

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

Second Monthly EM&A Report

14 February 2014

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

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Management**

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Second Monthly EM&A Report

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Client: Gammon		Project No: 0215660			
Summary: This document presents the Second Monthly EM&A Report for Tuen Mun – Chek Lap Kok Link – Southern Connection Viaduct Section.		Date: 14 February 2014			
		Approved by: 			
		<i>Mr Craig Reid</i> Partner			
		Certified by: 			
		<i>Mr Jovy Tam</i> ET Leader			
Rev a	Second Monthly EM&A Report	CL	JT	CAR	14/02/14
Revision	Description	By	Checked	Approved	Date
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Ref.: HYDZHMBEEM00_0_1693L.14

20 February 2014

AECOM
Supervising Officer Representative's Office
6 Hoi Kok Street,
Tsuen Wan, N.T.

By Fax (2492 2057) and By Post

Attention: Mr. Daniel Ip

Dear Sir,

**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
Monthly EM&A Report for December 2013 (EP-354/2009/B)**

Reference is made to the First Monthly Environmental Monitoring and Audit (EM&A) Report (for December 2013) Revision a certified by the ET Leader (ET's ref.: "0215660_2nd Monthly EM&A_Rev a_2014_02_14.pdf" dated 14 February 2014) and provided to us via email on 14 February 2014.

We are pleased to inform you that we have no adverse comments on the captioned monthly EM&A Report. We write to verify the captioned submission in accordance with Condition 4.4 of EP-354/2009/B.

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

Yours sincerely,



Tony Cheng
Independent Environmental Checker
Tuen Mun – Chek Lap Kok Link

c.c. HyD – Mr. Stephen Chan (By Fax: 3188 6614)
HyD – Mr. Matthew Fung (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: 2750 0922)

Internal: DY, YH, PL, 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). ENVIRON 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*.

The construction phase of the Contract commenced on 31 October 2013 and will be tentatively be 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 second monthly EM&A report presenting the EM&A works carried out during the period from 1 to 31 December 2013 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:

Marine-based Works

- Survey tower erection;
- Marine piling platform installation;
- Construction of rockfill platform at Viaduct D landing; and
- Additional marine ground investigation (GI) and laboratory testing.

Land-based Works

- SOR's and Contractor's site offices erection at Area 5;
- Satellite container offices erection along seawall;
- Tree felling at Pak Mong area;
- Fence relocation for Viaducts A, C & D;
- Additional land GI, trial pits and laboratory testing; and
- Utility surveys.

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

24-hour TSP monitoring	6 sessions
1-hour TSP monitoring	6 sessions
Noise monitoring	6 sessions

Impact Water Quality Monitoring	13 sessions
Impact dolphin monitoring	2 sessions
Joint Environmental site inspection	4 sessions

Breaches of Action and Limit Levels for Air Quality

Two (2) exceedances of Action Level in 24-hr TSP monitoring were recorded at both ASR8A and ASR8 in the reporting month. No exceedance of Action and Limit Levels was recorded for 1-hour monitoring in the reporting month. The exceedance was considered not related to the construction works of this Contract upon further investigation.

Breaches of Action and Limit Levels for Noise

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

Breaches of Action and Limit Levels for Water Quality

No exceedance of Action and Limit Levels was recorded for impact water quality 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 Chinese White Dolphins 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, where 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. No sighting of the Indo-Pacific humpback dolphin *Sousa chinensis* was recorded in December 2013 during the exclusion zone monitoring.

Environmental Complaints, Non-compliance & Summons

No complaint, notification of summons and successful prosecution was received in the reporting month.

Reporting Change

There was no reporting change required in the reporting period.

Upcoming Works for the Next Reporting Period

Works to be undertaken in the next monitoring period of January 2014 include the following:

Marine Works

- Erect temporary working platforms;
- GI and trial pit works for marine foundation at Viaduct B; and
- Marine foundation at Viaduct B, E2, E5-8 and E13.

Land-based Works

- Site set-up for Area 2 and works area along Cheung Tung Road for Viaduct B;
- Set up container site offices along CEDD access road; and
- Construct temporary road at CEDD track for piling.

Future Key Issues

Potential environmental impacts arising from the above upcoming construction activities in the next reporting month of January 2014 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-145/2009), 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-354/2009A) 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). ENVIRON 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*.

The construction phase of the Contract commenced on 31 October 2013 and will be tentatively be 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.

1.2 SCOPE OF REPORT

This is the second 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 December 2013.

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.

Table 1.1 *Contact Information of Key Personnel*

Party	Position	Name	Telephone	Fax
SOR (AECOM Asia Company Limited)	Chief Resident Engineer	Daniel Ip	3553 3800	2492 2057
ENPO / IEC (ENVIRON Hong Kong Ltd.)	ENPO Leader	Y.H. Hui	3465 2888	3465 2899
	IEC	Tony Cheng	3465 2888	3465 2899
Contractor (Gammon Construction Limited)	Environmental Manager	Brian Kam	3520 0381	3520 0486
	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 period are listed below:

Marine-based Works

- Survey tower erection;
- Marine piling platform installation;
- Construction of rockfill platform at Viaduct D landing; and
- Additional marine ground investigation (GI) and laboratory testing.
-

Land-based Works

- SOR's and Contractor's site offices erection at Area 5;
- Satellite container offices erection along seawall (ie CEDD Access Road);

- Tree felling at Pak Mong area;
- Fence relocation for Viaducts A, C & D;
- Additional land GI, trial pits & lab testing; and
- Utility surveys.

The general layout plan of the site showing the detailed works areas is shown in *Figures 1.1 to 1.12*.

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

Key

Site Boundary

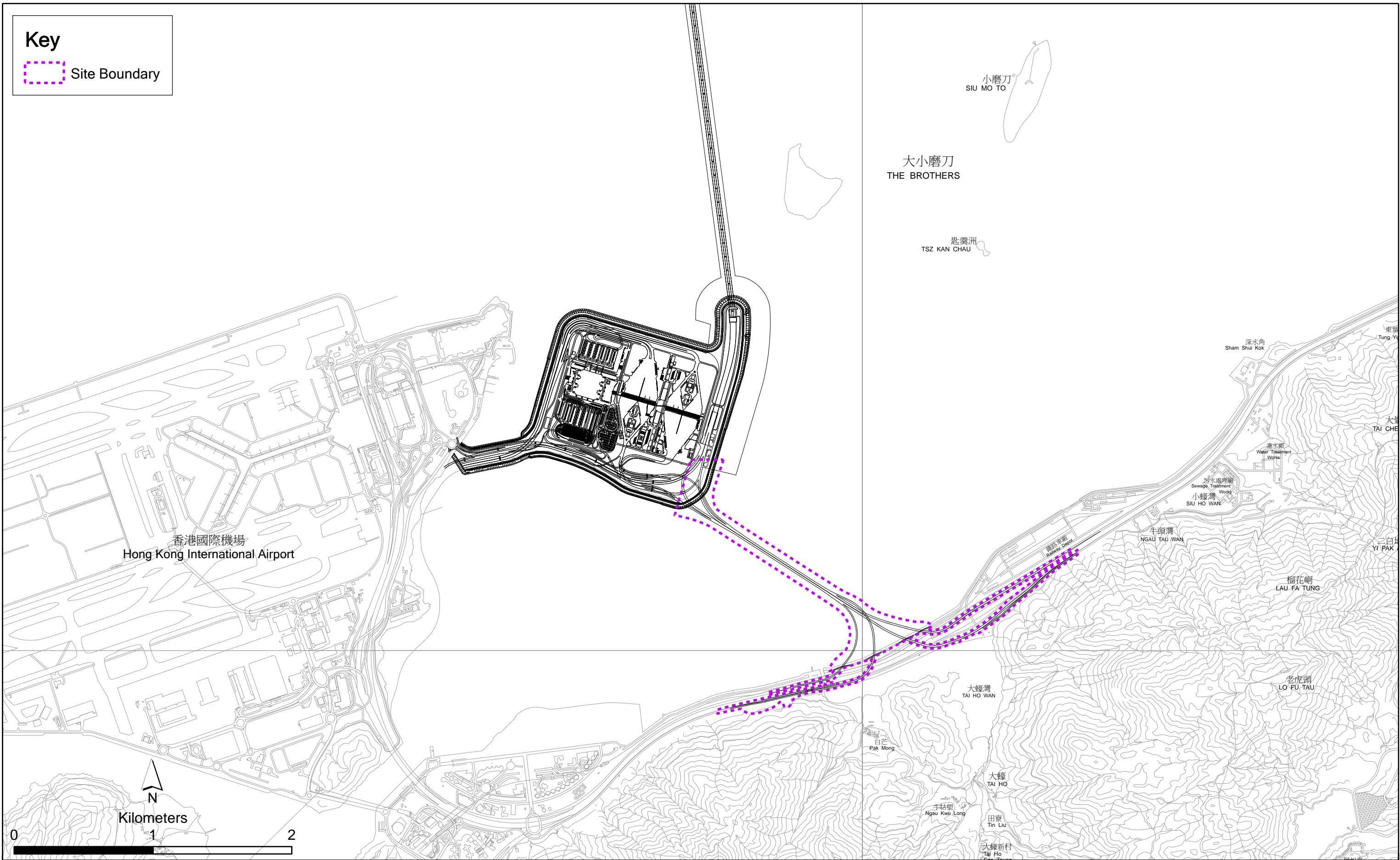


Figure 1.1

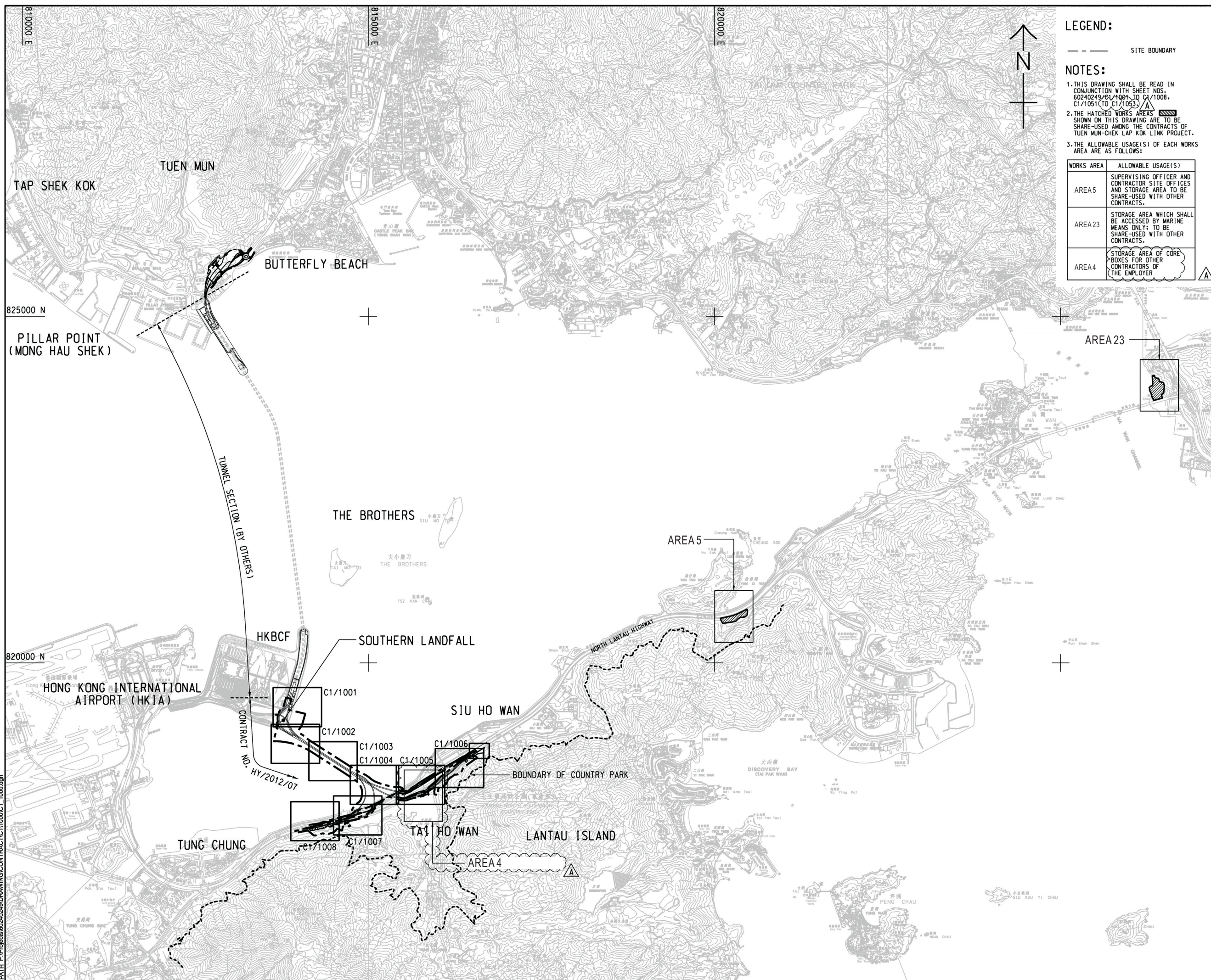
General Layout Plan of the Project

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Date: 6/12/2013

Environmental
Resources
Management



Plot File by: LIUJ3 2012/11/15
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 Project Management Initials: Designer: SLYY Checked: PLCK Approved: CWN ISO A1 594mm x 841mm



LEGEND:

--- SITE BOUNDARY

NOTES:

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH SHEET NOS. 60240249/61/1001 TO C1/1008, C1/1051 (TO C1/1053).
2. THE HATCHED WORKS AREAS SHOWN ON THIS DRAWING ARE TO BE SHARE-USED AMONG THE CONTRACTS OF TUEN MUN-CHEK LAP KOK LINK PROJECT.
3. THE ALLOWABLE USAGE(S) OF EACH WORKS AREA ARE AS FOLLOWS:

WORKS AREA	ALLOWABLE USAGE(S)
AREA 5	SUPERVISING OFFICER AND CONTRACTOR SITE OFFICES AND STORAGE AREA TO BE SHARE-USED WITH OTHER CONTRACTS.
AREA 23	STORAGE AREA WHICH SHALL BE ACCESSED BY MARINE MEANS ONLY; TO BE SHARE-USED WITH OTHER CONTRACTS.
AREA 4	STORAGE AREA OF CORE BOXES FOR OTHER CONTRACTORS OF THE EMPLOYER



PROJECT
 項目
TUEN MUN - CHEK LAP KOK LINK

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

CLIENT
 業主
HIGHWAYS DEPARTMENT
 港珠澳大橋香港工程管理有限公司
 Hong Kong - Zhuhai - Macao Bridge
 Hong Kong Project Management Office

CONSULTANT
 工程顧問公司
 AECOM Asia Company Ltd.
 www.aecom.com

SUB-CONSULTANTS
 分判工程顧問公司

Fig1.2

ISSUE/REVISION

I/R	DATE	DESCRIPTION	CHK
A	NOV. 12	TENDER ADDENDUM NO.1	CWY
-	OCT. 12	TENDER DRAWING	CWN

STATUS

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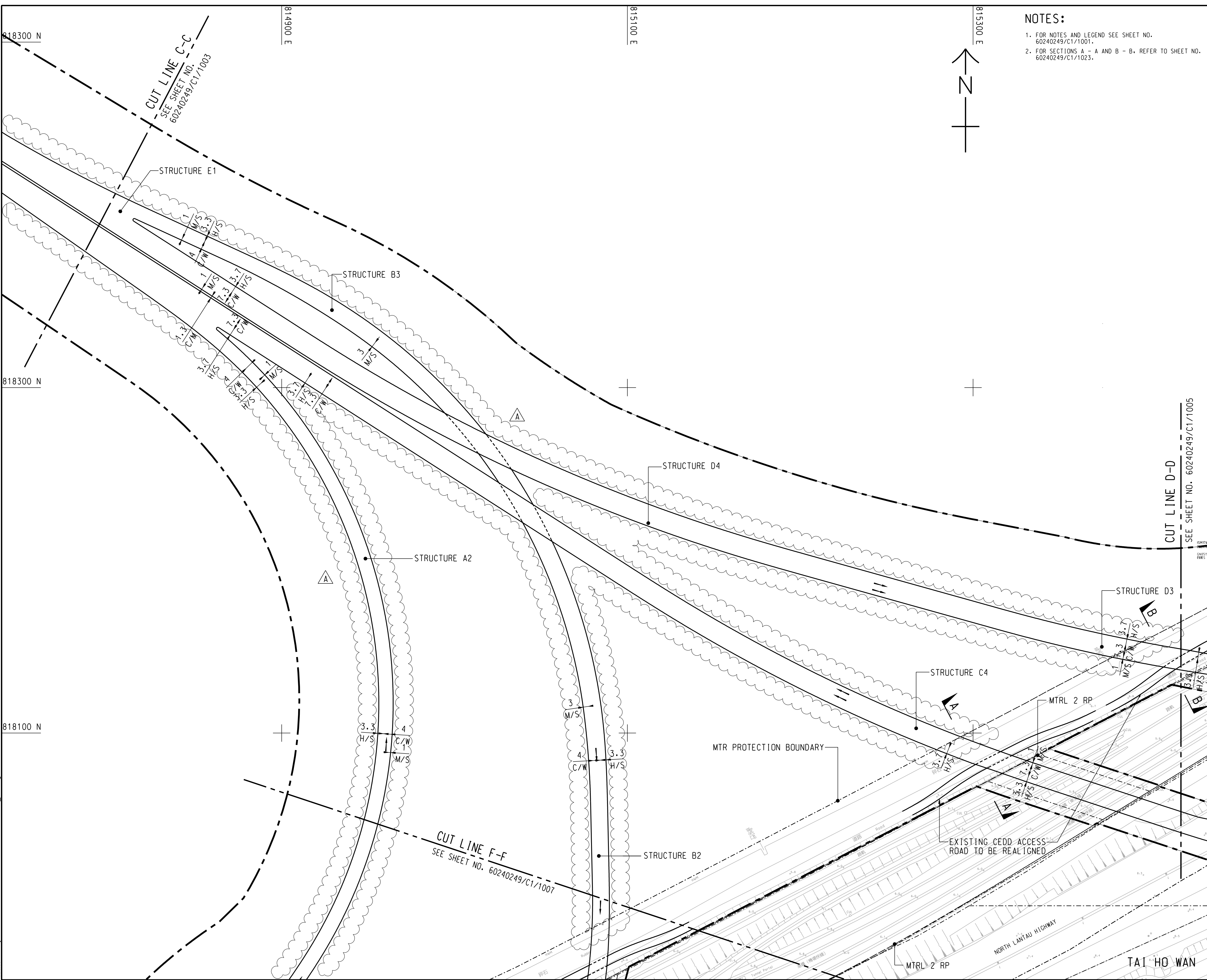
CONTRACT NO.
 合約編號
 HY/2012/07

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 LOCATION PLAN AND KEY PLAN

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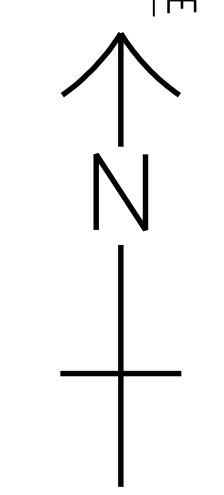
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NOTES:

- FOR NOTES AND LEGEND SEE SHEET NO. 60240249/C1/1001.
- FOR SECTIONS A - A AND B - B, REFER TO SHEET NO. 60240249/C1/1023.



AECOM

PROJECT
項目
TUEN MUN - CHEK LAP KOK LINK

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

CLIENT
業主
路政署
HIGHWAYS DEPARTMENT
港務大樓香港工程管理局
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Project Management Office

CONSULTANT
工程師有限公司
AECOM Asia Company Ltd.
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SUB-CONSULTANTS
分判工程師有限公司

Fig1.3

ISSUE/REVISION
修訂

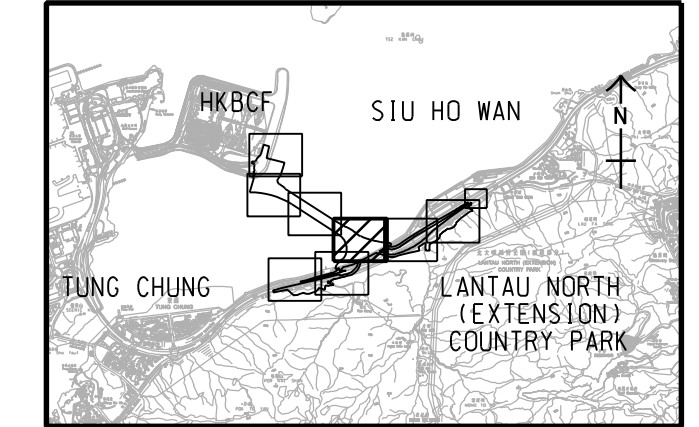
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METRES

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60240249

CONTRACT NO.
合約編號
HY/2012/07

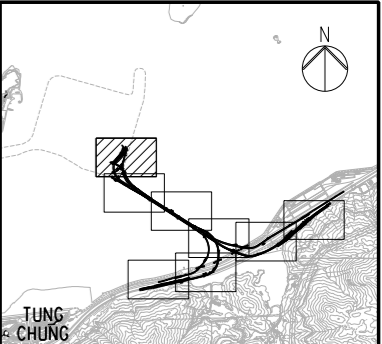
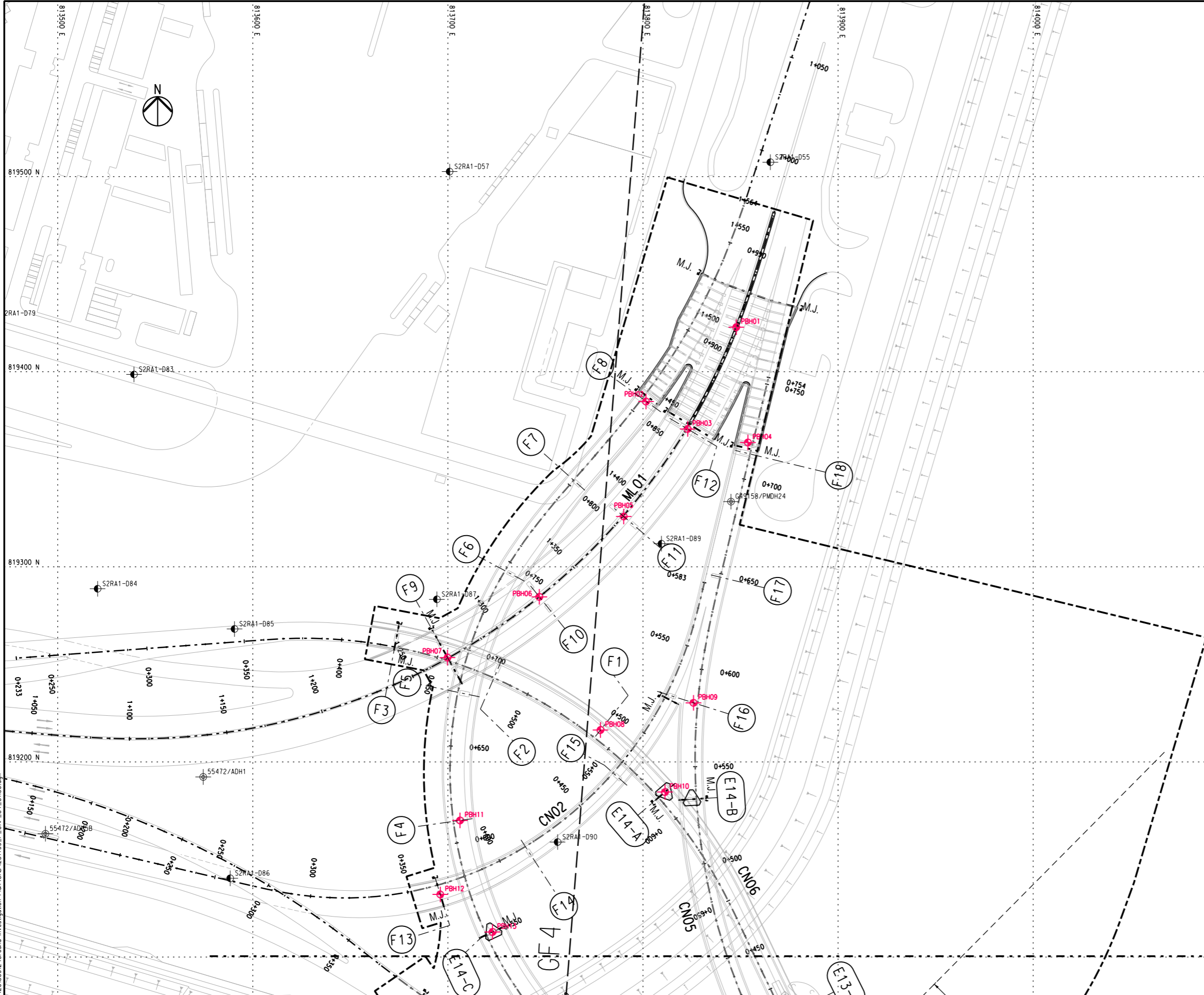
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SHEET 4 OF 8

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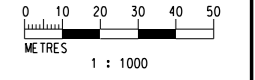


KEY PLAN

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
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 SEE DRG J3518/P/OAP/04/01101



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C	SUBMISSION	RC	09/13					DS	DOP
								Scale	
								1:1000 @ A1 / 1:2000 @ A3	

Client
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HIGHWAYS DEPARTMENT
 港珠澳大橋香港工程管理局
 Hong Kong - Zhuhai - Macao Bridge
 Hong Kong Project Management Office

Supervising Officer
AECOM

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

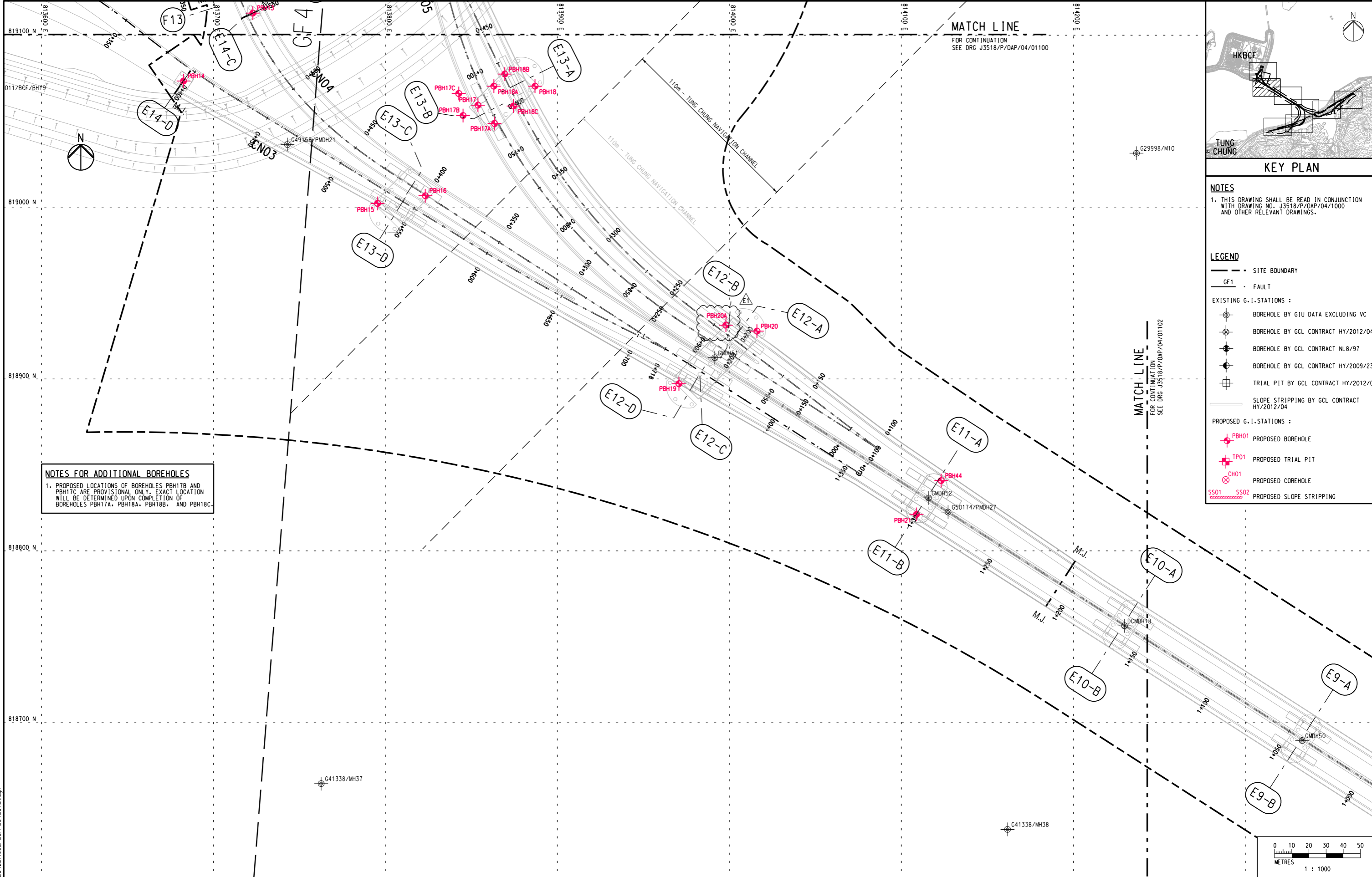
Contractor
Gammon

Drawing title
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Fig 1.4

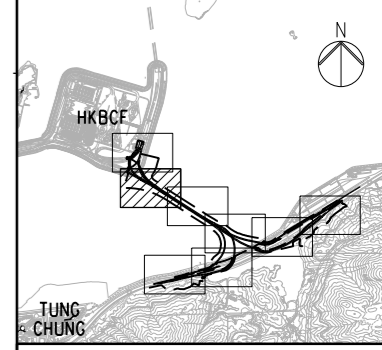
Originator
ARUP

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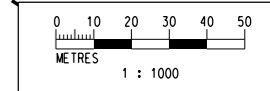
KEY PLAN

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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 NLB/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
 - SSD1 SSD2 PROPOSED SLOPE STRIPPING

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.



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C	SUBMISSION	RC	09/13					DS	DOP
D	SUBMISSION	RC	10/13					Scale	1:1000 @ A1 / 1:2000 @ A3
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Client
HIGHWAYS DEPARTMENT
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港珠澳大橋香港工程處
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Project Management Office

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

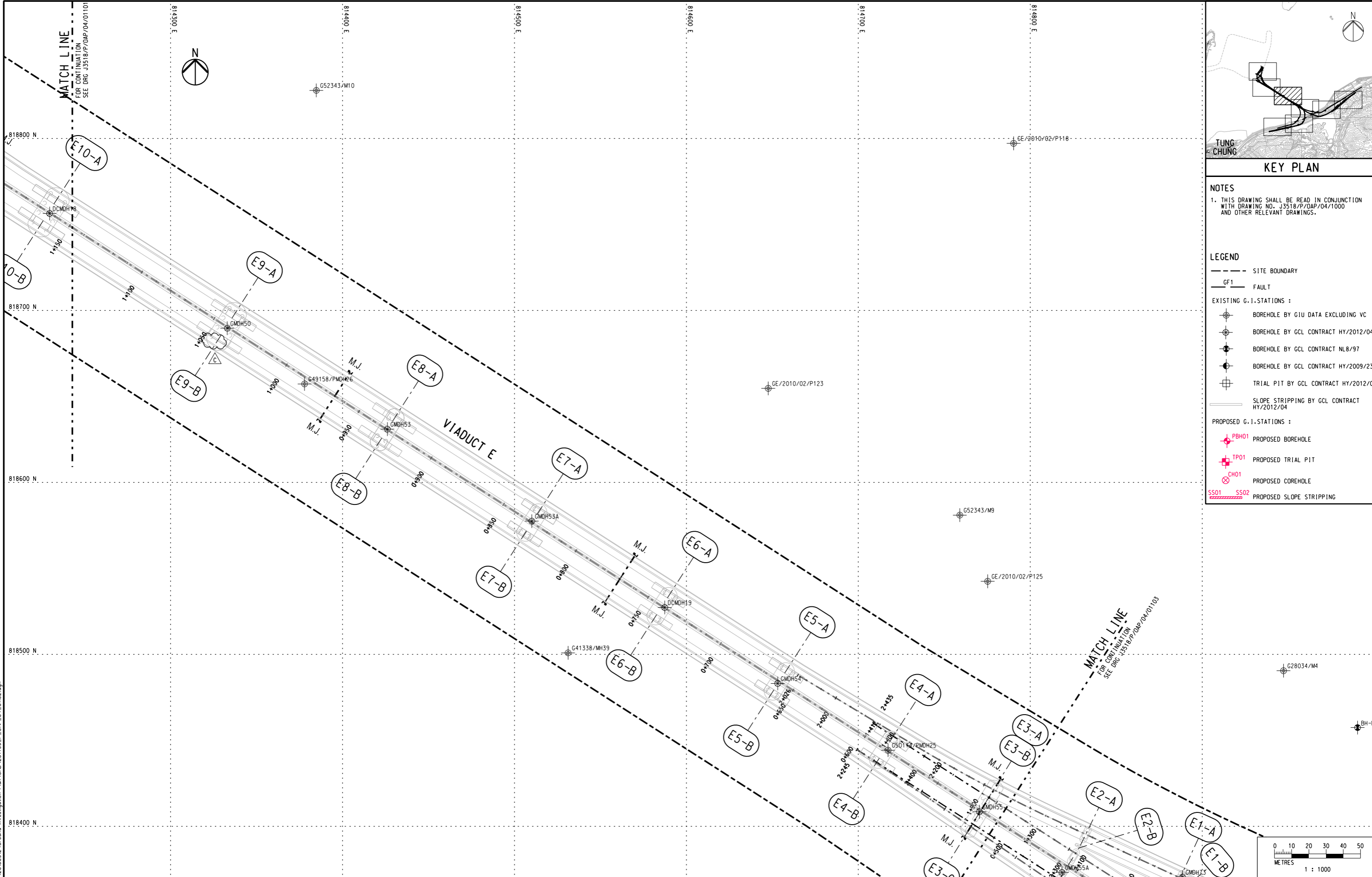
Drawing title
PROPOSED GROUND INVESTIGATION PLAN (2)
Fig 1.5
Drawing no. J3518/P/OAP/04/01101 Rev. E1

Supervising Officer
AECOM

Contractor
Gammon

Originator
ARUP

DO NOT SCALE DRAWING. CHECK ALL DIMENSIONS ON SITE.



KEY PLAN

NOTES

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NO. J3518/P/OAP/04/1000 AND OTHER RELEVANT DRAWINGS.

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 NLB/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

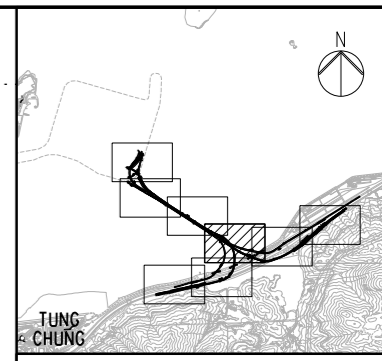
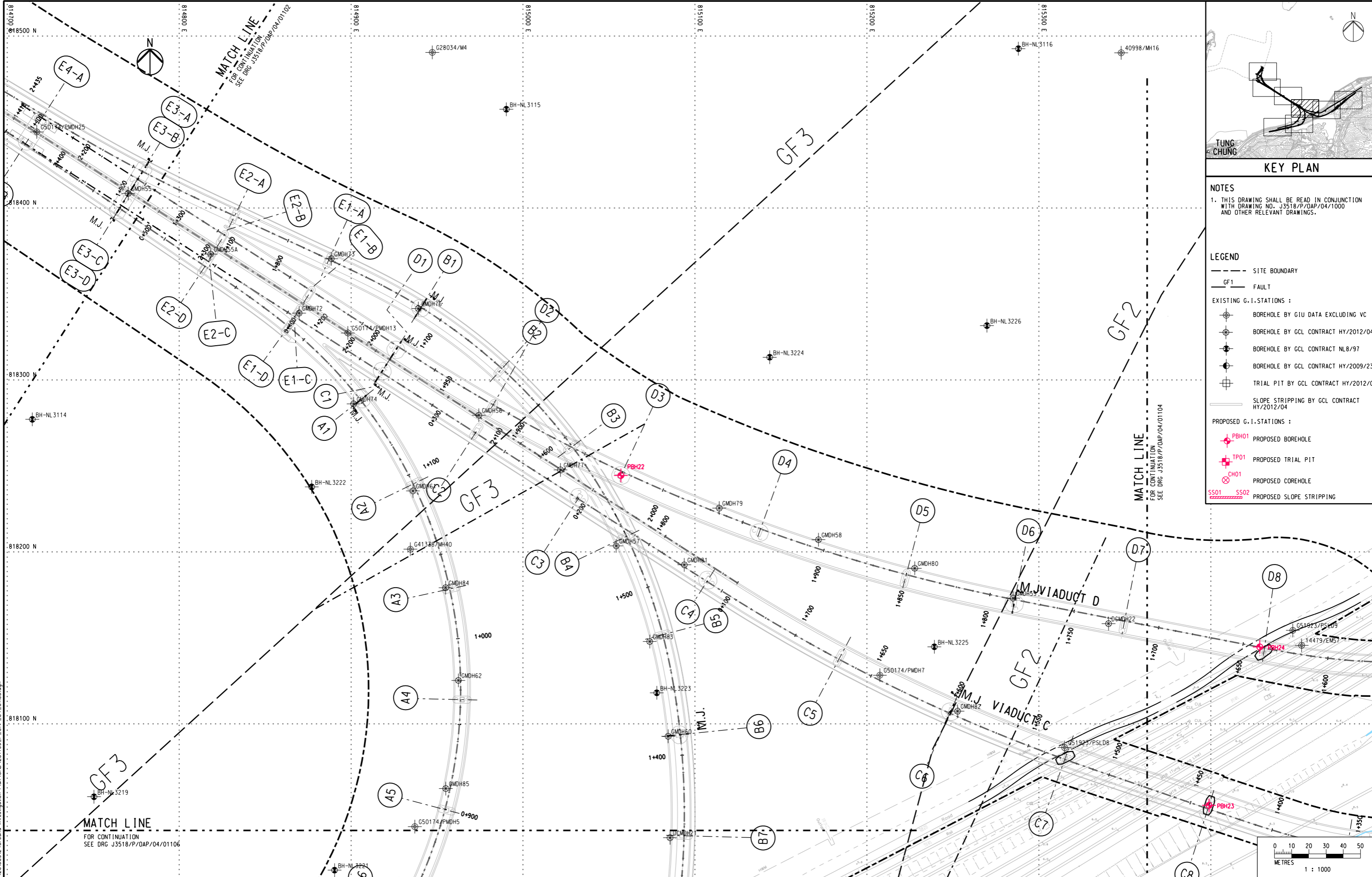
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A	SUBMISSION	RC	07/13				
B	SUBMISSION	RC	07/13				
C	SUBMISSION	RC	09/13				

Drawn	RL	Date	07/13
Checked	DS	Approved	DOP
Scale	1:1000 @ A1 / 1:2000 @ A3		

Client 路政署 HIGHWAYS DEPARTMENT 港珠澳大橋香港工程管理處 Hong Kong - Zhuhai - Macao Bridge Hong Kong Project Management Office	Project Title Contract No. HY/2012/07 Tuen Mun - Chek Lap Kok Link Southern Connection Viaduct Section	Drawing title PROPOSED GROUND INVESTIGATION PLAN (3) Fig 1.6
		Drawing no. J3518/P/OAP/04/01102 Rev. C
Supervising Officer AECOM	Contractor Gammon	Originator ARUP

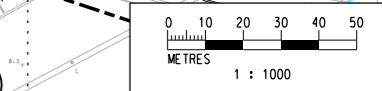
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KEY PLAN

NOTES
 1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NO. J3518/P/OAP/04/1000 AND OTHER RELEVANT DRAWINGS.

- 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



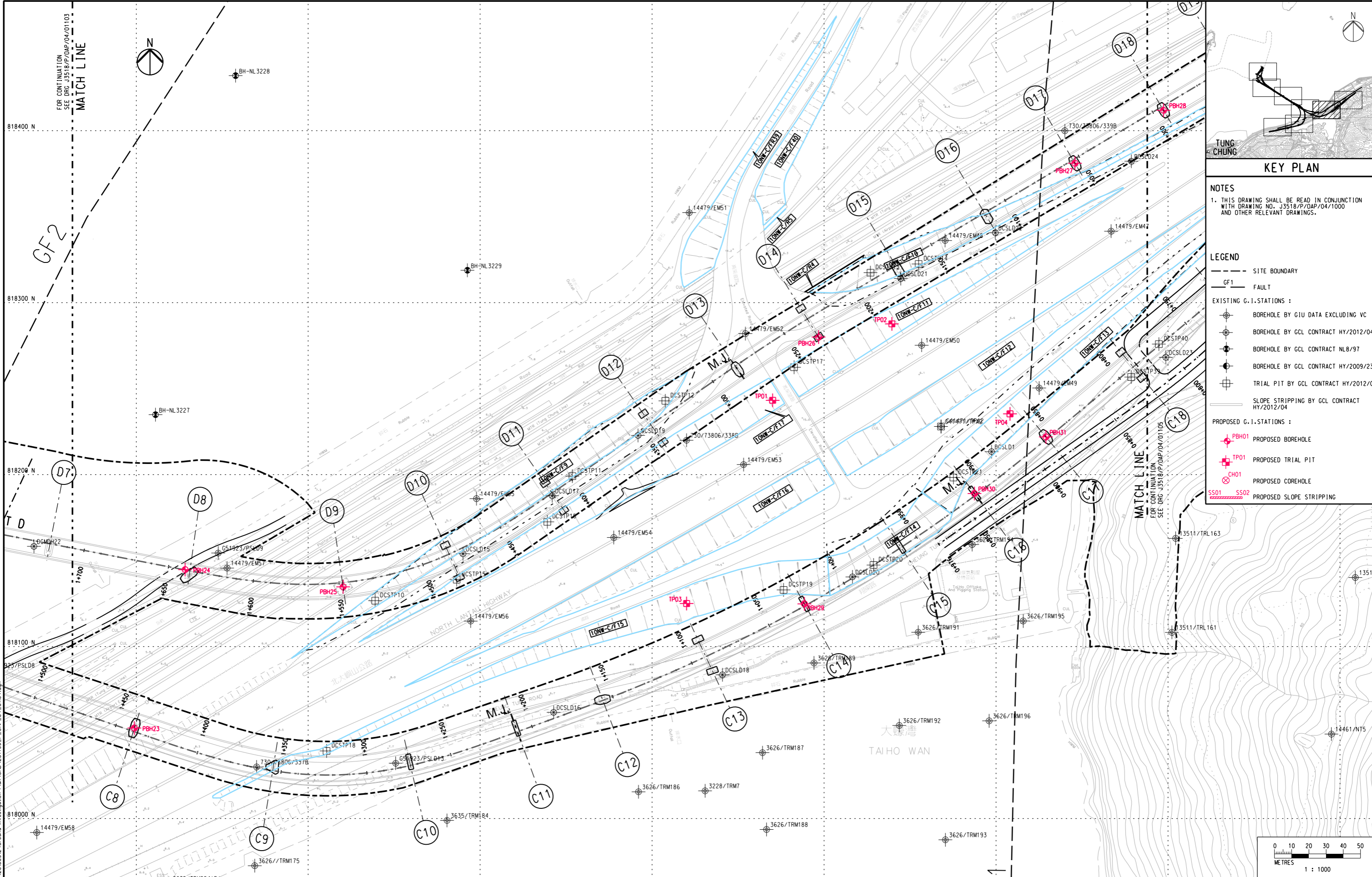
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B	SUBMISSION	RC	07/13				
C	SUBMISSION	RC	09/13				

Drawn	Date	Client
RL	07/13	路政署 HIGHWAYS DEPARTMENT
Checked	Date	Project Title
DS	Approved	Contract No. HY/2012/07 Tuen Mun - Chek Lap Kok Link Southern Connection Viaduct Section
Scale	1:1000 @ A1 / 1:2000 @ A3	Supervising Officer
		AECOM
		Contractor
		Gammon
		Originator
		ARUP

Drawing title PROPOSED GROUND INVESTIGATION PLAN (4) Fig 1.7 Drawing no. J3518/P/OAP/04/01103	Rev. C
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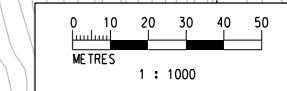
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KEY PLAN

NOTES
 1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NO. J3518/P/OAP/04/1000 AND OTHER RELEVANT DRAWINGS.

- 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



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Rev	Description	By	Date	Rev	Description	By	Date	Drawn	Date
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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
路政署 HIGHWAYS DEPARTMENT
 港珠澳大橋香港工程管理局
 Hong Kong - Zhuhai - Macao Bridge
 Hong Kong Project Management Office

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

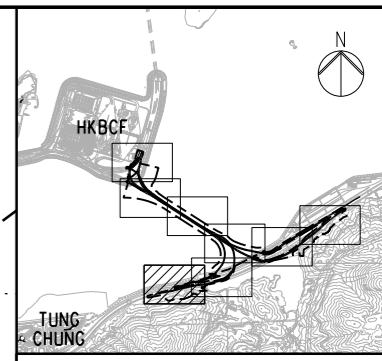
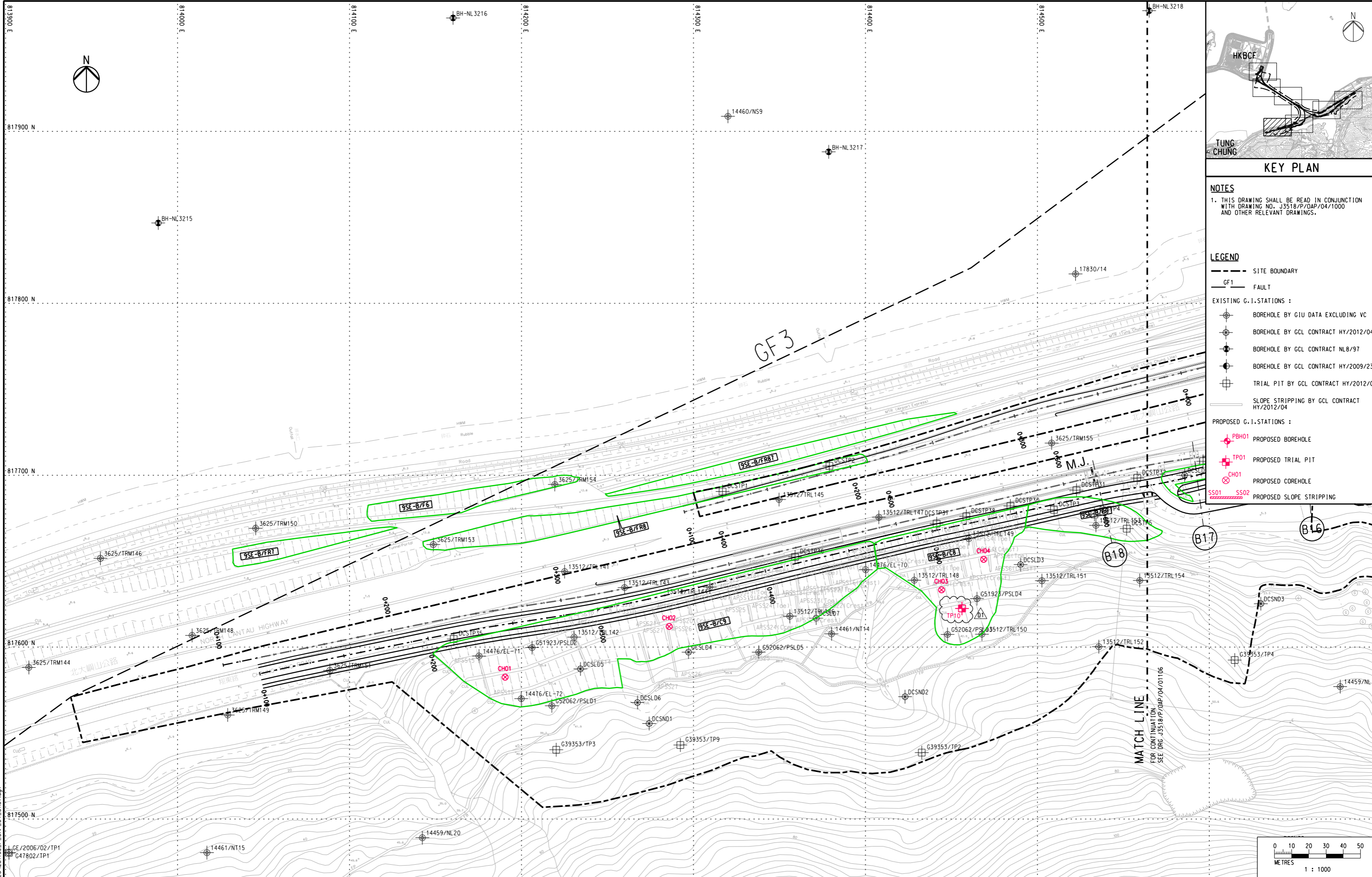
Drawing title
PROPOSED GROUND INVESTIGATION PLAN
(5)
Fig 1.8
 Drawing no. **J3518/P/OAP/04/01104** Rev. **C**

Supervising Officer
AECOM

Contractor
Gammon

Originator
ARUP

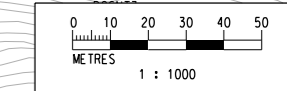
DO NOT SCALE DRAWING. CHECK ALL DIMENSIONS ON SITE.



KEY PLAN

NOTES
 1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NO. J3518/P/OAP/04/1000 AND OTHER RELEVANT DRAWINGS.

- 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

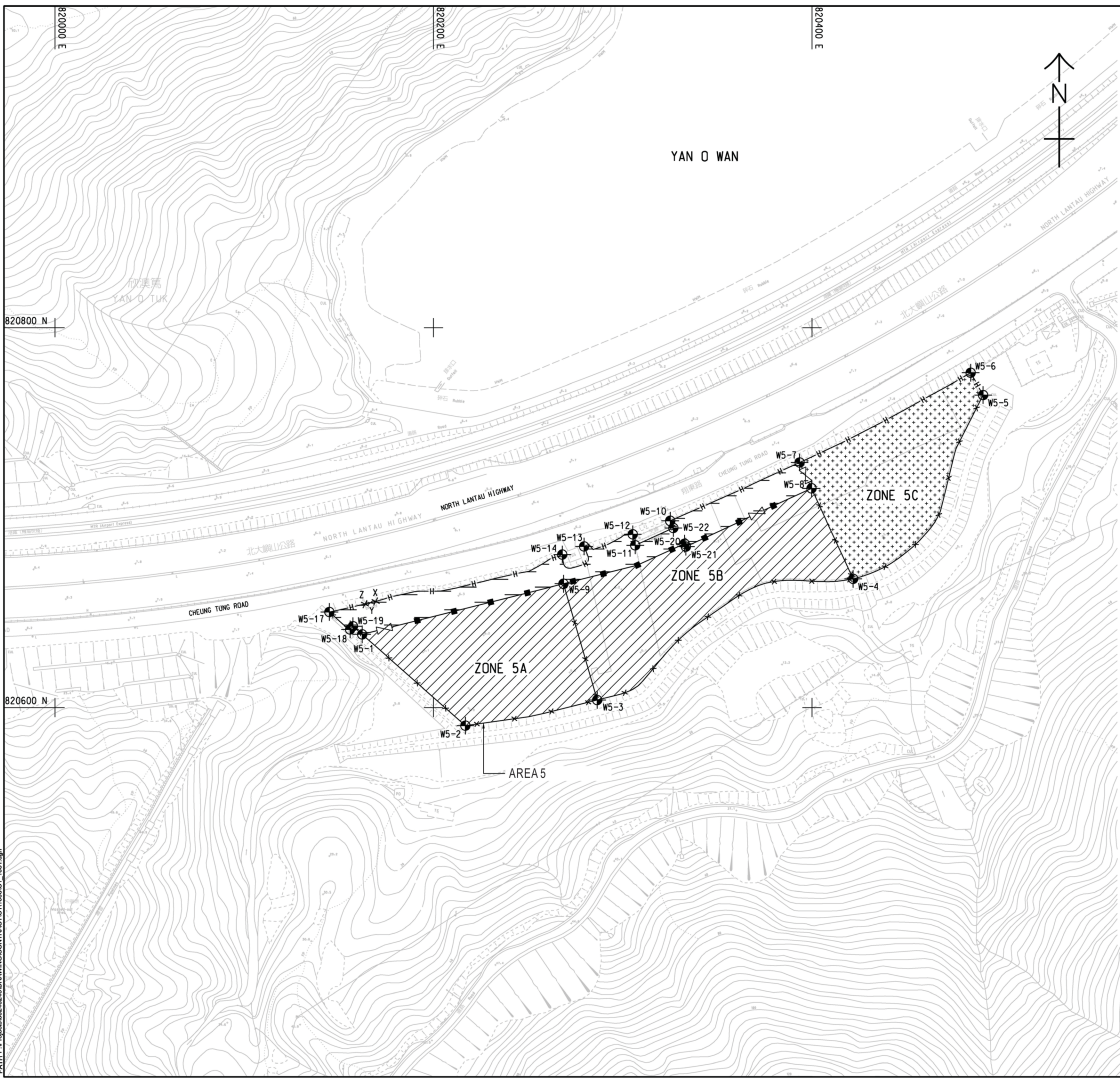


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Rev	Description	By	Date	Rev	Description	By	Date	Drawn	Date
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B	SUBMISSION	RC	07/13					Checked	Approved
C	SUBMISSION	RC	09/13					DS	DOP
D1	FOR INTERNAL REVIEW	RC	11/13					Scale	
								1:1000 @ A1 / 1:2000 @ A3	

Client 路政署 HIGHWAYS DEPARTMENT 港珠澳大橋香港工程管理局 Hong Kong - Zhuhai - Macao Bridge Hong Kong Project Management Office	Project Title Contract No. HY/2012/07 Tuen Mun - Chek Lap Kok Link Southern Connection Viaduct Section	Drawing title PROPOSED GROUND INVESTIGATION PLAN (6)	
		Fig 1.9 Drawing no. J3518/P/OAP/04/01107 Rev. D1	
Supervising Officer AECOM	Contractor Gammon	Originator ARUP	

Plot File by: LULJ3 2012-10-24
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 Project Management Initials: Designer: PLCK Checked: SLYY Approved: CWN
 ISO A1 594mm x 841mm



NOTES:

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE WORKS AREA KEY PLAN IN SHEET NO. 60240249/C1/1000.
2. 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.
3. DEMARCATION OF THE WORKS AREA SHALL BE DETERMINED ON SITE.
4. REFER TO HIGHWAYS DEPARTMENT STANDARD DRAWING NOS. H6110 AND H6111 FOR DETAILS OF HOARDING.
5. REFER TO HIGHWAYS DEPARTMENT STANDARD DRAWING NOS. H6121 AND H6122 FOR DETAILS OF CHAIN LINK FENCE.
6. REFER TO HIGHWAYS DEPARTMENT STANDARD DRAWING NO. H6121 FOR DETAILS OF GATE.
7. CHAIN LINK FENCE SHALL BE ERRECTED 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.
8. THE LOCATION AND WIDTH OF GATE SHOWN ARE INDICATIVE ONLY AND SHALL BE CONFIRMED BY THE SUPERVISING OFFICER.
9. NO STRUCTURES SHALL BE ERRECTED 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.
10. THE TENTATIVE OCCUPATION PERIOD SHALL BE REFERRED TO EMPLOYER'S REQUIREMENTS PART 2 AND PART 14 SECTION 1 CLAUSE 1.45A.
11. 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.
12. THE COMMON AREA SHALL BE CONCRETE PAVED BY THE CONTRACTOR.

LEGEND:

- [diagonal lines] WORKS AREA UNDER THIS CONTRACT
- [cross-hatch] COMMON AREA (MAINTAINED UNDER THIS CONTRACT) TO BE SHARE-USED WITH OTHER CONTRACTS
- [stippled] WORKS AREA FOR THIS CONTRACT TO BE EARLY HANDED OVER BY THE CONTRACTOR.
- [H symbol] HOARDING AND GATE (TO BE ERRECTED AND MAINTAINED UNDER THIS CONTRACT)
- [square symbol] CHAIN LINK FENCE AND GATE (TO BE ERRECTED AND MAINTAINED BY OTHERS)
- [X symbol] CHAIN LINK FENCE AND GATE (TO BE ERRECTED AND MAINTAINED UNDER THIS CONTRACT)

SETTING OUT COORDINATES OF AREA 5

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



PROJECT
 項目
TUEN MUN - CHEK LAP KOK LINK

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

CLIENT
 業主
 路政署
 HONG KONG - ZHUSHI - MEASO BRIDGE
 港粵澳大橋香港工程管理有限公司
 Hong Kong Project Management Office

CONSULTANT
 顧問公司
 AECOM Asia Company Ltd.
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SUB-CONSULTANTS
 分判工程師有限公司

Fig 1.10

ISSUE/REVISION

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

STATUS

修改

SCALE 比例
 A1 1 : 1000
DIMENSION UNIT 尺寸單位
 METRES

KEY PLAN

索引圖

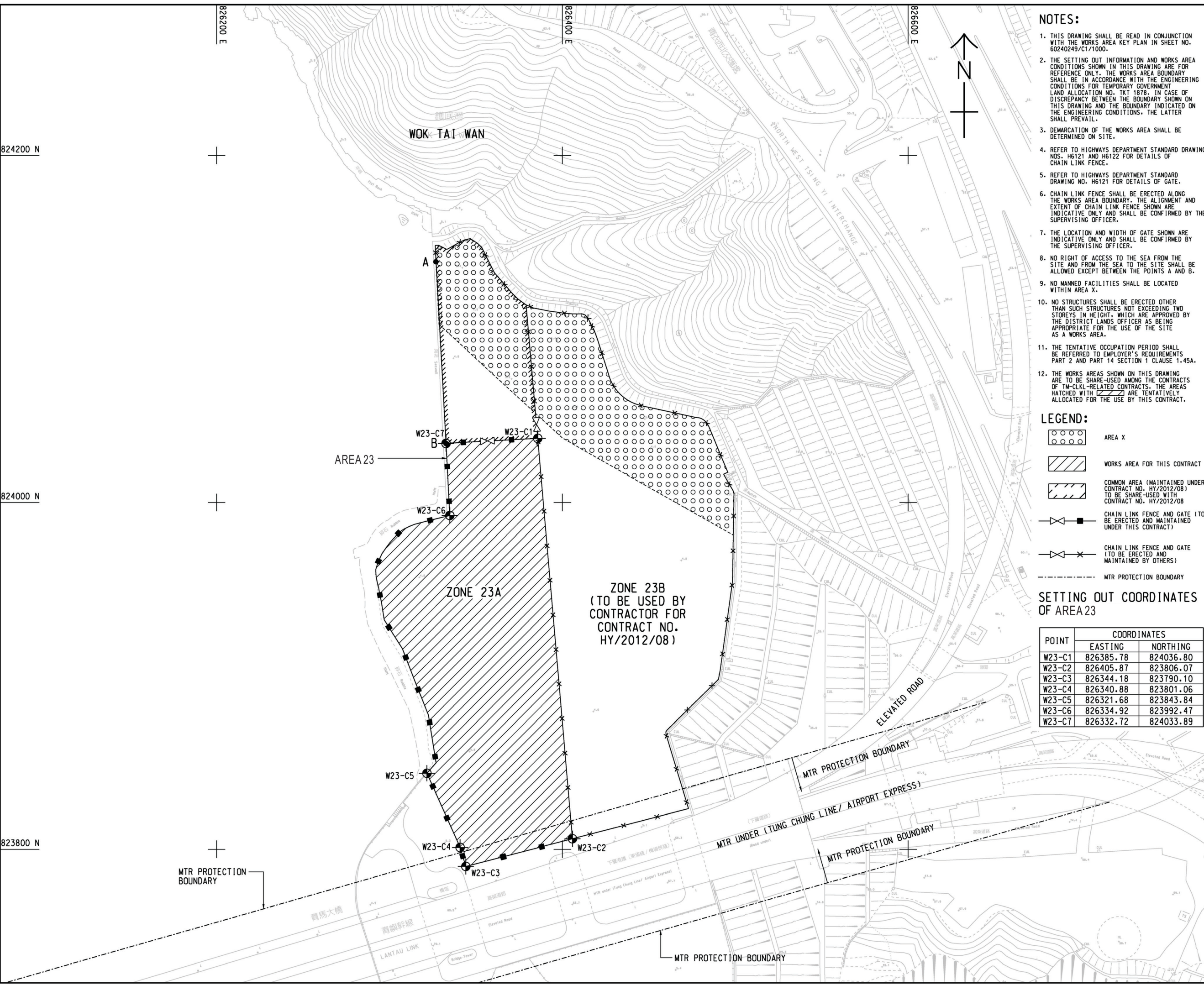
PROJECT NO. 項目編號
 60240249
CONTRACT NO. 合約編號
 HY/2012/07

SHEET TITLE
 圖紙名稱
 WORKS AREA AND HOARDING PLAN

SHEET NUMBER
 圖紙編號
 60240249/C1/1051

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Plot File by: LULIS 2012-10-24
 PATH: P:\Projects\60240249\DRAWING\CONTRACT\C11\000\C1_1052.dgn
 Project Management Initials: Designer: PLCK Checked: SLYY Approved: CWN ISO A1 594mm x 841mm



NOTES:

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE WORKS AREA KEY PLAN IN SHEET NO. 60240249/C1/1000.
2. 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 1878. IN CASE OF DISCREPANCY BETWEEN THE BOUNDARY SHOWN ON THIS DRAWING AND THE BOUNDARY INDICATED ON THE ENGINEERING CONDITIONS, THE LATTER SHALL PREVAIL.
3. DEMARCATION OF THE WORKS AREA SHALL BE DETERMINED ON SITE.
4. REFER TO HIGHWAYS DEPARTMENT STANDARD DRAWING NOS. H6121 AND H6122 FOR DETAILS OF CHAIN LINK FENCE.
5. REFER TO HIGHWAYS DEPARTMENT STANDARD DRAWING NO. H6121 FOR DETAILS OF GATE.
6. 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.
7. THE LOCATION AND WIDTH OF GATE SHOWN ARE INDICATIVE ONLY AND SHALL BE CONFIRMED BY THE SUPERVISING OFFICER.
8. 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.
9. NO MANNED FACILITIES SHALL BE LOCATED WITHIN AREA X.
10. 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.
11. THE TENTATIVE OCCUPATION PERIOD SHALL BE REFERRED TO EMPLOYER'S REQUIREMENTS PART 2 AND PART 14 SECTION 1 CLAUSE 1.45A.
12. THE WORKS AREAS SHOWN ON THIS DRAWING ARE TO BE SHARE-USED AMONG THE CONTRACTS OF TM-CKL-RELATED CONTRACTS. THE AREAS HATCHED WITH 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 SHARE-USED 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 AREA 23

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

PROJECT
項目

TUEN MUN - CHEK LAP KOK LINK

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

CLIENT
業主

路政署
HIGHWAYS DEPARTMENT
港務處大橋及港工務管理處
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Project Management Office

CONSULTANT
工程顧問公司

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Fig 1.11

ISSUE/REVISION

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

STATUS
階段

SCALE
比例

A1 : 1000

DIMENSION UNIT
尺寸單位

METRES

KEY PLAN
索引圖

PROJECT NO.
項目編號

60240249

CONTRACT NO.
合約編號

HY/2012/07

SHEET TITLE
圖紙名稱

WORKS AREA AND HOARDING PLAN

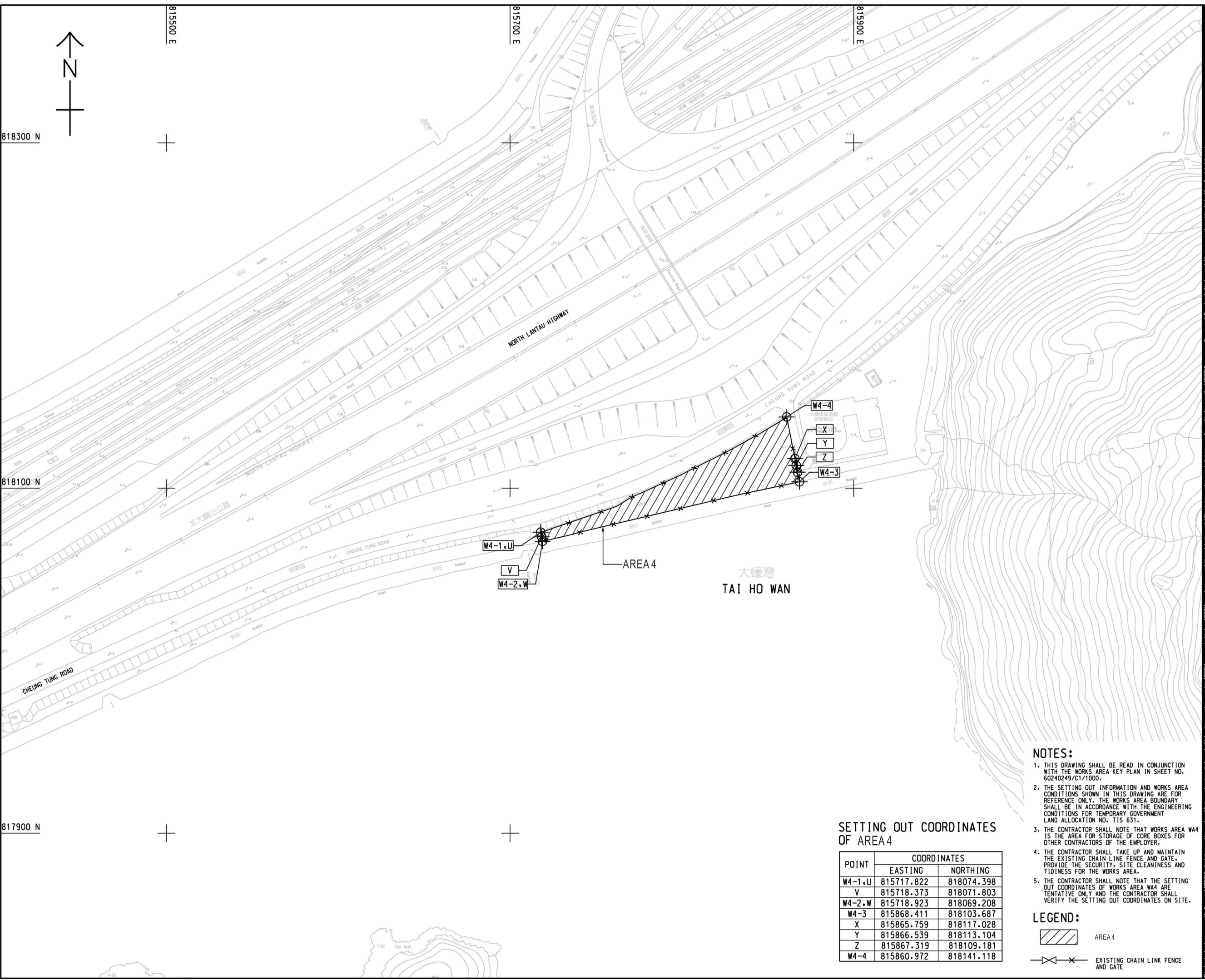
SHEET NUMBER
圖紙編號

60240249/C1/1052

SHEET 2 OF 2

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 Project Management Initials: Designer: PLCK Checked: SLYY Approved: CWN
 ISO A1 594mm x 841mm
 C:\AECOM



SETTING OUT COORDINATES OF AREA 4

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/C1/1000.
- 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. T1S 631.
- THE CONTRACTOR SHALL NOTE THAT WORKS AREA W4 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 W4 ARE TENTATIVE ONLY AND THE CONTRACTOR SHALL VERIFY THE SETTING OUT COORDINATES ON SITE.

LEGEND:

- AREA 4
- EXISTING CHAIN LINK FENCE AND GATE



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
 港珠澳大橋香港工程管理處
 Hong Kong - Zhuhai - Macao Bridge
 Hong Kong Project Management Office

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Fig 1.12

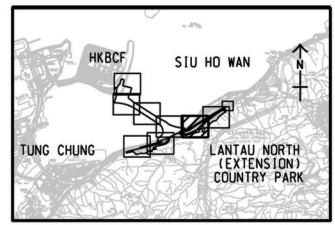
ISSUE/REVISION

I/R	DATE	DESCRIPTION	CHK.
-	NOV. 12	TENDER ADDENDUM NO. 1	CWY, CWN

STATUS
 階段

SCALE **DIMENSION UNIT**
 比例 尺寸單位
 A1 1 : 1000 METRES

KEY PLAN
 索引圖



PROJECT NO. **CONTRACT NO.**
 項目編號 合約編號
 60240249 HY/2012/07

SHEET TITLE
 圖紙名稱
 LOCATION OF AREA 4

SHEET NUMBER
 圖紙編號
 60240249/C1/1053

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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 Level of the air quality monitoring is provided in *Appendix D*.

Air quality monitoring stations ASR9A and ASR9C in Siu Ho Wan MTRC Depot were the proposed locations in accordance with the Updated EM&A Manual. However, authorization of getting access into Siu Ho Wan MTRC Depot is still being sought for the impact monitoring of the EM&A programme for the captioned Contract. Thus, a proposal for setting up alternative air quality monitoring stations at ASR8A (Area 4) and ASR8 (Rooftop of Pak Mong Village Watch Tower) was submitted on 13 November 2013 which was subsequently approved.

Table 2.1 *Locations of Impact Air Quality Monitoring Stations*

Monitoring Dates	Monitoring Station	Location	Description
3, 9, 13, 19, 24, 30 December 2013	ASR 8 ⁽¹⁾	Pak Mong Village Watch Tower	Rooftop of the premise
	ASR 8A ⁽¹⁾	Area 4	On ground at the Area 4

Note: (1) Air Quality Monitoring Stations ASR9A and ASR9C (Siu Ho Wan MTRC Depot) proposed in accordance with the Updated EM&A were temporarily relocated to ASR8A and ASR8, respectively.

High Volume Samplers (HVSs) were used for carrying out 1-hour and 24-hr TSP monitoring on 3, 9, 13, 19, 24 and 30 December 2013 at ASR8 (Pak Mong Village Watch Tower) and ASR8A (Area 4) (*Figure 2.1; Table 2.1*) in accordance with the requirements stipulated in the Updated EM&A Manual. Wind anemometer was installed at the rooftop of Pak Mong Village Watch Tower for logging wind speed and wind direction. Details of the equipment deployed are given in *Table 2.2*. Copies of the calibration certificates for the equipment are presented in *Appendix E*.

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 WE550

2.1.2 *Monitoring Schedule for the Reporting Month*

The schedule for air quality monitoring in December 2013 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*

	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	145	42 - 275	394	500
ASR 8	157	63 - 319	393	500

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

	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	136	80 - 210	178	260
ASR 8	131	83 - 205	178	260

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

All 1-hour TSP results were below the Action and Limit level at all monitoring locations in the reporting period. However, two (2) exceedances of Action Level in 24-hr TSP were detected on 13 December 2013 at both ASR8A and ASR8. Upon further investigation, the exceedances were considered not related to the construction works of this Contract. The Contractor was

Key

- Original Monitoring Station
- Alternative Monitoring Station
- Site Boundary

AQMS	X	Y
ASR9A	815847.40	818508.64
ASR9C	816399.52	818946.65
ASR8	815059.45	817488.99
ASR8A	815856.14	818118.14

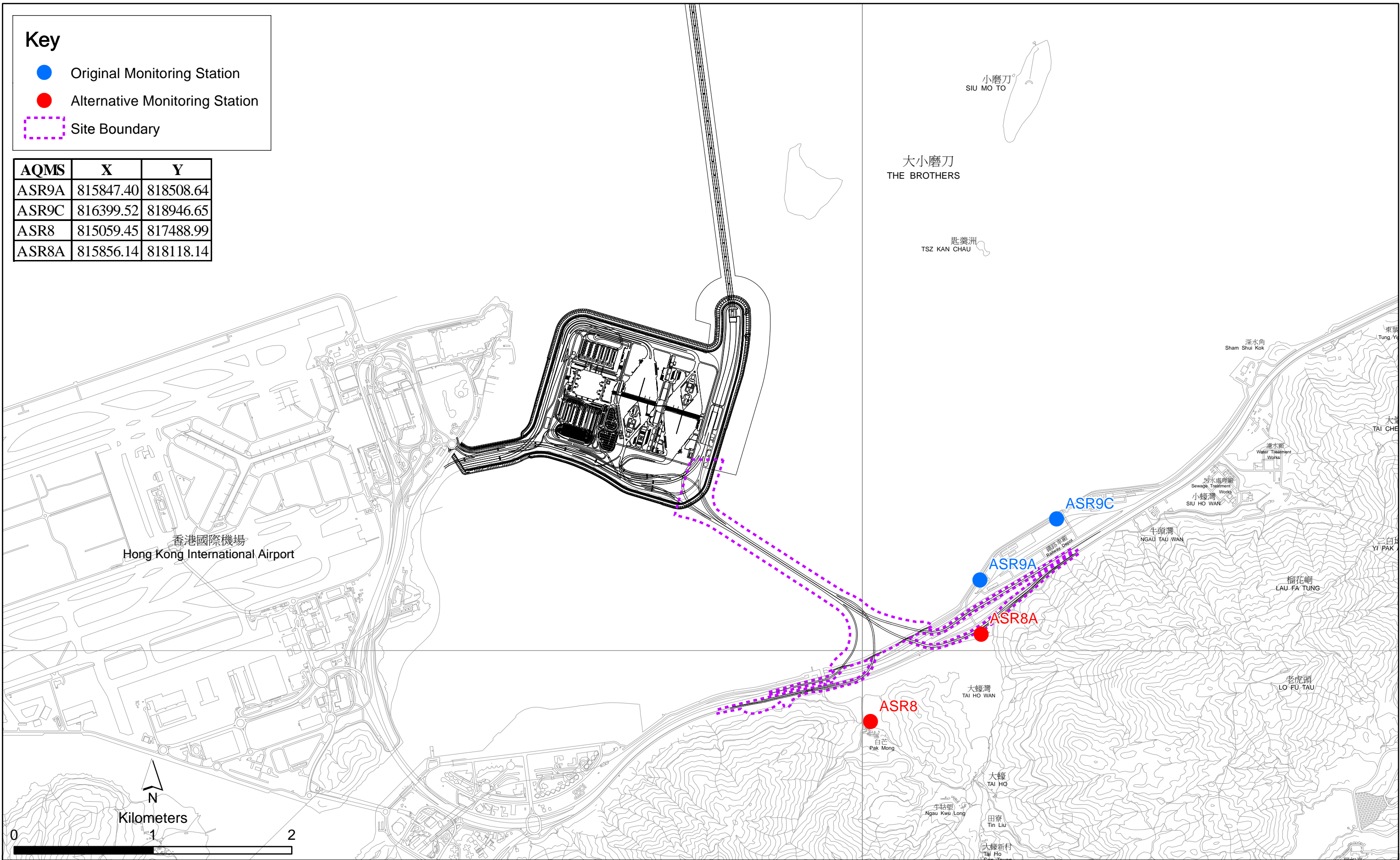


Figure 2.1

Locations of Air Quality Monitoring Stations

File: T:\GIS\CONTRACT\0215660\Mxd\0215660_AQMS.mxd
Date: 6/12/2013

Remark: Air Quality Monitoring Stations ASR9A and ASR9C (Siu Ho Wan MTRC Depot) proposed in accordance with the Updated EM&A were temporarily relocated to ASR8A and ASR8, respectively.

