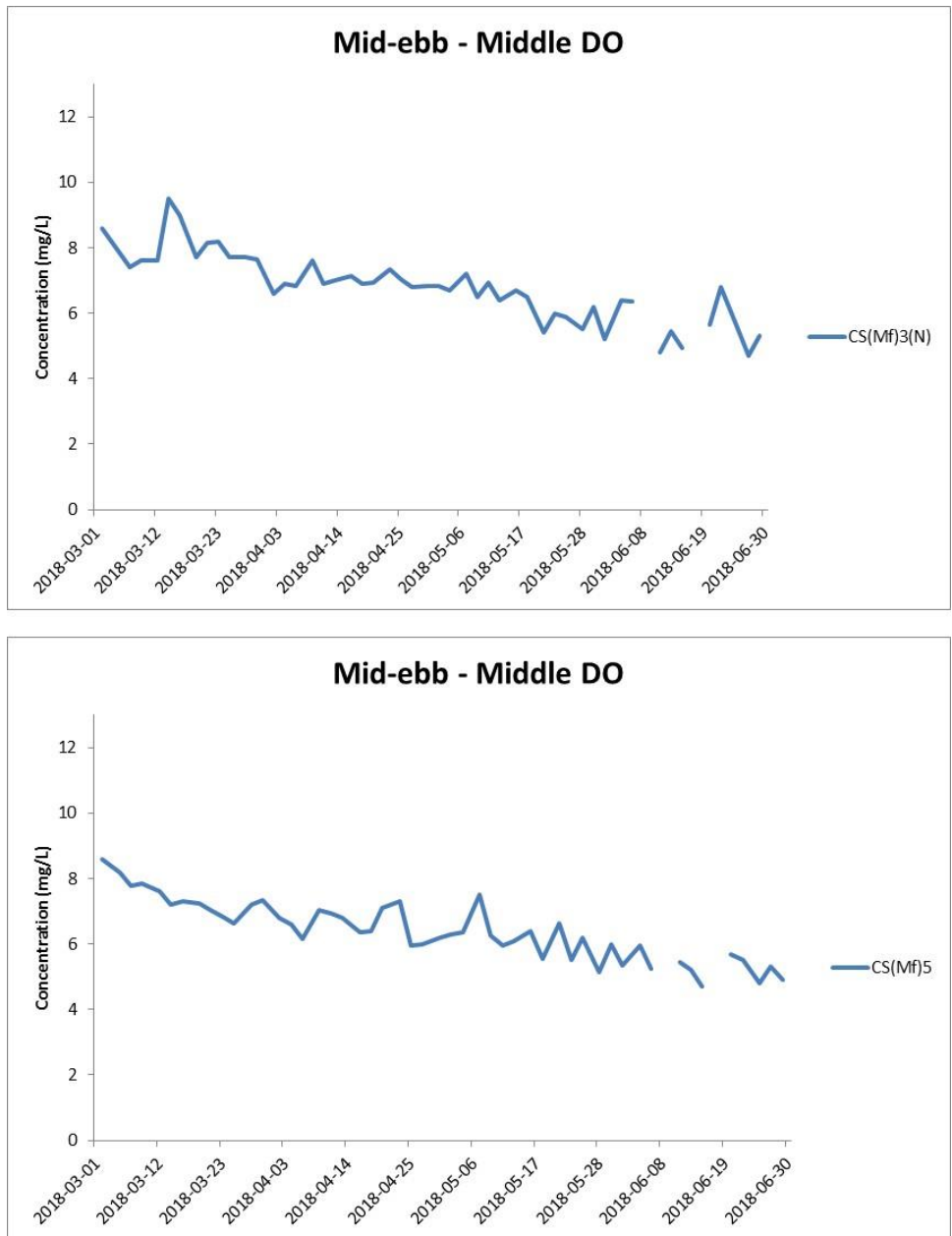


Figure J9 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in mid-depth waters during mid-ebb tide between 1 March and 30 June 2018 at CS(Mf)3(N) and CS(Mf)5.

(Weather condition varied between sunny to rainy within the reporting period.)
 WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

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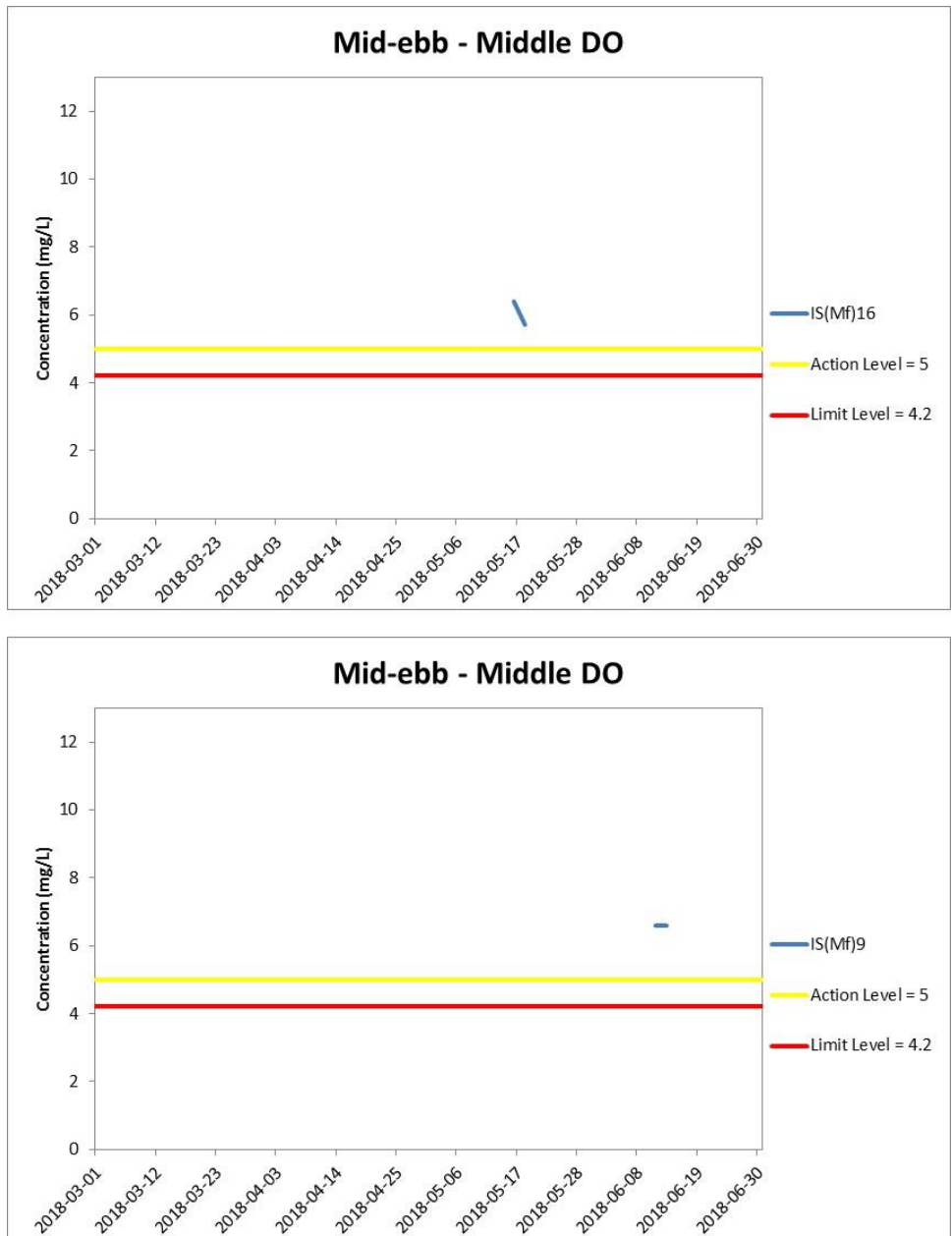


Figure J10 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in mid-depth waters during mid-ebb tide between 1 March and 30 June 2018 at IS(Mf)16 and IS(Mf)9.

(Weather condition varied between sunny to rainy within the reporting period.)
 WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

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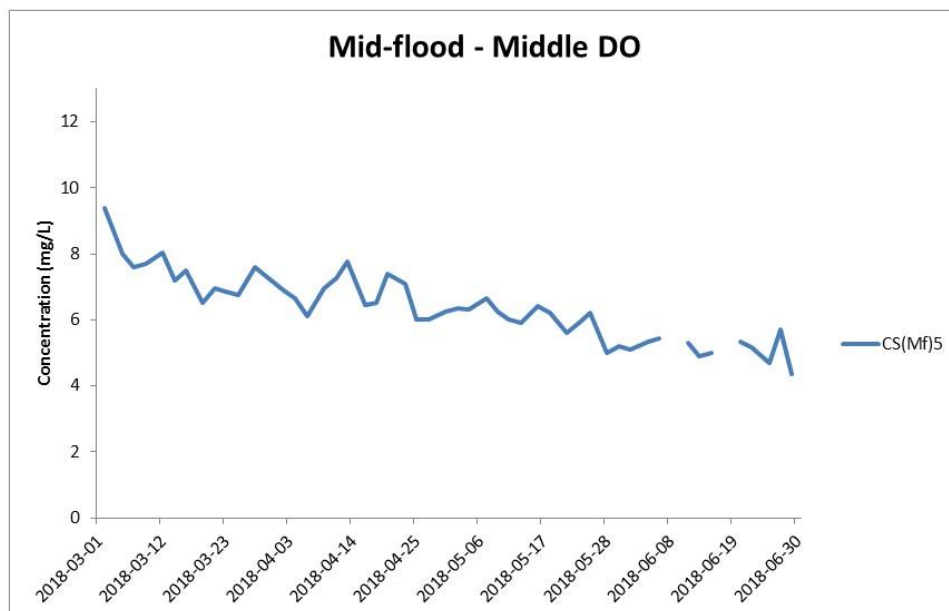
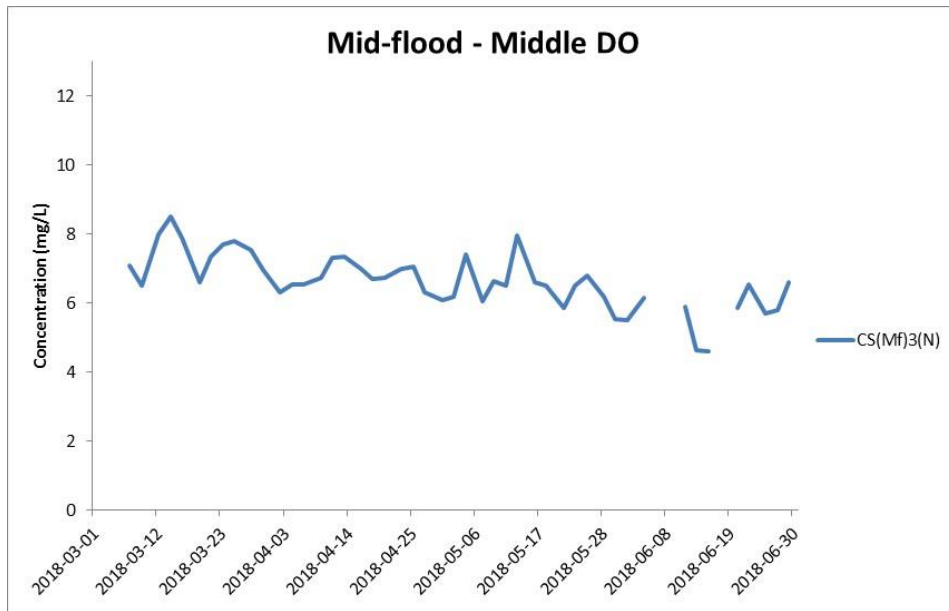


Figure J11 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in mid-depth waters during mid-flood tide between 1 March and 30 June 2018 at CS(Mf)3(N) and CS(Mf)5.

(Weather condition varied between sunny to rainy within the reporting period.)
 WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

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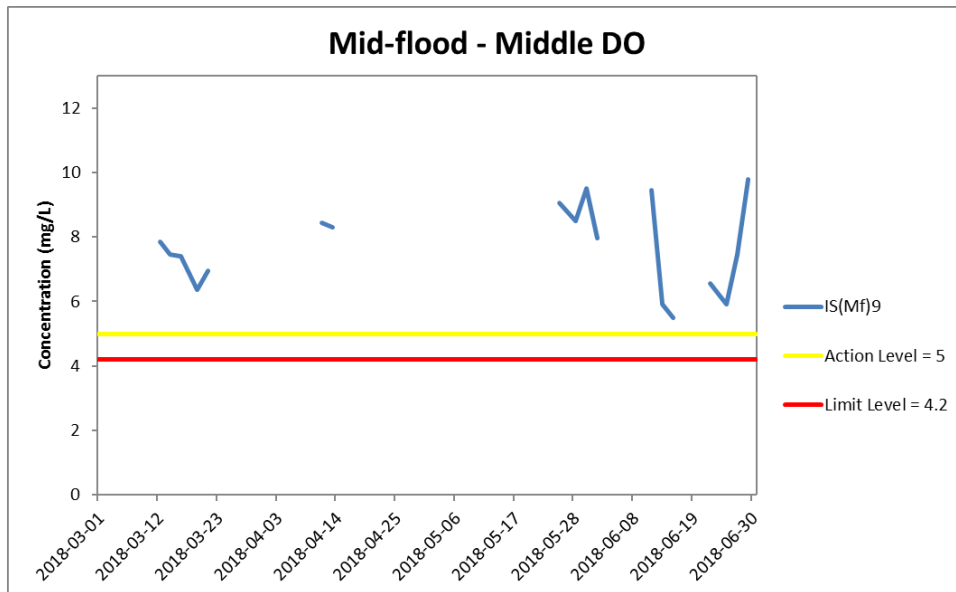


Figure J12 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in mid-depth waters during mid-flood tide between 1 March and 30 June 2018 at IS(Mf)9.

(Weather condition varied between sunny to rainy within the reporting period.)
 WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

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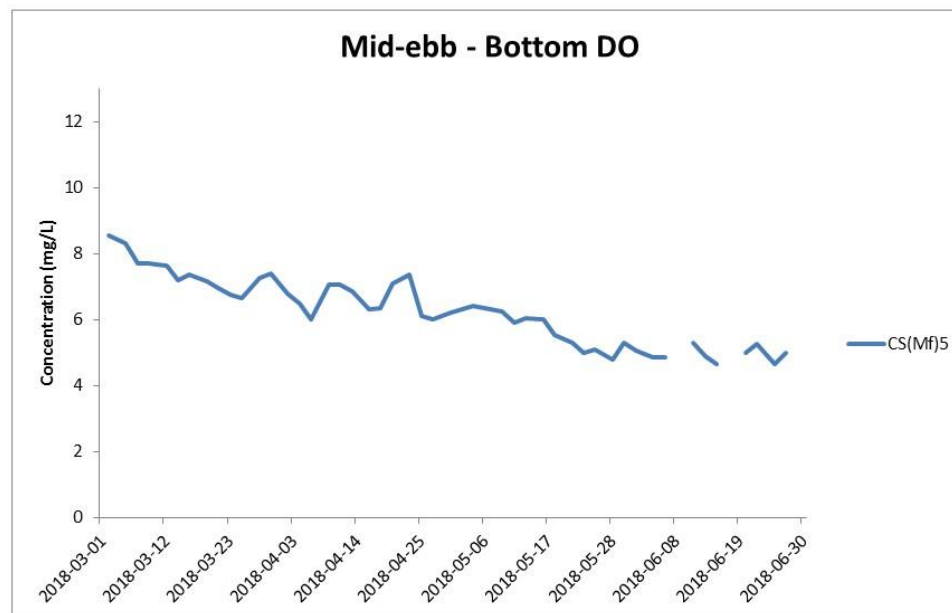
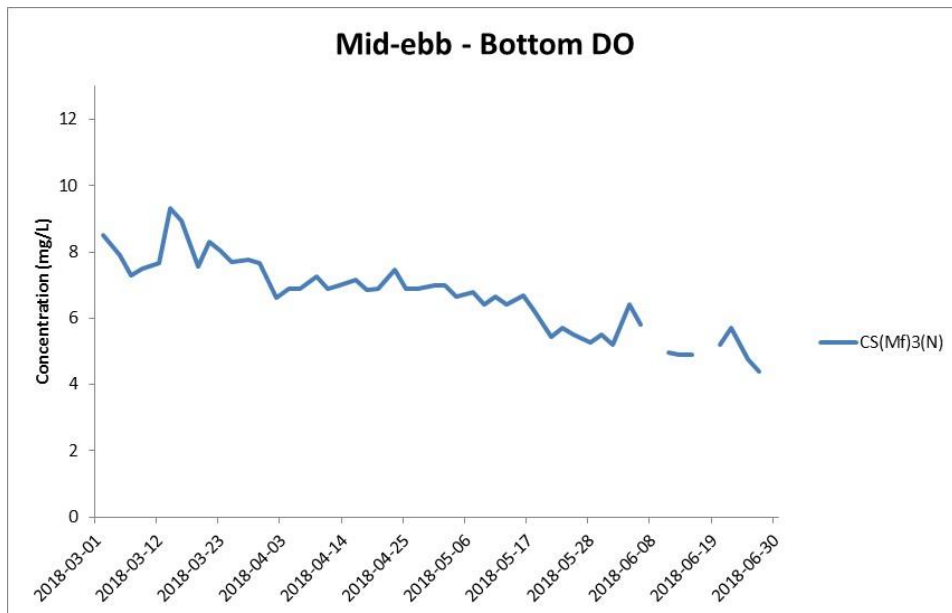


Figure J13 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in bottom waters during mid-ebb tide between 1 March and 30 June 2018 at CS(Mf)3(N) and CS(Mf)5.

(Weather condition varied between sunny to rainy within the reporting period.) WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

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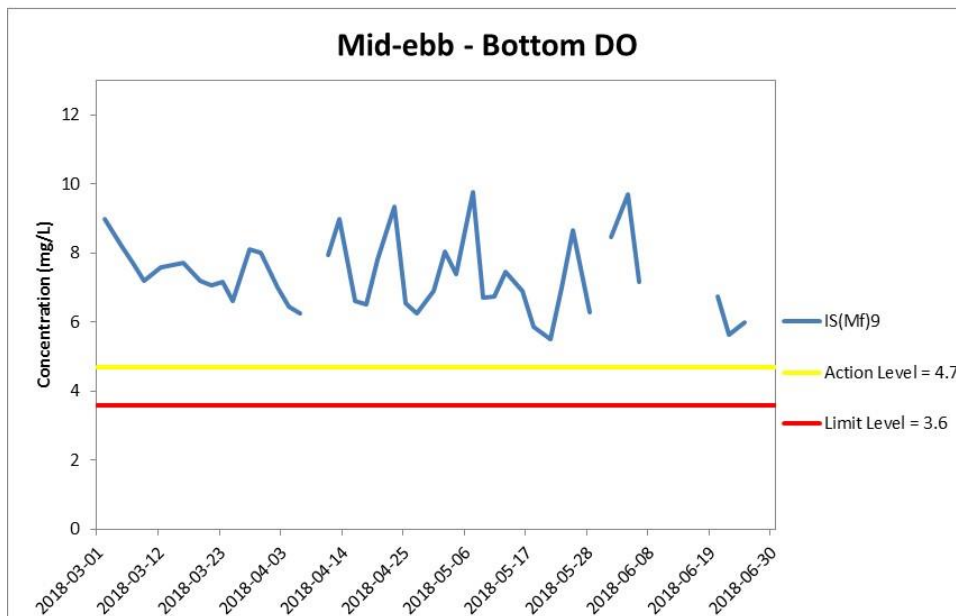
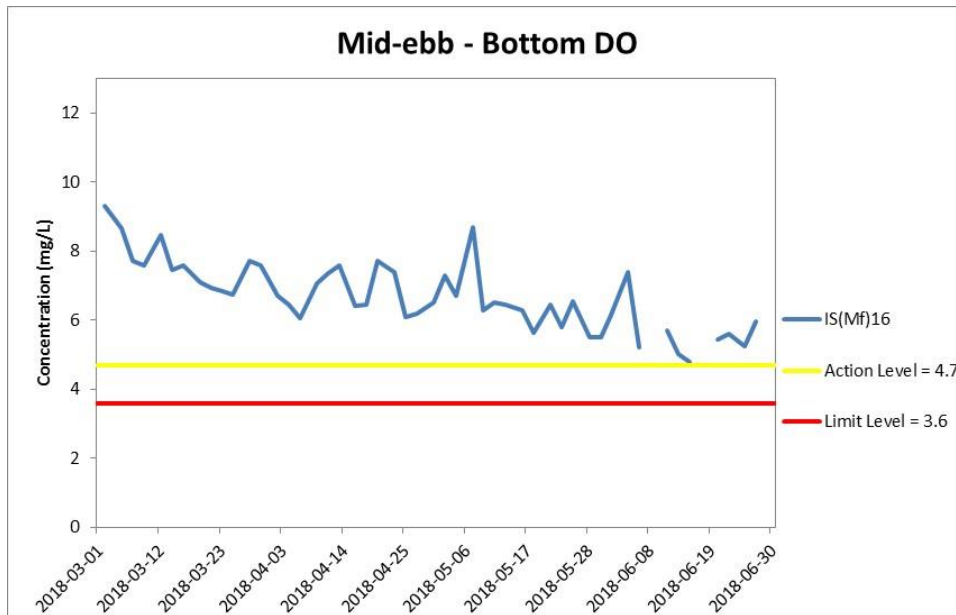


Figure J14 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in bottom waters during mid-ebb tide between 1 March and 30 June 2018 at IS(Mf)16 and IS(Mf)9.

(Weather condition varied between sunny to rainy within the reporting period.)
 WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

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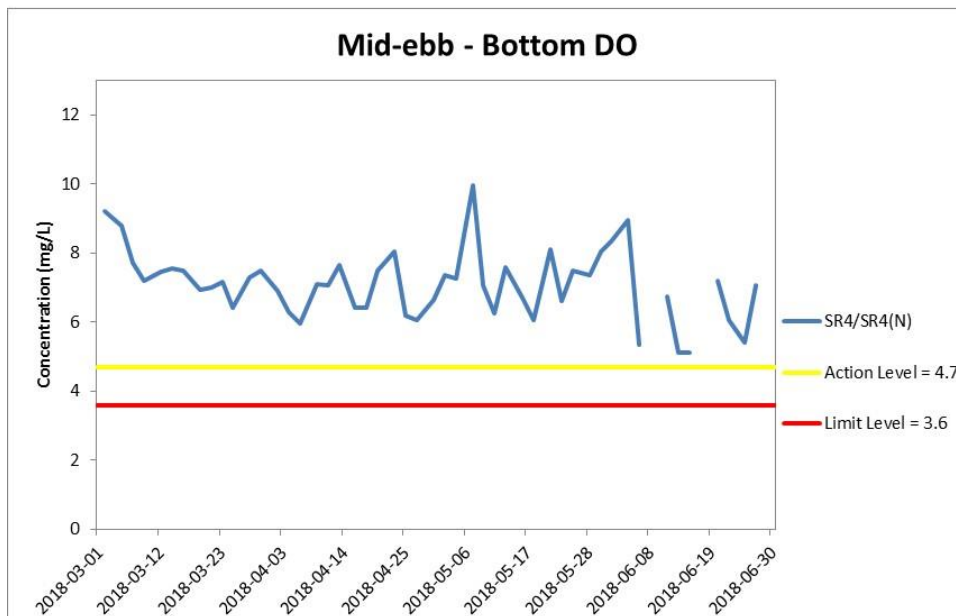
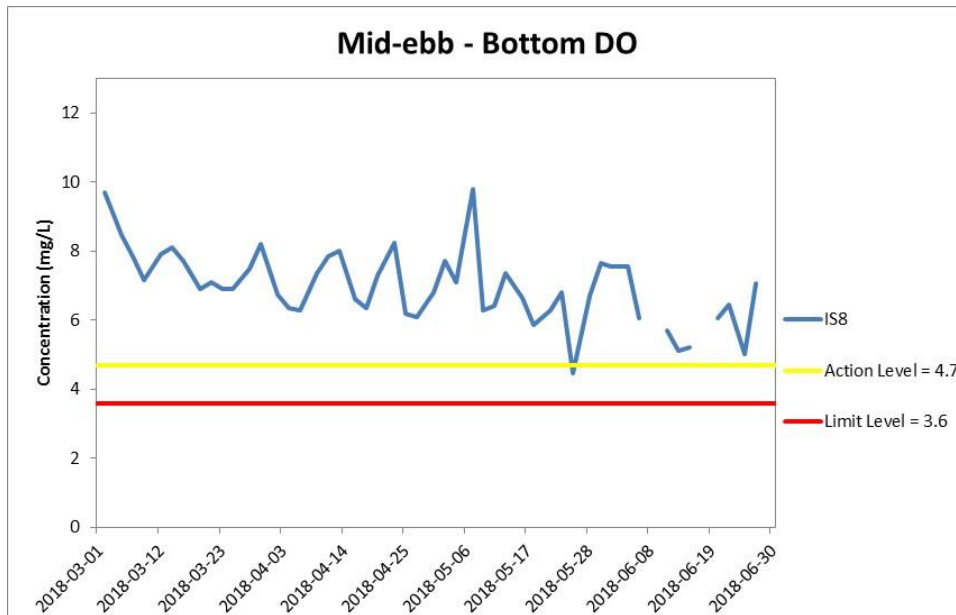


Figure J15 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in bottom waters during mid-ebb tide between 1 March and 30 June 2018 at IS8 and SR4/SR4(N).