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reminded to keep track of the construction activities in compliance with the environmental requirements and implement all necessary mitigation measure properly. Cumulative statistics of exceedances is presented in *Appendix N*

The Event and Action plan is presented in *Appendix L*.

Meteorological information collected from the wind station, 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 using sound level meter at the designated monitoring station NSR 1 (*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 equipment deployed 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
NSR 1	Pak Mong Village Watch Tower	Rooftop of the premise	30-mins 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

Table 2.6 *Noise Monitoring Equipment*

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

Key

- Noise Monitoring Station
- Site Boundary

NMS	X	Y
NSR1	815059.45	817488.99

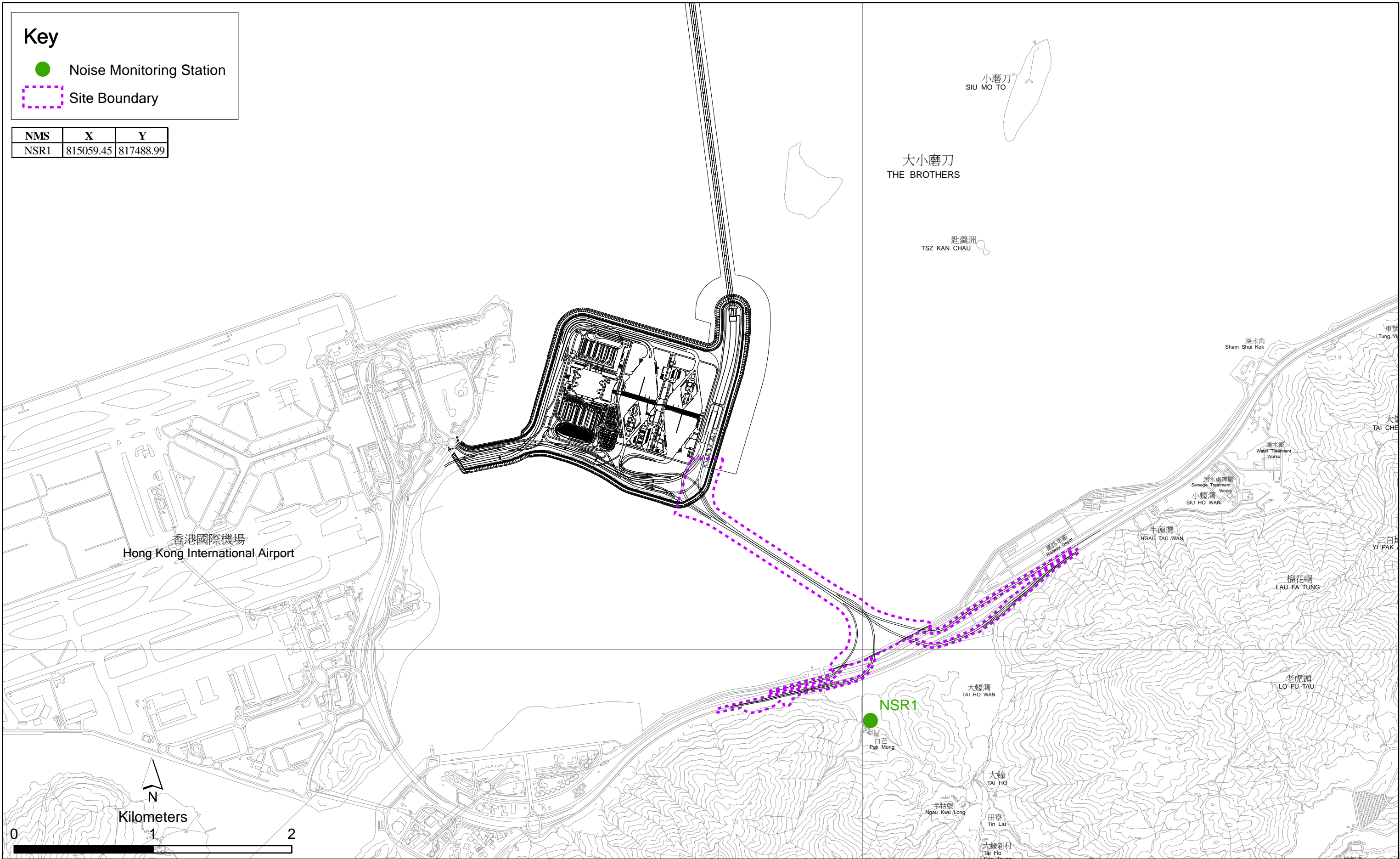


Figure 2.2

Locations of Noise Monitoring Stations

2.2.2 *Monitoring Schedule for the Reporting Month*

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

2.2.3 *Monitoring Results*

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

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

	Average , dB(A), L _{eq} (30mins)	Range, dB(A), L _{eq} (30mins)	Limit Level, dB(A), L _{eq} (30mins)
NSR 1	58	56 - 59	75

No noise Action Level and Limit level exceedance was recorded at all monitoring stations in the reporting month. No action is thus required to be undertaken in accordance with the Event Action Plan presented in *Appendix L*.

Major noise sources during the noise monitoring included construction activities, 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 Level of the water quality monitoring is provided in *Appendix D*.

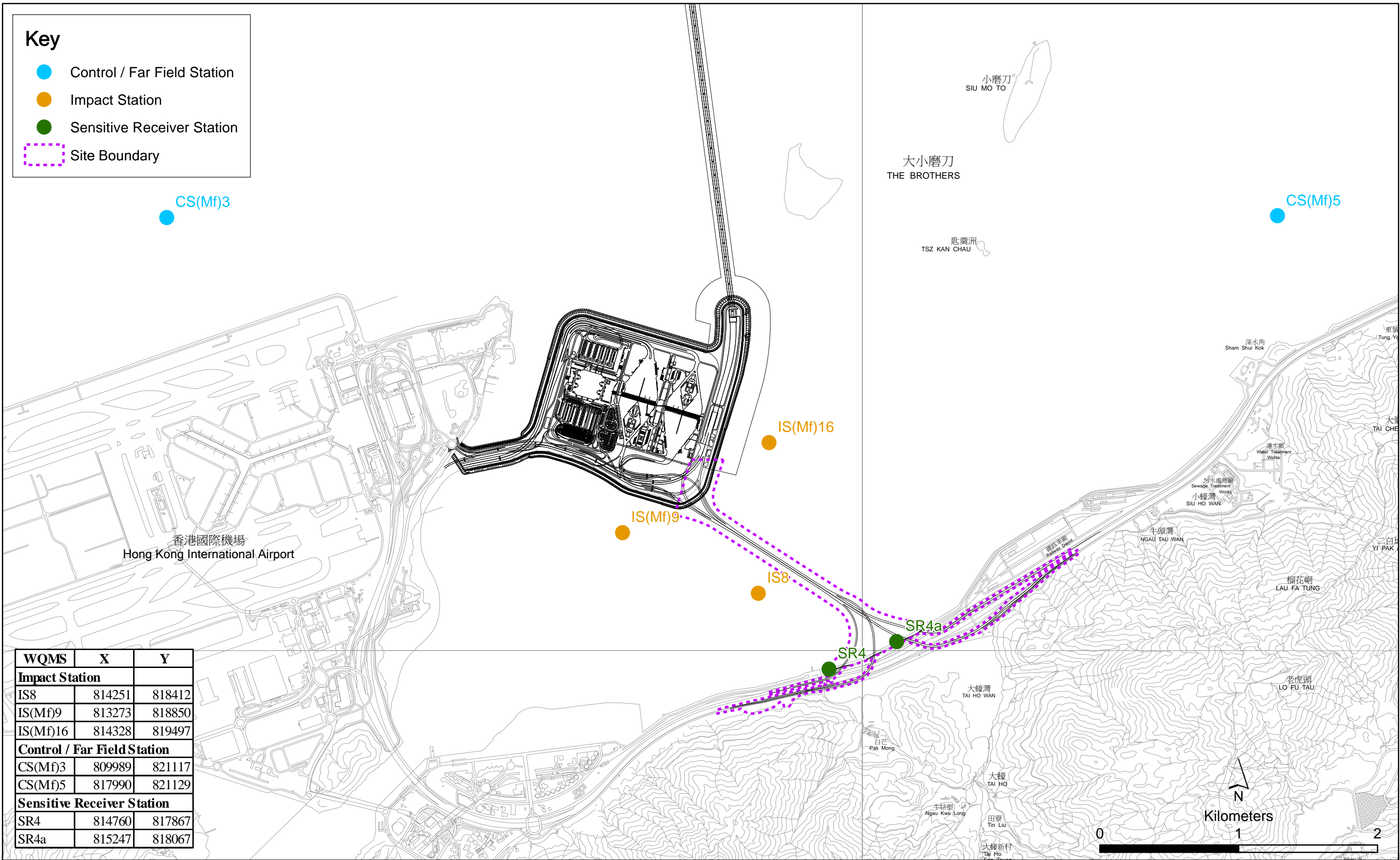
The locations of the monitoring stations under the Contract are shown in *Figure 2.3* and *Table 2.8*.

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) • Water depth (m) • Salinity (ppt) • DO (mg/L and % of saturation) SS (mg/L) 	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
IS(Mf)16	Impact Station (Close to HKBCF construction site)	814328	819497			

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)3	809989	821117
CS(Mf)5	817990	821129
Sensitive Receiver Station		
SR4	814760	817867
SR4a	815247	818067

Figure 2.3

Locations of Water Quality Monitoring Stations

Station ID	Type	Coordinates		*Parameters, unit	Frequency	Depth
IS8	Impact Station(Close to HKBCF construction site)	814251	818412			3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted
SR4	Sensitive receiver (Tai Ho Inlet)	814760	817867			
SR4a	Sensitive receiver	815247	818067			
CS(Mf)3	Control Station	809989	821117			
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.

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
DO, Temperature meter and Salinity	YSI Pro2030
Turbidimeter	HACH Model 2100Q
pH meter	HANNA HI8314
Positioning Equipment	Koden913MK2 with KBG-3 DGPS antenna
Water Depth Detector	Speedtech Instrument SM-5
Water Sampler	Kemmerer 1520 (1520-C25) 2.2L with messenger

2.3.2 Monitoring Schedule for the Reporting Month

The schedule for water quality monitoring in December 2013 is provided in Appendix F.

2.3.3 Results and Observations

Impact water quality monitoring was conducted at all designated monitoring stations in the reporting month. Impact water quality monitoring results and graphical presentations are provided in Appendix J.

No Action and Limit level exceedance was recorded at all monitoring stations for impact water quality monitoring in the reporting month. No action is thus required to be undertaken in accordance with the Event Action Plan 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 dolphins. 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 summarises the equipment used for the impact dolphin monitoring.

Table 2.10 Dolphin Monitoring Equipment

Equipment	Model
Global Positioning System (GPS)	Garmin 18X-PC
Camera	Geo One Phottix Nikon D90 300m 2.8D fixed focus Nikon D90 20-300m zoom lens
Laser Binoculars	Infinitor LRF 1000
Marine Binocular	Bushell 7 x 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.

Table 2.11 Impact Dolphin Monitoring Line Transect Co-ordinates

Line No.	Easting	Northing	Line No.	Easting	Northing		
1	Start Point	804671	814577	13	Start Point	816506	819480
1	End Point	804671	831404	13	End Point	816506	824859
2	Start Point	805475	815457	14	Start Point	817537	820220

Line No.		Easting	Northing		Line No.		Easting	Northing
2	End Point	805477	826654		14	End Point	817537	824613
3	Start Point	806464	819435		15	Start Point	818568	820735
3	End Point	806464	822911		15	End Point	818568	824433
4	Start Point	807518	819771		16	Start Point	819532	821420
4	End Point	807518	829230		16	End Point	819532	824209
5	Start Point	808504	820220		17	Start Point	820451	822125
5	End Point	808504	828602		17	End Point	820451	823671
6	Start Point	809490	820466		18	Start Point	821504	822371
6	End Point	809490	825352		18	End Point	821504	823761
7	Start Point	810499	820690		19	Start Point	822513	823268
7	End Point	810499	824613		19	End Point	822513	824321
8	Start Point	811508	820847		20	Start Point	823477	823402
8	End Point	811508	824254		20	End Point	823477	824613
9	Start Point	812516	820892		21	Start Point	805476	827081
9	End Point	812516	824254		21	End Point	805476	830562
10	Start Point	813525	820872		22	Start Point	806464	824033
10	End Point	813525	824657		22	End Point	806464	829598
11	Start Point	814556	818449		23	Start Point	814559	821739
11	End Point	814556	820992		23	End Point	814559	824768
12	Start Point	815542	818807					
12	End Point	815542	824882					

2.4.5 *Action & Limit Levels*

The action and limit levels of dolphin impact monitoring are shown in *Tables 2.12 & 2.13*. The Event and Action plan is presented in *Appendix K*.

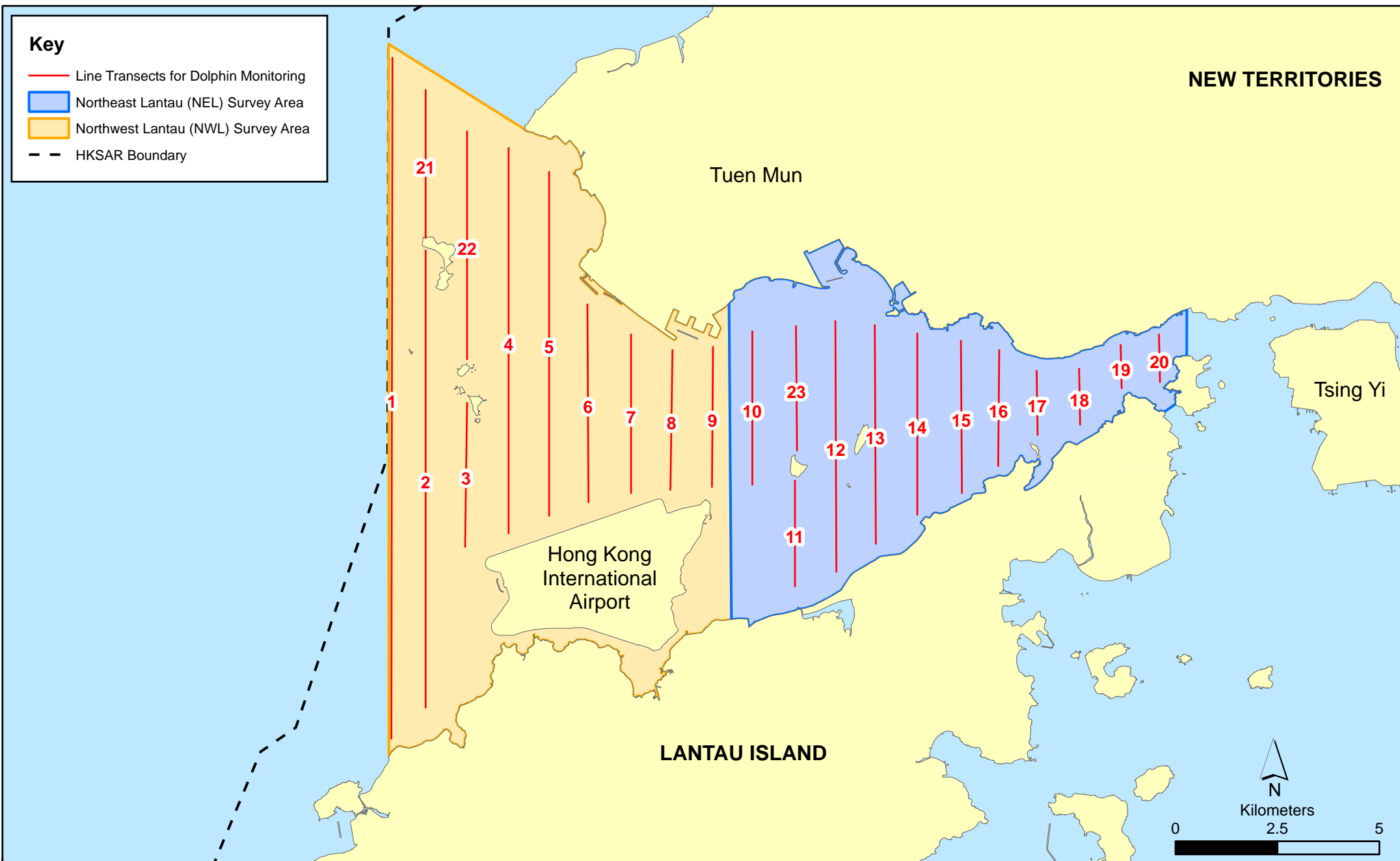


Figure 2.4

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

Table 2.12 Action Level and Limit Level for Dolphin Impact 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 2.13 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]	

2.4.6 Monitoring Schedule for the Reporting Month

Dolphin monitoring was carried out on 5, 9, 13 and 19 December 2013. The dolphin monitoring schedule for the reporting period is provided in *Appendix F*.

2.4.7 Results and Observations

A total of 277.40 km of survey effort was collected, with 83.2% of the total survey effort being conducted under favourable weather conditions (i.e. Beaufort Sea State 3 or below with good visibility) during the December’s surveys. Among the two areas, 98.10 km and 179.30 km of survey effort were collected from NEL and NWL survey areas respectively. The total survey effort conducted on primary and secondary lines were 217.14 km and 60.26 km respectively. The survey efforts are summarized in *Appendix K*.

A total of eight groups of thirty-three dolphins sightings were recorded during the two sets of surveys. All except one sighting were made in NWL during the two sets of surveys in December, with another group being sighted in NEL.

None of the 33 sightings was made in the proximity of this Project. The distribution of dolphin sightings 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

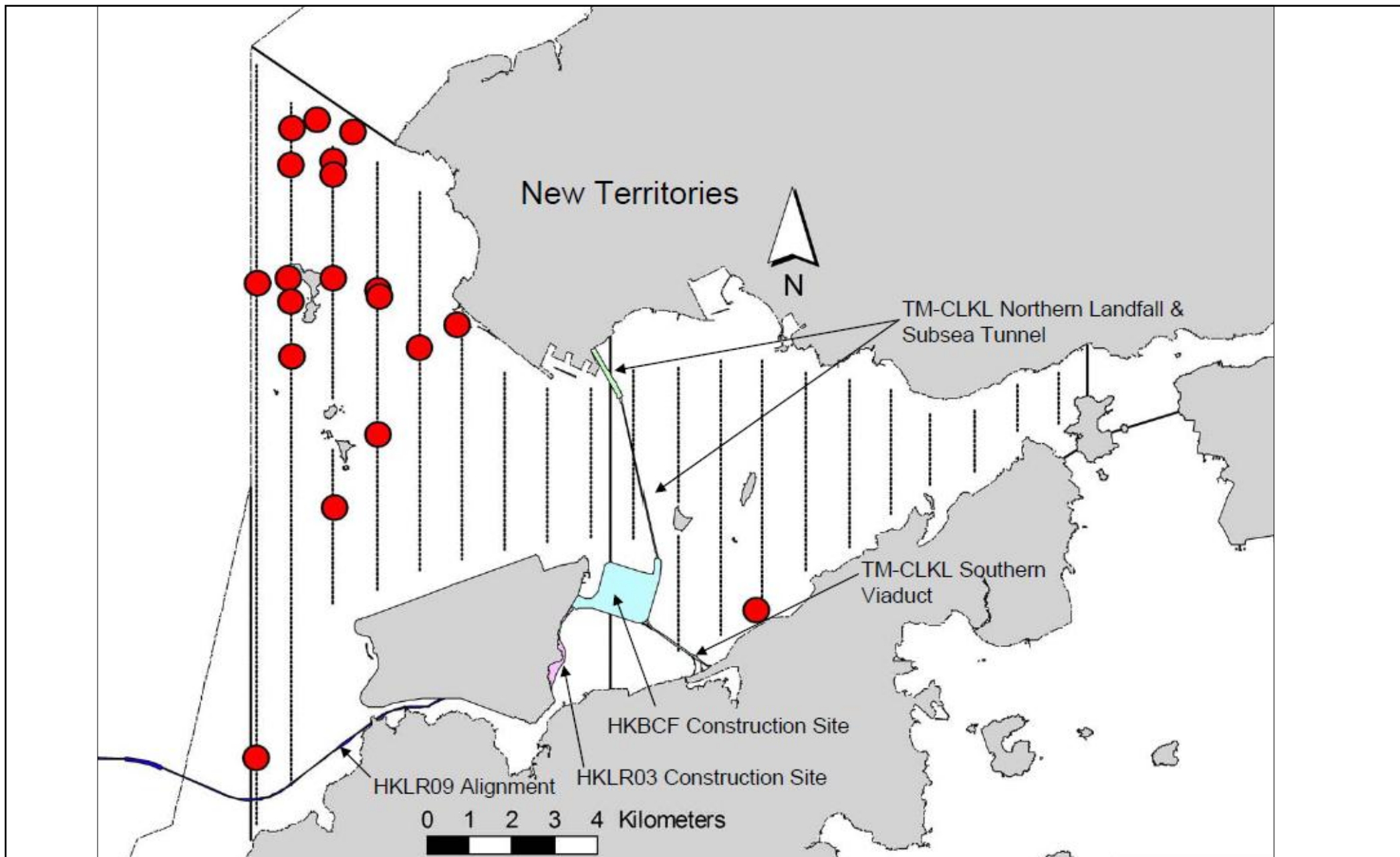


Figure 2.5

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 January 2014)

DATE: 06/03/2013

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3 or below with good visibility) in December 2013 with the results presented in *Tables 2.14 and 2.15.*

Table 2.14 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: Dec 5 th / 9 th	2.68	8.05
	Set 2: Dec 13 th / 19 th	0.0	0.0
NWL	Set 1: Dec 5 th / 9 th	6.95	30.57
	Set 2: Dec 13 th /19 th	6.82	27.27

Table 2.15 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	1.4	1.0	4.1	3.1
Northwest Lantau	6.9	5.3	29.6	22.6

Note: Overall dolphin encounter rates (sightings per 100km of survey effort) from all four surveys are conducted in December 2013 on primary lines only as well as both primary lines and secondary lines in Northeast and Northwest Lantau

The average group size of Chinese White Dolphins in December 2013 was 4.13 individuals per group. Six of the eight dolphin groups were composed of only 1-4 animals, while the other two were larger groups with six (6) and twelve (12) animals per group respectively.

During this month of dolphin monitoring, no unacceptable impact from the construction activities of the TM-CLKL Southern Connection Viaduct Section on Chinese White Dolphins 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 unacceptable 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, where 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 dredging activities being undertaken. No sighting of the Indo-Pacific humpback dolphin *Sousa chinensis* were recorded in December 2013 during the exclusion zone monitoring.

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 4, 11, 18 and 27 December 2013.

Key observations during the site inspections are described below:

Air Quality

Dust emission from generator in works area.

Noise

No adverse observation was identified in the reporting month.

Water Quality

No adverse observation was identified in the reporting month.

Chemical and Waste Management

Floating debris and trash were observed within the silt curtain.

Stagnant water was found accumulating in drip tray.

Stockpiles were not covered properly by tarpaulin sheet.

Landscape and Visual Impact

No adverse observation was identified in the reporting month.

Miscellaneous

The Environmental Permit was displayed at the site entrance.

The Contractor has rectified all observations identified during environmental site inspection in the reporting month. Follow-up inspections on the status on provision of mitigation measures will be conducted to ensure all identified items are mitigated properly.

2.6 WASTE MANAGEMENT STATUS

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

As advised by the Contractor, 135 m³ of inert C&D Materials are generated and disposed of in the reporting period and 94 m³ of inert C&D Materials are disposed of as public fill. 28.04 tonnes of general refuse were generated and disposed of in the reporting period. Monthly summary of waste flow table is detailed in *Appendix M*.

The Contractor is 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 is reminded to properly maintain the site tidiness and dispose of the wastes accumulated on site regularly and properly.

The Contractor is reminded that chemical waste containers should be properly treated and stored 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

Statutory Reference	License/ Permit	License or Permit No.	Date of Issue	Date of Expiry	License/ Permit Holder	Remarks
EIAO	Environmental Permit	EP-354/2009/A	8 Dec 2010	NA	HyD	Tuen Mun- Chek Lap Kok Link
NCO	Construction Dust Notification	361571	5 Jul 2013	NA	GCL	-
NCO	Construction Dust Notification	362093	17 Jul 2013	NA	GCL	Areas 2 and 3
WDO	Billing Account for Disposal	7017735	10 Jul 2013	End of Project	GCL	-
WDO	Chemical Waste Registration	5213-961-G2380-13	10 Oct 2013	NA	GCL	Chemical waste produced in Contract HY/2012/07
WDO	Chemical Waste Registration	5213-961-G2380-14	10 Oct 2013	NA	GCL	Chemical waste produced in Contract HY/2012/07
WDO	Chemical Waste Registration	5213-974-G2588-03	4 Nov 2013	NA	GCL	Chemical waste produced in Contract HY/2012/07
WDO	Construction Waste Disposal Account	7017735	10 Jul 2013	NA	GCL	Waste disposal in Contract HY/2012/07
WPCO	Waste Water Discharge License	Nil	Application Ref. 368337	NA	GCL	Discharge for discharge points for Viaduct A & B
NCO	Construction Noise Permit	Nil	Application in process	NA	GCL	For Piling Works

Statutory Reference	License/ Permit	License or Permit No.	Date of Issue	Date of Expiry	License/ Permit Holder	Remarks
NCO	Construction Noise Permit	GW-RW0660-13	27 Sep 2013	02 Feb 2014	GCL	For night works and works in general holidays
NCO	Construction Noise Permit	GW-RS1129-13	31 Oct 2013	30 Apr 2014	GCL	For night works and works in general holidays
NCO	Construction Noise Permit	GW-RS1186-13	23 Oct 2013	24 Dec 2013	GCL	For night works and works in general holidays
NCO	Construction Noise Permit	GW-RS1187-13	24 Oct 2013	28 Feb 2014	GCL	For night
NCO	Construction Noise Permit	GW-RW0925-13	11 Dec 2013	17 Apr 2014	GCL	Renewal of Area 5 site office erection
NCO	Construction Noise Permit	GW-RS1423-13	11 Dec 2013	30 Apr 2014	GCL	Renewal for marine portion
NCO	Construction Noise Permit	GW-RS1413-13	18 Dec 2013	26 Mar 2014	GCL	For loading and unloading on NLH near viaduct A & B
DASO	Dumping Permit/ Loading Permit (Type 1 – Open Sea Disposal)	(4) in EP/MD/14-075	25 Sep 2013	NA	GCL	-

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.

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

Two (2) exceedance of Action Level for 24-hr TSP at both ASR8A and ASR8 was recorded in the reporting month. The exceedances were considered not related to the construction works of this Contract after further investigation.

Results for 1-hour TSP monitoring, construction noise monitoring and impact water quality monitoring complied with the Action/ Limit levels in the reporting period.

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*.

No complaints, notification of summons and prosecution were received in the reporting period.

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

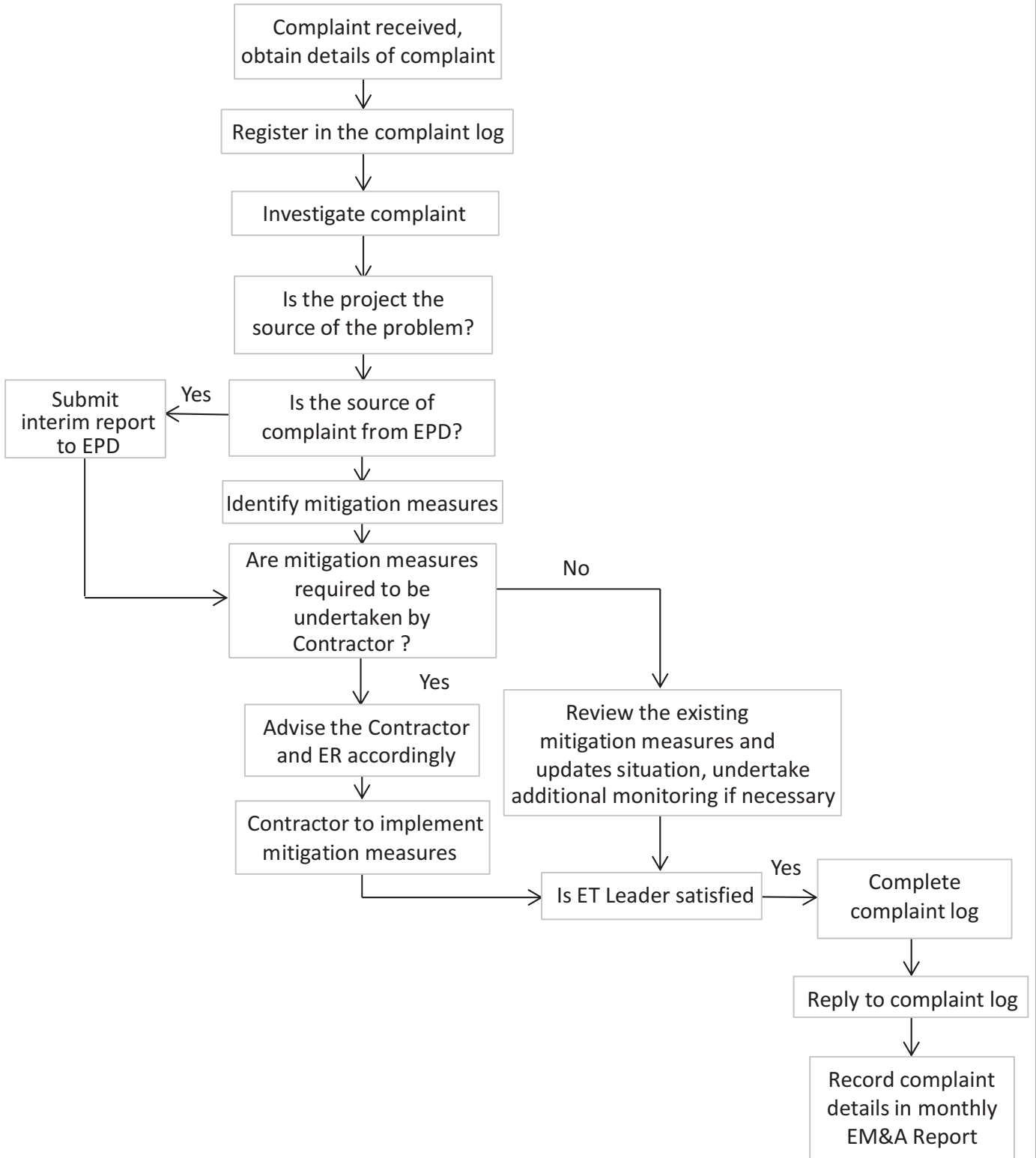


Figure 2.6

Environmental Complaint Handling Procedure

3 *FUTURE KEY ISSUES*

3.1 *CONSTRUCTION PROGRAMME FOR THE COMING MONTHS*

As informed by the Contractor, the major works for the Contract in January and February 2014 will be:

Marine Works

- Erect temporary working platforms;
- GI and trial pit works for marine foundation at Viaduct B; and
- Marine foundation at Viaduct B, E2, E5-8 and E13.

Land-based Works

- Site set-up for Area 2 and works area along Cheung Tung Road for Viaduct B;
- Set up container site offices along CEDD access road; and
- Construct temporary road at CEDD track for piling.

3.2 *KEY ISSUES FOR THE COMING MONTH*

Potential environmental impacts arising from the above upcoming construction activities in the next reporting month of January 2014 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 schedule for environmental monitoring in January 2014 is provided in *Appendix F*.

4.1 CONCLUSIONS

This second Monthly EM&A Report presents the findings of the EM&A activities undertaken during the period from 1 to 31 December 2013, in accordance with the Updated EM&A Manual and the requirements of EP-354/2009/A.

Air quality (including 1-hour TSP and 24-hour TSP), noise, water quality and dolphin monitoring were carried out in the reporting period. Two (2) exceedances of Action Levels for 24-hr TSP were recorded in this reporting month. The review of monitoring data and works activities undertaken suggested that the exceedance was not due to the Contract works. Nevertheless, the Contractor was reminded to ensure all dust mitigation measures are provided at the construction site.

Results for noise, 1-hr TSP monitoring and impact water quality monitoring complied with the Action/ Limit levels in the reporting period.

A total of eight (8) groups of thirty-three (33) dolphins sighting were recorded during the two sets of surveys. All except one sighting were made in NWL during the two sets of surveys with one sighting made in NEL in December 2013. None of the 33 sightings was made in the proximity of the TM-CLKL Southern Connection Viaduct Section. During this reporting period of dolphin monitoring, no unacceptable impact from the construction activities of the TM-CLKL Southern Connection Viaduct Section on Chinese White Dolphins was noticeable from general observations.

Environmental site inspection was carried out four (4) times in December 2013. Recommendations on remedial actions were given to the Contractor for the deficiencies identified during the site audits.

No environmental complaint, notification of summons and prosecution were received in the reporting month.

4.2 RECOMMENDATIONS

According to the environmental site inspections performed in the reporting month, the following recommendations were provided:

Air Quality Impact

- All working plants and vessels on site should be regularly inspected and properly maintained by the Contractor to avoid dark smoke emission.
- Open stockpiles should be properly covered by the Contractor.

- The Contractor should provide water spraying to suppress fugitive dust for any dusty construction activity.

Construction Noise Impact

- Vessels and equipment operating should be checked regularly and properly maintained by the Contractor.

Water Quality Impact

- The Contractor should regularly review and maintain drainage systems to make sure they are functioning effectively.
- Proper drainage channels, bunds and set-up should be provided by the Contractor at the site to collect/ intercept the surface run-off or waste water generated from works area to ensure no direct discharge from site to surrounding water bodies.

Chemical and Waste Management

- All types of wastes should be collected and sorted accordingly and removed timely by the Contractor. They should be properly stored in designated areas within the works areas temporarily.
- All plants and vehicles on site should be properly maintained by the Contractor and drip trays should be provided where appropriate to prevent oil leakage.
- All drain holes of the drip trays within the works areas should be properly plugged by the Contractor to avoid any oil and chemical waste leakage.
- Oil stains on soil surface should be cleared and disposed of as chemical waste by the Contractor.
- Floating debris and trash observed within the silt curtain and around the working barge should be collected as far as possible to maintain the cleanliness of the surrounding sea.

Appendix A

Project Organization for Environmental Works



↔ Line of Communication





Appendix B

Three-Month Rolling Construction Programme

Activity ID	New Pier Loc.	Activity Name	Responsible Person	Original Duration	Remaining Duration	Start	Finish	Actual Start	Actual Finish	Duration % Complete	2013							2014							
											December			January				February			March				April
											02	09	16	23	30	06	13	20	27	03	10	17	24	03	10
HY/2012/07 - TM-CLK Link-SC [DWP rB-1] - 3MRP Status Update 21-12-2013																									
Contract Key Dates																									
IPS Milestones																									
Cost Centre IPS Milestones																									
CC 1 - Preliminaries and General Requirements																									
MS1.05		Effect Contr insurance, incl but not ltd to, marine vessel liability ins for Wrks in accord w/ Cr	Neville Poon	0	0		21-Dec-13*			0%															
MS1.07		Complete 100% of establishment of main site office accom and fac for Supervising Officer	Neville Poon	0	0		21-Dec-13*			0%															
MS1.08		Complete 100% of establishment of temp accommodation and fac for the Contractor	Neville Poon	0	0		21-Dec-13*			0%															
MS1.09		Complete 100% of provision of Contract Computers and Network Fac for the Superv Offic	Neville Poon	0	0		21-Dec-13*			0%															
CC 2 - Design and Design Checking of the Works																									
MS2.046		Approve AIP for Structure E1 by the Supervising Officer	Neville Poon	0	0		03-Feb-14			0%															
MS2.050		Approve AIP for Structure E2 by the Supervising Officer	Neville Poon	0	0		03-Feb-14			0%															
MS2.054		Approve AIP for Structure E5, excl Structure E5 betw Pier E5c & Pier E5d, by S.O.	Neville Poon	0	0		03-Feb-14			0%															
MS2.058		Approve AIP for Structure E5 betw Pier E5c & Pier E5d by the Supervising Officer	Neville Poon	0	0		03-Feb-14			0%															
MS2.062		Approve AIP for Structure E6 by the Supervising Officer	Neville Poon	0	0		03-Feb-14			0%															
MS2.066		Approve AIP for Structure E7 by the Supervising Officer	Neville Poon	0	0		03-Feb-14			0%															
MS2.070		Approve AIP for Structure E8 by the Supervising Officer	Neville Poon	0	0		03-Feb-14			0%															
MS2.085		Submit AIP for Structure D	Neville Poon	0	0		31-Jan-14			0%															
MS2.093		Submit AIP for At grade Roadworks and Other Works along Cheung Tung Road	Neville Poon	0	0		31-Dec-13			0%															
MS2.097		Submit AIP for At grade Roadworks and Other Works at Southern Landfall	Neville Poon	0	0		31-Dec-13			0%															
MS2.101		Submit AIP for Watermains & All Assoc Works frm Tung Chung to Southern Landfall	Neville Poon	0	0		31-Dec-13			0%															
MS2.108-1		Submit AIP for Fac Prov for TCSS Works for At grade Roads at Southern Landfall	Neville Poon	0	0		04-Mar-14			0%															
MS2.109		Submit AIP for Facilities Provision for TCSS Works for Viaducts	Neville Poon	0	0		04-Mar-14			0%															
MS2.113		Submit AIP for Fac Prov for TCSS Wrks for At grade Rds along NLH	Neville Poon	0	0		04-Mar-14			0%															
MS2.117		Submit AIP for Facilities Provision for E&M Works	Neville Poon	0	0		07-Jan-14			0%															
MS2.004		Accept design memorandum by the Supervising Officer	Neville Poon	0	0		24-Dec-13			0%															
MS2.005		Submit construction traffic impact assessment	Neville Poon	0	0		14-Feb-14			0%															
MS2.008		Accept ground investigation reports by the Supervising Officer	Neville Poon	0	0		03-Jan-14			0%															
MS2.010		Accept hydrographic survey report by the Supervising Officer	Neville Poon	0	0		31-Dec-13*			0%															
MS2.012		Accept report for utilities by the Supervising Officer	Neville Poon	0	0		05-Mar-14			0%															
CC 4.1 - Structure E2 and All Associated Works																									
MS4.1.01		Complete piles of 5% of total pile length for Structure E2	Neville Poon	0	0		17-Mar-14*			0%															
General Submission																									
General Requirements																									
General Management																									
PR100		Initial Mobilization of Plant and Equipment for Piling Works	Hans Sundstro	90	0	11-Jul-13 A	21-Nov-13 A	11-Jul-13	21-Nov-13	100%															
PR01430		Produce interface management plan	Chris Ma	25	8	23-Aug-13 A	02-Jan-14	23-Aug-13		70%															
PR01344-1		IC/SO Approval of Hydrographic Survey Report	Ho Wing Tai	40	16	26-Sep-13 A	13-Jan-14	26-Sep-13		60%															
PR01090		Produce the web pages for approval	Chris Ma	25	8	20-Aug-13 A	02-Jan-14	20-Aug-13		70%															
PR9000		Completion of initial general submissions, mobilisation & setup coordination with external pa	Chris Ma	0	0		13-Mar-14*			0%															
Commercial																									
SC1000		Sub-Contract Procurement	Neville Poon	599	437	22-Jun-13 A	16-Jun-15	22-Jun-13		27.05%															
Temporary Works Design																									
PR00130		Unloading Jetty at HKBCF - Working Platform design and approval	Steven Jenkins	90	90	10-Mar-14	30-Jun-14*			0%															
PR00160		Propose/submit a performance review for piled fnds in accordance w/ ETWB TCW No. 4/;	Steven Jenkins	101	101	01-Mar-14*	05-Jul-14			0%															
Land Works																									
PR00460		Obtaining approval from HKCG with regard to diversion or disconnection of gas mains	Samuel Tsang	153	34	22-Jun-13 A	04-Feb-14	22-Jun-13		77.78%															
PR00520		Prepare / submit Additional Tree Felling Application / Compensation Tree Planning to Gov.	Samuel Tsang	20	20	28-Dec-13	21-Jan-14			0%															
PR00530		Additional Tree Survey Report Submission to SO	Samuel Tsang	32	4	18-Sep-13 A	27-Dec-13	18-Sep-13		87.5%															
PR00531		SO Approval of Additional Tree Survey Report Submission	Samuel Tsang	10	10	30-Dec-13	10-Jan-14			0%															
PR00532		Govt Approval of Additional Tree felling / tree compensation	Samuel Tsang	130	130	22-Jan-14	22-Jul-14			0%															
PR00533		Prepare / submit Tree Felling Method Statement	Samuel Tsang	24	4	25-Oct-13 A	27-Dec-13	25-Oct-13		83.33%															
PR00534		SO approval of Tree Felling Method Statement	Samuel Tsang	20	20	30-Dec-13	24-Jan-14			0%															
PR00535		Prepare / submit Tree Transplant method statement	Samuel Tsang	24	10	09-Oct-13 A	04-Jan-14	09-Oct-13		60%															
PR00536		SO approval of Tree Transplant Method Statement	Samuel Tsang	20	20	06-Jan-14	31-Jan-14			0%															

<div style="margin-bottom: 5px;"> <div style="width: 15px; height: 10px; background-color: #0000FF; border: 1px solid black; display: inline-block;"></div> Actual Work </div> <div style="margin-bottom: 5px;"> <div style="width: 15px; height: 10px; background-color: #90EE90; border: 1px solid black; display: inline-block;"></div> Planned Bar </div> <div style="margin-bottom: 5px;"> <div style="width: 15px; height: 10px; background-color: #FF0000; border: 1px solid black; display: inline-block;"></div> Critical Bar </div> <div style="margin-bottom: 5px;"> <div style="width: 15px; height: 10px; background-color: transparent; border: 1px solid black; display: inline-block;"></div> Milestone </div>	<table border="1"> <tr> <th>Date</th> <th>Revision</th> <th>Checked</th> <th>Approved</th> </tr> <tr> <td>13-Sep-13</td> <td>3W-Rolling Progr Up...</td> <td>RT</td> <td></td> </tr> <tr> <td>20-Sep-13</td> <td>3W-Rolling Progr Up...</td> <td>RT</td> <td></td> </tr> <tr> <td>27-Sep-13</td> <td>3W-Rolling Progr Up...</td> <td>RT</td> <td></td> </tr> <tr> <td>4-Oct-13</td> <td>3W-Rolling Progr Up...</td> <td>RT</td> <td></td> </tr> </table>	Date	Revision	Checked	Approved	13-Sep-13	3W-Rolling Progr Up...	RT		20-Sep-13	3W-Rolling Progr Up...	RT		27-Sep-13	3W-Rolling Progr Up...	RT		4-Oct-13	3W-Rolling Progr Up...	RT		<p>Tuen Mun - Chek Lap Kok Southern Connection</p> <p>3-Month Rolling Programme (Page 1 of 11 Pages)</p> <p>(Progress as of 21-Nov-13)</p>	<p>DWG. No.:</p> <p>J3518/GCL/PGM/3MRP - M07</p>
Date	Revision	Checked	Approved																				
13-Sep-13	3W-Rolling Progr Up...	RT																					
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Activity ID	New Pier Loc.	Activity Name	Responsible Person	Original Duration	Remaining Duration	Start	Finish	Actual Start	Actual Finish	Duration % Complete	2013							2014																								
											December			January				February				March				April																
											02	09	16	23	30	06	13	20	27	03	10	17	24	03	10	17	24	31	07													
Design Submission																																										
Detailed Design v16																																										
Ground Investigation																																										
ARDD0013-1		Additional GI Fieldwork, Lab Testing and Permitting E5-E8	Hans Sunstrom	45	18	10-Sep-13 A	24-Feb-14	10-Sep-13		60%																																
ARDD0014-1		Receipt of Additional GI Data E5-E8	Hans Sunstrom	0	0		24-Feb-14			0%																																
ARDD0015-1		E5-E8 Interpretation	Hans Sunstrom	15	13	23-Sep-13 A	08-Jan-14	23-Sep-13		13.33%																																
ARDD0010		IC/SO Approval of Ground Investigation Interpretative Report - AP03.00	Hans Sunstrom	75	10	13-Aug-13 A	03-Jan-14	13-Aug-13		86.67%																																
ARDD0012		IC/SO Approval of Additional GI Requirements	Hans Sunstrom	20	4	02-Aug-13 A	26-Dec-13	02-Aug-13		80%																																
ARDD0013-2		Additional GI Fieldwork, Lab Testing and Permitting - Other areas	Hans Sunstrom	60	18	20-Aug-13 A	24-Feb-14	20-Aug-13		70%																																
ARDD0014-2		Receipt of Additional GI Data - Other areas	Hans Sunstrom	0	0		24-Feb-14			0%																																
ARDD0017-2		IC/SO Approval of Additional GI Interpretative Report - AP03.00	Hans Sunstrom	75	75	18-Mar-14	30-Jun-14			0%																																
ARDD0015-2		Additional GI Interpretative Report - AP03.00	Hans Sunstrom	15	15	25-Feb-14	17-Mar-14			0%																																
Surveys and Investigations																																										
ARDD0021		Obtain Existing UU Records	Samuel Tsang	20	3	24-Jun-13 A	25-Dec-13	24-Jun-13		85%																																
ARDD0022		Fieldwork and Permitting	Samuel Tsang	60	21	08-Jul-13 A	22-Jan-14	08-Jul-13		65%																																
ARDD0025		IC/SO Approval of Utility Report - AP04.00	Samuel Tsang	75	53	22-Oct-13 A	05-Mar-14	22-Oct-13		29.33%																																
Interface with BCF Contract																																										
ARDD0026		Develop Interface Matrix between Contracts	Steven Jenkins	120	22	08-Jul-13 A	21-Jan-14	08-Jul-13		81.67%																																
ARDD0027		Finalise all Interface Details	Steven Jenkins	60	22	30-Sep-13 A	21-Jan-14	30-Sep-13		63.33%																																
General Submissions																																										
ARDD0033		IC/SO Approval of Design Memo - AP02.00	ARUP	75	2	02-Aug-13 A	24-Dec-13	02-Aug-13		97.33%																																
ARDD0035		IC/SO Approval of Durability Assessment Report - AP06.00	ARUP	75	10	08-Aug-13 A	03-Jan-14	08-Aug-13		86.67%																																
ARDD0037		IC/SO Approval of Seismic Impact Report - AP11.00	ARUP	75	8	21-Aug-13 A	03-Jan-14	21-Aug-13		89.33%																																
ARDD0461		Prepare draft TIA Report submission	ARUP	40	40	23-Dec-13	14-Feb-14			0%																																
ARDD0461-1		IC/SO & Govt Depts comment on draft TIA Report submission	ARUP	30	30	17-Feb-14	28-Mar-14			0%																																
GCL Erection Sequence and Method																																										
ARDD0060-7		Receipt of Final Erection Sequence and Loads - Bridge F	ARUP	0	0		10-Mar-14			0%																																
Gazette and Alignment (assume no gazette change)																																										
ARDD0068		IC/SO Approval of Alignment AIP - BP01.00	ARUP	68	3	06-Aug-13 A	25-Dec-13	06-Aug-13		95.59%																																
ARDD0069		Finalise Alignment DDA	ARUP	15	13	28-Oct-13 A	08-Jan-14	28-Oct-13		13.33%																																
ARDD0070		Submission of Alignment DDA - BP01.01	ARUP	0	0		08-Jan-14			0%																																
ARDD0071		IC/SO Approval of Alignment DDA - BP01.01	ARUP	75	75	09-Jan-14	23-Apr-14			0%																																
ARDD0071-1		Earliest Approval of Alignment DDA - BP01.01	ARUP	0	0		19-Feb-14			0%																																
General Viaduct Submission																																										
ARDD0075		Preparation of Viaduct E&M Works AIP - BP21.00	ARUP	20	12	30-Sep-13 A	07-Jan-14	30-Sep-13		40%																																
ARDD0076		IC/SO Approval of AIP - BP21.00	ARUP	68	68	08-Jan-14	11-Apr-14			0%																																
ARDD0077		Preparation of Viaduct E&M Works DDA - BP21.01	ARUP	30	30	05-Mar-14	15-Apr-14			0%																																
Viaduct B																																										
Viaduct Design																																										
ARDD0094-1		Viaduct B - Earliest IC Certificate for Foundation DDA DP12.01	ARUP	0	0		23-Dec-13			0%																																
ARDD0099-2		Viaduct B - IC/SO Approval (Pile Cap Precast Shells) of DDA (DP12.02)	ARUP	75	75	23-Dec-13	04-Apr-14			0%																																
ARDD0094-3		Viaduct B - IC/SO Approval of Foundation (Late) DDA - DP12.01	ARUP	75	65	07-Nov-13 A	21-Mar-14	07-Nov-13		13.33%																																
ARDD0094-2		Viaduct B - IC/SO Approval of Foundation (Early) DDA - DP12.01	ARUP	55	45	07-Nov-13 A	21-Feb-14	07-Nov-13		18.18%																																
ARDD0095		Viaduct B - Preparation of Pilecap Precast Shells DDA - DP12.02	ARUP	30	0	30-Sep-13 A	23-Dec-13	30-Sep-13		100%																																
ARDD0096		Viaduct B - Preparation of Substructure DDA - DP12.03	ARUP	50	37	04-Nov-13 A	02-Apr-14	04-Nov-13		26%																																
ARDD0097		Viaduct B - Preparation of Superstructure DDA - DP12.03	ARUP	70	57	04-Nov-13 A	02-Apr-14	04-Nov-13		18.57%																																
ARDD0089		Viaduct B - IC/SO Approval of AIP - DP12.00	ARUP	68	11	03-Sep-13 A	06-Jan-14	03-Sep-13		83.82%																																
Information to Contractor																																										
ARDD0108		Viaduct B - Typical Pilecap Reinforcement - Regular Rebar	ARUP	0	0		23-Dec-13			0%																																
ARDD0112		Viaduct B - Typical Segment Shapes for Moulds	ARUP	0	0		23-Dec-13			0%																																
ARDD0113		Viaduct B - Typical Segment Reinforcement	ARUP	0	0		27-Dec-13			0%																																
ARDD0118		Viaduct B - Final Bearing Schedule	ARUP	0	0		23-Dec-13			0%																																
ARDD0120		Viaduct B - Final Movement Joint (MJ) Schedule	ARUP	0	0		23-Dec-13			0%																																
Viaduct E5 and E6																																										
Viaduct Design																																										

	Actual Work	Date	Revision	Checked	Approved
	Planned Bar	13-Sep-13	3W-Rolling Progr Up...	RT	
	Critical Bar	20-Sep-13	3W-Rolling Progr Up...	RT	
	Milestone	27-Sep-13	3W-Rolling Progr Up...	RT	
		4-Oct-13	3W-Rolling Progr Up...	RT	

Tuen Mun - Chek Lap Kok Southern Connection
3-Month Rolling Programme (Page 3 of 11 Pages)
(Progress as of 21-Nov-13)

DWG. No.:
J3518/GCL/PGM/3MRP - M07

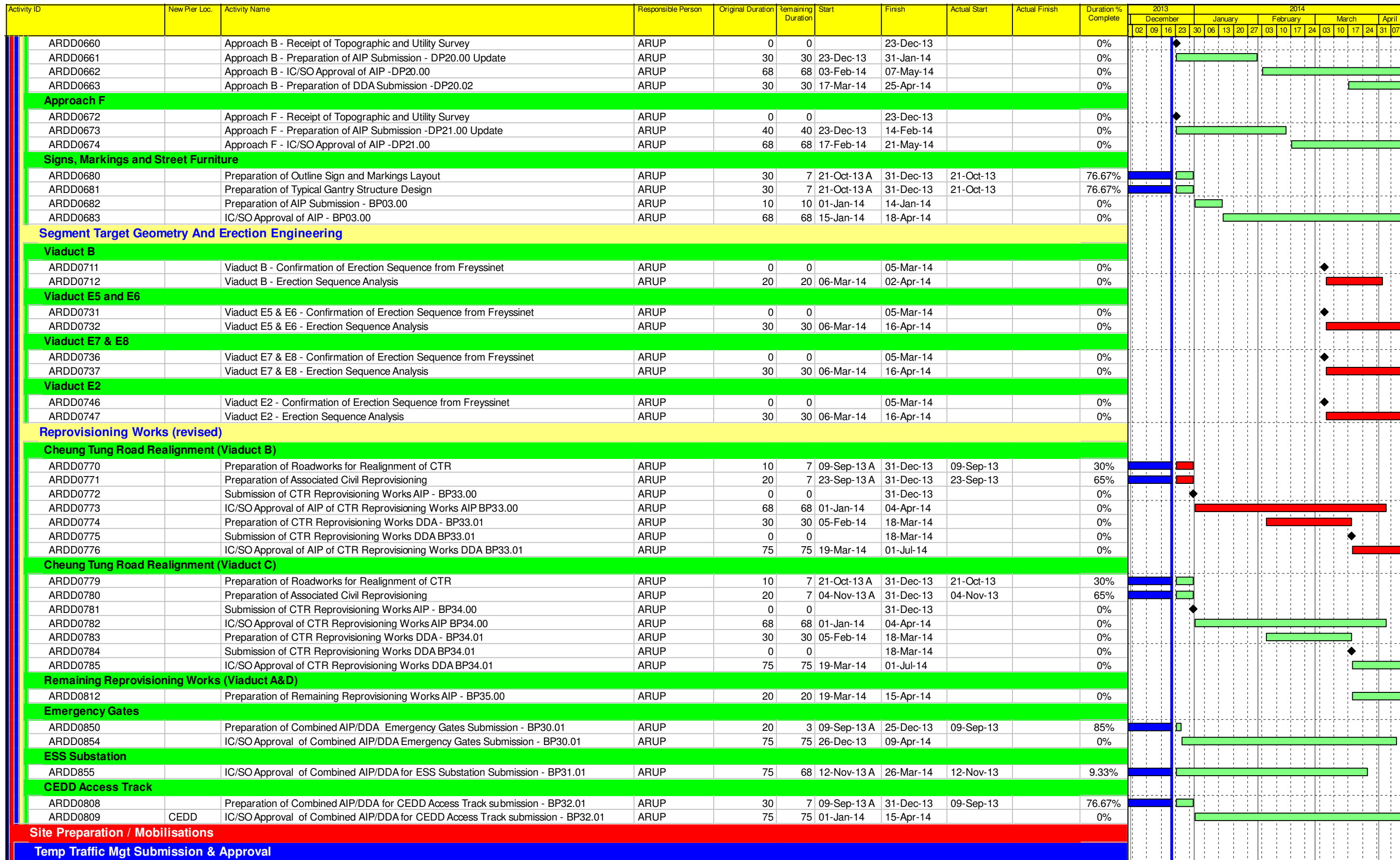
Activity ID	New Pier Loc.	Activity Name	Responsible Person	Original Duration	Remaining Duration	Start	Finish	Actual Start	Actual Finish	Duration % Complete	2013				2014					
											December		January		February		March		April	
											02	09	16	23	30	06	13	20	27	03
ARDD0140		Viaduct E5 & E6 - IC/SO Approval of AIP - DP15.00	ARUP	68	31	01-Oct-13 A	03-Feb-14	01-Oct-13		54.41%	█									
ARDD0142		Viaduct E5 & E6 - Update Midas Model	ARUP	10	5	30-Sep-13 A	27-Dec-13	30-Sep-13		50%	█	█								
ARDD0143		Viaduct E5 & E6 - Final Pile Loads and Global Analysis	ARUP	15	5	18-Oct-13 A	27-Dec-13	18-Oct-13		66.67%	█	█								
ARDD0144		Viaduct E5 & E6 - Foundation DDA - DP15.07	ARUP	45	20	30-Sep-13 A	24-Jan-14	30-Sep-13		55.56%	█									
ARDD0145-3		Viaduct E5 & E6 - IC/SO Approval of Foundation (Late) DDA - DP15.07	ARUP	75	75	18-Mar-14	30-Jun-14			0%										
ARDD0146		Viaduct E5 & E6 - Preparation of Pilecap Precast Shells DDA	ARUP	40	40	06-Feb-14	02-Apr-14			0%										
ARDD0147		Viaduct E5 & E6 - Preparation of Substructure DDA - DP15.08	ARUP	60	60	09-Jan-14	02-Apr-14			0%										
ARDD0148		Viaduct E5 & E6 - Preparation of Superstructure DDA - DP15.09	ARUP	90	90	09-Jan-14	14-May-14			0%										
Information to Contractor																				
ARDD0155		Viaduct E5 & E6 - Final Pile Reinforcement and Socket H Pile Details	ARUP	0	0		24-Jan-14			0%			◆							
ARDD0158		Viaduct E5 & E6 - Typical Pilecap Reinforcement - Stainless Steel Rebar	ARUP	0	0		12-Feb-14			0%										
ARDD0159		Viaduct E5 & E6 - Typical Pilecap Reinforcement - Regular Rebar	ARUP	0	0		05-Feb-14			0%										
ARDD0163		Viaduct E5 & E6 - Typical Segment Shapes for Moulds	ARUP	0	0		05-Feb-14			0%										
ARDD0164		Viaduct E5 & E6 - Typical Segment Reinforcement	ARUP	0	0		05-Mar-14			0%										
ARDD0169		Viaduct E5 & E6 - Final Bearing Schedule	ARUP	0	0		05-Feb-14			0%										
ARDD0171		Viaduct E5 & E6 - Final Movement Joint (MJ) Schedule	ARUP	0	0		19-Feb-14			0%										
Viaduct E7 & E8																				
Viaduct Design																				
ARDD0185		Viaduct E7 & E8 - IC/SO Approval of AIP - DP15.00	ARUP	68	31	01-Oct-13 A	03-Feb-14	01-Oct-13		54.41%	█									
ARDD0187		Viaduct E7 & E8 - Update Midas Model	ARUP	10	5	30-Sep-13 A	27-Dec-13	30-Sep-13		50%	█	█								
ARDD0188		Viaduct E7 & E8 - Final Pile Loads and Global Analysis	ARUP	15	5	18-Oct-13 A	27-Dec-13	18-Oct-13		66.67%	█	█								
ARDD0189		Viaduct E7 & E8 - Foundation DDA - DP15.07	ARUP	45	20	30-Sep-13 A	24-Jan-14	30-Sep-13		55.56%	█									
ARDD0190-3		Viaduct E7 & E8 - IC/SO Approval of Foundation (Late) DDA - DP15.07	ARUP	75	75	18-Mar-14	30-Jun-14			0%										
ARDD0191		Viaduct E7 & E8 - Preparation of Pilecap Precast Shells DDA	ARUP	40	40	06-Feb-14	02-Apr-14			0%										
ARDD0192		Viaduct E7 & E8 - Preparation of Substructure DDA - 15.08	ARUP	60	60	04-Feb-14	28-Apr-14			0%										
ARDD0193		Viaduct E7 & E8 - Preparation of Superstructure DDA - DP15.09	ARUP	90	90	09-Jan-14	14-May-14			0%										
Information to Contractor																				
ARDD0200		Viaduct E7 & E8 - Final Pile Reinforcement and Socket H Pile Details	ARUP	0	0		24-Jan-14			0%			◆							
ARDD0203		Viaduct E7 & E8 - Typical Pilecap Reinforcement - Stainless Steel Rebar	ARUP	0	0		10-Mar-14			0%										
ARDD0204		Viaduct E7 & E8 - Typical Pilecap Reinforcement - Regular Rebar	ARUP	0	0		03-Mar-14			0%										
ARDD0208		Viaduct E7 & E8 - Typical Segment Shapes for Moulds	ARUP	0	0		05-Feb-14			0%										
ARDD0209		Viaduct E7 & E8 - Typical Segment Reinforcement	ARUP	0	0		05-Mar-14			0%										
ARDD0214		Viaduct E7 & E8 - Final Bearing Schedule	ARUP	0	0		05-Feb-14			0%										
ARDD0216		Viaduct E7 & E8 - Final Movement Joint (MJ) Schedule	ARUP	0	0		19-Feb-14			0%										
Viaduct E2																				
Viaduct Design																				
ARDD0231		Viaduct E2 - IC/SO Approval of AIP - DP15.00	ARUP	68	31	01-Oct-13 A	03-Feb-14	01-Oct-13		54.41%	█									
ARDD0233		Viaduct E2 - Update Midas Model	ARUP	10	5	30-Sep-13 A	27-Dec-13	30-Sep-13		50%	█	█								
ARDD0234		Viaduct E2 - Final Pile Loads and Global Analysis	ARUP	15	5	18-Oct-13 A	27-Dec-13	18-Oct-13		66.67%	█	█								
ARDD0235		Viaduct E2 - Foundation DDA - DP15.04	ARUP	45	7	30-Sep-13 A	31-Dec-13	30-Sep-13		84.44%	█	█								
ARDD0236-3		Viaduct E2 - IC/SO Approval of Foundation (Late) DDA - DP15.04	ARUP	75	75	18-Mar-14	30-Jun-14			0%										
ARDD0237		Viaduct E2 - Preparation of Pilecap Precast Shells DDA	ARUP	40	40	06-Feb-14	02-Apr-14			0%										
ARDD0238		Viaduct E2 - Preparation of Substructure DDA - DP15.05	ARUP	60	60	09-Jan-14	02-Apr-14			0%										
ARDD0239		Viaduct E2 - Preparation of Superstructure DDA - DP15.06	ARUP	90	90	09-Jan-14	14-May-14			0%										
Information to Contractor																				
ARDD0246		Viaduct E2 - Final Pile Reinforcement and Socket H Pile Details	ARUP	0	0		31-Dec-13			0%			◆							
ARDD0249		Viaduct E2 - Typical Pilecap Reinforcement - Stainless Steel Rebar	ARUP	0	0		12-Feb-14			0%										
ARDD0250		Viaduct E2 - Typical Pilecap Reinforcement - Regular Rebar	ARUP	0	0		05-Feb-14			0%										
ARDD0254		Viaduct E2 - Typical Segment Shapes for Moulds	ARUP	0	0		05-Feb-14			0%										
ARDD0255		Viaduct E2 - Typical Segment Reinforcement	ARUP	0	0		05-Mar-14			0%										
ARDD0260		Viaduct E2 - Final Bearing Schedule	ARUP	0	0		22-Jan-14			0%										
ARDD0262		Viaduct E2 - Final Movement Joint (MJ) Schedule	ARUP	0	0		19-Feb-14			0%										
Viaduct E1																				
Viaduct Design																				
ARDD0277		Viaduct E1 - IC/SO Approval of Viaduct AIP - DP15.00	ARUP	68	31	01-Oct-13 A	03-Feb-14	01-Oct-13		54.41%	█									
ARDD0278		Viaduct E1 - Receipt of Data for Final Analysis	ARUP	0	0		31-Dec-13			0%			◆							
ARDD0279		Viaduct E1 - Update Midas Model	ARUP	10	10	01-Jan-14	14-Jan-14			0%										

Date	Revision	Checked	Approved
13-Sep-13	3W-Rolling Progr Up...	RT	
20-Sep-13	3W-Rolling Progr Up...	RT	
27-Sep-13	3W-Rolling Progr Up...	RT	
4-Oct-13	3W-Rolling Progr Up...	RT	

Tuen Mun - Chek Lap Kok Southern Connection
3-Month Rolling Programme (Page 4 of 11 Pages)
(Progress as of 21-Nov-13)

DWG. No.:
J3518/GCL/PGM/3MRP - M07

- █ Actual Work
- █ Planned Bar
- ◆ Critical Bar
- ◆ Milestone



Site Preparation / Mobilisations
Temp Traffic Mgt Submission & Approval

Actual Work
Planned Bar
Critical Bar
Milestone

Date	Revision	Checked	Approved
13-Sep-13	3W-Rolling Progr Up...	RT	
20-Sep-13	3W-Rolling Progr Up...	RT	
27-Sep-13	3W-Rolling Progr Up...	RT	
4-Oct-13	3W-Rolling Progr Up...	RT	

Tuen Mun - Chek Lap Kok Southern Connection
3-Month Rolling Programme (Page 6 of 11 Pages)
(Progress as of 21-Nov-13)

DWG. No.:
J3518/GCL/PGM/3MRP - M07

Activity ID	New Pier Loc.	Activity Name	Responsible Person	Original Duration	Remaining Duration	Start	Finish	Actual Start	Actual Finish	Duration % Complete	2013							2014								
											December			January				February				March				April
											02	09	16	23	30	06	13	20	27	03	10	17	24	03	10	17
TTM00340		Send TTMS to SO	Samuel Tsang	0	0	23-Dec-13				0%		◆														
TTM00430		TMLG Meeting 4	Samuel Tsang	0	0	09-Jan-14				0%			◆													
TTM00440		Send TTMS to SO	Samuel Tsang	0	0	23-Jan-14				0%				◆												
TTM00530		TMLG Meeting 5	Samuel Tsang	0	0	06-Feb-14				0%					◆											
TTM00540		Send TTMS to SO	Samuel Tsang	0	0	27-Feb-14				0%						◆										
TTM00630		TMLG Meeting 6	Samuel Tsang	0	0	13-Mar-14				0%							◆									
Site Set Up for Works Area 2 and Works Areas along CTR for Viaduct B																										
ZB40250	AB-B	Abutment B - Trial Trench for Utility Detection	Samuel Tsang	3	3	10-Jan-14	13-Jan-14			0%																
ZB40120	AB-B	Abutment B - Tree felling (approved plan)	Samuel Tsang	12	12	25-Feb-14	10-Mar-14			0%																
ZB40130	AB-B	Abutment B - Tree transplanting (approved plan)	Samuel Tsang	90	90	26-Feb-14	18-Jun-14			0%																
PR23020	B18	Pier B18 (B1b) - Trial trench for Utility Detection	Samuel Tsang	14	14	21-Dec-13	09-Jan-14			0%																
ZB40100	B18	Pier B18 (B1b) - Tree felling (approved plan)	Samuel Tsang	12	12	11-Feb-14	24-Feb-14			0%																
ZB40110	B18	Pier B18 (B1b) - Tree transplanting (approved plan)	Samuel Tsang	90	90	14-Feb-14	06-Jun-14			0%																
ZB40101	B18	Pier B18 (B1b) & Abutment B - Erect safety fence	Samuel Tsang	18	18	25-Feb-14	17-Mar-14			0%																
PR21040		B11 to B17 - Tree felling (approved plan)	Samuel Tsang	12	12	25-Jan-14	10-Feb-14			0%																
PR21050		B11 to B17 - Tree transplanting (approved plan)	Samuel Tsang	84	84	03-Feb-14	17-May-14			0%																
PR22020	B10	Pier B10 (B2c) - Land application/ Govt approval for gate G8 & G9 relocation	Samuel Tsang	90	90	21-Dec-13*	11-Apr-14			0%																
PR20040		Pedestrian and bus stop diversion	Samuel Tsang	28	28	21-Dec-13	25-Jan-14			0%																
PR20030		TTM approval for road re-alignment around site compound at Works Area 2	Samuel Tsang	0	0		21-Dec-13			0%																
PR20050		Works Area 2 - Construct access road to site compound off CTR	Samuel Tsang	12	12	21-Dec-13	07-Jan-14			0%																
PR20060		Works Area 2 - Erect hoarding / fencing & install gates	Samuel Tsang	12	12	08-Jan-14	21-Jan-14			0%																
PR20070		Works Area 2 - Site formation, paving and set up site offices / storage area	Samuel Tsang	54	54	15-Jan-14	20-Mar-14			0%																
ZB40111	B10	Pier B10 (B2c) - Tree felling / Transplanting (additional)	Samuel Tsang	90	90	14-Feb-14	06-Jun-14			0%																
PR22040-7	B10	Pier B10 (B2c) - Prepare TTM for constructing new Emergency Access Gates G8 & G9	Samuel Tsang	24	24	14-Mar-14	11-Apr-14			0%																
Site Set Up for Works Area 3 and Site Offices along CEDD Access Road																										
PR30010		Works Area 3-A1/A2/A3 - Approval from CEDD for land provision	Samuel Tsang	0	0		21-Dec-13*			0%																
PR30020		Works Area 3-A1/3-A2/A3 - Erect fencing / set up site security	Samuel Tsang	12	12	31-Dec-13	14-Jan-14			0%																
PR30030		Works Area 3-A1/3-A2 - Construct 1.5m steel access bridge	Samuel Tsang	30	30	15-Jan-14	20-Feb-14			0%																
PR30040		Set up container site offices at crest of CEDD Seawall	Samuel Tsang	60	60	31-Dec-13	13-Mar-14			0%																
PR30050-4	B08	Construct temp. road at CEDD track for piling at B08	Samuel Tsang	12	12	15-Jan-14	28-Jan-14			0%																
PR30050-3	D08	Construct temp. road at CEDD track for piling at D08	Samuel Tsang	12	12	29-Jan-14	13-Feb-14			0%																
PR30050-2	C07	Construct temp. road at CEDD track for piling at C07	Samuel Tsang	12	12	14-Feb-14	27-Feb-14			0%																
PR30050-1	A08	Construct temp. road at CEDD track for piling at A08	Samuel Tsang	12	12	28-Feb-14	13-Mar-14			0%																
Site Set Up for Works Area 5																										
PR01520		Facilities for SO - procurement, including permanent and temporary offices	Samuel Tsang	102	22	22-Jun-13 A	18-Jan-14	22-Jun-13		78.43%																
PR50020		Works Area 5 - Site formation, drainage, paving	Samuel Tsang	24	4	30-Jul-13 A	27-Dec-13	30-Jul-13		85%																
PR50030		Works Area 5 - Erect site offices, workshop and storage area	Samuel Tsang	100	33	30-Jul-13 A	03-Feb-14	30-Jul-13		67%																
Site Set Up for Works Area 6 (for Viaduct C south of CTR)																										
PR60030		Works Area WA6 - Tree felling (approved plan)	Samuel Tsang	30	30	11-Mar-14	15-Apr-14			0%																
PR60020		Works Area WA6 - Tree transplanting (approved plan)	Samuel Tsang	105	105	11-Mar-14	19-Jul-14			0%																
PR60010		Works Area WA6 - Erect waterfill barrier / fencing	Samuel Tsang	18	18	18-Feb-14	10-Mar-14			0%																
PR60118		Pier C9 - Trial Trench for Utility Detection	Samuel Tsang	7	7	24-Dec-13	03-Jan-14			0%																
PR60120		Pier C10 - Trial Trench for Utility Detection	Samuel Tsang	7	2	20-Nov-13 A	23-Dec-13	20-Nov-13		71.43%																
PR60122		Pier C11 - Trial Trench for Utility Detection	Samuel Tsang	7	7	24-Dec-13	03-Jan-14			0%																
PR60126		Pier C13 N & S - Trial Trench for Utility Detection	Samuel Tsang	7	3	18-Nov-13 A	24-Dec-13	18-Nov-13		57.14%																
PR60130		Pier C15 - Trial Trench for Utility Detection	Samuel Tsang	7	2	19-Nov-13 A	23-Dec-13	19-Nov-13		71.43%																
PR60140		Abutment C - Trial Trench for Utility Detection	Samuel Tsang	7	7	04-Jan-14	11-Jan-14			0%																
Temporary Working Platform at North Lantau																										
PR08010		Temp. Working Platform at N.Lantau - Procurement of materials	Samuel Tsang	36	10	07-Oct-13 A	04-Jan-14	07-Oct-13		72.22%																
PR08040		Temp. Working Platform at N.Lantau - Temp. seawall & precast cover slab for culvert outfa	Samuel Tsang	30	30	27-Dec-13	04-Feb-14			0%																
PR08050		Temp. Working Platform at N.Lantau - Temp. rockfill & paving between existing and temp.	Samuel Tsang	30	30	11-Jan-14	18-Feb-14			0%																
PR08060		Temp. Working Platform at N.Lantau - Install pipe piles for steel platform	Samuel Tsang	30	30	27-Dec-13	04-Feb-14			0%																
PR08020		Temp. Working Platform at N.Lantau - Install MTR protection fence	Samuel Tsang	22	22	21-Dec-13	18-Jan-14			0%																
PR08030		Temp. Working Platform at N.Lantau - Modify top of existing seawall	Samuel Tsang	24	24	27-Dec-13	25-Jan-14			0%																
PR08070		Temp. Working Platform at N.Lantau - Construct steel deck / bollards / fenders	Samuel Tsang	30	30	25-Jan-14	04-Mar-14			0%																
PR08080		Temp. Working Platform at N.Lantau - Install Lifting Gantry incl. testing/commissioning for s	Samuel Tsang	24	24	18-Feb-14	18-Mar-14			0%																

Major Procurement

- Actual Work
- Planned Bar
- Critical Bar
- Milestone

Date	Revision	Checked	Approved
13-Sep-13	3W-Rolling Progr Up...	RT	
20-Sep-13	3W-Rolling Progr Up...	RT	
27-Sep-13	3W-Rolling Progr Up...	RT	
4-Oct-13	3W-Rolling Progr Up...	RT	

Activity ID	New Pier Loc.	Activity Name	Responsible Person	Original Duration	Remaining Duration	Start	Finish	Actual Start	Actual Finish	Duration % Complete	2013				2014						
											December			January		February		March		April	
											02	09	16	23	30	06	13	20	27	03	10
Deck Segment Installation Equipment																					
PR60076		Launching Gantry procurement		81	38	09-Oct-13 A	27-Jan-14	09-Oct-13		53.09%											
PR60078		Launching Gantry 1 Design, Fabrication & Delivery		253	253	29-Jan-14	08-Oct-14			0%											
PR60077		Lifting Frames procurement		80	80	15-Jan-14*	04-Apr-14			0%											
Deck Segments & Precast Pile Cap Shells																					
Preliminaries																					
MBBC0010		Set Up Pile Cap Casting Yard & Beds etc	Ian Wong	93	25	30-Aug-13 A	22-Jan-14	30-Aug-13		73.12%											
MBBE0010		Set Up Segment Casting Yard & Beds etc	Ian Wong	165	97	30-Aug-13 A	23-Apr-14	30-Aug-13		41.21%											
General																					
H-Piles																					
PP7030		Procurement & 1st Delivery of Socketted H-Piles for Viaduct B	Hans Sundstro	70	9	06-Nov-13 A	03-Jan-14	06-Nov-13		87.14%											
Reinforcement																					
PPRB02		1st Rebar Delivery	Hans Sundstro	1	1	21-Dec-13	21-Dec-13			0%											
Bored Piles																					
PP7020		Rebar - Cut, Bend & Fabricate Pile Cage for Viaduct B Piles	Hans Sundstro	24	24	23-Dec-13	22-Jan-14			0%											
PP7100		Rebar - Cut, Bend & Fabricate Pile Cage for Viaduct E5 & E6 Piles	Hans Sundstro	153	153	04-Mar-14	08-Sep-14			0%											
PP7170		Rebar - Cut, Bend & Fabricate Pile Cage for Viaduct E7 & E8 Piles	Hans Sundstro	70	70	04-Mar-14	31-May-14			0%											
PP7240		Rebar - Cut, Bend & Fabricate Pile Cage for Viaduct E2 Piles	Hans Sundstro	106	106	02-Jan-14	14-May-14			0%											
In-Situ Formworks / Falseworks																					
PPPF00		Procurement of Falsework / Formwork Supplier	Ho Wing Tai	115	30	02-Sep-13 A	28-Jan-14	02-Sep-13		74%											
PPPF02		Fabrication of Falsework / Formwork & Delivery	Ho Wing Tai	121	121	28-Jan-14	28-Jun-14			0%											
Pre-cast Formworks																					
PP7050		Assembly of Rebar & Moulds for Viaduct B Marine Pile Caps	Ho Wing Tai	81	81	30-Jan-14	13-May-14			0%											
PP7120		Assembly of Rebar & Moulds for Viaduct E5 & E6 Pile Caps	Ho Wing Tai	131	131	08-Feb-14	19-Jul-14			0%											
PP7190		Assembly of Rebar & Moulds for Viaduct E7 & E8 Pile Caps	Ho Wing Tai	131	131	08-Feb-14	19-Jul-14			0%											
PP7260		Assembly of Rebar & Moulds for Viaduct E2 Pile Caps	Ho Wing Tai	91	91	08-Feb-14	31-May-14			0%											
Bearings																					
PPBR00		Procurement of Bearings Supplier		46	46	21-Dec-13	04-Feb-14			0%											
PPBRB1		Design & Approval of Bearings Viaduct B, E5 & E6, E7 & E8		90	90	02-Mar-14	30-May-14			0%											
PPBRE2-1		Design & Approval of Bearings Viaduct E2		90	90	22-Feb-14	22-May-14			0%											
Movement Joints																					
PPMJ00		Procurement of MJ Supplier		90	90	21-Dec-13	11-Apr-14			0%											
Construction																					
Main Marine Crossing																					
Viaduct E1																					
Viaduct E1 - Marine Foundation																					
Milestones																					
GFXX020	MS	E1 - ARUP issues Pile Spacing & Diameter for Temporary Platform Design	Richard Gibbs	0	0		21-Dec-13			0%											
Viaduct E2																					
Viaduct E2 - Marine Foundation																					
Milestones																					
GFXX034	MS	E2 - ARUP issues Pile Spacing & Diameter for Temporary Platform Design	Richard Gibbs	0	0	21-Dec-13				0%											
Pier E3 (E2a)																					
GFXX035	E03	E3 (E2a) - Erect Temporary Working Platform	Richard Gibbs	22	22	20-Feb-14	17-Mar-14			0%											
GFXX036	E03	E3 (E2a) - Predrilling (6 nos)	Richard Gibbs	21	21	18-Mar-14	11-Apr-14			0%											
Pier E4 (E2b)																					
GFXX040	E04	E4 (E2b) - Erect Temporary Working Platform	Richard Gibbs	18	18	12-Mar-14	01-Apr-14			0%											
Pier E5 (E2c)																					
GFXX045	E05	E5 (E2c) - Erect Temporary Working Platform	Richard Gibbs	19	19	04-Jan-14	25-Jan-14			0%											
GFXX046	E05	E5 (E2c) - Predrilling (4 nos)	Richard Gibbs	18	18	27-Jan-14	18-Feb-14			0%											
Pier E6 (E2d)																					
GFXX050	E06	E6 (E2d) - Erect Temporary Working Platform	Richard Gibbs	19	19	27-Jan-14	19-Feb-14			0%											
GFXX051	E06	E6 (E2d) - Predrilling (5 nos)	Richard Gibbs	21	21	20-Feb-14	15-Mar-14			0%											