(Weather condition varied between sunny to rainy within the reporting period.)
 WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

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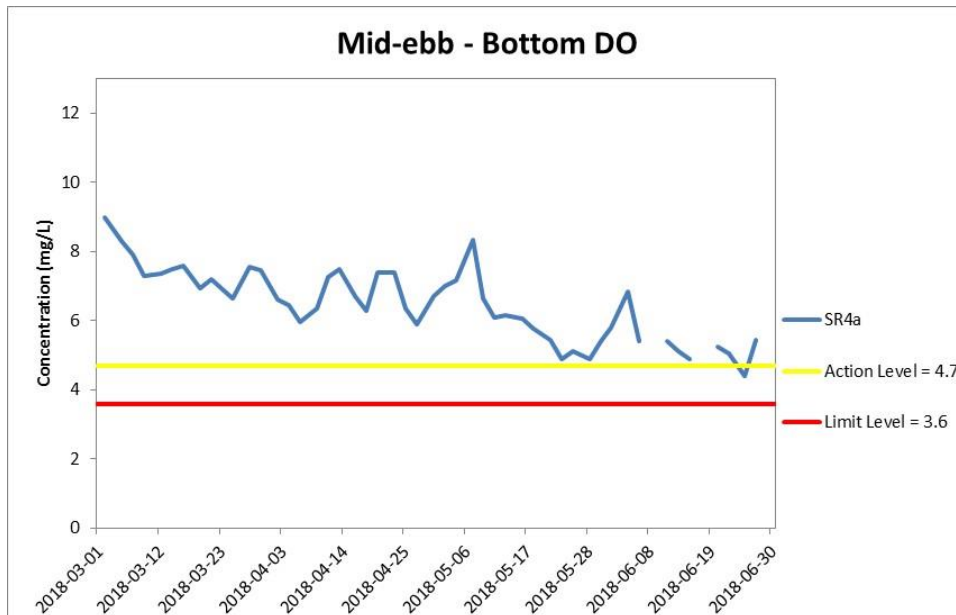


Figure J16 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in bottom waters during mid-ebb tide between 1 March and 30 June 2018 at SR4a.

(Weather condition varied between sunny to rainy within the reporting period.)
 WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

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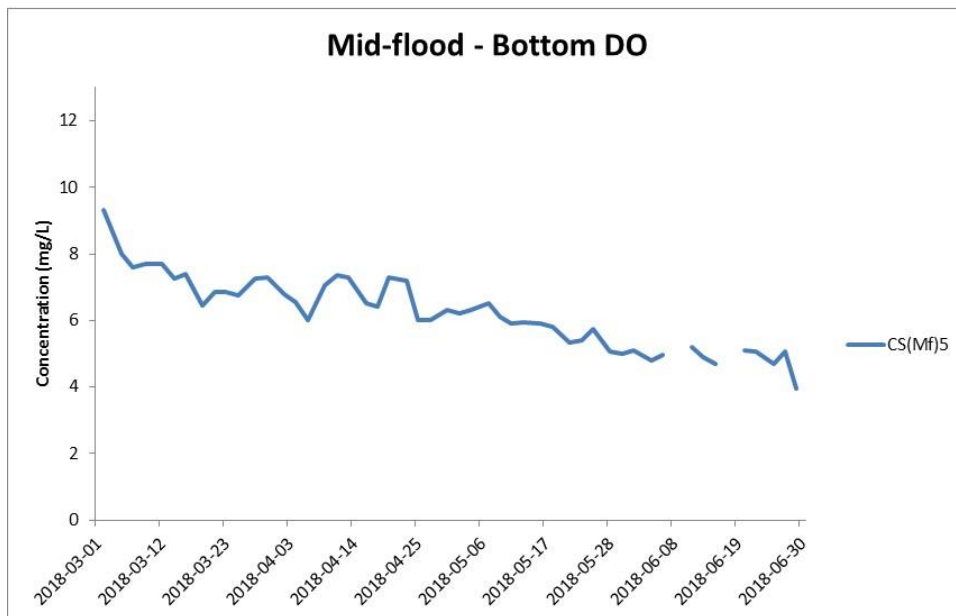
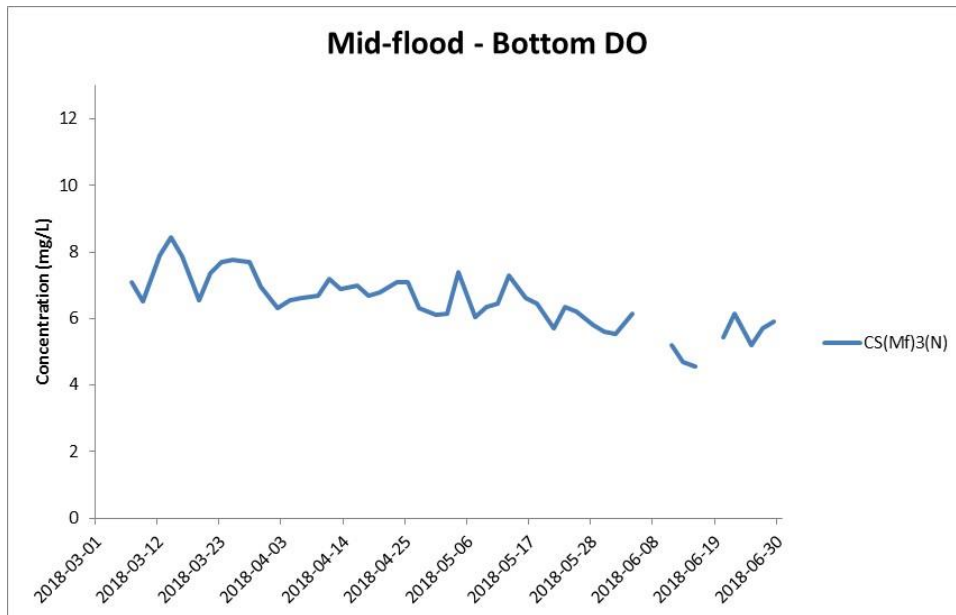


Figure J17 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in bottom waters during mid-flood tide between 1 March and 30 June 2018 at CS(Mf)3(N) and CS(Mf)5.

(Weather condition varied between sunny to rainy within the reporting period.)
 WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

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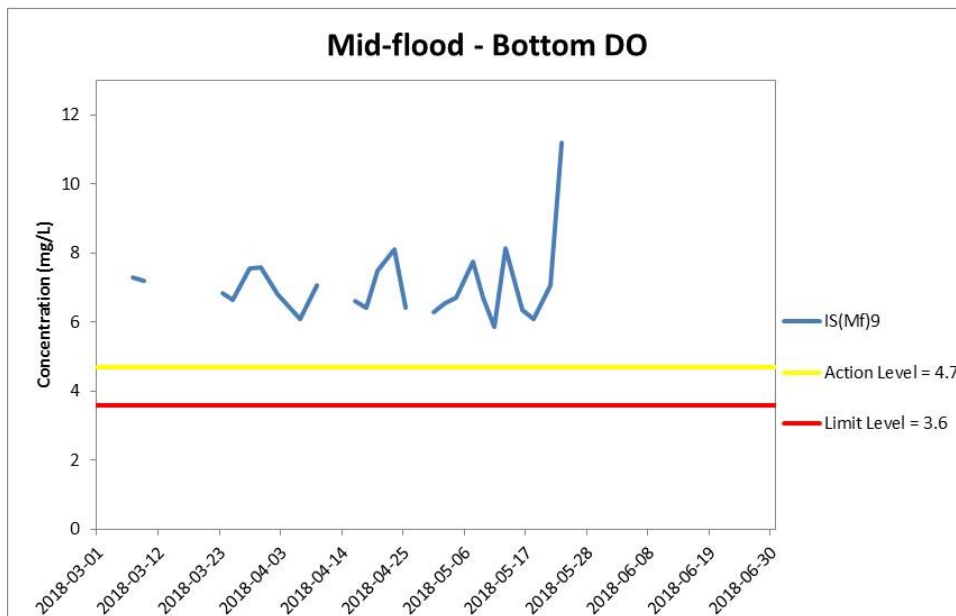
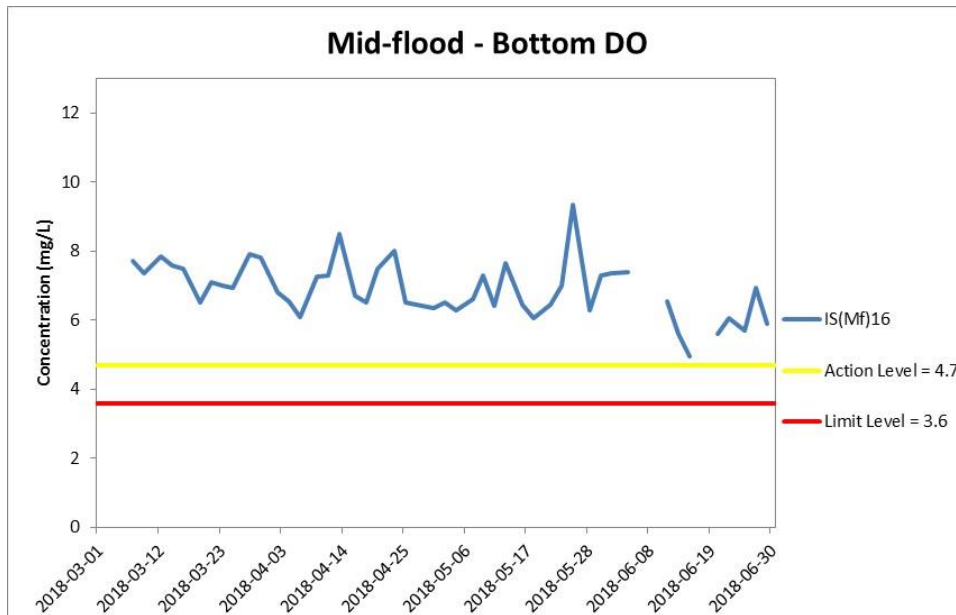


Figure J18 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in bottom waters during mid-flood tide between 1 March and 30 June 2018 at IS(Mf)16 and IS(Mf)9.

(Weather condition varied between sunny to rainy within the reporting period.)
 WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

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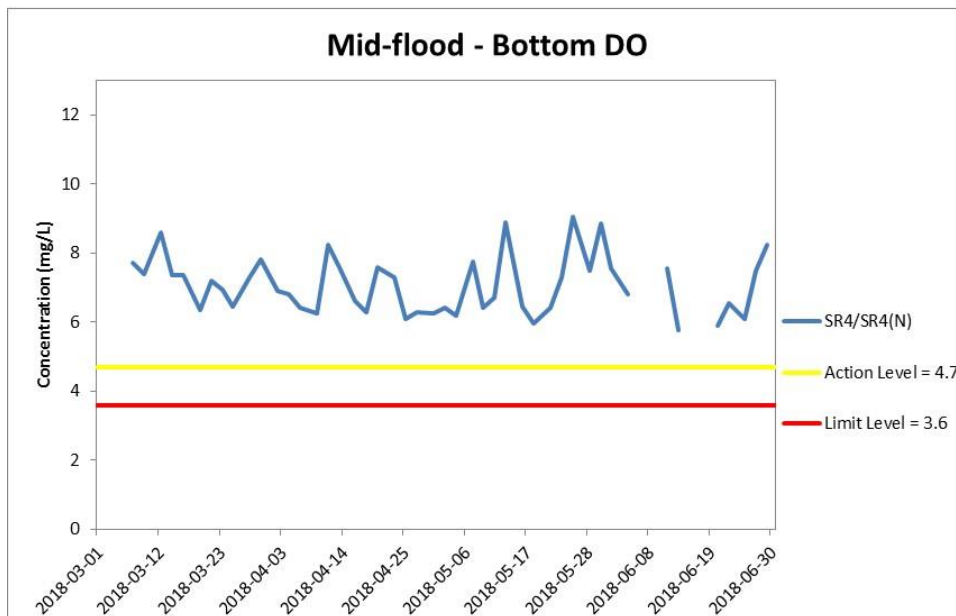
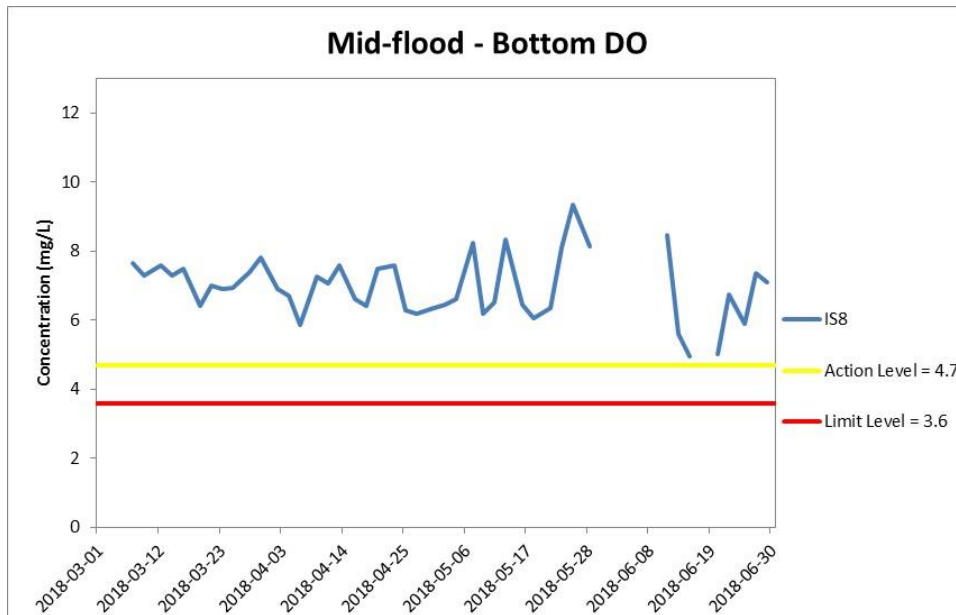


Figure J19 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in bottom waters during mid-flood tide between 1 March and 30 June 2018 at IS8 and SR4/SR4(N).

(Weather condition varied between sunny to rainy within the reporting period.)
 WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

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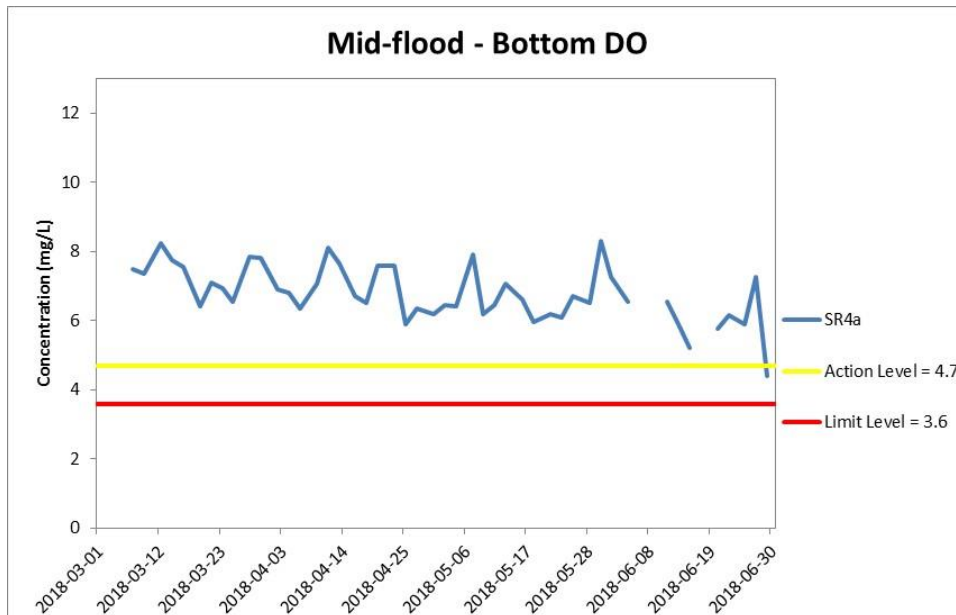


Figure J20 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in bottom waters during mid-flood tide between 1 March and 30 June 2018 at SR4a.

(Weather condition varied between sunny to rainy within the reporting period.)
 WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

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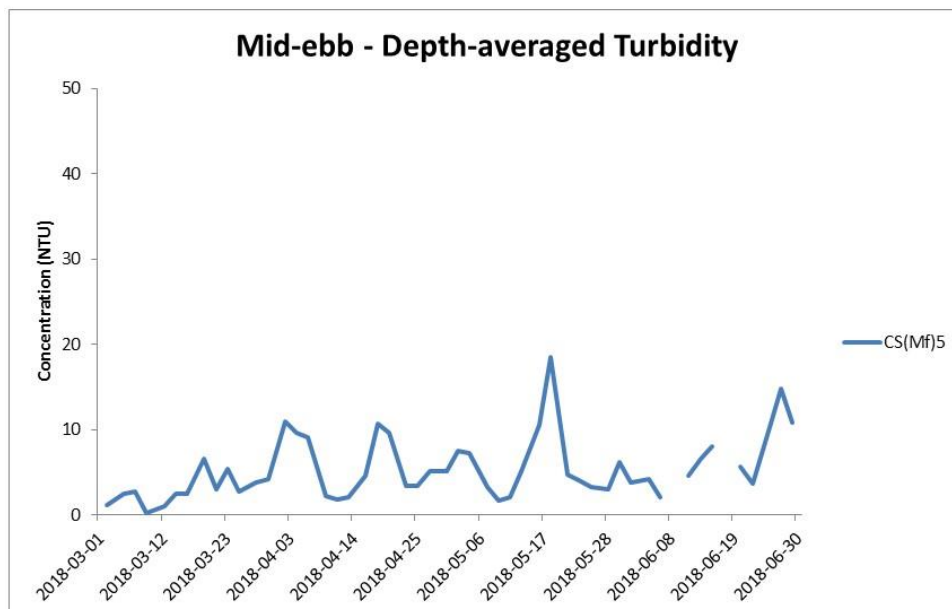
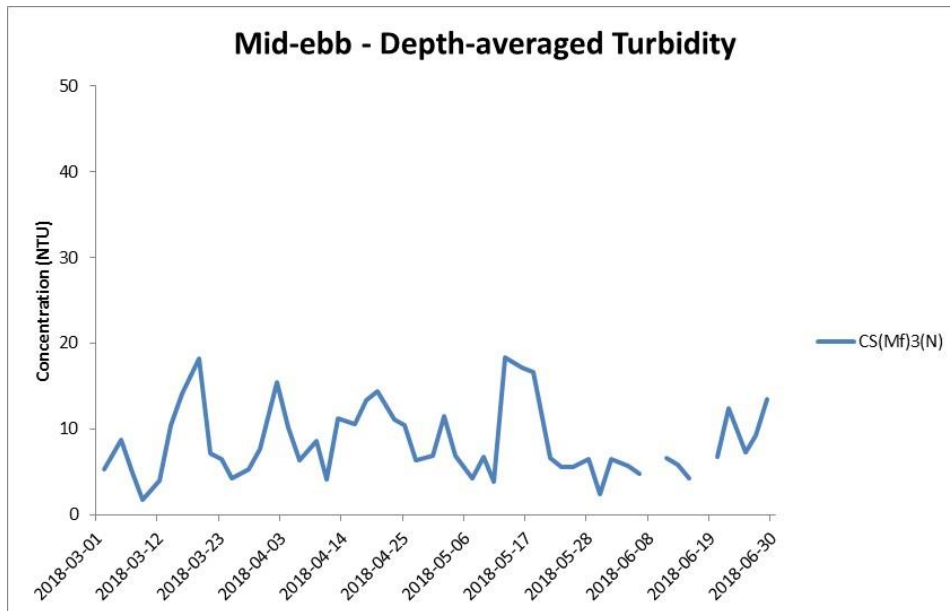


Figure J21 Impact Monitoring - Mean Level of depth-averaged Turbidity (NTU) during mid-ebb tide between 1 March and 30 June 2018 at CS(Mf)3(N) and CS(Mf)5.

(Weather condition varied between sunny to rainy within the reporting period.) WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

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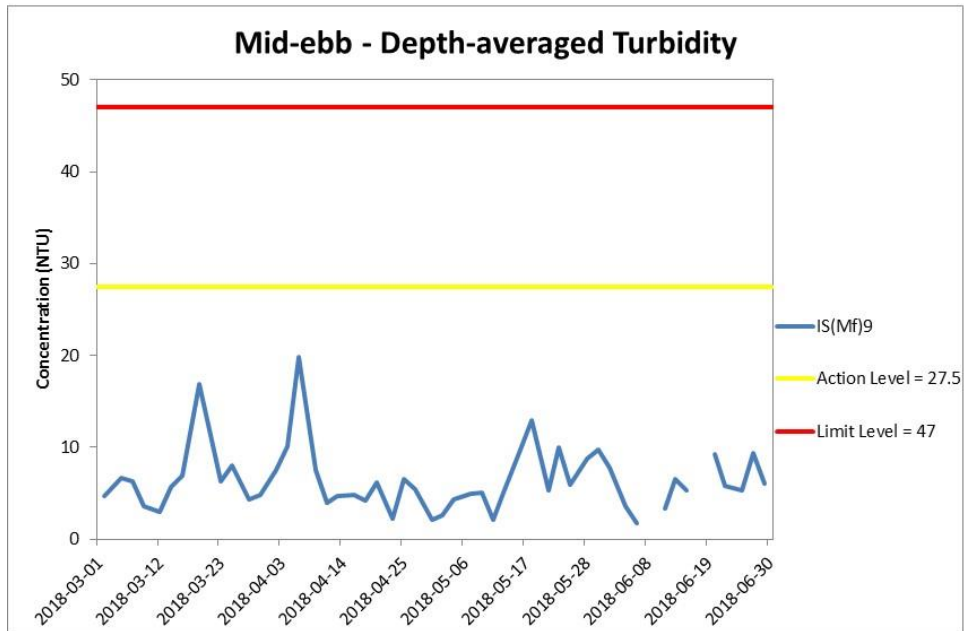
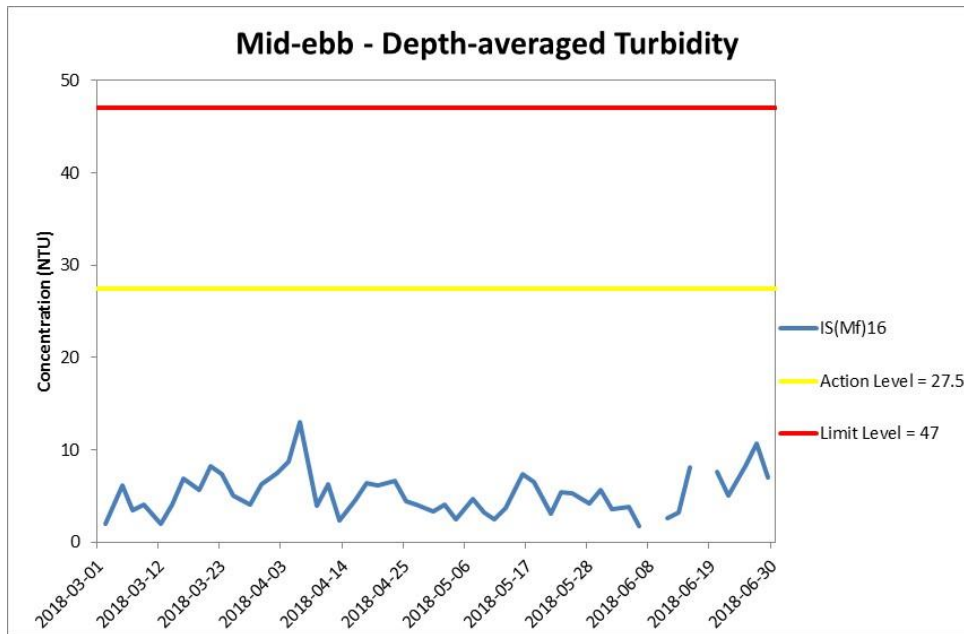


Figure J22 Impact Monitoring - Mean Level of depth-averaged Turbidity (NTU) during mid-ebb tide between 1 March and 30 June 2018 at IS(Mf)16 and IS(Mf)9.

(Weather condition varied between sunny to rainy within the reporting period.)
 WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

**Environmental
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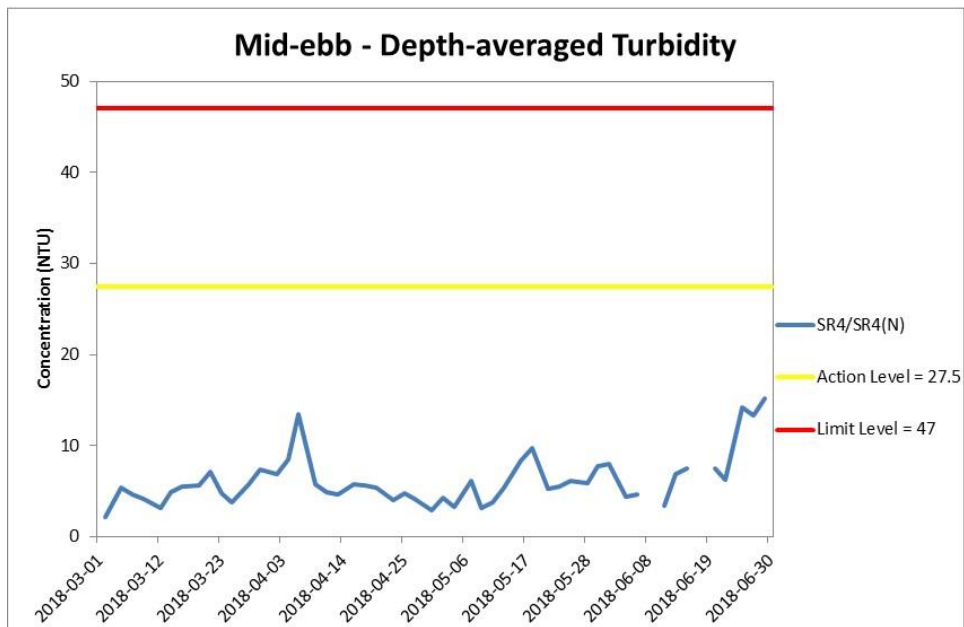
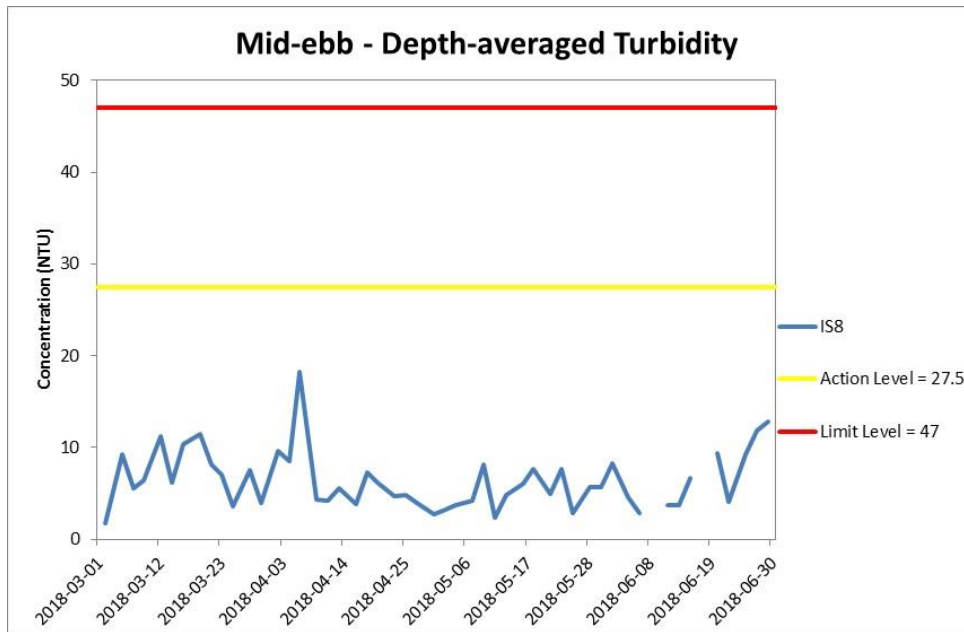


Figure J23 Impact Monitoring – Mean Level of depth-averaged Turbidity (NTU) during mid-ebb tide between 1 March and 30 June 2018 at IS8 and SR4/SR4(N).

(Weather condition varied between sunny to rainy within the reporting period.)
 WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

**Environmental
Resources
Management**



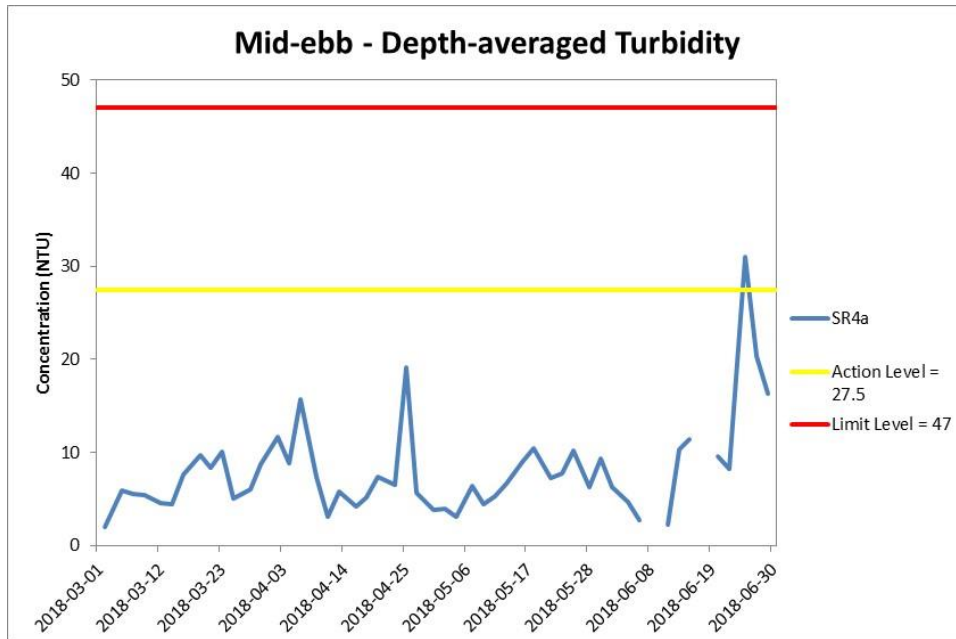


Figure J24 Impact Monitoring - Mean Level of depth-averaged Turbidity (NTU) during mid-ebb tide between 1 March and 30 June 2018 at SR4a.

(Weather condition varied between sunny to rainy within the reporting period.)
 WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

**Environmental
Resources
Management**



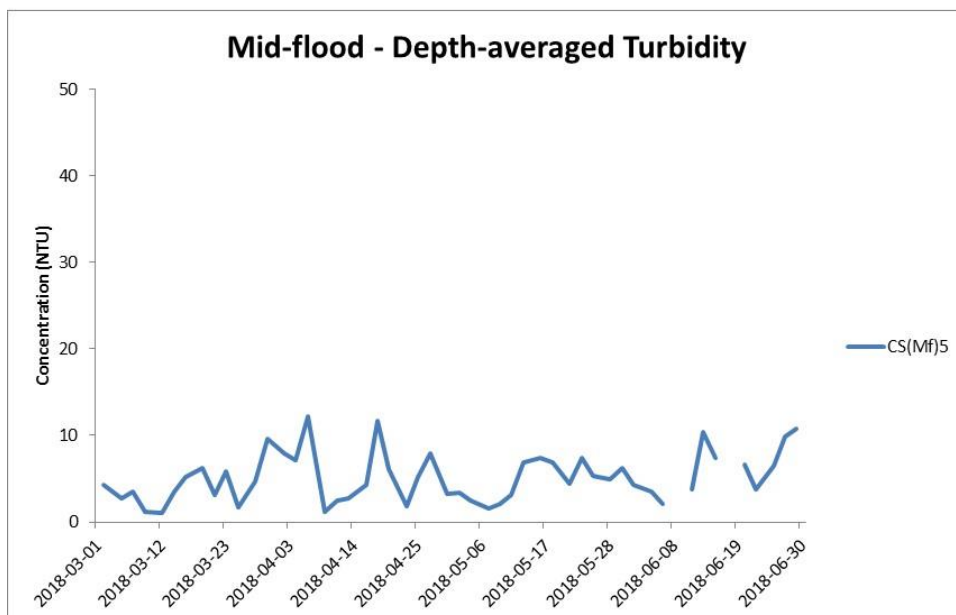
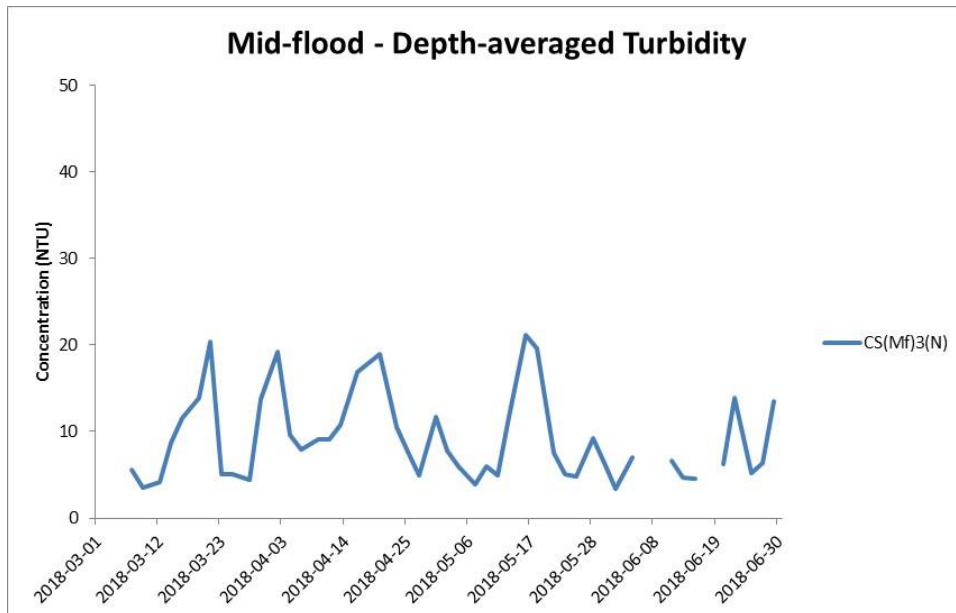


Figure J25 Impact Monitoring - Mean Level of depth-averaged Turbidity (NTU) during mid-flood tide between 1 March and 30 June 2018 at CS(Mf)3(N) and CS(MF)5.

(Weather condition varied between sunny to rainy within the reporting period.)
 WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

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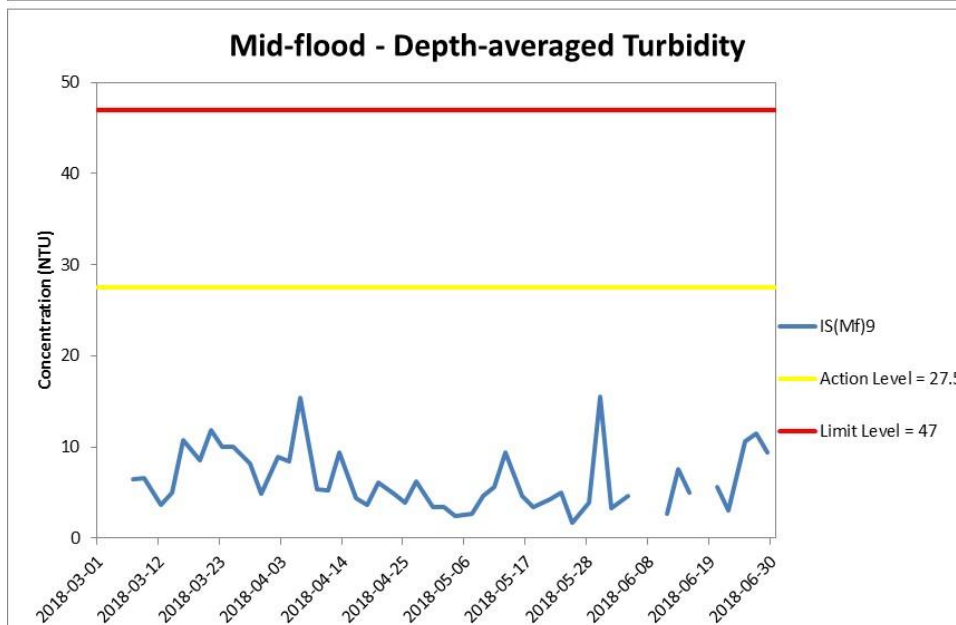
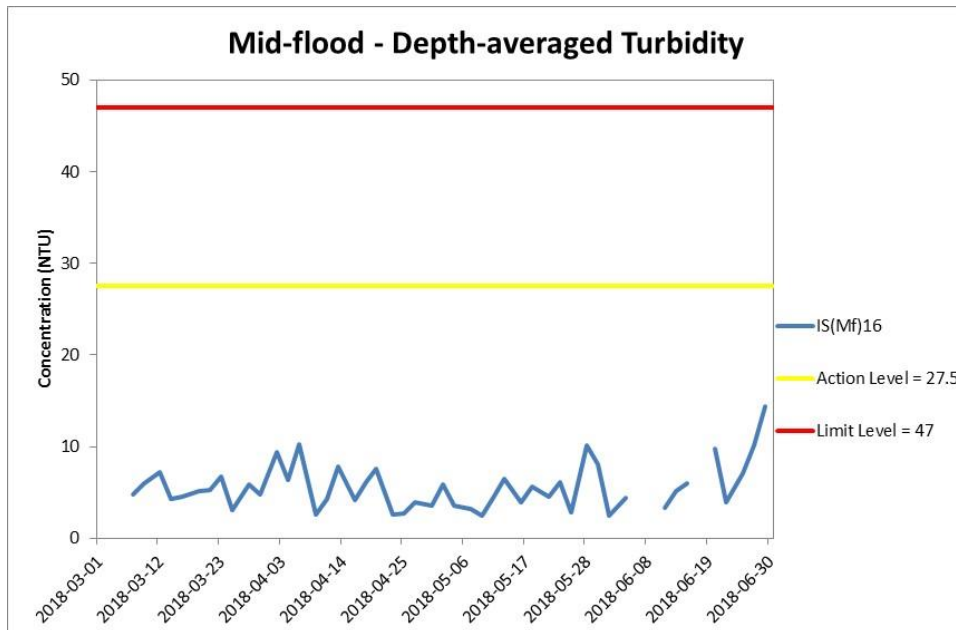


Figure J26 Impact Monitoring - Mean Level of depth-averaged Turbidity (NTU) during mid-flood tide between 1 March and 30 June 2018 at IS(Mf)16 and IS(Mf)9.

(Weather condition varied between sunny to rainy within the reporting period.)
 WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

**Environmental
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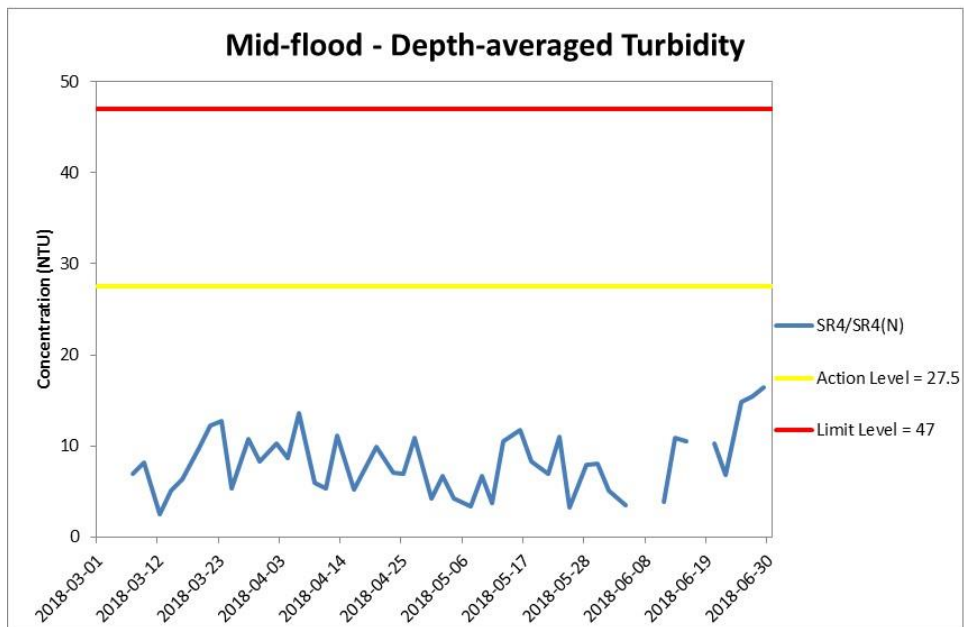
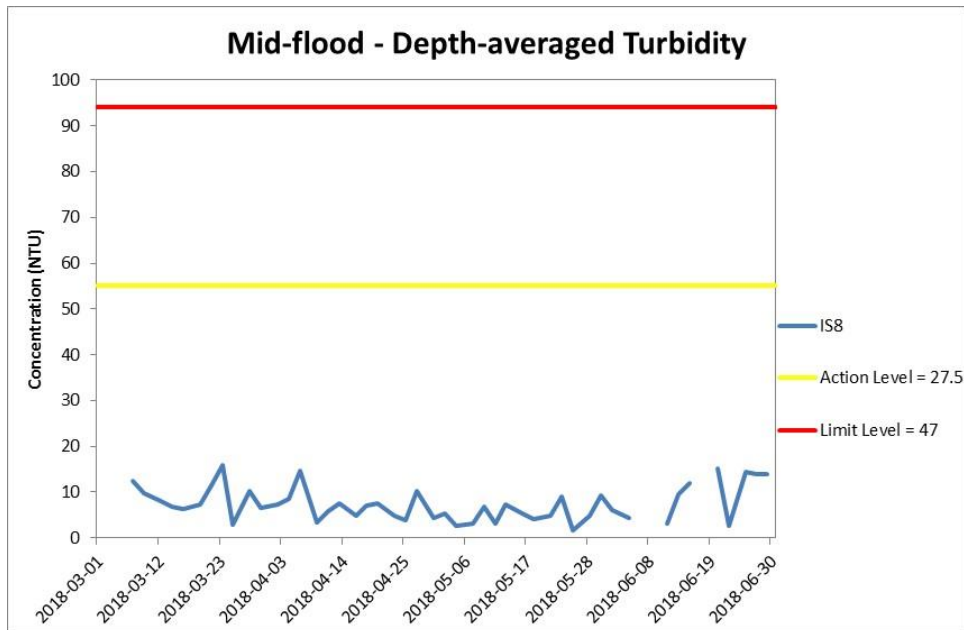


Figure J27 Impact Monitoring – Mean Level of depth-averaged Turbidity (NTU) during mid-flood tide between 1 March and 30 June 2018 at IS8 and SR4/SR4(N).

(Weather condition varied between sunny to rainy within the reporting period.)
 WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

**Environmental
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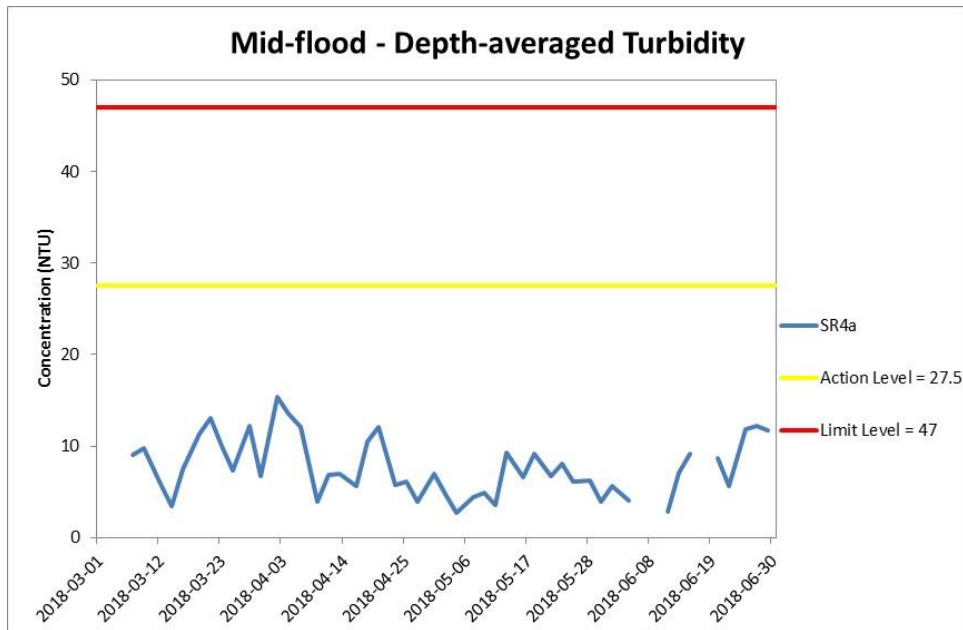


Figure J28 Impact Monitoring - Mean Level of depth-averaged Turbidity (NTU) during mid-flood tide between 1 March and 30 June 2018 at SR4a.