<ul style="list-style-type: none"> █ Actual Work █ Planned Bar █ Critical Bar ◆ Milestone 	Date	Revision	Checked	Approved	Tuen Mun - Chek Lap Kok Southern Connection 3-Month Rolling Programme (Page 8 of 11 Pages) (Progress as of 21-Nov-13)	DWG. No.: J3518/GCL/PGM/3MRP - M07
	13-Sep-13	3W-Rolling Progr Up...	RT			
	20-Sep-13	3W-Rolling Progr Up...	RT			
	27-Sep-13	3W-Rolling Progr Up...	RT			
	4-Oct-13	3W-Rolling Progr Up...	RT			

Activity ID	New Pier Loc.	Activity Name	Responsible Person	Original Duration	Remaining Duration	Start	Finish	Actual Start	Actual Finish	Duration % Complete	2013				2014															
											December				January				February				March				April			
											02	09	16	23	30	06	13	20	27	03	10	17	24	03	10	17	24	31	07	
Pier E7 (E2e)																														
GFXX055	E07	E7 (E2e) - Erect Temporary Working Platform	Richard Gibbs	19	19	15-Mar-14	07-Apr-14																							
Pier E9 (E2g)																														
GFXX065	E09	E9 (E2g) - Erect Temporary Working Platform	Richard Gibbs	19	19	04-Jan-14	25-Jan-14																							
GFXX066	E09	E9 (E2g) - Predrilling (8 nos)	Richard Gibbs	49	49	27-Jan-14	26-Mar-14																							
Pier E10 (E2h)																														
GFXX070	E10	E10 (E2h) - Erect Temporary Working Platform	Richard Gibbs	19	19	07-Mar-14	28-Mar-14																							
Viaduct E5, E6, E7 & E8																														
E5 to E8 Foundation Works																														
Viaduct E5 to E8 - Marine Foundation																														
Milestones																														
GFXX081	MS	E5/E6/E7/E8 - ARUP issues Pile Spacing & Diameter for Temporary Platform Design	Richard Gibbs	0	0	21-Dec-13																								
Pier E11 (E5E6a/E7E8a)																														
GFXX082	E11	E11 (E5E6a/E7E8a) - Erect Temporary Working Platform	Richard Gibbs	19	19	21-Feb-14	14-Mar-14																							
GFXX083	E11	E11 (E5E6a/E7E8a) - Predrilling (8 nos)	Richard Gibbs	70	70	15-Mar-14	12-Jun-14																							
Pier E12 (E5b/E6b + E7b/E8b + Dolphin E5b/E8b)																														
GFXX087	E12	E12 (E5b/E6b, E7b/E8b, Dolphin E5b/E8b) - Erect Temporary Working Platform	Richard Gibbs	43	43	27-Jan-14	19-Mar-14																							
GFXX088-2	E12	E12 (Dolphin E5b) - Predrilling (3 nos)	Richard Gibbs	9	9	20-Mar-14	29-Mar-14																							
Approach from Lantau																														
Viaduct B																														
Viaduct B Foundation Works																														
Viaduct B - Marine Foundation																														
Milestones																														
GFXX150	MS	Bridge B - ARUP issues Pile Spacing & Diameter for Temporary Platform Design	Richard Gibbs	0	0	21-Dec-13																								
Viaduct B - Land Foundation - North Lantau																														
Preliminary Works for Land Piling																														
GFXX303-3		Viaduct B - Submit all initial monitoring for installed instrumentation of piling works	Hans Sundstro	0	0	19-Feb-14																								
GFXX303-1		Viaduct B - Install & test Geo. Instrumentation B16-B10	Hans Sundstro	30	30	06-Jan-14	11-Feb-14																							
GFXX303-2		Viaduct B - Baseline monitoring of Geo. Instrumentation	Hans Sundstro	7	7	12-Feb-14	18-Feb-14																							
Socketted H-Pile Installation (132nos.; 1no. Rig)																														
Pier B8 (B2e) - Workfront no. Bwf7 - Phase 1																														
GFXX310-2	B08	Pier B8 (B2e) - Pre-grouting Works B8	Hans Sundstro	12	12	14-Mar-14	27-Mar-14																							
ZB20020	B08	Pier B8 (B2e) - Relocate MTR fence	Samuel Tsang	10	10	07-Feb-14	18-Feb-14																							
ZB20030	B08	Pier B8 (B2e) - Install protection fence	Samuel Tsang	10	10	19-Feb-14	01-Mar-14																							
ZB20040	B08	Pier B8 (B2e) - Set up piling platform	Samuel Tsang	10	10	03-Mar-14	13-Mar-14																							
ZB30010-6	B08	Pier B8 (B2e) - Setup Grnd.Monitoring Instrumentation	Hans Sundstro	12	12	07-Feb-14	20-Feb-14																							
ZB30010-8	B08	Pier B8 (B2e) - Perform Baseline Grnd.Monitoring	Hans Sundstro	7	7	21-Feb-14	28-Feb-14																							
ZB30000-9	B08	Pier B8 (B2e) - MTRC Approval for Piling Fence Design	Samuel Tsang	36	36	21-Dec-13	06-Feb-14																							
Pier B9 (B2d) - Workfront no. Bwf6 - Phase 1																														
GFXX309	B09	Mobilization for Pregrouting for B8 & B9	Hans Sundstro	5	5	27-Feb-14	04-Mar-14																							
GFXX310-1	B09	Viaduct B - Pre-grouting Works B9	Hans Sundstro	12	12	20-Mar-14	02-Apr-14																							
ZB30010-1	B09	Pier B9 (B2d) - Set up site ingress/local security fence	Samuel Tsang	4	4	23-Dec-13	28-Dec-13																							
ZB30020-1	B09	Pier B9 (B2d) - General site clearance	Samuel Tsang	6	6	30-Dec-13	06-Jan-14																							
ZB30030	B09	Pier B9 (B2d) - Erect MTR Piling Protection Fence	Samuel Tsang	6	6	13-Feb-14	19-Feb-14																							
ZB30040	B09	Pier B9 (B2d) - Erect platform for ELS	Samuel Tsang	12	12	13-Feb-14	26-Feb-14																							
ZB30050-1	B09	Pier B9 (B2d) - Install Temp.Timber Platform for access	Samuel Tsang	18	18	27-Feb-14	19-Mar-14																							
ZB30000-2	B09	Pier B9 (B2d) - MTRC Approval for Piling Fence Design / Method Statement	Samuel Tsang	36	36	21-Dec-13	06-Feb-14																							
ZB30000-3	B09	Pier B9 (B2d) - Procure Temp.Mtrls & Fabricate Pile Fence/deliver	Samuel Tsang	36	5	21-Oct-13 A	28-Dec-13	21-Oct-13																						
ZB30000-5	B09	Pier B9 (B2d) - Implement TTM Stage 1	Samuel Tsang	0	0		21-Dec-13*																							
ZB30000-6	B09	Pier B9 (B2d) - Implement TTM Stage 2	Samuel Tsang	0	0		06-Jan-14																							
ZB30010-2	B09	Pier B9 (B2d) - GI & Trial Pit works	Samuel Tsang	6	6	30-Dec-13	06-Jan-14																							
ZB30020-3	B09	Pier B9 (B2d) - Remove existing MTRC Security Fence	Samuel Tsang	5	5	07-Feb-14	12-Feb-14																							
ZB30000-7	B09	Pier B9 (B2d) - Temp.Works Design & Approval	Samuel Tsang	36	1	07-Oct-13 A	21-Dec-13	07-Oct-13																						
ZB30010-3	B09	Pier B9 (B2d) - Setup Grnd.Monitoring Instrumentation	Hans Sundstro	12	12	07-Jan-14	20-Jan-14																							
ZB30010-4	B09	Pier B9 (B2d) - Perform Baseline Grnd.Monitoring	Hans Sundstro	30	30	21-Jan-14	26-Feb-14																							
ZB30020-5	B09	Pier B9 (B2d) - Setup platform for erecting MTRC Security Fence	Samuel Tsang	6	6	07-Jan-14	13-Jan-14																							
ZB30000-11	B09	Pier B9 (B2d) - Submission of Fence Design / Method Statement	Samuel Tsang	0	0		21-Dec-13*																							

Actual Work
Planned Bar
Critical Bar
Milestone

Date	Revision	Checked	Approved
13-Sep-13	3W-Rolling Progr Up...	RT	
20-Sep-13	3W-Rolling Progr Up...	RT	
27-Sep-13	3W-Rolling Progr Up...	RT	
4-Oct-13	3W-Rolling Progr Up...	RT	

Tuen Mun - Chek Lap Kok Southern Connection
3-Month Rolling Programme (Page 9 of 11 Pages)
(Progress as of 21-Nov-13)

DWG. No.:

J3518/GCL/PGM/3MRP - M07

Activity ID	New Pier Loc.	Activity Name	Responsible Person	Original Duration	Remaining Duration	Start	Finish	Actual Start	Actual Finish	Duration % Complete	2013					2014																			
											December					January					February					March					April				
											02	09	16	23	30	06	13	20	27	03	10	17	24	03	10	17	24	31	07						
SWVB0010		Setup TTM for slopework for Slope 9SE-B/C8, B/C9, B/F9	Samuel Tsang	2	2	10-Mar-14	12-Mar-14			0%																									

Date	Revision	Checked	Approved
13-Sep-13	3W-Rolling Progr Up...	RT	
20-Sep-13	3W-Rolling Progr Up...	RT	
27-Sep-13	3W-Rolling Progr Up...	RT	
4-Oct-13	3W-Rolling Progr Up...	RT	

Tuen Mun - Chek Lap Kok Southern Connection
3-Month Rolling Programme (Page 11 of 11 Pages)
(Progress as of 21-Nov-13)

DWG. No.:

J3518/GCL/PGM/3MRP - M07

- Actual Work
- Planned Bar
- Critical Bar
- Milestone

Appendix C

Environmental Mitigation and Enhancement Measure Implementation Schedules

(Adopted from: CINOTECH (2011) Agreement No.
CE35/2011 EP Baseline Environmental Monitoring for
Hong Kong-Zhuhai-Macao Bridge Tuen Mun-Chep 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			Maintenance Agency
						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		n/a
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		n/a
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		n/a
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		n/a
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		n/a
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		n/a
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	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		n/a

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Maintenance Agency
						D	C	O	
		shall be dampened or covered before transport.							
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		n/a
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		n/a
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		n/a
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		n/a
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		n/a
NOISE									
5.11	Section 4	Noise monitoring	All existing representative sensitive receivers / during North Lantau Viaduct construction	Contractor	EM&A Manual		Y		n/a
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		n/a
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		Y		n/a

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Maintenance Agency
						D	C	O	
					permit conditions.				
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		n/a
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		n/a
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		n/a
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		n/a
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		n/a
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		n/a
<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		n/a
	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		n/a
	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		n/a

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Maintenance Agency
						D	C	O	
	5.2	One additional water quality monitoring station is 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,	During temporary staging works	Contractor		Y		n/a	
<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		n/a
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		n/a
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		n/a
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		n/a
6.10	-	Temporary access roads should be surfaced with crushed stone or gravel.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		n/a
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		n/a
6.10	-	Measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage	All areas/ throughout construction period	Contractor	TM-EIAO		Y		n/a

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Maintenance Agency
						D	C	O	
		system.							
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		n/a
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		n/a
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		n/a
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		n/a
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		n/a
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		n/a
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		n/a
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 off site disposal.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		n/a
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		n/a
6.10	-	Waste oil should be collected and stored for recycling or disposal, in accordance with the Waste Disposal	All areas/ throughout	Contractor	TM-EIAO Waste		Y		n/a

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Maintenance Agency
						D	C	O	
		Ordinance.	construction period		Disposal Ordinance				
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		n/a
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		n/a
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	n/a
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		n/a
<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	n/a
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	n/a
8.14	6.3	Specification for bored piling monitoring	Detailed Design	Design Consultant	TMEIA	Y			n/a

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Maintenance Agency
						D	C	O	
8.14	6.3	Implement any recommendations of the bored piling monitoring	Southern marine viaduct/Throughout construction during bored piling	Contractor	TMEIA		Y		n/a
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		n/a
8.15	6.3, 6.5	Specification and deployment of an artificial reef of an area of 3,600m2 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	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		n/a
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		n/a
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		n/a

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Maintenance Agency
						D	C	O	
7.13	6.5	Undertaken gabion wall works in Stream NL1 in the dry season	North Lantau slope works/dry season/construction phase	Contractor	TMEIA		Y		n/a
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		AFCD/LCSD
7.13	6.5	Spoil heaps shall be covered at all times.	All areas / Throughout construction period	Contractor	TMEIA		Y		n/a
7.13	6.5	Avoid damage and disturbance to the remaining and surrounding natural habitat	All areas / Throughout construction period	Contractor	TMEIA		Y		n/a
7.13	6.5	Placement of equipment in designated areas within the existing disturbed land	All areas / Throughout construction period	Contractor	TMEIA		Y		n/a
7.13	6.5	Disturbed areas to be reinstated immediately after completion of the works.	All areas / Throughout construction period	Contractor	TMEIA		Y		n/a
7.13	6.5	Construction activities should be restricted to the proposed works boundary	All areas / Throughout construction period	Contractor	TMEIA		Y		n/a
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		n/a

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Maintenance Agency
						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		n/a
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/ Contractor	TMEIA	Y	Y		n/a
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		n/a
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		n/a
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		n/a
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		n/a
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		n/a

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Maintenance Agency
						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
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		n/a
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	AFCD/HyD/ LCSD
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	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	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 (OM4)	All areas/detailed design/ during construction / during operation	Design Consultant/ Contractor	TMEIA	Y	Y	Y	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	HyD
WASTE									

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Maintenance Agency
						D	C	O	
12.6		The Contractor shall identify a coordinator for the management of waste.	Contract mobilisation	Contractor	TMEIA		Y		n/a
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		n/a
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		n/a
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		n/a
12.6	8.1	The extent of cutting operation should be optimised where possible. Earth retaining structures and bored pile walls should be proposed to minimise the extent of cutting.	All areas / throughout construction period	Contractor	TMEIA		Y		n/a
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		n/a
12.6	8.1	The site and surroundings shall be kept tidy and litter free.	All areas / throughout	Contractor	TMEIA		Y		n/a

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Maintenance Agency
						D	C	O	
			construction period						
12.6	8.1	No waste shall be burnt on site.	All areas / throughout construction period	Contractor	TMEIA		Y		n/a
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		n/a
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		n/a
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		n/a
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		n/a
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 materials should avoid over-ordering and wastage.	All areas / throughout construction period	Contractor	TMEIA		Y		n/a
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	All areas / throughout construction period	Contractor	TMEIA		Y		n/a

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Maintenance Agency
						D	C	O	
		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.							
12.6	8.1	All falsework will be steel instead of wood.	All areas / throughout construction period	Contractor	TMEIA		Y		n/a
12.6	8.1	<p>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:</p> <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; - 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 	All areas / throughout construction period	Contractor	TMEIA		Y		n/a

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Maintenance Agency
						D	C	O	
		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		n/a
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		n/a
12.6	8.1	Night soil should be regularly collected by licensed collectors.	All areas / throughout construction period	Contractor	TMEIA		Y		n/a
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		n/a
12.6	8.1	All waste containers shall be in a secure area on hardstanding;	All areas / throughout construction period	Contractor	TMEIA		Y		n/a
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		n/a
12.6	8.1	Office wastes can be reduced by recycling of 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.	Site Offices/ throughout construction period	Contractor	TMEIA		Y		n/a

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Maintenance Agency
						D	C	O	
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		n/a
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									

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 = 178	260
1 Hour TSP Level in $\mu\text{g}/\text{m}^3$	ASR9A/ASR8A = 394 ASR9C/ASR8 = 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 : ASR 9C
 Calibrated by : P.F.Yeung
 Date : 05/11/2013

Sampler

Model : TE-5170
 Serial Number : S/N 3572

Calibration Office and Standard Calibration Relationship

Serial Number : 2323
 Service Date : 26 Dec 2012
 Slope (m) : 2.09107
 Intercept (b) : -0.02838
 Correlation Coefficient(r) : 0.99996

Standard Condition

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

Calibration Condition

Pa (hpa) : 1019
 Ta(K) : 296

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1 18 holes	11.4	3.398	1.638	56	56.36
2 13 holes	9.0	3.019	1.457	50	50.32
3 10 holes	6.6	2.585	1.250	43	43.27
4 7 holes	4.2	2.062	0.100	36	36.23
5 5 holes	2.4	1.559	0.759	29	29.18

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): 30.801 Intercept(b): 5.465 Correlation Coefficient(r): 0.9991

Checked by: Magnum Fan

Date: 08/11/2013

High-Volume TSP Sampler
5-Point Calibration Record

Location : ASR9A
 Calibrated by : P.F.Yeung
 Date : 05/11/2013

Sampler

Model : TE-5170
 Serial Number : S/N 3573

Calibration Office and Standard Calibration Relationship

Serial Number : 2323
 Service Date : 26 Dec 2012
 Slope (m) : 2.09107
 Intercept (b) : -0.02838
 Correlation Coefficient(r) : 0.99996

Standard Condition

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

Calibration Condition

Pa (hpa) : 1019
 Ta(K) : 296

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1 18 holes	10.5	3.261	1.573	60	60.38
2 13 holes	8.2	2.882	1.392	54	54.34
3 10 holes	6.0	2.465	1.192	49	49.31
4 7 holes	4.0	2.013	0.976	42	42.27
5 5 holes	2.6	1.623	0.790	37	37.23

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): 29.442 Intercept(b): 13.831 Correlation Coefficient(r): 0.9992

Checked by: Magnum Fan

Date: 08/11/2013

Certificate of Calibration

校正證書

Certificate No. : C134307
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC13-1709)

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.
Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road,
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 : 12 July 2013

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
All results are within 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
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested By : 
測試 : K C Lee

Certified By : 
核證 : K M Wu

Date of Issue : 15 July 2013
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.

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Certificate of Calibration

校正證書

Certificate No. : C134307
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	C133632
CL281	Multifunction Acoustic Calibrator	DC130171
TST150A	Measuring Amplifier	C120886

- 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	93.7	± 0.5	± 0.2

5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	0.988	1 kHz ± 2 %	± 1

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

Note :

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

Certificate of Calibration

校正證書

Certificate No. : C133573
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC13-1422)

Description / 儀器名稱 : Sound Level Meter
Manufacturer / 製造商 : Rion
Model No. / 型號 : NL-31
Serial No. / 編號 : 00410224
Supplied By / 委託者 : Envirotech Services Co.
Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road,
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 : 14 June 2013

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
All results are within 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
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested By : 
測試 : K C Lee

Certified By : 
核證 : K K Wong

Date of Issue : 17 June 2013
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.

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Certificate of Calibration

校正證書

Certificate No. : C133573
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 was performed before the test.
- The results presented are the mean of 3 measurements at each calibration point.
- Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C130019
CL281	Multifunction Acoustic Calibrator	DC110233

- Test procedure : MA101N.

- Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

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	93.6	± 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	93.6 (Ref.)
				104.00		103.6
				114.00		113.6

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

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	93.6	Ref.
			Slow			93.5	± 0.3

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

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Certificate of Calibration 校正證書

Certificate No. : C133573
證書編號

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	67.3	-26.2 ± 1.5
					125 Hz	77.3	-16.1 ± 1.5
					250 Hz	84.9	-8.6 ± 1.4
					500 Hz	90.3	-3.2 ± 1.4
					1 kHz	93.6	Ref.
					2 kHz	94.9	+1.2 ± 1.6
					4 kHz	94.8	+1.0 ± 1.6
					8 kHz	92.6	-1.1 (+2.1 ; -3.1)
					12.5 kHz	89.7	-4.3 (+3.0 ; -6.0)

6.3.2 C-Weighting

UUT Setting				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	92.7	-0.8 ± 1.5
					125 Hz	93.4	-0.2 ± 1.5
					250 Hz	93.6	0.0 ± 1.4
					500 Hz	93.7	0.0 ± 1.4
					1 kHz	93.7	Ref.
					2 kHz	93.5	-0.2 ± 1.6
					4 kHz	93.0	-0.8 ± 1.6
					8 kHz	90.7	-3.0 (+2.1 ; -3.1)
					12.5 kHz	87.9	-6.2 (+3.0 ; -6.0)

Remarks : - UUT Microphone Model No. : UC-53A & S/N : 307154

- 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 :

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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Performance Check of Turbidity Meter


Equipment Ref. No. : ET/0505/009 Manufacturer : HACH
Model No. : 2100Q Serial No. : 11060 C 010010
Date of Calibration : 08/10/2013 Due Date : 07/01/2014


Gelex Vial Std	Theoretical Value (NTU)	Measured Value (NTU)	Difference %
0-10 NTU	5	5.2	3.92
10-100 NTU	50	5.19	3.73
100-1000 NTU	550	561	1.98

Acceptance Criteria

Difference : -5 % to 5%

The turbidity meter complies * / ~~does not comply~~ * with the specified requirements and is deemed acceptable * / ~~unacceptable~~ * for use. Measurements are traceable to national standards.

Checked by : 

Approved by : 



Internal Calibration & Performance Check of pH Meter

Equipment Ref. No. : ET/EW/007/003 Manufacturer : HANNA
 Model No. : HI 8314 Serial No. : 674469
 Date of Calibration : 09/11/2013 Calibration Due Date : 08/12/2013

Liquid Junction Error

Primary Standard Solution Used : Phosphate Ref No. of Primary Solution: 003/5.2/001/16
 Temperature of Solution : 20.2 $\Delta\text{pH}_{1/2} = \underline{+0.08}$
 pH value of diluted buffer : 6.80 pH (S) = 6.881
 $\Delta\text{pH} = \text{pH(S)} - \text{pH of diluted buffer} = \underline{0.081}$ (Observed Deviation)
 Liquid Junction Error (ΔpH_j) = $\Delta\text{pH} - \Delta\text{pH}_{1/2} = \underline{0.001}$

Shift on Stirring

pH of buffer solution (with stirring), $\text{pH}_s = \underline{6.89}$
 Shift on stirring, $\Delta\text{pH}_s = \text{pH}_s - \text{pH(S)} - \Delta\text{pH}_j = \underline{0.008}$

Noise

Noise, $\Delta\text{pH}_n = \text{difference between max and min reading} : \underline{0.00}$

Verification of ATC

Ref. No. of reference thermometer used: ET/0521/008
 Temperature record from the reference thermometer (T_R): 20.2 °C
 Temperature record from the ATC (T_{ATC}): 19.8 °C
 Temperature Difference, $|T_R - T_{ATC}|$: 0.4 °C

Acceptance Criteria

Performance Characteristic	Acceptable Range
Liquid Junction Error ΔpH_j	≤ 0.05
Shift on Stirring ΔpH_s	≤ 0.02
Noise ΔpH_n	≤ 0.02
Verification of ATC Temperature Difference	$\leq 0.5^\circ\text{C}$

The pH meter complies * / does not comply * with the specified requirements and is deemed acceptable * / unacceptable * for use. Measurements are traceable to national standards.

* Delete as appropriate

Calibrated by : 

Checked by : 



Internal Calibration & Performance Check of pH Meter

Equipment Ref. No. : ET/EW/007/003 Manufacturer : HANNA
 Model No. : HI 8314 Serial No. : 674469
 Date of Calibration : 10/12/2013 Calibration Due Date : 09/01/2014

Liquid Junction Error

Primary Standard Solution Used : Phosphate Ref No. of Primary Solution: 003/5.2/001/16
 Temperature of Solution : 20.1 $\Delta\text{pH}_{1/2} = \underline{+0.08}$
 pH value of diluted buffer : 6.79 $\text{pH (S)} = \underline{6.881}$
 $\Delta\text{pH} = \text{pH(S)} - \text{pH of diluted buffer} = \underline{0.091}$ (Observed Deviation)
 Liquid Junction Error (ΔpH_j) = $\Delta\text{pH} - \Delta\text{pH}_{1/2} = \underline{0.011}$

Shift on Stirring

pH of buffer solution (with stirring), $\text{pH}_s = \underline{6.89}$
 Shift on stirring, $\Delta\text{pH}_s = \text{pH}_s - \text{pH(S)} - \Delta\text{pH}_j = \underline{-0.002}$

Noise

Noise, $\Delta\text{pH}_n = \text{difference between max and min reading} : \underline{0.01}$

Verification of ATC

Ref. No. of reference thermometer used: ET/0521/008
 Temperature record from the reference thermometer (T_R): 20.2 °C
 Temperature record from the ATC (T_{ATC}): 19.9 °C
 Temperature Difference, $|T_R - T_{ATC}|$: 0.3 °C


Acceptance Criteria

Performance Characteristic	Acceptable Range
Liquid Junction Error ΔpH_j	≤ 0.05
Shift on Stirring ΔpH_s	≤ 0.02
Noise ΔpH_n	≤ 0.02
Verification of ATC Temperature Difference	$\leq 0.5^\circ\text{C}$

The pH meter complies * / does not comply * with the specified requirements and is deemed acceptable * / unacceptable * for use. Measurements are traceable to national standards.

* Delete as appropriate

Calibrated by : 

Checked by : 



Internal Calibration Report of Dissolved Oxygen Meter

Equipment Ref. No. : <u>ET/EW/008/005</u>	Manufacturer : <u>YSI</u>
Model No. : <u>Pro 2030</u>	Serial No. : <u>12A 100353</u>
Date of Calibration : <u>29/10/2013</u>	Calibration Due Date : <u>28/01/2014</u>

Temperature Verification

Ref. No. of Reference Thermometer : ET/0521/008
 Ref. No. of Water Bath : ---

		Temperature (°C)		
Reference Thermometer reading	Measured	20.3	Corrected	19.9
DO Meter reading	Measured	19.8	Difference	0.1

Standardization of sodium thiosulphate (Na₂S₂O₃) solution

Reagent No. of Na ₂ S ₂ O ₃ titrant	CPE/012/4.5/001/7	Reagent No. of 0.025N K ₂ Cr ₂ O ₇	CPE/012/4.4/001/22
		Trial 1	Trial 2
Initial Vol. of Na ₂ S ₂ O ₃ (ml)		1.00	12.00
Final Vol. of Na ₂ S ₂ O ₃ (ml)		11.55	22.50
Vol. of Na ₂ S ₂ O ₃ used (ml)		10.55	10.50
Normality of Na ₂ S ₂ O ₃ solution (N)		0.02370	0.02381
Average Normality (N) of Na ₂ S ₂ O ₃ solution (N)		0.02376	
Acceptance criteria, Deviation		Less than ± 0.001N	

Calculation: Normality of Na₂S₂O₃, N = 0.25 / ml Na₂S₂O₃ used

Lineality Checking

Determination of dissolved oxygen content by Winkler Titration *

Purging Time (min)	2		5		10	
	1	2	1	2	1	2
Initial Vol. of Na ₂ S ₂ O ₃ (ml)	0.00	11.80	23.40	0.00	8.00	13.00
Final Vol. of Na ₂ S ₂ O ₃ (ml)	11.80	23.40	31.50	8.00	13.00	18.10
Vol. (V) of Na ₂ S ₂ O ₃ used (ml)	11.80	11.60	8.10	8.00	5.00	5.10
Dissolved Oxygen (DO), mg/L	7.53	7.40	5.17	5.10	3.19	3.25
Acceptance criteria, Deviation	Less than + 0.3mg/L		Less than + 0.3mg/L		Less than + 0.3mg/L	

Calculation: DO (mg/L) = V x N x 8000/298

Purging time, min	DO meter reading, mg/L			Winkler Titration result *, mg/L			Difference (%) of DO Content
	1	2	Average	1	2	Average	
2	7.66	7.41	7.54	7.53	7.40	7.47	0.93
5	5.31	5.23	5.27	5.17	5.10	5.14	2.50
10	3.20	3.10	3.15	3.19	3.25	3.22	2.20
Linear regression coefficient				0.9987			



Internal Calibration Report of Dissolved Oxygen Meter

Zero Point Checking

DO meter reading, mg/L	0.00
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Salinity Checking

Reagent No. of NaCl (10ppt)	CPE/012/4.7/002/11	Reagent No. of NaCl (30ppt)	CPE/012/4.8/002/11
-----------------------------	--------------------	-----------------------------	--------------------

*Determination of dissolved oxygen content by Winkler Titration ***

Salinity (ppt)	10		30	
	1	2	1	2
Initial Vol. of Na ₂ S ₂ O ₃ (ml)	0.00	12.40	24.50	35.80
Final Vol. of Na ₂ S ₂ O ₃ (ml)	12.40	24.50	35.80	47.00
Vol. (V) of Na ₂ S ₂ O ₃ used (ml)	12.40	12.10	11.30	11.20
Dissolved Oxygen (DO), mg/L	7.91	7.72	7.21	7.14
Acceptance criteria, Deviation	Less than + 0.3mg/L		Less than + 0.3mg/L	

Calculation: $DO \text{ (mg/L)} = V \times N \times 8000/298$

Salinity (ppt)	DO meter reading, mg/L			Winkler Titration result**, mg/L			Difference (%) of DO Content
	1	2	Average	1	2	Average	
10	7.82	7.63	7.73	7.91	7.72	7.82	1.16
30	7.22	7.16	7.19	7.21	7.14	7.18	0.14

Acceptance Criteria

- (1) Differenc between temperature readings from temperature sensor of DO probe and reference thermometer : < 0.5 °C
- (2) Linear regression coefficient : >0.99
- (3) Zero checking: 0.0mg/L
- (4) Difference (%) of DO content from the meter reading and by winkler titration : within ± 5%

The equipment complies # / ~~does not comply~~ # with the specified requirements and is deemed acceptable # / unacceptable # for use.

Delete as appropriate

Calibrated by

:

Approved by :



Performance Check of Salinity Meter

Equipment Ref. No. : ET/EW/008/005 Manufacturer : YSI
Model No. : Pro 2030 Serial No. : 12A 100353
Date of Calibration : ^{29/10/2013} ~~29/08/2013~~ _{29/08/2013} Due Date : 28/01/2014

Ref. No. of Salinity Standard used (30ppt)

S/001/4

Salinity Standard (ppt)	Measured Salinity (ppt)	Difference %
30.0	30.8	2.63

Acceptance Criteria

Difference : <10 %

The salinity meter complies * / ~~does not comply~~ * with the specified requirements and is deemed acceptable * / ~~unacceptable~~ * for use. Measurements are traceable to national standards.

Checked by : 

Approved by : 

Appendix F

EM&A Monitoring Schedules

**HY/2012/07 Tuen Mun - Chek Lap Kok Link - Southern Connection Viaduct Section
Impact Noise Monitoring Schedule (1 Dec to 31 Dec 2013)**

Noise Monitoring at the rooftop of Pak Mong Village Watch Tower

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1-Dec	2-Dec	3-Dec	4-Dec	5-Dec	6-Dec	7-Dec
		Noise Monitoring				
8-Dec	9-Dec	10-Dec	11-Dec	12-Dec	13-Dec	14-Dec
	Noise Monitoring				Noise Monitoring	
15-Dec	16-Dec	17-Dec	18-Dec	19-Dec	20-Dec	21-Dec
				Noise Monitoring		
22-Dec	23-Dec	24-Dec	25-Dec	26-Dec	27-Dec	28-Dec
		Noise Monitoring				
29-Dec	30-Dec	31-Dec				
	Noise 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 Air Quality Monitoring Schedule (1 Dec to 31 Dec 2013)**

Air Quality Monitoring at WA4 and rooftop of Pak Mong Village Watch Tower

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1-Dec	2-Dec	3-Dec	4-Dec	5-Dec	6-Dec	7-Dec
		1-hour TSP - 3 times 24-hour TSP - 1 time <i>Impact AQM</i>				
8-Dec	9-Dec	10-Dec	11-Dec	12-Dec	13-Dec	14-Dec
	1-hour TSP - 3 times 24-hour TSP - 1 time <i>Impact AQM</i>				1-hour TSP - 3 times 24-hour TSP - 1 time <i>Impact AQM</i>	
15-Dec	16-Dec	17-Dec	18-Dec	19-Dec	20-Dec	21-Dec
				1-hour TSP - 3 times 24-hour TSP - 1 time <i>Impact AQM</i>		
22-Dec	23-Dec	24-Dec	25-Dec	26-Dec	27-Dec	28-Dec
		1-hour TSP - 3 times 24-hour TSP - 1 time <i>Impact AQM</i>				
29-Dec	30-Dec	31-Dec				
	1-hour TSP - 3 times 24-hour TSP - 1 time <i>Impact AQM</i>					

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 (Dec 13)**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
01-Dec	02-Dec	03-Dec	04-Dec	05-Dec	06-Dec	07-Dec
		WQM Mid-Ebb 13:15 (11:30 - 15:00) Mid-Flood 18:27 (16:42 - 20:12)		WQM Mid-Flood 9:23 (07:38 - 11:08) Mid-Ebb 14:52 (13:07 - 16:37)		WQM Mid-Flood 11:04 (09:19 - 12:49) Mid-Ebb 16:35 (14:51 - 18:21)
08-Dec	09-Dec	10-Dec	11-Dec	12-Dec	13-Dec	14-Dec
		WQM Mid-Flood 13:55 (12:10 - 15:40) Mid-Ebb 20:18 (18:33 - 22:03)		WQM Mid-Ebb 8:57 (07:12 - 10:42) Mid-Flood 15:28 (13:43 - 17:13)		WQM Mid-Ebb 11:05 (09:20 - 12:50) Mid-Flood 16:40 (14:55 - 18:25)
15-Dec	16-Dec	17-Dec	18-Dec	19-Dec	20-Dec	21-Dec
		WQM Mid-Ebb 13:03 (11:18 - 14:48) Mid-Flood 18:14 (16:29 - 19:59)		WQM Mid-Ebb 14:09 (12:24 - 15:54) Mid-Flood 19:18 (17:33 - 21:03)		WQM Mid-Flood 10:00 (08:15 - 11:45) Mid-Ebb 15:13 (13:28 - 16:58)
22-Dec	23-Dec	24-Dec	25-Dec	26-Dec	27-Dec	28-Dec
		WQM Mid-Flood 11:53 (10:08 - 13:38) Mid-Ebb 17:33 (15:48 - 19:18)		WQM Mid-Flood 13:25 (11:40 - 15:10) Mid-Ebb 19:58 (18:13 - 21:43)		WQM Mid-Ebb 9:01 (07:16 - 10:46) Mid-Flood 14:59 (13:14 - 16:44)
29-Dec	30-Dec	31-Dec				
		WQM Mid-Ebb 12:15 (10:30 - 14:00) Mid-Flood 17:23 (15:38 - 19:08)				

**HY/2012/07 Tuen Mun - Chek Lap Kok Link - Southern Connection Viaduct Section
Impact Dolphin Monitoring Survey Schedule - December 2013**

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

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
Tentative Impact Noise Monitoring Schedule (1 Jan to 31 Jan 2014)**

Noise Monitoring at the rooftop of Pak Mong Village Watch Tower

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			01-Jan	02-Jan	03-Jan	04-Jan
					Noise Monitoring	
05-Jan	06-Jan	07-Jan	08-Jan	09-Jan	10-Jan	11-Jan
				Noise Monitoring		
12-Jan	13-Jan	14-Jan	15-Jan	16-Jan	17-Jan	18-Jan
			Noise Monitoring			
19-Jan	20-Jan	21-Jan	22-Jan	23-Jan	24-Jan	25-Jan
		Noise Monitoring				
26-Jan	27-Jan	28-Jan	29-Jan	30-Jan	31-Jan	
	Noise Monitoring			Noise 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
Tentative Impact Air Quality Monitoring Schedule (1 Jan to 31 Jan 2014)**

Air Quality Monitoring at WA4 and rooftop of Pak Mong Village Watch Tower

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			01-Jan	02-Jan	03-Jan	04-Jan
					1-hour TSP - 3 times 24-hour TSP - 1 time <i>Impact AQM</i>	
05-Jan	06-Jan	07-Jan	08-Jan	09-Jan	10-Jan	11-Jan
				1-hour TSP - 3 times 24-hour TSP - 1 time <i>Impact AQM</i>		
12-Jan	13-Jan	14-Jan	15-Jan	16-Jan	17-Jan	18-Jan
			1-hour TSP - 3 times 24-hour TSP - 1 time <i>Impact AQM</i>			
19-Jan	20-Jan	21-Jan	22-Jan	23-Jan	24-Jan	25-Jan
		1-hour TSP - 3 times 24-hour TSP - 1 time <i>Impact AQM</i>				
26-Jan	27-Jan	28-Jan	29-Jan	30-Jan	31-Jan	
	1-hour TSP - 3 times 24-hour TSP - 1 time <i>Impact AQM</i>			1-hour TSP - 3 times 24-hour TSP - 1 time <i>Impact AQM</i>		

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 (Jan 14)**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			01-Jan	02-Jan	03-Jan	04-Jan
				WQM Mid-Ebb 13:52 (12:07 - 15:37) Mid-Flood 19:00 (17:15 - 20:45)		WQM Mid-Flood 9:53 (08:08 - 11:28) Mid-Ebb 15:25 (13:40 - 17:10)
05-Jan	06-Jan	07-Jan	08-Jan	09-Jan	10-Jan	11-Jan
		WQM Mid-Flood 12:06 (10:21 - 13:51) Mid-Ebb 18:19 (16:34 - 20:04)		WQM Mid-Flood 13:43 (11:58 - 15:28) Mid-Ebb 20:43 (18:57 - 21:57)		WQM Mid-Ebb 9:46 (08:01 - 11:01) Mid-Flood 15:16 (13:31 - 17:01)
12-Jan	13-Jan	14-Jan	15-Jan	16-Jan	17-Jan	18-Jan
		WQM Mid-Ebb 12:12 (10:27 - 13:42) Mid-Flood 17:22 (15:27 - 18:57)		WQM Mid-Ebb 13:15 (11:30 - 15:00) Mid-Flood 18:34 (16:49 - 20:19)		WQM Mid-Ebb 14:14 (12:29 - 15:59) Mid-Flood 19:44 (17:59 - 21:00)
19-Jan	20-Jan	21-Jan	22-Jan	23-Jan	24-Jan	25-Jan
		WQM Mid-Flood 10:17 (08:32 - 12:02) Mid-Ebb 16:01 (14:16 - 17:46)		WQM Mid-Flood 11:30 (09:45 - 13:15) Mid-Ebb 17:48 (16:03 - 19:33)		WQM Mid-Flood 13:06 (11:21 - 14:51) Mid-Ebb 20:14 (18:29 - 21:29)
26-Jan	27-Jan	28-Jan	29-Jan	30-Jan	31-Jan	
		WQM Mid-Ebb 11:13 (09:28 - 12:28) Mid-Flood 16:15 (14:30 - 18:00)		WQM Mid-Ebb 12:51 (11:06 - 14:36) Mid-Flood 18:04 (16:19 - 19:49)		

**HY/2012/07 Tuen Mun - Chek Lap Kok Link - Southern Connection Viaduct Section
Tentative Impact Dolphin Monitoring Survey Schedule (1 Jan to 31 Jan 2014)**

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

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 ASR8

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	2013-12-03	ASR8	8:30	1-hr TSP	161	393	500		
TMCLKL	HY/2012/07	2013-12-03	ASR8	9:32	1-hr TSP	77				
TMCLKL	HY/2012/07	2013-12-03	ASR8	10:34	1-hr TSP	77				
TMCLKL	HY/2012/07	2013-12-09	ASR8	8:22	1-hr TSP	277				
TMCLKL	HY/2012/07	2013-12-09	ASR8	9:24	1-hr TSP	228				
TMCLKL	HY/2012/07	2013-12-09	ASR8	10:26	1-hr TSP	319				
TMCLKL	HY/2012/07	2013-12-13	ASR8	11:40	1-hr TSP	195				
TMCLKL	HY/2012/07	2013-12-13	ASR8	12:42	1-hr TSP	237				
TMCLKL	HY/2012/07	2013-12-13	ASR8	13:44	1-hr TSP	209				
TMCLKL	HY/2012/07	2013-12-19	ASR8	8:40	1-hr TSP	63				
TMCLKL	HY/2012/07	2013-12-19	ASR8	9:42	1-hr TSP	65				
TMCLKL	HY/2012/07	2013-12-19	ASR8	10:44	1-hr TSP	83				
TMCLKL	HY/2012/07	2013-12-24	ASR8	8:12	1-hr TSP	149				
TMCLKL	HY/2012/07	2013-12-24	ASR8	9:14	1-hr TSP	95				
TMCLKL	HY/2012/07	2013-12-24	ASR8	10:16	1-hr TSP	126				
TMCLKL	HY/2012/07	2013-12-30	ASR8	8:12	1-hr TSP	184				
TMCLKL	HY/2012/07	2013-12-30	ASR8	9:14	1-hr TSP	127				
TMCLKL	HY/2012/07	2013-12-30	ASR8	10:16	1-hr TSP	145				
					Average	157				
					Min.	63				
					Max.	319				

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	2013-12-03	ASR8A	8:20	1-hr TSP	66	394	500
TMCLKL	HY/2012/07	2013-12-03	ASR8A	9:22	1-hr TSP	88		
TMCLKL	HY/2012/07	2013-12-03	ASR8A	10:24	1-hr TSP	91		
TMCLKL	HY/2012/07	2013-12-09	ASR8A	8:10	1-hr TSP	198		
TMCLKL	HY/2012/07	2013-12-09	ASR8A	9:12	1-hr TSP	213		
TMCLKL	HY/2012/07	2013-12-09	ASR8A	10:14	1-hr TSP	209		
TMCLKL	HY/2012/07	2013-12-13	ASR8A	11:30	1-hr TSP	182		
TMCLKL	HY/2012/07	2013-12-13	ASR8A	12:32	1-hr TSP	244		
TMCLKL	HY/2012/07	2013-12-13	ASR8A	13:34	1-hr TSP	275		
TMCLKL	HY/2012/07	2013-12-19	ASR8A	8:30	1-hr TSP	42		
TMCLKL	HY/2012/07	2013-12-19	ASR8A	9:32	1-hr TSP	72		
TMCLKL	HY/2012/07	2013-12-19	ASR8A	10:34	1-hr TSP	70		
TMCLKL	HY/2012/07	2013-12-24	ASR8A	8:00	1-hr TSP	148		
TMCLKL	HY/2012/07	2013-12-24	ASR8A	9:02	1-hr TSP	84		
TMCLKL	HY/2012/07	2013-12-24	ASR8A	10:04	1-hr TSP	118		
TMCLKL	HY/2012/07	2013-12-30	ASR8A	8:00	1-hr TSP	255		
TMCLKL	HY/2012/07	2013-12-30	ASR8A	9:02	1-hr TSP	112		
TMCLKL	HY/2012/07	2013-12-30	ASR8A	10:04	1-hr TSP	140		
					Average	145		
					Min.	42		
					Max.	275		

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	2013-12-03	ASR8A	11:26	24-hr TSP	93	178	260
TMCLKL	HY/2012/07	2013-12-09	ASR8A	11:16	24-hr TSP	161		
TMCLKL	HY/2012/07	2013-12-13	ASR8A	14:36	24-hr TSP	210		
TMCLKL	HY/2012/07	2013-12-19	ASR8A	11:36	24-hr TSP	80		
TMCLKL	HY/2012/07	2013-12-24	ASR8A	11:06	24-hr TSP	136		
TMCLKL	HY/2012/07	2013-12-30	ASR8A	11:06	24-hr TSP	137		

Average 136

Min. 80

Max. 210

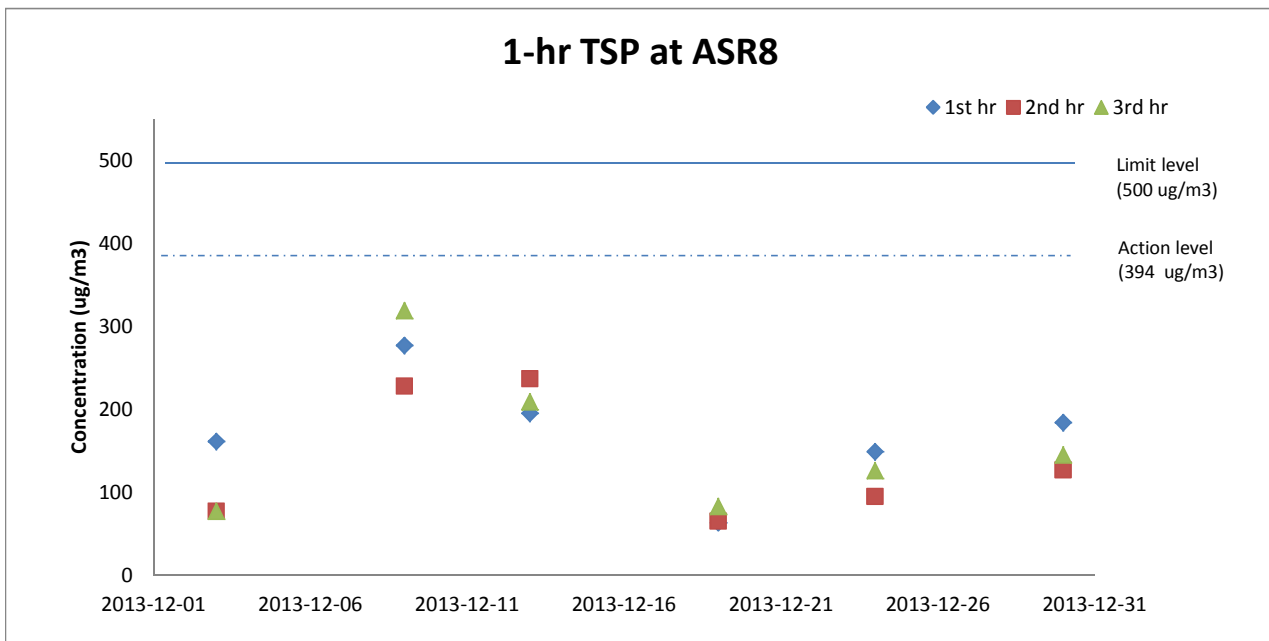
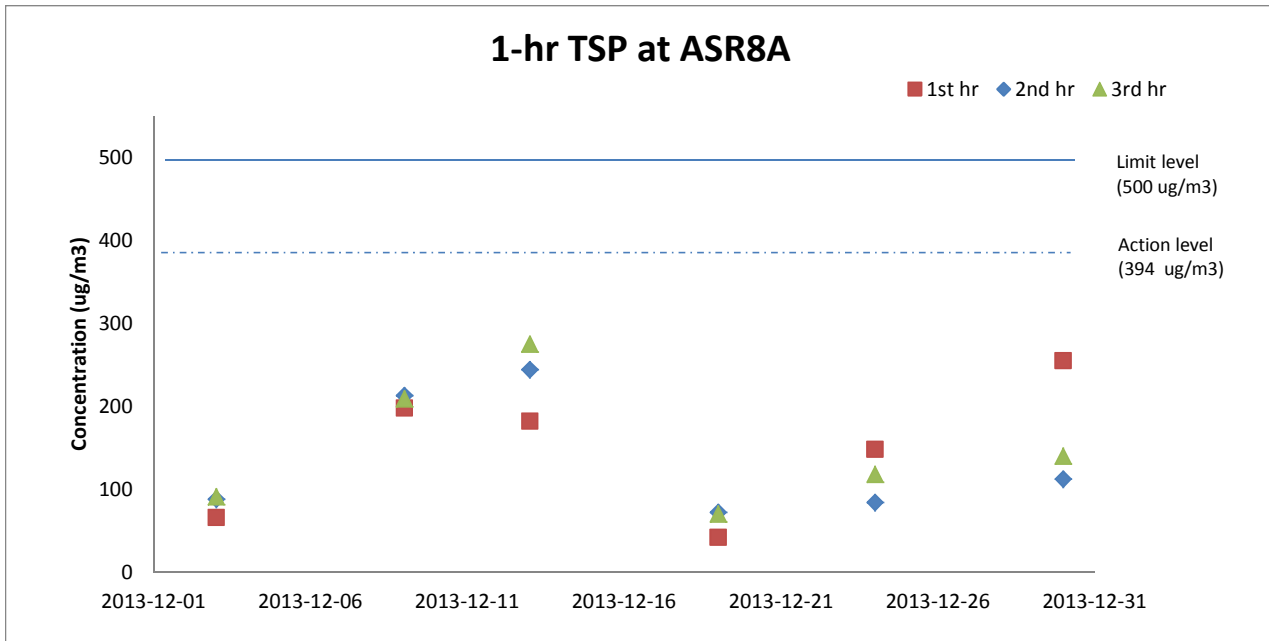
24-hour TSP Monitoring Results at Air Quality Monitoring Station ASR8

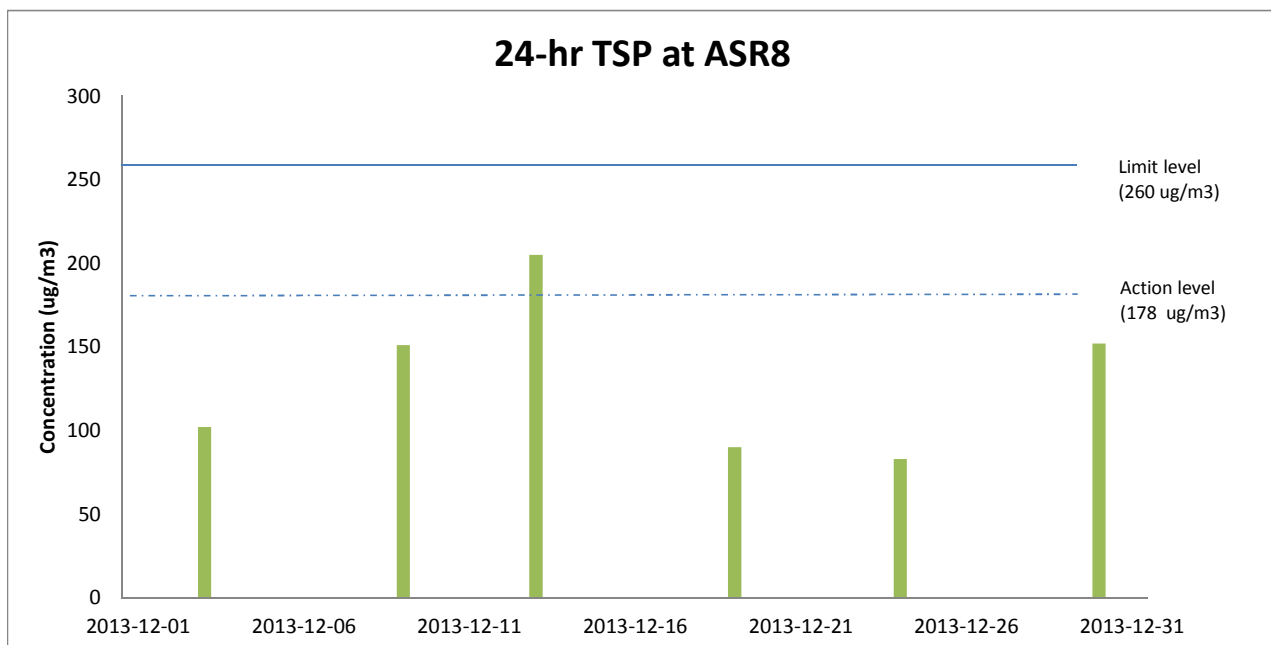
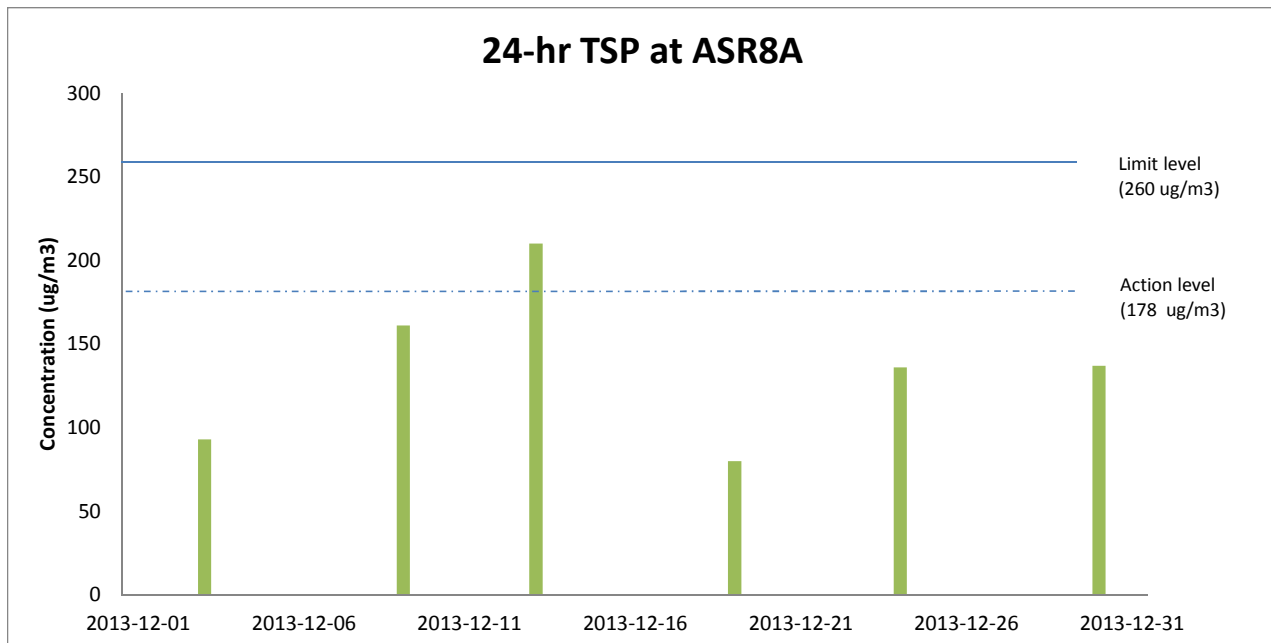
Project	Works	Date (yyyy-mm-dd)	Station	Time (hh:mm, 24hour)	Parameter	Results (ug/m3)	Action Level (ug/m3)	Limit Level (ug/m3)
TMCLKL	HY/2012/07	2013-12-03	ASR8	11:36	24-hr TSP	102	178	260
TMCLKL	HY/2012/07	2013-12-09	ASR8	11:28	24-hr TSP	151		
TMCLKL	HY/2012/07	2013-12-13	ASR8	14:46	24-hr TSP	205		
TMCLKL	HY/2012/07	2013-12-19	ASR8	11:46	24-hr TSP	90		
TMCLKL	HY/2012/07	2013-12-24	ASR8	11:18	24-hr TSP	83		
TMCLKL	HY/2012/07	2013-12-30	ASR8	11:18	24-hr TSP	152		

Average 131

Min. 83

Max. 205





Appendix H

Meteorological Data for the Reporting Month

Appendix H Meteorological Data for Impact Monitoring in the reporting period

Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
03-12-2013	00:04:43	0.02	175.82
03-12-2013	00:09:43	0.02	119.33
03-12-2013	00:14:43	0.02	130.03
03-12-2013	00:19:43	0.02	135.15
03-12-2013	00:24:43	0.02	116.66
03-12-2013	00:29:43	0.02	116.77
03-12-2013	00:34:43	0.02	127.24
03-12-2013	00:39:43	0.02	88.8
03-12-2013	00:44:43	0.02	128.8
03-12-2013	00:49:43	0.02	140.17
03-12-2013	00:54:43	0.02	131.48
03-12-2013	00:59:43	0.02	123.34
03-12-2013	01:04:43	0.02	119
03-12-2013	01:09:43	0.02	105.18
03-12-2013	01:14:43	0.02	142.06
03-12-2013	01:19:43	0.02	156.88
03-12-2013	01:24:43	0.02	161.67
03-12-2013	01:29:43	0.02	149.64
03-12-2013	01:34:43	0.02	157.33
03-12-2013	01:39:43	0.02	144.74
03-12-2013	01:44:43	0.02	144.85
03-12-2013	01:49:43	0.02	135.82
03-12-2013	01:54:43	0.02	117.77
03-12-2013	01:59:43	0.02	96.94
03-12-2013	02:04:43	0.02	115.65
03-12-2013	02:09:43	0.02	126.46
03-12-2013	02:14:43	0.02	120.22
03-12-2013	02:19:43	0.02	62.06
03-12-2013	02:24:43	0.02	166.35
03-12-2013	02:29:43	0.02	169.47
03-12-2013	02:34:43	0.02	137.94
03-12-2013	02:39:43	0.08	142.84
03-12-2013	02:44:43	0.02	157.33
03-12-2013	02:49:43	0.02	97.16
03-12-2013	02:54:43	0.02	108.86
03-12-2013	02:59:43	0.02	133.59
03-12-2013	03:04:43	0.02	146.41
03-12-2013	03:09:43	0.02	8.69
03-12-2013	03:14:43	0.02	117.55
03-12-2013	03:19:43	0.02	120.45
03-12-2013	03:24:43	0.02	140.5
03-12-2013	03:29:43	0.02	141.28
03-12-2013	03:34:43	0.02	103.62

Appendix H Meteorological Data for Impact Monitoring in the reporting period

Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
03-12-2013	03:39:43	0.02	117.33
03-12-2013	03:44:43	0.02	139.28
03-12-2013	03:49:43	0.02	132.59
03-12-2013	03:54:43	0.02	149.19
03-12-2013	03:59:43	0.02	160.45
03-12-2013	04:04:43	0.02	140.28
03-12-2013	04:09:43	0.02	167.8
03-12-2013	04:14:43	0.02	153.31
03-12-2013	04:19:43	0.02	110.97
03-12-2013	04:24:43	0.02	134.82
03-12-2013	04:29:43	0.02	187.3
03-12-2013	04:34:43	0.02	154.21
03-12-2013	04:39:43	0.02	181.62
03-12-2013	04:44:43	0.02	155.77
03-12-2013	04:49:43	0.02	182.17
03-12-2013	04:54:43	0.02	128.69
03-12-2013	04:59:43	0.02	171.81
03-12-2013	05:04:43	0.02	129.25
03-12-2013	05:09:43	0.02	153.31
03-12-2013	05:14:43	0.02	184.18
03-12-2013	05:19:43	0.02	155.1
03-12-2013	05:24:43	0.02	117.44
03-12-2013	05:29:43	0.02	139.83
03-12-2013	05:34:43	0.02	86.8
03-12-2013	05:39:43	0.02	120.56
03-12-2013	05:44:43	0.02	114.54
03-12-2013	05:49:43	0.02	89.03
03-12-2013	05:54:43	0.02	76.21
03-12-2013	05:59:43	0.03	155.77
03-12-2013	06:04:43	0.09	80.89
03-12-2013	06:09:43	0.02	148.08
03-12-2013	06:14:43	0.02	167.91
03-12-2013	06:19:43	0.02	93.48
03-12-2013	06:24:43	0.02	123.34
03-12-2013	06:29:43	0.02	110.19
03-12-2013	06:34:43	0.02	135.6
03-12-2013	06:39:43	0.02	134.15
03-12-2013	06:44:43	0.02	126.69
03-12-2013	06:49:43	0.02	145.74
03-12-2013	06:54:43	0.02	117.99
03-12-2013	06:59:43	0.02	154.21
03-12-2013	07:04:43	0.02	65.4
03-12-2013	07:09:43	0.02	126.8

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Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
03-12-2013	07:14:43	0.02	146.18
03-12-2013	07:19:43	0.02	141.06
03-12-2013	07:24:43	0.02	141.06
03-12-2013	07:29:43	0.02	116.99
03-12-2013	07:34:43	0.02	123.01
03-12-2013	07:39:43	0.02	110.53
03-12-2013	07:44:43	0.02	120.11
03-12-2013	07:49:43	0.02	132.59
03-12-2013	07:54:43	0.02	99.94
03-12-2013	07:59:43	0.02	120.56
03-12-2013	08:04:43	0.02	88.8
03-12-2013	08:09:43	0.02	88.8
03-12-2013	08:14:43	0.02	82.12
03-12-2013	08:19:43	0.02	61.28
03-12-2013	08:24:43	0.02	127.69
03-12-2013	08:29:43	0.02	165.68
03-12-2013	08:34:43	0.02	188.52
03-12-2013	08:39:43	0.02	291.25
03-12-2013	08:44:43	0.02	66.07
03-12-2013	08:49:43	0.5	18.94
03-12-2013	08:54:43	0.02	354.21
03-12-2013	08:59:43	0.02	11.7
03-12-2013	09:04:43	0.02	92.37
03-12-2013	09:09:43	0.31	33.87
03-12-2013	09:14:43	0.18	5.68
03-12-2013	09:19:43	1.18	55.71
03-12-2013	09:24:43	0.12	21.73
03-12-2013	09:29:43	0.69	1.67
03-12-2013	09:34:43	0.02	58.83
03-12-2013	09:39:43	0.02	24.29
03-12-2013	09:44:43	0.63	17.94
03-12-2013	09:49:43	0.41	17.27
03-12-2013	09:54:43	0.02	36.21
03-12-2013	09:59:43	0.02	2.34
03-12-2013	10:04:43	0.4	74.32
03-12-2013	10:09:43	0.69	26.52
03-12-2013	10:14:43	0.02	61.06
03-12-2013	10:19:43	0.41	345.4
03-12-2013	10:24:43	0.02	2.34
03-12-2013	10:29:43	0.02	316.21
03-12-2013	10:34:43	1.3	12.81
03-12-2013	10:39:43	0.41	311.64
03-12-2013	10:44:43	0	9.25

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Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
03-12-2013	10:49:43	0.02	291.92
03-12-2013	10:54:43	0.02	30.31
03-12-2013	10:59:43	0.61	61.06
03-12-2013	11:04:43	1.12	350.53
03-12-2013	11:09:43	0.69	350.97
03-12-2013	11:14:43	0.86	8.47
03-12-2013	11:19:43	1.56	3.34
03-12-2013	11:24:43	0.02	265.29
03-12-2013	11:29:43	0.02	19.39
03-12-2013	11:34:43	0.02	320.78
03-12-2013	11:39:43	0.02	252.03
03-12-2013	11:44:43	0.02	162.9
03-12-2013	11:49:43	0.02	257.49
03-12-2013	11:54:43	0.02	228.86
03-12-2013	11:59:43	0.02	232.42
03-12-2013	12:04:43	0.02	342.73
03-12-2013	12:09:43	0.02	14.6
03-12-2013	12:14:43	0.02	288.25
03-12-2013	12:19:43	0.05	2.12
03-12-2013	12:24:43	0.02	342.4
03-12-2013	12:29:43	0.02	272.09
03-12-2013	12:34:43	0.02	283.57
03-12-2013	12:39:43	0.02	343.06
03-12-2013	12:44:43	0.61	34.32
03-12-2013	12:49:43	0.75	46.69
03-12-2013	12:54:43	0.02	139.16
03-12-2013	12:59:43	0.55	54.82
03-12-2013	13:04:43	0.02	52.7
03-12-2013	13:09:43	0.05	44.57
03-12-2013	13:14:43	0.03	107.08
03-12-2013	13:19:43	0.18	70.42
03-12-2013	13:24:43	0.02	146.18
03-12-2013	13:29:43	0.02	124.23
03-12-2013	13:34:43	0.02	225.07
03-12-2013	13:39:43	0.02	178.83
03-12-2013	13:44:43	0.02	184.85
03-12-2013	13:49:43	0.02	59.16
03-12-2013	13:54:43	0.09	209.25
03-12-2013	13:59:43	0.02	53.82
03-12-2013	14:04:43	0.02	238.55
03-12-2013	14:09:43	0.02	331.25
03-12-2013	14:14:43	0.02	236.32
03-12-2013	14:19:43	0.02	281

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Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
03-12-2013	14:24:43	0.02	215.38
03-12-2013	14:29:43	0.02	235.32
03-12-2013	14:34:43	0.02	278.22
03-12-2013	14:39:43	0.02	15.71
03-12-2013	14:44:43	0.02	243.45
03-12-2013	14:49:43	0.02	274.76
03-12-2013	14:54:43	0.02	274.76
03-12-2013	14:59:43	0.02	282.67
03-12-2013	15:04:43	0.02	140.5
03-12-2013	15:09:43	0.02	120.89
03-12-2013	15:14:43	0.02	151.64
03-12-2013	15:19:43	0.05	163.45
03-12-2013	15:24:43	0.02	30.97
03-12-2013	15:29:43	0.02	114.32
03-12-2013	15:34:43	0.02	56.27
03-12-2013	15:39:43	0.02	89.81
03-12-2013	15:44:43	0.02	132.92
03-12-2013	15:49:43	0.05	155.43
03-12-2013	15:54:43	0.03	79.33
03-12-2013	15:59:43	0.02	98.61
03-12-2013	16:04:43	0.02	112.98
03-12-2013	16:09:43	0.02	63.96
03-12-2013	16:14:43	0.02	165.01
03-12-2013	16:19:43	0.02	181.06
03-12-2013	16:24:43	0.02	183.06
03-12-2013	16:29:43	0.02	227.3
03-12-2013	16:34:43	0.02	226.96
03-12-2013	16:39:43	0.02	227.19
03-12-2013	16:44:43	0.02	227.3
03-12-2013	16:49:43	0.02	219.39
03-12-2013	16:54:43	0.02	220.5
03-12-2013	16:59:43	0.02	228.3
03-12-2013	17:04:43	0.02	228.3
03-12-2013	17:09:43	0.02	228.41
03-12-2013	17:14:43	0.02	206.13
03-12-2013	17:19:43	0.02	206.24
03-12-2013	17:24:43	0.02	195.21
03-12-2013	17:29:43	0.02	195.99
03-12-2013	17:34:43	0.02	212.59
03-12-2013	17:39:43	0.02	222.62
03-12-2013	17:44:43	0.02	224.18
03-12-2013	17:49:43	0.02	222.4
03-12-2013	17:54:43	0.03	202.79

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Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
03-12-2013	17:59:43	0.02	213.7
03-12-2013	18:04:43	0.02	149.64
03-12-2013	18:09:43	0.02	238.22
03-12-2013	18:14:43	0.14	229.53
03-12-2013	18:19:43	0.02	248.8
03-12-2013	18:24:43	0.02	213.7
03-12-2013	18:29:43	0.02	128.91
03-12-2013	18:34:43	0.02	184.29
03-12-2013	18:39:43	0.02	98.94
03-12-2013	18:44:43	0.02	125.91
03-12-2013	18:49:43	0.02	189.53
03-12-2013	18:54:43	0.02	212.26
03-12-2013	18:59:43	0.02	178.61
03-12-2013	19:04:43	0.02	204.12
03-12-2013	19:09:43	0.02	173.82
03-12-2013	19:14:43	0.02	173.82
03-12-2013	19:19:43	0.02	196.1
03-12-2013	19:24:43	0.02	196.21
03-12-2013	19:29:43	0.02	200.22
03-12-2013	19:34:43	0.02	176.6
03-12-2013	19:39:43	0.02	237.99
03-12-2013	19:44:43	0.02	215.6
03-12-2013	19:49:43	0.02	216.6
03-12-2013	19:54:43	0.02	205.35
03-12-2013	19:59:43	0.02	201.23
03-12-2013	20:04:43	0.23	218.72
03-12-2013	20:09:43	0.02	220.17
03-12-2013	20:14:43	0.02	231.87
03-12-2013	20:19:43	0.44	223.84
03-12-2013	20:24:43	0.02	219.39
03-12-2013	20:29:43	0.02	221.28
03-12-2013	20:34:43	0.02	199.22
03-12-2013	20:39:43	0.02	225.4
03-12-2013	20:44:43	0.02	220.84
03-12-2013	20:49:43	0.05	179.16
03-12-2013	20:54:43	0.05	139.28
03-12-2013	20:59:43	0.02	143.29
03-12-2013	21:04:43	0.02	338.61
03-12-2013	21:09:43	0.02	25.74
03-12-2013	21:14:43	0.02	307.19
03-12-2013	21:19:43	0.02	271.64
03-12-2013	21:24:43	0.02	271.75
03-12-2013	21:29:43	0.02	271.87

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Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
03-12-2013	21:34:43	0.02	271.64
03-12-2013	21:39:43	0.02	271.75
03-12-2013	21:44:43	0.26	235.21
03-12-2013	21:49:43	0.02	226.52
03-12-2013	21:54:43	0.02	234.76
03-12-2013	21:59:43	0.02	239.89
03-12-2013	22:04:43	0.49	245.24
03-12-2013	22:09:43	0.02	214.71
03-12-2013	22:14:43	0.02	212.81
03-12-2013	22:19:43	0.02	225.85
03-12-2013	22:24:43	0.02	209.47
03-12-2013	22:29:43	0.02	232.65
03-12-2013	22:34:43	0.61	240.45
03-12-2013	22:39:43	0.02	254.04
03-12-2013	22:44:43	0.02	227.3
03-12-2013	22:49:43	0.02	230.64
03-12-2013	22:54:43	0.02	203.12
03-12-2013	22:59:43	0.4	162.23
03-12-2013	23:04:43	0.02	223.51
03-12-2013	23:09:43	0.02	203.79
03-12-2013	23:14:43	0.02	203.9
03-12-2013	23:19:43	0.02	227.86
03-12-2013	23:24:43	0.02	225.74
03-12-2013	23:29:43	0.02	222.4
03-12-2013	23:34:43	0.23	220.84
03-12-2013	23:39:43	0.03	224.96
03-12-2013	23:44:43	0.38	191.87
03-12-2013	23:49:43	0.2	180.95
03-12-2013	23:54:43	0.02	208.8
03-12-2013	23:59:43	0.02	234.09
09-12-2013	00:02:02	0.02	227.86
09-12-2013	00:07:02	0.02	227.86
09-12-2013	00:12:02	0.02	227.97
09-12-2013	00:17:02	0.02	227.86
09-12-2013	00:22:02	0.02	227.97
09-12-2013	00:27:02	0.02	265.52
09-12-2013	00:32:02	0.02	277.33
09-12-2013	00:37:02	0.02	240.67
09-12-2013	00:42:02	0.02	257.27
09-12-2013	00:47:02	0.06	260.84
09-12-2013	00:52:02	0.02	258.61
09-12-2013	00:57:02	0.02	221.17
09-12-2013	01:02:02	0.2	261.62

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Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
09-12-2013	01:07:02	0.02	264.62
09-12-2013	01:12:02	0.02	245.91
09-12-2013	01:17:02	0.02	249.03
09-12-2013	01:22:02	0.02	229.3
09-12-2013	01:27:02	0.02	313.98
09-12-2013	01:32:02	0.02	313.98
09-12-2013	01:37:02	0.02	254.48
09-12-2013	01:42:02	0.02	243.68
09-12-2013	01:47:02	0.02	257.27
09-12-2013	01:52:02	0.02	284.23
09-12-2013	01:57:02	0.02	230.08
09-12-2013	02:02:02	0.02	261.28
09-12-2013	02:07:02	0.02	273.43
09-12-2013	02:12:02	0.02	288.58
09-12-2013	02:17:02	0.02	241.11
09-12-2013	02:22:02	0.02	263.62
09-12-2013	02:27:02	0.02	304.07
09-12-2013	02:32:02	0.02	307.63
09-12-2013	02:37:02	0.02	255.15
09-12-2013	02:42:02	0.02	279.89
09-12-2013	02:47:02	0.02	244.9
09-12-2013	02:52:02	0.02	242.79
09-12-2013	02:57:02	0.02	239.78
09-12-2013	03:02:02	0.02	287.47
09-12-2013	03:07:02	0.02	251.36
09-12-2013	03:12:02	0.02	267.97
09-12-2013	03:17:02	0.02	338.72
09-12-2013	03:22:02	0.52	244.46
09-12-2013	03:27:02	0.02	338.27
09-12-2013	03:32:02	0.02	312.98
09-12-2013	03:37:02	0.02	175.49
09-12-2013	03:42:02	0.02	330.14
09-12-2013	03:47:02	0.02	263.51
09-12-2013	03:52:02	0.02	222.62
09-12-2013	03:57:02	1.04	250.25
09-12-2013	04:02:02	0.06	262.28
09-12-2013	04:07:02	0.02	284.9
09-12-2013	04:12:02	0.03	306.96
09-12-2013	04:17:02	0.02	287.35
09-12-2013	04:22:02	0.02	129.25
09-12-2013	04:27:02	0.11	253.26
09-12-2013	04:32:02	0.02	355.54
09-12-2013	04:37:02	0.02	278.55