(Weather condition varied between sunny to rainy within the reporting period.)
 WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

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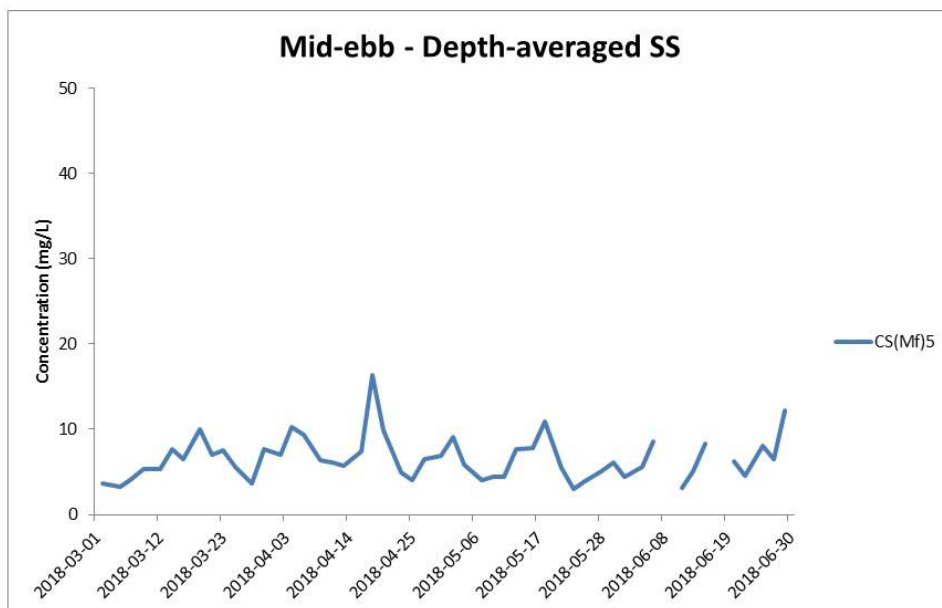
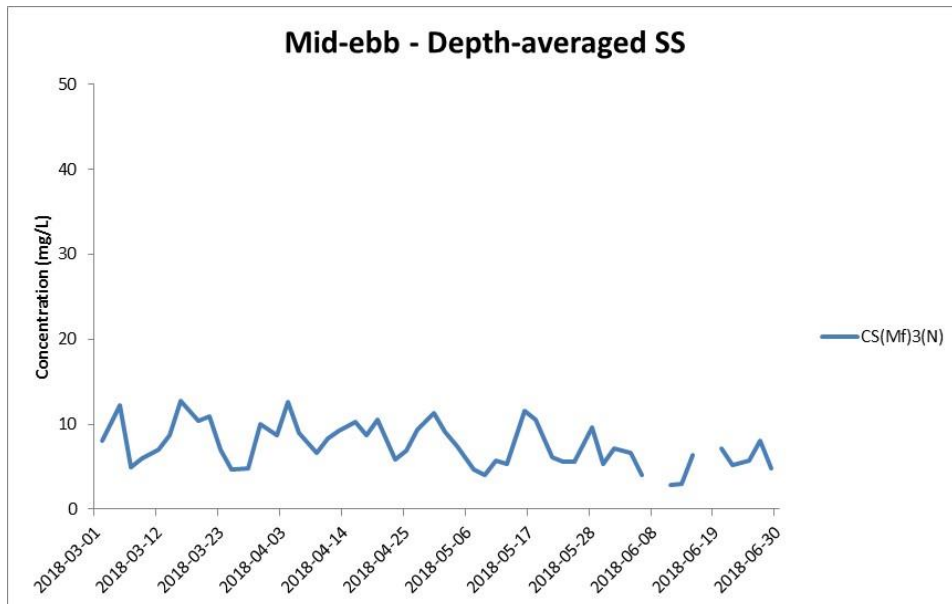


Figure J29 Impact Monitoring - Mean depth-averaged level of Suspended Solids (mg/L) during mid-ebb tide between 1 March and 30 June 2018 at CS(Mf)3(N) and CS(Mf)5.

(Weather condition varied between sunny to rainy within the reporting period.)
 WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

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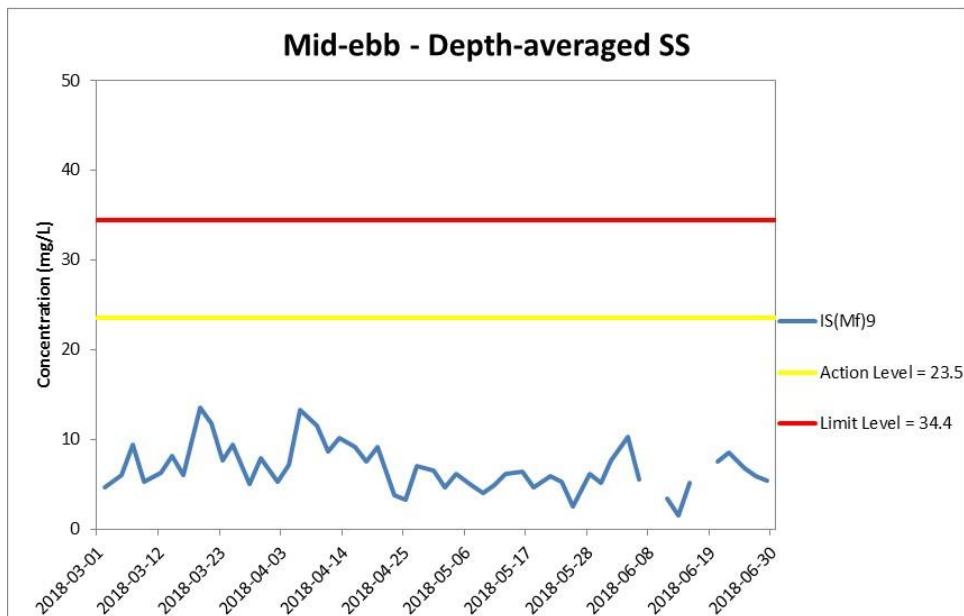
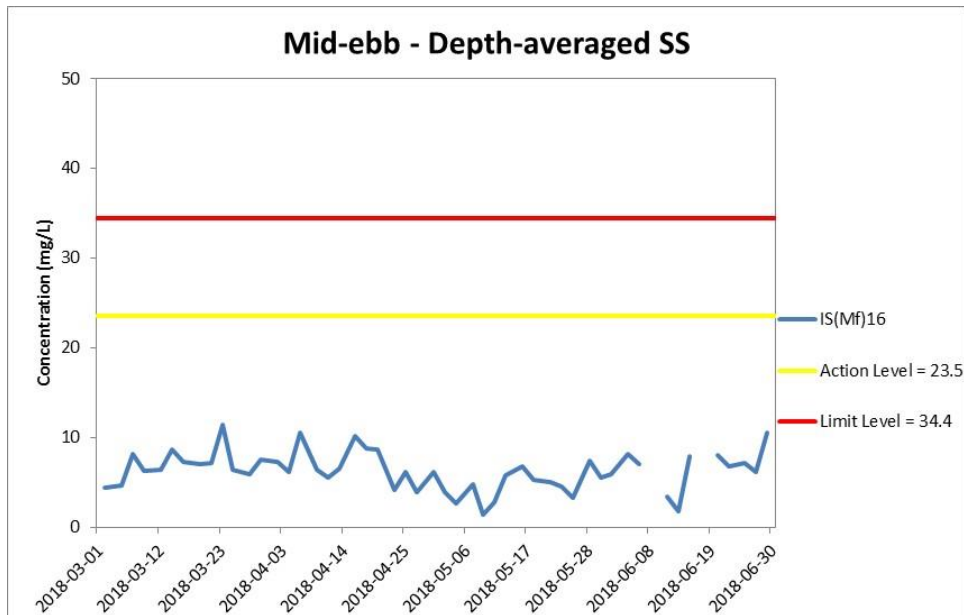


Figure J30 Impact Monitoring - Mean depth-averaged level of Suspended Solids (mg/L) during mid-ebb tide between 1 March and 30 June 2018 at IS(Mf)16 and IS(Mf)9.

(Weather condition varied between sunny to rainy within the reporting period.)
 WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

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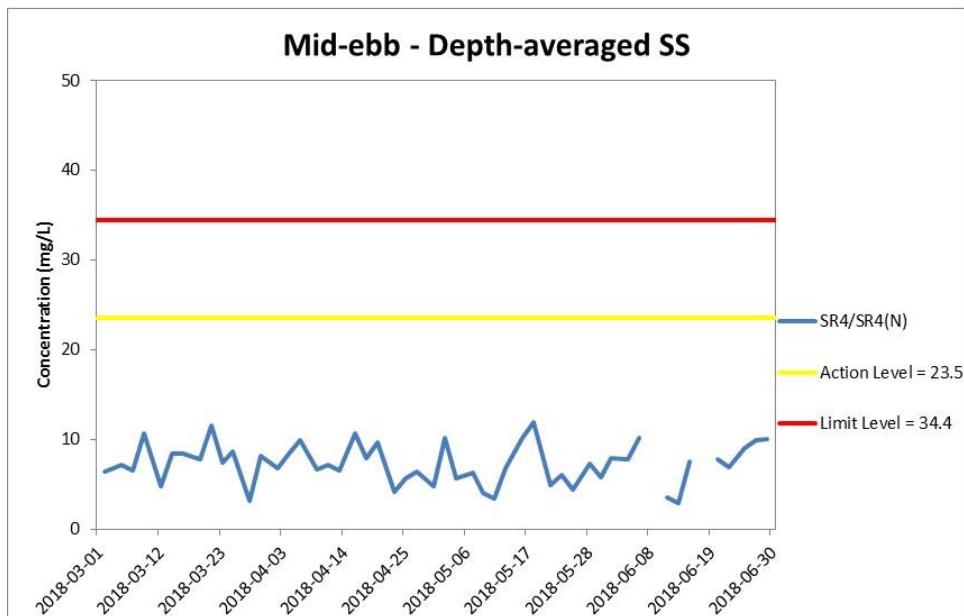
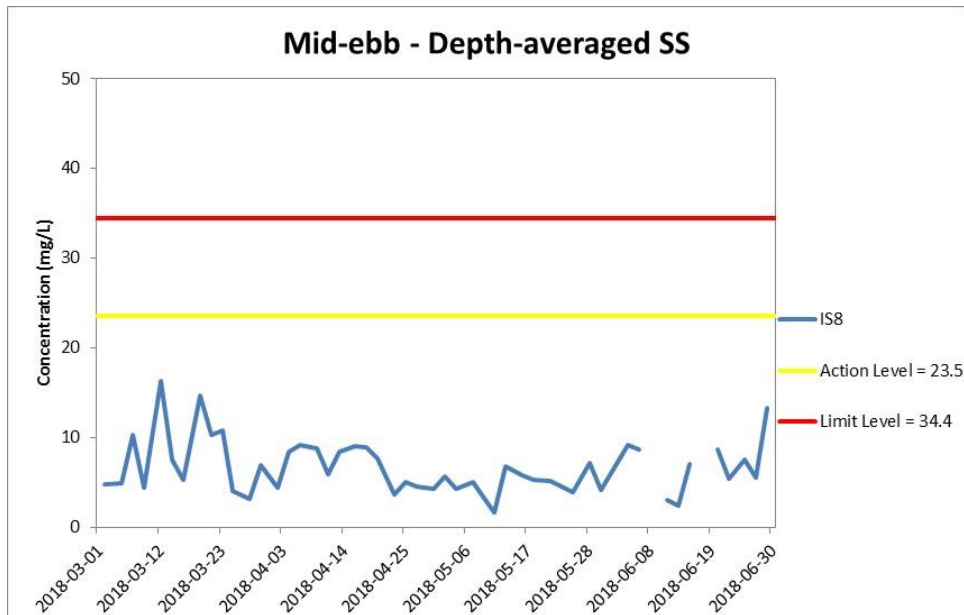


Figure J31 Impact Monitoring - Mean depth-averaged level of Suspended Solids (mg/L) during mid-ebb tide between 1 March and 30 June 2018 at IS8 and SR4/SR4(N).

(Weather condition varied between sunny to rainy within the reporting period.)
 WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

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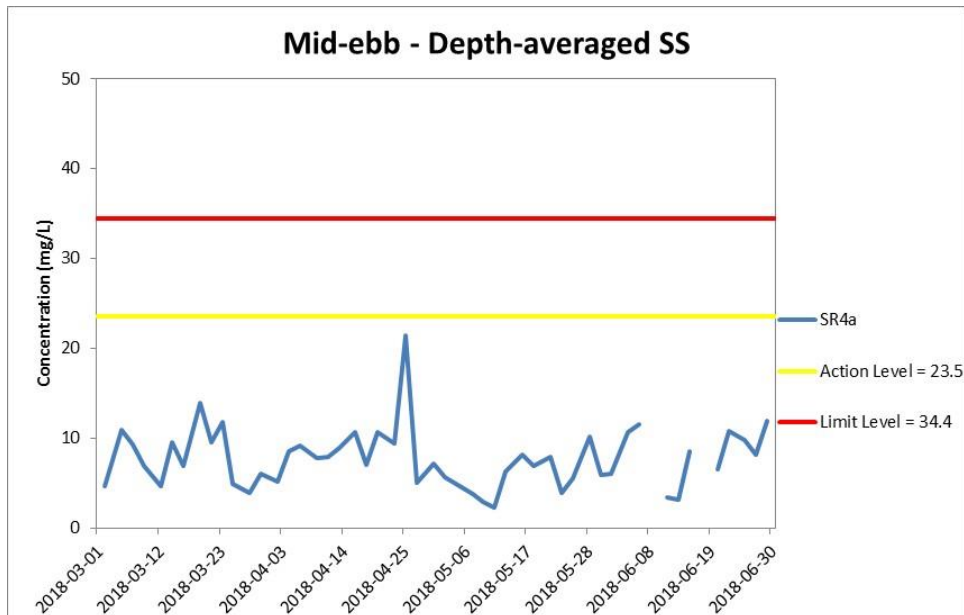


Figure J32 Impact Monitoring – Mean depth-averaged level of Suspended Solids (mg/L) during mid-ebb tide between 1 March and 30 June 2018 at SR4a.

(Weather condition varied between sunny to rainy within the reporting period.)
 WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

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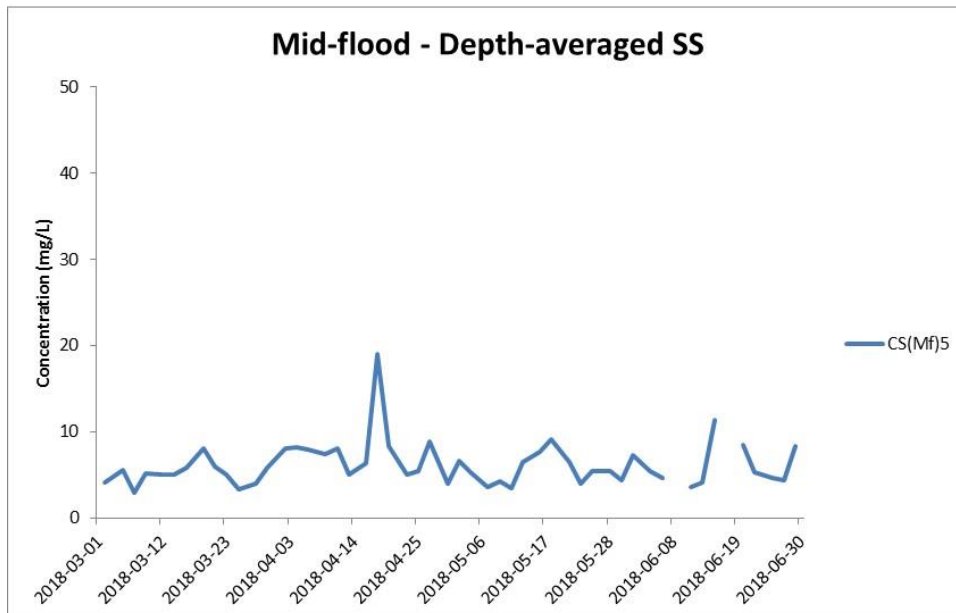
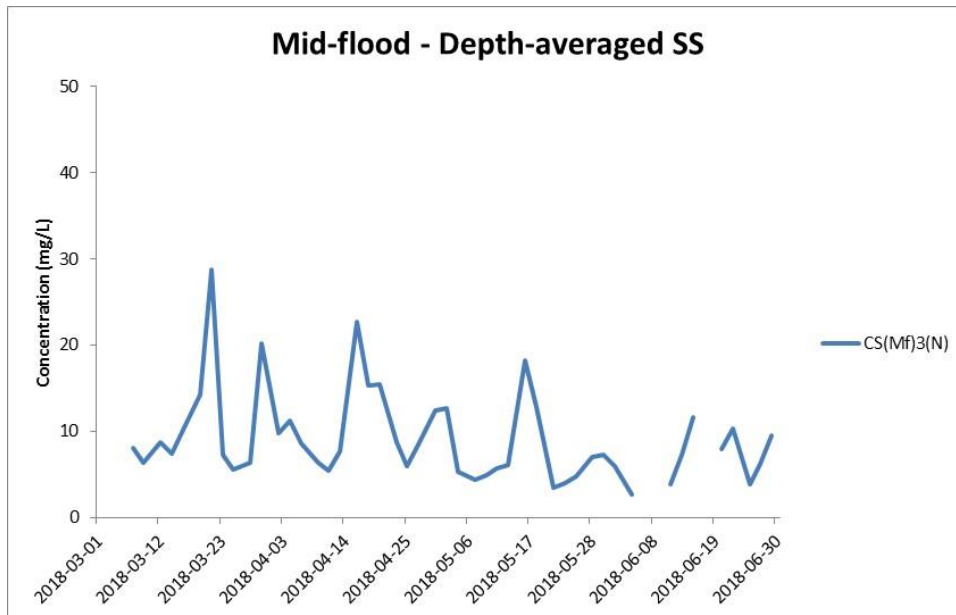


Figure J33 Impact Monitoring - Mean depth-averaged level of Suspended Solids (mg/L) during mid-flood tide between 1 March and 30 June 2018 at CS(Mf)3(N) and CS(Mf)5.

(Weather condition varied between sunny to rainy within the reporting period.) WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

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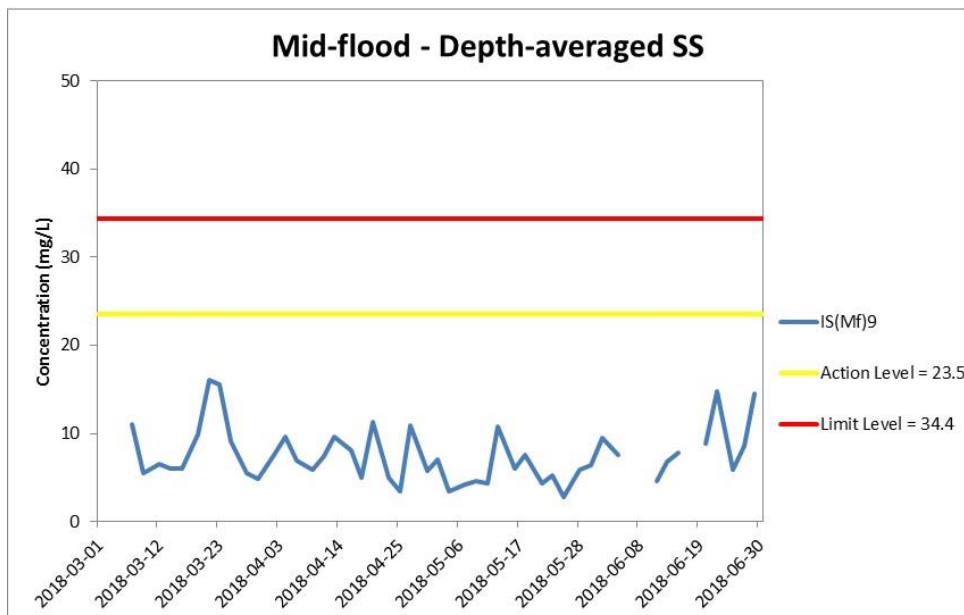
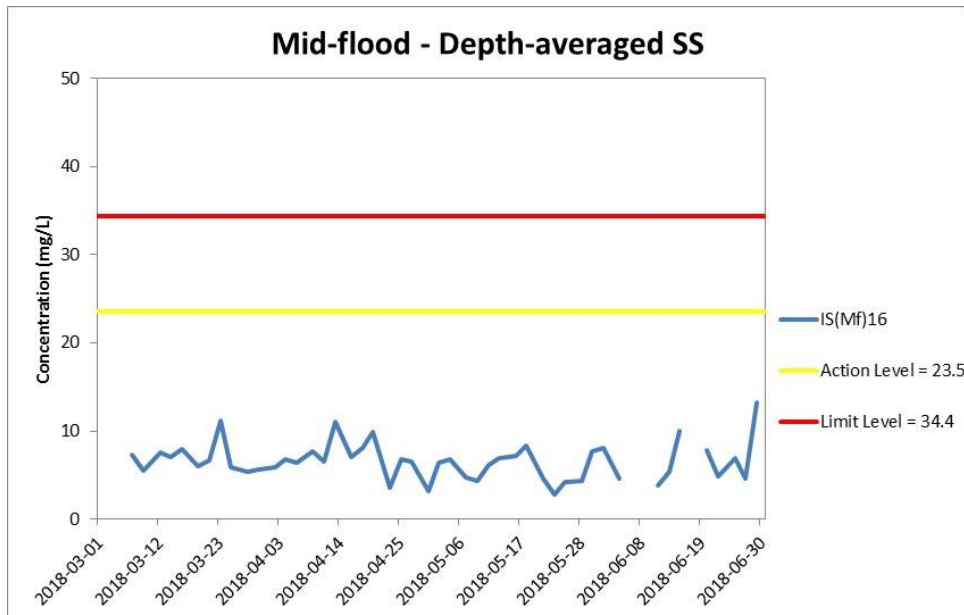


Figure J34 Impact Monitoring - Mean depth-averaged level of Suspended Solids (mg/L) during mid-flood tide between 1 March and 30 June 2018 at IS(Mf)16 and IS(Mf)9.

(Weather condition varied between sunny to rainy within the reporting period.)
 WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

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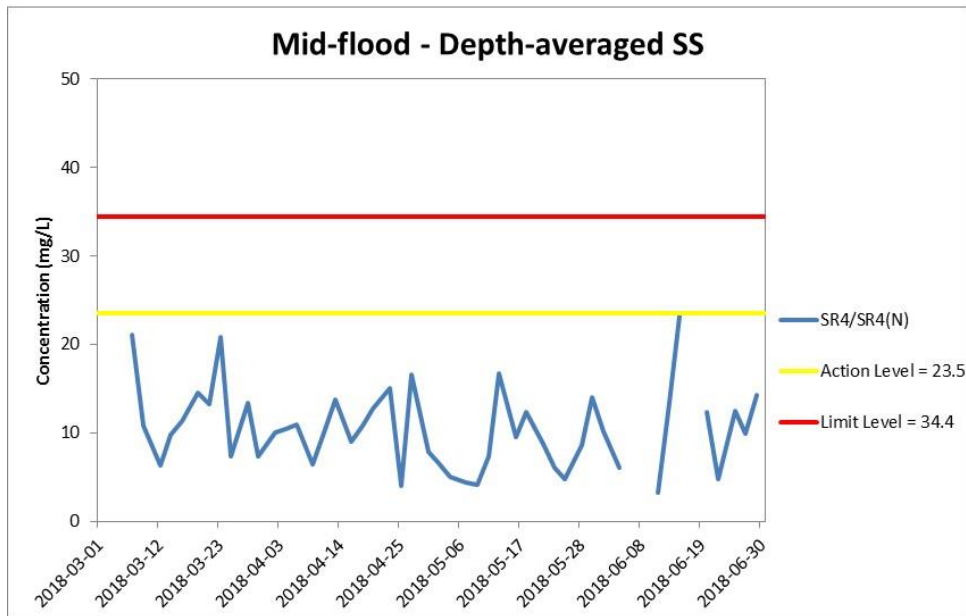
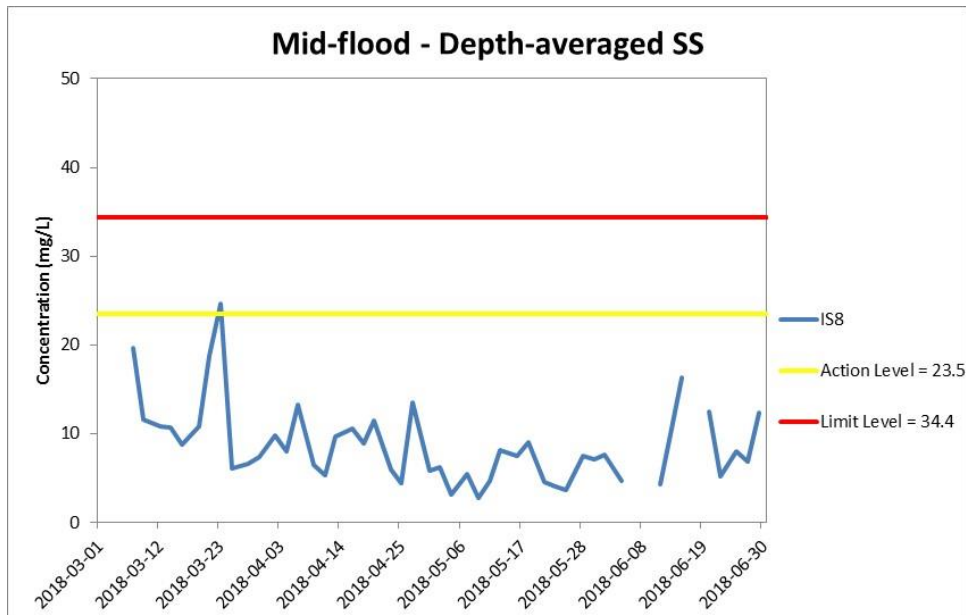


Figure J35 Impact Monitoring - Mean depth-averaged level of Suspended Solids (mg/L) during mid-flood tide between 1 March and 30 June 2018 at IS8 and SR4/SR4(N).

(Weather condition varied between sunny to rainy within the reporting period.)
 WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

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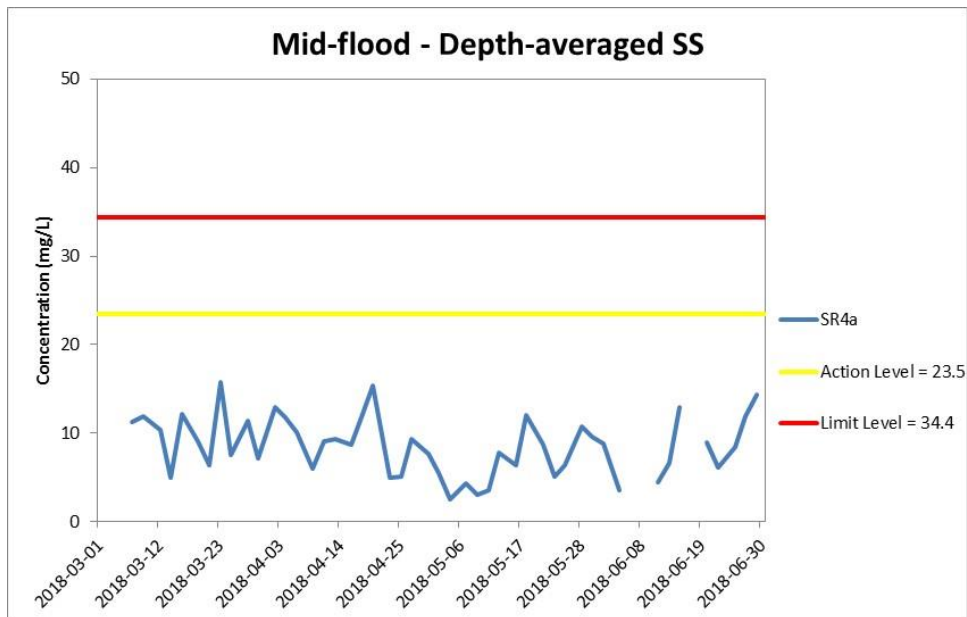


Figure J36 Impact Monitoring – Mean depth-averaged level of Suspended Solids (mg/L) during mid-flood tide between 1 March and 30 June 2018 at SR4a.

(Weather condition varied between sunny to rainy within the reporting period.) WQM during mid-flood at all water quality monitoring stations, except CS(Mf)5, on 6 June 2018 and all monitoring stations during both mid-ebb and mid-flood tide on 8 June 2018 were canceled due to adverse weather. WQM on 18 June 2018 was canceled due to suspension of works during holiday. In-situ monitoring is taken according to the requirement specified in the EM&A Manual, i.e. 3 water depth namely 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.

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Appendix K

Impact Dolphin Monitoring Survey Results

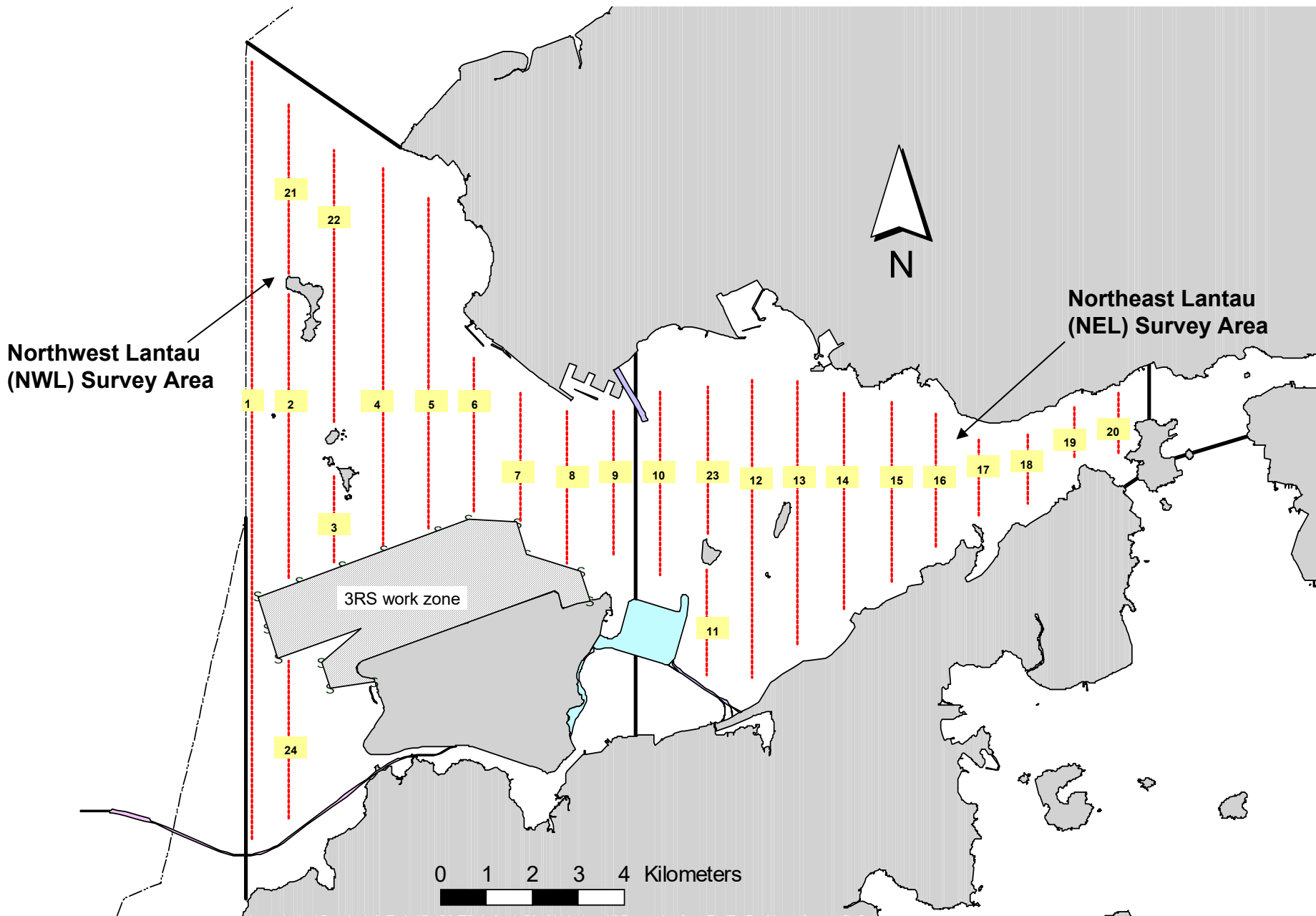


Figure 1. Transect Line Layout in Northwest and Northeast Lantau Survey Areas

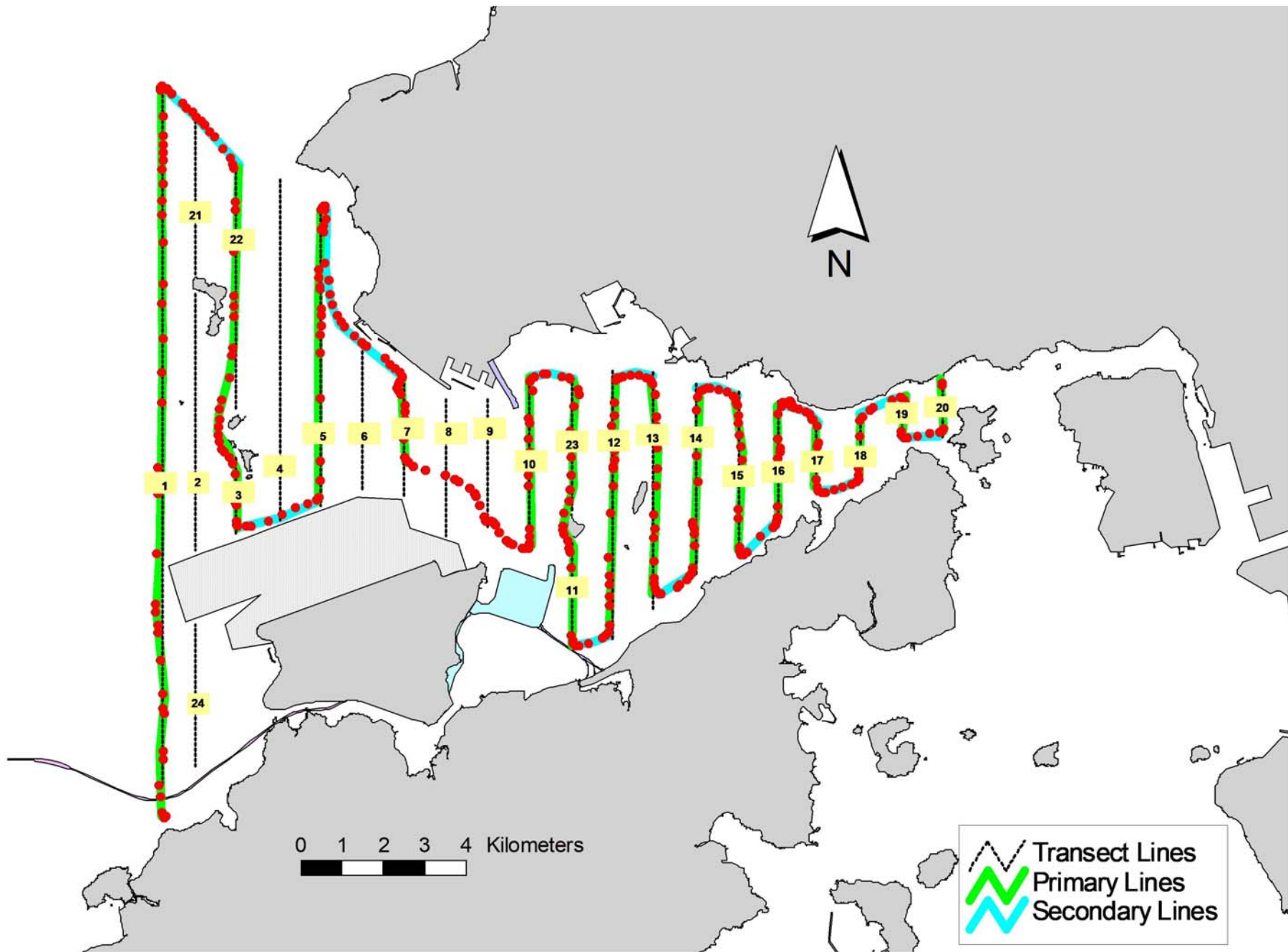


Figure 2. Survey Route on June 5th, 2018 (from HKLR03 project)

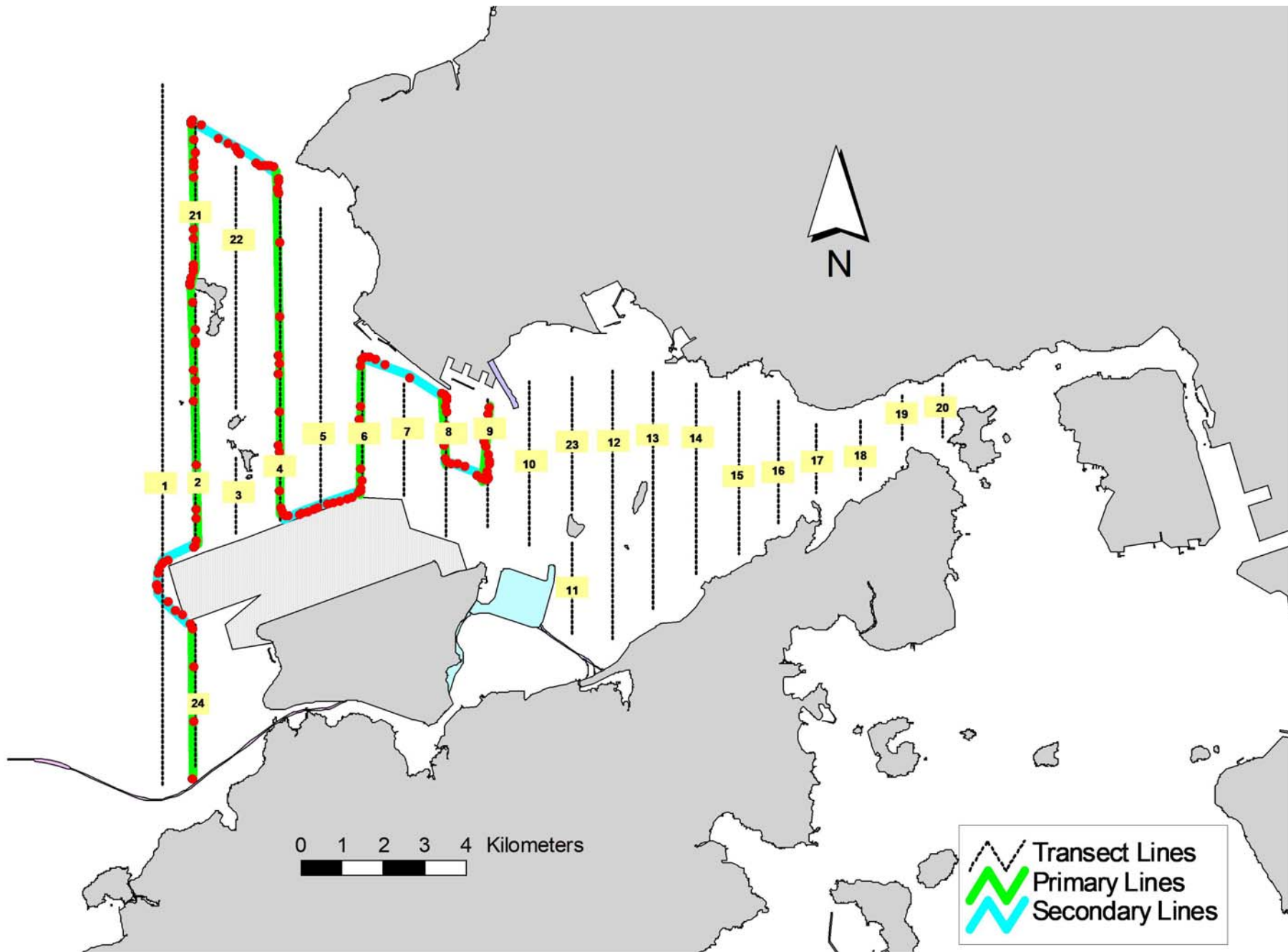


Figure 3. Survey Route on June 13th, 2018 (from HKLR03 project)

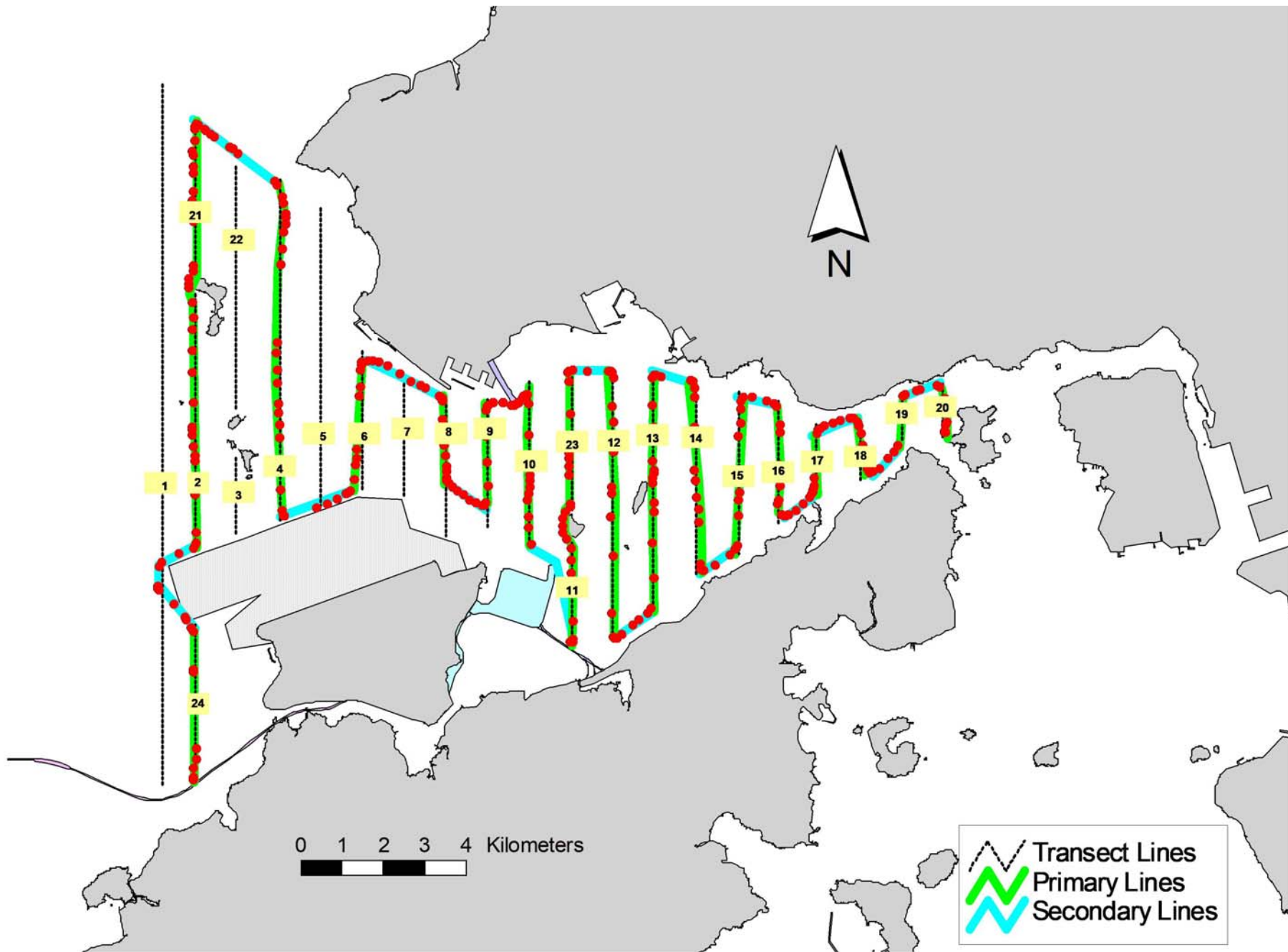


Figure 4. Survey Route on June 19th, 2018 (from HKLR03 project)

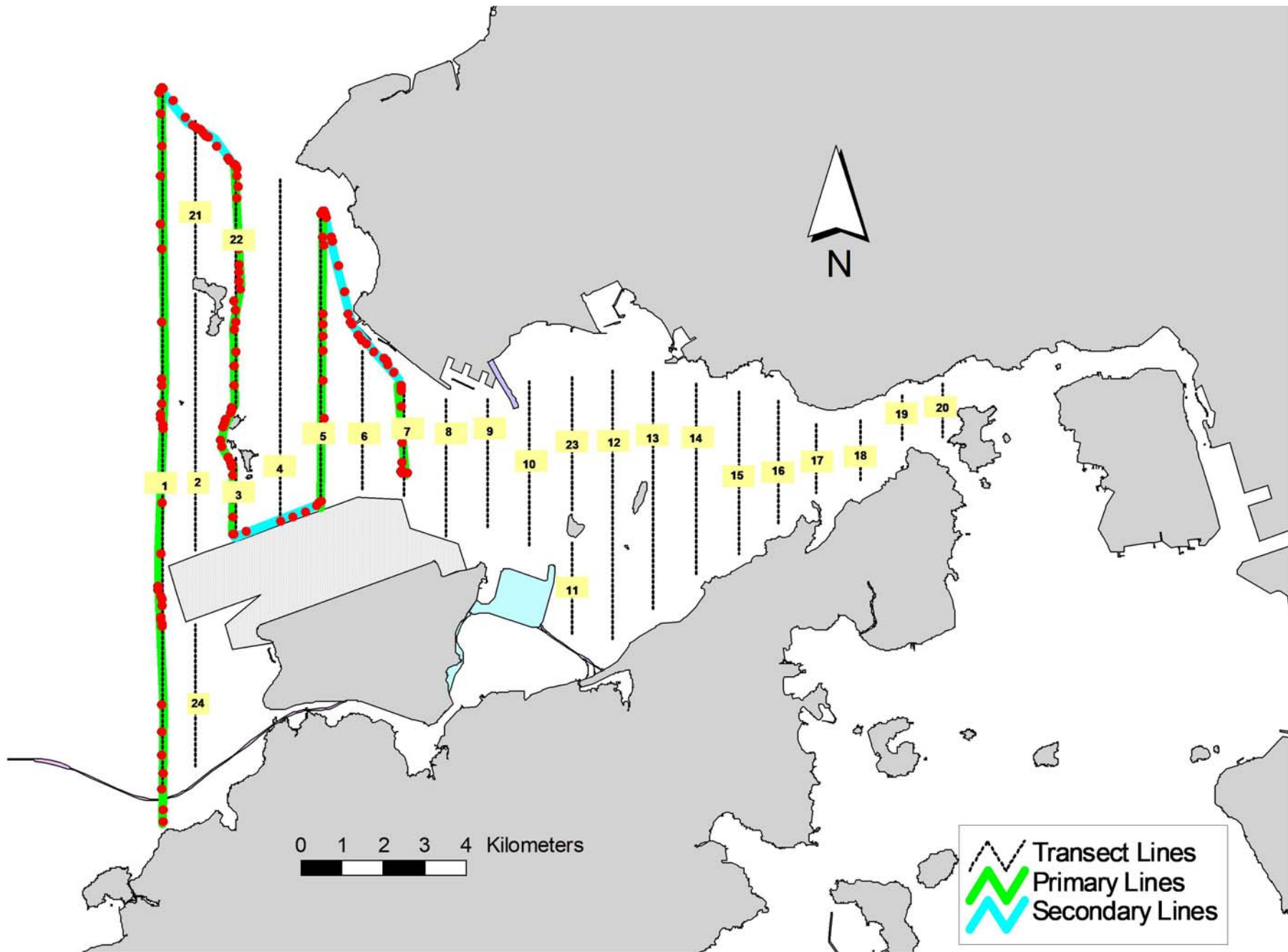


Figure 5. Survey Route on June 27th, 2018 (from HKLR03 project)