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Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
09-12-2013	04:42:02	0.02	209.36
09-12-2013	04:47:02	0.02	270.97
09-12-2013	04:52:02	0.02	346.96
09-12-2013	04:57:02	0.02	270.31
09-12-2013	05:02:02	0.02	265.52
09-12-2013	05:07:02	0.02	303.51
09-12-2013	05:12:02	2.14	244.9
09-12-2013	05:17:02	0.03	312.2
09-12-2013	05:22:02	0.02	267.74
09-12-2013	05:27:02	0.4	199.78
09-12-2013	05:32:02	0.02	257.27
09-12-2013	05:37:02	0.09	2.79
09-12-2013	05:42:02	0.02	306.3
09-12-2013	05:47:02	0.03	267.97
09-12-2013	05:52:02	0.02	323.01
09-12-2013	05:57:02	0.02	348.64
09-12-2013	06:02:02	0.02	248.58
09-12-2013	06:07:02	0.02	290.14
09-12-2013	06:12:02	0.02	232.42
09-12-2013	06:17:02	0.02	240.45
09-12-2013	06:22:02	0.02	298.05
09-12-2013	06:27:02	0.02	286.69
09-12-2013	06:32:02	0.02	244.57
09-12-2013	06:37:02	0.02	282.56
09-12-2013	06:42:02	0.02	286.57
09-12-2013	06:47:02	1.59	234.21
09-12-2013	06:52:02	0.02	263.96
09-12-2013	06:57:02	0.02	257.49
09-12-2013	07:02:02	0.02	247.13
09-12-2013	07:07:02	0.02	284.01
09-12-2013	07:12:02	0.02	279.67
09-12-2013	07:17:02	0.02	251.25
09-12-2013	07:22:02	0.02	287.8
09-12-2013	07:27:02	0.06	226.07
09-12-2013	07:32:02	0.06	245.57
09-12-2013	07:37:02	0.02	275.32
09-12-2013	07:42:02	0.15	262.84
09-12-2013	07:47:02	0.02	303.06
09-12-2013	07:52:02	0.46	289.36
09-12-2013	07:57:02	0.02	267.52
09-12-2013	08:02:02	0.02	249.25
09-12-2013	08:07:02	0.02	299.16
09-12-2013	08:12:02	0.02	20.17

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Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
09-12-2013	08:17:02	0.02	251.92
09-12-2013	08:22:02	0.02	285.91
09-12-2013	08:27:02	0.02	247.02
09-12-2013	08:32:02	0.02	288.25
09-12-2013	08:37:02	0.02	255.93
09-12-2013	08:42:02	0.02	320.11
09-12-2013	08:47:02	0.02	348.86
09-12-2013	08:52:02	0.02	269.19
09-12-2013	08:57:02	0.26	9.69
09-12-2013	09:02:02	0.02	10.47
09-12-2013	09:07:02	0.02	341.39
09-12-2013	09:12:02	0.02	315.77
09-12-2013	09:17:02	0.02	236.55
09-12-2013	09:22:02	0.02	243.45
09-12-2013	09:27:02	0.02	246.13
09-12-2013	09:32:02	0.02	260.39
09-12-2013	09:37:02	0.02	251.48
09-12-2013	09:42:02	0.02	207.13
09-12-2013	09:47:02	0.02	296.49
09-12-2013	09:52:02	1.71	1.78
09-12-2013	09:57:02	0.21	338.16
09-12-2013	10:02:02	0.02	270.64
09-12-2013	10:07:02	0.02	237.44
09-12-2013	10:12:02	0.02	354.76
09-12-2013	10:17:02	0.02	282.34
09-12-2013	10:22:02	0.02	338.94
09-12-2013	10:27:02	0.31	239.55
09-12-2013	10:32:02	0.02	324.79
09-12-2013	10:37:02	0.02	255.82
09-12-2013	10:42:02	0.02	262.84
09-12-2013	10:47:02	0.02	225.52
09-12-2013	10:52:02	0.02	254.37
09-12-2013	10:57:02	0.02	255.49
09-12-2013	11:02:02	0.02	293.82
09-12-2013	11:07:02	0.02	314.21
09-12-2013	11:12:02	0.02	268.3
09-12-2013	11:17:02	0.02	267.3
09-12-2013	11:22:02	0.02	245.13
09-12-2013	11:27:02	0.02	237.88
09-12-2013	11:32:02	0.02	256.94
09-12-2013	11:37:02	0.02	244.79
09-12-2013	11:42:02	0.37	311.53
09-12-2013	11:47:02	0.35	284.46

Appendix H Meteorological Data for Impact Monitoring in the reporting period

Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
09-12-2013	11:52:02	0.02	265.74
09-12-2013	11:57:02	0.08	264.85
09-12-2013	12:02:02	0.02	123.68
09-12-2013	12:07:02	0.02	302.06
09-12-2013	12:12:02	0.02	242.79
09-12-2013	12:17:02	0.02	1.45
09-12-2013	12:22:02	0.09	243.68
09-12-2013	12:27:02	1.53	294.82
09-12-2013	12:32:02	0.29	206.24
09-12-2013	12:37:02	0.2	277.1
09-12-2013	12:42:02	0	22.84
09-12-2013	12:47:02	0.05	176.27
09-12-2013	12:52:02	0.08	352.98
09-12-2013	12:57:02	0.02	316.77
09-12-2013	13:02:02	0.21	255.71
09-12-2013	13:07:02	0.37	13.37
09-12-2013	13:12:02	0.14	6.24
09-12-2013	13:17:02	0.02	237.66
09-12-2013	13:22:02	0.21	249.81
09-12-2013	13:27:02	0.61	6.69
09-12-2013	13:32:02	0.02	330.14
09-12-2013	13:37:02	0.02	292.7
09-12-2013	13:42:02	0.02	29.75
09-12-2013	13:47:02	0.02	211.25
09-12-2013	13:52:02	1.94	4.46
09-12-2013	13:57:02	0.06	347.3
09-12-2013	14:02:02	0.26	325.35
09-12-2013	14:07:02	0.02	6.24
09-12-2013	14:12:02	0.61	286.91
09-12-2013	14:17:02	0.02	263.73
09-12-2013	14:22:02	0.02	36.77
09-12-2013	14:27:02	0.02	235.43
09-12-2013	14:32:02	0.02	260.5
09-12-2013	14:37:02	0.02	290.47
09-12-2013	14:42:02	0.02	7.35
09-12-2013	14:47:02	0.02	253.37
09-12-2013	14:52:02	0.02	191.98
09-12-2013	14:57:02	0.02	297.72
09-12-2013	15:02:02	0.46	259.72
09-12-2013	15:07:02	0.02	27.19
09-12-2013	15:12:02	0.08	313.31
09-12-2013	15:17:02	0.02	44.35
09-12-2013	15:22:02	0.02	352.42

Appendix H Meteorological Data for Impact Monitoring in the reporting period

Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
09-12-2013	15:27:02	0.02	352.53
09-12-2013	15:32:02	0.02	224.29
09-12-2013	15:37:02	0.2	252.48
09-12-2013	15:42:02	0.21	254.93
09-12-2013	15:47:02	0.03	323.68
09-12-2013	15:52:02	0.02	269.42
09-12-2013	15:57:02	0.02	257.16
09-12-2013	16:02:02	0.99	266.96
09-12-2013	16:07:02	0.02	314.76
09-12-2013	16:12:02	0.02	12.03
09-12-2013	16:17:02	0.02	11.92
09-12-2013	16:22:02	0.02	11.92
09-12-2013	16:27:02	0.02	11.92
09-12-2013	16:32:02	0.02	225.74
09-12-2013	16:37:02	0.02	225.85
09-12-2013	16:42:02	0.02	61.06
09-12-2013	16:47:02	0.02	160
09-12-2013	16:52:02	0.02	160
09-12-2013	16:57:02	0.02	160.11
09-12-2013	17:02:02	0.02	197.88
09-12-2013	17:07:02	0.02	209.36
09-12-2013	17:12:02	0.02	222.95
09-12-2013	17:17:02	0.02	214.37
09-12-2013	17:22:02	0.02	172.37
09-12-2013	17:27:02	0.02	202.9
09-12-2013	17:32:02	0.02	161.67
09-12-2013	17:37:02	0.02	235.54
09-12-2013	17:42:02	0.05	246.69
09-12-2013	17:47:02	0.02	220.06
09-12-2013	17:52:02	0.02	174.04
09-12-2013	17:57:02	0.02	201.89
09-12-2013	18:02:02	0.02	204.57
09-12-2013	18:07:02	0.06	226.07
09-12-2013	18:12:02	0.03	204.9
09-12-2013	18:17:02	0.02	197.21
09-12-2013	18:22:02	0.02	194.21
09-12-2013	18:27:02	0.02	180.28
09-12-2013	18:32:02	0.02	172.37
09-12-2013	18:37:02	0.02	210.7
09-12-2013	18:42:02	0.02	255.15
09-12-2013	18:47:02	0.02	164.9
09-12-2013	18:52:02	0.02	211.36
09-12-2013	18:57:02	0.02	130.03

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Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
09-12-2013	19:02:02	0.02	218.27
09-12-2013	19:07:02	0.18	186.74
09-12-2013	19:12:02	0.02	189.3
09-12-2013	19:17:02	0.02	185.18
09-12-2013	19:22:02	0.02	167.13
09-12-2013	19:27:02	0.02	232.98
09-12-2013	19:32:02	0.02	211.7
09-12-2013	19:37:02	0.02	211.7
09-12-2013	19:42:02	0.02	211.81
09-12-2013	19:47:02	0.02	240
09-12-2013	19:52:02	0.02	174.48
09-12-2013	19:57:02	0.02	168.36
09-12-2013	20:02:02	0.02	191.87
09-12-2013	20:07:02	0.02	193.43
09-12-2013	20:12:02	0.02	199.78
09-12-2013	20:17:02	0.02	144.29
09-12-2013	20:22:02	0.02	221.06
09-12-2013	20:27:02	0.02	216.27
09-12-2013	20:32:02	0.23	232.2
09-12-2013	20:37:02	0.02	218.38
09-12-2013	20:42:02	0.02	183.84
09-12-2013	20:47:02	0.03	181.84
09-12-2013	20:52:02	0.02	167.24
09-12-2013	20:57:02	0.03	231.87
09-12-2013	21:02:02	0.02	248.02
09-12-2013	21:07:02	0.02	125.91
09-12-2013	21:12:02	0.26	204.68
09-12-2013	21:17:02	0.02	273.87
09-12-2013	21:22:02	0.02	273.98
09-12-2013	21:27:02	0.02	342.95
09-12-2013	21:32:02	0.52	182.17
09-12-2013	21:37:02	0.02	325.79
09-12-2013	21:42:02	0.02	10.47
09-12-2013	21:47:02	0.02	225.74
09-12-2013	21:52:02	0.2	263.62
09-12-2013	21:57:02	0.14	240.45
09-12-2013	22:02:02	0.02	231.87
09-12-2013	22:07:02	0.02	44.01
09-12-2013	22:12:02	0.02	227.41
09-12-2013	22:17:02	0.23	27.08
09-12-2013	22:22:02	0.02	68.19
09-12-2013	22:27:02	0.02	226.07
09-12-2013	22:32:02	0.02	191.87

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Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
09-12-2013	22:37:02	0.02	249.36
09-12-2013	22:42:02	0.02	300.28
09-12-2013	22:47:02	0.02	143.62
09-12-2013	22:52:02	0.02	207.69
09-12-2013	22:57:02	0.02	254.82
09-12-2013	23:02:02	0.02	210.7
09-12-2013	23:07:02	0.02	221.62
09-12-2013	23:12:02	0.02	205.13
09-12-2013	23:17:02	1.27	221.28
09-12-2013	23:22:02	0.08	179.28
09-12-2013	23:27:02	0.02	265.29
09-12-2013	23:32:02	0.17	202.45
09-12-2013	23:37:02	0.12	245.46
09-12-2013	23:42:02	0.02	228.19
09-12-2013	23:47:02	0.28	250.47
09-12-2013	23:52:02	0.02	179.72
09-12-2013	23:57:02	0.02	230.86
13-12-2013	00:04:43	3.04	61.73
13-12-2013	00:09:43	0.02	81.11
13-12-2013	00:14:43	0.35	149.86
13-12-2013	00:19:43	0.02	82.9
13-12-2013	00:24:43	0.02	67.86
13-12-2013	00:29:43	0.02	79.89
13-12-2013	00:34:43	0.18	170.7
13-12-2013	00:39:43	0.02	116.55
13-12-2013	00:44:43	0.02	102.17
13-12-2013	00:49:43	0.02	178.72
13-12-2013	00:54:43	0.02	167.69
13-12-2013	00:59:43	0.02	84.9
13-12-2013	01:04:43	0.02	128.25
13-12-2013	01:09:43	0.02	133.48
13-12-2013	01:14:43	0.02	133.48
13-12-2013	01:19:43	0.02	115.21
13-12-2013	01:24:43	0.02	158.11
13-12-2013	01:29:43	0.02	136.82
13-12-2013	01:34:43	0.11	151.87
13-12-2013	01:39:43	0.02	145.4
13-12-2013	01:44:43	0.02	132.26
13-12-2013	01:49:43	0.02	91.59
13-12-2013	01:54:43	0.02	91.48
13-12-2013	01:59:43	0.02	64.96
13-12-2013	02:04:43	0.02	69.86
13-12-2013	02:09:43	0.02	33.54

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Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
13-12-2013	02:14:43	0.02	51.7
13-12-2013	02:19:43	0.02	52.26
13-12-2013	02:24:43	0.02	59.94
13-12-2013	02:29:43	0.02	0.67
13-12-2013	02:34:43	0.02	0.67
13-12-2013	02:39:43	0.02	0.89
13-12-2013	02:44:43	0.02	0.89
13-12-2013	02:49:43	0.02	0.67
13-12-2013	02:54:43	0.02	343.62
13-12-2013	02:59:43	0.02	343.73
13-12-2013	03:04:43	0.02	7.24
13-12-2013	03:09:43	0.52	357.77
13-12-2013	03:14:43	0.02	345.29
13-12-2013	03:19:43	0.02	6.91
13-12-2013	03:24:43	0.02	323.45
13-12-2013	03:29:43	0.02	347.63
13-12-2013	03:34:43	0.02	299.61
13-12-2013	03:39:43	0.02	303.06
13-12-2013	03:44:43	0.02	2.45
13-12-2013	03:49:43	0.02	273.2
13-12-2013	03:54:43	0.02	313.54
13-12-2013	03:59:43	0.02	296.27
13-12-2013	04:04:43	0.02	1.78
13-12-2013	04:09:43	0.28	347.52
13-12-2013	04:14:43	0.12	355.1
13-12-2013	04:19:43	0.02	330.25
13-12-2013	04:24:43	0.02	296.38
13-12-2013	04:29:43	0.02	252.03
13-12-2013	04:34:43	0.02	358.44
13-12-2013	04:39:43	0.02	257.27
13-12-2013	04:44:43	0.02	307.52
13-12-2013	04:49:43	0.02	261.06
13-12-2013	04:54:43	0.02	274.76
13-12-2013	04:59:43	0.02	272.65
13-12-2013	05:04:43	0.02	335.71
13-12-2013	05:09:43	0.02	33.76
13-12-2013	05:14:43	0.41	70.64
13-12-2013	05:19:43	0.02	50.03
13-12-2013	05:24:43	0.02	68.19
13-12-2013	05:29:43	0.29	93.15
13-12-2013	05:34:43	0.02	346.18
13-12-2013	05:39:43	0.03	65.29
13-12-2013	05:44:43	0.02	66.63

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Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
13-12-2013	05:49:43	0.02	41
13-12-2013	05:54:43	0.02	91.25
13-12-2013	05:59:43	0.02	93.82
13-12-2013	06:04:43	0.02	123.68
13-12-2013	06:09:43	0.02	131.48
13-12-2013	06:14:43	0.02	131.59
13-12-2013	06:19:43	0.02	216.38
13-12-2013	06:24:43	0.02	216.38
13-12-2013	06:29:43	0.02	216.38
13-12-2013	06:34:43	0.02	213.15
13-12-2013	06:39:43	0.02	213.15
13-12-2013	06:44:43	0.02	213.15
13-12-2013	06:49:43	0.02	213.15
13-12-2013	06:54:43	0.02	213.15
13-12-2013	06:59:43	0.02	213.15
13-12-2013	07:04:43	0.02	213.15
13-12-2013	07:09:43	0.02	340.28
13-12-2013	07:14:43	0.02	283.34
13-12-2013	07:19:43	0.02	283.23
13-12-2013	07:24:43	0.02	283.23
13-12-2013	07:29:43	0.02	283.23
13-12-2013	07:34:43	0.02	283.23
13-12-2013	07:39:43	0.02	247.13
13-12-2013	07:44:43	0.02	111.09
13-12-2013	07:49:43	0	105.52
13-12-2013	07:54:43	0.02	106.74
13-12-2013	07:59:43	0.02	106.63
13-12-2013	08:04:43	0.02	106.74
13-12-2013	08:09:43	0.02	106.18
13-12-2013	08:14:43	0.02	106.18
13-12-2013	08:19:43	0.02	106.18
13-12-2013	08:24:43	0.02	105.85
13-12-2013	08:29:43	0.02	105.85
13-12-2013	08:34:43	0.02	105.63
13-12-2013	08:39:43	0.02	105.52
13-12-2013	08:44:43	0.02	105.52
13-12-2013	08:49:43	0.02	105.4
13-12-2013	08:54:43	0.02	196.55
13-12-2013	09:19:43	0.02	197.99
13-12-2013	09:24:43	0.02	94.82
13-12-2013	09:29:43	0.02	94.37
13-12-2013	09:34:43	0.02	94.15
13-12-2013	09:39:43	0.02	94.04

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Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
13-12-2013	09:44:43	0.02	93.93
13-12-2013	09:49:43	0.02	94.04
13-12-2013	09:54:43	0.02	93.93
13-12-2013	09:59:43	0.02	93.93
13-12-2013	10:04:43	0.02	94.04
13-12-2013	10:09:43	0.02	95.60
13-12-2013	10:14:43	0.02	94.48
13-12-2013	10:19:43	0.02	95.49
13-12-2013	10:24:43	0.02	95.15
13-12-2013	10:29:43	0.02	96.27
13-12-2013	10:34:43	0.02	96.38
13-12-2013	10:39:43	0.02	96.38
13-12-2013	10:44:43	0.02	96.49
13-12-2013	10:49:43	0.02	96.49
13-12-2013	10:54:43	0.02	96.27
13-12-2013	10:59:43	0.02	96.38
13-12-2013	11:04:43	0.02	96.38
13-12-2013	11:09:43	0.02	76.99
13-12-2013	11:14:43	0.02	303.73
13-12-2013	11:19:43	0.09	4.46
13-12-2013	11:24:43	0.02	5.91
13-12-2013	11:29:43	0.03	5.35
13-12-2013	11:34:43	0.02	231.87
13-12-2013	11:39:43	0.02	335.15
13-12-2013	11:44:43	0.02	245.24
13-12-2013	11:49:43	0.05	216.49
13-12-2013	11:54:43	0.02	339.05
13-12-2013	11:59:43	0.02	233.31
13-12-2013	12:04:43	0.02	359.00
13-12-2013	12:09:43	0.02	228.19
13-12-2013	12:14:43	0.38	232.09
13-12-2013	12:19:43	0.02	344.29
13-12-2013	12:24:43	0.05	220.17
13-12-2013	12:29:43	0.02	258.72
13-12-2013	12:34:43	0.02	228.75
13-12-2013	12:39:43	0.02	293.48
13-12-2013	12:44:43	0.17	249.58
13-12-2013	12:49:43	0.02	236.32
13-12-2013	12:54:43	0.02	257.94
13-12-2013	12:59:43	0.02	346.41
13-12-2013	13:04:43	0.02	242.45
13-12-2013	13:09:43	0.02	252.14
13-12-2013	13:14:43	0.02	256.71

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Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
13-12-2013	13:19:43	0.02	292.14
13-12-2013	13:24:43	0.02	355.77
13-12-2013	13:29:43	0.02	33.54
13-12-2013	13:34:43	0.02	9.14
13-12-2013	13:39:43	0.23	57.60
13-12-2013	13:44:43	0.02	253.93
13-12-2013	13:49:43	0.02	2.56
13-12-2013	13:54:43	0.02	334.93
13-12-2013	13:59:43	0.02	205.13
13-12-2013	14:04:43	0.02	355.10
13-12-2013	14:09:43	0.14	359.89
13-12-2013	14:14:43	0.02	309.86
13-12-2013	14:19:43	0.02	295.71
13-12-2013	14:24:43	0.02	1.34
13-12-2013	14:29:43	0.02	278.44
13-12-2013	14:34:43	0.02	246.69
13-12-2013	14:39:43	0.02	-0.11
13-12-2013	14:44:43	0.02	267.30
13-12-2013	14:49:43	0.02	305.63
13-12-2013	14:54:43	0.02	163.68
13-12-2013	14:59:43	0.02	317.88
13-12-2013	15:04:43	0.02	359.67
13-12-2013	15:09:43	0.02	271.98
13-12-2013	15:14:43	0.02	269.30
13-12-2013	15:19:43	0.02	315.43
13-12-2013	15:24:43	0.02	268.86
13-12-2013	15:29:43	0.02	299.61
13-12-2013	15:34:43	0.02	300.06
13-12-2013	15:39:43	0.05	119.78
13-12-2013	15:44:43	0.02	243.79
13-12-2013	15:49:43	0.02	-0.11
13-12-2013	15:54:43	0.02	313.65
13-12-2013	15:59:43	0.02	245.01
13-12-2013	16:04:43	0.02	65.40
13-12-2013	16:09:43	0.02	323.01
13-12-2013	16:14:43	0.02	320.67
13-12-2013	16:19:43	0.02	264.96
13-12-2013	16:24:43	0.02	254.82
13-12-2013	16:29:43	0.02	294.93
13-12-2013	16:34:43	0.02	309.08
13-12-2013	16:39:43	0.02	259.39
13-12-2013	16:44:43	0.02	259.61
13-12-2013	16:49:43	0.02	235.88

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Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
13-12-2013	16:54:43	0.02	235.88
13-12-2013	16:59:43	0.02	235.88
13-12-2013	17:04:43	0.02	235.88
13-12-2013	17:09:43	0.02	270.42
13-12-2013	17:14:43	0.02	263.51
13-12-2013	17:19:43	0.02	238.55
13-12-2013	17:24:43	0.02	268.86
13-12-2013	17:29:43	0.02	268.64
13-12-2013	17:34:43	0.02	275.10
13-12-2013	17:39:43	0.02	259.16
13-12-2013	17:44:43	0.02	239.89
13-12-2013	17:49:43	0.02	287.47
13-12-2013	17:54:43	0.02	287.58
13-12-2013	17:59:43	0.02	211.81
13-12-2013	18:04:43	0.02	211.81
13-12-2013	18:09:43	0.03	211.92
13-12-2013	18:14:43	0.02	211.92
13-12-2013	18:19:43	0.02	250.03
13-12-2013	18:24:43	0.02	220.72
13-12-2013	18:29:43	0.02	246.57
13-12-2013	18:34:43	0.02	246.13
13-12-2013	18:39:43	0.02	248.80
13-12-2013	18:44:43	0.02	248.80
13-12-2013	18:49:43	0.02	248.91
13-12-2013	18:54:43	0.02	215.60
13-12-2013	18:59:43	0.02	269.30
13-12-2013	19:04:43	0.02	219.16
13-12-2013	19:09:43	0.02	219.39
13-12-2013	19:14:43	0.02	319.11
13-12-2013	19:19:43	0.02	283.01
13-12-2013	19:24:43	0.02	270.75
13-12-2013	19:29:43	0.06	212.70
13-12-2013	19:34:43	0.02	305.85
13-12-2013	19:39:43	0.02	320.56
13-12-2013	19:44:43	0.02	201.56
13-12-2013	19:49:43	0.02	272.53
13-12-2013	19:54:43	0.02	283.90
13-12-2013	19:59:43	0.02	254.71
13-12-2013	20:04:43	0.67	242.79
13-12-2013	20:09:43	0.02	221.39
13-12-2013	20:14:43	0.02	223.29
13-12-2013	20:19:43	0.12	283.79
13-12-2013	20:24:43	0.02	306.96

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Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
13-12-2013	20:29:43	0.02	239.00
13-12-2013	20:34:43	0.02	239.00
13-12-2013	20:39:43	0.02	268.97
13-12-2013	20:44:43	1.04	254.48
13-12-2013	20:49:43	0.03	266.30
13-12-2013	20:54:43	0.69	310.53
13-12-2013	20:59:43	0.06	173.59
13-12-2013	21:04:43	0.02	300.06
13-12-2013	21:09:43	0.02	278.22
13-12-2013	21:14:43	0.03	284.90
13-12-2013	21:19:43	0.06	283.68
13-12-2013	21:24:43	0.02	298.72
13-12-2013	21:29:43	0.02	285.46
13-12-2013	21:34:43	0.02	303.18
13-12-2013	21:39:43	0.02	278.66
13-12-2013	21:44:43	0.02	251.92
13-12-2013	21:49:43	0.02	302.28
13-12-2013	21:54:43	0.02	303.73
13-12-2013	21:59:43	0.02	259.28
13-12-2013	22:04:43	0.02	224.74
13-12-2013	22:09:43	0.02	334.82
13-12-2013	22:14:43	0.02	334.82
13-12-2013	22:19:43	0.02	334.82
13-12-2013	22:24:43	0.02	205.13
13-12-2013	22:29:43	0.02	205.01
13-12-2013	22:34:43	0.02	197.44
13-12-2013	22:39:43	0.02	197.55
13-12-2013	22:44:43	0.02	197.66
13-12-2013	22:49:43	0.02	197.66
13-12-2013	22:54:43	0.02	197.66
13-12-2013	22:59:43	0.02	197.66
13-12-2013	23:04:43	0.02	197.55
13-12-2013	23:09:43	0.02	197.66
13-12-2013	23:14:43	0.02	197.66
13-12-2013	23:19:43	0.02	197.66
13-12-2013	23:24:43	0.05	292.26
13-12-2013	23:29:43	0.02	252.14
13-12-2013	23:34:43	0.08	7.13
13-12-2013	23:39:43	0.02	294.71
13-12-2013	23:44:43	0.02	5.35
13-12-2013	23:49:43	0.02	303.62
13-12-2013	23:54:43	0.87	244.90
13-12-2013	23:59:43	1.07	267.63

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Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
14-12-2013	00:04:43	0.02	271.98
14-12-2013	00:09:43	0.02	247.69
14-12-2013	00:14:43	0.02	279.11
14-12-2013	00:19:43	0.02	271.42
14-12-2013	00:24:43	0.54	261.62
14-12-2013	00:29:43	0.02	236.10
14-12-2013	00:34:43	0.02	200.00
14-12-2013	00:39:43	0.02	200.00
14-12-2013	00:44:43	0.02	200.00
14-12-2013	00:49:43	0.02	200.11
14-12-2013	00:54:43	0.02	200.00
14-12-2013	00:59:43	0.02	200.00
14-12-2013	01:04:43	0.02	200.00
14-12-2013	01:09:43	0.02	200.11
14-12-2013	01:14:43	0.02	200.00
14-12-2013	01:19:43	0.02	302.17
14-12-2013	01:24:43	0.18	298.72
14-12-2013	01:29:43	0.73	346.07
14-12-2013	01:34:43	0.02	271.53
14-12-2013	01:39:43	0.17	264.74
14-12-2013	01:44:43	0.02	311.98
14-12-2013	01:49:43	0.02	195.88
14-12-2013	01:54:43	0.02	258.61
14-12-2013	01:59:43	0.02	233.09
14-12-2013	02:04:43	0.02	213.48
14-12-2013	02:09:43	0.23	254.82
14-12-2013	02:14:43	0.02	248.02
14-12-2013	02:19:43	0.02	326.35
14-12-2013	02:24:43	0.43	266.85
14-12-2013	02:29:43	0.21	361.34
14-12-2013	02:34:43	0.02	248.58
14-12-2013	02:39:43	0.66	274.09
14-12-2013	02:44:43	0.02	87.91
14-12-2013	02:49:43	0.02	155.77
14-12-2013	02:54:43	0.02	32.98
14-12-2013	02:59:43	0.02	32.87
14-12-2013	03:04:43	0.02	32.87
14-12-2013	03:09:43	0.02	32.87
14-12-2013	03:14:43	0.02	32.87
14-12-2013	03:19:43	0.02	32.87
14-12-2013	03:24:43	0.02	151.53
14-12-2013	03:29:43	0.02	151.53
14-12-2013	03:34:43	0.02	151.53

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Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
14-12-2013	03:39:43	0.02	151.53
14-12-2013	03:44:43	0.02	151.42
14-12-2013	03:49:43	0.02	151.42
14-12-2013	03:54:43	0.02	141.28
14-12-2013	03:59:43	0.02	141.28
14-12-2013	04:04:43	0.02	139.72
14-12-2013	04:09:43	0.03	129.69
14-12-2013	04:14:43	0.02	165.13
14-12-2013	04:19:43	0.02	165.13
14-12-2013	04:24:43	0.02	165.13
14-12-2013	04:29:43	0.02	165.24
14-12-2013	04:34:43	0.02	165.13
14-12-2013	04:39:43	0.02	165.13
14-12-2013	04:44:43	0.02	165.13
14-12-2013	04:49:43	0.02	174.71
14-12-2013	04:54:43	0.02	111.09
14-12-2013	04:59:43	0.02	178.38
14-12-2013	05:04:43	0.02	178.38
14-12-2013	05:09:43	0.02	178.38
14-12-2013	05:14:43	0.02	178.38
14-12-2013	05:19:43	0.02	178.38
14-12-2013	05:24:43	0.02	178.38
14-12-2013	05:29:43	0.02	178.38
14-12-2013	05:34:43	0.02	201.23
14-12-2013	05:39:43	0.02	201.23
14-12-2013	05:44:43	0.02	201.23
14-12-2013	05:49:43	0.02	201.23
14-12-2013	05:54:43	0.02	201.11
14-12-2013	05:59:43	0.02	201.23
14-12-2013	06:04:43	0.02	201.11
14-12-2013	06:09:43	0.02	201.23
14-12-2013	06:14:43	0.02	201.11
14-12-2013	06:19:43	0.02	201.23
14-12-2013	06:24:43	0.02	201.11
14-12-2013	06:29:43	0.02	136.71
14-12-2013	06:34:43	0.02	138.50
14-12-2013	06:39:43	0.02	138.50
14-12-2013	06:44:43	0.26	68.41
14-12-2013	06:49:43	0.02	27.74
14-12-2013	06:54:43	0.05	113.87
14-12-2013	06:59:43	0.02	102.06
14-12-2013	07:04:43	0.02	36.32
14-12-2013	07:09:43	0.02	47.58

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Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
14-12-2013	07:14:43	0.02	129.47
14-12-2013	07:19:43	0.02	215.93
14-12-2013	07:24:43	0.02	234.21
14-12-2013	07:29:43	0.02	234.09
14-12-2013	07:34:43	0.02	234.21
14-12-2013	07:39:43	0.02	234.21
14-12-2013	07:44:43	0.02	234.09
14-12-2013	07:49:43	0.02	234.21
14-12-2013	07:54:43	0.02	18.27
14-12-2013	07:59:43	0.26	53.15
14-12-2013	08:04:43	0.02	7.13
14-12-2013	08:09:43	0.02	152.42
14-12-2013	08:14:43	0.02	1.11
14-12-2013	08:19:43	0.08	360.22
14-12-2013	08:24:43	0.02	332.48
14-12-2013	08:29:43	0.02	45.13
14-12-2013	08:34:43	0.02	358.55
14-12-2013	08:39:43	0.02	33.31
14-12-2013	08:44:43	0.02	33.54
14-12-2013	08:49:43	0.02	41.34
14-12-2013	08:54:43	0.02	54.37
14-12-2013	08:59:43	0.02	54.37
14-12-2013	09:04:43	0.02	54.26
14-12-2013	09:09:43	0.02	54.37
14-12-2013	09:14:43	0.02	69.75
14-12-2013	09:19:43	0.02	126.69
14-12-2013	09:24:43	0.02	77.88
14-12-2013	09:29:43	0.02	87.35
14-12-2013	09:34:43	0.02	-0.45
14-12-2013	09:39:43	0.02	262.28
14-12-2013	09:44:43	0.02	348.30
14-12-2013	09:49:43	0.02	-0.33
14-12-2013	09:54:43	0.02	43.01
14-12-2013	09:59:43	0.02	345.74
14-12-2013	10:04:43	0.02	356.55
14-12-2013	10:09:43	0.12	-0.45
14-12-2013	10:14:43	0.02	359.55
14-12-2013	10:19:43	0.02	0.78
14-12-2013	10:24:43	0.02	-0.45
14-12-2013	10:29:43	0.02	25.52
14-12-2013	10:34:43	0.02	25.52
14-12-2013	10:39:43	0.02	277.33
14-12-2013	10:44:43	0.02	99.05

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Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
14-12-2013	10:49:43	0.02	68.41
14-12-2013	10:54:43	0.02	328.02
14-12-2013	10:59:43	0.02	53.70
14-12-2013	11:04:43	0.02	53.82
14-12-2013	11:09:43	0.02	53.82
14-12-2013	11:14:43	0.02	53.70
14-12-2013	11:19:43	0.02	-0.33
14-12-2013	11:24:43	0.02	-0.33
14-12-2013	11:29:43	0.02	-0.45
14-12-2013	11:34:43	0.02	0.11
14-12-2013	11:39:43	0.08	356.66
14-12-2013	11:44:43	0.02	353.65
14-12-2013	11:49:43	0.02	17.94
14-12-2013	11:54:43	0.02	68.97
14-12-2013	11:59:43	0.02	17.38
14-12-2013	12:04:43	0.02	17.38
14-12-2013	12:09:43	0.02	17.27
14-12-2013	12:14:43	0.02	49.92
14-12-2013	12:19:43	0.02	22.28
14-12-2013	12:24:43	0.02	207.35
14-12-2013	12:29:43	0.02	240.33
14-12-2013	12:34:43	0.02	40.00
14-12-2013	12:39:43	0.02	309.64
14-12-2013	12:44:43	0.02	212.92
14-12-2013	12:49:43	0.02	300.39
14-12-2013	12:54:43	0.02	352.87
14-12-2013	12:59:43	0.02	288.25
14-12-2013	13:04:43	0.02	303.40
14-12-2013	13:09:43	0.02	301.84
14-12-2013	13:14:43	0.02	353.54
14-12-2013	13:19:43	0.02	353.20
14-12-2013	13:24:43	0.02	338.27
14-12-2013	13:29:43	0.02	338.38
14-12-2013	13:34:43	0.02	175.71
14-12-2013	13:39:43	0.35	2.79
14-12-2013	13:44:43	0.02	351.31
14-12-2013	13:49:43	0.02	41.56
14-12-2013	13:54:43	0.02	23.73
14-12-2013	13:59:43	0.02	340.17
14-12-2013	14:04:43	0.02	339.61
14-12-2013	14:09:43	0.02	304.74
14-12-2013	14:14:43	0.02	342.40
14-12-2013	14:19:43	0.02	359.55

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Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
14-12-2013	14:24:43	0.02	356.10
14-12-2013	14:29:43	0.02	260.06
14-12-2013	14:34:43	0.02	1.45
14-12-2013	14:39:43	0.20	1.78
14-12-2013	14:44:43	0.24	289.58
14-12-2013	14:49:43	0.02	0.11
19-12-2013	08:20:07	0.02	4.23
19-12-2013	08:25:07	0.03	248.13
19-12-2013	08:30:07	1.76	347.86
19-12-2013	08:35:07	0.02	266.85
19-12-2013	08:40:07	0.02	232.53
19-12-2013	08:45:07	0.37	208.47
19-12-2013	08:50:07	0.02	280.89
19-12-2013	08:55:07	0.29	295.93
19-12-2013	09:00:07	0.02	346.52
19-12-2013	09:05:07	0.02	54.93
19-12-2013	09:10:07	0.03	252.81
19-12-2013	09:15:07	0.02	275.54
19-12-2013	09:20:07	0.02	345.40
19-12-2013	09:25:07	0.02	9.92
19-12-2013	09:30:07	0.02	251.59
19-12-2013	09:35:07	0.02	320.56
19-12-2013	09:40:07	0.63	8.91
19-12-2013	09:45:07	0.02	285.91
19-12-2013	09:50:07	0.55	249.69
19-12-2013	09:55:07	0.03	311.87
19-12-2013	10:00:07	0.02	359.22
19-12-2013	10:05:07	0.21	7.02
19-12-2013	10:10:07	0.61	3.90
19-12-2013	10:15:07	0.02	339.83
19-12-2013	10:20:07	0.05	220.50
19-12-2013	10:25:07	0.05	241.34
19-12-2013	10:30:07	0.03	206.57
19-12-2013	10:35:07	0.87	8.91
19-12-2013	10:40:07	0.47	36.10
19-12-2013	10:45:07	0.09	319.11
19-12-2013	10:50:07	2.34	11.81
19-12-2013	10:55:07	0.03	270.97
19-12-2013	11:00:07	0.26	343.18
19-12-2013	11:05:07	1.56	360.56
19-12-2013	11:10:07	0.11	353.87
19-12-2013	11:15:07	0.02	312.53
19-12-2013	11:20:07	0.41	232.76

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Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
19-12-2013	11:25:07	0.57	232.09
19-12-2013	11:30:07	0.14	284.01
19-12-2013	11:35:07	0.02	296.38
19-12-2013	11:40:07	0.02	326.46
19-12-2013	11:45:07	0.20	233.87
19-12-2013	11:50:07	0.06	324.57
19-12-2013	11:55:07	0.02	242.79
19-12-2013	12:00:07	0.06	252.59
19-12-2013	12:05:07	0.03	276.43
19-12-2013	12:10:07	0.02	337.94
19-12-2013	12:15:07	0.02	258.72
19-12-2013	12:20:07	0.02	294.26
19-12-2013	12:25:07	0.02	235.54
19-12-2013	12:30:07	0.02	286.69
19-12-2013	12:35:07	0.09	229.19
19-12-2013	12:40:07	0.26	224.40
19-12-2013	12:45:07	0.02	326.57
19-12-2013	12:50:07	0.02	328.25
19-12-2013	12:55:07	0.02	209.14
19-12-2013	13:00:07	0.02	44.46
19-12-2013	13:05:07	0.02	270.53
19-12-2013	13:10:07	0.57	351.75
19-12-2013	13:15:07	0.34	239.11
19-12-2013	13:20:07	0.54	246.57
19-12-2013	13:25:07	0.02	349.75
19-12-2013	13:30:07	0.81	357.77
19-12-2013	13:35:07	0.02	287.47
19-12-2013	13:40:07	0.02	250.47
19-12-2013	13:45:07	0.08	335.38
19-12-2013	13:50:07	0.09	276.77
19-12-2013	13:55:07	0.41	343.29
19-12-2013	14:00:07	0.03	296.27
19-12-2013	14:05:07	0.05	91.14
19-12-2013	14:10:07	0.02	291.92
19-12-2013	14:15:07	0.26	349.97
19-12-2013	14:20:07	0.09	228.41
19-12-2013	14:25:07	0.05	3.90
19-12-2013	14:30:07	0.92	251.25
19-12-2013	14:35:07	0.32	150.64
19-12-2013	14:40:07	0.09	263.51
19-12-2013	14:45:07	0.17	251.70
19-12-2013	14:50:07	0.57	298.94
19-12-2013	14:55:07	0.02	249.92

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Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
19-12-2013	15:00:07	0.28	355.54
19-12-2013	15:05:07	0.02	309.42
19-12-2013	15:10:07	0.02	259.28
19-12-2013	15:15:07	0.21	17.49
19-12-2013	15:20:07	0.02	221.84
19-12-2013	15:25:07	0.02	0.00
19-12-2013	15:30:07	0.09	217.27
19-12-2013	15:35:07	0.35	353.31
19-12-2013	15:40:07	0.02	266.30
19-12-2013	15:45:07	2.06	-33.76
19-12-2013	15:50:07	0.54	355.54
19-12-2013	15:55:07	0.02	214.37
19-12-2013	16:00:07	0.09	257.72
19-12-2013	16:05:07	0.02	60.28
19-12-2013	16:10:07	1.36	357.10
19-12-2013	16:15:07	0.52	209.03
19-12-2013	16:20:07	0.90	353.65
19-12-2013	16:25:07	0.02	321.56
19-12-2013	16:30:07	0.12	321.67
19-12-2013	16:35:07	0.09	338.72
19-12-2013	16:40:07	0.28	299.28
19-12-2013	16:45:07	0.02	0.33
19-12-2013	16:50:07	0.08	308.64
19-12-2013	16:55:07	0.26	191.20
19-12-2013	17:00:07	0.03	246.24
19-12-2013	17:05:07	0.02	331.36
19-12-2013	17:10:07	0.02	217.05
19-12-2013	17:15:07	0.02	42.12
19-12-2013	17:20:07	0.02	224.29
19-12-2013	17:25:07	0.02	238.44
19-12-2013	17:30:07	0.02	229.97
19-12-2013	17:35:07	0.69	338.16
19-12-2013	17:40:07	0.34	9.14
19-12-2013	17:45:07	0.02	207.80
19-12-2013	17:50:07	0.35	35.10
19-12-2013	17:55:07	0.02	259.50
19-12-2013	18:00:07	0.02	46.02
19-12-2013	18:05:07	0.02	218.83
19-12-2013	18:10:07	0.09	250.92
19-12-2013	18:15:07	1.07	241.78
19-12-2013	18:20:07	0.02	254.15
19-12-2013	18:25:07	0.02	205.46
19-12-2013	18:30:07	0.03	249.25

Appendix H Meteorological Data for Impact Monitoring in the reporting period

Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
19-12-2013	18:35:07	0.49	16.82
19-12-2013	18:40:07	0.03	231.98
19-12-2013	18:45:07	0.05	237.66
19-12-2013	18:50:07	0.02	329.81
19-12-2013	18:55:07	1.01	224.29
19-12-2013	19:00:07	0.12	220.95
19-12-2013	19:05:07	0.02	298.50
19-12-2013	19:10:07	0.47	282.01
19-12-2013	19:15:07	0.03	328.47
19-12-2013	19:20:07	0.12	221.39
19-12-2013	19:25:07	0.15	244.68
19-12-2013	19:30:07	0.47	256.71
19-12-2013	19:35:07	0.21	226.52
19-12-2013	19:40:07	0.03	43.23
19-12-2013	19:45:07	0.21	69.19
19-12-2013	19:50:07	0.02	339.50
19-12-2013	19:55:07	0.02	-46.24
19-12-2013	20:00:07	0.05	265.07
19-12-2013	20:05:07	0.78	330.58
19-12-2013	20:10:07	0.06	354.21
19-12-2013	20:15:07	0.63	49.25
19-12-2013	20:20:07	0.02	26.52
19-12-2013	20:25:07	0.78	10.58
19-12-2013	20:30:07	0.02	7.13
19-12-2013	20:35:07	0.02	251.36
19-12-2013	20:40:07	0.06	0.67
19-12-2013	20:45:07	0.02	219.16
19-12-2013	20:50:07	0.05	200.67
19-12-2013	20:55:07	0.28	216.82
19-12-2013	21:00:07	0.02	236.32
19-12-2013	21:05:07	0.02	215.93
19-12-2013	21:10:07	0.20	244.46
19-12-2013	21:15:07	0.02	229.64
19-12-2013	21:20:07	0.02	279.78
19-12-2013	21:25:07	0.37	229.19
19-12-2013	21:30:07	0.02	212.81
19-12-2013	21:35:07	0.61	53.26
19-12-2013	21:40:07	0.37	225.40
19-12-2013	21:45:07	0.18	193.87
19-12-2013	21:50:07	0.05	156.43
19-12-2013	21:55:07	0.02	261.06
19-12-2013	22:00:07	0.20	281.67
19-12-2013	22:05:07	0.02	229.64

Appendix H Meteorological Data for Impact Monitoring in the reporting period

Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
19-12-2013	22:10:07	0.02	256.04
19-12-2013	22:15:07	0.02	253.15
19-12-2013	22:20:07	0.02	252.03
19-12-2013	22:25:07	0.02	225.63
19-12-2013	22:30:07	0.02	257.72
19-12-2013	22:35:07	0.02	228.52
19-12-2013	22:40:07	0.02	148.97
19-12-2013	22:45:07	0.02	190.08
19-12-2013	22:50:07	0.03	216.04
19-12-2013	22:55:07	0.17	219.61
19-12-2013	23:00:07	0.02	187.97
19-12-2013	23:05:07	0.02	187.97
19-12-2013	23:10:07	0.02	187.97
19-12-2013	23:15:07	0.02	163.68
19-12-2013	23:20:07	0.03	178.16
19-12-2013	23:25:07	0.03	178.16
19-12-2013	23:30:07	0.21	176.94
19-12-2013	23:35:07	0.02	177.49
19-12-2013	23:40:07	0.02	177.49
19-12-2013	23:45:07	0.05	146.30
19-12-2013	23:50:07	0.02	115.32
19-12-2013	23:55:07	0.21	129.81
24-12-2013	00:00:07	0.02	170.70
24-12-2013	00:05:07	0.02	170.03
24-12-2013	00:10:07	0.76	180.95
24-12-2013	00:15:07	0.05	216.04
24-12-2013	00:20:07	0.02	197.10
24-12-2013	00:25:07	0.02	132.81
24-12-2013	00:30:07	0.02	192.31
24-12-2013	00:35:07	0.02	181.73
24-12-2013	00:40:07	0.23	167.91
24-12-2013	00:45:07	0.02	108.52
24-12-2013	00:50:07	0.02	136.27
24-12-2013	00:55:07	0.14	160.11
24-12-2013	01:00:07	0.02	121.23
24-12-2013	01:05:07	0.02	153.09
24-12-2013	01:10:07	0.02	166.80
24-12-2013	01:15:07	0.02	146.63
24-12-2013	01:20:07	0.02	149.19
24-12-2013	01:25:07	0.11	133.70
24-12-2013	01:30:07	0.02	157.10
24-12-2013	01:35:07	0.23	165.91
24-12-2013	01:40:07	0.80	191.75

Appendix H Meteorological Data for Impact Monitoring in the reporting period

Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
24-12-2013	01:45:07	0.26	211.03
24-12-2013	01:50:07	0.02	99.83
24-12-2013	01:55:07	0.02	163.79
24-12-2013	02:00:07	0.02	188.64
24-12-2013	02:05:07	0.02	188.52
24-12-2013	02:10:07	0.02	188.41
24-12-2013	02:15:07	0.02	192.76
24-12-2013	02:20:07	0.02	192.76
24-12-2013	02:25:07	0.02	192.31
24-12-2013	02:30:07	0.02	192.31
24-12-2013	02:35:07	0.02	144.07
24-12-2013	02:40:07	0.02	197.44
24-12-2013	02:45:07	0.02	185.74
24-12-2013	02:50:07	0.02	157.88
24-12-2013	02:55:07	0.14	213.82
24-12-2013	03:00:07	0.02	216.16
24-12-2013	03:05:07	0.02	339.94
24-12-2013	03:10:07	0.02	261.17
24-12-2013	03:15:07	0.12	273.87
24-12-2013	03:20:07	0.02	246.69
24-12-2013	03:25:07	0.02	246.24
24-12-2013	03:30:07	0.02	238.55
24-12-2013	03:35:07	0.02	250.47
24-12-2013	03:40:07	0.03	320.11
24-12-2013	03:45:07	0.17	243.34
24-12-2013	03:50:07	0.37	220.72
24-12-2013	03:55:07	0.06	245.13
24-12-2013	04:00:07	0.03	248.80
24-12-2013	04:05:07	0.02	356.55
24-12-2013	04:10:07	0.02	251.92
24-12-2013	04:15:07	0.02	230.64
24-12-2013	04:20:07	0.02	222.73
24-12-2013	04:25:07	0.02	197.55
24-12-2013	04:30:07	0.02	186.41
24-12-2013	04:35:07	0.02	186.63
24-12-2013	04:40:07	0.02	187.52
24-12-2013	04:45:07	0.02	186.18
24-12-2013	04:50:07	0.02	158.55
24-12-2013	04:55:07	0.02	197.21
24-12-2013	05:00:07	0.02	195.88
24-12-2013	05:05:07	0.52	215.60
24-12-2013	05:10:07	0.02	160.22
24-12-2013	05:15:07	0.02	148.52

Appendix H Meteorological Data for Impact Monitoring in the reporting period

Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
24-12-2013	05:20:07	0.02	149.53
24-12-2013	05:25:07	0.32	221.62
24-12-2013	05:30:07	0.02	210.25
24-12-2013	05:35:07	0.02	212.92
24-12-2013	05:40:07	0.35	197.33
24-12-2013	05:45:07	0.83	244.01
24-12-2013	05:50:07	0.40	235.88
24-12-2013	05:55:07	0.29	245.35
24-12-2013	06:00:07	0.08	319.33
24-12-2013	06:05:07	0.02	283.57
24-12-2013	06:10:07	0.24	248.47
24-12-2013	06:15:07	0.03	318.22
24-12-2013	06:20:07	0.50	261.62
24-12-2013	06:25:07	1.42	233.87
24-12-2013	06:30:07	0.15	205.91
24-12-2013	06:35:07	0.78	199.67
24-12-2013	06:40:07	0.11	241.45
24-12-2013	06:45:07	0.24	240.11
24-12-2013	06:50:07	0.31	242.34
24-12-2013	06:55:07	0.14	240.56
24-12-2013	07:00:07	0.11	190.64
24-12-2013	07:05:07	0.02	267.30
24-12-2013	07:10:07	0.02	209.58
24-12-2013	07:15:07	0.06	198.66
24-12-2013	07:20:07	0.02	289.36
24-12-2013	07:25:07	0.02	296.71
24-12-2013	07:30:07	0.02	280.33
24-12-2013	07:35:07	0.02	243.23
24-12-2013	07:40:07	0.03	231.20
24-12-2013	07:45:07	0.02	240.78
24-12-2013	07:50:07	0.02	202.67
24-12-2013	07:55:07	0.02	202.56
24-12-2013	08:00:07	0.02	192.87
24-12-2013	08:05:07	0.02	190.19
24-12-2013	08:10:07	0.02	264.29
24-12-2013	08:15:07	0.02	344.62
24-12-2013	08:20:07	0.02	230.64
24-12-2013	08:25:07	0.80	269.75
24-12-2013	08:30:07	0.43	234.09
24-12-2013	08:35:07	0.02	257.49
24-12-2013	08:40:07	0.41	223.40
24-12-2013	08:45:07	0.02	248.69
24-12-2013	08:50:07	0.02	17.94

Appendix H Meteorological Data for Impact Monitoring in the reporting period

Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
24-12-2013	08:55:07	0.02	277.55
24-12-2013	09:00:07	0.02	272.65
24-12-2013	09:05:07	0.02	311.98
24-12-2013	09:10:07	0.52	219.28
24-12-2013	09:15:07	0.06	271.42
24-12-2013	09:20:07	0.35	269.64
24-12-2013	09:25:07	0.08	342.62
24-12-2013	09:30:07	0.38	223.06
24-12-2013	09:35:07	0.20	251.92
24-12-2013	09:40:07	0.02	48.02
24-12-2013	09:45:07	1.04	356.66
24-12-2013	09:50:07	0.02	272.09
24-12-2013	09:55:07	0.66	1.23
24-12-2013	10:00:07	1.02	236.77
24-12-2013	10:05:07	0.02	184.96
24-12-2013	10:10:07	0.02	276.66
24-12-2013	10:15:07	0.32	265.29
24-12-2013	10:20:07	0.03	339.39
24-12-2013	10:25:07	0.02	245.57
24-12-2013	10:30:07	0.32	352.76
24-12-2013	10:35:07	0.02	240.22
24-12-2013	10:40:07	0.17	227.19
24-12-2013	10:45:07	0.50	256.49
24-12-2013	10:50:07	0.03	355.88
24-12-2013	10:55:07	1.16	236.21
24-12-2013	11:00:07	0.24	226.85
24-12-2013	11:05:07	0.09	233.43
24-12-2013	11:10:07	0.31	12.26
24-12-2013	11:15:07	0.80	255.38
24-12-2013	11:20:07	0.17	245.35
24-12-2013	11:25:07	0.02	220.72
24-12-2013	11:30:07	0.08	242.90
24-12-2013	11:35:07	0.02	255.93
24-12-2013	11:40:07	0.02	231.87
24-12-2013	11:45:07	0.02	15.38
24-12-2013	11:50:07	0.12	247.91
24-12-2013	11:55:07	0.02	330.81
24-12-2013	12:00:07	0.02	228.75
24-12-2013	12:05:07	0.02	238.44
24-12-2013	12:10:07	0.02	262.62
24-12-2013	12:15:07	0.02	300.06
24-12-2013	12:20:07	0.02	348.08
24-12-2013	12:25:07	0.50	327.24

Appendix H Meteorological Data for Impact Monitoring in the reporting period

Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
24-12-2013	12:30:07	0.02	330.14
24-12-2013	12:35:07	0.02	277.99
24-12-2013	12:40:07	0.02	272.09
24-12-2013	12:45:07	0.03	347.19
24-12-2013	12:50:07	0.38	243.34
24-12-2013	12:55:07	0.18	280.56
24-12-2013	13:00:07	0.03	260.50
24-12-2013	13:05:07	0.02	206.24
24-12-2013	13:10:07	0.02	225.52
24-12-2013	13:15:07	0.02	354.43
24-12-2013	13:20:07	0.83	344.40
24-12-2013	13:25:07	0.09	356.99
24-12-2013	13:30:07	0.29	248.58
24-12-2013	13:35:07	0.21	301.06
24-12-2013	13:40:07	0.02	301.62
24-12-2013	13:45:07	0.55	287.02
24-12-2013	13:50:07	0.14	246.91
24-12-2013	13:55:07	0.05	265.63
24-12-2013	14:00:07	0.02	330.14
24-12-2013	14:05:07	1.07	237.10
24-12-2013	14:10:07	0.02	235.54
24-12-2013	14:15:07	0.02	283.68
24-12-2013	14:20:07	0.61	267.08
24-12-2013	14:25:07	0.24	188.41
24-12-2013	14:30:07	0.05	244.57
24-12-2013	14:35:07	0.06	269.42
24-12-2013	14:40:07	0.18	250.36
24-12-2013	14:45:07	0.89	298.38
24-12-2013	14:50:07	0.24	320.33
24-12-2013	14:55:07	0.05	50.25
24-12-2013	15:00:07	0.06	26.96
24-12-2013	15:05:07	0.93	324.01
24-12-2013	15:10:07	0.02	61.84
24-12-2013	15:15:07	0.02	289.25
24-12-2013	15:20:07	0.08	279.67
24-12-2013	15:25:07	0.02	312.09
24-12-2013	15:30:07	0.43	19.72
24-12-2013	15:35:07	0.02	283.12
24-12-2013	15:40:07	0.76	56.49
24-12-2013	15:45:07	0.26	340.61
24-12-2013	15:50:07	0.21	28.08
24-12-2013	15:55:07	0.34	296.27
24-12-2013	16:00:07	0.02	246.02

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Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
24-12-2013	16:05:07	0.02	268.41
24-12-2013	16:10:07	0.41	14.15
24-12-2013	16:15:07	0.02	347.08
24-12-2013	16:20:07	0.09	249.03
24-12-2013	16:25:07	0.02	232.53
24-12-2013	16:30:07	0.02	296.04
24-12-2013	16:35:07	0.02	260.95
24-12-2013	16:40:07	0.05	230.08
24-12-2013	16:45:07	0.02	234.32
24-12-2013	16:50:07	0.02	200.00
24-12-2013	16:55:07	0.02	200.22
24-12-2013	17:00:07	0.02	294.60
24-12-2013	17:05:07	0.02	242.90
24-12-2013	17:10:07	0.02	192.53
24-12-2013	17:15:07	0.02	216.27
24-12-2013	17:20:07	0.02	216.16
24-12-2013	17:25:07	0.02	216.27
24-12-2013	17:30:07	0.02	282.45
24-12-2013	17:35:07	0.02	279.55
24-12-2013	17:40:07	0.02	233.43
24-12-2013	17:45:07	0.02	152.65
24-12-2013	17:50:07	0.02	224.96
24-12-2013	17:55:07	0.02	225.07
24-12-2013	18:00:07	0.02	225.07
24-12-2013	18:05:07	0.02	220.28
24-12-2013	18:10:07	0.02	210.03
24-12-2013	18:15:07	0.02	210.25
24-12-2013	18:20:07	0.02	210.25
24-12-2013	18:25:07	0.02	201.56
24-12-2013	18:30:07	0.11	228.52
24-12-2013	18:35:07	0.02	223.06
24-12-2013	18:40:07	0.02	227.63
24-12-2013	18:45:07	0.02	227.41
24-12-2013	18:50:07	0.02	229.64
24-12-2013	18:55:07	0.02	234.32
24-12-2013	19:00:07	0.02	230.64
24-12-2013	19:05:07	0.02	84.57
24-12-2013	19:10:07	0.02	174.82
24-12-2013	19:15:07	0.02	198.55
24-12-2013	19:20:07	0.02	227.74
24-12-2013	19:25:07	0.02	204.90
24-12-2013	19:30:07	0.60	234.21
24-12-2013	19:35:07	0.05	158.33

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Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
24-12-2013	19:40:07	0.02	195.77
24-12-2013	19:45:07	0.02	191.09
24-12-2013	19:50:07	0.57	169.14
24-12-2013	19:55:07	0.02	144.07
24-12-2013	20:00:07	0.09	225.07
24-12-2013	20:05:07	0.02	181.28
24-12-2013	20:10:07	0.02	163.57
24-12-2013	20:15:07	0.78	191.53
24-12-2013	20:20:07	0.02	181.06
24-12-2013	20:25:07	0.02	171.70
24-12-2013	20:30:07	0.02	192.53
24-12-2013	20:35:07	0.02	202.23
24-12-2013	20:40:07	0.26	177.27
24-12-2013	20:45:07	0.02	156.10
24-12-2013	20:50:07	0.02	199.44
24-12-2013	20:55:07	0.02	175.93
24-12-2013	21:00:07	0.09	198.44
24-12-2013	21:05:07	0.02	156.66
24-12-2013	21:10:07	0.02	138.61
24-12-2013	21:15:07	0.02	190.97
24-12-2013	21:20:07	0.02	171.92
24-12-2013	21:25:07	0.02	181.95
24-12-2013	21:30:07	0.05	210.92
24-12-2013	21:35:07	0.02	174.93
24-12-2013	21:40:07	0.37	203.57
24-12-2013	21:45:07	0.02	165.35
24-12-2013	21:50:07	0.02	198.66
24-12-2013	21:55:07	0.02	198.77
24-12-2013	22:00:07	0.03	187.74
24-12-2013	22:05:07	0.02	183.40
24-12-2013	22:10:07	0.02	132.92
24-12-2013	22:15:07	0.14	231.87
24-12-2013	22:20:07	0.06	211.59
24-12-2013	22:25:07	0.02	194.87
24-12-2013	22:30:07	0.63	135.04
24-12-2013	22:35:07	0.05	182.84
24-12-2013	22:40:07	0.02	136.71
24-12-2013	22:45:07	0.02	168.80
24-12-2013	22:50:07	0.02	187.74
24-12-2013	22:55:07	0.21	163.90
24-12-2013	23:00:07	0.02	176.60
24-12-2013	23:05:07	0.02	176.60
24-12-2013	23:10:07	0.02	171.48

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Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
24-12-2013	23:15:07	0.02	167.91
24-12-2013	23:20:07	0.02	118.55
24-12-2013	23:25:07	0.02	127.69
24-12-2013	23:30:07	0.02	193.87
24-12-2013	23:35:07	0.06	229.42
24-12-2013	23:40:07	0.02	181.73
24-12-2013	23:45:07	0.02	194.65
24-12-2013	23:50:07	0.02	177.49
24-12-2013	23:55:07	0.02	168.69
30-12-2013	00:00:07	0.47	227.86
30-12-2013	00:05:07	0.43	192.87
30-12-2013	00:10:07	0.47	217.49
30-12-2013	00:15:07	0.14	109.19
30-12-2013	00:20:07	0.02	181.39
30-12-2013	00:25:07	0.02	181.50
30-12-2013	00:30:07	0.11	181.50
30-12-2013	00:35:07	0.05	174.15
30-12-2013	00:40:07	0.02	193.09
30-12-2013	00:45:07	0.08	201.56
30-12-2013	00:50:07	0.02	193.09
30-12-2013	00:55:07	0.08	170.25
30-12-2013	01:00:07	0.02	162.67
30-12-2013	01:05:07	0.60	175.82
30-12-2013	01:10:07	0.02	54.93
30-12-2013	01:15:07	0.05	196.99
30-12-2013	01:20:07	0.02	147.30
30-12-2013	01:25:07	0.46	227.19
30-12-2013	01:30:07	0.02	226.18
30-12-2013	01:35:07	0.02	150.53
30-12-2013	01:40:07	0.02	180.72
30-12-2013	01:45:07	0.86	197.66
30-12-2013	01:50:07	0.02	232.09
30-12-2013	01:55:07	0.06	155.21
30-12-2013	02:00:07	0.49	190.75
30-12-2013	02:05:07	0.29	180.84
30-12-2013	02:10:07	0.02	178.16
30-12-2013	02:15:07	0.47	222.95
30-12-2013	02:20:07	0.02	169.81
30-12-2013	02:25:07	0.02	129.81
30-12-2013	02:30:07	0.02	226.74
30-12-2013	02:35:07	0.70	163.34
30-12-2013	02:40:07	0.17	183.84
30-12-2013	02:45:07	0.02	137.60

Appendix H Meteorological Data for Impact Monitoring in the reporting period

Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
30-12-2013	02:50:07	0.24	210.58
30-12-2013	02:55:07	0.02	200.00
30-12-2013	03:00:07	0.03	216.71
30-12-2013	03:05:07	0.41	165.57
30-12-2013	03:10:07	0.02	155.21
30-12-2013	03:15:07	0.02	205.79
30-12-2013	03:20:07	0.02	171.25
30-12-2013	03:25:07	0.02	147.41
30-12-2013	03:30:07	0.02	192.09
30-12-2013	03:35:07	0.02	160.00
30-12-2013	03:40:07	0.02	193.43
30-12-2013	03:45:07	0.02	163.01
30-12-2013	03:50:07	0.17	200.56
30-12-2013	03:55:07	0.05	180.61
30-12-2013	04:00:07	0.23	191.87
30-12-2013	04:05:07	0.02	150.42
30-12-2013	04:10:07	0.38	188.08
30-12-2013	04:15:07	0.02	167.58
30-12-2013	04:20:07	0.02	190.64
30-12-2013	04:25:07	0.02	187.63
30-12-2013	04:30:07	0.37	157.66
30-12-2013	04:35:07	0.02	202.67
30-12-2013	04:40:07	0.02	206.46
30-12-2013	04:45:07	0.18	188.97
30-12-2013	04:50:07	0.02	188.86
30-12-2013	04:55:07	0.02	161.34
30-12-2013	05:00:07	0.02	172.03
30-12-2013	05:05:07	0.02	161.78
30-12-2013	05:10:07	0.06	157.77
30-12-2013	05:15:07	0.02	183.40
30-12-2013	05:20:07	0.02	137.72
30-12-2013	05:25:07	0.02	209.03
30-12-2013	05:30:07	0.02	159.89
30-12-2013	05:35:07	0.02	195.54
30-12-2013	05:40:07	0.02	185.07
30-12-2013	05:45:07	0.28	202.23
30-12-2013	05:50:07	0.03	176.94
30-12-2013	05:55:07	0.02	159.22
30-12-2013	06:00:07	0.18	181.06
30-12-2013	06:05:07	0.03	176.38
30-12-2013	06:10:07	0.57	135.71
30-12-2013	06:15:07	0.02	165.57
30-12-2013	06:20:07	0.69	212.03

Appendix H Meteorological Data for Impact Monitoring in the reporting period

Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
30-12-2013	06:25:07	0.03	162.23
30-12-2013	06:30:07	0.75	205.91
30-12-2013	06:35:07	0.02	205.01
30-12-2013	06:40:07	0.03	150.08
30-12-2013	06:45:07	0.02	151.87
30-12-2013	06:50:07	0.02	181.28
30-12-2013	06:55:07	0.02	180.17
30-12-2013	07:00:07	0.05	142.84
30-12-2013	07:05:07	0.05	177.72
30-12-2013	07:10:07	0.02	226.07
30-12-2013	07:15:07	0.02	162.79
30-12-2013	07:20:07	0.02	158.22
30-12-2013	07:25:07	0.02	158.22
30-12-2013	07:30:07	0.02	158.33
30-12-2013	07:35:07	0.02	177.05
30-12-2013	07:40:07	0.23	151.87
30-12-2013	07:45:07	0.02	160.00
30-12-2013	07:50:07	0.02	162.56
30-12-2013	07:55:07	0.02	116.55
30-12-2013	08:00:07	0.02	116.43
30-12-2013	08:05:07	0.02	116.43
30-12-2013	08:10:07	0.02	116.43
30-12-2013	08:15:07	0.02	116.43
30-12-2013	08:20:07	0.02	116.32
30-12-2013	08:25:07	0.02	191.75
30-12-2013	08:30:07	0.02	191.75
30-12-2013	08:35:07	0.02	260.84
30-12-2013	08:40:07	0.20	245.01
30-12-2013	08:45:07	0.05	263.73
30-12-2013	08:50:07	0.18	295.15
30-12-2013	08:55:07	0.02	284.35
30-12-2013	09:00:07	0.17	277.10
30-12-2013	09:05:07	0.02	323.45
30-12-2013	09:10:07	0.11	288.25
30-12-2013	09:15:07	0.09	330.14
30-12-2013	09:20:07	0.02	356.10
30-12-2013	09:25:07	0.02	345.40
30-12-2013	09:30:07	0.02	351.53
30-12-2013	09:35:07	0.11	345.07
30-12-2013	09:40:07	0.32	41.00
30-12-2013	09:45:07	0.02	261.84
30-12-2013	09:50:07	0.02	321.67
30-12-2013	09:55:07	0.05	357.55

Appendix H Meteorological Data for Impact Monitoring in the reporting period

Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
30-12-2013	10:00:07	0.02	286.80
30-12-2013	10:05:07	0.02	344.40
30-12-2013	10:10:07	0.02	293.93
30-12-2013	10:15:07	0.43	1.00
30-12-2013	10:20:07	0.02	332.14
30-12-2013	10:25:07	0.02	230.19
30-12-2013	10:30:07	0.12	248.91
30-12-2013	10:35:07	0.02	290.47
30-12-2013	10:40:07	0.11	354.65
30-12-2013	10:45:07	0.02	237.44
30-12-2013	10:50:07	0.02	7.24
30-12-2013	10:55:07	0.72	338.94
30-12-2013	11:00:07	0.46	9.92
30-12-2013	11:05:07	0.02	350.64
30-12-2013	11:10:07	0.11	316.88
30-12-2013	11:15:07	0.02	278.55
30-12-2013	11:20:07	0.02	255.49
30-12-2013	11:25:07	0.47	338.38
30-12-2013	11:30:07	0.09	1.11
30-12-2013	11:35:07	0.02	337.60
30-12-2013	11:40:07	0.21	228.64
30-12-2013	11:45:07	0.02	342.73
30-12-2013	11:50:07	0.21	275.21
30-12-2013	11:55:07	0.12	224.40
30-12-2013	12:00:07	0.08	279.11
30-12-2013	12:05:07	0.02	335.15
30-12-2013	12:10:07	0.02	263.73
30-12-2013	12:15:07	0.20	241.11
30-12-2013	12:20:07	0.02	247.80
30-12-2013	12:25:07	0.02	261.95
30-12-2013	12:30:07	0.03	214.82
30-12-2013	12:35:07	0.03	351.98
30-12-2013	12:40:07	0.26	232.76
30-12-2013	12:45:07	0.02	199.89
30-12-2013	12:50:07	0.40	296.04
30-12-2013	12:55:07	0.11	241.78
30-12-2013	13:00:07	0.02	270.75
30-12-2013	13:05:07	0.38	226.52
30-12-2013	13:10:07	0.12	225.96
30-12-2013	13:15:07	0.75	298.16
30-12-2013	13:20:07	0.02	264.29
30-12-2013	13:25:07	0.63	255.38
30-12-2013	13:30:07	0.40	233.31

Appendix H Meteorological Data for Impact Monitoring in the reporting period

Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
30-12-2013	13:35:07	0.02	227.52
30-12-2013	13:40:07	0.20	323.23
30-12-2013	13:45:07	0.02	267.52
30-12-2013	13:50:07	0.17	248.36
30-12-2013	13:55:07	0.02	227.52
30-12-2013	14:00:07	0.02	330.81
30-12-2013	14:05:07	0.11	249.25
30-12-2013	14:10:07	0.03	248.02
30-12-2013	14:15:07	0.02	306.07
30-12-2013	14:20:07	0.60	240.78
30-12-2013	14:25:07	0.41	229.75
30-12-2013	14:30:07	0.09	256.49
30-12-2013	14:35:07	0.02	19.39
30-12-2013	14:40:07	0.21	238.33
30-12-2013	14:45:07	0.17	245.46
30-12-2013	14:50:07	0.09	332.59
30-12-2013	14:55:07	0.02	256.04
30-12-2013	15:00:07	0.02	233.09
30-12-2013	15:05:07	0.02	322.45
30-12-2013	15:10:07	0.03	343.73
30-12-2013	15:15:07	0.09	345.07
30-12-2013	15:20:07	0.02	244.01
30-12-2013	15:25:07	0.02	308.75
30-12-2013	15:30:07	0.02	247.24
30-12-2013	15:35:07	0.02	321.45
30-12-2013	15:40:07	0.87	70.42
30-12-2013	15:45:07	0.14	74.87
30-12-2013	15:50:07	0.02	280.33
30-12-2013	15:55:07	0.02	291.92
30-12-2013	16:00:07	0.21	253.15
30-12-2013	16:05:07	0.02	230.53
30-12-2013	16:10:07	0.02	222.95
30-12-2013	16:15:07	0.02	259.16
30-12-2013	16:20:07	0.02	261.62
30-12-2013	16:25:07	0.02	306.30
30-12-2013	16:30:07	0.02	307.97
30-12-2013	16:35:07	0.02	253.70
30-12-2013	16:40:07	0.02	253.70
30-12-2013	16:45:07	0.02	252.81
30-12-2013	16:50:07	0.02	239.22
30-12-2013	16:55:07	0.14	245.35
30-12-2013	17:00:07	0.02	208.13
30-12-2013	17:05:07	0.17	210.81

Appendix H Meteorological Data for Impact Monitoring in the reporting period

Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
30-12-2013	17:10:07	0.02	231.98
30-12-2013	17:15:07	0.03	237.88
30-12-2013	17:20:07	0.02	185.29
30-12-2013	17:25:07	0.02	262.62
30-12-2013	17:30:07	0.02	263.06
30-12-2013	17:35:07	0.18	315.43
30-12-2013	17:40:07	0.02	248.02
30-12-2013	17:45:07	0.03	219.16
30-12-2013	17:50:07	0.02	231.64
30-12-2013	17:55:07	0.05	255.04
30-12-2013	18:00:07	0.15	226.18
30-12-2013	18:05:07	0.02	238.66
30-12-2013	18:10:07	0.37	236.43
30-12-2013	18:15:07	0.02	259.05
30-12-2013	18:20:07	0.02	261.17
30-12-2013	18:25:07	0.06	275.32
30-12-2013	18:30:07	0.06	242.45
30-12-2013	18:35:07	0.02	248.47
30-12-2013	18:40:07	0.15	261.06
30-12-2013	18:45:07	0.02	210.03
30-12-2013	18:50:07	0.02	238.11
30-12-2013	18:55:07	0.34	261.50
30-12-2013	19:00:07	0.02	241.67
30-12-2013	19:05:07	0.02	267.30
30-12-2013	19:10:07	0.21	324.68
30-12-2013	19:15:07	0.02	250.92
30-12-2013	19:20:07	0.37	281.34
30-12-2013	19:25:07	0.02	341.95
30-12-2013	19:30:07	0.02	249.81
30-12-2013	19:35:07	0.11	244.90
30-12-2013	19:40:07	0.81	228.19
30-12-2013	19:45:07	0.02	114.32
30-12-2013	19:50:07	0.08	239.55
30-12-2013	19:55:07	0.02	246.46
30-12-2013	20:00:07	0.02	254.26
30-12-2013	20:05:07	0.02	242.01
30-12-2013	20:10:07	0.02	207.35
30-12-2013	20:15:07	0.31	231.42
30-12-2013	20:20:07	0.32	238.55
30-12-2013	20:25:07	0.02	308.19
30-12-2013	20:30:07	0.02	331.48
30-12-2013	20:35:07	0.02	235.77
30-12-2013	20:40:07	0.02	251.03

Appendix H Meteorological Data for Impact Monitoring in the reporting period

Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
30-12-2013	20:45:07	0.02	242.01
30-12-2013	20:50:07	0.02	229.86
30-12-2013	20:55:07	0.02	235.10
30-12-2013	21:00:07	0.02	201.56
30-12-2013	21:05:07	0.02	154.21
30-12-2013	21:10:07	0.02	205.79
30-12-2013	21:15:07	0.02	243.57
30-12-2013	21:20:07	0.61	227.08
30-12-2013	21:25:07	0.02	28.97
30-12-2013	21:30:07	0.02	176.49
30-12-2013	21:35:07	0.02	226.96
30-12-2013	21:40:07	0.02	226.85
30-12-2013	21:45:07	0.02	216.38
30-12-2013	21:50:07	0.02	165.46
30-12-2013	21:55:07	0.02	207.80
30-12-2013	22:00:07	0.02	192.76
30-12-2013	22:05:07	0.02	312.65
30-12-2013	22:10:07	0.02	304.62
30-12-2013	22:15:07	0.02	196.55
30-12-2013	22:20:07	0.02	199.55
30-12-2013	22:25:07	0.72	194.09
30-12-2013	22:30:07	0.02	222.28
30-12-2013	22:35:07	0.06	203.23
30-12-2013	22:40:07	0.02	155.54
30-12-2013	22:45:07	0.02	161.45
30-12-2013	22:50:07	0.02	131.03
30-12-2013	22:55:07	0.02	131.14
30-12-2013	23:00:07	0.02	131.14
30-12-2013	23:05:07	0.02	131.14
30-12-2013	23:10:07	0.02	8.58
30-12-2013	23:15:07	0.02	8.58
30-12-2013	23:20:07	0.02	8.58
30-12-2013	23:25:07	0.02	153.65
30-12-2013	23:30:07	0.02	153.54
30-12-2013	23:35:07	0.02	153.54
30-12-2013	23:40:07	0.02	144.18
30-12-2013	23:45:07	0.02	49.47
30-12-2013	23:50:07	0.02	185.18
30-12-2013	23:55:07	0.06	202.79