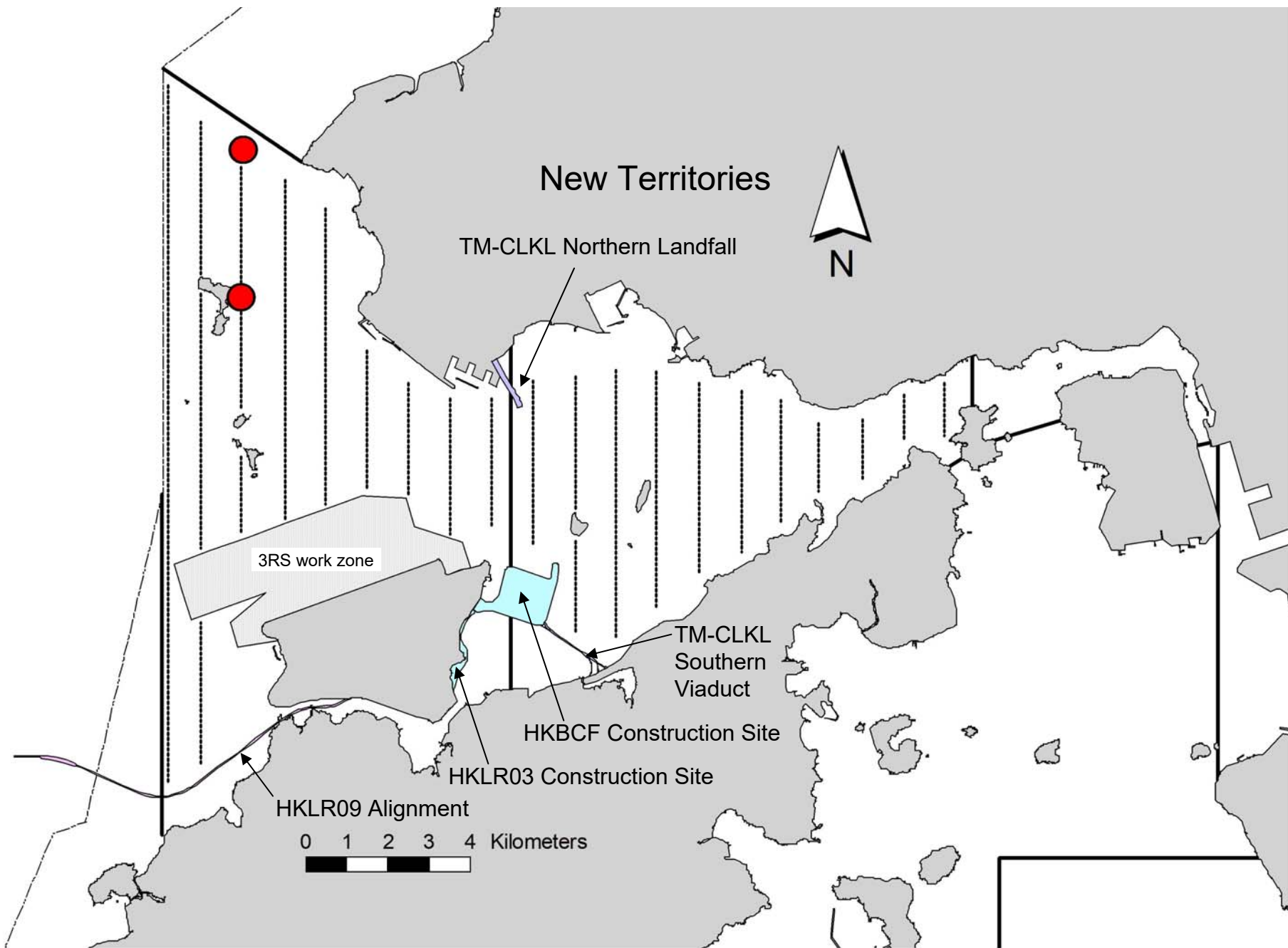


Figure 6. Distribution of Chinese White Dolphin Sightings during June 2018 HKLR03 Monitoring Surveys

Appendix I. HKLR03 Survey Effort Database (June 2018)

(Abbreviations: BEAU = Beaufort Sea State; P = Primary Line Effort; S = Secondary Line Effort)

DATE	AREA	BEAU	EFFORT	SEASON	VESSEL	TYPE	P/S
5-Jun-18	NW LANTAU	2	3.73	SUMMER	STANDARD36826	HKLR	P
5-Jun-18	NW LANTAU	3	28.14	SUMMER	STANDARD36826	HKLR	P
5-Jun-18	NW LANTAU	2	3.46	SUMMER	STANDARD36826	HKLR	S
5-Jun-18	NW LANTAU	3	6.03	SUMMER	STANDARD36826	HKLR	S
5-Jun-18	NE LANTAU	2	10.32	SUMMER	STANDARD36826	HKLR	P
5-Jun-18	NE LANTAU	3	25.47	SUMMER	STANDARD36826	HKLR	P
5-Jun-18	NE LANTAU	2	6.68	SUMMER	STANDARD36826	HKLR	S
5-Jun-18	NE LANTAU	3	3.77	SUMMER	STANDARD36826	HKLR	S
13-Jun-18	NW LANTAU	2	23.63	SUMMER	STANDARD36826	HKLR	P
13-Jun-18	NW LANTAU	3	3.34	SUMMER	STANDARD36826	HKLR	P
13-Jun-18	NW LANTAU	2	8.49	SUMMER	STANDARD36826	HKLR	S
13-Jun-18	NW LANTAU	3	2.64	SUMMER	STANDARD36826	HKLR	S
19-Jun-18	NW LANTAU	3	23.85	SUMMER	STANDARD36826	HKLR	P
19-Jun-18	NW LANTAU	4	3.40	SUMMER	STANDARD36826	HKLR	P
19-Jun-18	NW LANTAU	3	7.85	SUMMER	STANDARD36826	HKLR	S
19-Jun-18	NW LANTAU	4	3.20	SUMMER	STANDARD36826	HKLR	S
19-Jun-18	NE LANTAU	2	24.33	SUMMER	STANDARD36826	HKLR	P
19-Jun-18	NE LANTAU	3	11.62	SUMMER	STANDARD36826	HKLR	P
19-Jun-18	NE LANTAU	2	9.72	SUMMER	STANDARD36826	HKLR	S
19-Jun-18	NE LANTAU	3	1.87	SUMMER	STANDARD36826	HKLR	S
27-Jun-18	NW LANTAU	2	16.07	SUMMER	STANDARD36826	HKLR	P
27-Jun-18	NW LANTAU	3	12.56	SUMMER	STANDARD36826	HKLR	P
27-Jun-18	NW LANTAU	4	4.20	SUMMER	STANDARD36826	HKLR	P
27-Jun-18	NW LANTAU	2	10.57	SUMMER	STANDARD36826	HKLR	S

Appendix II. HKLR03 Chinese White Dolphin Sighting Database (June 2018)

(Abbreviations: STG# = Sighting Number; HRD SZ = Dolphin Herd Size; BEAU = Beaufort Sea State; PSD = Perpendicular Distance; BOAT ASSOC. = Fishing Boat Association; P/S: Sighting Made on Primary/Secondary Line)

DATE	STG #	TIME	HRD SZ	AREA	BEAU	PSD	EFFORT	TYPE	NORTHING	EASTING	SEASON	BOAT ASSOC.	P/S
13-Jun-18	1	1123	5	NW LANTAU	2	83	ON	HKLR	829917	806493	SUMMER	NONE	S
27-Jun-18	1	1144	2	NW LANTAU	2	73	ON	HKLR	826551	806435	SUMMER	NONE	P

Appendix III. Individual dolphins identified during HKLR03 monitoring surveys in June 2018

ID#	DATE	STG#	AREA
CH34	13/06/18	1	NW LANTAU
	27/06/18	1	NW LANTAU
NL12	27/06/18	1	NW LANTAU
NL80	13/06/18	1	NW LANTAU
NL202	13/06/18	1	NW LANTAU
NL301	13/06/18	1	NW LANTAU

CH34_20180613_1

NL80_20180613_1

NL202_20180613_1

NL301_20180613_1

CH34_20180627_1

NL12_20180627_1

Appendix IV. Photographs of Identified Individual Dolphins in June 2018 (HKLR03)

Appendix L

Event Action Plan

Appendix L1 Event/ Action Plan for Air Quality

EVENT	ET ⁽¹⁾	ACTION		
		IEC ⁽¹⁾	SOR ⁽¹⁾	Contractor
Action Level				
1. Exceedance for one sample	<ol style="list-style-type: none"> 1. Identify the source. 2. Inform the IEC and the SOR. 3. Repeat measurement to confirm finding. 4. Increase monitoring frequency to daily. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by the ET. 2. Check Contractor's working method. 	<ol style="list-style-type: none"> 1. Notify Contractor. 	<ol style="list-style-type: none"> 1. Rectify any unacceptable practice 2. Amend working methods if appropriate
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> 1. Identify the source. 2. Inform the IEC and the SOR. 3. Repeat measurements to confirm findings. 4. Increase monitoring frequency to daily. 5. Discuss with the IEC and the Contractor on remedial actions required. 6. If exceedance continues, arrange meeting with the IEC and the SOR. 7. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by the ET. 2. Check the Contractor's working method. 3. Discuss with the ET and the Contractor on possible remedial measures. 4. Advise the SOR on the effectiveness of the proposed remedial measures. 5. Supervisor implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. Ensure remedial measures properly implemented. 	<ol style="list-style-type: none"> 1. Submit proposals for remedial actions to IEC within 3 working days of notification 2. Implement the agreed proposals 3. Amend proposal if appropriate

EVENT	ET ⁽¹⁾	ACTION		
		IEC ⁽¹⁾	SOR ⁽¹⁾	Contractor
Limit Level				
1. Exceedance for one sample	<ol style="list-style-type: none"> 1. Identify the source. 2. Inform the SOR and the DEP. 3. Repeat measurement to confirm finding. 4. Increase monitoring frequency to daily. 5. Assess effectiveness of Contractor's remedial actions and keep the IEC, the DEP and the SOR informed of the results. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by the ET. 2. Check Contractor's working method. 3. Discuss with the ET and the Contractor on possible remedial measures. 4. Advise the SOR on the effectiveness of the proposed remedial measures. 5. Supervisor implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. Ensure remedial measures are properly implemented. 	<ol style="list-style-type: none"> 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. Amend proposal if appropriate
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> 1. Notify the IEC, the SOR, the DEP and the Contractor. 2. Identify the source. 3. Repeat measurements to confirm findings. 4. Increase monitoring frequency to daily. 5. Carry out analysis of the Contractor's working procedures to determine possible mitigation to be implemented. 6. Arrange meeting with the IEC and the SOR to discuss the remedial actions to be taken. 7. Assess effectiveness of the Contractor's remedial actions 	<ol style="list-style-type: none"> 1. Discuss amongst the SOR, ET and the Contractor on the potential remedial actions. 2. Review the Contractor's remedial actions whenever necessary to assure their effectiveness and advise the SOR accordingly. 3. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented. 4. Ensure remedial measures are properly implemented. 5. If exceedance continues, consider what activity of the work is responsible and instruct the Contractor to stop that activity of work until the exceedance is abated. 	<ol style="list-style-type: none"> 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 activity of works as determined by the SOR until the exceedance is abated.

and keep the IEC, the DEP and
the SOR informed of the results.

8. If the exceedance stops, cease
additional monitoring.

Appendix L2 Event/ Action Plan for Construction Noise

ACTION					
EVENT	ET	IEC	SOR	Contractor	
Action Level	<ol style="list-style-type: none"> 1. Notify the IEC and the Contractor. 2. Carry out investigation. 3. Report the results of investigation to the IEC and the Contractor. 4. Discuss with the Contractor and formulate remedial measures. 5. Increase monitoring frequency to check mitigation effectiveness. 	<ol style="list-style-type: none"> 1. Review the analysed results submitted by the ET. 2. Review the proposed remedial measures by the Contractor and advise the SOR accordingly. 3. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented. 	<ol style="list-style-type: none"> 1. Submit noise mitigation proposals to IEC 2. Implement noise mitigation proposals 	
Limit Level	<ol style="list-style-type: none"> 1. Notify the IEC, the SOR, the DEP and the Contractor. 2. Identify the source. 3. Repeat measurement to confirm findings. 4. Increase monitoring frequency. 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented. 6. Inform the IEC, the SOR and the DEP the causes & actions taken for the exceedances. 7. Assess effectiveness of the Contractor's remedial actions and keep the IEC, the DEP and the SOR informed of the results. 8. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Discuss amongst the SOR, the ET and the Contractor on the potential remedial actions. 2. Review the Contractor's remedial actions whenever necessary to assure their effectiveness and advise the SOR accordingly. 3. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented. 5. If exceedance continues, consider what activity of the work is responsible and instruct the Contractor to stop that activity of work until the exceedance is abated. 	<ol style="list-style-type: none"> 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 activity of works as determined by the SOR until the exceedance is abated. 	

Appendix L3 *Event/ Action Plan for Water Quality*

Event	ET Leader	IEC	SOR	Contractor
Action level being exceeded by one sampling day	<ol style="list-style-type: none"> Repeat in situ measurement on next day of exceedance to confirm findings; Identify source(s) of impact; Inform IEC, contractor and SOR; Check monitoring data, all plant, equipment and Contractor's working methods. 	<ol style="list-style-type: none"> Check monitoring data submitted by ET and Contractor's working methods. 	<ol style="list-style-type: none"> Confirm receipt of notification of non-compliance in writing; Notify Contractor. 	<ol style="list-style-type: none"> Inform the SOR and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Amend working methods if appropriate.
Action level being exceeded by two or more consecutive sampling days	<ol style="list-style-type: none"> Repeat measurement on next day of exceedance to confirm findings; Identify source(s) of impact; Inform IEC, contractor, SOR and EPD; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC, SOR and Contractor; Ensure mitigation measures are implemented; Increase the monitoring frequency to daily until no exceedance of Action level; 	<ol style="list-style-type: none"> Check monitoring data submitted by ET and Contractor's working method; Discuss with ET and Contractor on possible remedial actions; Review the proposed mitigation measures submitted by Contractor and advise the SOR accordingly; Supervise the implementation of mitigation measures. 	<ol style="list-style-type: none"> Discuss with IEC on the proposed mitigation measures; Ensure mitigation measures are properly implemented; Assess the effectiveness of the implemented mitigation measures. 	<ol style="list-style-type: none"> Inform the Supervising Officer and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment and consider changes of working methods; Submit proposal of additional mitigation measures to SOR within 3 working days of notification and discuss with ET, IEC and SOR; Implement the agreed mitigation measures.
Limit level being exceeded by one sampling day	<ol style="list-style-type: none"> Repeat measurement on next day of exceedance to confirm findings; 	<ol style="list-style-type: none"> Check monitoring data submitted by ET and Contractor's working method; 	<ol style="list-style-type: none"> Confirm receipt of notification of failure in writing; 	<ol style="list-style-type: none"> Inform the SOR and confirm notification of the non-compliance in writing;

Event	ET Leader	IEC	SOR	Contractor
	2. Identify source(s) of impact;		2. Discuss with IEC, ET and Contractor on the proposed mitigation measures;	2. Rectify unacceptable practice;
	3. Inform IEC, contractor, SOR and EPD;	2. Discuss with ET and Contractor on possible remedial actions;		3. Check all plant and equipment and consider changes of working methods;
	4. Check monitoring data, all plant, equipment and Contractor's working methods;	3. Review the proposed mitigation measures submitted by Contractor and advise the SOR accordingly.	3. Request Contractor to review the working methods.	4. Submit proposal of mitigation measures to SOR within 3 working days of notification and discuss with ET, IEC and SOR.
	5. Discuss mitigation measures with IEC, SOR and Contractor;			
Limit level being exceeded by two or more consecutive sampling days	1. Repeat measurement on next day of exceedance to confirm findings;	1. Check monitoring data submitted by ET and Contractor's working method;	1. Discuss with IEC, ET and Contractor on the proposed mitigation measures;	1. Take immediate action to avoid further exceedance;
	2. Identify source(s) of impact;	2. Discuss with ET and Contractor on possible remedial actions;	2. Request Contractor to critically review the working methods;	2. Submit proposal of mitigation measures to SOR within 3 working days of notification and discuss with ET, IEC and SOR;
	3. Inform IEC, contractor, SOR and EPD;	3. Review the Contractor's mitigation measures whenever necessary to assure their effectiveness and advise the SOR accordingly;	3. Make agreement on the mitigation measures to be implemented;	3. Implement the agreed mitigation measures;
	4. Check monitoring data, all plant, equipment and Contractor's working methods;	4. Supervise the implementation of mitigation measures.	4.	4. Resubmit proposals of mitigation measures if problem still not under control;
	5. Discuss mitigation measures with IEC, SOR and Contractor;		5. Ensure mitigation measures are properly implemented;	
	6. Ensure mitigation measures are implemented;		6.	
	7. Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days;		7. Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the construction activities until no exceedance of Limit level.	5. As directed by the Supervising Officer, to slow down or to stop all or part of the construction activities until no exceedance of Limit level.

Appendix L4 Implementation of Event-Action Plan for Dolphin Monitoring

Event	ET Leader	IEC	SOR	Contractor
Action Level	<ol style="list-style-type: none"> 1. Repeat statistical data analysis to confirm findings; 2. Review all available and relevant data, including raw data and statistical analysis results of other parameters covered in the EM&A, to ascertain if differences are as a result of natural variation or previously observed seasonal differences; 3. Identify source(s) of impact; 4. Inform the IEC, SOR and Contractor; 5. Check monitoring data. 6. Review to ensure all the dolphin protective measures are fully and properly implemented and advise on additional measures if necessary. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET and Contractor; 2. Discuss monitoring results and findings with the ET and the Contractor. 	<ol style="list-style-type: none"> 1. Discuss monitoring with the IEC and any other measures proposed by the ET; 2. If SOR is satisfied with the proposal of any other measures, SOR to signify the agreement in writing on the measures to be implemented. 	<ol style="list-style-type: none"> 1. Inform the SOR and confirm notification of the non-compliance in writing; 2. Discuss with the ET and the IEC and propose measures to the IEC and the SOR; 3. Implement the agreed measures.

Event	ET Leader	IEC	SOR	Contractor
Limit Level	<ol style="list-style-type: none"> 1. Repeat statistical data analysis to confirm findings; 2. Review all available and relevant data, including raw data and statistical analysis results of other parameters covered in the EM&A, to ascertain if differences are as a result of natural variation or previously observed seasonal differences; 3. Identify source(s) of impact; 4. Inform the IEC, ER/SOR and Contractor of findings; 5. Check monitoring data; 6. Repeat review to ensure all the dolphin protective measures are fully and properly implemented and advise on additional measures if necessary; 7. If ET proves that the source of impact is caused by any of the construction activity by the works contract, ET to arrange a meeting to discuss with IEC, ER/SOR and Contractor the necessity of additional dolphin monitoring and/or any other potential mitigation measures (e.g., consider to modify the perimeter silt curtain or consider to control/temporarily stop relevant construction activity etc.) and submit to IEC a proposal of additional dolphin monitoring and/or mitigation measures where necessary. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET and Contractor; 2. Discuss monitoring results and findings with the ET and the Contractor; 3. Attend the meeting to discuss with ET, ER/SOR and Contractor the necessity of additional dolphin monitoring and any other potential mitigation measures; 4. Review proposals for additional monitoring and any other mitigation measures submitted by ET and Contractor and advise ER/SOR of the results and findings accordingly; 5. Supervise / Audit the implementation of additional monitoring and/or any other mitigation measures and advise ER/SOR the results and findings accordingly. 	<ol style="list-style-type: none"> 1. Attend the meeting to discuss with ET, IEC and Contractor the necessity of additional dolphin monitoring and any other potential mitigation measures; 2. If ER/SOR is satisfied with the proposals for additional dolphin monitoring and/or any other mitigation measures submitted by ET and Contractor and verified by IEC, ER/SOR to signify the agreement in writing on such proposals and any other mitigation measures; 3. Supervise the implementation of additional monitoring and/or any other mitigation measures. 	<ol style="list-style-type: none"> 1. Inform the ER/SOR and confirm notification of the non-compliance in writing; 2. Attend the meeting to discuss with ET, IEC and ER/SOR the necessity of additional dolphin monitoring and any other potential mitigation measures; 3. Jointly submit with ET to IEC a proposal of additional dolphin monitoring and/or any other mitigation measures when necessary; 4. Implement the agreed additional dolphin monitoring and/or any other mitigation measures.

Appendix L5 Event and Action Plan on Dolphin Acoustic Behaviour

EVENT	ACTION			
	ET Leader	IEC	SO	Contractor
<p><u>Action Level</u></p> <p>With the numerical values presented in <i>Table 5.7 of Baseline Monitoring Report</i>, when any of the response variable for dolphin acoustic behaviour recorded in the construction phase monitoring is 20% lower or higher than that recorded in the baseline monitoring (see <i>Table 5.8 of Baseline Monitoring Report</i>), or when there is a difference of 20% in dolphin acoustic signal detection at nighttime period at Site C1 only, the action level should be triggered</p>	<ol style="list-style-type: none"> 1. Repeat statistical data analysis to confirm findings; 2. Review all available and relevant data to ascertain if differences are as a result of natural variation or seasonal differences; 3. Identify source(s) of impact; 4. Inform the IEC, SO and Contractor; 5. Check monitoring data; 6. Carry out audit to ensure all dolphin protective measures are implemented fully and additional measures be proposed if necessary 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET and Contractor; 2. Discuss monitoring with the ET and the Contractor; 	<ol style="list-style-type: none"> 1. Discuss with the IEC the repeat monitoring and any other measures proposed by the ET; 2. Make agreement on measures to be implemented. 	<ol style="list-style-type: none"> 1. Inform the SO and confirm notification of the non-compliance in writing; 2. Discuss with the ET and the IEC and propose measures to the IEC and the SO; 3. Implement the agreed measures.

EVENT	ACTION			
	ET Leader	IEC	SO	Contractor
<p><u>Limit Level</u></p> <p>With the numerical values presented in Table 5.7 of <i>Baseline Monitoring Report</i>, when any of the response variable for dolphin acoustic behaviour recorded in the construction phase monitoring is 40% lower or higher than that recorded in the baseline monitoring (see Table 5.8 of <i>Baseline Monitoring Report</i>), or when there is a difference of 40% in dolphin acoustic signal detection at nighttime at Site C1 only, the limit level should be triggered</p>	<ol style="list-style-type: none"> 1. Repeat statistical data analysis to confirm findings; 2. Review all available and relevant data to ascertain if differences are as a result of natural variation or seasonal differences; 3. Identify source(s) of impact; 4. Inform the IEC, SO and Contractor; 5. Check monitoring data; 6. Carry out audit to ensure all dolphin protective measures are implemented fully and additional measures be proposed if necessary 7. Discuss additional dolphin monitoring and any other potential mitigation measures (eg consider to temporarily stop relevant portion of construction activity) with the IEC and Contractor. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET and Contractor; 2. Discuss monitoring with the ET and the Contractor; 3. Review proposals for additional monitoring and any other measures submitted by the Contractor and advise ER accordingly. 	<ol style="list-style-type: none"> 1. Discuss with the IEC the repeat monitoring and any other measures proposed by the ET; 2. Make agreement on measures to be implemented. 	<ol style="list-style-type: none"> 1. Inform the SO and confirm notification of the non-compliance in writing; 2. Discuss with the ET and the IEC and propose measures to the IEC and the SO; 3. Implement the agreed measures.