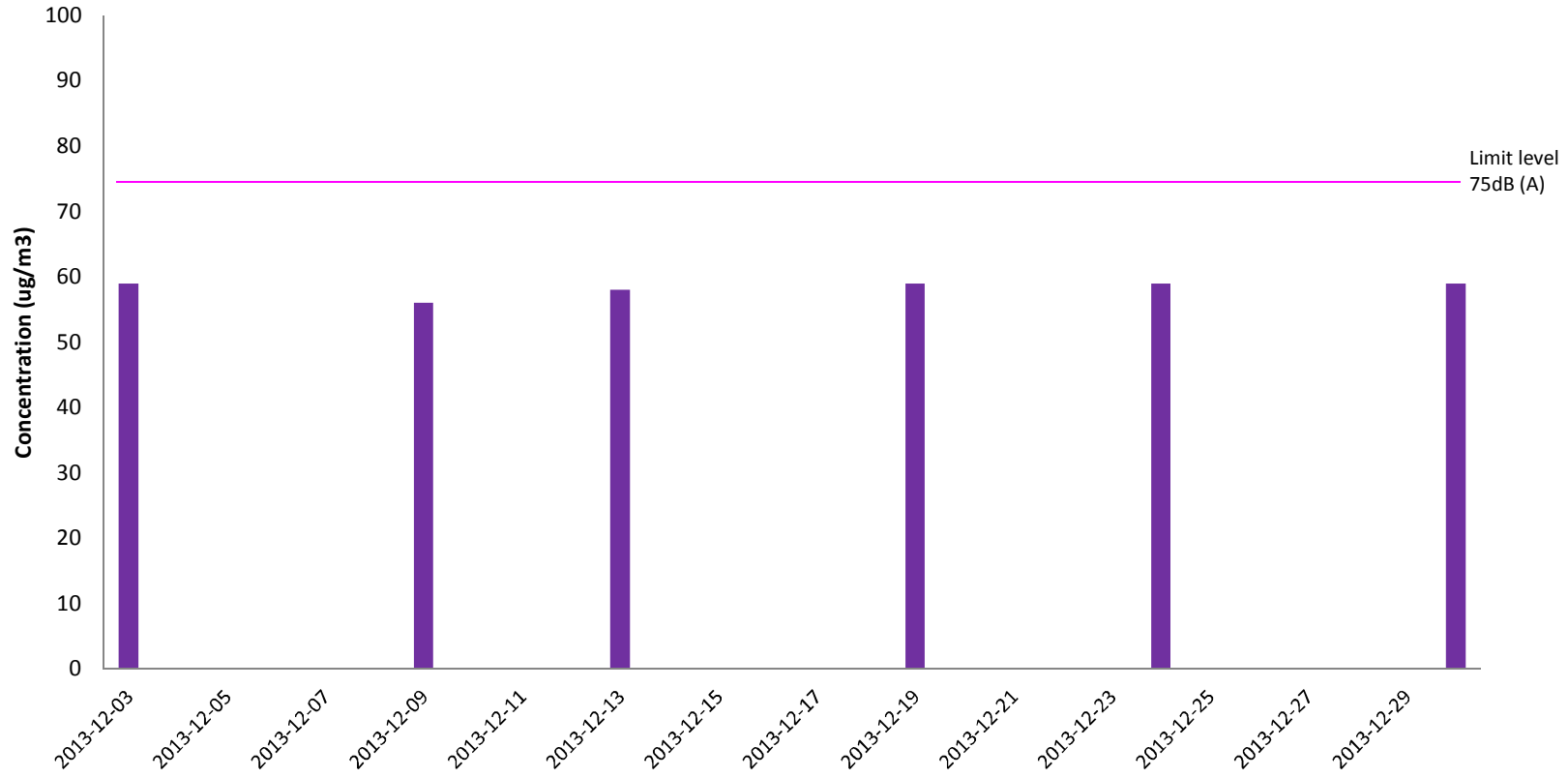
Appendix I

Impact Noise Monitoring Results and Graphical Presentation

Appendix II 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)	Temp (° C)	Wind Speed (m/s)	Noise Meter Model/ID	Calibrator Model/ID
						Leq	L10	L90					
TMCLKL	HY/2012/07	2013-12-03	NSR1	Sunny	10:38	59	62	53	75	20	0.4	RION NL31 (S/N 00410224)	RION NC73 (S/N 10997142)
TMCLKL	HY/2012/07	2013-12-09	NSR1	Sunny	10:33	56	57	54	75	23	0.6	RION NL31 (S/N 00410224)	RION NC73 (S/N 10997142)
TMCLKL	HY/2012/07	2013-12-13	NSR1	Cloudy	13:47	58	62	54	75	19	0.5	RION NL31 (S/N 00410224)	RION NC73 (S/N 10997142)
TMCLKL	HY/2012/07	2013-12-19	NSR1	Sunny	10:50	59	62	55	75	14	0.6	RION NL31 (S/N 00410224)	RION NC73 (S/N 10997142)
TMCLKL	HY/2012/07	2013-12-24	NSR1	Sunny	9:18	59	63	52	75	16	0.6	RION NL31 (S/N 00410224)	RION NC73 (S/N 10997142)
TMCLKL	HY/2012/07	2013-12-30	NSR1	Sunny	10:19	59	62	54	75	15	0.5	RION NL31 (S/N 00410224)	RION NC73 (S/N 10997142)
						Min.	56						
						Max.	59						
						Average	58						

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



Appendix J

Impact Water Quality Monitoring Results and Graphical Presentation

Appendix J Water Quality Monitoring Results

Project	Works	Date (yyyy-mm-dd)	Tide	Weather	Sea Condition	Stat	Level	Water Depth	Lev_Cod	Replicate	Time	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	CS(Mf)5	Surface	1.0	1	1	16:42	20.7	8.0	26.8	6.95	14.3	11.5
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	CS(Mf)5	Surface	1.0	1	2	16:42	20.7	8.0	26.8	6.92	14.3	11.6
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	CS(Mf)5	Middle	5.3	2	1	16:42	20.7	8.0	26.8	6.99	14.2	13.0
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	CS(Mf)5	Middle	5.3	2	2	16:42	20.7	8.0	26.8	6.95	14.2	13.1
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	CS(Mf)5	Bottom	9.6	3	1	16:42	20.8	8.0	26.9	6.96	14.9	14.3
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	CS(Mf)5	Bottom	9.6	3	2	16:42	20.8	8.0	26.9	6.94	14.9	14.6
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	SR4a	Surface	1.0	1	1	17:12	20.8	8.0	26.9	6.98	11.7	9.6
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	SR4a	Surface	1.0	1	2	17:12	20.8	8.0	26.9	6.95	11.7	10.3
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	SR4a	Middle		2	1	17:12						
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	SR4a	Middle		2	2	17:12						
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	SR4a	Bottom	4.4	3	1	17:12	20.8	8.0	26.9	6.95	9.9	11.1
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	SR4a	Bottom	4.4	3	2	17:12	20.7	8.0	26.9	6.91	9.9	11.9
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	SR4	Surface	1.0	1	1	17:42	20.9	8.0	26.8	7.08	11.6	11.6
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	SR4	Surface	1.0	1	2	17:42	20.8	8.0	26.8	7.04	11.7	11.9
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	SR4	Middle		2	1	17:42						
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	SR4	Middle		2	2	17:42						
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	SR4	Bottom	4.2	3	1	17:42	20.8	8.0	26.8	7.05	9.0	10.0
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	SR4	Bottom	4.2	3	2	17:42	20.7	8.0	26.8	7.01	9.1	11.3
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	IS8	Surface	1.0	1	1	18:12	20.8	8.1	26.8	6.98	11.6	11.4
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	IS8	Surface	1.0	1	2	18:12	20.9	8.1	26.8	6.94	11.6	11.9
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	IS8	Middle		2	1	18:12						
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	IS8	Middle		2	2	18:12						
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	IS8	Bottom	4.8	3	1	18:12	20.7	8.1	26.8	7.03	12.1	11.8
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	IS8	Bottom	4.8	3	2	18:12	20.7	8.1	26.8	7.01	12.1	11.4
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	IS(Mf)16	Surface	1.0	1	1	18:42	20.8	8.1	26.8	6.94	11.9	6.8
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	IS(Mf)16	Surface	1.0	1	2	18:42	20.8	8.1	26.8	6.90	11.8	7.1
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	IS(Mf)16	Middle	4.5	2	1	18:42	20.7	8.1	26.9	6.98	10.0	7.9
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	IS(Mf)16	Middle	4.5	2	2	18:42	20.7	8.1	26.9	6.94	10.0	8.5
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	IS(Mf)16	Bottom	8.0	3	1	18:42	20.7	8.1	26.9	6.95	11.1	10.0
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	IS(Mf)16	Bottom	8.0	3	2	18:42	20.7	8.1	26.9	6.91	11.2	9.1
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	IS(Mf)9	Surface	1.0	1	1	19:20	20.8	8.1	26.8	7.10	13.0	7.0
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	IS(Mf)9	Surface	1.0	1	2	19:20	20.8	8.1	26.8	7.06	13.0	7.2
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	IS(Mf)9	Middle		2	1	19:20						
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	IS(Mf)9	Middle		2	2	19:20						
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	IS(Mf)9	Bottom	4.2	3	1	19:20	20.7	8.1	26.8	7.07	12.6	9.6
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	IS(Mf)9	Bottom	4.2	3	2	19:20	20.7	8.1	26.8	7.05	12.6	9.5
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	CS(Mf)3	Surface	1.0	1	1	19:55	20.8	8.1	26.8	7.04	13.5	12.4
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	CS(Mf)3	Surface	1.0	1	2	19:55	20.8	8.1	26.8	7.06	13.5	12.4
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	CS(Mf)3	Middle	3.9	2	1	19:55	20.7	8.0	26.8	7.01	13.7	12.7
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	CS(Mf)3	Middle	3.9	2	2	19:55	20.7	8.0	26.8	6.98	13.8	12.8
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	CS(Mf)3	Bottom	6.8	3	1	19:55	20.7	8.1	26.8	6.99	14.4	12.5
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Flood	Fine	Small Wave	CS(Mf)3	Bottom	6.8	3	2	19:55	20.7	8.1	26.8	7.03	14.4	11.5
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	CS(Mf)3	Surface	1.0	1	1	11:30	20.5	8.0	26.8	6.97	13.7	11.0
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	CS(Mf)3	Surface	1.0	1	2	11:30	20.5	8.0	26.8	6.95	13.7	10.9
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	CS(Mf)3	Middle	3.7	2	1	11:30	20.5	8.0	26.8	7.05	12.6	11.6
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	CS(Mf)3	Middle	3.7	2	2	11:30	20.5	8.0	26.8	7.07	12.6	12.5
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	CS(Mf)3	Bottom	6.4	3	1	11:30	20.5	8.0	26.8	7.03	15.1	12.8
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	CS(Mf)3	Bottom	6.4	3	2	11:30	20.5	8.0	26.8	7.06	15.1	11.8
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	SR4a	Surface	1.0	1	1	14:05	20.5	8.0	26.9	6.95	11.9	12.2
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	SR4a	Surface	1.0	1	2	14:05	20.5	8.0	26.9	6.92	11.9	11.6
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	SR4a	Middle		2	1	14:05						
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	SR4a	Middle		2	2	14:05						
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	SR4a	Bottom	3.8	3	1	14:05	20.4	8.0	26.9	6.91	13.1	13.4
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	SR4a	Bottom	3.8	3	2	14:05	20.4	8.0	26.9	6.93	13.1	14.3
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	SR4	Surface	1.0	1	1	13:30	20.4	8.0	26.9	6.93	13.1	9.8
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	SR4	Surface	1.0	1	2	13:30	20.4	8.0	26.9	6.96	13.2	9.5
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	SR4	Middle		2	1	13:30						
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	SR4	Middle		2	2	13:30						
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	SR4	Bottom	3.6	3	1	13:30	20.5	8.0	26.9	6.90	10.4	12.3
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	SR4	Bottom	3.6	3	2	13:30	20.5	8.0	26.9	6.94	10.5	12.7
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	IS8	Surface	1.0	1	1	13:00	20.4	8.0	26.9	6.93	11.8	9.5
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	IS8	Surface	1.0	1	2	13:00	20.4	8.0	26.9	6.90	11.8	9.0
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	IS8	Middle		2	1	13:00						
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	IS8	Middle		2	2	13:00						
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	IS8	Bottom	4.2	3	1	13:00	20.4	8.0	26.8	6.95	11.7	16.9
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	IS8	Bottom	4.2	3	2	13:00	20.5	8.0	26.8	6.97	11.6	16.4
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	IS(Mf)16	Surface	1.0	1	1	12:30	20.4	8.0	26.9	6.92	10.0	8.2
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	IS(Mf)16	Surface	1.0	1	2	12:30	20.4	8.0	26.9	6.94	10.0	8.5
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	IS(Mf)16	Middle	4.2	2	1	12:30	20.4	8.0	26.9	6.97	10.7	9.4
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	IS(Mf)16	Middle	4.2	2	2	12:30	20.4	8.0	26.9	6.99	10.7	10.4
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	IS(Mf)16	Bottom	7.4	3	1	12:30	20.5	8.0	26.8	6.90	12.0	11.3
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	IS(Mf)16	Bottom	7.4	3	2	12:30	20.5	8.0	26.8	6.88	12.0	10.9
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	IS(Mf)9	Surface	1.0	1	1	12:00	20.4	8.0	26.8	7.09	11.0	8.9
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	IS(Mf)9	Surface	1.0	1	2	12:00	20.4	8.0	26.8	7.06	11.0	9.0
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	IS(Mf)9	Middle		2	1	12:00						
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	IS(Mf)9	Middle		2	2	12:00						
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	IS(Mf)9	Bottom	3.8	3	1	12:00	20.4	8.0	26.8	7.10	11.3	10.0
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	IS(Mf)9	Bottom	3.8	3	2	12:00	20.4	8.0	26.8	7.08	11.2	9.2
TM-CLK Southern	HY/2012/07	2013-12-03	Mid-Ebb	Fine	Small Wave	CS(Mf)											

Appendix J Water Quality Monitoring Results

Project	Works	Date (yyyy-mm-dd)	Tide	Weather	Sea Condition	Stat	Level	Water Depth	Lev_Cod	Replicate	Time	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	CS(Mf)5	Surface	1.0	1	1	07:38	19.3	7.9	26.8	6.98	13.2	13.4
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	CS(Mf)5	Surface	1.0	1	2	07:38	19.2	7.8	26.7	6.96	12.6	13.0
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	CS(Mf)5	Middle	5.3	2	1	07:38	19.3	7.9	26.8	6.94	15.4	14.0
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	CS(Mf)5	Middle	5.3	2	2	07:38	19.4	7.9	26.8	6.96	14.2	14.4
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	CS(Mf)5	Bottom	9.6	3	1	07:38	19.4	7.9	26.8	6.99	17.0	19.0
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	CS(Mf)5	Bottom	9.6	3	2	07:38	19.4	8.0	26.9	6.95	18.2	17.4
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	SR4a	Surface	1.0	1	1	08:08	19.2	8.0	26.8	6.94	17.4	16.4
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	SR4a	Surface	1.0	1	2	08:08	19.3	8.0	26.8	6.90	17.1	16.6
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	SR4a	Middle		2	1	08:08						
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	SR4a	Middle		2	2	08:08						
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	SR4a	Bottom	4.4	3	1	08:08	19.3	8.0	26.9	6.90	19.1	20.0
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	SR4a	Bottom	4.4	3	2	08:08	19.4	8.0	26.8	6.92	19.1	21.3
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	SR4	Surface	1.0	1	1	08:38	19.3	7.9	26.9	6.98	18.9	16.2
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	SR4	Surface	1.0	1	2	08:38	19.3	7.9	26.8	6.96	18.8	15.9
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	SR4	Middle		2	1	08:38						
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	SR4	Middle		2	2	08:38						
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	SR4	Bottom	4.3	3	1	08:38	19.4	8.0	26.9	6.96	19.8	16.4
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	SR4	Bottom	4.3	3	2	08:38	19.3	8.0	27.0	6.92	19.7	16.2
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	IS8	Surface	1.0	1	1	09:00	19.4	8.0	26.8	6.94	20.4	14.6
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	IS8	Surface	1.0	1	2	09:00	19.4	8.0	26.8	6.96	20.6	16.0
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	IS8	Middle		2	1	09:00						
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	IS8	Middle		2	2	09:00						
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	IS8	Bottom	4.8	3	1	09:00	19.4	7.9	26.9	6.96	17.8	16.6
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	IS8	Bottom	4.8	3	2	09:00	19.4	8.0	26.9	6.93	18.4	16.6
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	IS(Mf)16	Surface	1.0	1	1	09:34	19.3	8.0	26.8	6.96	14.6	12.3
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	IS(Mf)16	Surface	1.0	1	2	09:34	19.4	8.0	26.8	6.96	14.4	12.4
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	IS(Mf)16	Middle	4.5	2	1	09:34	19.4	8.0	26.9	6.93	16.1	16.7
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	IS(Mf)16	Middle	4.5	2	2	09:34	19.4	8.0	26.8	6.90	15.5	15.5
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	IS(Mf)16	Bottom	8.0	3	1	09:34	19.4	8.0	26.9	6.94	16.1	16.7
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	IS(Mf)16	Bottom	8.0	3	2	09:34	19.3	8.0	26.9	6.90	17.3	15.5
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	IS(Mf)9	Surface	1.0	1	1	10:15	19.4	8.0	26.8	6.90	18.1	14.8
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	IS(Mf)9	Surface	1.0	1	2	10:15	19.4	8.0	26.8	6.88	18.3	13.1
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	IS(Mf)9	Middle		2	1	10:15						
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	IS(Mf)9	Middle		2	2	10:15						
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	IS(Mf)9	Bottom	4.2	3	1	10:15	19.4	7.9	26.9	6.90	17.3	15.7
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	IS(Mf)9	Bottom	4.2	3	2	10:15	19.3	7.9	26.9	6.86	17.6	14.7
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	CS(Mf)3	Surface	1.0	1	1	10:43	19.5	8.0	26.8	6.89	17.2	13.1
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	CS(Mf)3	Surface	1.0	1	2	10:43	19.4	8.0	26.9	6.89	16.5	13.2
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	CS(Mf)3	Middle	4.0	2	1	10:43	19.4	7.9	26.9	6.91	15.5	12.6
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	CS(Mf)3	Middle	4.0	2	2	10:43	19.4	8.0	26.9	6.93	15.8	11.9
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	CS(Mf)3	Bottom	6.9	3	1	10:43	19.4	8.0	27.0	6.94	17.9	16.5
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Flood	Sunny	Small Wave	CS(Mf)3	Bottom	6.9	3	2	10:43	19.5	8.0	26.9	6.90	18.1	17.8
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	CS(Mf)3	Surface	1.0	1	1	13:07	19.6	7.9	26.8	6.90	15.9	13.4
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	CS(Mf)3	Surface	1.0	1	2	13:07	19.5	7.9	26.9	6.93	15.4	13.3
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	CS(Mf)3	Middle	3.8	2	1	13:07	19.6	7.9	26.9	6.94	15.4	13.7
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	CS(Mf)3	Middle	3.8	2	2	13:07	19.6	8.0	26.9	6.90	15.3	13.9
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	CS(Mf)3	Bottom	6.5	3	1	13:07	19.4	7.9	27.0	6.89	15.8	18.3
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	CS(Mf)3	Bottom	6.5	3	2	13:07	19.5	7.9	26.9	6.88	16.0	17.5
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	SR4a	Surface	1.0	1	1	15:45	19.6	7.9	26.9	6.93	16.5	17.9
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	SR4a	Surface	1.0	1	2	15:45	19.6	7.9	26.9	6.90	17.7	17.8
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	SR4a	Middle		2	1	15:45						
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	SR4a	Middle		2	2	15:45						
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	SR4a	Bottom	3.8	3	1	15:45	19.5	7.9	27.0	6.89	15.8	17.9
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	SR4a	Bottom	3.8	3	2	15:45	19.6	7.9	27.1	6.91	16.5	17.5
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	SR4	Surface	1.0	1	1	15:10	19.6	7.9	26.9	6.88	15.9	17.2
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	SR4	Surface	1.0	1	2	15:10	19.6	8.0	26.8	6.84	16.3	16.8
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	SR4	Middle		2	1	15:10						
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	SR4	Middle		2	2	15:10						
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	SR4	Bottom	3.6	3	1	15:10	19.6	7.9	26.9	6.88	16.3	19.6
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	SR4	Bottom	3.6	3	2	15:10	19.5	7.9	26.9	6.87	17.3	19.7
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	IS8	Surface	1.0	1	1	14:40	19.6	7.9	26.9	6.89	19.3	15.0
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	IS8	Surface	1.0	1	2	14:40	19.7	7.9	26.9	6.91	17.1	15.0
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	IS8	Middle		2	1	14:40						
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	IS8	Middle		2	2	14:40						
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	IS8	Bottom	4.2	3	1	14:40	19.6	7.9	26.8	6.90	17.9	17.2
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	IS8	Bottom	4.2	3	2	14:40	19.6	7.9	26.9	6.88	17.8	18.0
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	IS(Mf)16	Surface	1.0	1	1	14:10	19.7	7.9	27.0	6.88	14.7	12.1
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	IS(Mf)16	Surface	1.0	1	2	14:10	19.7	7.9	27.0	6.87	15.2	11.2
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	IS(Mf)16	Middle	4.2	2	1	14:10	19.7	7.9	26.9	6.86	15.4	15.3
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	IS(Mf)16	Middle	4.2	2	2	14:10	19.6	7.9	26.9	6.88	15.5	16.4
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	IS(Mf)16	Bottom	7.3	3	1	14:10	19.6	7.9	27.0	6.92	15.5	17.3
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	IS(Mf)16	Bottom	7.3	3	2	14:10	19.6	7.9	26.9	6.90	15.9	15.9
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	IS(Mf)9	Surface	1.0	1	1	13:40	19.3	7.9	26.9	6.90	13.9	14.4
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	IS(Mf)9	Surface	1.0	1	2	13:40	19.4	7.9	6.9	6.86	14.6	14.6
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	IS(Mf)9	Middle		2	1	13:40						
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	IS(Mf)9	Middle		2	2	13:40						
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	IS(Mf)9	Bottom	3.8	3	1	13:40	19.4	7.8	27.0	6.93	19.7	17.0
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-Ebb	Sunny	Small Wave	IS(Mf)9	Bottom	3.8	3	2	13:40	19.5	7.9	26.9	6.90	19.8	16.6
TM-CLK Southern	HY/2012/07	2013-12-05	Mid-E														

Appendix J Water Quality Monitoring Results

Project	Works	Date (yyyy-mm-dd)	Tide	Weather	Sea Condition	Stat	Level	Water Depth	Lev_Cod	Replicate	Time	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Surface	1.0	1	1	09:19	19.4	7.8	26.7	6.95	14.7	16.6
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Surface	1.0	1	2	09:19	19.3	7.8	26.6	6.93	15.1	16.9
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Middle	5.4	2	1	09:19	19.4	7.8	26.7	6.88	17.0	16.4
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Middle	5.4	2	2	09:19	19.5	7.9	26.8	6.90	17.4	16.4
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Bottom	9.8	3	1	09:19	19.5	7.9	26.8	6.89	18.7	20.0
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Bottom	9.8	3	2	09:19	19.6	7.9	26.9	6.86	18.3	19.7
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	SR4a	Surface	1.0	1	1	09:54	19.3	7.9	26.7	6.91	16.9	19.5
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	SR4a	Surface	1.0	1	2	09:54	19.4	7.9	26.8	6.87	17.2	19.4
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	SR4a	Middle		2	1	09:54						
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	SR4a	Middle		2	2	09:54						
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	SR4a	Bottom	4.6	3	1	09:54	19.5	8.0	26.9	6.85	22.3	22.2
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	SR4a	Bottom	4.6	3	2	09:54	19.4	7.9	26.9	6.83	22.6	23.0
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	SR4	Surface	1.0	1	1	10:24	19.4	7.9	26.8	6.92	18.9	13.5
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	SR4	Surface	1.0	1	2	10:24	19.3	7.9	26.9	6.90	18.6	13.3
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	SR4	Middle		2	1	10:24						
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	SR4	Middle		2	2	10:24						
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	SR4	Bottom	4.6	3	1	10:24	19.5	7.9	27.0	6.87	21.8	20.3
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	SR4	Bottom	4.6	3	2	10:24	19.5	7.9	26.9	6.83	21.3	20.2
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	IS8	Surface	1.0	1	1	10:54	19.4	7.9	26.8	6.89	17.4	18.1
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	IS8	Surface	1.0	1	2	10:54	19.5	7.9	26.8	6.90	17.1	17.8
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	IS8	Middle		2	1	10:54						
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	IS8	Middle		2	2	10:54						
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	IS8	Bottom	4.4	3	1	10:54	19.6	7.9	26.8	6.87	20.9	21.9
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	IS8	Bottom	4.4	3	2	10:54	19.5	7.9	26.9	6.84	20.4	21.4
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Surface	1.0	1	1	11:24	19.5	7.9	26.7	6.94	17.0	18.7
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Surface	1.0	1	2	11:24	19.4	7.9	26.6	6.93	16.5	18.9
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Middle	4.6	2	1	11:24	19.5	7.9	26.8	6.87	18.1	18.2
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Middle	4.6	2	2	11:24	19.6	7.9	26.9	6.84	18.4	18.2
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Bottom	8.2	3	1	11:24	19.6	7.9	26.9	6.82	20.5	20.4
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Bottom	8.2	3	2	11:24	19.6	8.0	27.0	6.81	20.1	19.3
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Surface	1.0	1	1	11:54	19.5	7.9	26.7	6.87	17.3	16.4
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Surface	1.0	1	2	11:54	19.4	7.9	26.8	6.85	18.1	16.9
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Middle		2	1	11:54						
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Middle		2	2	11:54						
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Bottom	4.2	3	1	11:54	19.5	7.9	26.9	6.81	19.1	20.6
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Bottom	4.2	3	2	11:54	19.6	7.9	26.8	6.77	18.3	20.5
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Surface	1.0	1	1	12:22	19.5	7.9	26.9	6.89	18.2	18.4
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Surface	1.0	1	2	12:22	19.5	7.9	26.8	6.88	17.8	18.3
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Middle	3.8	2	1	12:22	19.5	7.9	26.9	6.82	18.6	16.8
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Middle	3.8	2	2	12:22	19.6	7.9	27.0	6.84	19.1	17.3
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Bottom	6.6	3	1	12:22	19.6	8.0	27.0	6.85	23.1	19.1
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Bottom	6.6	3	2	12:22	19.5	7.9	27.0	6.81	22.3	17.5
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Surface	1.0	1	1	14:51	19.8	7.9	27.0	6.82	18.0	16.5
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Surface	1.0	1	2	14:51	19.7	7.8	27.0	6.83	18.4	16.7
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Middle	3.8	2	1	14:51	19.7	7.9	27.1	6.74	19.6	17.6
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Middle	3.8	2	2	14:51	19.7	7.9	27.1	6.80	19.9	17.7
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Bottom	6.6	3	1	14:51	19.6	8.0	27.0	6.83	24.9	21.4
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Bottom	6.6	3	2	14:51	19.7	8.0	27.1	6.78	24.3	21.2
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	SR4a	Surface	1.0	1	1	17:25	19.8	7.9	26.9	6.98	18.1	18.4
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	SR4a	Surface	1.0	1	2	17:25	19.8	7.9	26.9	6.92	18.4	18.8
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	SR4a	Middle		2	1	17:25						
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	SR4a	Middle		2	2	17:25						
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	SR4a	Bottom	4.2	3	1	17:25	19.7	8.0	27.0	6.62	22.8	21.4
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	SR4a	Bottom	4.2	3	2	17:25	19.7	8.0	27.1	6.68	23.1	21.9
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	SR4	Surface	1.0	1	1	16:56	19.8	7.9	27.0	6.72	19.4	16.7
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	SR4	Surface	1.0	1	2	16:56	19.9	7.9	26.9	6.78	19.6	17.3
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	SR4	Middle		2	1	16:56						
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	SR4	Middle		2	2	16:56						
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	SR4	Bottom	4.4	3	1	16:56	19.8	7.8	27.0	6.70	22.4	19.9
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	SR4	Bottom	4.4	3	2	16:56	19.8	7.8	27.0	6.68	22.8	20.9
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	IS8	Surface	1.0	1	1	16:26	19.9	7.9	26.9	6.81	18.7	17.3
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	IS8	Surface	1.0	1	2	16:26	19.8	7.9	26.9	6.83	18.9	16.6
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	IS8	Middle		2	1	16:26						
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	IS8	Middle		2	2	16:26						
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	IS8	Bottom	4.0	3	1	16:26	19.7	7.9	27.1	6.75	21.8	19.2
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	IS8	Bottom	4.0	3	2	16:26	19.7	7.9	27.0	6.77	21.0	18.9
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Surface	1.0	1	1	15:56	19.9	8.0	27.0	6.94	17.8	15.4
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Surface	1.0	1	2	15:56	19.9	8.0	27.0	6.88	18.4	16.4
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Middle	4.5	2	1	15:56	19.8	7.9	27.1	6.76	19.5	19.4
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Middle	4.5	2	2	15:56	19.7	7.9	27.1	6.83	20.3	19.5
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Bottom	8.0	3	1	15:56	19.7	7.9	27.0	6.88	21.4	20.5
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Bottom	8.0	3	2	15:56	19.7	7.9	27.1	6.90	21.9	20.6
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Surface	1.0	1	1	15:26	19.8	7.9	26.9	6.90	18.7	16.9
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Surface	1.0	1	2	15:26	19.8	7.9	26.9	6.84	18.3	16.4
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Middle		2	1	15:26						
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Middle		2	2	15:26						
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Bottom	3.8	3	1	15:26	19.7	7.9	27.0	6.79	19.8	23.0
TM-CLK Southern	HY/2012/07	2013-12-07	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Bottom	3.8	3	2	15:26	19.8	7.9	27			

Appendix J Water Quality Monitoring Results

Project	Works	Date (yyyy-mm-dd)	Tide	Weather	Sea Condition	Stat	Level	Water Depth	Lev_Cod	Replicate	Time	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Surface	1.0	1	1	12:10	19.5	7.8	26.7	7.01	4.5	2.9
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Surface	1.0	1	2	12:10	19.4	7.7	26.8	6.99	4.6	2.7
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Middle	5.5	2	1	12:10	19.5	7.8	26.9	6.94	8.2	4.4
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Middle	5.5	2	2	12:10	19.6	7.8	26.9	6.96	8.1	3.5
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Bottom	10.0	3	1	12:10	19.6	7.8	26.9	6.95	16.9	11.3
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Bottom	10.0	3	2	12:10	19.7	7.9	27.0	6.92	16.1	11.5
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	SR4a	Surface	1.0	1	1	12:45	19.4	7.9	26.8	6.97	6.3	4.4
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	SR4a	Surface	1.0	1	2	12:45	19.5	7.9	26.7	6.93	6.3	6.1
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	SR4a	Middle		2	1	12:45						
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	SR4a	Middle		2	2	12:45						
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	SR4a	Bottom	4.8	3	1	12:45	19.6	7.9	26.8	6.91	12.0	9.0
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	SR4a	Bottom	4.8	3	2	12:45	19.5	7.9	26.9	6.89	12.6	9.9
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	SR4	Surface	1.0	1	1	13:15	19.5	7.8	26.9	6.98	7.2	4.7
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	SR4	Surface	1.0	1	2	13:15	19.4	7.8	26.8	6.96	7.3	4.0
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	SR4	Middle		2	1	13:15						
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	SR4	Middle		2	2	13:15						
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	SR4	Bottom	4.6	3	1	13:15	19.6	7.9	27.0	6.93	14.5	9.7
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	SR4	Bottom	4.6	3	2	13:15	19.5	7.9	27.1	6.89	14.8	10.4
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	IS8	Surface	1.0	1	1	13:15	19.5	7.9	26.8	6.95	8.9	4.7
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	IS8	Surface	1.0	1	2	13:15	19.6	7.9	26.9	6.96	9.0	3.1
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	IS8	Middle		2	1	13:15						
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	IS8	Middle		2	2	13:15						
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	IS8	Bottom	4.8	3	1	13:15	19.7	7.8	27.0	6.93	9.5	8.1
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	IS8	Bottom	4.8	3	2	13:15	19.7	7.9	26.9	6.90	9.5	6.9
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Surface	1.0	1	1	14:15	19.6	7.9	26.7	7.00	4.7	2.5
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Surface	1.0	1	2	14:15	19.6	7.9	26.8	6.90	4.7	2.8
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Middle	4.7	2	1	14:15	19.7	7.9	26.9	6.93	6.9	3.5
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Middle	4.7	2	2	14:15	19.6	7.9	27.0	6.90	6.9	2.6
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Bottom	8.4	3	1	14:15	19.7	7.9	27.1	6.88	14.0	11.9
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Bottom	8.4	3	2	14:15	19.8	7.9	27.0	6.87	15.0	12.2
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Surface	1.0	1	1	14:45	19.6	7.9	26.8	6.93	7.3	6.6
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Surface	1.0	1	2	14:45	19.5	7.9	26.9	6.91	7.4	8.1
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Middle		2	1	14:45						
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Middle		2	2	14:45						
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Bottom	4.4	3	1	14:45	19.6	7.8	27.0	6.87	10.7	7.5
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Bottom	4.4	3	2	14:45	19.7	7.8	27.0	6.83	10.9	8.6
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Surface	1.0	1	1	15:20	19.6	7.9	26.8	6.95	4.8	2.8
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Surface	1.0	1	2	15:20	19.6	7.9	26.8	6.94	4.9	2.6
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Middle	4.1	2	1	15:20	19.7	7.8	26.9	6.88	5.5	3.8
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Middle	4.1	2	2	15:20	19.6	7.9	27.0	6.90	5.6	3.1
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Bottom	7.2	3	1	15:20	19.8	7.9	27.1	6.91	13.3	10.9
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Bottom	7.2	3	2	15:20	19.7	7.9	27.0	6.87	12.9	11.8
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Surface	1.0	1	1	18:33	19.6	7.9	26.8	6.86	4.8	2.3
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Surface	1.0	1	2	18:33	19.7	7.9	26.9	6.85	4.9	3.1
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Middle	4.2	2	1	18:33	19.7	7.9	27.0	6.79	5.6	6.1
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Middle	4.2	2	2	18:33	19.6	7.9	26.9	6.81	5.7	5.2
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Bottom	7.4	3	1	18:33	19.8	7.9	27.1	6.82	13.6	12.2
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Bottom	7.4	3	2	18:33	19.8	7.9	27.2	6.78	13.2	11.6
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Ebb	Cloudy	Small Wave	SR4a	Surface	1.0	1	1	21:08	19.4	7.8	26.7	6.88	6.3	8.7
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Ebb	Cloudy	Small Wave	SR4a	Surface	1.0	1	2	21:08	19.3	7.8	26.8	6.84	6.4	8.0
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Ebb	Cloudy	Small Wave	SR4a	Middle		2	1	21:08						
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Ebb	Cloudy	Small Wave	SR4a	Middle		2	2	21:08						
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Ebb	Cloudy	Small Wave	SR4a	Bottom	4.6	3	1	21:08	19.4	7.9	26.9	6.82	12.5	8.1
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Ebb	Cloudy	Small Wave	SR4a	Bottom	4.6	3	2	21:08	19.5	7.9	26.9	6.80	13.1	8.8
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Ebb	Cloudy	Small Wave	SR4	Surface	1.0	1	1	20:38	19.4	7.9	26.8	6.89	7.3	10.4
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Ebb	Cloudy	Small Wave	SR4	Surface	1.0	1	2	20:38	19.4	7.9	26.7	6.87	7.3	10.1
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Ebb	Cloudy	Small Wave	SR4	Middle		2	1	20:38						
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Ebb	Cloudy	Small Wave	SR4	Middle		2	2	20:38						
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Ebb	Cloudy	Small Wave	SR4	Bottom	4.4	3	1	20:38	19.5	7.9	26.9	6.84	15.0	9.9
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Ebb	Cloudy	Small Wave	SR4	Bottom	4.4	3	2	20:38	19.4	7.9	27.0	6.88	15.3	10.5
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Ebb	Cloudy	Small Wave	IS8	Surface	1.0	1	1	20:08	19.5	7.9	26.8	6.86	9.0	5.1
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Ebb	Cloudy	Small Wave	IS8	Surface	1.0	1	2	20:08	19.4	7.9	26.8	6.87	9.0	5.6
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Ebb	Cloudy	Small Wave	IS8	Middle		2	1	20:08						
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Ebb	Cloudy	Small Wave	IS8	Middle		2	2	20:08						
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Ebb	Cloudy	Small Wave	IS8	Bottom	4.6	3	1	20:08	19.5	7.9	26.9	6.84	9.5	8.7
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Ebb	Cloudy	Small Wave	IS8	Bottom	4.6	3	2	20:08	19.6	7.9	26.8	6.81	9.6	9.0
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Surface	1.0	1	1	19:38	19.5	7.9	26.7	6.92	4.7	4.0
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Surface	1.0	1	2	19:38	19.6	7.9	26.7	6.90	4.8	2.9
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Middle	4.6	2	1	19:38	19.6	7.9	26.9	6.84	6.9	4.8
TM-CLK Southern	HY/2012/07	2013-12-10	Mid-Ebb	Cloudy	Small Wave												

Appendix J Water Quality Monitoring Results

Project	Works	Date (yyyy-mm-dd)	Tide	Weather	Sea Condition	Stat	Level	Water Depth	Lev_Cod	Replicate	Time	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Surface	1.0	1	1	13:43	20.1	7.5	26.2	6.49	4.6	2.8
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Surface	1.0	1	2	13:43	20.2	7.5	26.1	6.52	4.9	3.4
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Middle	4.9	2	1	13:43	20.3	7.5	26.3	6.61	4.8	2.9
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Middle	4.9	2	2	13:43	20.2	7.5	26.4	6.58	4.9	3.3
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Bottom	8.8	3	1	13:43	20.3	7.5	26.4	6.56	4.9	3.5
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Bottom	8.8	3	2	13:43	20.3	7.5	26.5	6.54	4.8	2.4
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	SR4a	Surface	1.0	1	1	14:18	20.2	7.5	26.1	6.46	4.7	7.0
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	SR4a	Surface	1.0	1	2	14:18	20.1	7.5	26.2	6.44	4.4	6.6
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	SR4a	Middle			1	14:18						
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	SR4a	Middle			2	14:18						
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	SR4a	Bottom	3.8	3	1	14:18	20.2	7.5	26.3	6.51	5.0	7.4
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	SR4a	Bottom	3.8	3	2	14:18	20.2	7.5	26.2	6.52	4.9	5.6
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	SR4	Surface	1.0	1	1	14:48	20.2	7.4	26.2	6.59	11.9	7.0
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	SR4	Surface	1.0	1	2	14:48	20.2	7.4	26.1	6.57	9.5	6.6
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	SR4	Middle			1	14:48						
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	SR4	Middle			2	14:48						
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	SR4	Bottom	3.8	3	1	14:48	20.2	7.5	26.3	6.62	8.9	7.4
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	SR4	Bottom	3.8	3	2	14:48	20.1	7.5	26.3	6.61	10.3	5.6
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	IS8	Surface	1.0	1	1	15:18	20.2	7.5	26.1	6.56	7.7	5.0
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	IS8	Surface	1.0	1	2	15:18	20.1	7.5	26.2	6.53	7.8	5.6
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	IS8	Middle			1	15:18						
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	IS8	Middle			2	15:18						
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	IS8	Bottom	4.0	3	1	15:18	20.2	7.5	26.4	6.62	7.5	5.5
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	IS8	Bottom	4.0	3	2	15:18	20.3	7.5	26.3	6.67	7.4	5.0
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Surface	1.0	1	1	15:48	20.3	7.4	26.3	6.47	6.5	3.6
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Surface	1.0	1	2	15:48	20.2	7.4	26.2	6.50	6.5	2.5
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Middle	3.6	2	1	15:48	20.3	7.5	26.3	6.58	6.6	2.7
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Middle	3.6	2	2	15:48	20.3	7.5	26.4	6.61	6.6	3.0
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Bottom	6.2	3	1	15:48	20.3	7.5	26.4	6.56	6.6	3.2
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Bottom	6.2	3	2	15:48	20.4	7.5	26.4	6.55	6.6	2.9
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Surface	1.0	1	1	16:18	20.1	7.5	25.8	6.52	4.7	3.8
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Surface	1.0	1	2	16:18	20.0	7.5	25.7	6.56	4.6	3.5
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Middle			1	16:18						
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Middle			2	16:18						
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Bottom	3.6	3	1	16:18	20.2	7.4	25.8	6.58	4.8	4.0
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Bottom	3.6	3	2	16:18	20.2	7.4	25.9	6.59	4.8	3.7
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Surface	1.0	1	1	16:53	20.1	7.5	25.8	6.62	10.0	6.3
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Surface	1.0	1	2	16:53	20.1	7.4	25.9	6.59	10.0	7.4
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Middle	4.6	2	1	16:53	20.1	7.5	25.9	6.69	10.0	7.3
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Middle	4.6	2	2	16:53	20.2	7.5	26.0	6.66	10.0	7.4
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Bottom	8.2	3	1	16:53	20.3	7.5	26.1	6.53	9.3	7.7
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Bottom	8.2	3	2	16:53	20.2	7.5	26.0	6.50	9.8	7.7
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Surface	1.0	1	1	07:50	20.0	7.4	25.7	6.56	10.9	8.4
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Surface	1.0	1	2	07:50	20.0	7.4	25.8	6.53	10.2	7.4
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Middle	4.4	2	1	07:50	20.1	7.5	25.9	6.63	10.4	7.2
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Middle	4.4	2	2	07:50	20.1	7.5	25.9	6.60	10.7	9.1
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Bottom	7.8	3	1	07:50	20.1	7.4	25.9	6.44	9.3	10.0
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Bottom	7.8	3	2	07:50	20.2	7.4	26.0	6.47	9.9	10.3
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	SR4a	Surface	1.0	1	1	09:53	20.1	7.4	26.0	6.40	4.8	4.3
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	SR4a	Surface	1.0	1	2	09:53	20.1	7.4	26.1	6.38	4.5	2.8
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	SR4a	Middle			1	09:53						
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	SR4a	Middle			2	09:53						
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	SR4a	Bottom	3.6	3	1	09:53	20.1	7.5	26.2	6.45	5.0	3.7
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	SR4a	Bottom	3.6	3	2	09:53	20.1	7.5	26.2	6.46	5.0	3.3
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	SR4	Surface	1.0	1	1	09:28	20.1	7.4	26.0	6.53	5.5	3.7
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	SR4	Surface	1.0	1	2	09:28	20.0	7.4	26.1	6.51	5.4	3.4
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	SR4	Middle			1	09:28						
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	SR4	Middle			2	09:28						
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	SR4	Bottom	3.6	3	1	09:28	20.1	7.4	26.1	6.56	6.1	3.2
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	SR4	Bottom	3.6	3	2	09:28	20.1	7.4	26.2	6.55	5.6	2.9
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	IS8	Surface	1.0	1	1	09:06	20.1	7.4	26.1	6.50	4.6	3.6
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	IS8	Surface	1.0	1	2	09:06	20.1	7.4	26.1	6.47	4.2	3.8
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	IS8	Middle			1	09:06						
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	IS8	Middle			2	09:06						
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	IS8	Bottom	3.8	3	1	09:06	20.1	7.5	26.2	6.56	4.8	3.9
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	IS8	Bottom	3.8	3	2	09:06	20.2	7.5	26.3	6.58	4.8	4.5
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Surface	1.0	1	1	08:40	20.1	7.4	26.1	6.41	5.6	4.5
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Surface	1.0	1	2	08:40	20.2	7.4	26.2	6.44	5.3	3.2
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Middle	3.4	2	1	08:40	20.2	7.4	26.2	6.52	4.4	5.0
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Middle	3.4	2	2	08:40	20.2	7.4	26.2	6.55	4.9	5.8
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Bottom	5.8	3	1	08:40	20.2	7.5	26.3	6.50	5.2	4.3
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Bottom	5.8	3	2	08:40	20.2	7.5	26.2	6.49	4.9	4.3
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Surface	1.0	1	1	08:15	20.0	7.5	25.6	6.50	4.8	3.2
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Surface	1.0	1	2	08:15	20.0	7.5	25.7	6.46	4.7	3.4
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Middle			1	08:15						
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Middle			2	08:15						
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Bottom	3.4	3	1	08:15	20.0	7.4	25.7	6.52	4.9	3.7
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Bottom	3.4	3	2	08:15	20.1	7.4	25.7	6.54	4.9	2.9
TM-CLK Southern	HY/2012/07	2013-12-12	Mid-Ebb	Cloudy	Small Wave	CS(Mf)5	Surface	1.0	1	1	10:23						

Appendix J Water Quality Monitoring Results

Project	Works	Date (yyyy-mm-dd)	Tide	Weather	Sea Condition	Stat	Level	Water Depth	Lev_Cod	Replicate	Time	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Surface	1.0	1	1	14:55	20.3	7.7	27.4	7.43	7.8	8.5
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Surface	1.0	1	2	14:55	20.2	7.7	27.3	7.40	7.1	8.5
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Middle	5.2	2	1	14:55	20.3	7.7	27.5	7.36	11.5	11.2
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Middle	5.2	2	2	14:55	20.3	7.7	27.6	7.33	10.8	12.5
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Bottom	9.4	3	1	14:55	20.4	7.7	27.6	7.20	17.6	20.3
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Bottom	9.4	3	2	14:55	20.3	7.7	27.5	7.17	17.9	21.7
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	SR4a	Surface	1.0	1	1	15:25	20.1	7.8	27.3	7.33	7.6	7.3
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	SR4a	Surface	1.0	1	2	15:25	20.2	7.8	27.4	7.30	7.5	6.4
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	SR4a	Middle		2	1	15:25						
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	SR4a	Middle		2	2	15:25						
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	SR4a	Bottom	3.8	3	1	15:25	20.3	7.8	27.4	7.17	9.4	7.8
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	SR4a	Bottom	3.8	3	2	15:25	20.2	7.8	27.5	7.20	10.9	7.7
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	SR4a	Surface	1.0	1	1	15:55	20.2	7.8	27.3	7.16	7.6	7.7
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	SR4	Surface	1.0	1	2	15:55	20.1	7.8	27.4	7.19	7.8	9.3
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	SR4	Middle		2	1	15:55						
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	SR4	Middle		2	2	15:55						
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	SR4	Bottom	3.8	3	1	15:55	20.2	7.8	27.5	7.11	8.6	8.6
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	SR4	Bottom	3.8	3	2	15:55	20.3	7.8	27.4	7.06	9.5	7.6
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	IS8	Surface	1.0	1	1	16:25	20.2	7.8	27.4	7.27	7.0	7.2
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	IS8	Surface	1.0	1	2	16:25	20.2	7.8	27.3	7.24	6.6	7.3
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	IS8	Middle		2	1	16:25						
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	IS8	Middle		2	2	16:25						
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	IS8	Bottom	4.0	3	1	16:25	20.3	7.8	27.5	7.15	10.1	12.0
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	IS8	Bottom	4.0	3	2	16:25	20.2	7.8	27.6	7.11	11.2	13.1
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Surface	1.0	1	1	16:55	20.1	7.8	27.4	7.22	9.0	7.9
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Surface	1.0	1	2	16:55	20.2	7.8	27.3	7.18	8.1	8.3
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Middle		2	1	16:55	20.2	7.8	27.5	7.11	10.9	10.8
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Middle		2	2	16:55	20.2	7.9	27.5	7.10	11.1	11.0
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Bottom	6.2	3	1	16:55	20.3	7.8	27.7	7.02	19.1	22.1
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Bottom	6.2	3	2	16:55	20.2	7.8	27.6	7.05	18.7	21.7
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Surface	1.0	1	1	17:25	20.1	7.9	27.3	7.24	6.8	9.2
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Surface	1.0	1	2	17:25	20.0	7.9	27.2	7.20	7.5	10.2
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Middle		2	1	17:25						
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Middle		2	2	17:25						
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Bottom	3.8	3	1	17:25	20.1	7.9	27.4	7.12	9.0	13.4
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Bottom	3.8	3	2	17:25	20.1	7.9	27.5	7.09	10.0	13.3
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Surface	1.0	1	1	18:05	20.1	7.9	27.3	7.28	10.9	11.6
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Surface	1.0	1	2	18:05	20.0	7.9	27.4	7.31	11.5	12.1
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Middle	4.7	2	1	18:05	20.2	7.9	27.5	7.13	11.8	11.7
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Middle	4.7	2	2	18:05	20.1	7.9	27.6	7.16	12.0	11.4
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Bottom	8.4	3	1	18:05	20.2	7.9	27.8	7.11	10.2	10.8
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Bottom	8.4	3	2	18:05	20.2	7.9	27.7	7.07	10.0	12.7
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Surface	1.0	1	1	09:20	20.0	7.8	27.3	7.19	11.1	13.7
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Surface	1.0	1	2	09:20	20.0	7.8	27.3	7.22	11.9	12.6
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Middle	4.5	2	1	09:20	20.0	7.9	27.5	7.04	12.1	12.0
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Middle	4.5	2	2	09:20	20.1	7.9	27.5	7.07	12.6	12.5
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Bottom	8.0	3	1	09:20	20.1	7.8	27.7	7.02	10.8	13.4
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Bottom	8.0	3	2	09:20	20.1	7.8	27.7	6.98	10.1	12.9
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	SR4a	Surface	1.0	1	1	11:25	20.1	7.8	27.3	7.24	7.7	8.0
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	SR4a	Surface	1.0	1	2	11:25	20.1	7.8	27.3	7.21	7.6	7.5
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	SR4a	Middle		2	1	11:25						
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	SR4a	Middle		2	2	11:25						
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	SR4a	Bottom	3.5	3	1	11:25	20.1	7.8	27.3	7.08	9.5	9.1
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	SR4a	Bottom	3.5	3	2	11:25	20.2	7.8	27.4	7.11	11.7	9.4
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	SR4	Surface	1.0	1	1	10:55	20.1	7.7	27.3	7.07	7.7	7.2
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	SR4	Surface	1.0	1	2	10:55	20.1	7.7	27.3	7.10	7.9	6.6
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	SR4	Middle		2	1	10:55						
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	SR4	Middle		2	2	10:55						
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	SR4	Bottom	3.6	3	1	10:55	20.1	7.7	27.5	7.02	8.7	8.4
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	SR4	Bottom	3.6	3	2	10:55	20.1	7.7	27.4	6.97	9.5	7.9
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	IS8	Surface	1.0	1	1	10:32	20.1	7.8	27.3	7.18	7.1	6.3
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	IS8	Surface	1.0	1	2	10:32	20.0	7.8	27.3	7.15	6.7	6.5
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	IS8	Middle		2	1	10:32						
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	IS8	Middle		2	2	10:32						
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	IS8	Bottom	3.8	3	1	10:32	20.1	7.8	27.4	7.06	10.6	9.5
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	IS8	Bottom	3.8	3	2	10:32	20.1	7.8	27.5	7.02	11.5	11.0
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Surface	1.0	1	1	10:08	20.0	7.8	27.2	7.13	9.0	9.6
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Surface	1.0	1	2	10:08	20.1	7.8	27.3	7.09	8.1	9.4
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Middle	3.5	2	1	10:08	20.1	7.8	27.4	7.02	11.7	13.2
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Middle	3.5	2	2	10:08	20.1	7.8	27.4	7.01	11.5	14.2
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Bottom	6.0	3	1	10:08	20.1	7.8	27.5	6.93	19.9	23.2
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Bottom	6.0	3	2	10:08	20.2	7.8	27.6	6.96	19.3	21.1
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Surface	1.0	1	1	09:46	20.0	7.9	27.1	7.15	6.8	15.5
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Surface	1.0	1	2	09:46	20.0	7.9	27.2	7.11	7.6	14.0
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Middle		2	1	09:46						
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Middle		2	2	09:46						
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Bottom	3.5	3	1	09:46	20.0	7.9	27.4	7.03	9.1	13.6
TM-CLK Southern	HY/2012/07	2013-12-14	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Bottom	3.5	3	2	09:46	20.0	7.9	27.4	7.00	10.4	13.8
TM-CLK Southern	HY/2012/07	201															

Project	Works	Date (yyyy-mm-dd)	Tide	Weather	Sea Condition	Stat	Level	Water Depth	Lev_Cod	Replicate	Time	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	CS(Mf)5	Surface	1.0	1	1	16:29	19.9	7.3	27.2	6.50	2.6	7.2
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	CS(Mf)5	Surface	1.0	1	2	16:29	19.9	7.2	27.1	6.58	2.8	7.6
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	CS(Mf)5	Middle	5.2	2	1	16:29	20.0	7.5	27.3	6.39	2.2	8.3
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	CS(Mf)5	Middle	5.2	2	2	16:29	20.1	7.4	27.2	6.43	2.3	8.4
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	CS(Mf)5	Bottom	9.4	3	1	16:29	20.2	7.5	27.3	6.19	1.5	10.4
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	CS(Mf)5	Bottom	9.4	3	2	16:29	20.1	7.5	27.4	6.14	1.6	8.8
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	SR4a	Surface	1.0	1	1	17:04	19.9	7.3	27.1	6.20	8.6	11.3
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	SR4a	Surface	1.0	1	2	17:04	20.0	7.3	27.0	6.22	8.8	11.6
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	SR4a	Middle		2	1	17:04						
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	SR4a	Middle		2	2	17:04						
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	SR4a	Bottom	4.0	3	1	17:04	20.1	7.4	27.2	6.05	5.9	13.8
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	SR4a	Bottom	4.0	3	2	17:04	20.1	7.4	27.3	5.99	6.0	14.6
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	SR4	Surface	1.0	1	1	17:34	19.9	7.4	27.1	6.32	4.4	7.7
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	SR4	Surface	1.0	1	2	17:34	20.0	7.4	27.2	6.36	4.4	6.3
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	SR4	Middle		2	1	17:34						
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	SR4	Middle		2	2	17:34						
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	SR4	Bottom	4.2	3	1	17:34	20.0	7.4	27.2	6.20	4.7	10.6
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	SR4	Bottom	4.2	3	2	17:34	20.1	7.5	27.3	6.22	4.8	9.8
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	IS8	Surface	1.0	1	1	18:04	20.1	7.4	27.3	6.19	8.6	7.4
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	IS8	Surface	1.0	1	2	18:04	20.0	7.4	27.2	6.21	8.5	7.9
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	IS8	Middle		2	1	18:04						
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	IS8	Middle		2	2	18:04						
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	IS8	Bottom	4.4	3	1	18:04	20.1	7.5	27.2	6.14	5.1	9.1
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	IS8	Bottom	4.4	3	2	18:04	20.1	7.5	27.2	6.17	5.1	9.0
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	IS(Mf)16	Surface	1.0	1	1	18:34	20.1	7.4	27.2	6.15	2.9	8.7
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	IS(Mf)16	Surface	1.0	1	2	18:34	20.2	7.4	27.1	6.19	3.0	9.4
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	IS(Mf)16	Middle	3.4	2	1	18:34	20.2	7.5	27.3	6.11	3.2	8.4
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	IS(Mf)16	Middle	3.4	2	2	18:34	20.3	7.4	27.2	6.07	3.1	8.3
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	IS(Mf)16	Bottom	5.8	3	1	18:34	20.3	7.3	27.3	6.36	2.0	8.8
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	IS(Mf)16	Bottom	5.8	3	2	18:34	20.3	7.3	27.3	6.39	1.9	8.1
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	IS(Mf)9	Surface	1.0	1	1	19:04	19.9	7.3	27.1	6.28	5.3	8.6
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	IS(Mf)9	Surface	1.0	1	2	19:04	20.0	7.3	27.0	6.30	5.4	7.0
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	IS(Mf)9	Middle		2	1	19:04						
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	IS(Mf)9	Middle		2	2	19:04						
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	IS(Mf)9	Bottom	3.8	3	1	19:04	20.1	7.3	27.1	6.09	6.7	9.6
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	IS(Mf)9	Bottom	3.8	3	2	19:04	20.0	7.3	27.2	6.17	6.9	9.8
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	CS(Mf)3	Surface	1.0	1	1	19:39	19.9	7.2	26.9	6.52	2.1	10.1
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	CS(Mf)3	Surface	1.0	1	2	19:39	19.8	7.2	27.0	6.49	2.0	10.0
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	CS(Mf)3	Middle	4.4	2	1	19:39	19.9	7.3	27.1	6.21	2.2	11.7
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	CS(Mf)3	Middle	4.4	2	2	19:39	20.0	7.4	27.0	6.19	2.2	12.4
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	CS(Mf)3	Bottom	7.8	3	1	19:39	20.0	7.4	27.2	6.11	2.0	12.3
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Flood	Drizzle	Small Wave	CS(Mf)3	Bottom	7.8	3	2	19:39	20.1	7.5	27.1	6.18	2.1	12.5
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	CS(Mf)3	Surface	1.0	1	1	11:18	19.9	7.2	27.0	6.43	2.4	13.4
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	CS(Mf)3	Surface	1.0	1	2	11:18	19.9	7.2	27.0	6.40	2.5	12.6
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	CS(Mf)3	Middle	4.3	2	1	11:18	20.0	7.3	27.0	6.12	3.2	13.7
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	CS(Mf)3	Middle	4.3	2	2	11:18	20.1	7.3	27.1	6.10	3.2	12.9
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	CS(Mf)3	Bottom	7.6	3	1	11:18	20.1	7.4	27.1	6.02	1.9	12.6
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	CS(Mf)3	Bottom	7.6	3	2	11:18	20.1	7.4	27.1	6.10	1.9	13.7
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	SR4a	Surface	1.0	1	1	13:54	19.8	7.2	26.9	6.11	8.8	9.4
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	SR4a	Surface	1.0	1	2	13:54	19.8	7.3	26.9	6.13	8.9	9.2
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	SR4a	Middle		2	1	13:54						
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	SR4a	Middle		2	2	13:54						
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	SR4a	Bottom	2.4	3	1	13:54	20.0	7.4	27.1	5.96	6.1	9.4
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	SR4a	Bottom	2.4	3	2	13:54	20.0	7.4	27.0	5.90	6.1	9.2
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	SR4	Surface	1.0	1	1	13:24	19.9	7.4	27.1	6.23	4.6	9.1
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	SR4	Surface	1.0	1	2	13:24	19.9	7.4	27.0	6.27	4.6	10.0
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	SR4	Middle		2	1	13:24						
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	SR4	Middle		2	2	13:24						
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	SR4	Bottom	3.8	3	1	13:24	20.0	7.4	27.1	6.11	4.9	10.6
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	SR4	Bottom	3.8	3	2	13:24	20.0	7.4	27.2	6.13	4.9	10.9
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	IS8	Surface	1.0	1	1	12:53	19.9	7.4	27.2	6.10	8.9	10.3
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	IS8	Surface	1.0	1	2	12:53	19.8	7.4	27.3	6.12	8.8	10.3
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	IS8	Middle		2	1	12:53						
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	IS8	Middle		2	2	12:53						
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	IS8	Bottom	4.0	3	1	12:53	20.0	7.5	27.0	6.05	5.3	10.2
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	IS8	Bottom	4.0	3	2	12:53	19.9	7.5	27.1	6.08	5.3	9.2
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	IS(Mf)16	Surface	1.0	1	1	12:23	20.0	7.4	27.1	6.06	3.0	10.5
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	IS(Mf)16	Surface	1.0	1	2	12:23	19.9	7.4	27.1	6.10	3.0	9.5
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	IS(Mf)16	Middle	3.2	2	1	12:23	20.0	7.5	27.2	6.02	4.9	10.0
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	IS(Mf)16	Middle	3.2	2	2	12:23	20.0	7.4	27.2	5.98	5.0	10.5
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	IS(Mf)16	Bottom	5.4	3	1	12:23	20.1	4.2	27.0	6.27	2.0	9.2
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	IS(Mf)16	Bottom	5.4	3	2	12:23	20.1	4.3	27.1	6.30	2.1	8.9
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	IS(Mf)9	Surface	1.0	1	1	11:53	19.9	7.2	26.9	6.19	5.4	8.2
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	IS(Mf)9	Surface	1.0	1	2	11:53	19.9	7.3	27.0	6.21	5.4	8.0
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	IS(Mf)9	Middle		2	1	11:53						
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	IS(Mf)9	Middle		2	2	11:53						
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	IS(Mf)9	Bottom	3.6	3	1	11:53	20.0	7.3	27.0	6.00	6.9	9.4
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	IS(Mf)9	Bottom	3.6	3	2	11:53	20.0	7.3	27.0	6.08	7.0	9.2
TM-CLK Southern	HY/2012/07	2013-12-17	Mid-Ebb	Drizzle	Calm	CS(Mf)5	Surface	1.0	1	1							

Appendix J Water Quality Monitoring Results

Project	Works	Date (yyyy-mm-dd)	Tide	Weather	Sea Condition	Stat	Level	Water Depth	Lev_Cod	Replicate	Time	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	CS(Mf)5	Surface	1.0	1	1	17:33	19.6	7.3	27.1	6.21	9.2	8.1
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	CS(Mf)5	Surface	1.0	1	2	17:33	19.5	7.3	27.0	6.20	9.1	9.4
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	CS(Mf)5	Middle	4.6	2	1	17:33	19.5	7.4	27.2	6.18	9.5	8.4
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	CS(Mf)5	Middle	4.6	2	2	17:33	19.6	7.5	27.2	6.12	9.5	8.4
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	CS(Mf)5	Bottom	8.2	3	1	17:33	19.8	7.5	27.2	6.02	8.4	8.2
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	CS(Mf)5	Bottom	8.2	3	2	17:33	19.7	7.5	27.3	6.03	8.3	8.0
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	SR4a	Surface	1.0	1	1	18:08	19.4	7.4	27.1	6.18	7.7	8.8
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	SR4a	Surface	1.0	1	2	18:08	19.5	7.4	27.1	6.20	7.6	8.4
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	SR4a	Middle		2	1	18:08						
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	SR4a	Middle		2	2	18:08						
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	SR4a	Bottom	3.6	3	1	18:08	19.7	7.6	27.2	6.07	8.0	7.6
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	SR4a	Bottom	3.6	3	2	18:08	19.6	7.6	27.2	6.10	7.9	7.9
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	SR4	Surface	1.0	1	1	18:38	19.5	7.2	27.0	6.19	8.1	8.2
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	SR4	Surface	1.0	1	2	18:38	19.6	7.3	27.0	6.21	8.1	7.6
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	SR4	Middle		2	1	18:38						
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	SR4	Middle		2	2	18:38						
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	SR4	Bottom	3.8	3	1	18:38	19.7	7.3	27.1	5.94	7.1	9.1
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	SR4	Bottom	3.8	3	2	18:38	19.6	7.3	27.1	5.96	7.2	7.0
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	IS8	Surface	1.0	1	1	19:06	19.6	7.4	27.0	6.15	8.2	8.0
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	IS8	Surface	1.0	1	2	19:06	19.7	7.5	26.9	6.11	8.3	7.8
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	IS8	Middle		2	1	19:06						
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	IS8	Middle		2	2	19:06						
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	IS8	Bottom	4.8	3	1	19:06	19.8	7.4	27.1	6.00	6.8	9.6
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	IS8	Bottom	4.8	3	2	19:06	19.8	7.4	27.1	6.08	6.9	8.5
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	IS(Mf)16	Surface	1.0	1	1	19:35	19.7	7.6	27.1	6.09	9.7	8.7
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	IS(Mf)16	Surface	1.0	1	2	19:35	19.7	7.6	27.0	6.11	9.8	8.7
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	IS(Mf)16	Middle	3.9	2	1	19:35	19.7	7.5	27.2	6.24	9.6	8.6
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	IS(Mf)16	Middle	3.9	2	2	19:35	19.8	7.5	27.2	6.26	9.7	9.9
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	IS(Mf)16	Bottom	6.8	3	1	19:35	19.8	7.5	27.3	6.06	9.2	9.4
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	IS(Mf)16	Bottom	6.8	3	2	19:35	19.8	7.5	27.4	6.01	9.3	9.1
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	IS(Mf)9	Surface	1.0	1	1	20:05	19.5	7.2	27.0	6.12	7.6	7.3
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	IS(Mf)9	Surface	1.0	1	2	20:05	19.4	7.2	27.1	6.14	7.7	7.5
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	IS(Mf)9	Middle		2	1	20:05						
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	IS(Mf)9	Middle		2	2	20:05						
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	IS(Mf)9	Bottom	3.8	3	1	20:05	19.6	7.5	27.2	6.59	7.3	11.0
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	IS(Mf)9	Bottom	3.8	3	2	20:05	19.7	7.5	27.2	6.51	7.3	11.0
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	CS(Mf)3	Surface	1.0	1	1	20:40	19.6	7.3	27.0	6.42	7.9	8.6
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	CS(Mf)3	Surface	1.0	1	2	20:40	19.6	7.3	26.9	6.40	7.9	7.9
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	CS(Mf)3	Middle	5.9	2	1	20:40	19.7	7.4	27.1	6.24	9.1	9.6
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	CS(Mf)3	Middle	5.9	2	2	20:40	19.7	7.4	27.1	6.26	9.2	8.5
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	CS(Mf)3	Bottom	10.8	3	1	20:40	19.8	7.5	27.2	6.10	9.6	9.6
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Flood	Fine	Small Wave	CS(Mf)3	Bottom	10.8	3	2	20:40	19.7	7.6	27.2	6.14	9.6	9.3
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	CS(Mf)3	Surface	1.0	1	1	12:24	19.6	7.4	27.1	6.36	7.6	9.0
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	CS(Mf)3	Surface	1.0	1	2	12:24	19.5	7.4	27.0	6.38	7.7	9.9
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	CS(Mf)3	Middle	5.8	2	1	12:24	19.7	7.4	27.2	6.22	9.0	9.5
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	CS(Mf)3	Middle	5.8	2	2	12:24	19.8	7.4	27.3	6.20	9.1	9.5
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	CS(Mf)3	Bottom	10.8	3	1	12:24	19.9	7.2	27.5	6.04	9.5	10.7
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	CS(Mf)3	Bottom	10.8	3	2	12:24	19.8	7.2	27.4	6.02	9.5	10.9
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	SR4	Surface	1.0	1	1	14:54	19.5	7.4	27.1	6.11	7.4	8.2
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	SR4a	Surface	1.0	1	2	14:54	19.5	7.5	27.0	6.13	7.5	8.3
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	SR4a	Middle		2	1	14:54						
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	SR4a	Middle		2	2	14:54						
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	SR4a	Bottom	3.4	3	1	14:54	19.6	7.7	27.3	6.04	7.8	9.7
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	SR4a	Bottom	3.4	3	2	14:54	19.7	7.7	27.2	6.02	7.8	8.1
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	SR4	Surface	1.0	1	1	14:24	19.4	7.3	27.0	6.15	7.9	8.0
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	SR4	Surface	1.0	1	2	14:24	19.5	7.3	27.1	6.17	7.9	7.9
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	SR4	Middle		2	1	14:24						
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	SR4	Middle		2	2	14:24						
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	SR4	Bottom	3.6	3	1	14:24	19.6	7.3	27.2	5.91	7.0	9.0
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	SR4	Bottom	3.6	3	2	14:24	19.7	7.4	27.3	5.89	7.0	9.9
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	IS8	Surface	1.0	1	1	13:54	19.5	7.5	27.1	6.09	8.1	7.2
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	IS8	Surface	1.0	1	2	13:54	19.5	7.5	27.1	6.11	8.1	8.4
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	IS8	Middle		2	1	13:54						
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	IS8	Middle		2	2	13:54						
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	IS8	Bottom	4.6	3	1	13:54	19.6	7.3	27.3	5.94	6.6	7.6
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	IS8	Bottom	4.6	3	2	13:54	19.6	7.3	27.2	5.96	6.6	9.3
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	IS(Mf)16	Surface	1.0	1	1	13:24	19.5	7.6	27.1	5.94	9.6	9.5
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	IS(Mf)16	Surface	1.0	1	2	13:24	19.6	7.6	27.0	5.96	9.6	9.5
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	IS(Mf)16	Middle	3.8	2	1	13:24	19.7	7.5	27.3	6.17	9.4	9.0
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	IS(Mf)16	Middle	3.8	2	2	13:24	19.8	7.5	27.2	6.19	9.4	8.0
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	IS(Mf)16	Bottom	6.5	3	1	13:24	19.8	7.4	27.5	6.03	9.0	10.4
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	IS(Mf)16	Bottom	6.5	3	2	13:24	19.8	7.4	27.5	6.01	9.0	11.6
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	IS(Mf)9	Surface	1.0	1	1	12:59	19.5	7.3	27.1	6.04	7.5	7.5
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	IS(Mf)9	Surface	1.0	1	2	12:59	19.5	7.3	27.2	6.06	7.5	8.9
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	IS(Mf)9	Middle		2	1	12:59						
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	IS(Mf)9	Middle		2	2	12:59						
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	IS(Mf)9	Bottom	3.5	3	1	12:59	19.7	7.5	27.3	6.43	7.2	8.9
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	IS(Mf)9	Bottom	3.5	3	2	12:59	19.6	7.5	27.3	6.45	7.2	8.9
TM-CLK Southern	HY/2012/07	2013-12-19	Mid-Ebb	Fine	Calm	CS(Mf)5	Surface	1.0	1	1	15:35	19.5	7.4	27.0	6.16	8.9	8.3
TM-CLK Southern	HY/2012/07	2013-12															

Appendix J Water Quality Monitoring Results

Project	Works	Date (yyyy-mm-dd)	Tide	Weather	Sea Condition	Stat	Level	Water Depth	Lev_Cod	Replicate	Time	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Surface	1.0	1	1	08:15	18.6	7.3	27.2	6.27	7.5	7.9
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Surface	1.0	1	2	08:15	18.6	7.3	27.3	6.30	7.4	7.6
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Middle	4.9	2	1	08:15	18.7	7.3	27.4	6.44	7.6	10.4
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Middle	4.9	2	2	08:15	18.7	7.3	27.4	6.48	7.7	10.7
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Bottom	8.8	3	1	08:15	18.8	7.4	27.4	6.51	7.8	12.1
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Bottom	8.8	3	2	08:15	18.9	7.4	27.5	6.57	7.9	12.0
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	SR4a	Surface	1.0	1	1	08:48	18.6	7.4	27.3	6.41	7.7	7.7
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	SR4a	Surface	1.0	1	2	08:48	18.7	7.4	27.3	6.43	7.8	8.5
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	SR4a	Middle		2	1	08:48						
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	SR4a	Middle		2	2	08:48						
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	SR4a	Bottom	3.8	3	1	08:48	18.8	7.5	27.5	6.32	7.4	7.9
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	SR4a	Bottom	3.8	3	2	08:48	18.8	7.5	27.5	6.38	7.5	7.2
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	SR4	Surface	1.0	1	1	09:18	18.6	7.7	27.2	6.23	8.1	6.6
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	SR4	Surface	1.0	1	2	09:18	18.6	7.7	27.3	6.27	8.2	7.9
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	SR4	Middle		2	1	09:18						
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	SR4	Middle		2	2	09:18						
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	SR4	Bottom	3.8	3	1	09:18	18.8	7.6	27.4	6.36	7.9	7.6
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	SR4	Bottom	3.8	3	2	09:18	18.9	7.6	27.4	6.34	7.9	8.0
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	IS8	Surface	1.0	1	1	09:48	18.6	7.5	27.4	6.41	8.4	8.4
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	IS8	Surface	1.0	1	2	09:48	18.7	7.6	27.3	6.43	8.5	6.7
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	IS8	Middle		2	1	09:48						
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	IS8	Middle		2	2	09:48						
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	IS8	Bottom	4.8	3	1	09:48	18.9	7.6	27.4	6.27	8.2	6.8
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	IS8	Bottom	4.8	3	2	09:48	18.9	7.6	27.5	6.29	8.4	6.4
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Surface	1.0	1	1	10:18	18.7	7.4	27.3	6.50	8.5	9.8
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Surface	1.0	1	2	10:18	18.6	7.4	27.4	6.54	8.6	9.5
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Middle	3.9	2	1	10:18	18.8	7.4	27.6	6.07	8.2	8.1
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Middle	3.9	2	2	10:18	18.8	7.4	27.5	6.03	8.2	7.7
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Bottom	6.8	3	1	10:18	18.9	7.7	27.5	6.19	8.7	8.3
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Bottom	6.8	3	2	10:18	18.8	7.8	27.5	6.21	8.7	8.0
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Surface	1.0	1	1	10:48	18.7	7.5	27.2	6.27	7.9	6.8
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Surface	1.0	1	2	10:48	18.7	7.5	27.2	6.23	7.9	6.5
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Middle		2	1	10:48						
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Middle		2	2	10:48						
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Bottom	3.8	3	1	10:48	18.9	7.6	27.4	6.38	8.2	7.5
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Bottom	3.8	3	2	10:48	18.8	7.6	27.5	6.40	8.3	6.8
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Surface	1.0	1	1	11:20	18.7	7.5	27.3	6.17	7.4	8.7
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Surface	1.0	1	2	11:20	18.8	7.5	27.2	6.19	7.5	9.1
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Middle	5.9	2	1	11:20	18.8	7.4	27.3	6.28	8.0	9.0
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Middle	5.9	2	2	11:20	18.8	7.4	27.4	6.30	8.1	9.4
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Bottom	10.8	3	1	11:20	18.8	7.5	27.5	6.08	8.4	8.8
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Bottom	10.8	3	2	11:20	18.9	7.5	27.6	6.02	8.5	8.5
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Surface	1.0	1	1	13:28	18.6	7.5	27.2	6.23	8.5	8.4
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Surface	1.0	1	2	13:28	18.7	7.4	27.3	6.27	8.4	8.9
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Middle	5.8	2	1	13:28	18.5	7.4	27.4	6.36	8.1	10.3
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Middle	5.8	2	2	13:28	18.6	7.4	27.5	6.40	8.0	9.4
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Bottom	10.6	3	1	13:28	18.8	7.7	27.6	6.14	7.7	10.5
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Bottom	10.6	3	2	13:28	18.9	7.7	27.6	6.13	7.8	9.3
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	SR4a	Surface	1.0	1	1	16:03	18.8	7.4	27.1	6.42	7.7	8.9
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	SR4a	Surface	1.0	1	2	16:03	18.8	7.4	27.1	6.40	7.7	7.9
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	SR4a	Middle		2	1	16:03						
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	SR4a	Middle		2	2	16:03						
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	SR4a	Bottom	3.4	3	1	16:03	18.9	7.5	27.2	6.35	8.1	7.5
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	SR4a	Bottom	3.4	3	2	16:03	18.9	7.5	27.3	6.37	8.2	9.8
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	SR4	Surface	1.0	1	1	15:32	18.7	7.6	27.2	6.43	8.1	8.0
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	SR4	Surface	1.0	1	2	15:32	18.6	7.6	27.3	6.47	8.1	6.7
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	SR4	Middle		2	1	15:32						
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	SR4	Middle		2	2	15:32						
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	SR4	Bottom	3.4	3	1	15:32	18.9	7.6	27.4	6.28	7.9	8.8
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	SR4	Bottom	3.4	3	2	15:32	18.9	7.7	27.4	6.30	7.9	8.1
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	IS8	Surface	1.0	1	1	15:02	18.6	7.5	27.3	6.29	7.4	6.7
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	IS8	Surface	1.0	1	2	15:02	18.5	7.5	27.2	6.21	7.6	7.2
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	IS8	Middle		2	1	15:02						
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	IS8	Middle		2	2	15:02						
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	IS8	Bottom	4.2	3	1	15:02	18.8	7.5	27.5	6.39	7.7	8.0
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	IS8	Bottom	4.2	3	2	15:02	18.8	7.6	27.4	6.31	7.9	7.7
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Surface	1.0	1	1	14:32	18.5	7.4	27.2	6.18	7.6	7.6
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Surface	1.0	1	2	14:32	18.5	7.4	27.3	6.20	7.6	8.0
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Middle	3.6	2	1	14:32	18.6	7.5	27.4	6.20	7.9	8.7
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Middle	3.6	2	2	14:32	18.6	7.5	27.4	6.22	8.1	10.0
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Bottom	6.2	3	1	14:32	18.9	7.6	27.5	6.24	7.9	10.3
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Bottom	6.2	3	2	14:32	18.8	7.7	27.4	6.20	8.0	10.5
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Surface	1.0	1	1	14:01	18.8	7.6	27.3	6.13	8.8	6.7
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Surface	1.0	1	2	14:01	18.7	7.6	27.3	6.17	9.4	6.4
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Middle		2	1	14:01						
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Middle		2	2	14:01						
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Bottom	3.6	3	1	14:01	18.6	7.5	27.5	6.38	8.5	7.4
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Bottom	3.6	3	2	14:01	18.7	7.6	27.6	6.32	8.6	8.1
TM-CLK Southern	HY/2012/07	2013-12-21	Mid-Ebb	Cloudy	Small Wave	CS(Mf)5											

Project	Works	Date (yyyy-mm-dd)	Tide	Weather	Sea Condition	Stat	Level	Water Depth	Lev_Cod	Replicate	Time	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	CS(Mf)5	Surface	1.0	1	1	10:08	17.3	7.9	27.6	6.73	7.3	5.6
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	CS(Mf)5	Surface	1.0	1	2	10:08	17.4	7.8	27.5	6.72	7.4	5.3
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	CS(Mf)5	Middle	4.8	2	1	10:08	17.2	7.9	27.7	6.60	7.8	5.2
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	CS(Mf)5	Middle	4.8	2	2	10:08	17.2	7.9	27.8	6.62	7.7	3.9
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	CS(Mf)5	Bottom	8.6	3	1	10:08	17.2	8.0	27.8	6.54	8.0	10.6
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	CS(Mf)5	Bottom	8.6	3	2	10:08	17.3	7.9	27.8	6.50	7.8	8.9
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	SR4a	Surface	1.0	1	1	10:43	17.3	8.0	27.6	6.62	11.4	11.4
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	SR4a	Surface	1.0	1	2	10:43	17.3	8.0	27.6	6.63	13.2	13.0
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	SR4a	Middle		2	1	10:43						
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	SR4a	Middle		2	2	10:43						
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	SR4a	Bottom	2.8	3	1	10:43	17.2	8.0	27.6	6.67	19.5	22.7
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	SR4a	Bottom	2.8	3	2	10:43	17.3	8.0	27.6	6.65	16.7	21.9
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	SR4	Surface	1.0	1	1	11:13	17.3	7.2	27.5	6.99	12.7	12.4
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	SR4	Surface	1.0	1	2	11:13	17.3	7.2	27.5	6.85	18.5	12.7
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	SR4	Middle		2	1	11:13						
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	SR4	Middle		2	2	11:13						
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	SR4	Bottom	3.1	3	1	11:13	17.3	7.2	27.5	6.80	10.8	14.2
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	SR4	Bottom	3.1	3	2	11:13	17.3	7.2	27.5	6.81	16.8	13.4
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	IS8	Surface	1.0	1	1	11:43	17.2	7.5	27.5	6.80	11.4	8.7
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	IS8	Surface	1.0	1	2	11:43	17.3	7.5	27.6	6.84	11.6	9.9
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	IS8	Middle		2	1	11:43						
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	IS8	Middle		2	2	11:43						
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	IS8	Bottom	3.4	3	1	11:43	17.3	7.7	27.7	6.73	12.6	10.0
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	IS8	Bottom	3.4	3	2	11:43	17.2	7.7	27.6	6.72	12.9	11.0
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	IS(Mf)16	Surface	1.0	1	1	12:13	17.3	7.8	27.6	6.72	10.8	3.7
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	IS(Mf)16	Surface	1.0	1	2	12:13	17.3	7.8	27.6	6.74	10.2	4.9
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	IS(Mf)16	Middle	3.4	2	1	12:13	17.3	7.8	27.8	6.40	8.7	4.2
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	IS(Mf)16	Middle	3.4	2	2	12:13	17.2	7.8	27.7	6.48	8.8	4.5
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	IS(Mf)16	Bottom	5.8	3	1	12:13	17.2	8.0	27.8	6.59	8.5	4.2
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	IS(Mf)16	Bottom	5.8	3	2	12:13	17.2	8.0	27.8	6.61	8.7	4.7
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	IS(Mf)9	Surface	1.0	1	1	12:43	17.3	7.8	27.3	6.67	11.7	8.4
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	IS(Mf)9	Surface	1.0	1	2	12:43	17.3	7.8	27.4	6.63	11.9	9.5
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	IS(Mf)9	Middle		2	1	12:43						
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	IS(Mf)9	Middle		2	2	12:43						
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	IS(Mf)9	Bottom	3.8	3	1	12:43	17.2	7.9	27.8	6.50	9.4	9.3
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	IS(Mf)9	Bottom	3.8	3	2	12:43	17.2	7.9	27.7	6.48	9.1	8.9
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	CS(Mf)3	Surface	1.0	1	1	13:18	17.4	7.6	27.4	6.78	8.7	7.1
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	CS(Mf)3	Surface	1.0	1	2	13:18	17.3	7.6	27.5	6.79	8.6	6.5
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	CS(Mf)3	Middle	4.4	2	1	13:18	17.3	7.5	27.6	6.55	7.3	6.9
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	CS(Mf)3	Middle	4.4	2	2	13:18	17.3	7.6	27.6	6.51	7.2	5.6
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	CS(Mf)3	Bottom	7.8	3	1	13:18	17.2	7.7	27.7	6.39	8.4	5.4
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Flood	Fine	Calm	CS(Mf)3	Bottom	7.8	3	2	13:18	17.2	7.7	27.7	6.31	8.6	4.9
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	CS(Mf)3	Surface	1.0	1	1	15:48	17.3	7.7	27.6	6.54	9.0	5.1
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	CS(Mf)3	Surface	1.0	1	2	15:48	17.4	7.7	27.5	6.56	8.8	6.5
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	CS(Mf)3	Middle	4.3	2	1	15:48	17.3	7.8	27.8	6.81	7.4	5.8
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	CS(Mf)3	Middle	4.3	2	2	15:48	17.3	7.9	27.8	6.83	7.2	6.1
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	CS(Mf)3	Bottom	7.6	3	1	15:48	17.3	7.8	27.9	6.36	7.7	5.9
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	CS(Mf)3	Bottom	7.6	3	2	15:48	17.2	7.8	27.8	6.34	7.7	6.7
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	SR4a	Surface	1.0	1	1	18:15	17.4	7.7	27.5	6.47	12.3	8.7
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	SR4a	Surface	1.0	1	2	18:15	17.4	7.7	27.6	6.43	12.7	9.3
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	SR4a	Middle		2	1	18:15						
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	SR4a	Middle		2	2	18:15						
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	SR4a	Bottom	3.8	3	1	18:15	17.2	7.7	27.8	6.74	13.6	10.6
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	SR4a	Bottom	3.8	3	2	18:15	17.3	7.7	27.8	6.71	13.9	11.2
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	SR4	Surface	1.0	1	1	17:48	17.3	7.3	27.7	6.32	13.2	10.9
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	SR4	Surface	1.0	1	2	17:48	17.3	7.3	27.6	6.38	13.0	9.0
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	SR4	Middle		2	1	17:48						
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	SR4	Middle		2	2	17:48						
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	SR4	Bottom	3.4	3	1	17:48	17.2	7.3	27.8	6.70	14.9	10.5
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	SR4	Bottom	3.4	3	2	17:48	17.2	7.4	27.7	6.68	14.1	11.8
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	IS8	Surface	1.0	1	1	17:23	17.3	7.7	27.5	6.49	10.3	9.9
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	IS8	Surface	1.0	1	2	17:23	17.3	7.6	27.6	6.51	10.1	8.5
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	IS8	Middle		2	1	17:23						
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	IS8	Middle		2	2	17:23						
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	IS8	Bottom	3.6	3	1	17:23	17.2	7.8	27.7	6.50	12.4	8.3
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	IS8	Bottom	3.6	3	2	17:23	17.2	7.7	27.7	6.54	12.9	9.6
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	IS(Mf)16	Surface	1.0	1	1	16:53	17.3	7.8	27.6	6.70	6.3	5.0
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	IS(Mf)16	Surface	1.0	1	2	16:53	17.4	7.8	27.6	6.68	6.5	5.4
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	IS(Mf)16	Middle	3.5	2	1	16:53	17.3	7.8	27.7	6.57	7.3	4.4
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	IS(Mf)16	Middle	3.5	2	2	16:53	17.3	7.8	27.6	6.53	7.5	4.2
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	IS(Mf)16	Bottom	6.0	3	1	16:53	17.2	7.8	27.7	6.42	6.9	4.8
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	IS(Mf)16	Bottom	6.0	3	2	16:53	17.2	7.9	27.7	6.48	7.0	4.6
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	IS(Mf)9	Surface	1.0	1	1	16:23	17.4	7.8	27.6	6.74	13.6	9.8
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	IS(Mf)9	Surface	1.0	1	2	16:23	17.4	7.8	27.5	6.76	13.0	10.7
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	IS(Mf)9	Middle		2	1	16:23						
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	IS(Mf)9	Middle		2	2	16:23						
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	IS(Mf)9	Bottom	3.6	3	1	16:23	17.2	7.9	27.7	6.42	14.0	14.0
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	IS(Mf)9	Bottom	3.6	3	2	16:23	17.3	7.9	27.6	6.41	13.2	12.5
TM-CLK Southern	HY/2012/07	2013-12-24	Mid-Ebb	Fine	Small Wave	CS(Mf)5	Surface	1.0	1	1	18:48	17.3	7.4	27.4	6.52	7.7	

Project	Works	Date (yyyy-mm-dd)	Tide	Weather	Sea Condition	Stat	Level	Water Depth	Lev_Cod	Replicate	Time	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	CS(Mf)5	Surface	1.0	1	1	11:40	19.1	7.4	27.2	6.39	5.0	3.5
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	CS(Mf)5	Surface	1.0	1	2	11:40	19.1	7.3	27.1	6.41	5.0	3.7
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	CS(Mf)5	Middle	4.9	2	1	11:40	19.2	7.4	27.3	6.37	5.4	4.1
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	CS(Mf)5	Middle	4.9	2	2	11:40	19.3	7.4	27.4	6.35	5.4	3.6
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	CS(Mf)5	Bottom	8.7	3	1	11:40	19.4	7.5	27.6	6.59	5.3	4.7
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	CS(Mf)5	Bottom	8.7	3	2	11:40	19.4	7.5	27.5	6.61	5.3	4.0
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	SR4a	Surface	1.0	1	1	12:13	19.0	7.3	27.1	6.42	4.2	3.8
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	SR4a	Surface	1.0	1	2	12:13	19.1	7.3	27.1	6.43	4.1	3.6
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	SR4a	Middle		2	1	12:13						
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	SR4a	Middle		2	2	12:13						
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	SR4a	Bottom	3.6	3	1	12:13	19.2	7.5	27.3	6.35	5.7	4.7
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	SR4a	Bottom	3.6	3	2	12:13	19.1	7.5	27.4	6.36	5.7	4.5
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	SR4a	Surface	1.0	1	1	12:43	19.1	7.5	27.0	6.16	3.9	3.6
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	SR4a	Surface	1.0	1	2	12:43	19.1	7.6	27.1	6.15	3.9	3.4
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	SR4a	Middle		2	1	12:43						
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	SR4a	Middle		2	2	12:43						
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	SR4a	Bottom	3.7	3	1	12:43	19.2	7.4	27.3	6.27	5.6	5.1
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	SR4a	Bottom	3.7	3	2	12:43	19.3	7.4	27.4	6.25	5.6	4.5
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	IS8	Surface	1.0	1	1	13:13	19.1	7.4	27.1	6.45	4.0	4.1
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	IS8	Surface	1.0	1	2	13:13	19.2	7.4	27.2	6.43	4.0	3.5
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	IS8	Middle		2	1	13:13						
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	IS8	Middle		2	2	13:13						
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	IS8	Bottom	4.7	3	1	13:13	19.2	7.5	27.4	6.35	5.3	3.9
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	IS8	Bottom	4.7	3	2	13:13	19.1	7.5	27.4	6.34	5.3	4.6
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	IS(Mf)16	Surface	1.0	1	1	13:50	19.2	7.4	27.0	6.65	5.1	3.6
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	IS(Mf)16	Surface	1.0	1	2	13:50	19.1	7.4	27.1	6.63	5.1	3.3
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	IS(Mf)16	Middle	3.9	2	1	13:50	19.2	7.6	27.3	6.14	4.7	3.8
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	IS(Mf)16	Middle	3.9	2	2	13:50	19.3	7.6	27.2	6.17	4.7	5.0
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	IS(Mf)16	Bottom	6.8	3	1	13:50	19.4	7.7	27.4	6.19	6.0	4.0
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	IS(Mf)16	Bottom	6.8	3	2	13:50	19.3	7.7	27.5	6.21	5.9	4.5
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	IS(Mf)9	Surface	1.0	1	1	14:20	19.0	7.4	27.0	6.39	4.2	3.3
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	IS(Mf)9	Surface	1.0	1	2	14:20	19.1	7.4	27.1	6.41	4.2	3.3
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	IS(Mf)9	Middle		2	1	14:20						
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	IS(Mf)9	Middle		2	2	14:20						
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	IS(Mf)9	Bottom	4.0	3	1	14:20	19.2	7.6	27.3	6.47	5.4	4.4
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	IS(Mf)9	Bottom	4.0	3	2	14:20	19.1	7.6	27.2	6.50	5.4	3.7
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	CS(Mf)3	Surface	1.0	1	1	14:50	19.0	7.4	27.0	6.23	5.7	4.1
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	CS(Mf)3	Surface	1.0	1	2	14:50	19.1	7.5	27.2	6.24	5.7	4.2
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	CS(Mf)3	Middle	6.0	2	1	14:50	19.2	7.5	27.3	6.37	5.2	3.6
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	CS(Mf)3	Middle	6.0	2	2	14:50	19.2	7.5	27.4	6.38	5.2	3.7
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	CS(Mf)3	Bottom	10.9	3	1	14:50	19.3	7.6	27.5	6.21	5.4	3.4
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Flood	Fine	Small Wave	CS(Mf)3	Bottom	10.9	3	2	14:50	19.4	7.6	27.6	6.20	5.4	4.5
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	CS(Mf)3	Surface	1.0	1	1	18:13	19.0	7.4	27.0	6.11	5.8	3.4
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	CS(Mf)3	Surface	1.0	1	2	18:13	19.1	7.4	27.1	6.09	5.8	4.3
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	CS(Mf)3	Middle	5.8	2	1	18:13	19.2	7.5	27.2	6.22	5.4	4.0
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	CS(Mf)3	Middle	5.8	2	2	18:13	19.3	7.5	27.3	6.24	5.4	4.0
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	CS(Mf)3	Bottom	10.0	3	1	18:13	19.4	7.4	27.4	6.02	5.5	3.9
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	CS(Mf)3	Bottom	10.0	3	2	18:13	19.5	7.4	27.5	6.00	5.5	3.1
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	SR4a	Surface	1.0	1	1	20:50	19.1	7.3	27.1	6.34	4.3	3.4
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	SR4a	Surface	1.0	1	2	20:50	19.1	7.4	27.2	6.37	4.3	3.4
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	SR4a	Middle		2	1	20:50						
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	SR4a	Middle		2	2	20:50						
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	SR4a	Bottom	3.5	3	1	20:50	19.2	7.4	27.3	6.24	5.8	4.9
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	SR4a	Bottom	3.5	3	2	20:50	19.3	7.4	27.3	6.26	5.8	5.0
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	SR4a	Surface	1.0	1	1	20:19	19.2	7.5	27.2	6.14	4.0	3.1
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	SR4a	Surface	1.0	1	2	20:19	19.1	7.6	27.1	6.16	4.0	3.2
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	SR4a	Middle		2	1	20:19						
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	SR4a	Middle		2	2	20:19						
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	SR4a	Bottom	3.5	3	1	20:19	19.3	7.6	27.3	6.32	5.9	4.2
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	SR4a	Bottom	3.5	3	2	20:19	19.3	7.6	27.4	6.34	5.9	4.9
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	IS8	Surface	1.0	1	1	19:48	19.1	7.4	27.2	6.34	4.1	3.5
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	IS8	Surface	1.0	1	2	19:48	19.1	7.5	27.2	6.31	4.2	3.1
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	IS8	Middle		2	1	19:48						
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	IS8	Middle		2	2	19:48						
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	IS8	Bottom	4.6	3	1	19:48	19.2	7.5	27.3	6.22	5.5	5.1
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	IS8	Bottom	4.6	3	2	19:48	19.3	7.6	27.4	6.20	5.5	4.9
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	IS(Mf)16	Surface	1.0	1	1	19:17	19.0	7.4	27.0	6.44	5.2	4.3
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	IS(Mf)16	Surface	1.0	1	2	19:17	19.1	7.4	27.1	6.43	5.2	3.9
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	IS(Mf)16	Middle	3.8	2	1	19:17	19.2	7.4	27.2	6.02	4.8	4.2
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	IS(Mf)16	Middle	3.8	2	2	19:17	19.3	7.4	27.3	6.01	4.9	3.3
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	IS(Mf)16	Bottom	6.5	3	1	19:17	19.4	7.5	27.4	6.11	6.1	3.3
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	IS(Mf)16	Bottom	6.5	3	2	19:17	19.5	7.5	27.5	6.14	6.1	3.3
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	IS(Mf)9	Surface	1.0	1	1	18:46	19.0	7.5	27.0	6.17	4.4	3.8
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	IS(Mf)9	Surface	1.0	1	2	18:46	19.1	7.5	27.0	6.19	4.5	3.1
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	IS(Mf)9	Middle		2	1	18:46						
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	IS(Mf)9	Middle		2	2	18:46						
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	IS(Mf)9	Bottom	3.6	3	1	18:46	19.2	7.5	27.2	6.32	5.4	4.6
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	IS(Mf)9	Bottom	3.6	3	2	18:46	19.2	7.5	27.3	6.35	5.4	4.9
TM-CLK Southern	HY/2012/07	2013-12-26	Mid-Ebb	Fine	Small Wave	CS(Mf)5	Surface	1.0	1	1	21:20	19.0	7.3	27.1	6.22		

Appendix J Water Quality Monitoring Results

Project	Works	Date (yyyy-mm-dd)	Tide	Weather	Sea Condition	Stat	Level	Water Depth	Lev_Cod	Replicate	Time	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Surface	1.0	1	1	13:14	19.2	7.4	27.2	6.43	3.6	3.6
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Surface	1.0	1	2	13:14	19.2	7.4	27.2	6.45	3.8	4.2
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Middle	4.8	2	1	13:14	19.3	7.4	27.4	6.41	3.6	3.7
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Middle	4.8	2	2	13:14	19.2	7.4	27.3	6.39	3.5	2.9
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Bottom	8.6	3	1	13:14	19.4	7.5	27.4	6.63	4.2	4.9
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Bottom	8.6	3	2	13:14	19.5	7.5	27.5	6.65	4.3	3.8
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	SR4a	Surface	1.0	1	1	13:54	19.1	7.3	27.2	6.48	3.6	4.6
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	SR4a	Surface	1.0	1	2	13:54	19.2	7.3	27.1	6.46	3.6	4.1
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	SR4a	Middle		2	1	13:54						
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	SR4a	Middle		2	2	13:54						
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	SR4a	Bottom	3.8	3	1	13:54	19.4	7.5	27.4	6.39	3.5	3.8
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	SR4a	Bottom	3.8	3	2	13:54	19.3	7.6	27.4	6.41	3.5	4.3
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	SR4	Surface	1.0	1	1	14:24	19.2	7.6	27.3	6.34	3.3	4.8
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	SR4	Surface	1.0	1	2	14:24	19.2	7.6	27.2	6.32	3.5	3.0
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	SR4	Middle		2	1	14:24						
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	SR4	Middle		2	2	14:24						
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	SR4	Bottom	3.8	3	1	14:24	19.4	7.4	27.4	6.45	3.5	5.8
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	SR4	Bottom	3.8	3	2	14:24	19.5	7.5	27.4	6.43	3.6	5.1
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	IS8	Surface	1.0	1	1	14:54	19.2	7.4	27.2	6.49	3.5	3.8
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	IS8	Surface	1.0	1	2	14:54	19.3	7.4	27.3	6.47	3.7	3.6
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	IS8	Middle		2	1	14:54						
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	IS8	Middle		2	2	14:54						
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	IS8	Bottom	4.8	3	1	14:54	19.3	7.5	27.5	6.39	4.3	3.3
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	IS8	Bottom	4.8	3	2	14:54	19.4	7.5	27.4	6.38	4.4	4.4
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Surface	1.0	1	1	15:24	19.2	7.4	27.2	6.69	3.9	3.5
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Surface	1.0	1	2	15:24	19.1	7.5	27.2	6.71	4.0	2.9
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Middle	4.1	2	1	15:24	19.4	7.6	27.3	6.18	3.0	3.9
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Middle	4.1	2	2	15:24	19.3	7.6	27.4	6.21	3.1	2.8
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Bottom	7.2	3	1	15:24	19.4	7.7	27.4	6.23	4.3	3.2
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Bottom	7.2	3	2	15:24	19.5	7.7	27.3	6.25	4.2	3.0
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Surface	1.0	1	1	15:54	19.1	7.4	27.2	6.43	3.7	4.3
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Surface	1.0	1	2	15:54	19.1	7.4	27.3	6.45	3.8	3.4
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Middle		2	1	15:54						
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Middle		2	2	15:54						
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Bottom	4.2	3	1	15:54	19.3	7.6	27.4	6.51	3.4	4.8
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Bottom	4.2	3	2	15:54	19.2	7.6	27.3	6.54	3.2	3.3
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Surface	1.0	1	1	16:24	19.1	7.4	27.2	6.27	3.9	4.9
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Surface	1.0	1	2	16:24	19.0	7.5	27.3	6.28	4.0	3.9
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Middle	6.4	2	1	16:24	19.3	7.5	27.4	6.41	3.6	3.9
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Middle	6.4	2	2	16:24	19.2	7.5	27.3	6.42	3.6	5.1
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Bottom	11.8	3	1	16:24	19.4	7.4	27.6	6.25	4.6	4.1
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Bottom	11.8	3	2	16:24	19.4	7.4	27.5	6.23	4.7	4.1
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Surface	1.0	1	1	07:16	18.9	7.4	27.1	6.18	4.0	4.5
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Surface	1.0	1	2	07:16	19.0	7.4	27.2	6.19	4.1	4.1
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Middle	6.2	2	1	07:16	19.1	7.4	27.3	6.32	3.7	2.9
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Middle	6.2	2	2	07:16	19.1	7.5	27.2	6.33	3.7	3.9
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Bottom	11.4	3	1	07:16	19.3	7.4	27.4	6.16	4.7	3.7
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Bottom	11.4	3	2	07:16	19.2	7.3	27.5	6.14	4.8	4.4
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	SR4	Surface	1.0	1	1	09:46	19.0	7.2	27.0	6.39	3.6	3.4
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	SR4a	Surface	1.0	1	2	09:46	19.0	7.2	27.1	6.37	3.7	4.5
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	SR4a	Middle		2	1	09:46						
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	SR4a	Middle		2	2	09:46						
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	SR4a	Bottom	3.4	3	1	09:46	19.2	7.5	27.3	6.30	3.5	3.3
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	SR4a	Bottom	3.4	3	2	09:46	19.1	7.5	27.3	6.31	3.6	5.2
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	SR4	Surface	1.0	1	1	09:16	19.0	7.5	27.1	6.25	3.4	4.8
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	SR4	Surface	1.0	1	2	09:16	18.9	7.5	27.2	6.23	3.6	3.4
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	SR4	Middle		2	1	09:16						
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	SR4	Middle		2	2	09:16						
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	SR4	Bottom	3.6	3	1	09:16	19.2	7.3	27.3	6.36	3.6	4.9
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	SR4	Bottom	3.6	3	2	09:16	19.3	7.4	27.2	6.34	3.7	4.5
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	IS8	Surface	1.0	1	1	08:46	19.0	7.3	27.2	6.40	3.6	3.8
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	IS8	Surface	1.0	1	2	08:46	19.1	7.3	27.1	6.38	3.7	3.3
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	IS8	Middle		2	1	08:46						
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	IS8	Middle		2	2	08:46						
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	IS8	Bottom	4.4	3	1	08:46	19.2	7.5	27.3	6.30	4.4	5.0
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	IS8	Bottom	4.4	3	2	08:46	19.3	7.5	27.4	6.29	4.5	4.9
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Surface	1.0	1	1	08:16	19.1	7.4	27.1	6.60	4.0	2.9
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Surface	1.0	1	2	08:16	19.0	7.4	27.0	6.62	4.1	4.2
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Middle	3.8	2	1	08:16	19.1	7.5	27.2	6.09	3.1	3.5
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Middle	3.8	2	2	08:16	19.2	7.6	27.1	6.12	3.2	2.6
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Bottom	6.6	3	1	08:16	19.4	7.6	27.3	6.14	4.4	5.8
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Bottom	6.6	3	2	08:16	19.4	7.6	27.2	6.16	4.2	5.1
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Surface	1.0	1	1	07:46	18.9	7.4	27.1	6.34	3.8	5.7
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Surface	1.0	1	2	07:46	19.0	7.4	27.2	6.36	3.9	5.7
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Middle		2	1	07:46						
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Middle		2	2	07:46						
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Bottom	3.6	3	1	07:46	19.2	7.6	27.4	6.42	3.5	4.2
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Bottom	3.6	3	2	07:46	19.1	7.6	27.3	6.45	3.3	4.8
TM-CLK Southern	HY/2012/07	2013-12-28	Mid-Ebb	Cloudy	Small Wave	CS(Mf)5	Surface										

Appendix J Water Quality Monitoring Results

Project	Works	Date (yyyy-mm-dd)	Tide	Weather	Sea Condition	Stat	Level	Water Depth	Lev_Cod	Replicate	Time	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Surface	1.0	1	1	15:38	19.2	7.5	27.1	6.55	7.9	6.9
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Surface	1.0	1	2	15:38	19.1	7.5	27.2	6.57	7.9	7.1
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Middle	5.2	2	1	15:38	19.4	7.5	27.3	6.53	6.6	5.6
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Middle	5.2	2	2	15:38	19.3	7.5	27.2	6.51	6.6	5.9
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Bottom	9.4	3	1	15:38	19.4	7.6	27.4	6.75	6.6	6.7
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	CS(Mf)5	Bottom	9.4	3	2	15:38	19.5	7.6	27.4	6.77	6.5	6.4
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	SR4a	Surface	1.0	1	1	16:18	19.1	7.4	27.1	6.60	5.0	6.1
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	SR4a	Surface	1.0	1	2	16:18	19.1	7.4	27.2	6.58	5.1	5.3
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	SR4a	Middle		2	1	16:18						
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	SR4a	Middle		2	2	16:18						
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	SR4a	Bottom	4.2	3	1	16:18	19.2	7.6	27.3	6.51	5.0	10.8
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	SR4a	Bottom	4.2	3	2	16:18	19.1	7.7	27.4	6.52	5.0	11.7
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	SR4	Surface	1.0	1	1	16:48	19.0	7.7	27.1	6.46	6.5	7.1
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	SR4	Surface	1.0	1	2	16:48	18.9	7.7	27.2	6.44	6.6	5.9
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	SR4	Middle		2	1	16:48						
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	SR4	Middle		2	2	16:48						
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	SR4	Bottom	4.0	3	1	16:48	19.1	7.5	27.3	6.57	8.9	12.9
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	SR4	Bottom	4.0	3	2	16:48	19.2	7.6	27.2	6.55	8.0	12.6
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	IS8	Surface	1.0	1	1	17:18	19.1	7.5	27.2	6.61	7.3	6.9
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	IS8	Surface	1.0	1	2	17:18	19.1	7.5	27.1	6.59	7.4	7.6
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	IS8	Middle		2	1	17:18						
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	IS8	Middle		2	2	17:18						
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	IS8	Bottom	4.8	3	1	17:18	19.3	7.6	27.3	6.51	12.1	12.2
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	IS8	Bottom	4.8	3	2	17:18	19.2	7.6	27.4	6.50	12.5	12.3
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Surface	1.0	1	1	17:48	19.1	7.5	27.1	6.81	7.2	6.3
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Surface	1.0	1	2	17:48	19.0	7.6	27.0	6.83	7.2	6.2
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Middle	4.1	2	1	17:48	19.1	7.7	27.3	6.30	7.6	5.6
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Middle	4.1	2	2	17:48	19.2	7.7	27.2	6.33	7.6	7.4
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Bottom	7.2	3	1	17:48	19.3	7.8	27.3	6.35	9.6	7.2
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	IS(Mf)16	Bottom	7.2	3	2	17:48	19.4	7.8	27.4	6.37	9.4	7.8
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Surface	1.0	1	1	18:48	19.0	7.5	27.1	6.55	6.7	5.4
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Surface	1.0	1	2	18:48	18.9	7.5	27.1	6.57	6.7	5.8
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Middle		2	1	18:48						
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Middle		2	2	18:48						
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Bottom	4.2	3	1	18:48	19.2	7.7	27.2	6.63	9.9	9.4
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	IS(Mf)9	Bottom	4.2	3	2	18:48	19.1	7.7	27.1	6.66	9.9	9.2
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Surface	1.0	1	1	18:18	19.0	7.5	27.1	6.39	7.3	6.3
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Surface	1.0	1	2	18:18	19.0	7.6	27.0	6.40	7.2	6.9
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Middle	6.3	2	1	18:18	19.1	7.6	27.2	6.53	8.4	5.5
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Middle	6.3	2	2	18:18	19.0	7.6	27.2	6.54	8.4	5.4
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Bottom	11.6	3	1	18:18	19.2	7.5	27.3	6.37	9.1	5.7
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Flood	Cloudy	Small Wave	CS(Mf)3	Bottom	11.6	3	2	18:18	19.3	7.5	27.4	6.35	9.2	5.2
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Surface	1.0	1	1	10:30	18.9	7.5	27.1	6.33	7.4	6.0
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Surface	1.0	1	2	10:30	18.8	7.5	27.0	6.34	7.3	6.0
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Middle	6.1	2	1	10:30	19.0	7.5	27.3	6.47	8.4	5.9
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Middle	6.1	2	2	10:30	18.9	7.5	27.2	6.48	8.5	5.9
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Bottom	11.2	3	1	10:30	19.0	7.5	27.4	6.31	9.2	6.2
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	CS(Mf)3	Bottom	11.2	3	2	10:30	19.1	7.4	27.5	6.29	9.3	5.6
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	SR4a	Surface	1.0	1	1	13:00	18.9	7.3	27.1	6.54	5.1	4.5
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	SR4a	Surface	1.0	1	2	13:00	19.0	7.3	27.2	6.52	5.2	3.0
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	SR4a	Middle		2	1	13:00						
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	SR4a	Middle		2	2	13:00						
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	SR4a	Bottom	3.6	3	1	13:00	19.2	7.6	27.2	6.45	5.1	3.9
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	SR4a	Bottom	3.6	3	2	13:00	19.3	7.6	27.3	6.46	5.1	5.4
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	SR4	Surface	1.0	1	1	12:30	18.9	7.6	27.0	6.40	6.6	4.7
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	SR4	Surface	1.0	1	2	12:30	18.8	7.6	27.1	6.38	6.7	4.9
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	SR4	Middle		2	1	12:30						
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	SR4	Middle		2	2	12:30						
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	SR4	Bottom	3.4	3	1	12:30	19.0	7.4	27.2	6.51	9.0	5.4
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	SR4	Bottom	3.4	3	2	12:30	19.1	7.5	27.1	6.49	8.1	6.3
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	IS8	Surface	1.0	1	1	12:00	18.9	7.4	27.1	6.55	7.4	5.7
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	IS8	Surface	1.0	1	2	12:00	19.0	7.4	27.0	6.53	7.5	6.1
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	IS8	Middle		2	1	12:00						
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	IS8	Middle		2	2	12:00						
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	IS8	Bottom	4.6	3	1	12:00	19.2	7.6	27.2	6.45	13.4	11.1
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	IS8	Bottom	4.6	3	2	12:00	19.1	7.6	27.3	6.44	12.8	11.8
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Surface	1.0	1	1	11:30	19.0	7.5	27.0	6.75	7.3	5.2
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Surface	1.0	1	2	11:30	18.9	7.5	27.0	6.77	7.3	5.5
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Middle	3.9	2	1	11:30	19.0	7.6	27.1	6.24	7.7	4.6
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Middle	3.9	2	2	11:30	19.1	7.6	27.2	6.27	7.7	5.2
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Bottom	6.8	3	1	11:30	19.2	7.7	27.3	6.29	9.7	6.7
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	IS(Mf)16	Bottom	6.8	3	2	11:30	19.3	7.7	27.2	6.31	9.5	7.2
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Surface	1.0	1	1	11:00	18.9	7.5	27.2	6.49	6.8	6.3
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Surface	1.0	1	2	11:00	18.8	7.5	27.1	6.51	6.8	5.4
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Middle		2	1	11:00						
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Middle		2	2	11:00						
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Bottom	3.8	3	1	11:00	19.1	7.7	27.2	6.57	10.8	9.4
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	IS(Mf)9	Bottom	3.8	3	2	11:00	19.1	7.7	27.3	6.60	10.0	8.6
TM-CLK Southern	HY/2012/07	2013-12-31	Mid-Ebb	Cloudy	Small Wave	CS(Mf)5											

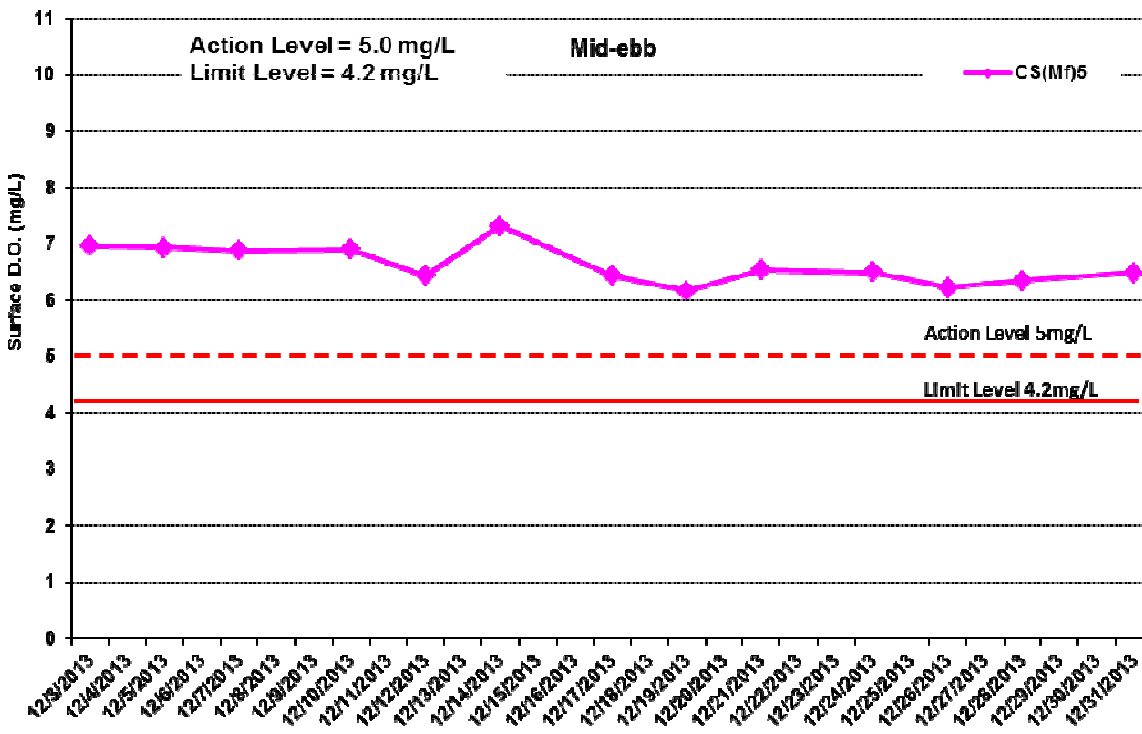
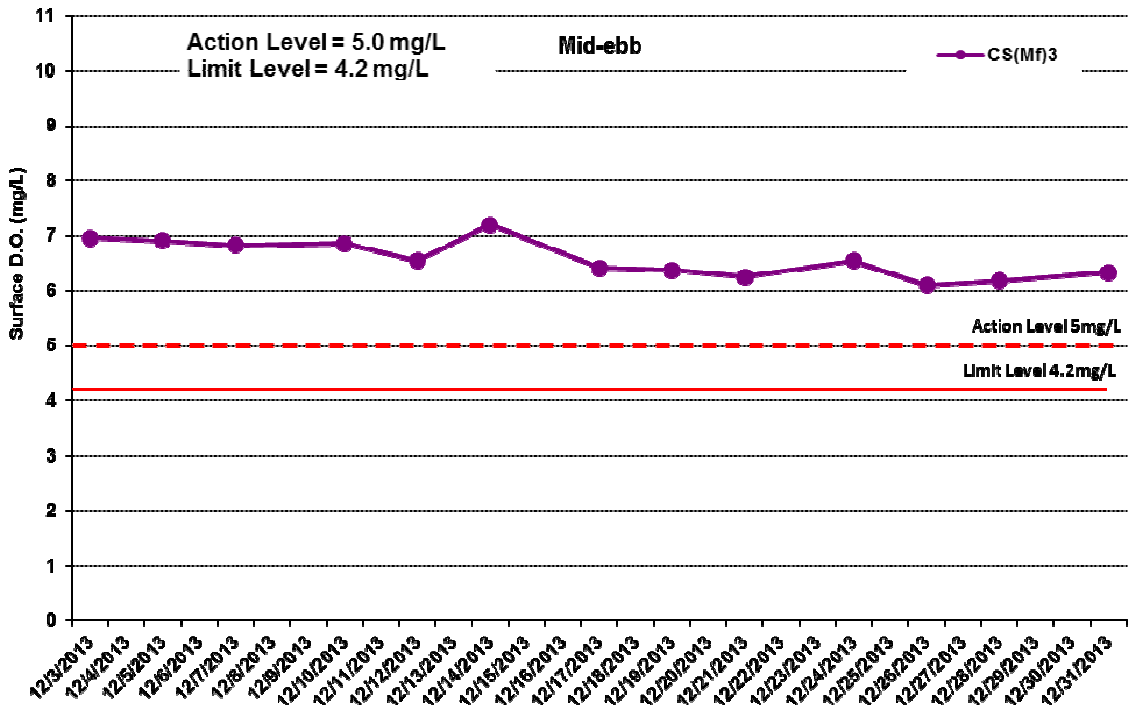


Figure J1 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in surface waters during mid-ebb tide between 1 to 31 December 2013 at CS(Mf)3 and CS(Mf)5.

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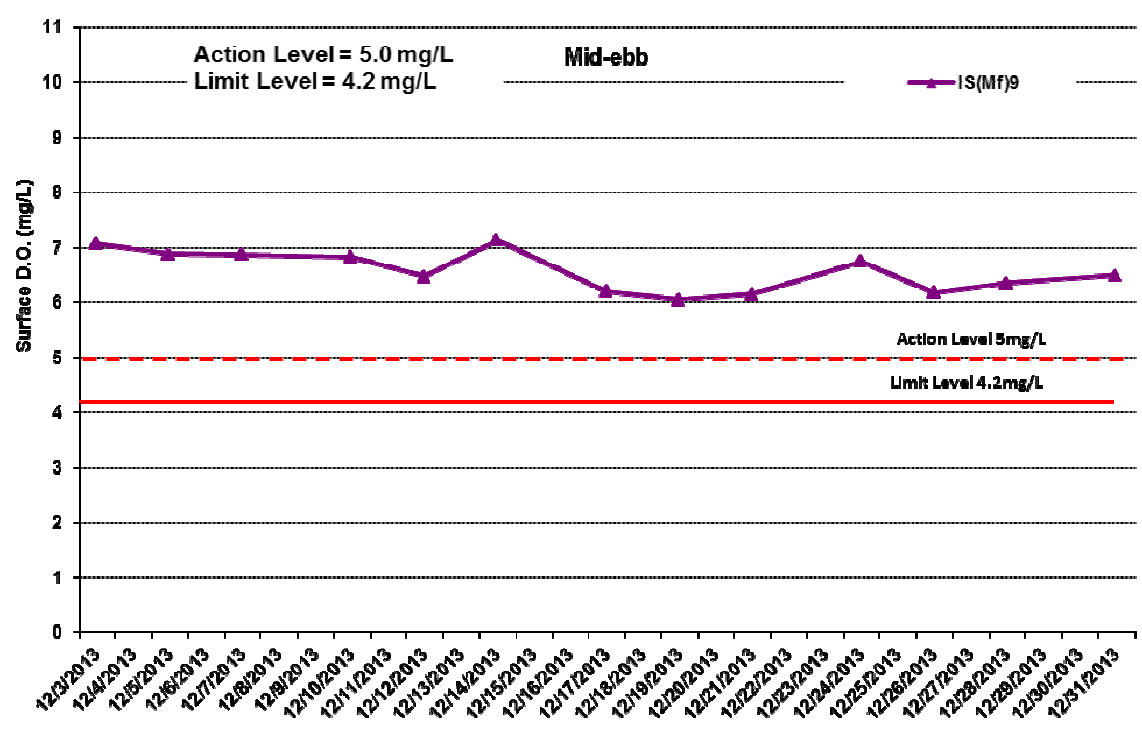
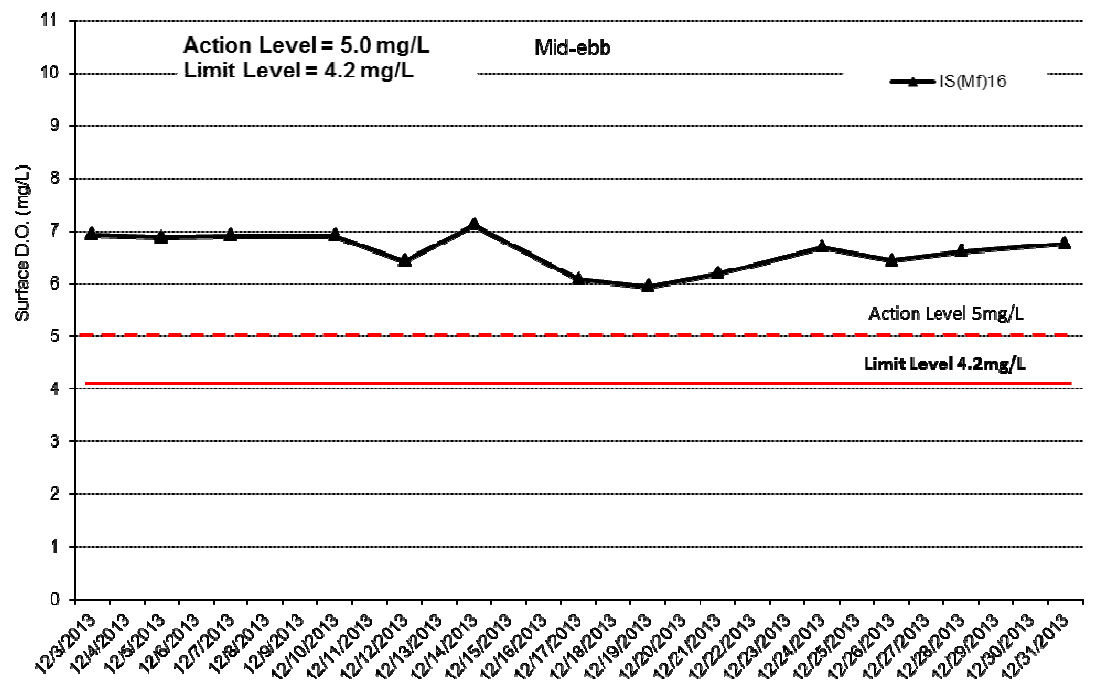


Figure J2 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in surface waters during mid-ebb tide between 1 to 31 December 2013 at IS(Mf)16 and IS(Mf)9.

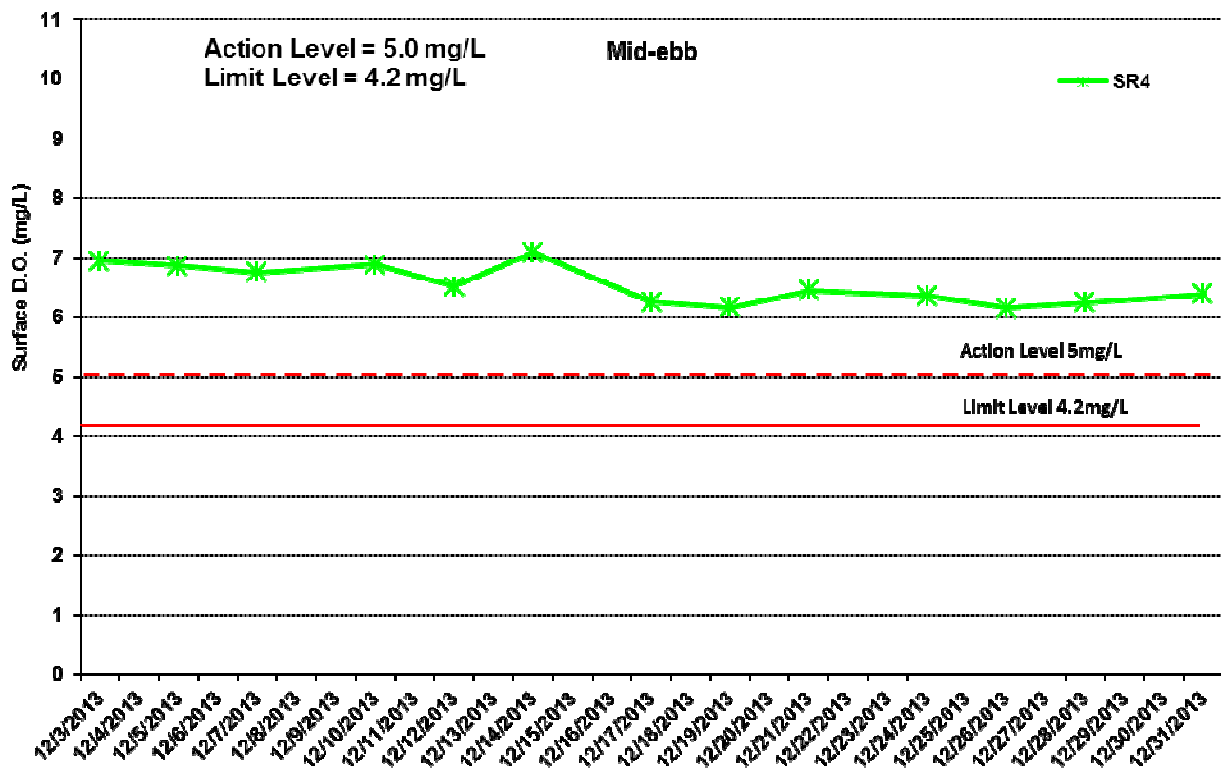
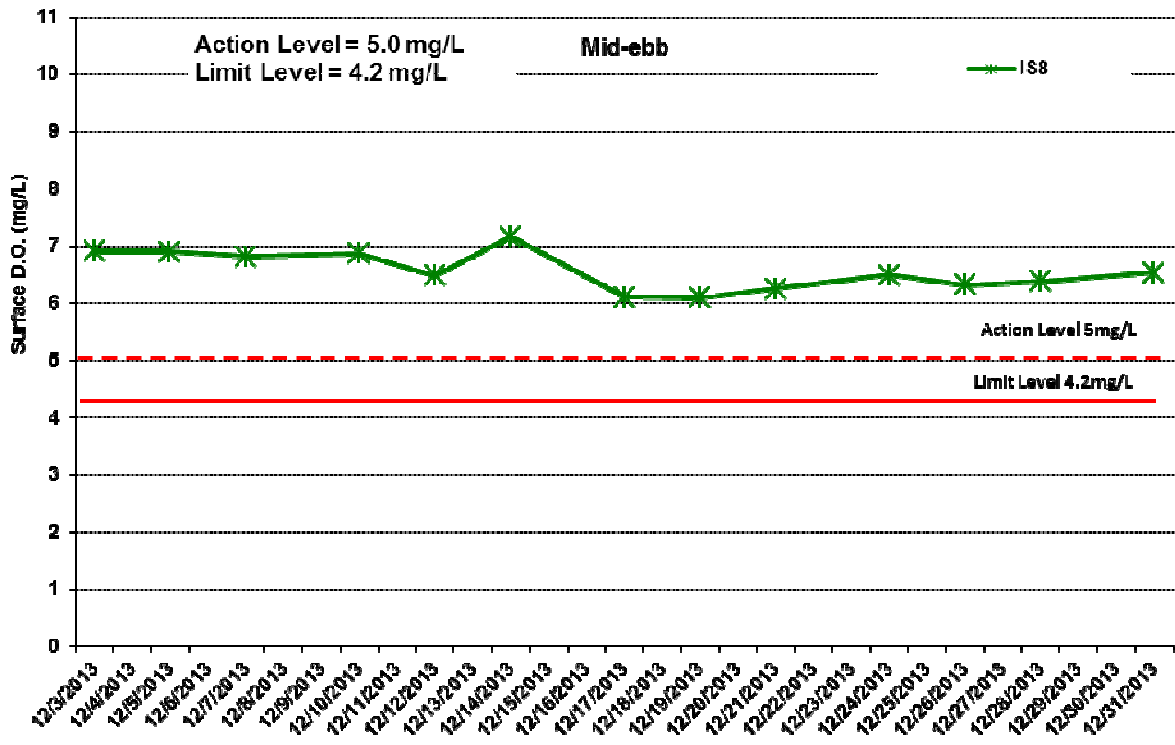


Figure J3 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in surface waters during mid-ebb tide between 1 to 31 December 2013 at IS8 and SR4.

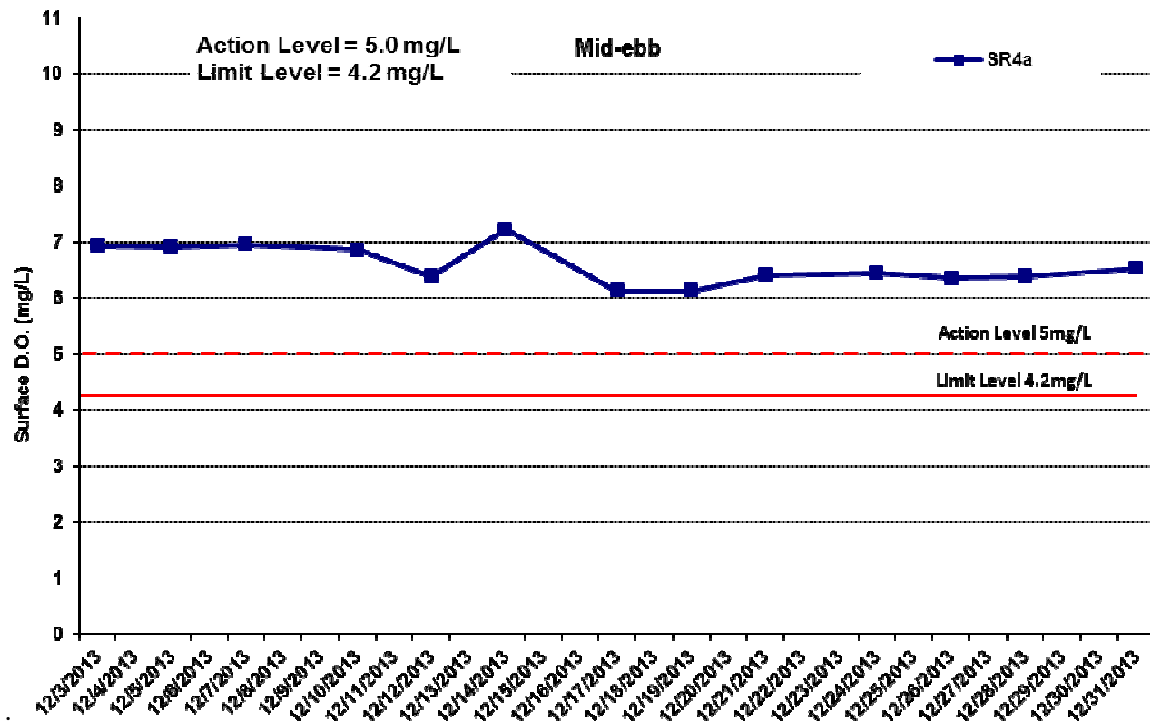


Figure J4 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in surface waters during mid-ebb tide between 1 to 31 December 2013 at SR4a.

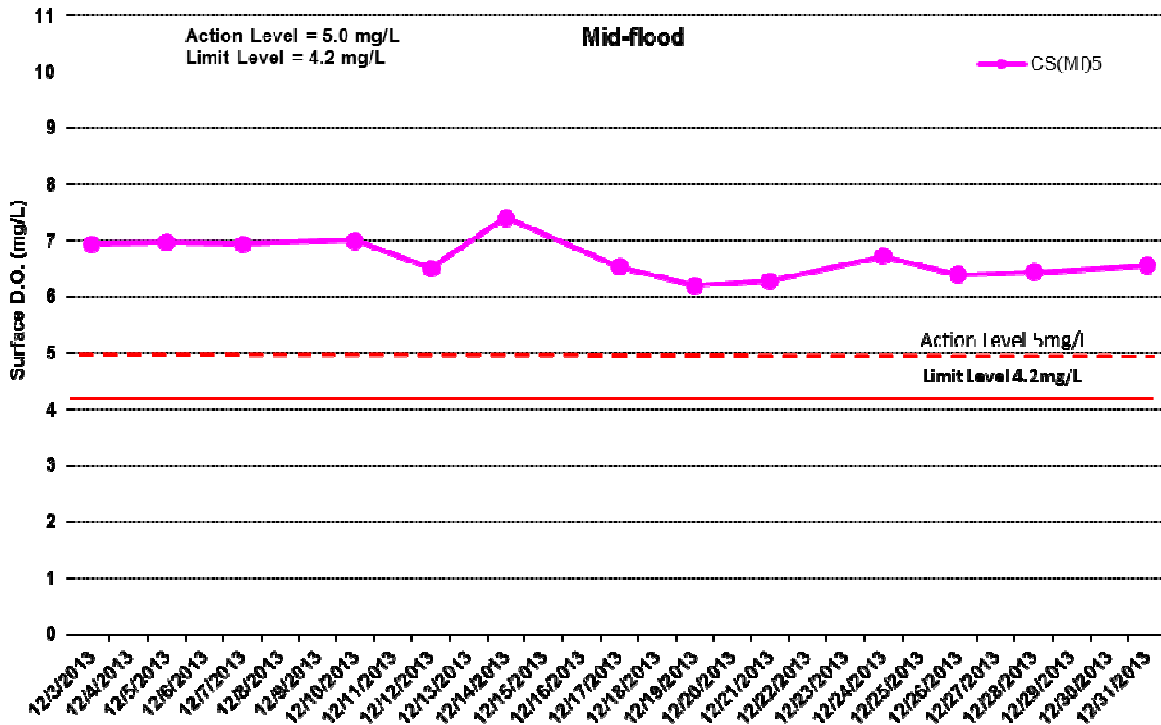
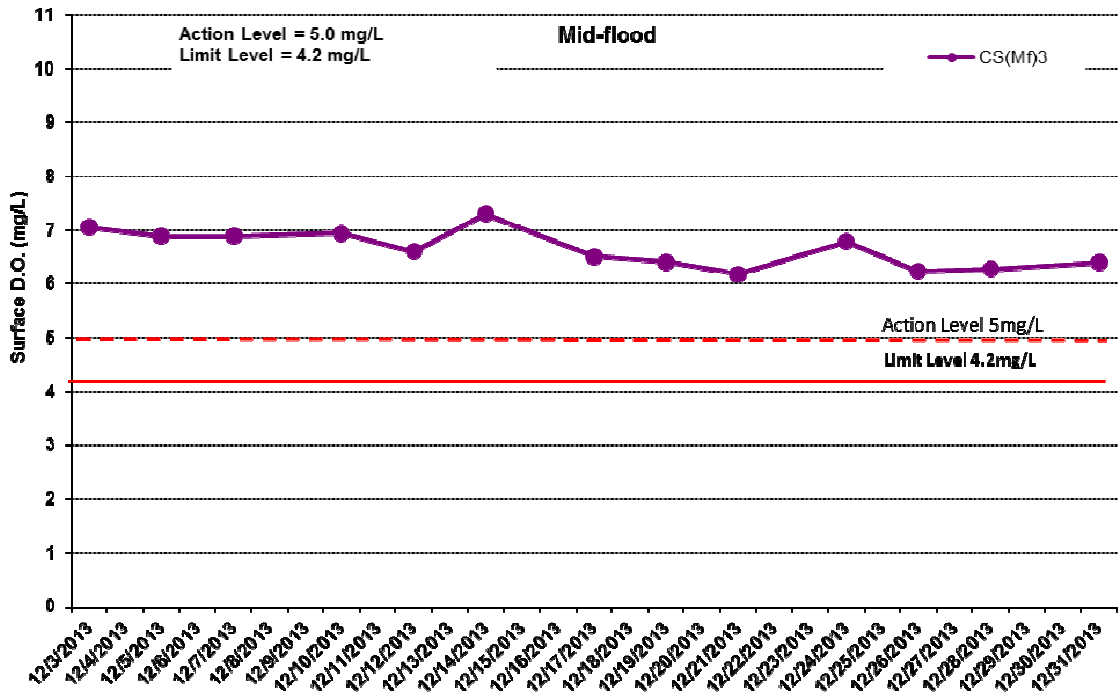


Figure J5 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in surface waters during mid-flood tide between 1 to 31 December 2013 at CS(Mf)3 and CS(Mf)5.

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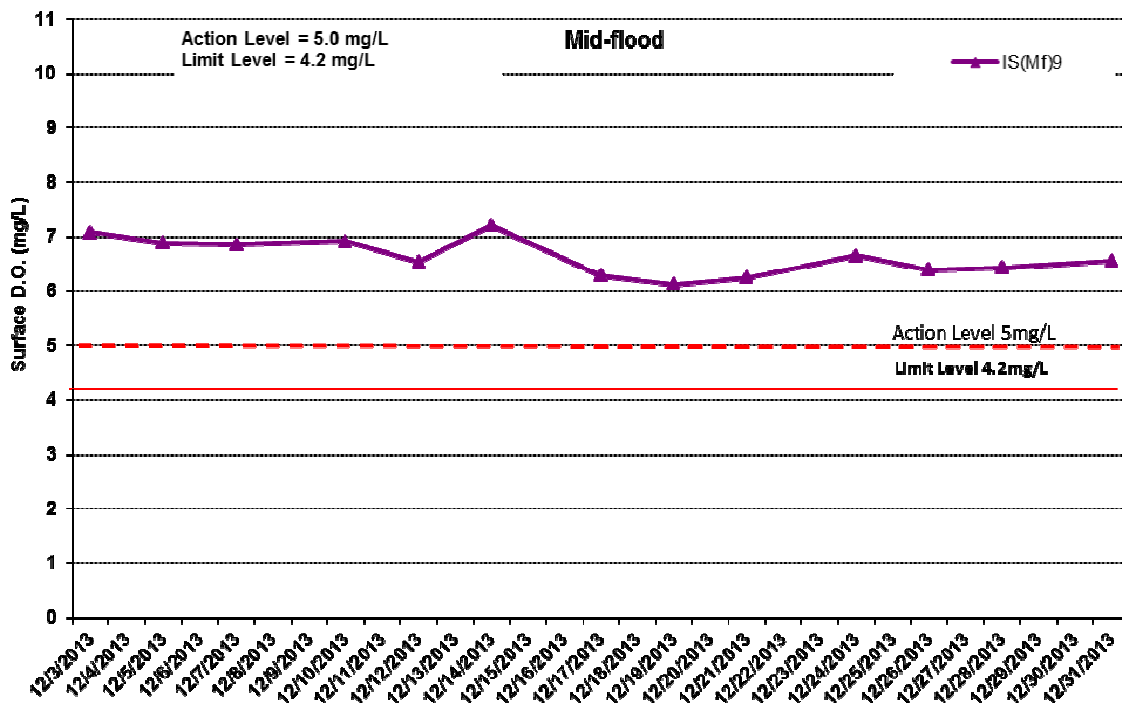
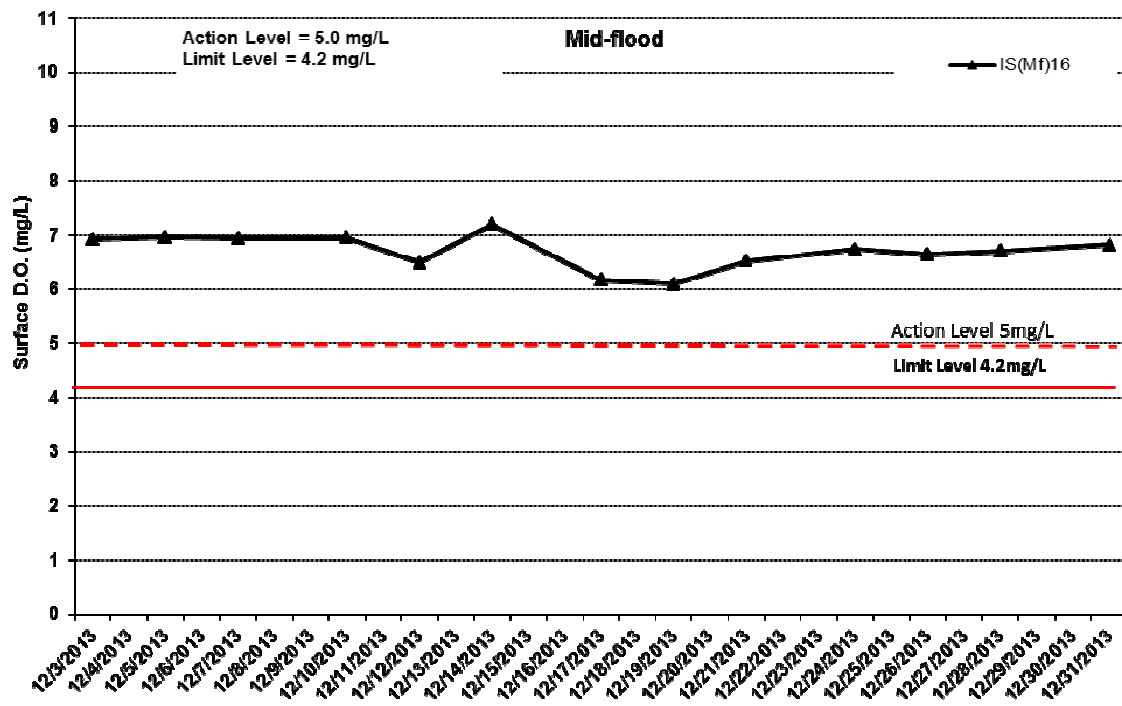


Figure J6 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in surface waters during mid-flood tide between 1 to 31 December 2013 at IS(Mf)16 and IS(Mf)9.

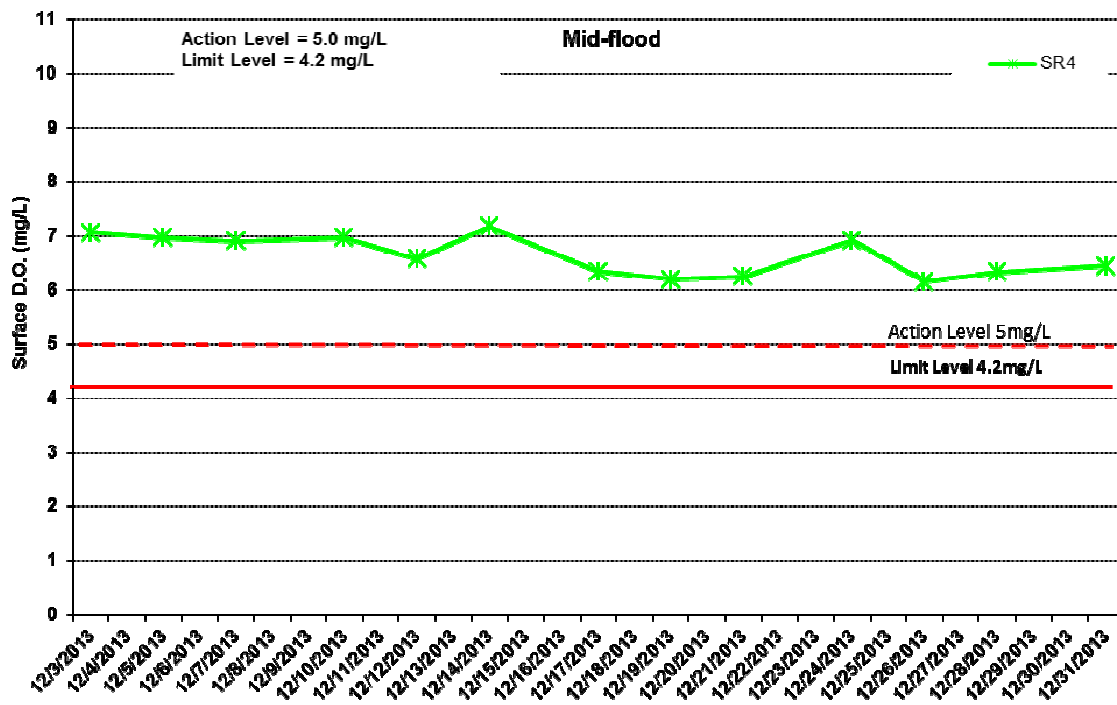
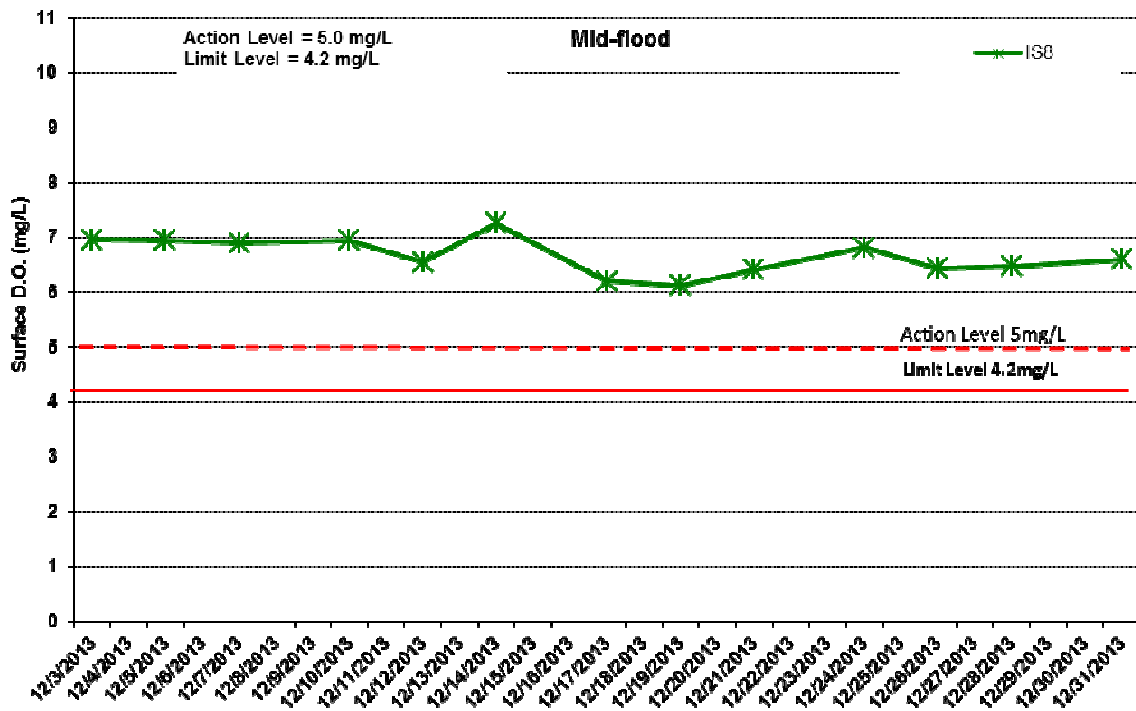


Figure J7 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in surface waters during mid-flood tide between 1 to 31 December 2013 at IS8 and SR4.

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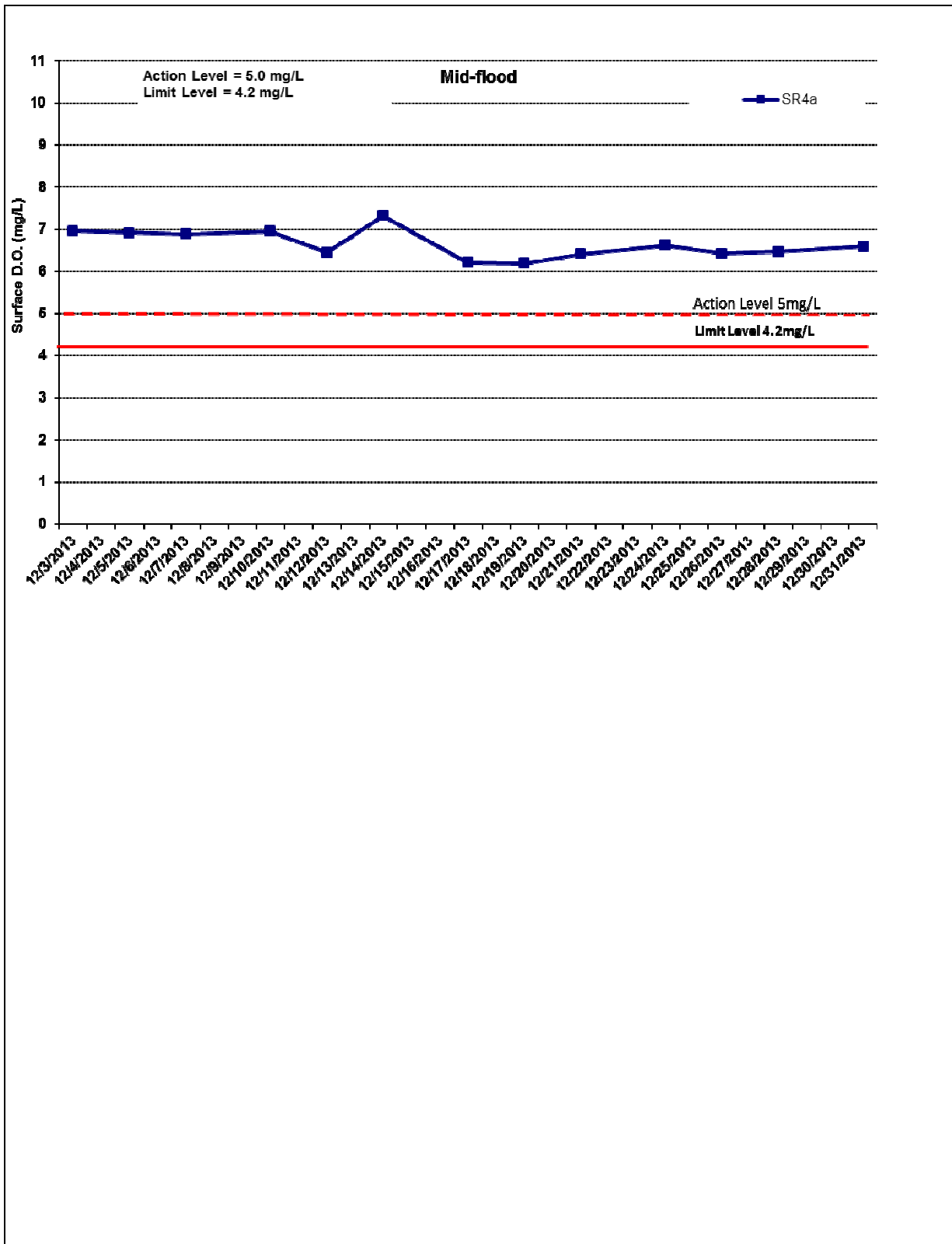


Figure J8 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in surface waters during mid-flood tide between 1 to 31 December 2013 at SR4a.

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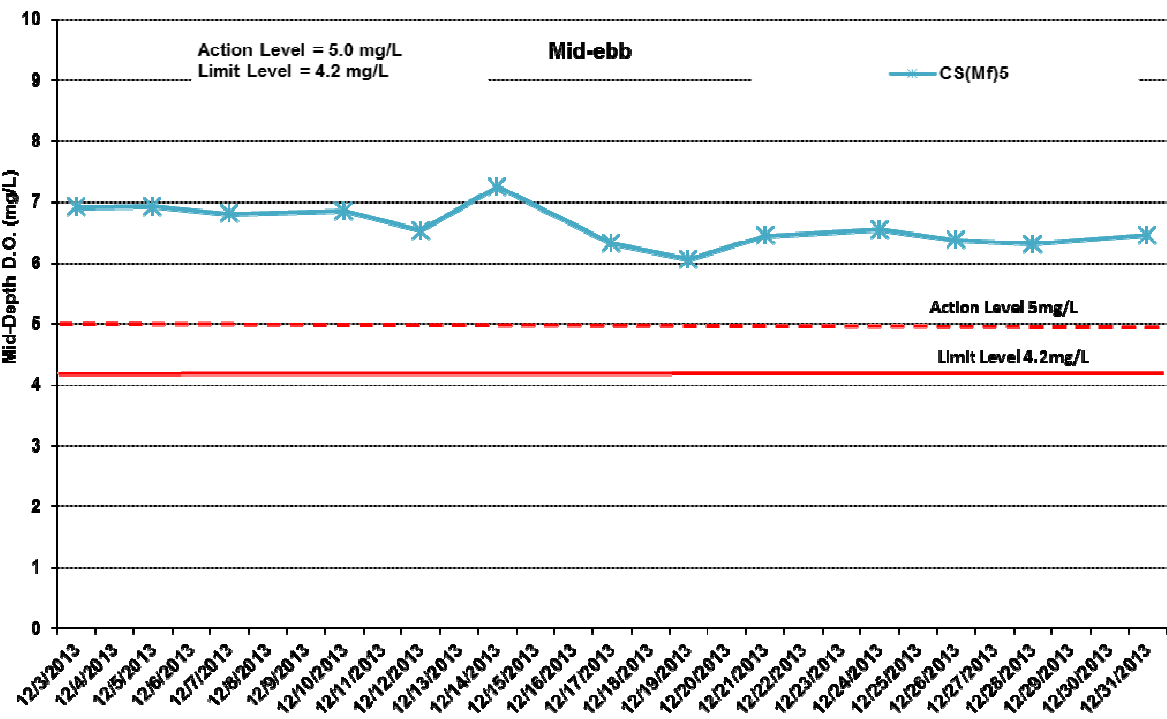
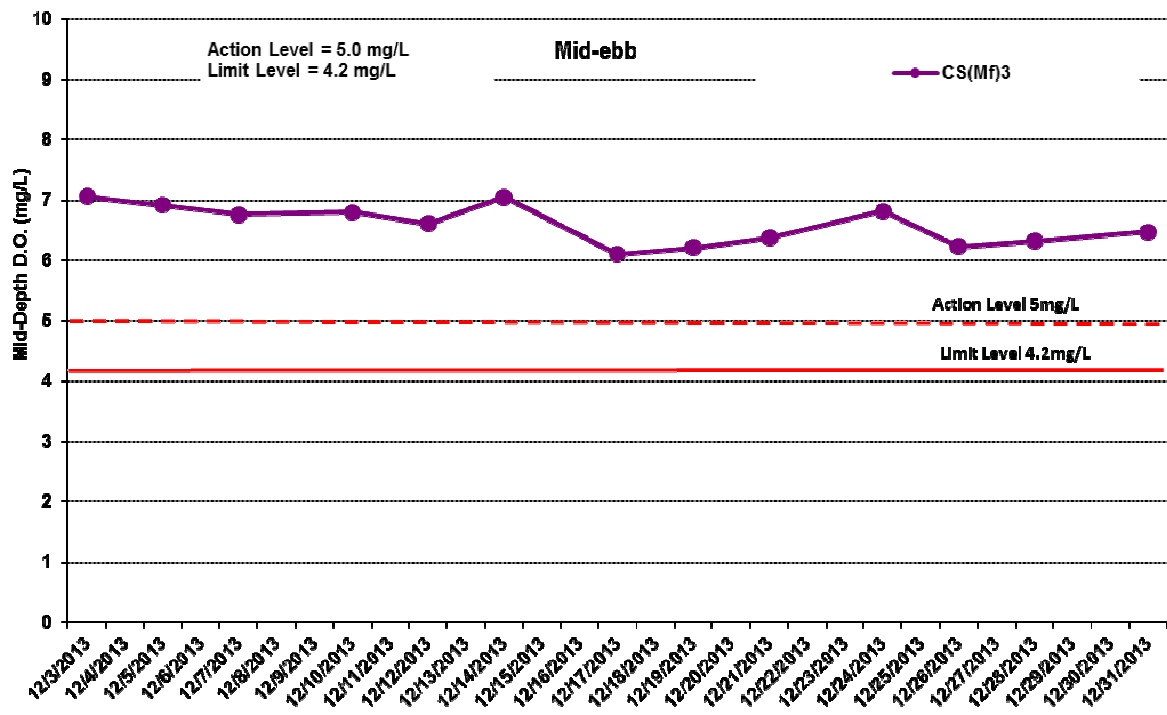


Figure J9 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in mid-depth waters during mid-ebb tide between 1 to 31 December 2013 at CS(Mf)3 and IS(Mf)5.