Abbreviations: ET – Environmental Team, IEC – Independent Environmental Checker, SO – Supervising Office, DEP – Director of Environmental Protection

Appendix M

Monthly Summary of Waste Flow Table

Contract No. : HY/2012/07

Tuen Mun Chek Lap Kok Link – Southern Connection Viaduct Section

Monthly Summary Waste Flow Table for 2018 (Year)

Month/Material	Actual Quantities of Inert C&D Materials Generation						Actual Quantities of C&D wastes Generation						Actual Quantities of Recyclables Generation			
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fills	Imported Fill	Marine Sediment, Cat. L	Marine Sediment, Cat. Mp	Marine Sediment, Cat. Mf	Marine Sediment, Cat. H	Chemical Waste	General Refuse	Metals	Felled trees	Paper/ cardboard packaging	Plastics
Unit	('000m ³)	('000m ³)	('000m ³)	('000m ³)	('000m ³)	('000m ³)	('000m ³)	('000m ³)	('000m ³)	('000m ³)	('000Kg)	('000Kg)	('000Kg)	('000Kg)	('000Kg)	('000Kg)
Jan	4.288	0.405	0.137	-	4.151	-	-	-	-	-	-	211.060	-	2.540	0.084	-
Feb	2.662	0.241	0.826	-	1.836	-	-	-	-	-	-	184.880	-	12.280	0.028	-
Mar	5.916	0.289	2.503	-	1.536	1.877	-	-	-	-	1.200	307.670	-	30.190	0.161	-
Apr	6.103	0.352	0.852	-	1.274	3.977	-	-	-	-	-	349.640	-	19.150	0.112	-
May	4.492	0.616	1.333	0.148	1.676	1.336	-	-	-	-	-	438.160	-	-	0.056	-
Jun	2.801	0.763	1.134	-	1.600	0.067	-	-	-	-	-	669.690	-	9.570	0.035	-
SUB-TOTAL	26.262	2.666	6.783	0.148	12.074	7.257	-	-	-	-	1.200	2161.100	-	73.730	0.476	-
Jul	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aug	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sep	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oct	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nov	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dec	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	26.262	2.666	6.783	0.148	12.074	7.257	-	-	-	-	1.200	2,161.100	-	73.730	0.476	-

Notes :

- 1 - The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
- 2 - Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.
- 3 - Broken concrete for recycling into aggregates.
- 4 - Assumed 5 kg per damaged water-filled barrier.
- 5 - Disposed as Public Fills includes Hard Rock and Large Broken Concrete.

Appendix N

Cumulative Statistics on
Exceedances, Complaints,
Notifications of Summons
and Successful Prosecutions

Appendix N1 Cumulative Statistics on Exceedances

		Total No. recorded in this reporting month	Total No. recorded since project commencement
1-Hr TSP	Action	0	0
	Limit	0	1
24-Hr TSP	Action	0	2
	Limit	0	0
Noise	Action	0	0
	Limit	0	0
Water Quality	Action	3	141
	Limit	0	15
Impact Dolphin Monitoring	Action	0	11
	Limit	0	11

Appendix N2 Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions

Reporting Period	Cumulative Statistics		
	Complaints	Notifications of Summons	Successful Prosecutions
This Reporting Month (June 2018)	2	0	0
Total No. received since project commencement	14	0	0

Email
message

**Environmental
Resources
Management**

To Ramboll Hong Kong Limited (ENPO)

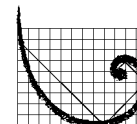
From ERM- Hong Kong, Limited

Ref/Project number Contract No. HY/2012/07
Tuen Mun – Chek Lap Kok Link – Southern
Connection Viaduct Section

Subject Notification of Exceedance for Marine Water
Quality Impact Monitoring

Date 26 June 2018

2507,
25/F One Harbourfront,
18 Tak Fung Street,
Hung Hom, Hong Kong
Telephone: (852) 2271 3113
Facsimile: (852) 2723 5660
E-mail: jovy.tam@erm.com



ERM

Dear Sir/ Madam,

Please find attached the Notification of Exceedance (NOE) of the following
Log no.:

Action Level Exceedance

0215660_25 June 2018_ Bottom-depth DO_E_ Station SR4a

0215660_25 June 2018_ Depth-averaged turbidity_E_ Station SR4a

A total of two exceedances were recorded on 25 June 2018.

Regards,

A handwritten signature in black ink, appearing to be 'Jovy Tam'.

Mr Jovy Tam
Environmental Team Leader

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ERM-Hong Kong, Limited

CONTRACT NO. HY/2012/07

TUEN MUN - CHEK LAP KOK LINK -
SOUTHERN CONNECTION VIADUCT SECTION

Marine Water Quality Impact Monitoring

Notification of Exceedance

Log No.	<u>Action Level Exceedance</u> 0215660_25 June 2018_ Bottom-depth DO_E_Station SR4a 0215660_25 June 2018_ Depth-averaged Turbidity_E_Station SR4a [Total No. of Exceedances = 2]	
Date	25 June 2018 (Measured) 26 June 2018 (<i>In situ</i> results received by ERM) 04 July 2018 (Laboratory results received by ERM)	
Monitoring Station	CS(Mf)5, SR4a, SR4, IS8, IS(Mf)16, IS(Mf)9, CS(Mf)3(N)	
Parameter(s) with Exceedance(s)	Bottom-depth Dissolved Oxygen (DO), Depth-averaged Turbidity	
Action Levels for DO	Bottom-depth DO	4.7 mg/L
Limit Levels for DO	Bottom-depth DO	3.6 mg/L
Action Levels for Turbidity	Depth-averaged Turbidity	27.5 NTU
Limit Levels for Turbidity	Depth-averaged Turbidity	47.0 NTU
Measured Levels	<u>Action Level Exceedance</u> 1. Mid-ebb at SR4a (Bottom-depth DO = 4.4mg/L); 2. Mid-ebb at SR4a (Depth-averaged Turbidity = 31.0 NTU)	
Works Undertaken (at the time of monitoring event)	No major marine works was undertaken under this Contract on 25 June 2018.	

Possible Reason for Action or Limit Level Exceedance(s)	<p>The exceedances of bottom-depth DO and depth-averaged Turbidity are unlikely to be due to the Project, in view of the following:</p> <ul style="list-style-type: none"> • No marine works was undertaken under this Contract on 25 June 2018. • Apart from DO exceedance at SR4a, levels of DO at all monitoring stations were in compliance with the Action and Limit Levels during both mid-ebb and mid-flood tides on the same day. • DO levels were generally lower at water quality monitoring stations due to two possible reasons of natural variation: <ul style="list-style-type: none"> 1. Natural ability for water to hold dissolved oxygen is reduced due to higher water temperature in summer months. 2. The higher Salinity recorded at the bottom level of SR4a was possibly caused by the stratification of seawater during summer when the freshwater discharged from the Pearl River tended to form a surface layer of lower salinity water, which is probably responsible for the lower Salinity recorded at the surface and middle levels compared to the higher Salinity recorded at the bottom level of the monitoring stations. The stratification of seawater in the water column is likely a contributing factor to the results of lower levels of DO at the bottom level. • Apart from SR4a, depth-averaged Turbidity levels at all other monitoring stations were in compliance with the Action and Limit Levels during both mid-flood and mid-ebb tides on the same day. • Depth-averaged Suspended Solids (SS) levels at all stations were in compliance with the Action and Limit Levels during both mid-ebb and mid-flood tides on the same day. • No effluent discharge from platforms and work areas was observed and no malpractice was observed during the sampling process on 25 June 2018.
Actions Taken/ To Be Taken	<p>No immediate action is considered necessary. The ET will monitor for future trends in exceedances.</p>
Remarks	<p>The monitoring results on 25 June 2018 and locations of water quality monitoring stations are attached. Site photo record on 25 June 2018 is attached.</p>

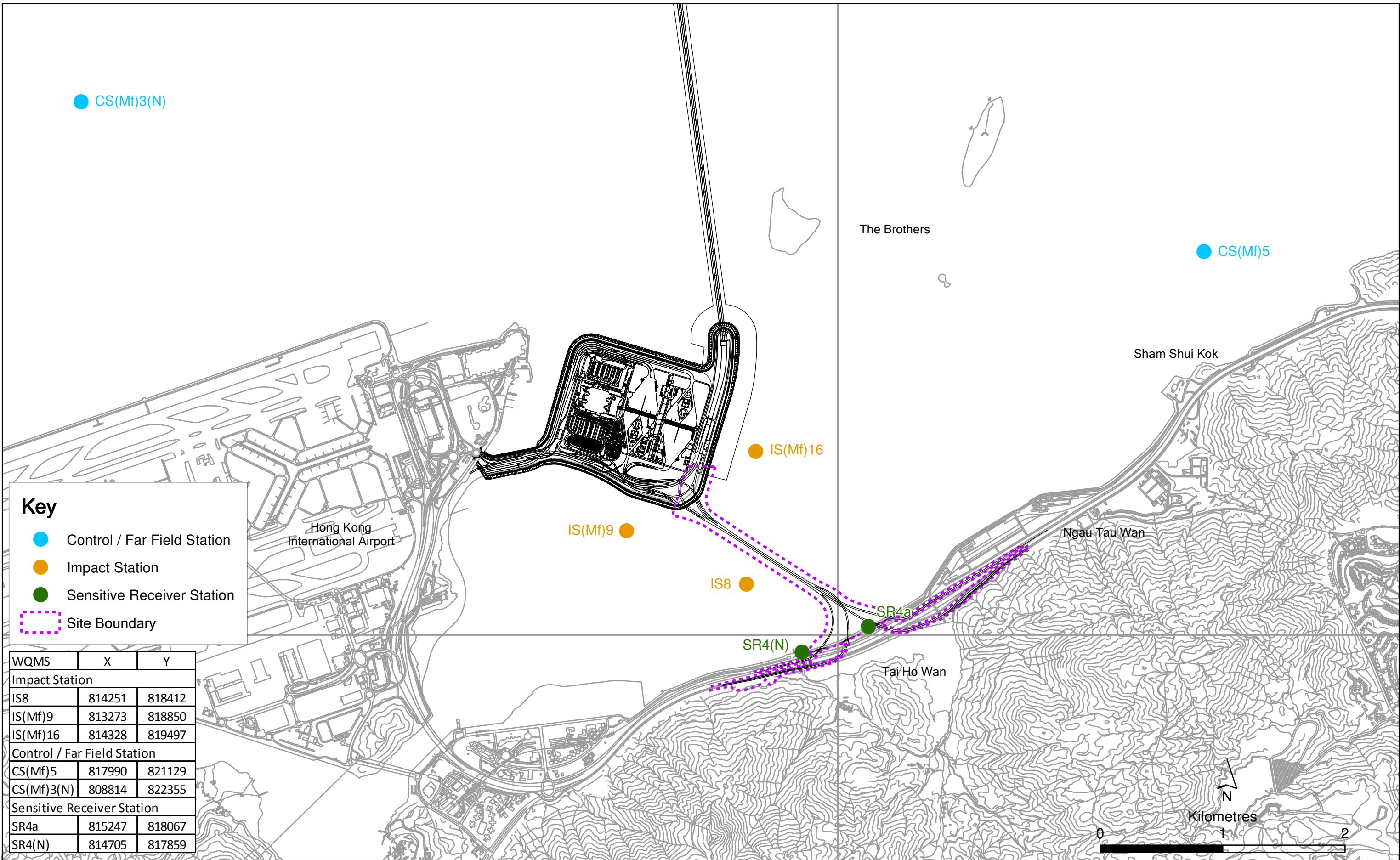
Project	Works	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	CS(Mf)5	10:50	Surface	1	28.8	7.9	20.8	5.7	5.3	6.4	10.2	4.5	8.1
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	CS(Mf)5	10:50	Surface	2	28.8	8.0	20.8	5.8		7.0		4.7	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	CS(Mf)5	10:50	Middle	1	28.3	7.9	25.4	4.8		9.8		9.2	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	CS(Mf)5	10:50	Middle	2	28.3	8.0	25.3	4.8		9.2		9.7	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	CS(Mf)5	10:50	Bottom	1	27.8	7.9	28.1	4.6	4.7	14.6		9.9	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	CS(Mf)5	10:50	Bottom	2	27.9	7.9	28.0	4.7		14.4		10.3	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	CS(Mf)3(N)	12:17	Surface	1	28.9	8.0	16.6	6.2	5.9	4.1	7.2	5.0	5.7
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	CS(Mf)3(N)	12:17	Surface	2	28.9	8.1	16.5	6.3		4.7		5.8	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	CS(Mf)3(N)	12:17	Middle	1	29.0	8.0	19.0	5.5		2.6		6.2	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	CS(Mf)3(N)	12:17	Middle	2	28.9	8.0	18.9	5.6		3.3		6.5	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	CS(Mf)3(N)	12:17	Bottom	1	28.8	8.0	22.6	4.7	4.8	13.3		5.3	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	CS(Mf)3(N)	12:17	Bottom	2	28.7	8.0	22.4	4.8		15.2		5.6	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS(Mf)16	11:30	Surface	1	28.5	7.9	20.1	5.8	5.6	7.4	9.1	6.0	7.1
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS(Mf)16	11:30	Surface	2	28.6	7.9	20.1	5.9		7.3		5.3	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS(Mf)16	11:30	Middle	1	28.5	7.9	22.7	5.2		10.3			
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS(Mf)16	11:30	Middle	2	28.6	7.9	22.6	5.3		10.9			
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS(Mf)16	11:30	Bottom	1	28.4	7.9	23.7	5.2	5.3	9.2		8.2	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS(Mf)16	11:30	Bottom	2	28.5	8.0	23.7	5.3		9.3		9.0	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	SR4a	11:42	Surface	1	28.7	7.9	21.0	5.0	5.1	10.0	31.0	7.8	9.8
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	SR4a	11:42	Surface	2	28.8	7.9	20.9	5.1		10.5		8.0	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	SR4a	11:42	Middle	1									
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	SR4a	11:42	Middle	2									
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	SR4a	11:42	Bottom	1	28.5	7.9	23.9	4.4	4.4	56.9		11.3	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	SR4a	11:42	Bottom	2	28.6	7.9	23.8	4.4		46.5		12.0	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	SR4(N)	11:51	Surface	1	28.7	7.8	18.2	5.7	5.7	10.5	14.2	8.0	9.0
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	SR4(N)	11:51	Surface	2	28.8	7.9	18.1	5.7		10.5		7.2	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	SR4(N)	11:51	Middle	1									
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	SR4(N)	11:51	Middle	2									
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	SR4(N)	11:51	Bottom	1	28.7	7.9	19.6	5.4	5.4	18.1		10.1	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	SR4(N)	11:51	Bottom	2	28.8	7.9	19.5	5.4		17.8		10.6	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS8	12:01	Surface	1	28.7	7.8	20.5	5.6	5.6	7.4	9.3	6.5	7.6
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS8	12:01	Surface	2	28.8	7.9	20.3	5.6		7.1		5.9	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS8	12:01	Middle	1									
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS8	12:01	Middle	2									
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS8	12:01	Bottom	1	28.6	7.8	21.4	5.0	5.0	11.5		8.7	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS8	12:01	Bottom	2	28.7	7.9	21.2	5.0		11.1		9.2	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS(Mf)9	12:14	Surface	1	28.7	7.9	19.7	6.0	6.0	5.4	5.3	4.8	6.8
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS(Mf)9	12:14	Surface	2	28.8	8.0	19.6	6.0		5.5		5.8	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS(Mf)9	12:14	Middle	1									
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS(Mf)9	12:14	Middle	2									
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS(Mf)9	12:14	Bottom	1	28.7	7.9	19.7	6.0	6.0	5.1		8.4	
TMCLKL	HY/2012/07	2018-06-25	Mid-Ebb	IS(Mf)9	12:14	Bottom	2	28.8	8.0	19.6	6.0		5.2		8.0	

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS		
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	CS(Mf)5	18:20	Surface	1	28.8	8.0	19.5	6.0	5.4	3.5	6.5	4.0	4.7		
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	CS(Mf)5	18:20	Surface	2	28.8	7.9	19.6	6.1		2.9		4.7			
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	CS(Mf)5	18:20	Middle	1	28.3	8.0	25.6	4.7		7.5		4.5			
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	CS(Mf)5	18:20	Middle	2	28.3	7.9	25.7	4.7		6.9		4.6			
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	CS(Mf)5	18:20	Bottom	1	28.2	8.0	26.7	4.7	4.7	9.1	6.5	5.3	4.7		
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	CS(Mf)5	18:20	Bottom	2	28.1	7.9	26.8	4.7		8.8		4.8			
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	CS(Mf)3(N)	17:27	Surface	1	29.3	8.0	12.1	6.4	6.1	4.1	5.2	3.8	3.9		
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	CS(Mf)3(N)	17:27	Surface	2	29.3	8.0	12.1	6.4		4.1		3.7			
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	CS(Mf)3(N)	17:27	Middle	1	29.1	8.0	15.2	5.7		5.5		3.9			
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	CS(Mf)3(N)	17:27	Middle	2	29.1	8.0	15.2	5.7		5.5		3.7			
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	CS(Mf)3(N)	17:27	Bottom	1	29.0	8.0	18.4	5.2	5.2	5.9	5.2	3.8	3.9		
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	CS(Mf)3(N)	17:27	Bottom	2	29.0	8.0	18.4	5.2		5.9		4.2			
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS(Mf)16	17:47	Surface	1	28.9	8.0	19.4	6.4	6.4	4.7	7.1	9.7	7.0		
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS(Mf)16	17:47	Surface	2	28.8	7.9	19.5	6.3		4.4		10.0			
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS(Mf)16	17:47	Middle	1											
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS(Mf)16	17:47	Middle	2											
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS(Mf)16	17:47	Bottom	1	28.8	8.0	21.2	5.7	5.7	10.0	5.7	4.1	7.0		
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS(Mf)16	17:47	Bottom	2	28.7	7.9	21.3	5.7		9.4		4.0			
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	SR4a	17:36	Surface	1	29.0	8.0	19.6	6.3	6.3	9.3	11.9	7.6	8.5		
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	SR4a	17:36	Surface	2	28.9	7.9	19.8	6.3		8.2		7.3			
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	SR4a	17:36	Middle	1											
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	SR4a	17:36	Middle	2											
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	SR4a	17:36	Bottom	1	29.0	8.0	20.5	5.9	5.9	15.6	5.9	9.2	8.5		
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	SR4a	17:36	Bottom	2	28.9	7.9	20.5	5.9		14.4		9.7			
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	SR4(N)	17:29	Surface	1	29.0	8.0	20.5	6.1	6.1	15.2	14.9	11.9	12.5		
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	SR4(N)	17:29	Surface	2	28.9	7.9	20.7	6.1		14.8		12.6			
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	SR4(N)	17:29	Middle	1											
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	SR4(N)	17:29	Middle	2											
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	SR4(N)	17:29	Bottom	1	29.0	8.0	20.5	6.1	6.1	14.9	6.1	13.0	8.0		
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	SR4(N)	17:29	Bottom	2	28.9	7.9	20.7	6.1		14.5		12.4			
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS8	17:22	Surface	1	29.0	8.0	20.0	6.4	6.4	8.9	14.4	6.7	8.0		
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS8	17:22	Surface	2	28.9	7.9	20.1	6.3		8.7		7.5			
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS8	17:22	Middle	1											
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS8	17:22	Middle	2											
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS8	17:22	Bottom	1	29.0	8.0	20.7	5.9	5.9	20.7	5.9	8.7	8.0		
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS8	17:22	Bottom	2	28.9	7.9	20.8	5.9		19.3		9.0			
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS(Mf)9	17:11	Surface	1					5.9		10.7		5.9		
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS(Mf)9	17:11	Surface	2											
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS(Mf)9	17:11	Middle	1	28.9	7.9	20.8	5.9		11.0		5.8			
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS(Mf)9	17:11	Middle	2	28.8	7.9	20.9	5.9		10.3		6.0			
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS(Mf)9	17:11	Bottom	1											
TMCLKL	HY/2012/07	2018-06-25	Mid-Flood	IS(Mf)9	17:11	Bottom	2											

Note: Indicates Exceedance of Action Level
Indicates Exceedance of Limit Level

Photo 1 - Mid-Ebb at SR4a on 25 June 2018





Key

- Control / Far Field Station
- Impact Station
- Sensitive Receiver Station
- Site Boundary

WQMS	X	Y
Impact Station		
IS8	814251	818412
IS(Mf)9	813273	818850
IS(Mf)16	814328	819497
Control / Far Field Station		
CS(Mf)5	817990	821129
CS(Mf)3(N)	808814	822355
Sensitive Receiver Station		
SR4a	815247	818067
SR4(N)	814705	817859

Locations of Water Quality Monitoring Stations

Email
message

**Environmental
Resources
Management**

To Ramboll Hong Kong Limited (ENPO)

From ERM- Hong Kong, Limited

Ref/Project number Contract No. HY/2012/07
Tuen Mun – Chek Lap Kok Link – Southern
Connection Viaduct Section

Subject Notification of Exceedance for Marine Water
Quality Impact Monitoring

Date 3 July 2018

2507,
25/F One Harbourfront,
18 Tak Fung Street,
Hung Hom, Hong Kong
Telephone: (852) 2271 3113
Facsimile: (852) 2723 5660
E-mail: jovy.tam@erm.com



ERM

Dear Sir/ Madam,

Please find attached the Notification of Exceedance (NOE) of the following
Log no.:

Action Level Exceedance
0215660_29 June 2018_ Bottom-depth DO_E_Station SR4a

A total of one exceedance was recorded on 29 June 2018.

Regards,



Mr Jovy Tam
Environmental Team Leader

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ERM-Hong Kong, Limited

CONTRACT NO. HY/2012/07

TUEN MUN – CHEK LAP KOK LINK –
SOUTHERN CONNECTION VIADUCT SECTION

Marine Water Quality Impact Monitoring

Notification of Exceedance

Log No.	<p><u>Action Level Exceedance</u> 0215660_29 June 2018_ Bottom-depth DO_F_Station SR4a</p> <p>[Total No. of Exceedances = 1]</p>	
Date	<p>29 June 2018 (Measured) 30 June 2018 (<i>In situ</i> results received by ERM) 09 July 2018 (Laboratory results received by ERM)</p>	
Monitoring Station	<p>CS(Mf)5, SR4a, SR4, IS8, IS(Mf)16, IS(Mf)9, CS(Mf)3(N)</p>	
Parameter(s) with Exceedance(s)	<p>Bottom-depth Dissolved Oxygen (DO)</p>	
Action Levels for DO	Bottom-depth DO	4.7 mg/L
Limit Levels for DO	Bottom-depth DO	3.6 mg/L
Measured Levels	<p><u>Action Level Exceedance</u> 1. Mid-flood at SR4a (Bottom-depth DO = 4.4mg/L).</p>	
Works Undertaken (at the time of monitoring event)	<p>No major marine works was undertaken under this Contract on 29 June 2018.</p>	
Possible Reason for Action or Limit Level Exceedance(s)	<p>The exceedance of bottom-depth DO is unlikely to be due to the Project, in view of the following:</p> <ul style="list-style-type: none"> • No marine works was undertaken under this Contract on 29 June 2018. • Apart from DO exceedance at SR4a, levels of DO at all monitoring stations were in compliance with the Action and Limit Levels during both mid-ebb and mid-flood tides on the same day. • The DO pattern at SR4a was similar to the control station where the bottom-depth DO levels were generally lower. DO levels were generally lower at water quality monitoring stations due to reduce in natural ability for water to hold dissolved oxygen under higher water temperature in summer months. In addition, lower bottom-depth DO levels may possibly caused by the stratification of seawater during summer when the freshwater discharged from the Pearl River tended to form a surface layer of lower salinity water, which is probably responsible for the lower Salinity recorded at the surface and middle levels compared to the higher Salinity recorded at the bottom level of the monitoring stations. The stratification of seawater in the water column is likely a contributing factor to the results of lower levels of DO at the bottom level. 	
Actions Taken/ To Be Taken	<p>No immediate action is considered necessary. The ET will monitor for future trends in exceedances.</p>	
Remarks	<p>The monitoring results on 29 June 2018 and locations of water quality monitoring stations are attached. Site photo record on 29 June 2018 is attached.</p>	

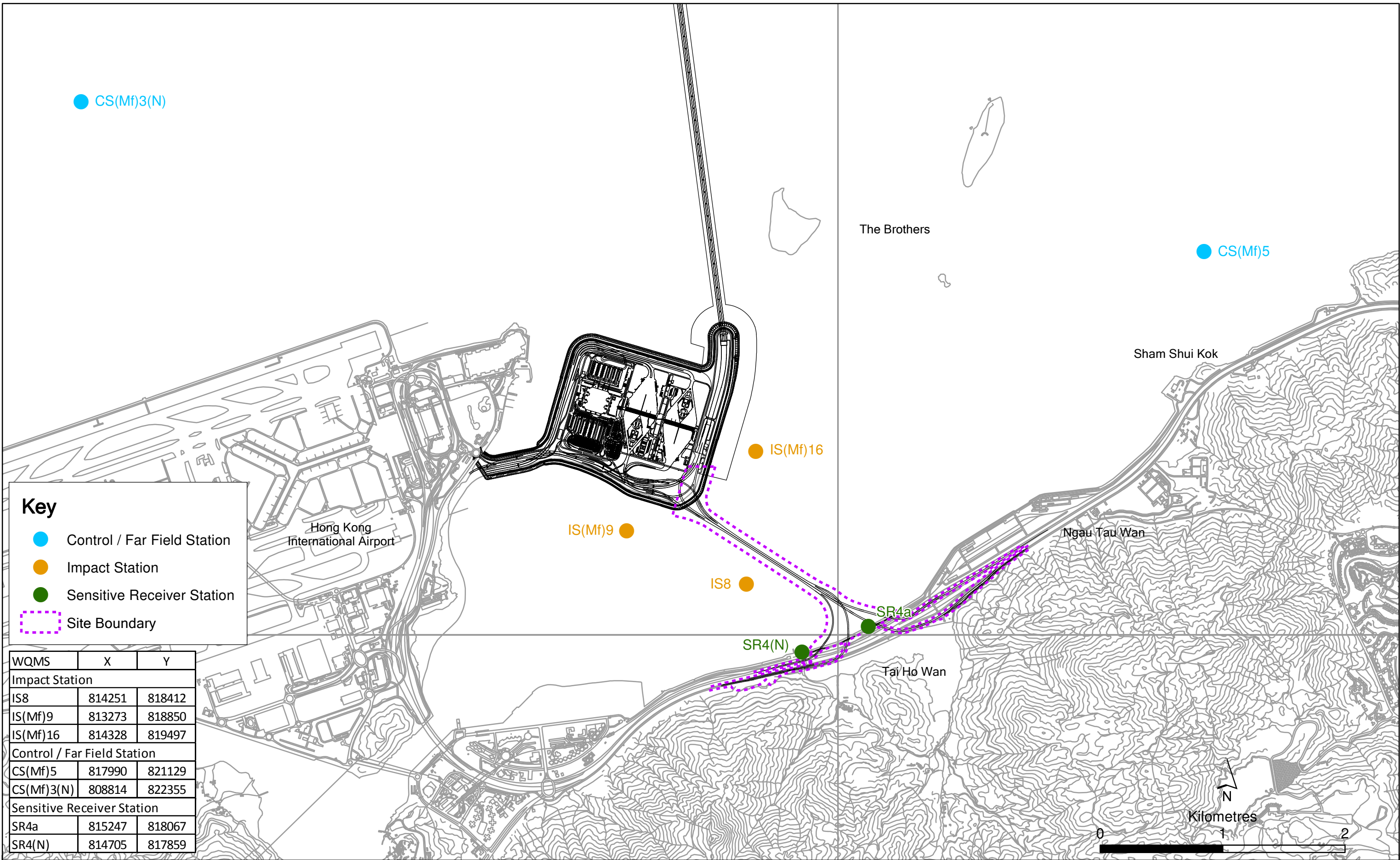
Project	Works	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	CS(Mf)5	13:11	Surface	1	29.4	7.9	17.6	5.9	5.4	10.4	10.8	10.6	12.2
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	CS(Mf)5	13:11	Surface	2	29.6	7.9	17.4	5.9		10.2		11.3	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	CS(Mf)5	13:11	Middle	1	28.6	7.9	21.2	4.9		12.0		12.0	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	CS(Mf)5	13:11	Middle	2	28.7	7.9	21.1	4.9	4.1	11.4	10.8	11.4	12.2
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	CS(Mf)5	13:11	Bottom	1	27.0	7.9	27.3	4.1		10.7		13.3	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	CS(Mf)5	13:11	Bottom	2	27.1	7.9	27.0	4.0	6.0	10.2	13.5	14.8	4.8
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	CS(Mf)3(N)	14:18	Surface	1	30.2	8.0	14.0	6.7		8.1		4.7	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	CS(Mf)3(N)	14:18	Surface	2	30.2	8.1	14.1	6.6		8.0		5.2	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	CS(Mf)3(N)	14:18	Middle	1	29.2	8.0	17.8	5.3	5.1	11.8	13.5	5.2	4.8
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	CS(Mf)3(N)	14:18	Middle	2	29.2	8.0	17.9	5.3		11.4		5.1	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	CS(Mf)3(N)	14:18	Bottom	1	28.6	8.0	21.7	5.1	6.3	20.5	7.1	4.0	10.5
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	CS(Mf)3(N)	14:18	Bottom	2	28.6	8.0	21.8	5.1		21.3		4.6	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS(Mf)16	13:50	Surface	1	29.4	8.0	19.3	6.3	6.3	9.4	7.1	11.3	10.5
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS(Mf)16	13:50	Surface	2	29.5	8.0	19.1	6.3		9.4		10.6	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS(Mf)16	13:50	Middle	1									
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS(Mf)16	13:50	Middle	2					5.3		7.1		10.5
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS(Mf)16	13:50	Bottom	1	28.6	7.9	21.4	5.3		4.9		10.0	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS(Mf)16	13:50	Bottom	2	28.7	7.9	21.4	5.2	6.6	4.6	16.3	10.1	11.9
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	SR4a	13:58	Surface	1	29.9	8.0	17.6	6.6		9.9		11.7	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	SR4a	13:58	Surface	2	30.0	8.0	17.4	6.6		9.9		11.3	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	SR4a	13:58	Middle	1					4.8		16.3		11.9
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	SR4a	13:58	Middle	2									
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	SR4a	13:58	Bottom	1	28.8	7.9	21.0	4.8	9.7	25.0	15.2	12.0	10.1
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	SR4a	13:58	Bottom	2	28.9	7.9	20.8	4.7		20.4		12.7	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	SR4(N)	14:07	Surface	1	30.7	8.2	16.4	9.7		13.5		10.4	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	SR4(N)	14:07	Surface	2	30.8	8.2	16.3	9.6	9.1	13.1	15.2	9.9	10.1
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	SR4(N)	14:07	Middle	1									
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	SR4(N)	14:07	Middle	2					9.1		15.2		10.1
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	SR4(N)	14:07	Bottom	1	30.5	8.2	16.5	9.2		17.3		10.1	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	SR4(N)	14:07	Bottom	2	30.6	8.2	16.4	9.0	8.1	17.0	12.8	9.8	13.3
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS8	14:16	Surface	1	30.2	8.1	17.7	8.1		9.0		11.8	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS8	14:16	Surface	2	30.3	8.1	17.6	8.1		9.0		12.3	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS8	14:16	Middle	1					7.0		12.8		13.3
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS8	14:16	Middle	2									
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS8	14:16	Bottom	1	29.6	8.1	18.1	6.9	9.2	16.6	6.1	14.1	5.4
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS8	14:16	Bottom	2	29.7	8.1	18.0	7.0		16.6		15.0	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS(Mf)9	14:30	Surface	1	30.2	8.2	17.2	9.2	9.2	5.4	6.1	5.6	5.4
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS(Mf)9	14:30	Surface	2	30.3	8.2	17.0	9.1		5.4		5.4	
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS(Mf)9	14:30	Middle	1									
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS(Mf)9	14:30	Middle	2					8.9		6.1		5.4
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS(Mf)9	14:30	Middle	1									
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS(Mf)9	14:30	Bottom	1	29.9	8.2	17.5	8.9	8.9	6.8	6.1	5.1	5.4
TMCLKL	HY/2012/07	2018-06-29	Mid-Ebb	IS(Mf)9	14:30	Bottom	2	29.9	8.2	17.4	8.8		6.8		5.6	

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS	
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	CS(Mf)5	21:13	Surface	1	29.6	7.9	16.5	5.8	5.1	3.7	10.8	5.8	8.4	
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	CS(Mf)5	21:13	Surface	2	29.7	8.0	16.3	5.8		4.2		7.4		
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	CS(Mf)5	21:13	Middle	1	27.8	7.9	22.9	4.4		6.4		8.3		
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	CS(Mf)5	21:13	Middle	2	27.9	7.9	22.7	4.3		7.3		8.5		
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	CS(Mf)5	21:13	Bottom	1	27.1	7.9	27.0	4.0	4.0	20.9	10.8	10.6	8.4	
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	CS(Mf)5	21:13	Bottom	2	27.2	7.9	26.7	3.9		22.0		9.5		
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	CS(Mf)3(N)	20:09	Surface	1	30.4	8.0	9.9	6.9	6.8	11.9	13.5	8.9	9.6	
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	CS(Mf)3(N)	20:09	Surface	2	30.4	8.0	9.7	7.0		11.6		9.2		
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	CS(Mf)3(N)	20:09	Middle	1	30.5	8.0	11.6	6.6		13.8		10.8		
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	CS(Mf)3(N)	20:09	Middle	2	30.5	7.9	11.4	6.6		12.7		10.1		
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	CS(Mf)3(N)	20:09	Bottom	1	29.8	8.0	14.1	5.9	5.9	15.3	13.5	9.5	9.6	
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	CS(Mf)3(N)	20:09	Bottom	2	29.8	7.9	13.9	5.9		15.8		8.9		
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS(Mf)16	20:43	Surface	1	29.6	8.1	17.8	6.8	6.8	11.2	14.4	10.3	13.2	
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS(Mf)16	20:43	Surface	2	29.7	8.1	17.7	6.8		11.8		10.1		
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS(Mf)16	20:43	Middle	1										
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS(Mf)16	20:43	Middle	2										
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS(Mf)16	20:43	Bottom	1	29.2	8.0	19.1	5.9	5.9	16.4	14.4	15.9	13.2	
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS(Mf)16	20:43	Bottom	2	29.3	8.0	18.9	5.9		18.1		16.4		
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	SR4a	20:33	Surface	1	29.8	8.0	16.4	6.8	6.9	8.2	11.7	10.1	14.4	
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	SR4a	20:33	Surface	2	29.9	8.1	16.3	6.9		9.1		10.5		
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	SR4a	20:33	Middle	1										
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	SR4a	20:33	Middle	2										
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	SR4a	20:33	Bottom	1	28.8	7.9	21.1	4.4	4.4	15.3	11.7	18.4	14.4	
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	SR4a	20:33	Bottom	2	28.9	7.9	20.9	4.4	14.1	18.4				
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	SR4(N)	20:26	Surface	1	29.9	8.2	17.3	8.3	8.3	15.6	16.4	13.8	14.3	
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	SR4(N)	20:26	Surface	2	30.0	8.2	17.1	8.2		17.1		14.8		
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	SR4(N)	20:26	Middle	1										
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	SR4(N)	20:26	Middle	2										
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	SR4(N)	20:26	Bottom	1	29.9	8.2	17.3	8.3	8.3	15.8	16.4	14.3	14.3	
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	SR4(N)	20:26	Bottom	2	30.1	8.2	17.1	8.2		17.1		14.1		
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS8	20:19	Surface	1	29.6	8.1	17.1	6.8	6.8	12.2	14.0	10.2	12.4	
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS8	20:19	Surface	2	29.7	8.1	16.9	6.8		13.1		10.7		
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS8	20:19	Middle	1										
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS8	20:19	Middle	2										
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS8	20:19	Bottom	1	29.7	8.0	17.7	7.1	7.1	15.3	14.0	14.4	12.4	
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS8	20:19	Bottom	2	29.8	8.0	17.4	7.1		15.2		14.1		
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS(Mf)9	20:08	Surface	1					9.8		9.4		14.6	
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS(Mf)9	20:08	Surface	2										
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS(Mf)9	20:08	Middle	1	30.1	8.3	17.8	9.8		9.0		15.0		
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS(Mf)9	20:08	Middle	2	30.3	8.3	17.6	9.8		9.8		14.1		
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS(Mf)9	20:08	Bottom	1										
TMCLKL	HY/2012/07	2018-06-29	Mid-Flood	IS(Mf)9	20:08	Bottom	2										

Note: Indicates Exceedance of Action Level
Indicates Exceedance of Limit Level

Photo 1 - Mid-Flood at SR4a on 29 June 2018





Key

- Control / Far Field Station
- Impact Station
- Sensitive Receiver Station
- Site Boundary

WQMS	X	Y
Impact Station		
IS8	814251	818412
IS(Mf)9	813273	818850
IS(Mf)16	814328	819497
Control / Far Field Station		
CS(Mf)5	817990	821129
CS(Mf)3(N)	808814	822355
Sensitive Receiver Station		
SR4a	815247	818067
SR4(N)	814705	817859

Locations of Water Quality Monitoring Stations

File: T:\GIS\CONTRACT\0215660\Mxd\0215660_WQMS.mxd
Date: 20/3/2018



ENVIRONMENTAL COMPLAINT/ ENQUIRY FORM

Complaint/ ~~Enquiry~~ Received*

Date: 22 June 2018

Time: Undisclosed

From: 1823

Via: Email

Complainant/ ~~Enquirer~~*:

Name: Undisclosed

Tel: Undisclosed

Address: Undisclosed

Media: ~~Dust~~ / ~~Noise~~ / Water Quality / ~~Other~~

Description: A complaint case was received regarding discharge of muddy water from Hong Kong Boundary Crossing Facilities (HKBCF) of Hong Kong-Zhuhai-Macao Bridge (HZMB) Projects on 13 June 2018. The complainant added the discharge of muddy water was observed nearby HKBCF facing the Century Link. The Environmental Team (ET) received the complaint notification from the Supervising Officer's Representative (SOR) on 22 June 2018.

Investigation Report & Response

Based on the work records provided by the Contractor, no marine works i.e. excavation works was undertaken under this Contract on 13 June 2018. Major works on the same day included land-based works i.e. segment erection within the Site boundary of HKBCF (*Figure 1*).

According to ET's weekly site inspection records on 13th June 2018, no discharge of surface run-off and muddy water observed in the sea adjacent to the works area. Open stockpiles of aggregates and soil in HKBCF were observed being covered with tarpaulin and sand bags were observed being provided to prevent the washout of sand and other construction materials to the nearby water body (*Annex A*).

Water Quality Monitoring results on 13 June 2018 were reviewed (*refer below*). No exceedance on water quality parameters was observed. The recorded levels of depth-averaged turbidity and suspended solids at all water quality stations during the concerned period were well below the Action Level of the corresponding water quality parameters (Action Level of turbidity and suspended solid are 27.5 NTU and 23.5 mg/L respectively). In addition, no particular observation was noticed nearby the water quality monitoring stations on 13 June 2018.

Based on the above, there is no evidence to prove that the complaint case is related to this Contract.

Mitigation Measures and Follow-Up Actions Recommended to Contractor

Based on the findings of the investigation, there is no evidence to prove that the complaint case is related to this Contract and thus no further action is required. The Contractor has been reminded that wastewater generated from construction works should be collected, treated, neutralized, and desilted before discharge. In addition, the Contractor has been reminded to cover stockpiles with tarpaulin and place sand bags to avoid washout of construction materials where necessary in order to ensure the compliance with all the conditions under the Effluent Discharge License.

Date of File Closed : 09 July 2018



Approved and Filed by:



(Jovy Tam, ET Leader)

Date: 09 July 2018

Key

-  Known Coral Communities
-  Site Boundary

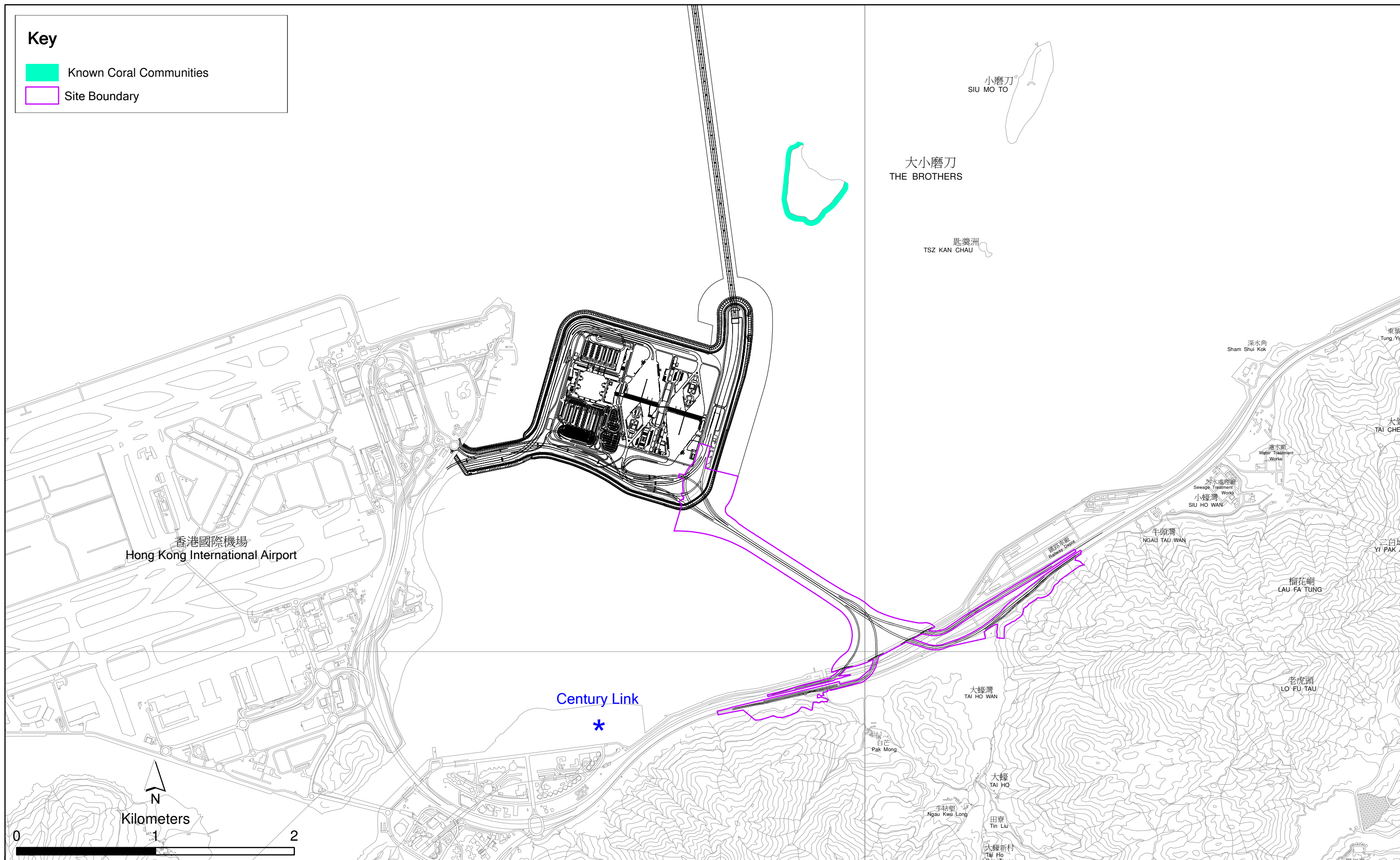


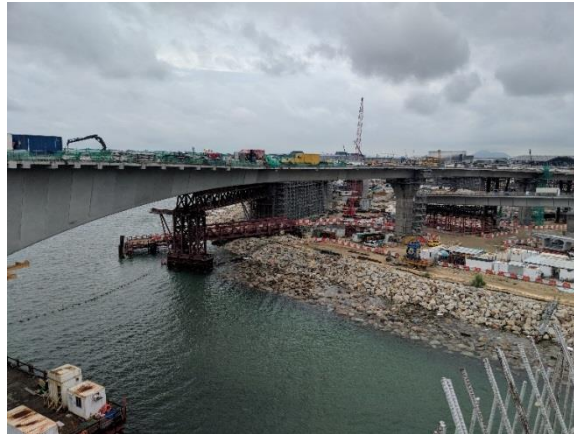
Figure 1

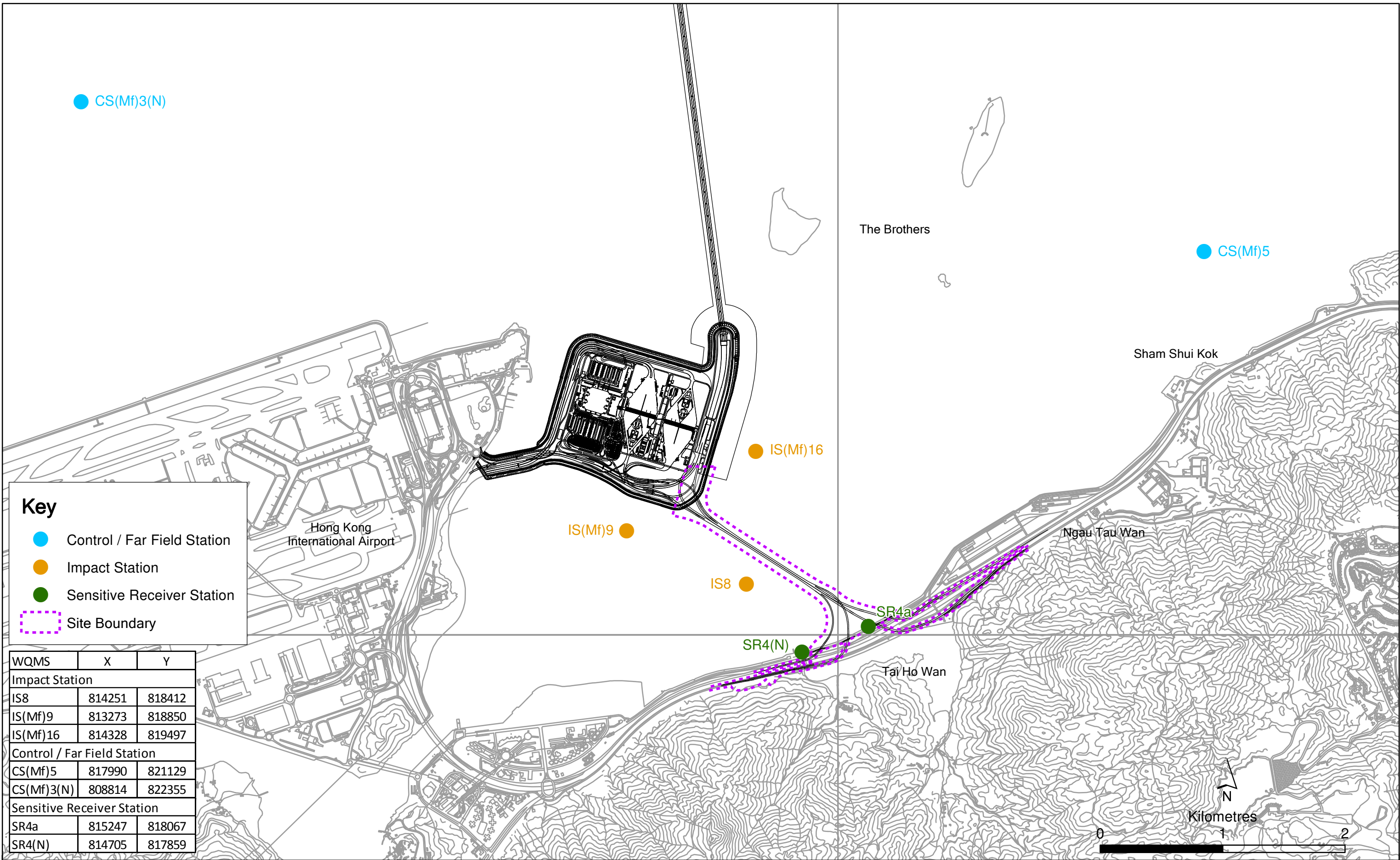
General Site Layout

Annex A

Photos of ET weekly site
inspection on 13 June
2018

Photo 1- No discharge of surface run-off and muddy water observed in the sea adjacent to the works area on 13 June 2018





Key

- Control / Far Field Station
- Impact Station
- Sensitive Receiver Station
- Site Boundary

WQMS	X	Y
Impact Station		
IS8	814251	818412
IS(Mf)9	813273	818850
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Sensitive Receiver Station		
SR4a	815247	818067
SR4(N)	814705	817859

Locations of Water Quality Monitoring Stations

File: T:\GIS\CONTRACT\0215660\Mxd\0215660_WQMS.mxd
Date: 20/3/2018