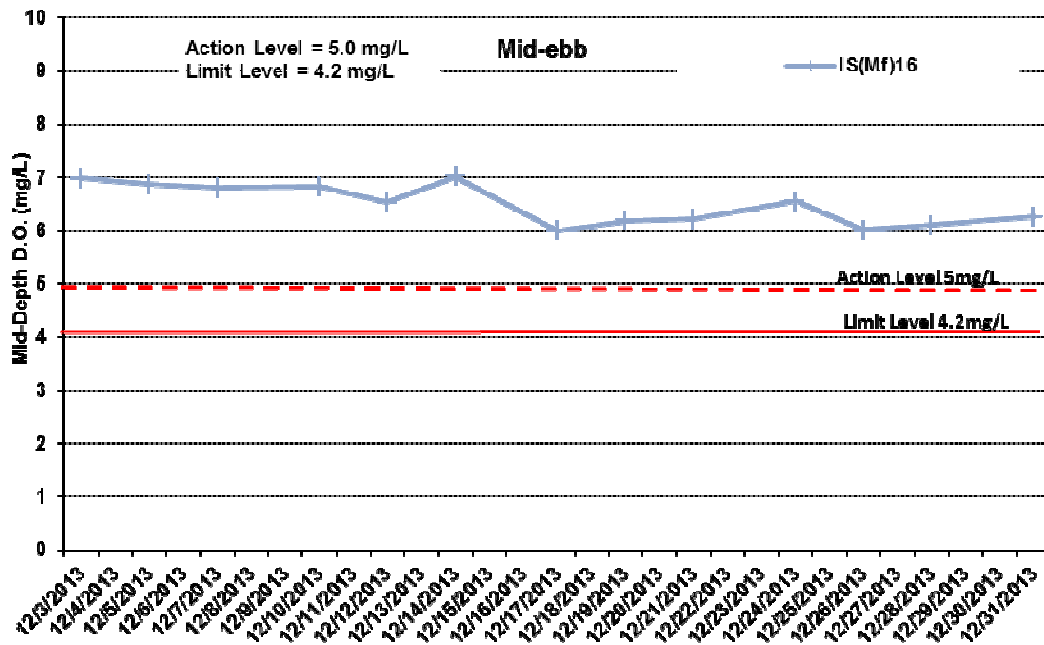


Figure J10 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in mid-depth waters during mid-ebb tide between 1 to 31 December 2013 at IS(Mf)16.

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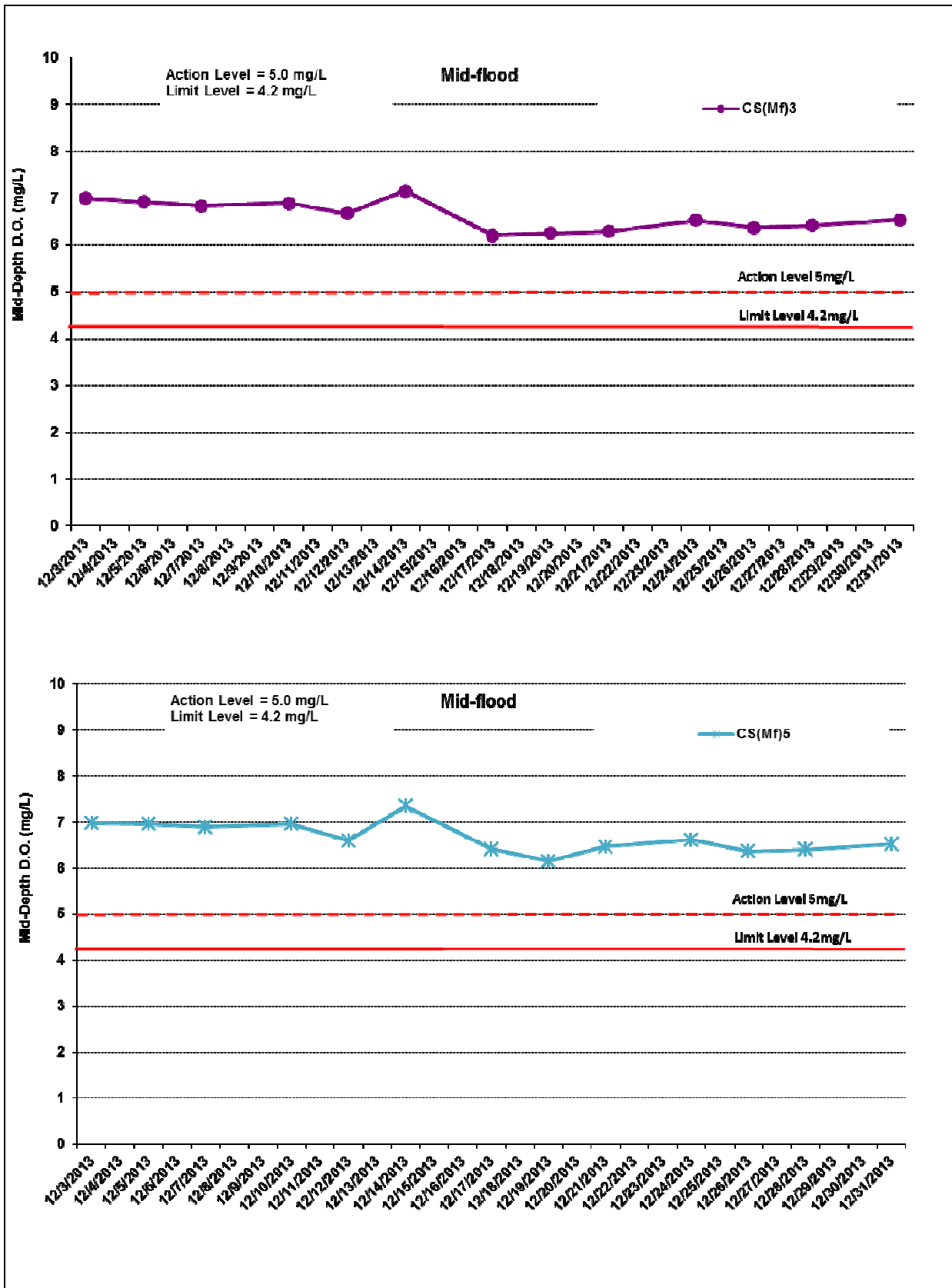


Figure J11 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in mid-depth waters during mid-flood tide between 1 to 31 December 2013 at CS(Mf)3 and IS(Mf)5.



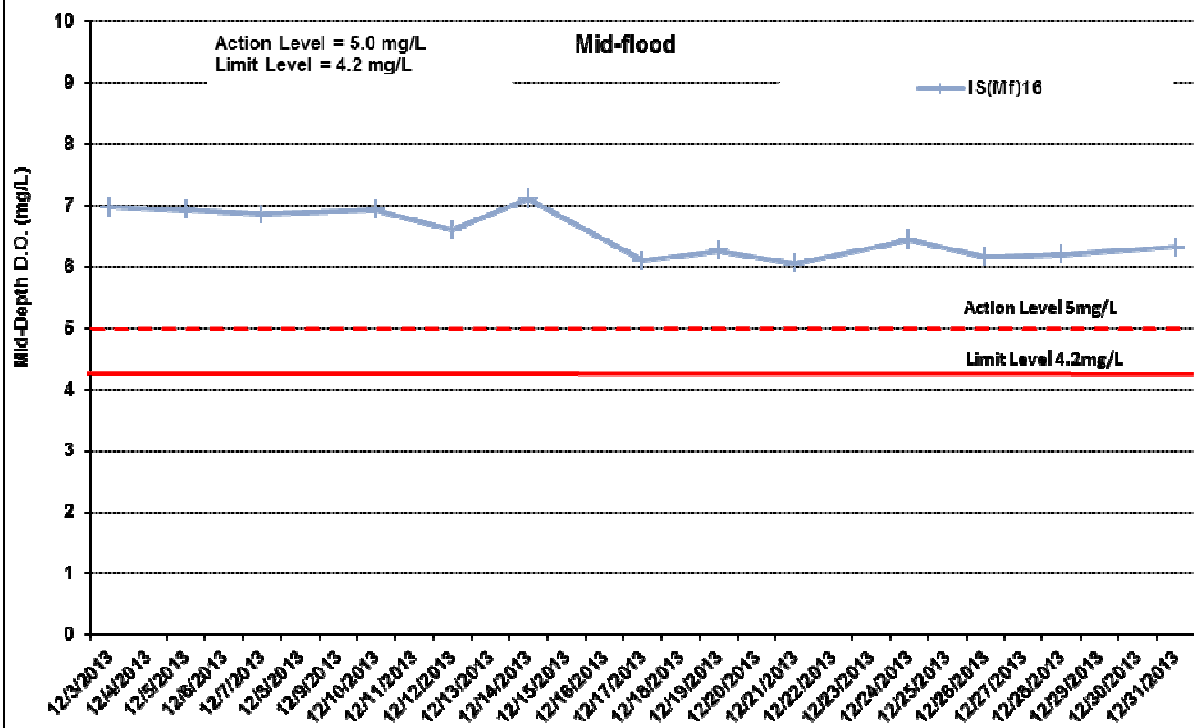


Figure J12 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in mid-depth waters during mid-flood tide between 1 to 31 December 2013 at IS(Mf)16.

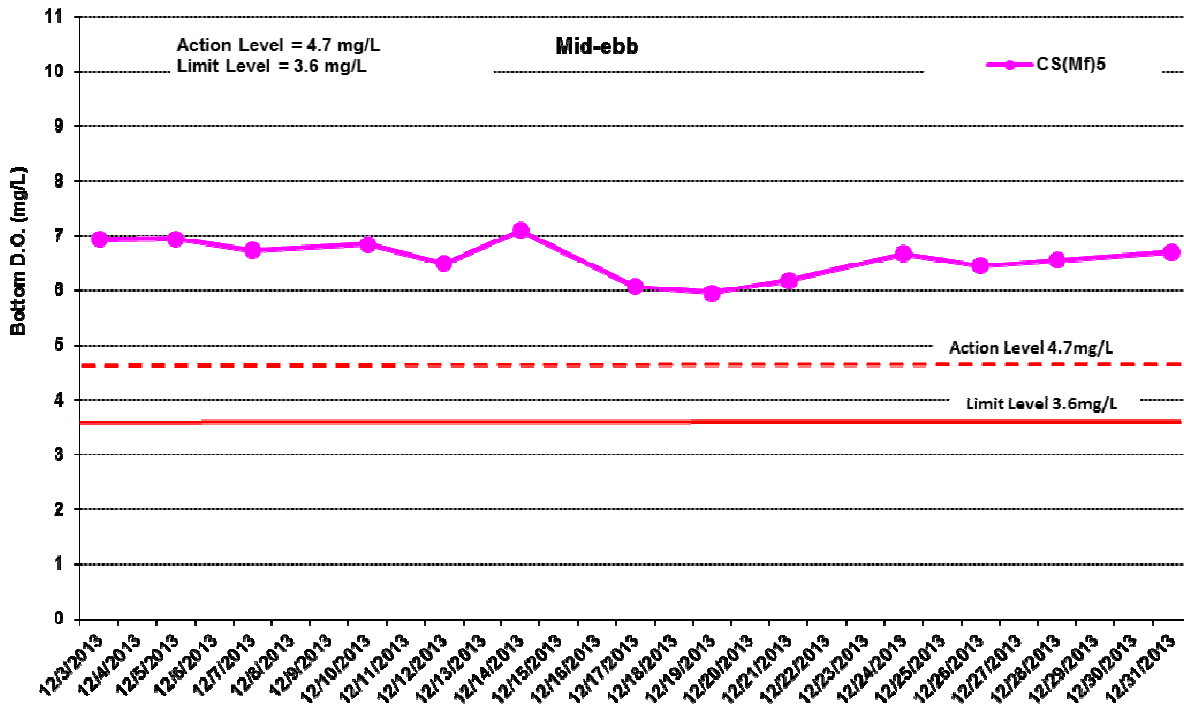
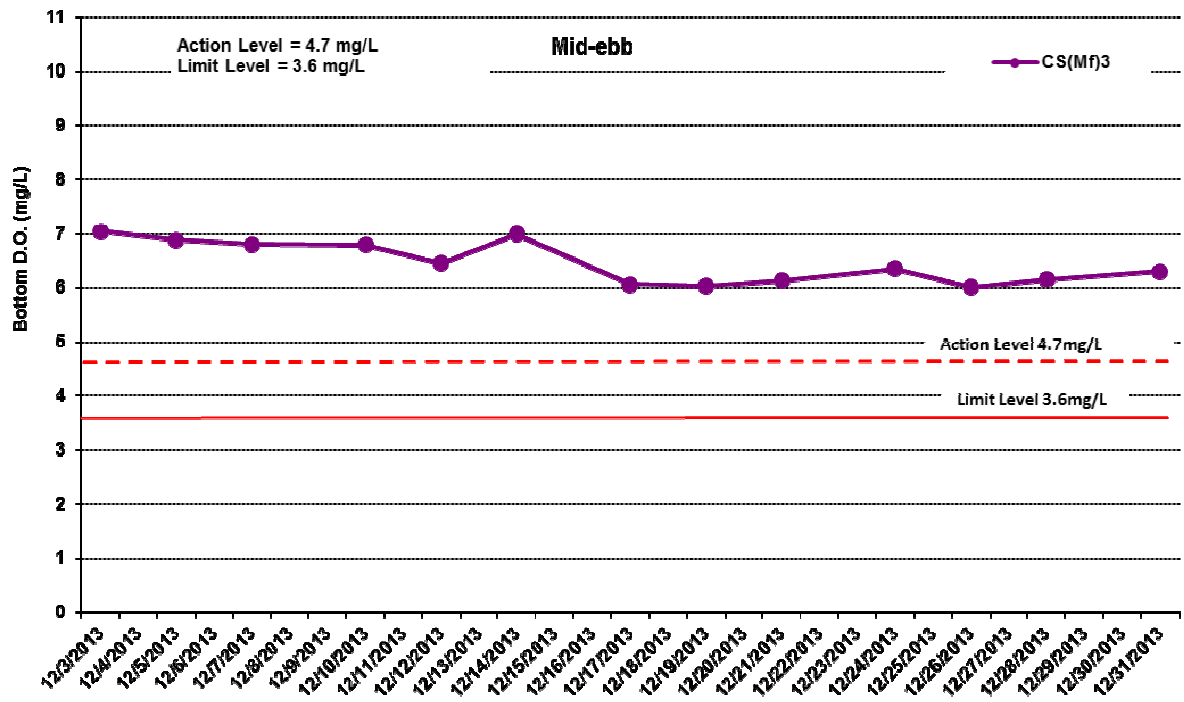


Figure J13 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in bottom waters during mid-ebb tide between 1 to 31 December 2013 at CS(Mf)3 and CS(Mf)5.

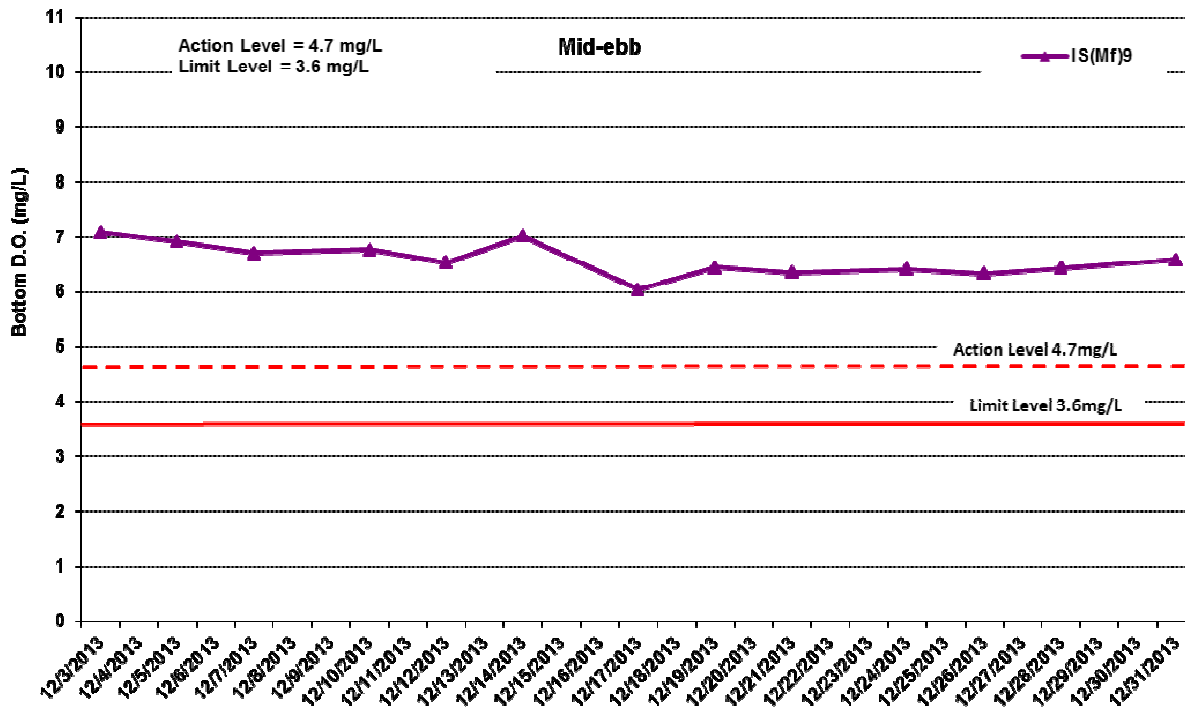
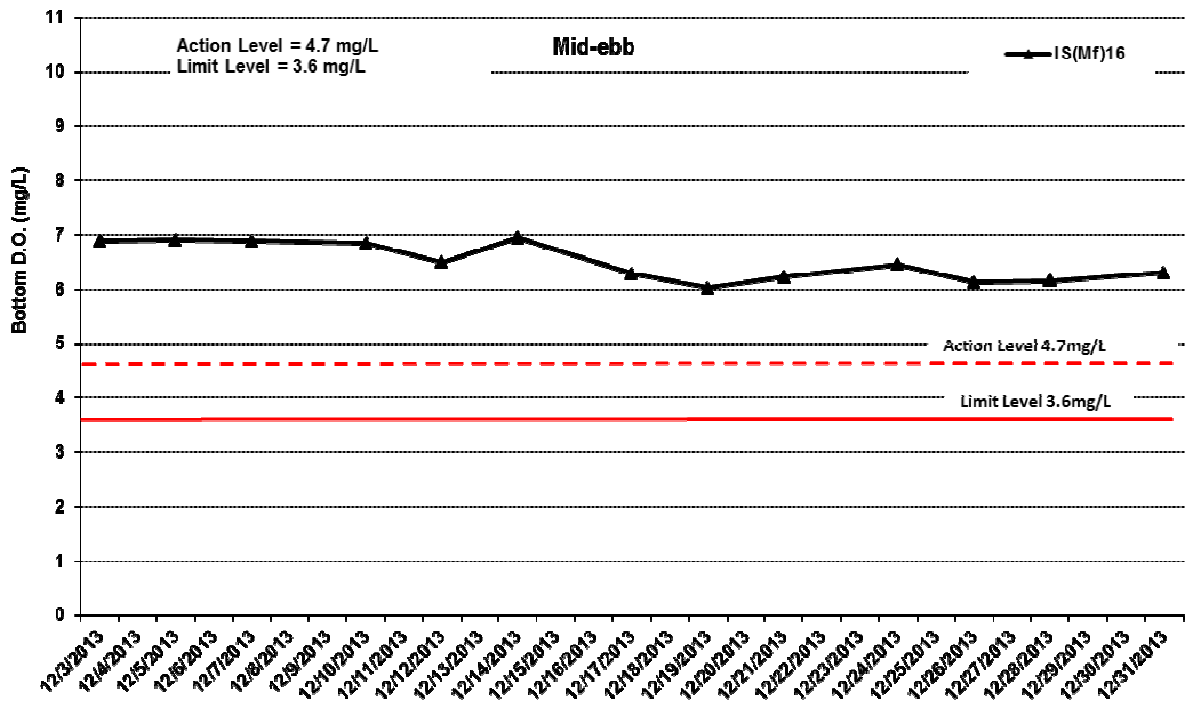


Figure J14 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in bottom waters during mid-ebb tide between 1 to 31 December 2013 at IS(Mf)16 and IS(Mf)9.



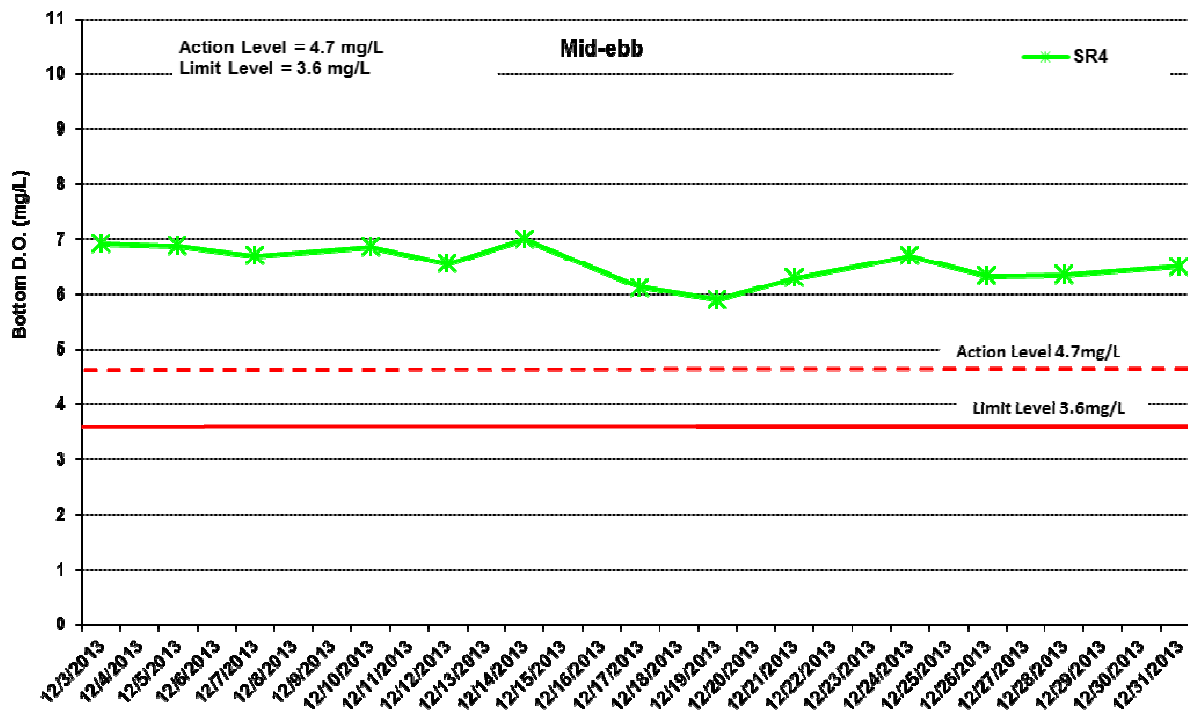
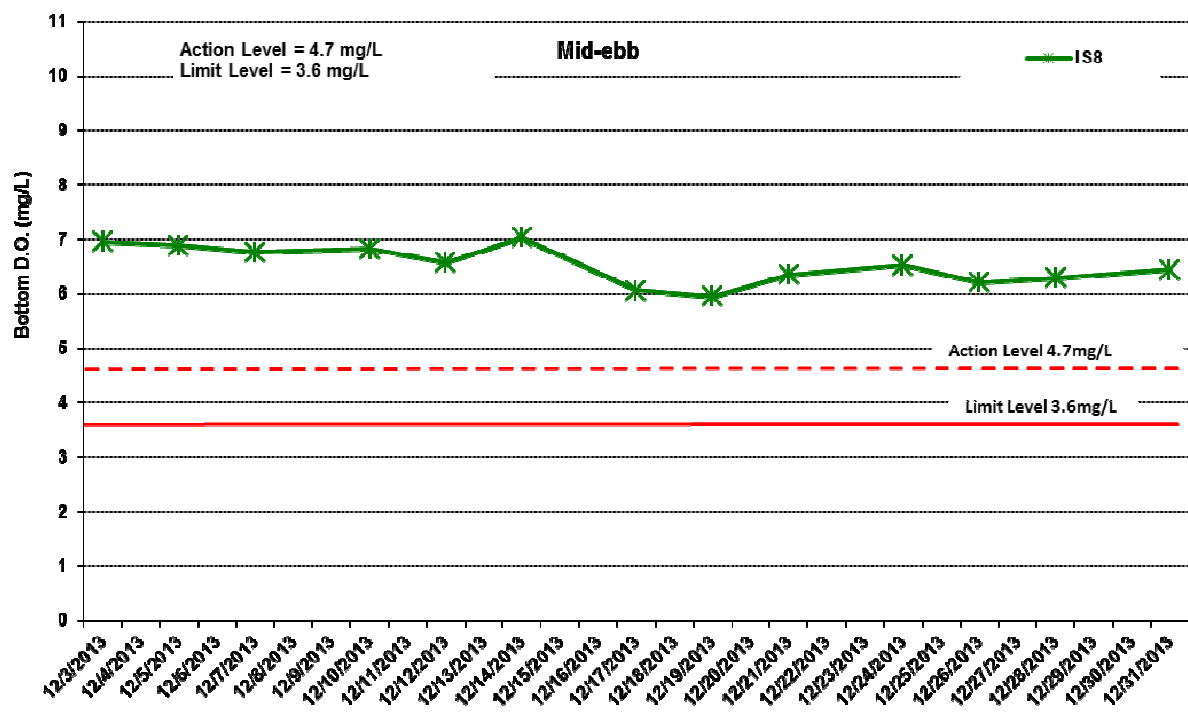


Figure J15 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in bottom waters during mid-ebb tide between 1 to December 2013 at IS8 and SR4.

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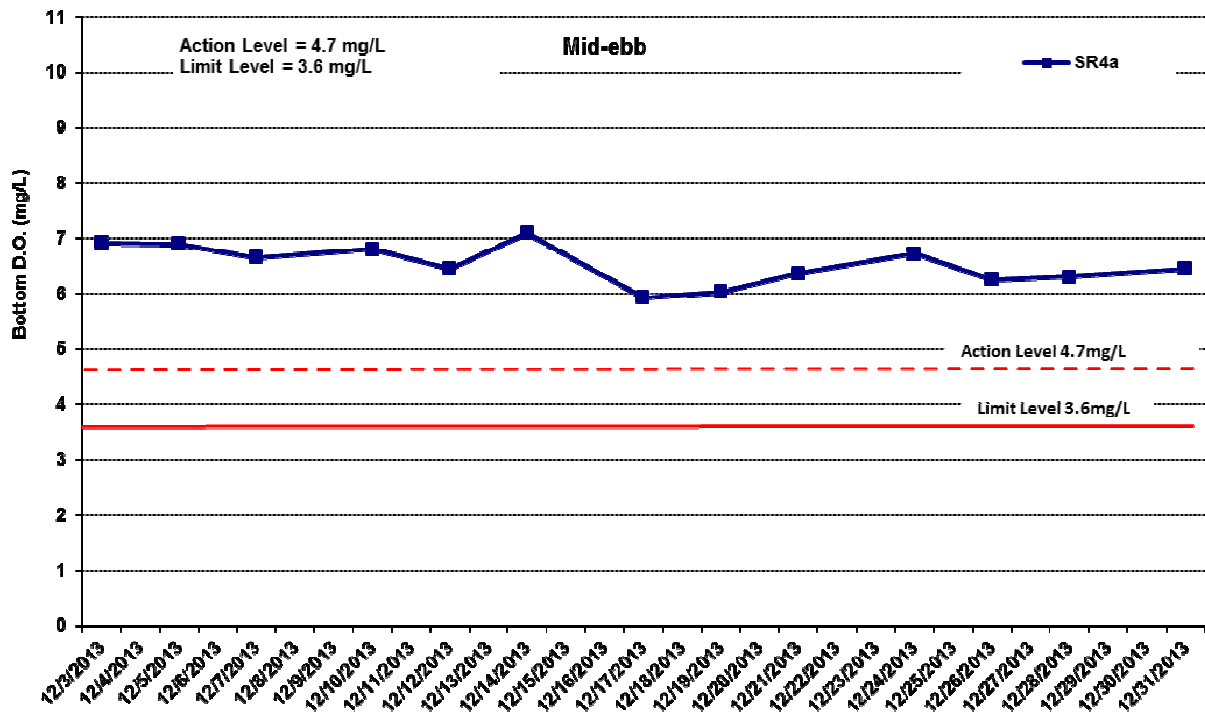


Figure J16 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in bottom waters during mid-ebb tide between 1 to 31 December 2013 at SR4a.

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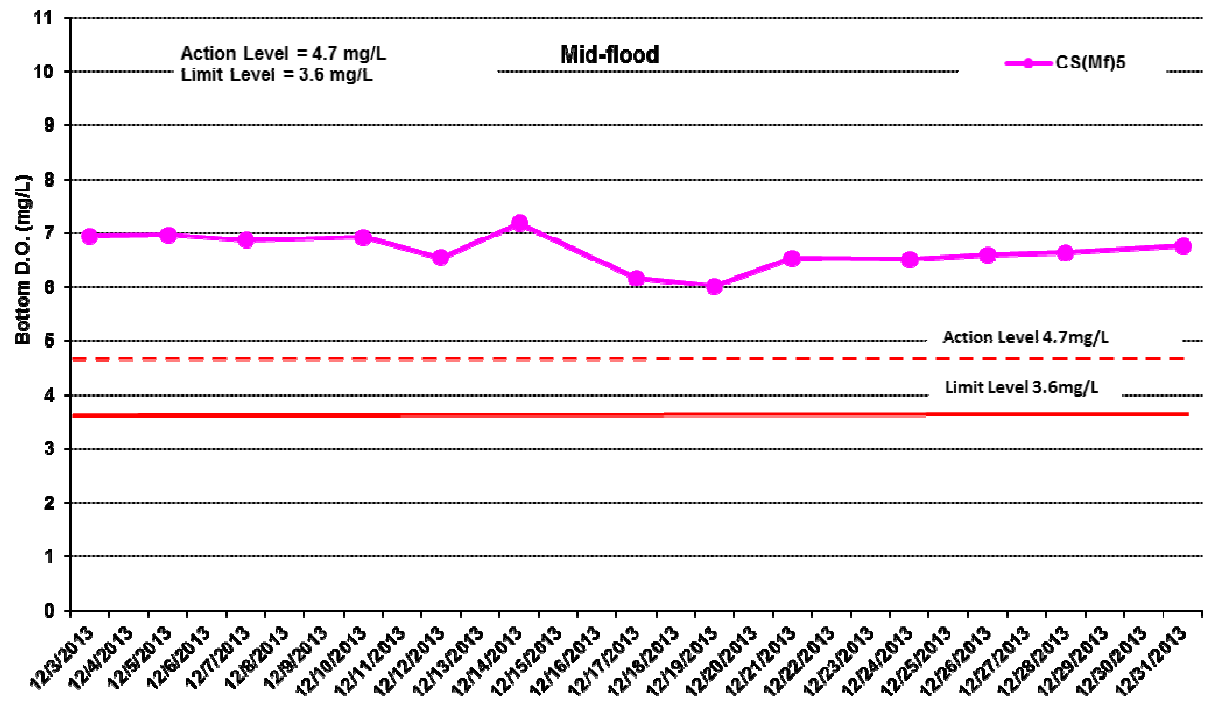
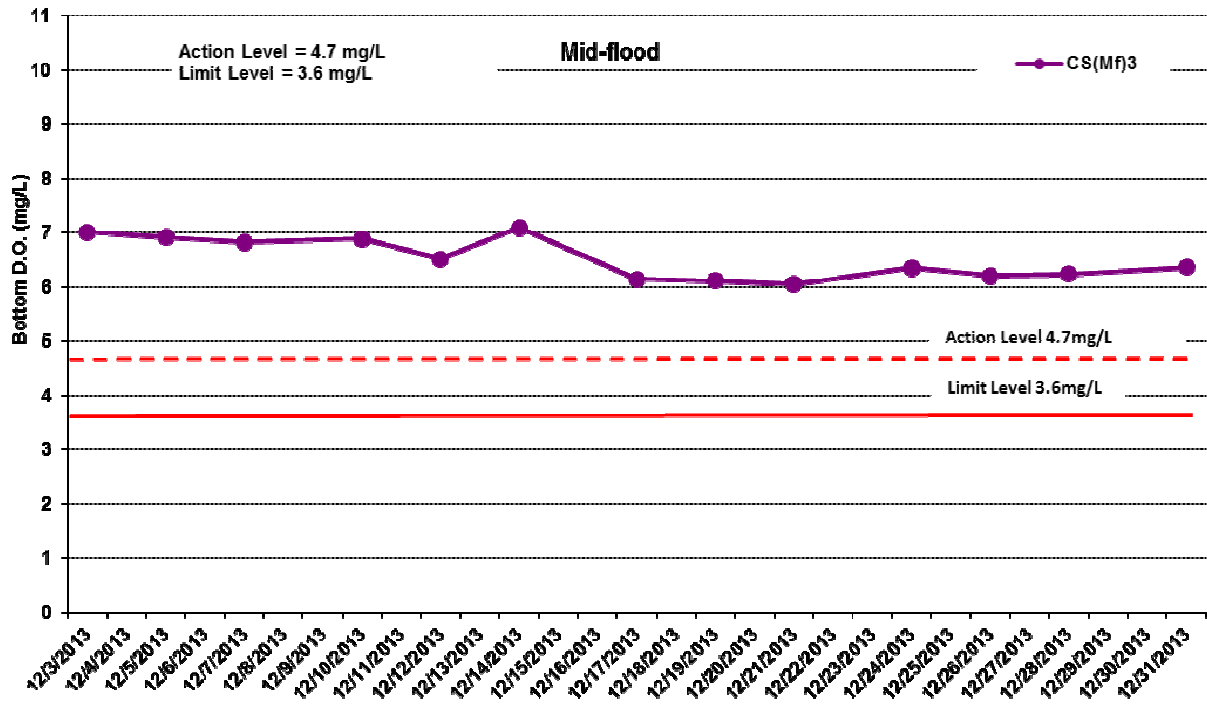


Figure J17 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in bottom waters during mid-flood tide between 1 to 31 December 2013 at CS(Mf)3 and CS(Mf)5.



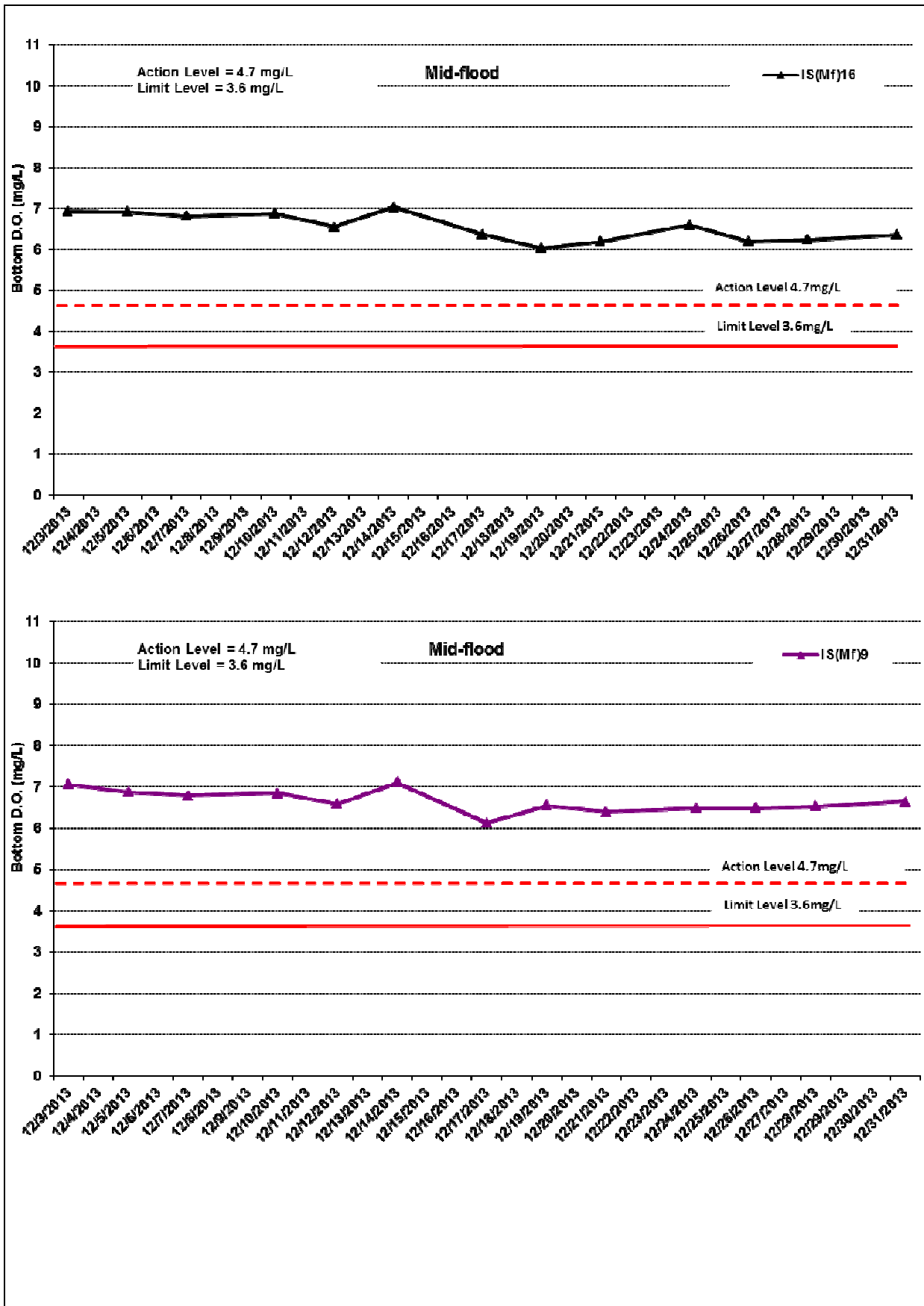


Figure J18 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in bottom waters during mid-flood tide between 1 to 31 December 2013 at IS(Mf)16 and IS(Mf)9.

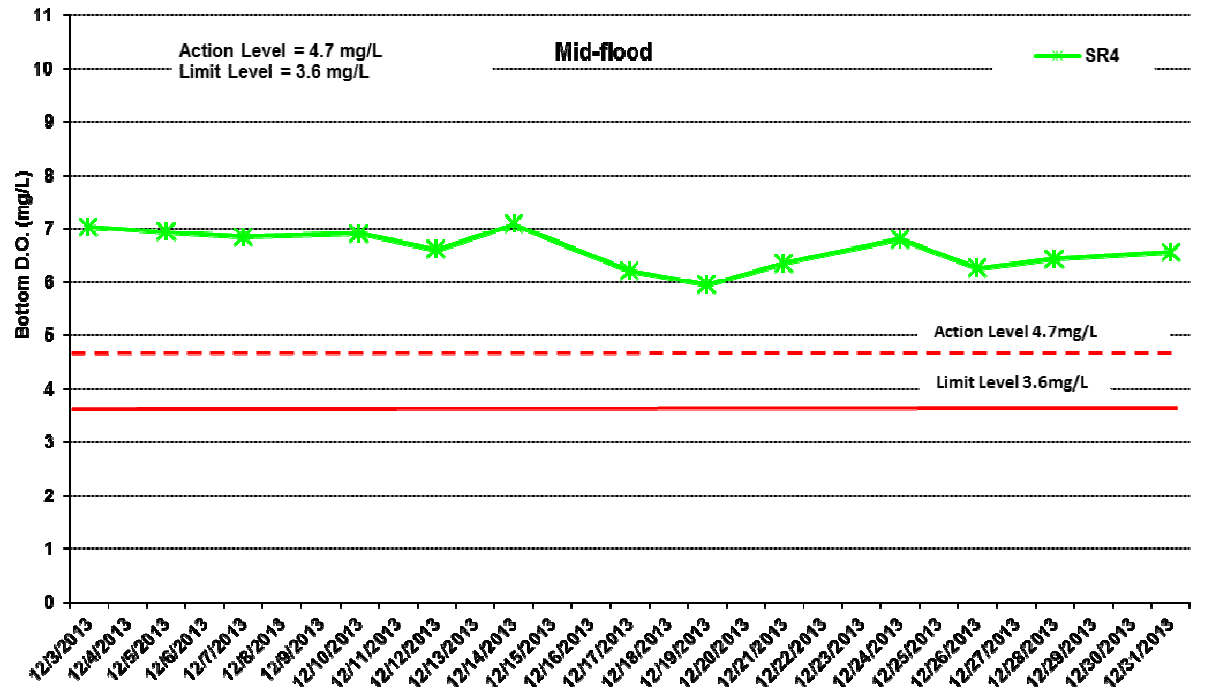
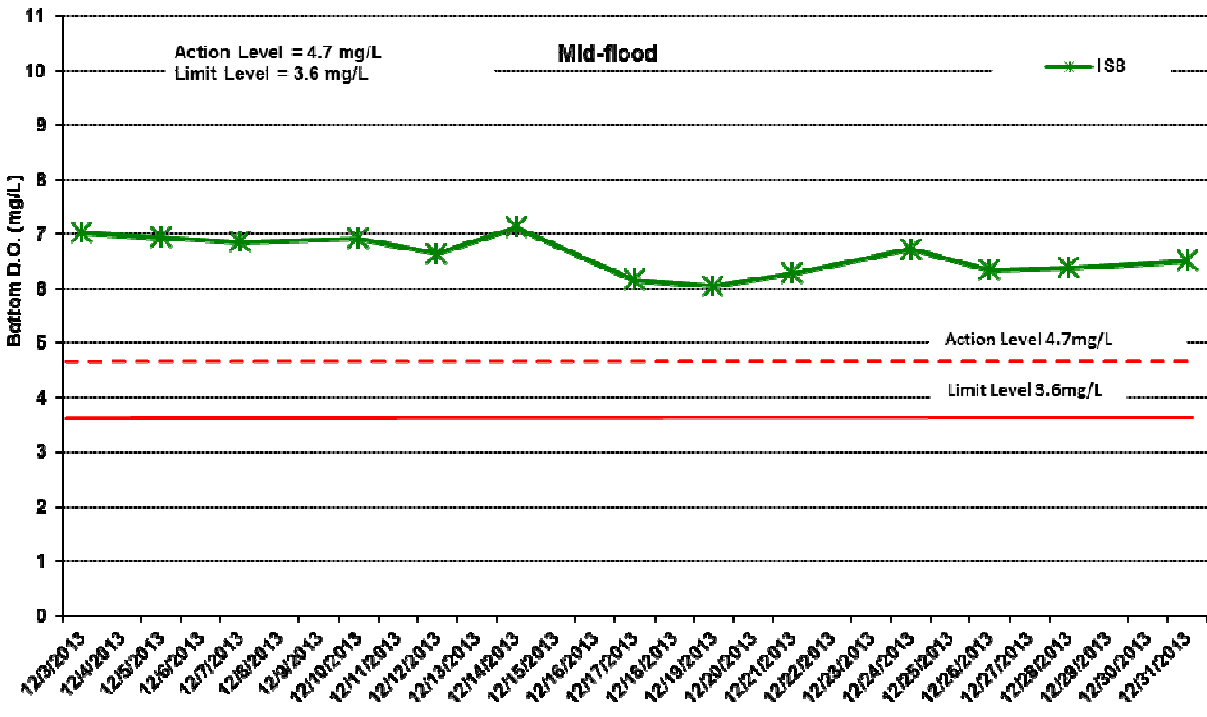


Figure J19 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in bottom waters during mid-flood tide between 1 to 31 December 2013 at IS8 and SR4.

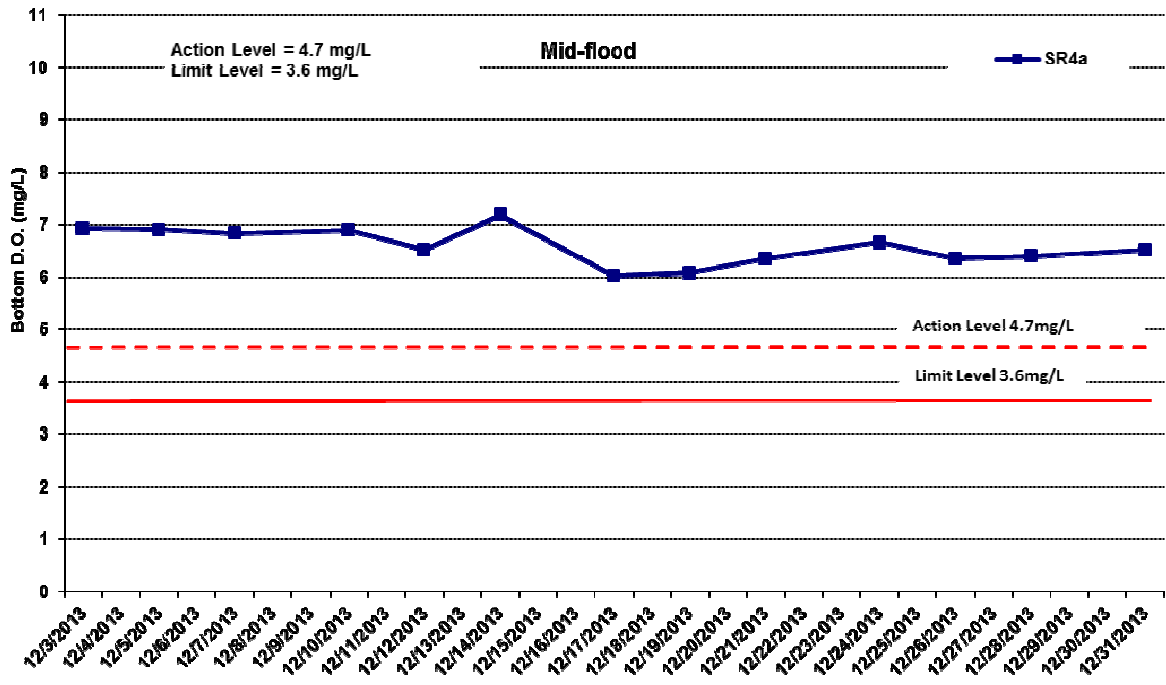


Figure J20 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in bottom waters during mid-flood tide between 1 to 31 December 2013 at SR4a.

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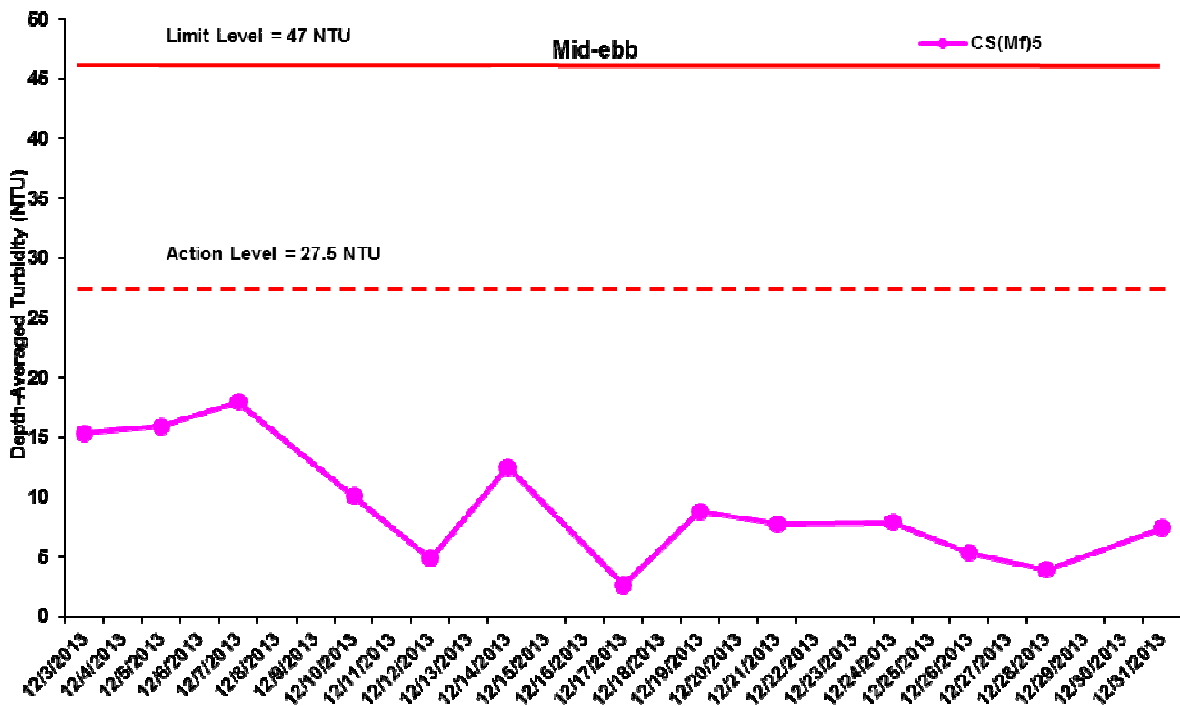
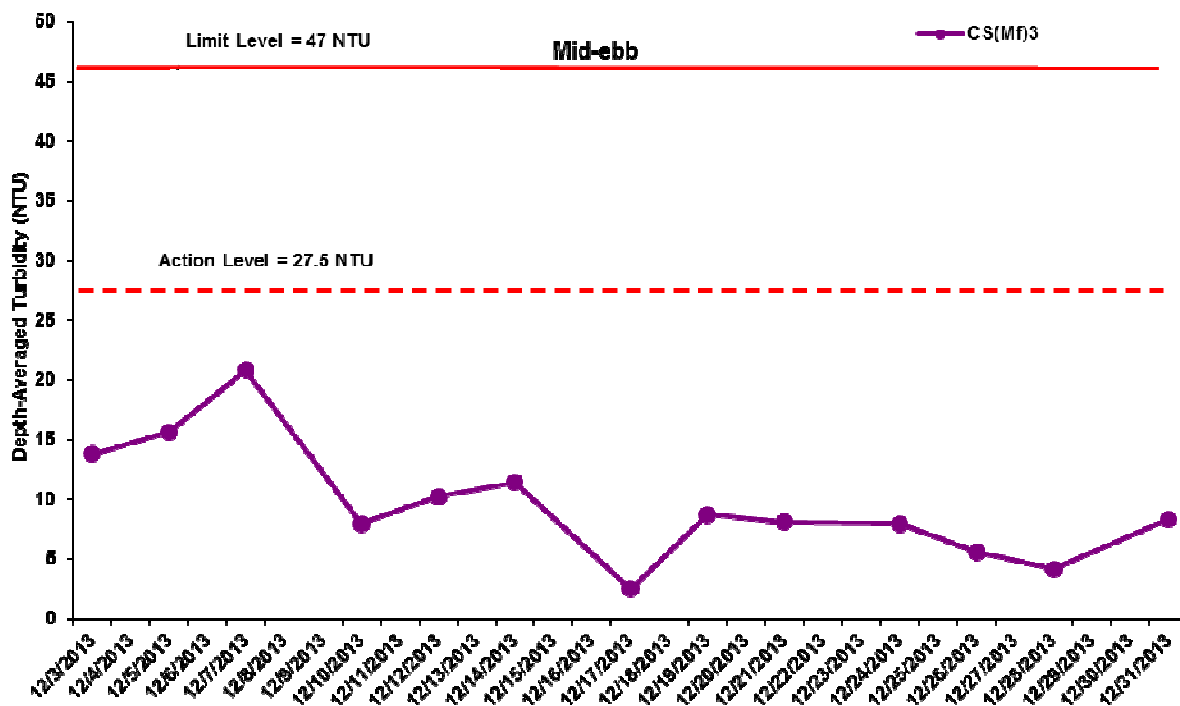


Figure J21 Impact Monitoring – Mean Level of depth-averaged Turbidity (NTU) during mid-ebb tide between 1 to 31 December 2013 at CS(Mf)3 and CS(Mf)5.

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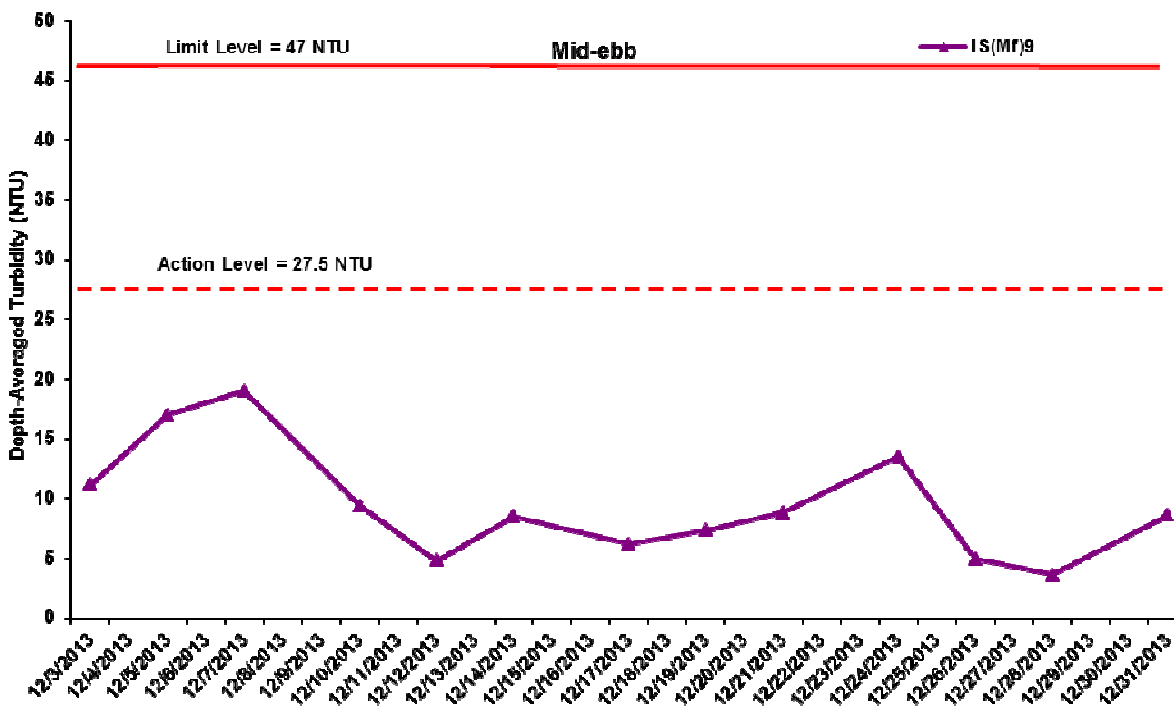
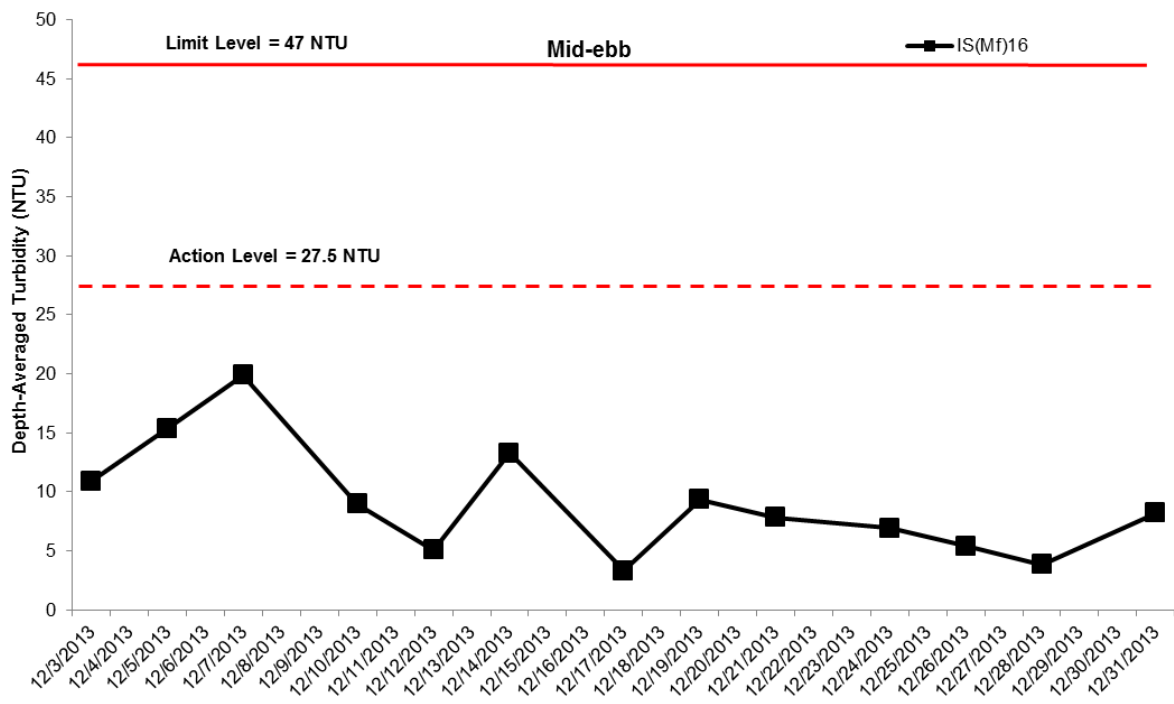


Figure J22 Impact Monitoring – Mean Level of depth-averaged Turbidity (NTU) during mid-ebb tide between 1 to 31 December 2013 at IS(Mf)16 and IS(Mf)9.



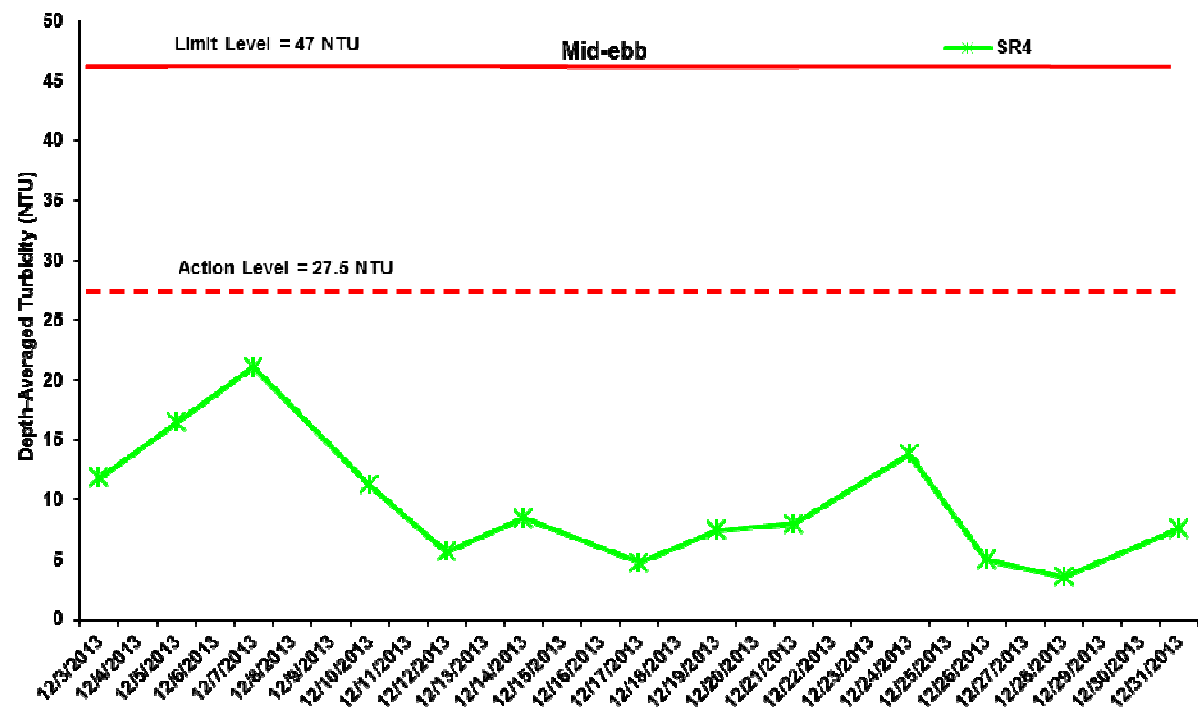
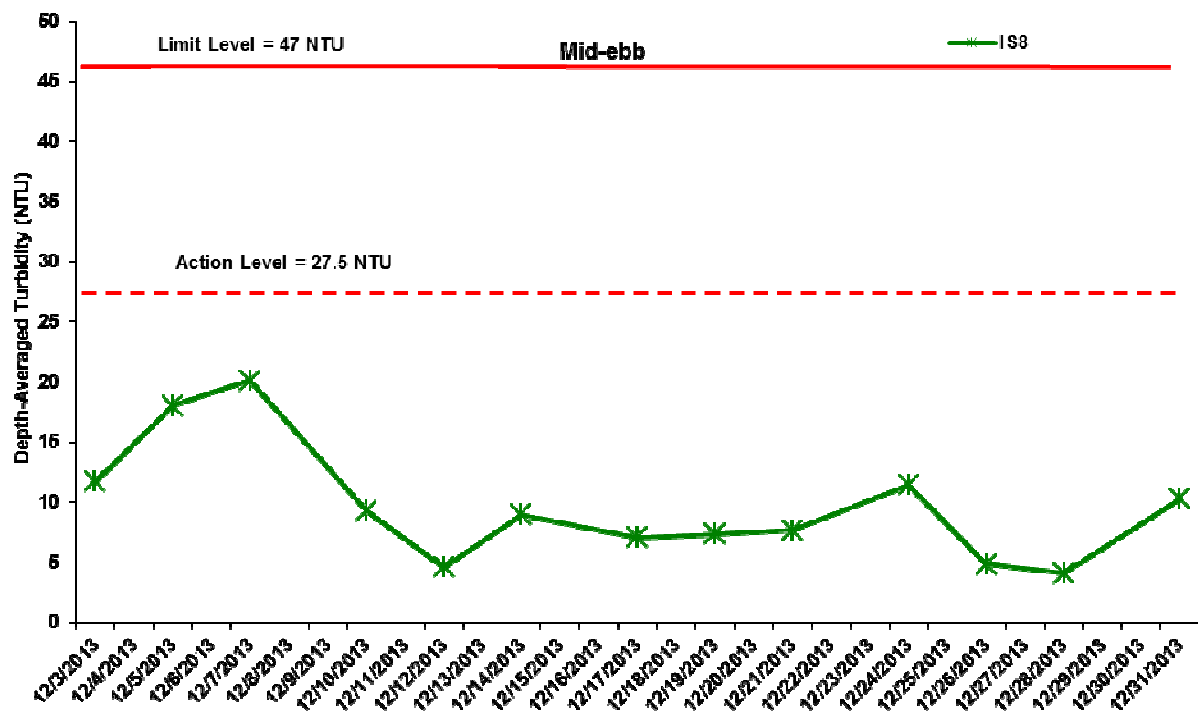


Figure J23 Impact Monitoring – Mean Level of depth-averaged Turbidity (NTU) during mid-ebb tide between 1 to 31 December 2013 at IS8 and SR4.

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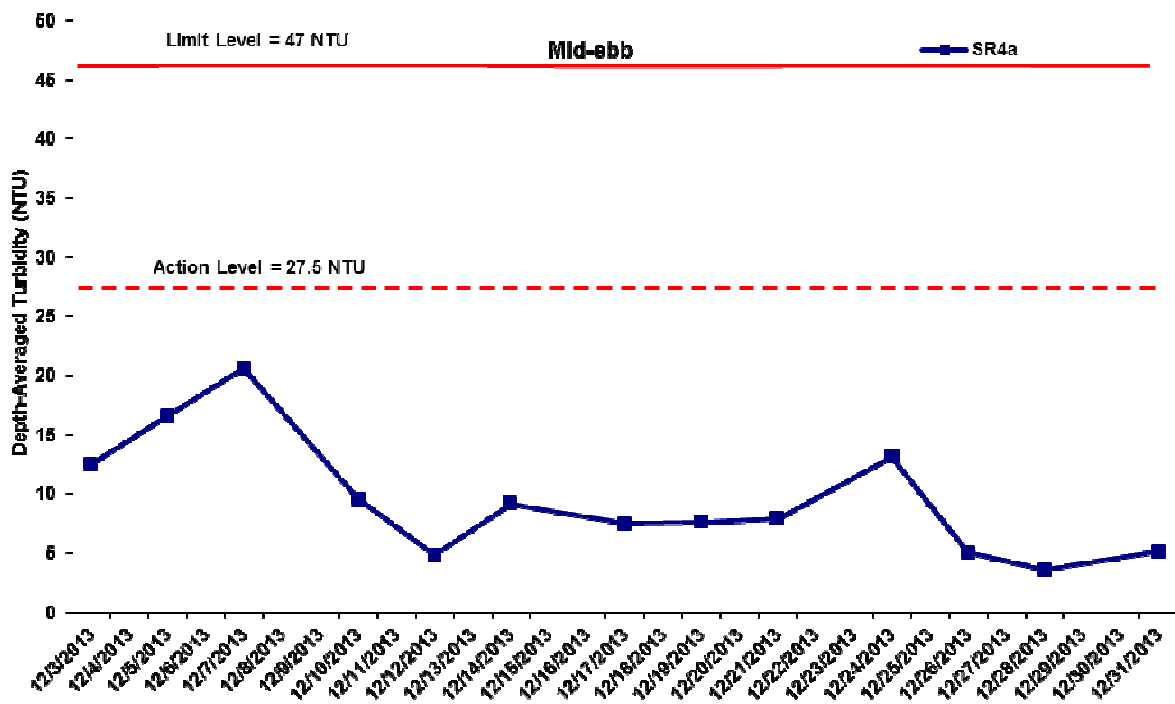


Figure J24 Impact Monitoring – Mean Level of depth-averaged Turbidity (NTU) during mid-ebb tide between 1 to 31 December 2013 at SR4a.

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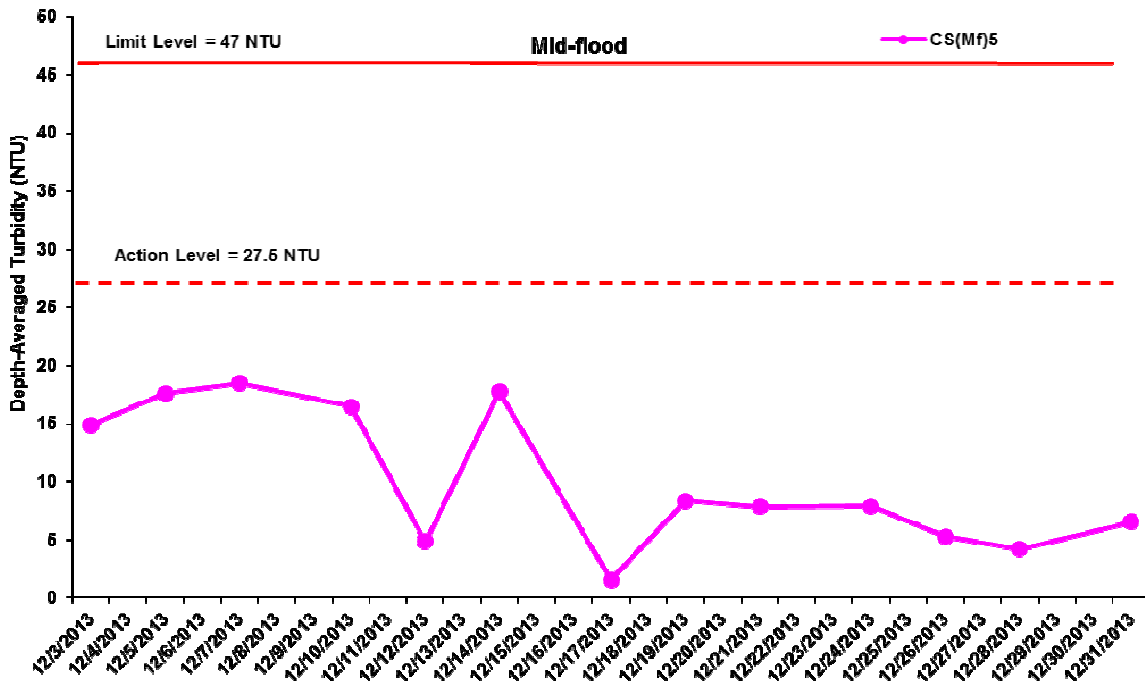
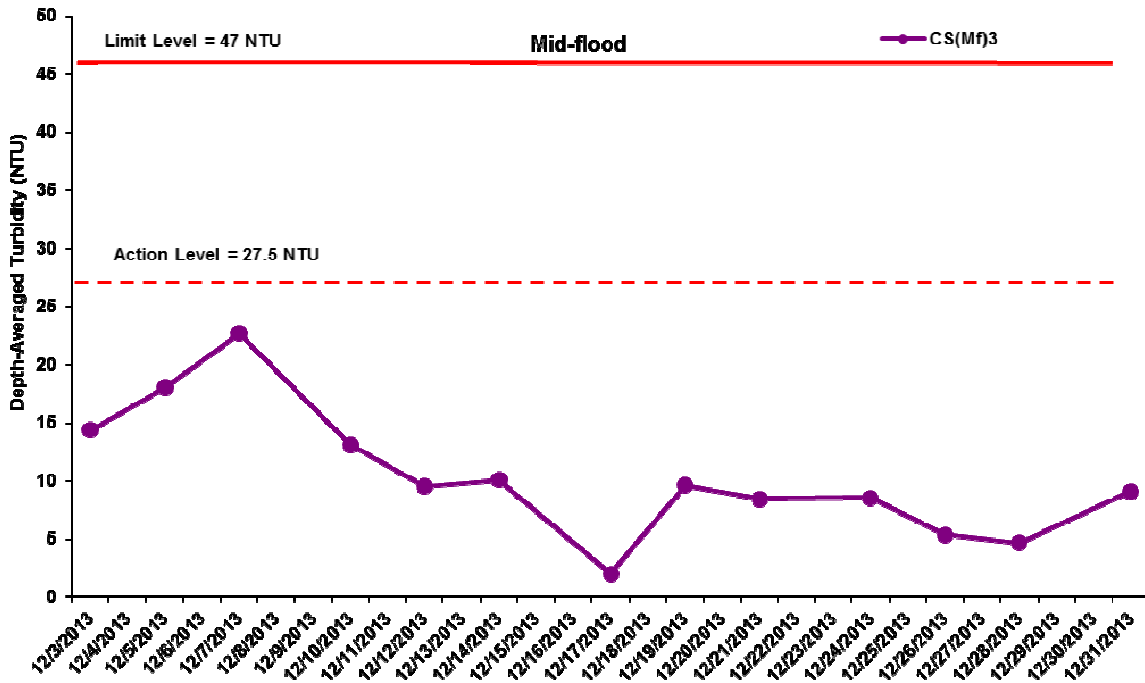


Figure J25 Impact Monitoring – Mean Level of depth-averaged Turbidity (NTU) during mid-flood tide between 1 to 31 December 2013 at CS(Mf)3 and CS(MF)5.

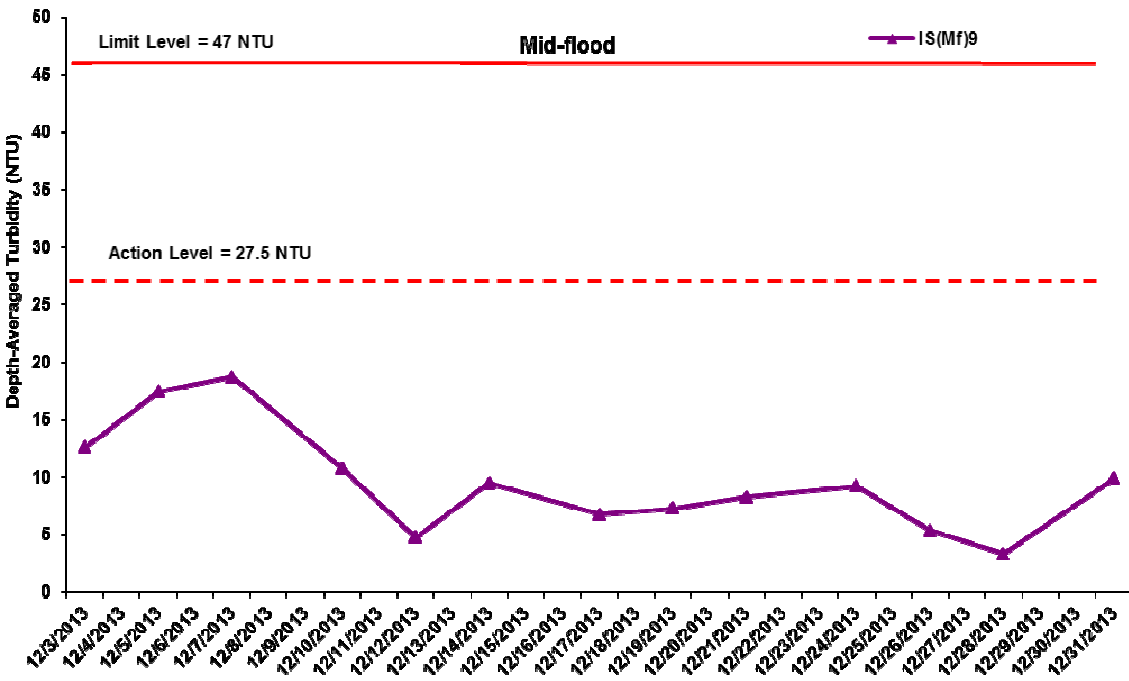
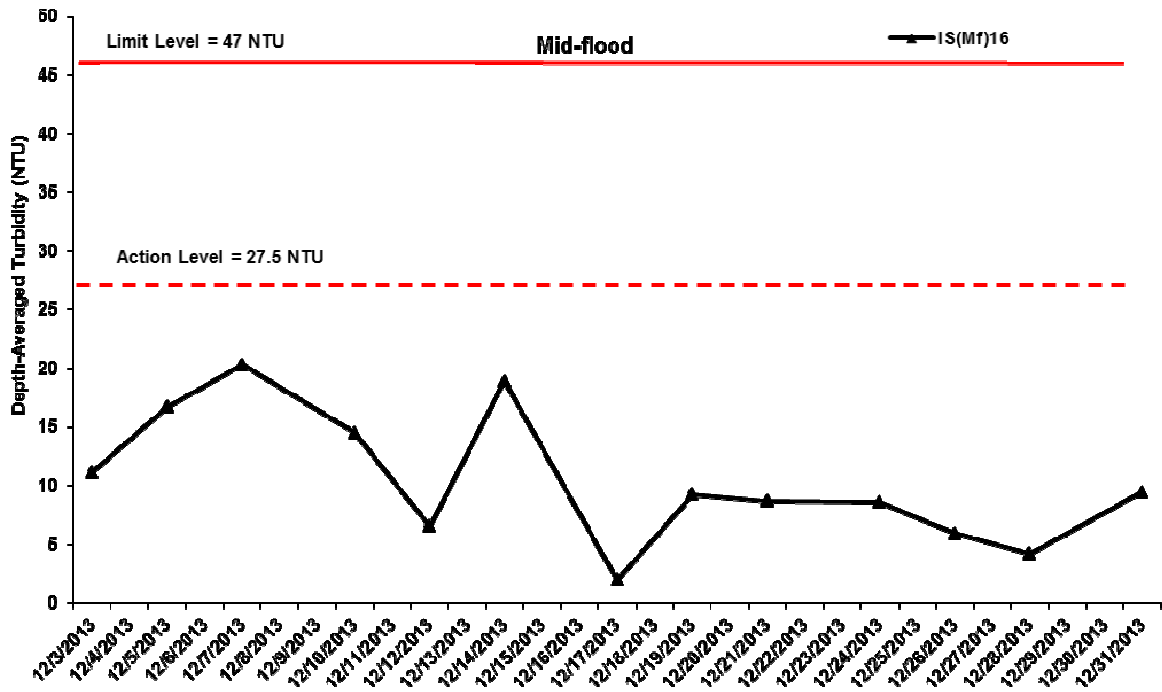


Figure J26 Impact Monitoring – Mean Level of depth-averaged Turbidity (NTU) during mid-flood tide between 1 to 31 December 2013 at IS(Mf)16 and IS(Mf)9.

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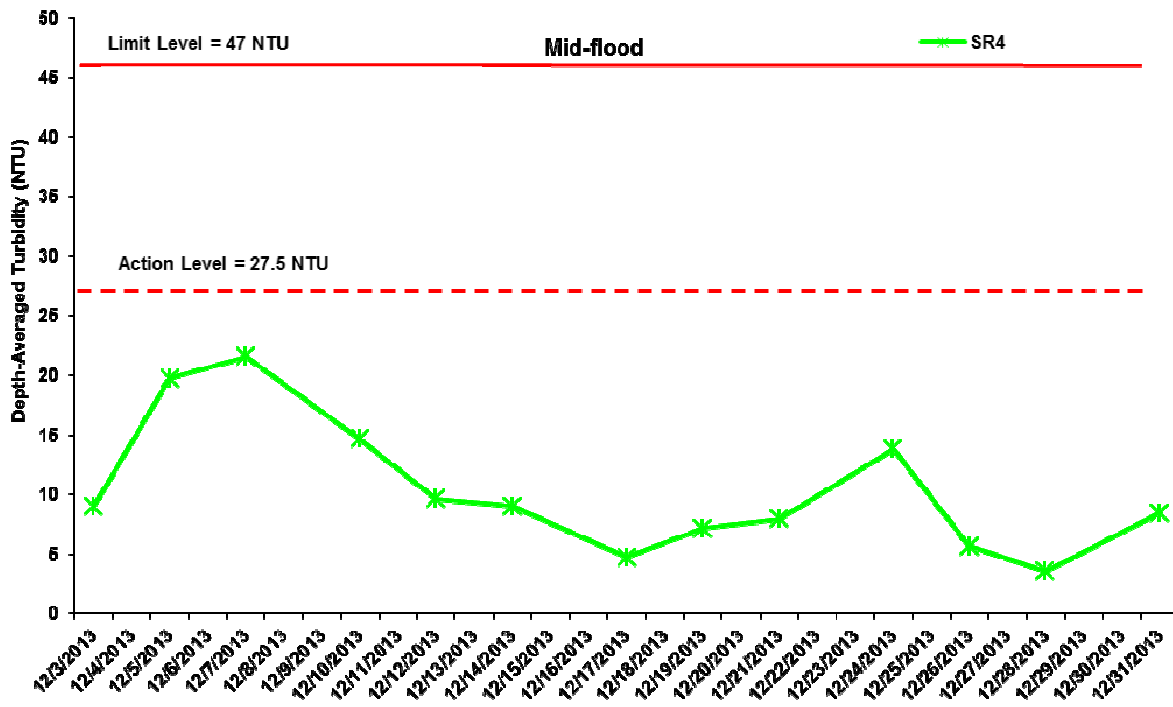
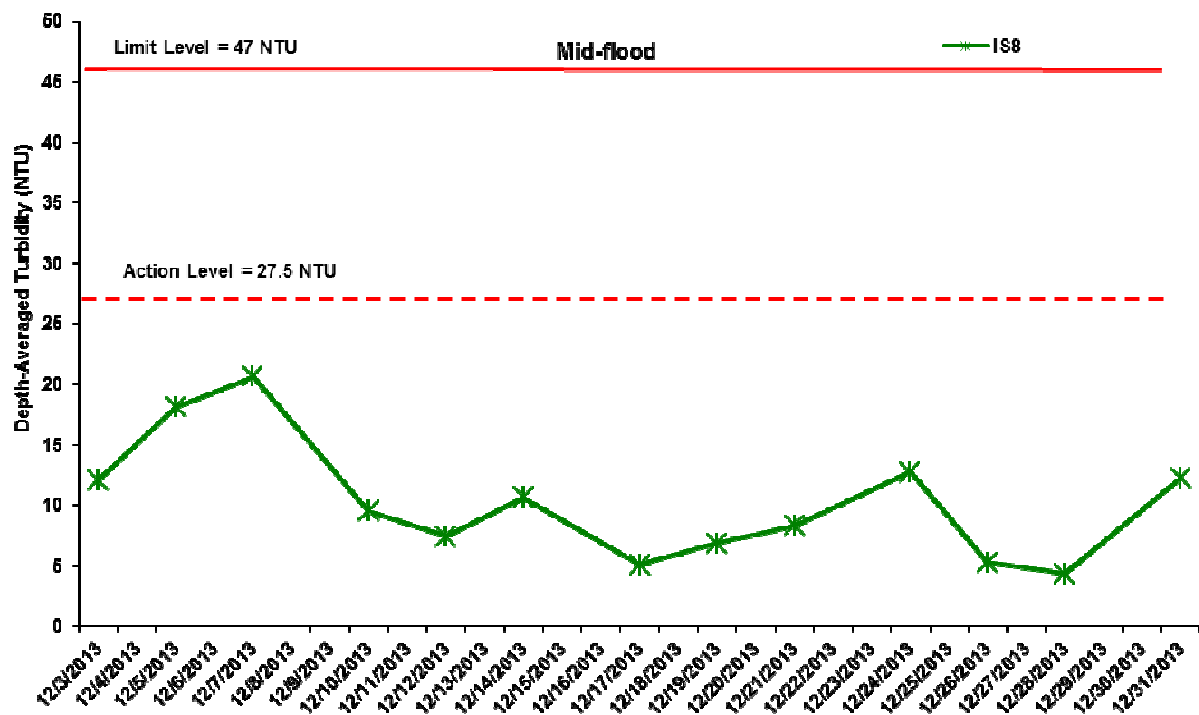


Figure J27 Impact Monitoring – Mean Level of depth-averaged Turbidity (NTU) during mid-flood tide between 31 October and 30 November 2013 at IS8 and SR4.

Environmental Resources Management



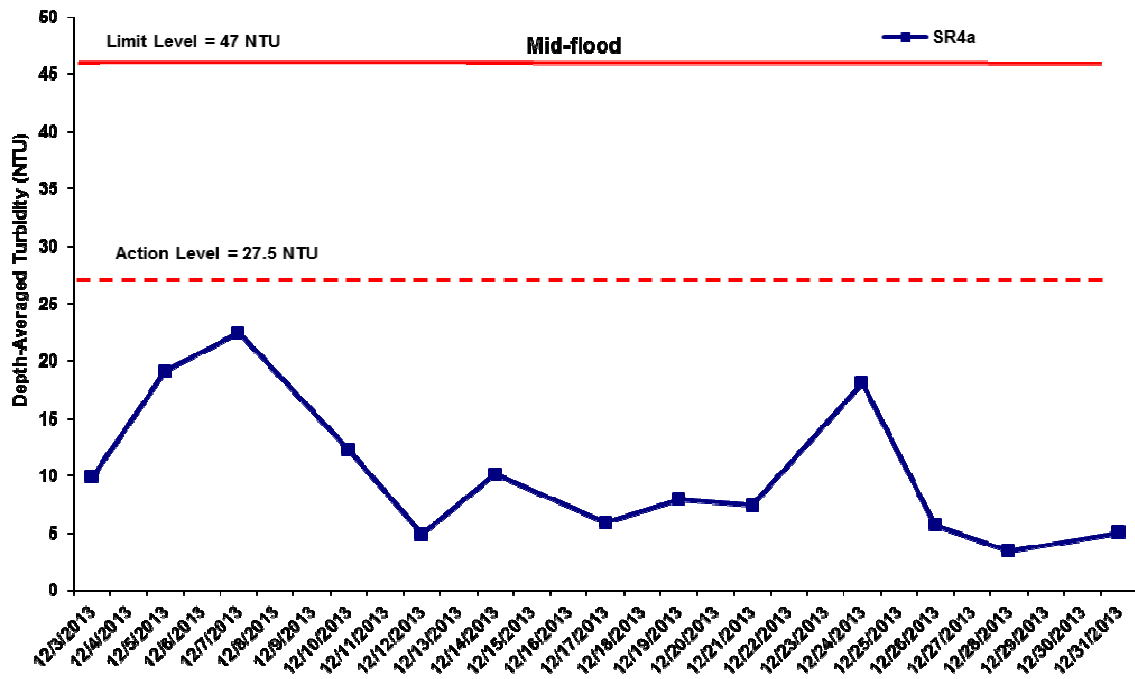


Figure J28 Impact Monitoring – Mean Level of depth-averaged Turbidity (NTU) during mid-flood tide between 1 to 31 December 2013 at SR4a.

Environmental
Resources
Management



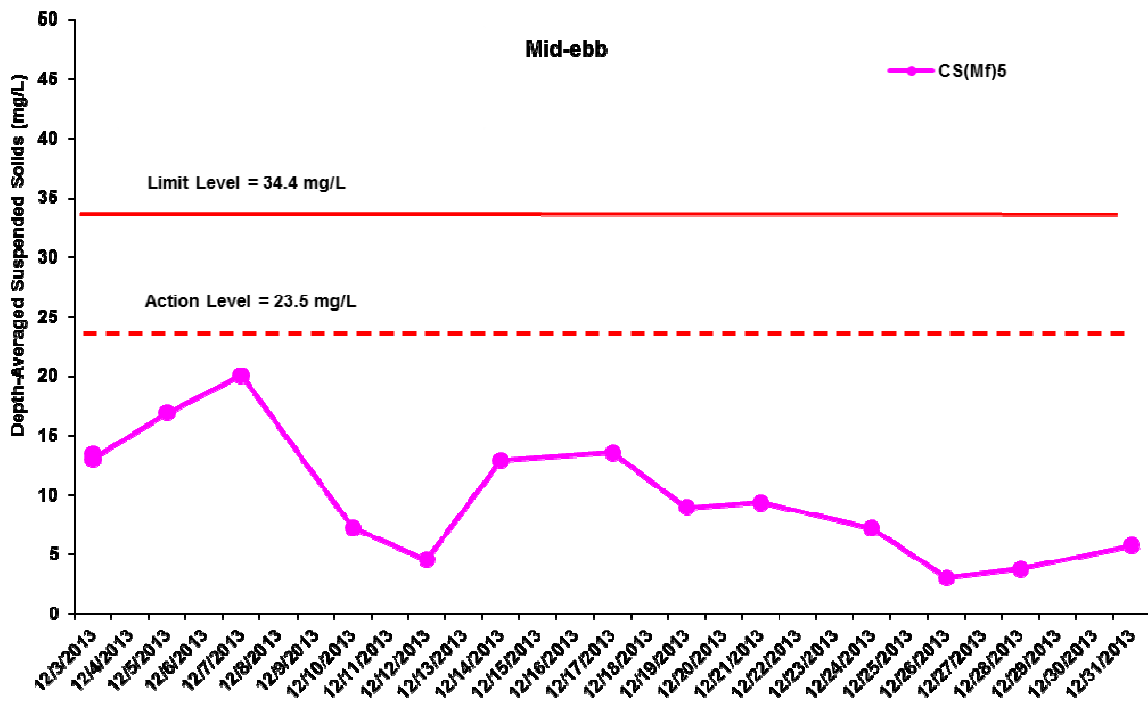
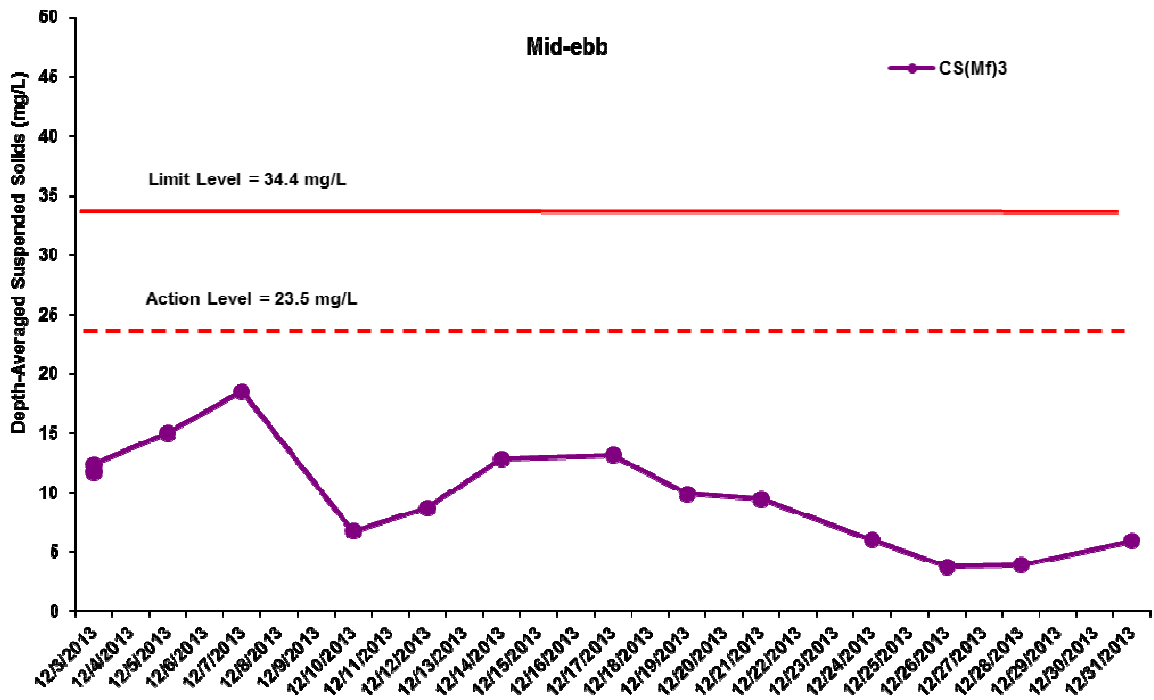


Figure J29 Impact Monitoring – Mean Level of depth-averaged Suspended Solids (mg/L) during mid-ebb tide between 1 to 31 December 2013 at CS(Mf)3 and CS(Mf)5.

Environmental
Resources
Management



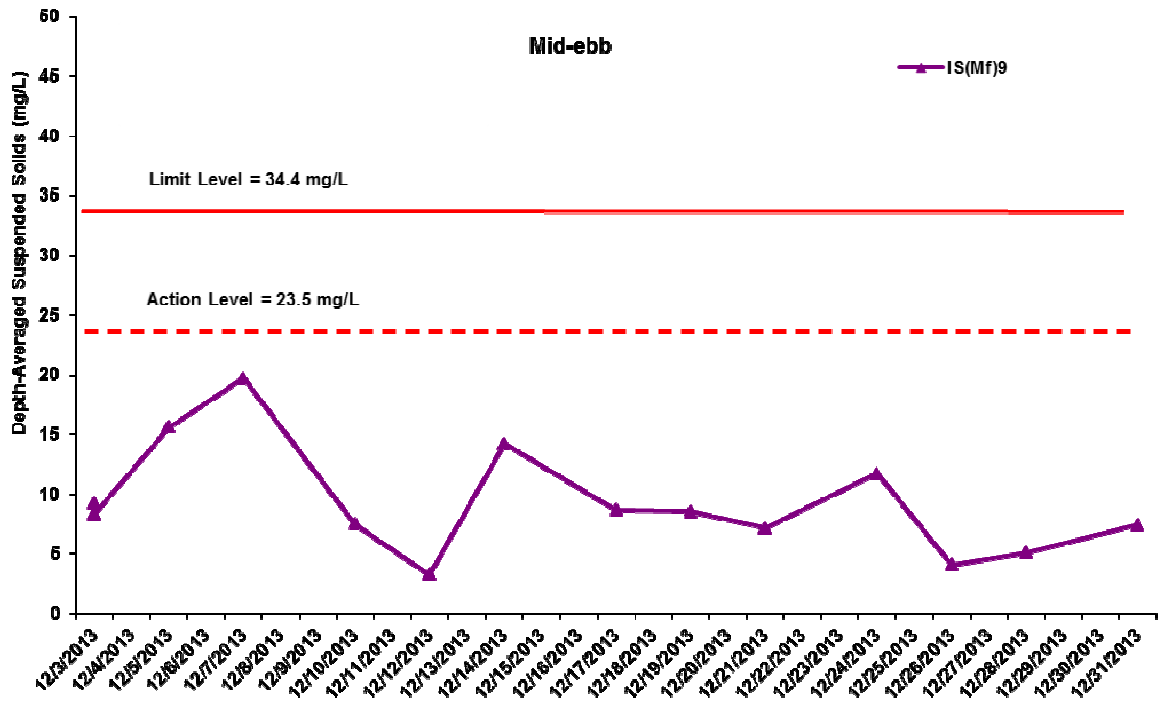
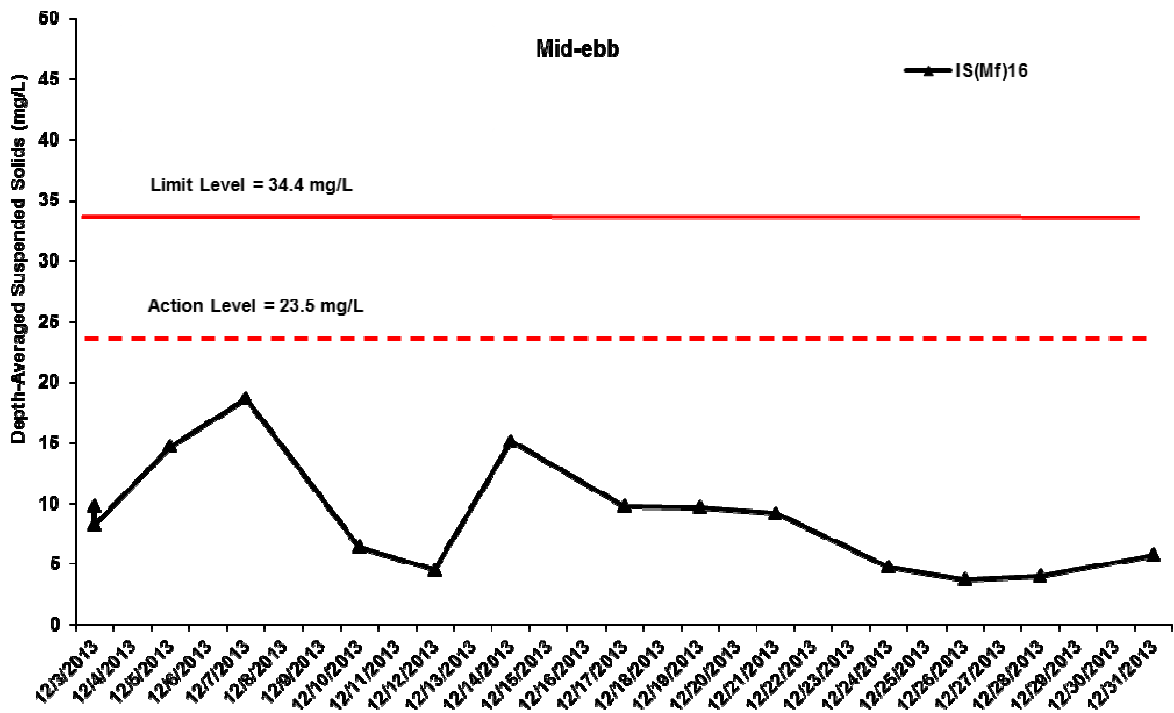


Figure J30 Impact Monitoring – Mean Level of depth-averaged Suspended Solids (mg/L) during mid-ebb tide between 1 to 31 December 2013 at IS(Mf)16 and IS(Mf)9.

Environmental Resources Management



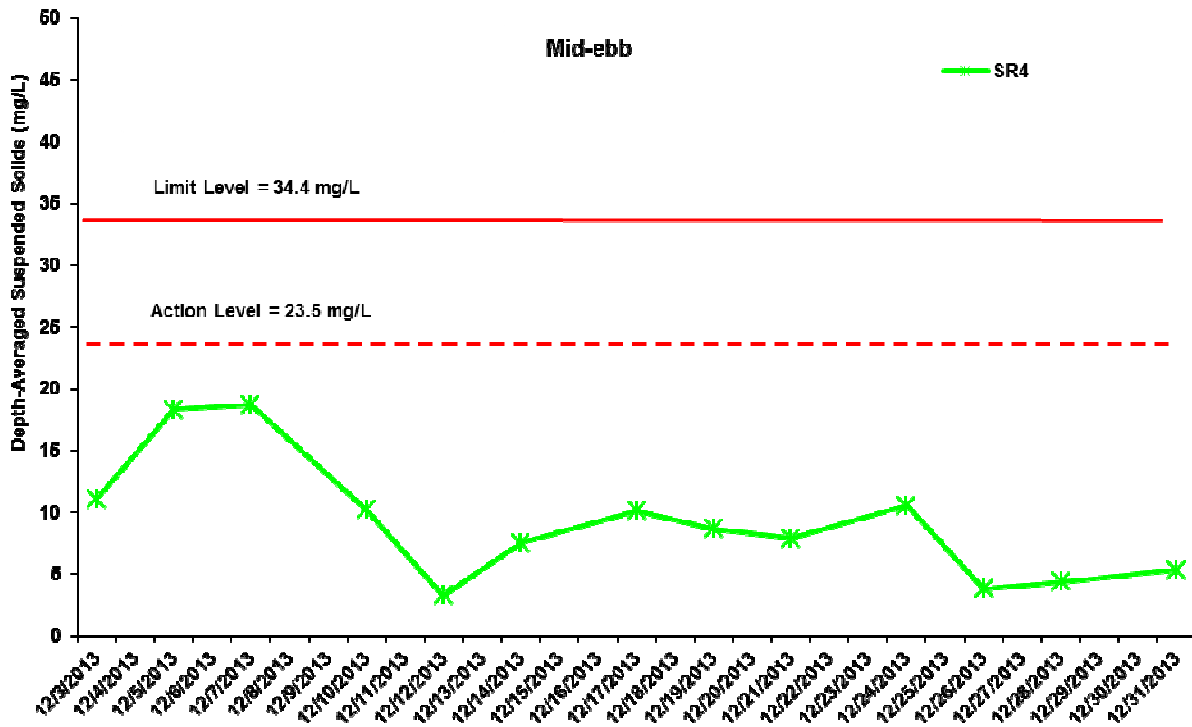
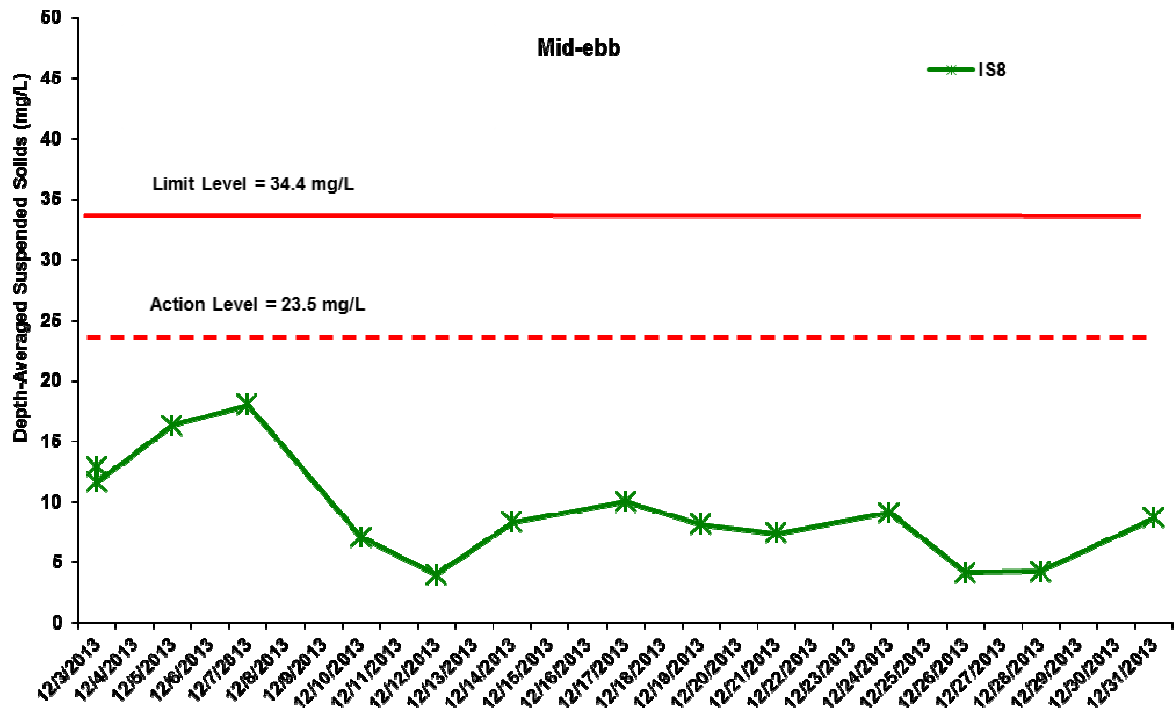


Figure J31 Impact Monitoring – Mean Level of depth-averaged Suspended Solids (mg/L) during mid-ebb tide between 1 to 31 December 2013 at IS8 and SR4.

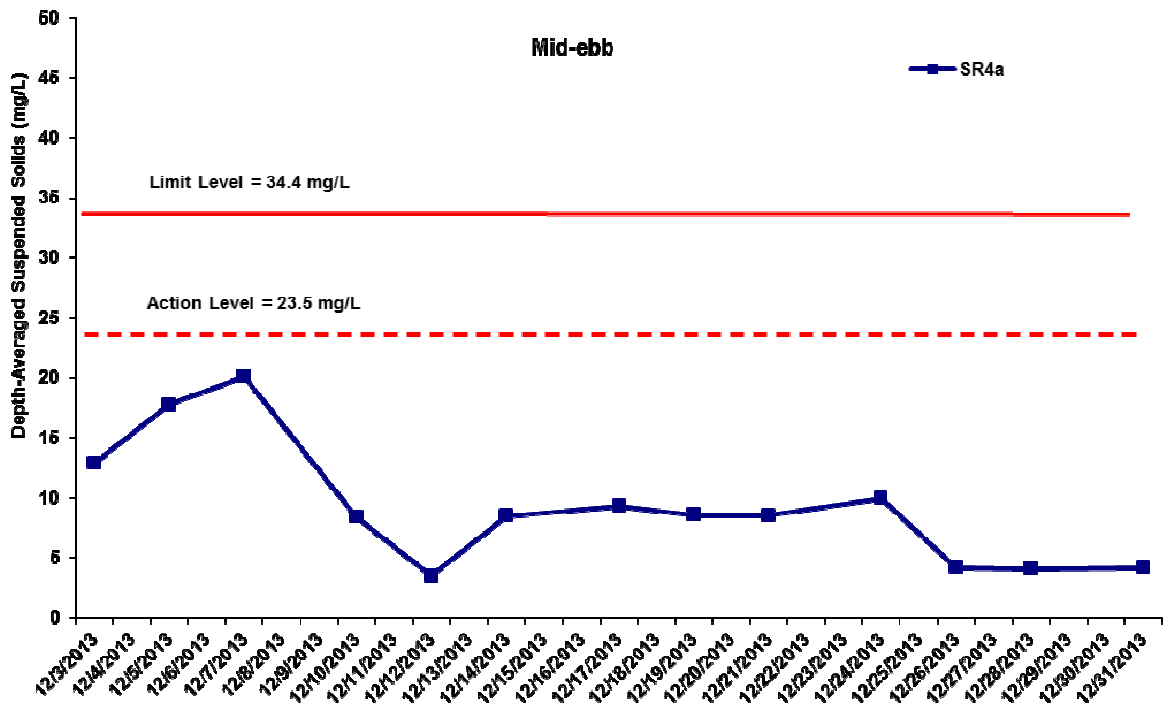


Figure J32 Impact Monitoring – Mean Level of depth-averaged Suspended Solids (mg/L) during mid-ebb tide between 1 to 31 December 2013 at SR4a.

Environmental
Resources
Management



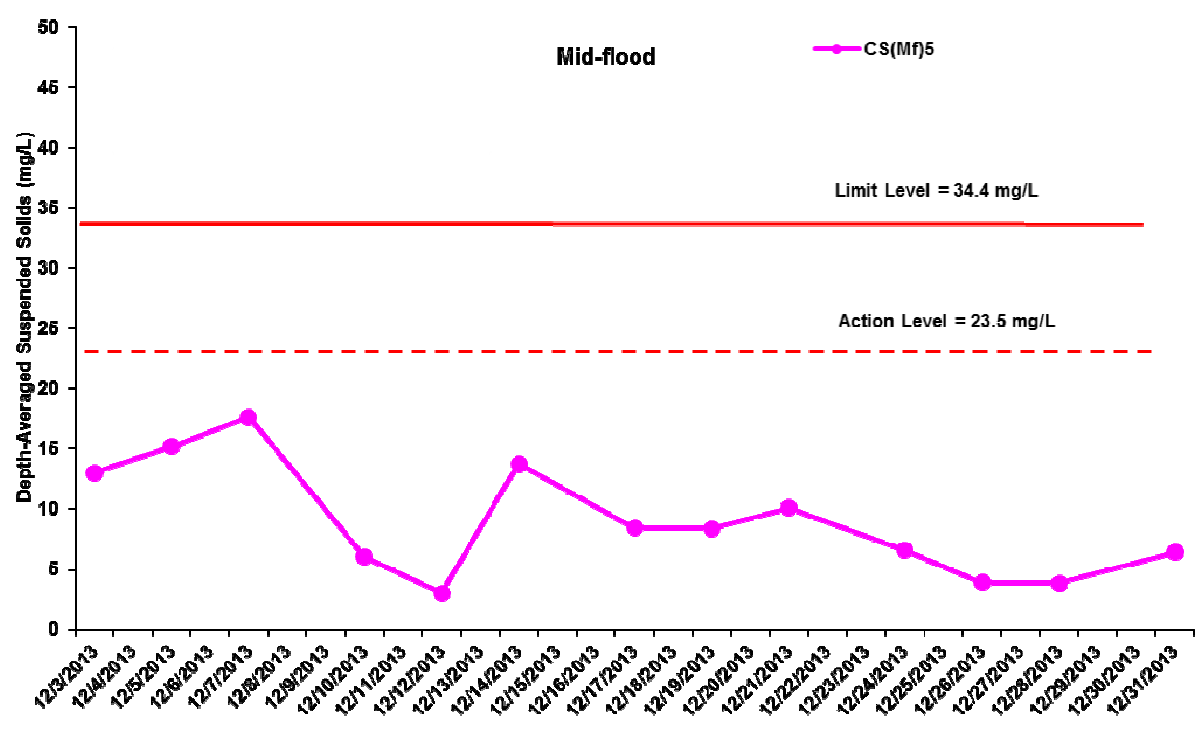
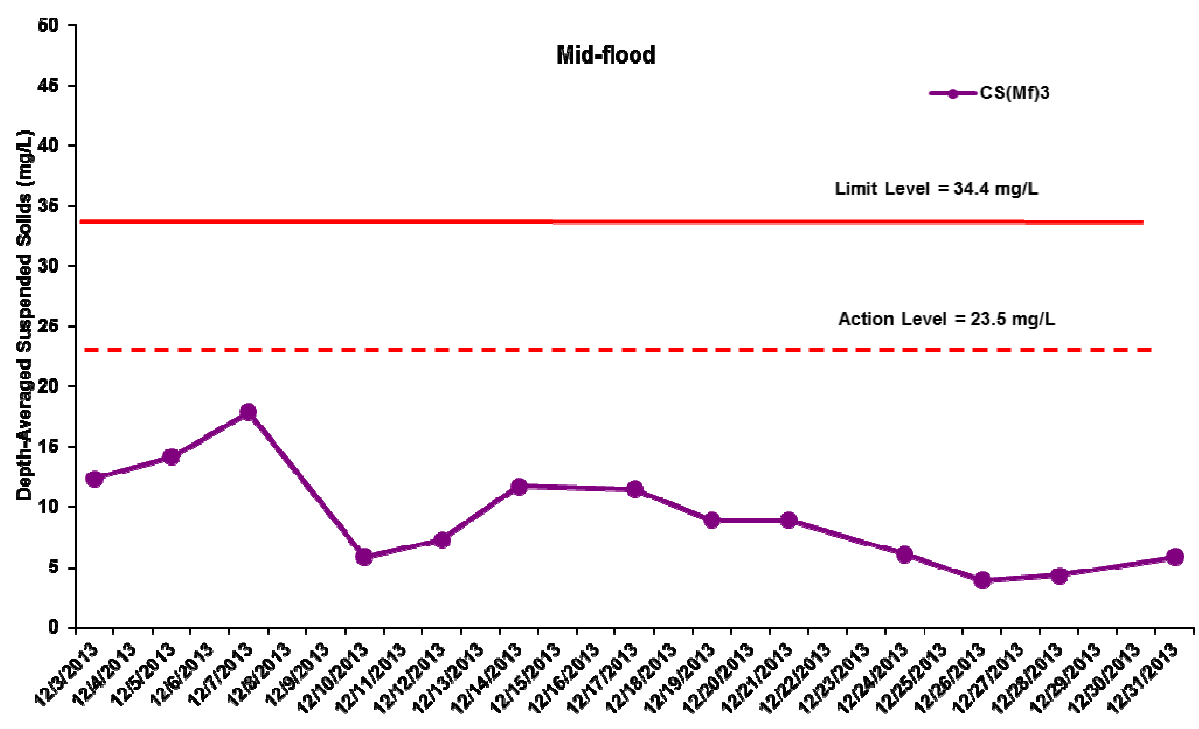


Figure J33 Impact Monitoring – Mean Level of depth-averaged Suspended Solids (mg/L) during mid-flood tide between 1 to 31 December 2013 at CS(Mf)3 and CS(Mf)5.

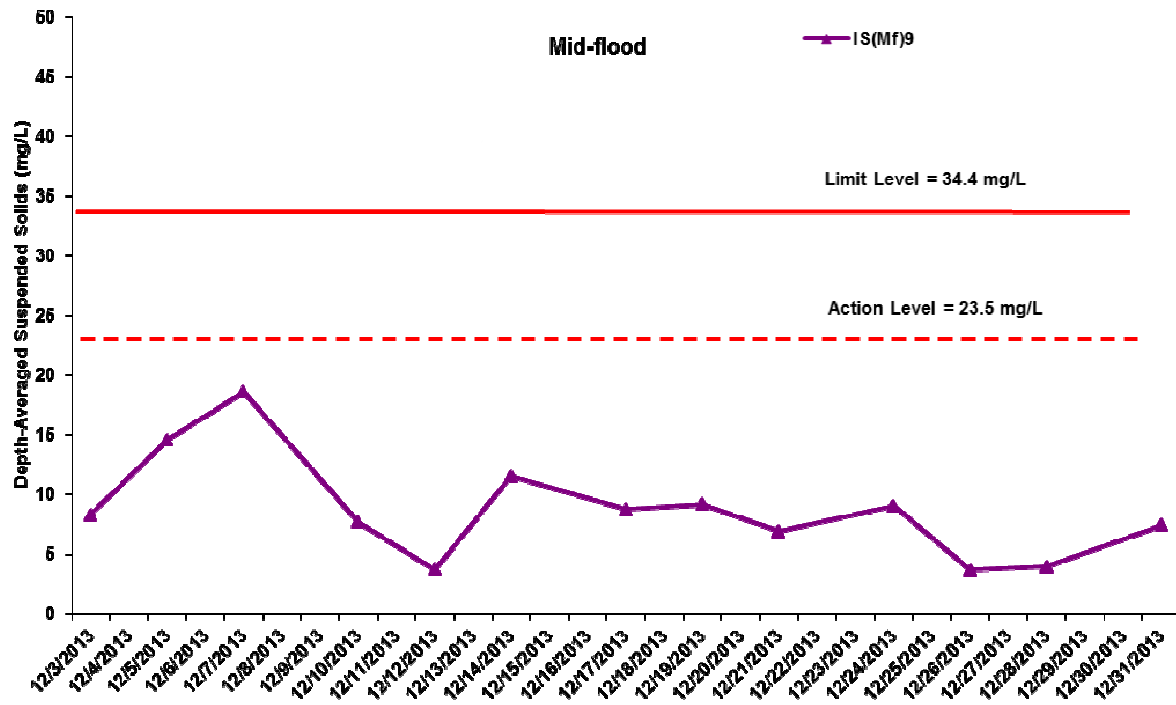
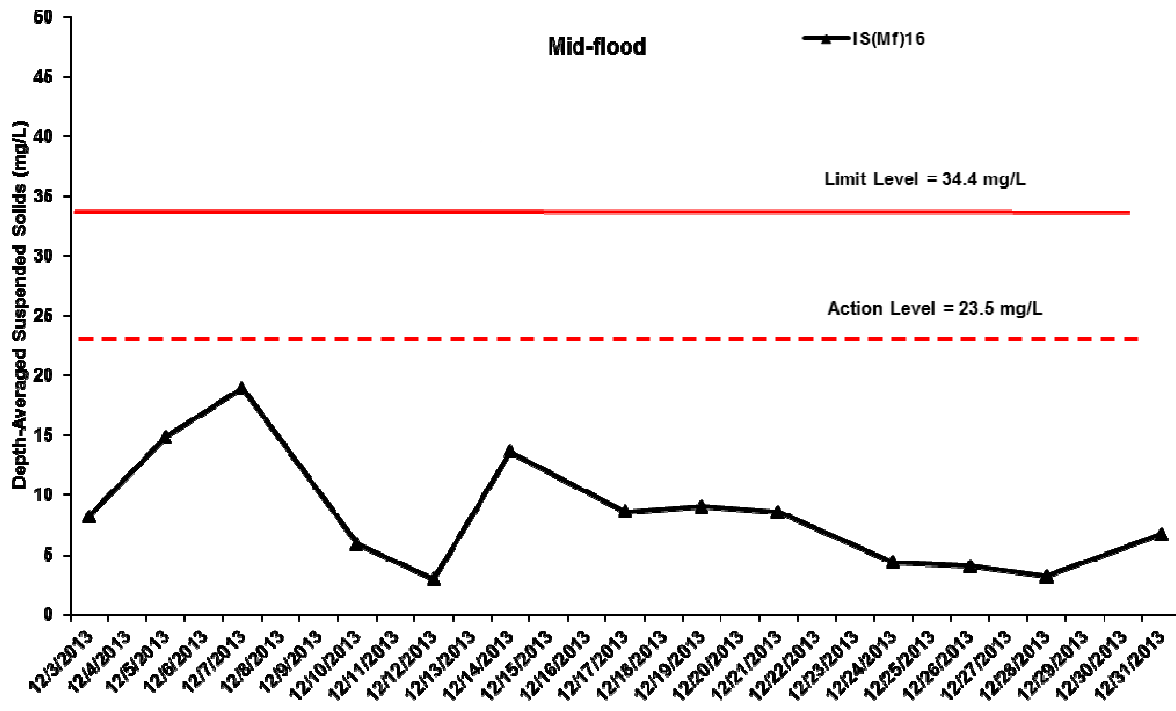


Figure J34 Impact Monitoring – Mean Level of depth-averaged Suspended Solids (mg/L) during mid-flood tide between 1 to 31 December 2013 at IS(Mf)16 and IS(Mf)9 .

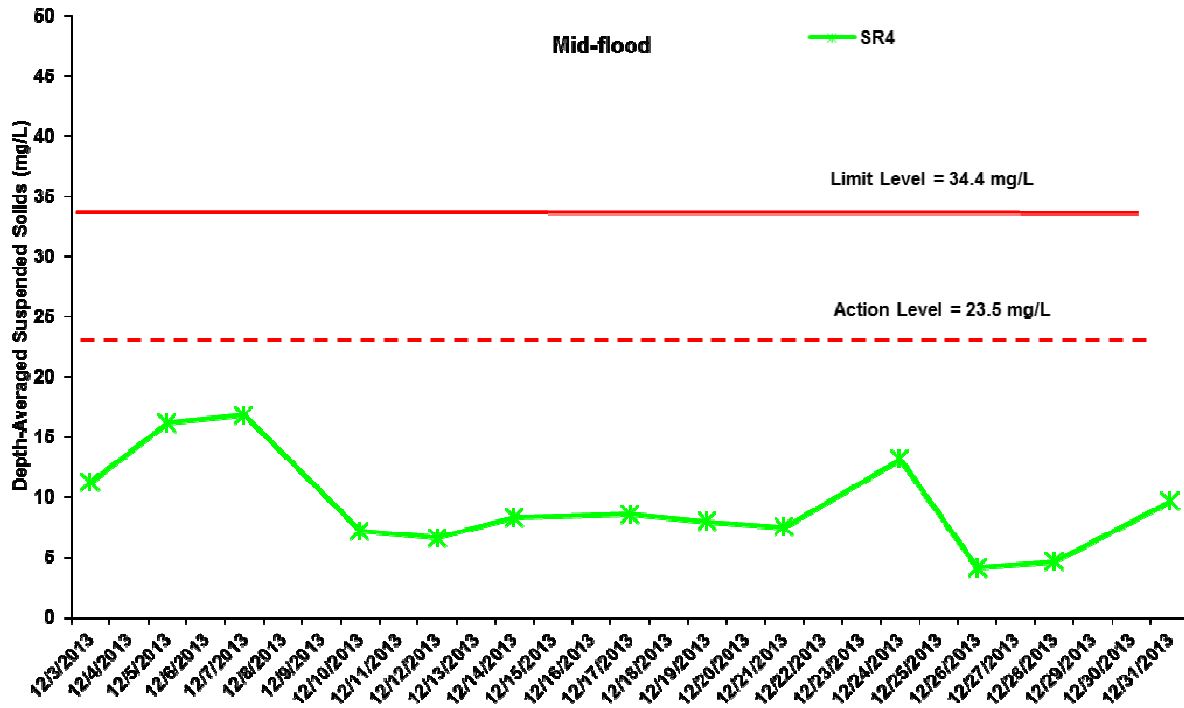


Figure J35 Impact Monitoring – Mean Level of depth-averaged Suspended Solids (mg/L) during mid-flood tide between 1 to 31 December 2013 at IS8 and SR4.

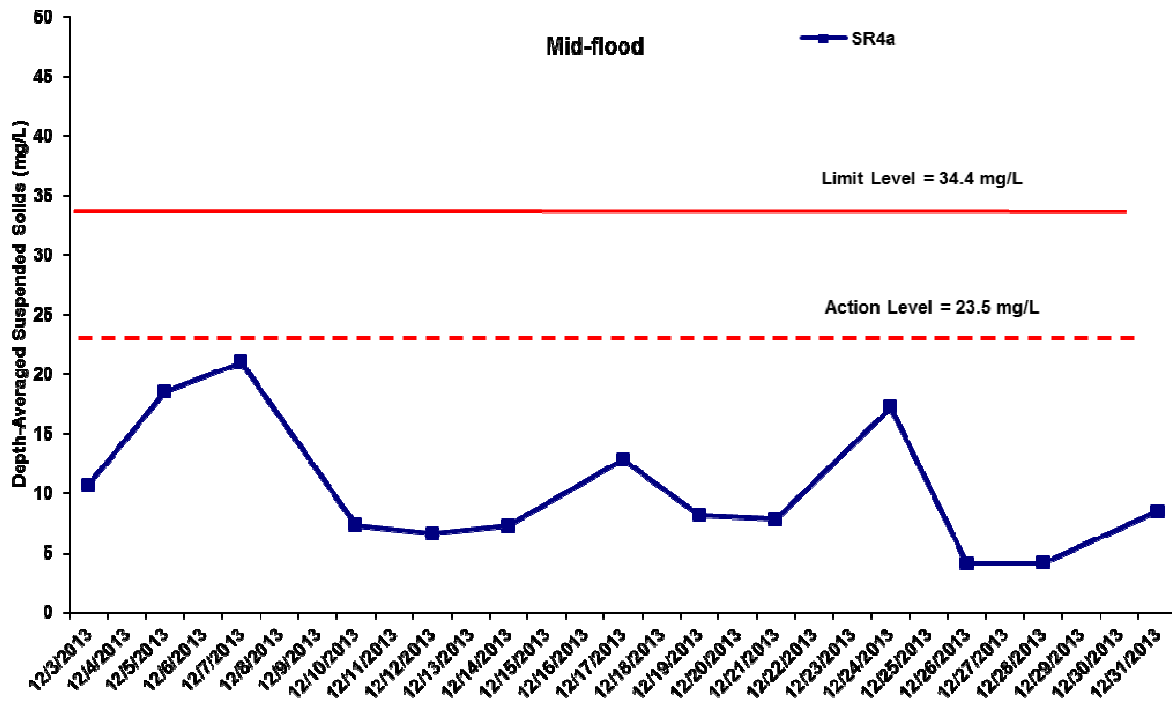


Figure J36 Impact Monitoring – Mean Level of depth-averaged Suspended Solids (mg/L) during mid-flood tide between 1 to 31 December 2013 at SR4a.

Environmental
Resources
Management



Appendix K

Impact Dolphin Monitoring Survey Results

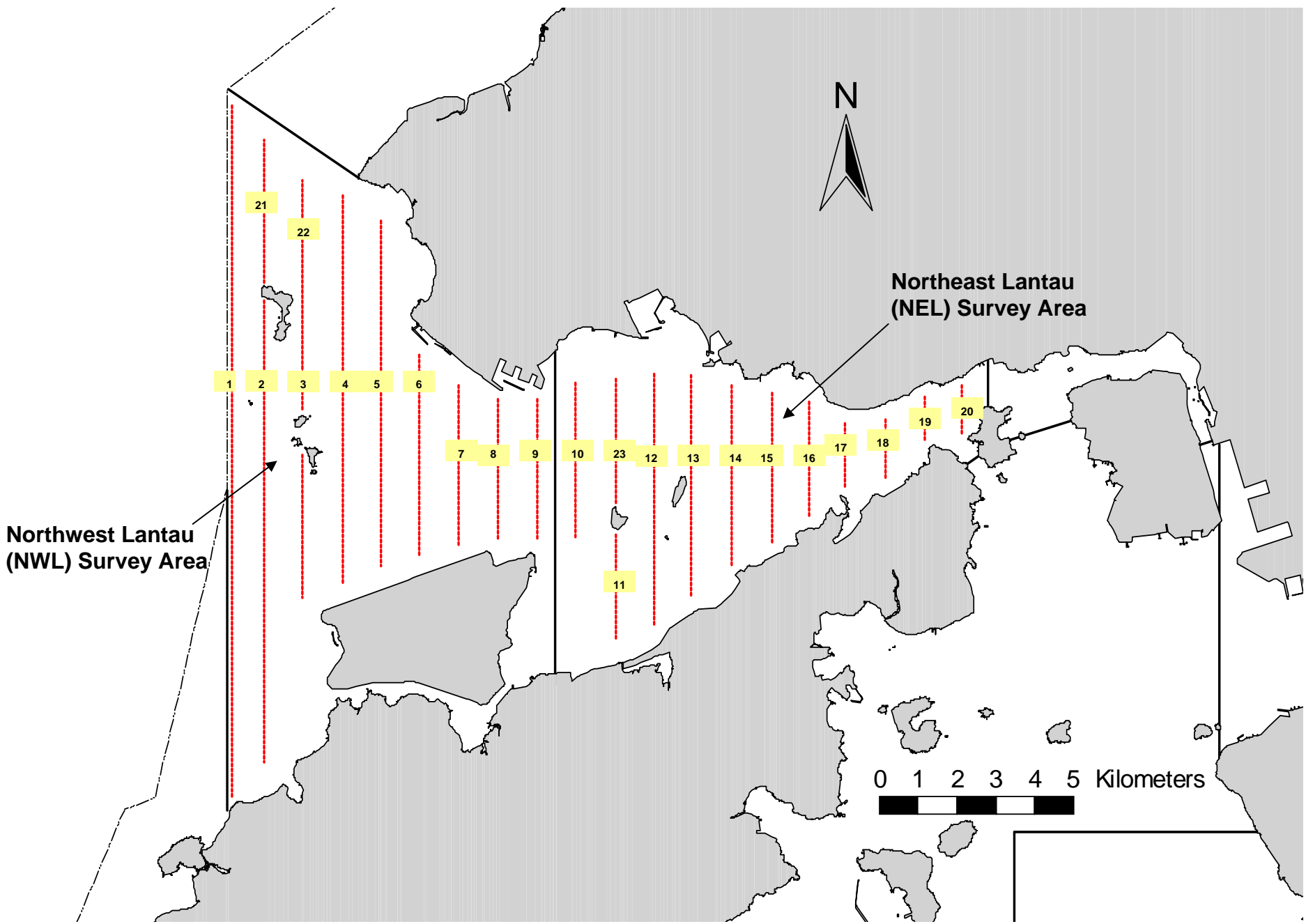


Figure 1. Transect Line Layout in Northwest and Northeast Lantau Survey Areas

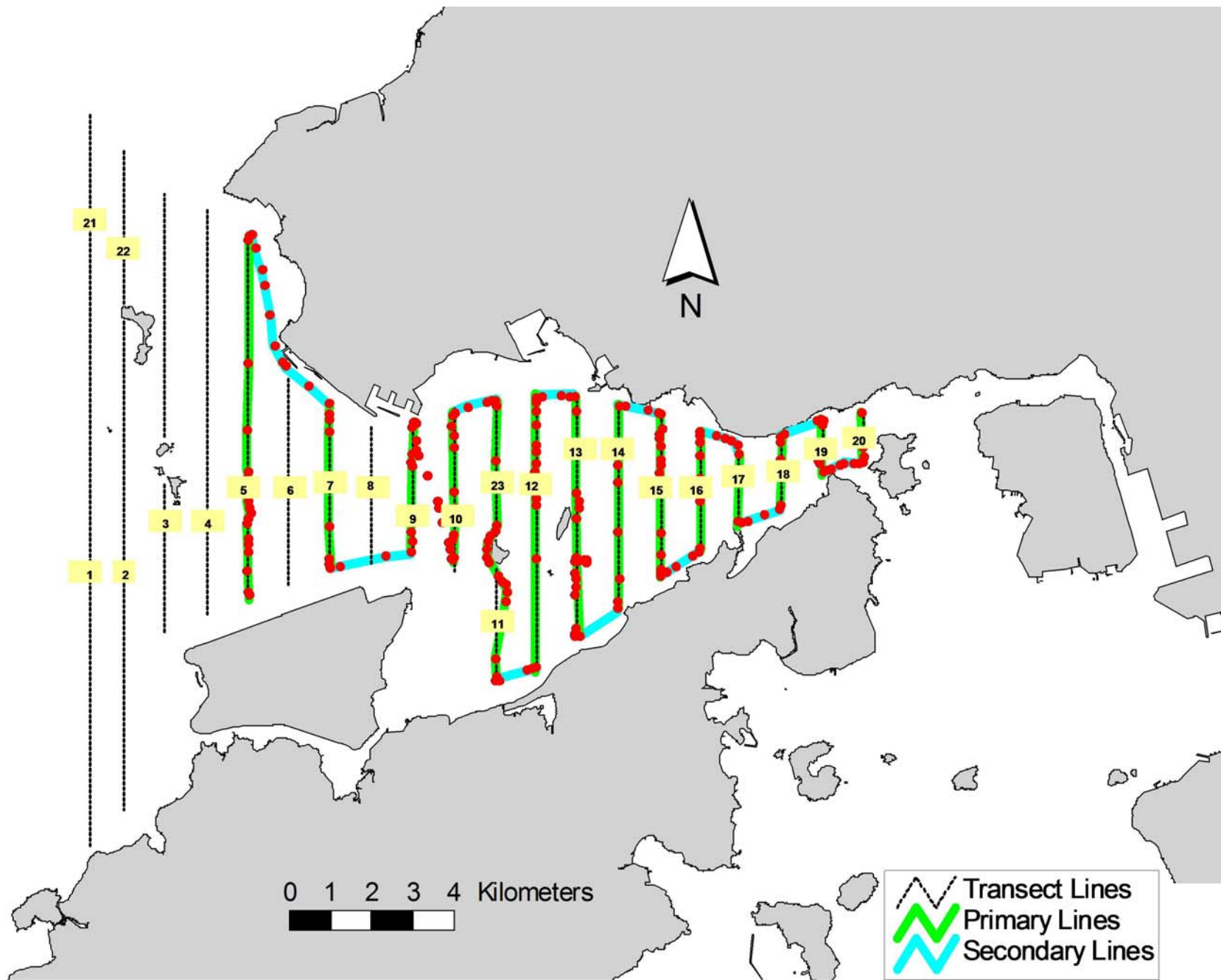


Figure 2. Survey Route on December 5th, 2013 (from HKLR03 project)

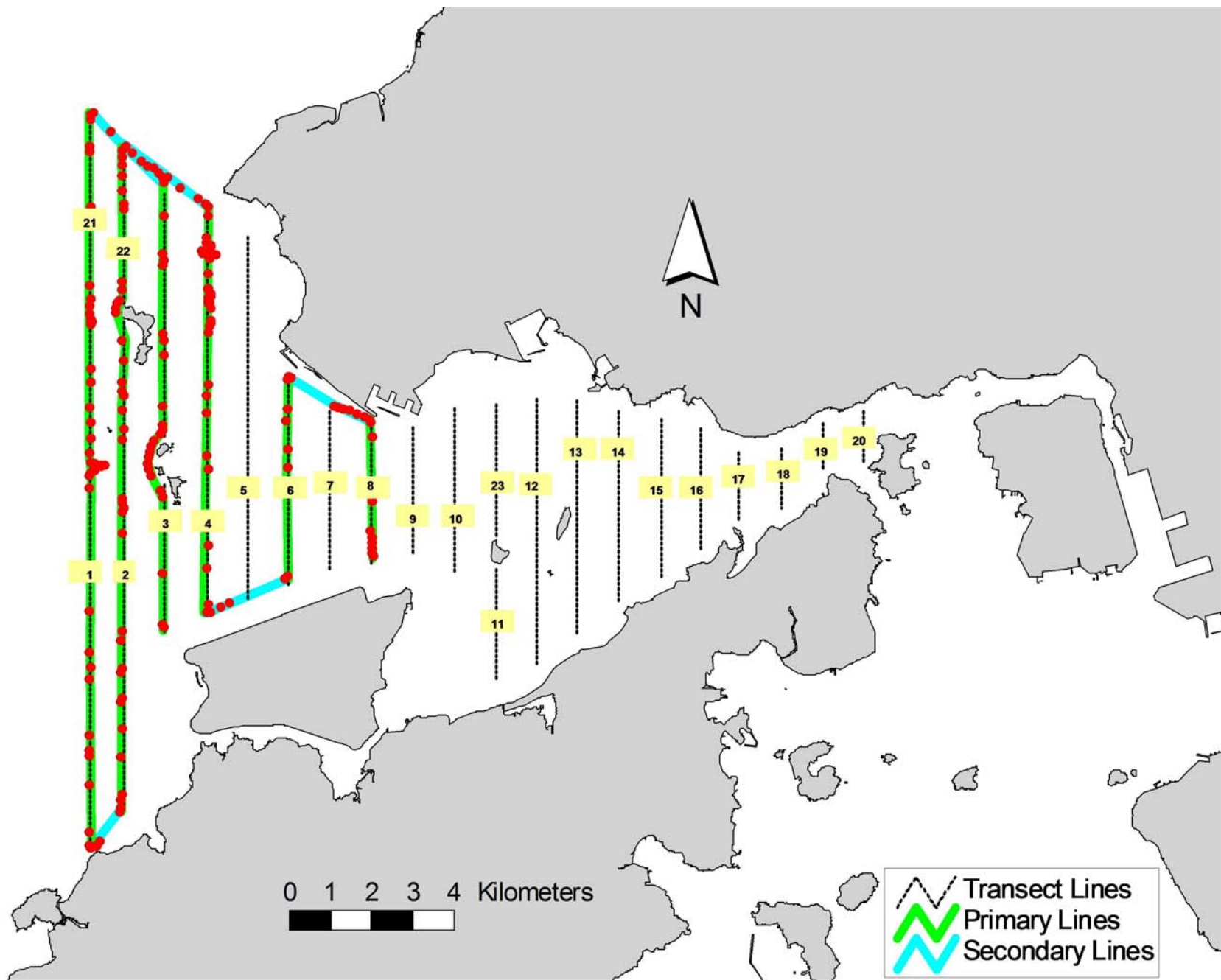


Figure 3. Survey Route on December 9th, 2013 (from HKLR03 project)

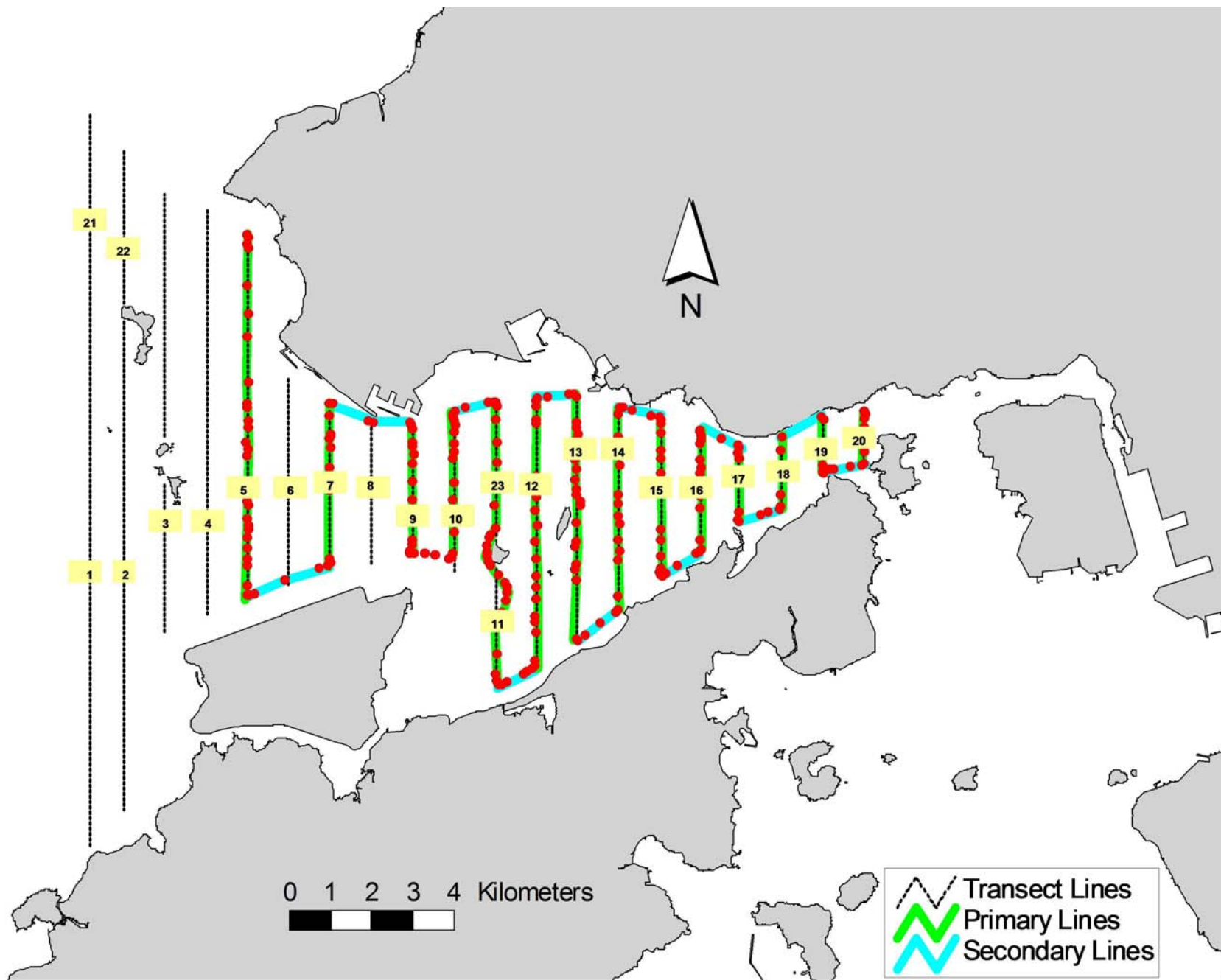


Figure 4. Survey Route on December 11th, 2013 (from HKLR03 project)

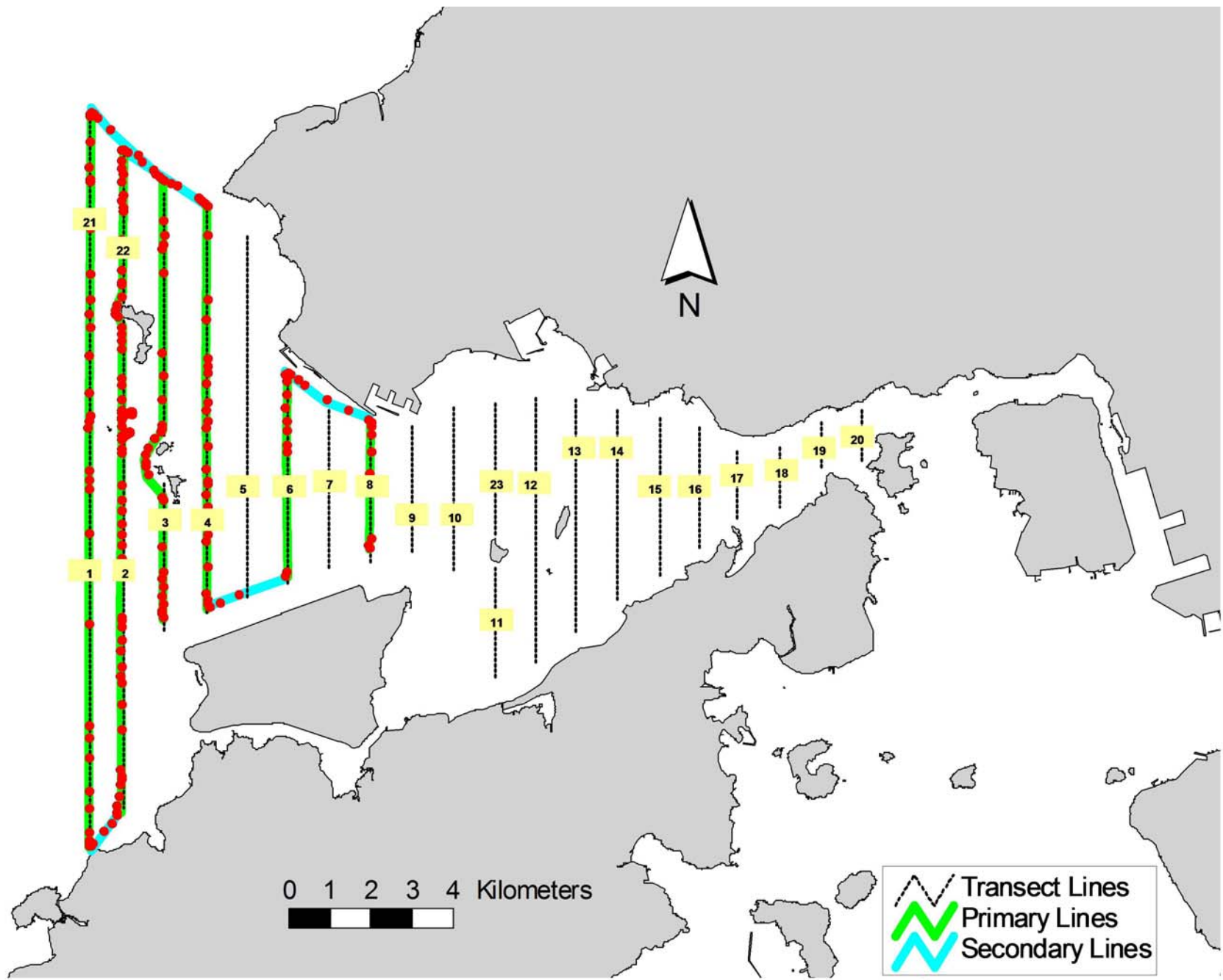


Figure 5. Survey Route on December 19th, 2013 (from HKLR03 project)

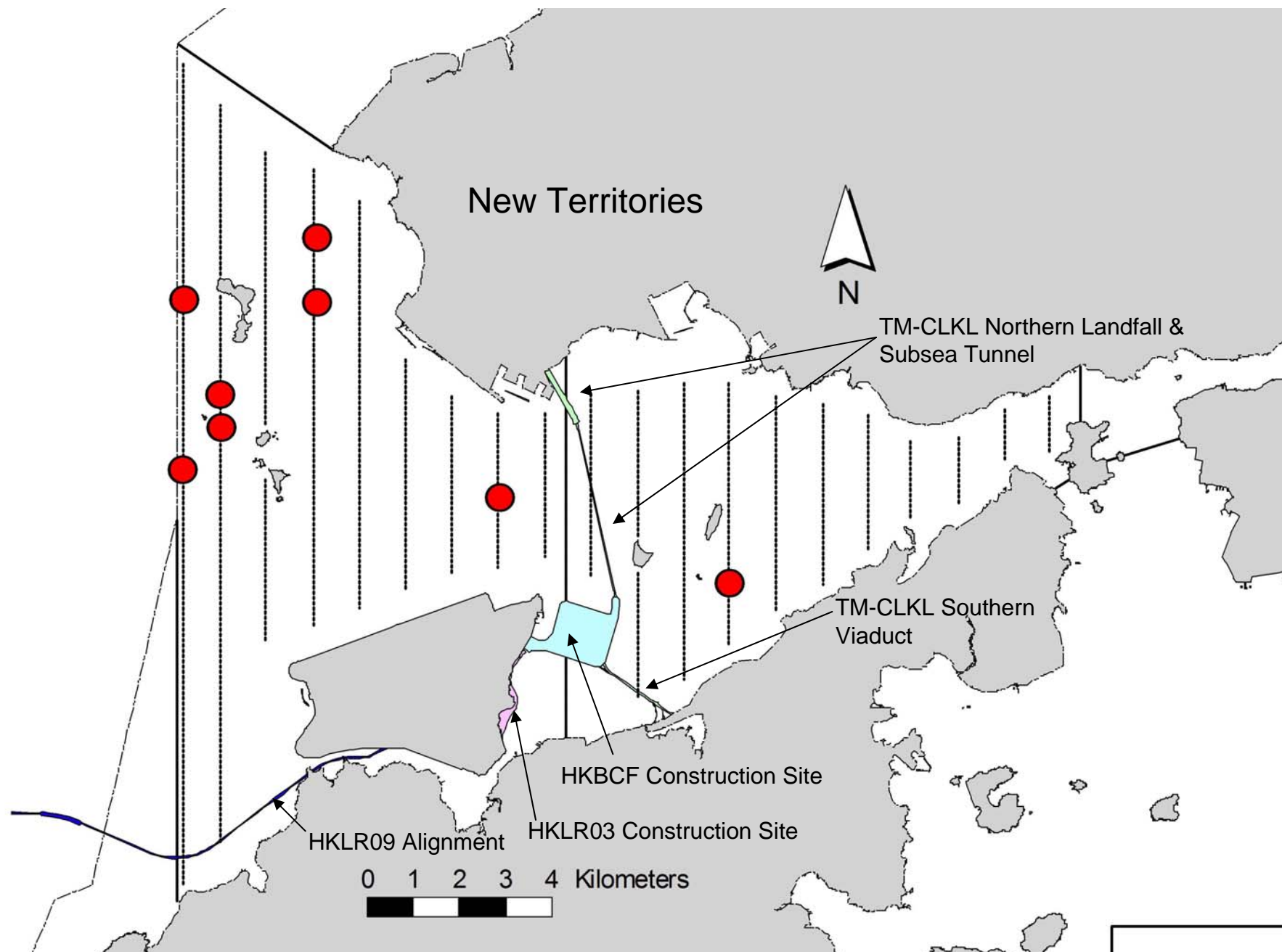


Figure 6. Distribution of Chinese White Dolphin Sightings During December 2013 HKLR03 Monitoring Surveys

Appendix I. HKLR03 Survey Effort Database (December 2013)

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

DATE	AREA	BEAU	EFFORT	SEASON	VESSEL	TYPE	P/S
5-Dec-13	NE LANTAU	1	21.06	WINTER	STANDARD31516	HKLR	P
5-Dec-13	NE LANTAU	2	16.22	WINTER	STANDARD31516	HKLR	P
5-Dec-13	NE LANTAU	1	6.64	WINTER	STANDARD31516	HKLR	S
5-Dec-13	NE LANTAU	2	5.18	WINTER	STANDARD31516	HKLR	S
5-Dec-13	NW LANTAU	2	11.53	WINTER	STANDARD31516	HKLR	P
5-Dec-13	NW LANTAU	3	3.89	WINTER	STANDARD31516	HKLR	P
5-Dec-13	NW LANTAU	2	3.87	WINTER	STANDARD31516	HKLR	S
5-Dec-13	NW LANTAU	3	2.51	WINTER	STANDARD31516	HKLR	S
9-Dec-13	NW LANTAU	2	19.03	WINTER	STANDARD31516	HKLR	P
9-Dec-13	NW LANTAU	3	37.52	WINTER	STANDARD31516	HKLR	P
9-Dec-13	NW LANTAU	2	5.22	WINTER	STANDARD31516	HKLR	S
9-Dec-13	NW LANTAU	3	6.78	WINTER	STANDARD31516	HKLR	S
13-Dec-13	NE LANTAU	1	4.50	WINTER	STANDARD31516	HKLR	P
13-Dec-13	NE LANTAU	2	31.16	WINTER	STANDARD31516	HKLR	P
13-Dec-13	NE LANTAU	1	3.90	WINTER	STANDARD31516	HKLR	S
13-Dec-13	NE LANTAU	2	9.44	WINTER	STANDARD31516	HKLR	S
13-Dec-13	NW LANTAU	2	8.88	WINTER	STANDARD31516	HKLR	P
13-Dec-13	NW LANTAU	3	6.40	WINTER	STANDARD31516	HKLR	P
13-Dec-13	NW LANTAU	2	4.12	WINTER	STANDARD31516	HKLR	S
19-Dec-13	NW LANTAU	3	14.06	WINTER	STANDARD31516	HKLR	P
19-Dec-13	NW LANTAU	4	36.79	WINTER	STANDARD31516	HKLR	P
19-Dec-13	NW LANTAU	5	6.10	WINTER	STANDARD31516	HKLR	P
19-Dec-13	NW LANTAU	3	8.79	WINTER	STANDARD31516	HKLR	S
19-Dec-13	NW LANTAU	4	2.91	WINTER	STANDARD31516	HKLR	S
19-Dec-13	NW LANTAU	5	0.90	WINTER	STANDARD31516	HKLR	S

Appendix II. HKLR03 Chinese White Dolphin Sighting Database (December 2013)

(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
05-Dec-13	1	1127	3	NE LANTAU	1	275	ON	HKLR	820787	816500	WINTER	NONE	P
09-Dec-13	1	1119	1	NW LANTAU	3	77	ON	HKLR	822544	811516	WINTER	NONE	P
09-Dec-13	2	1238	4	NW LANTAU	2	132	ON	HKLR	826515	807547	WINTER	NONE	P
09-Dec-13	3	1256	12	NW LANTAU	2	103	ON	HKLR	827833	807540	WINTER	NONE	P
09-Dec-13	4	1518	4	NW LANTAU	3	177	ON	HKLR	823088	804646	WINTER	NONE	P
09-Dec-13	5	1539	1	NW LANTAU	2	866	ON	HKLR	826577	804664	WINTER	NONE	P
19-Dec-13	1	1203	2	NW LANTAU	3	73	ON	HKLR	824648	805453	WINTER	NONE	P
19-Dec-13	2	1216	6	NW LANTAU	3	150	ON	HKLR	823972	805483	WINTER	NONE	P

Appendix III. Individual dolphins identified during HKLR03 monitoring surveys in December 2013

ID#	DATE	STG#	AREA
CH34	09/12/13	3	NW LANTAU
EL01	05/12/13	1	NE LANTAU
NL24	05/12/13	1	NE LANTAU
	09/12/13	4	NW LANTAU
	19/12/13	2	NW LANTAU
NL48	09/12/13	3	NW LANTAU
NL49	09/12/13	3	NW LANTAU
NL98	19/12/13	2	NW LANTAU
NL104	09/12/13	3	NW LANTAU
NL136	09/12/13	2	NW LANTAU
NL139	09/12/13	2	NW LANTAU
NL165	09/12/13	3	NW LANTAU
NL226	05/12/13	1	NE LANTAU
NL242	19/12/13	2	NW LANTAU
NL244	09/12/13	1	NW LANTAU
NL261	09/12/13	3	NW LANTAU
NL262	09/12/13	3	NW LANTAU
NL284	09/12/13	3	NW LANTAU
WL04	09/12/13	2	NW LANTAU
WL05	09/12/13	3	NW LANTAU
WL46	09/12/13	3	NW LANTAU
WL179	09/12/13	4	NW LANTAU

EL01_20131205_1



NL24_20131205_1



NL226_20131205_1



NL244_20131209_1



NL136_20131209_2



NL139_20131209_2



WL04_20131209_2



CH34_20131209_3



NL48_20131209_3



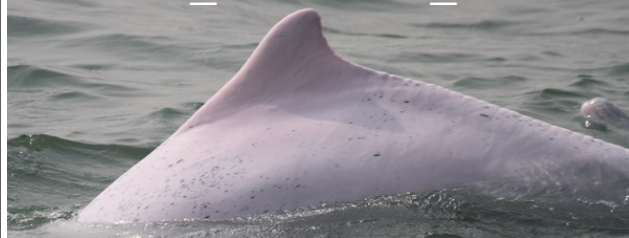
NL49_20131209_3



NL104_20131209_3



NL165_20131209_3



NL261_20131209_3



NL262_20131209_3



NL284_20131209_3



WL05_20131209_3



WL46_20131209_3



NL24_20131209_4





Appendix IV. (cont'd)

Appendix L

Event Action Plan

Appendix L1 *Event/ Action Plan for Air Quality*

EVENT	ACTION			
	ET ⁽¹⁾	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

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	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.	Check monitoring data submitted by ET and Contractor's working methods.	Confirm receipt of notification of non-compliance in writing; Notify Contractor.	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	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;	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.	Discuss with IEC on the proposed mitigation measures; Ensure mitigation measures are properly implemented; Assess the effectiveness of the implemented mitigation measures.	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	Repeat measurement on next day of exceedance to confirm findings; Identify source(s) of impact; Inform IEC, contractor, SOR and EPD;	Check monitoring data submitted by ET and Contractor's working method; Discuss with ET and Contractor on possible remedial actions;	Confirm receipt of notification of failure in writing; Discuss with IEC, ET and Contractor on the proposed mitigation measures;	Inform the SOR and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment

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

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
<u>Action Level</u>				
With the numerical values presented in <i>Table 5.7</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</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	<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, 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), 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

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 2013 (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	Chemical Waste	General Refuse	Metals	Paper/ cardboard packaging	Plastics
Unit	('000m ³)	('000m ³)	('000m ³)	('000m ³)	('000m ³)	('000m ³)	('000m ³)	('000m ³)	('000m ³)	('000Kg)	('000Kg)	('000Kg)	('000Kg)	('000Kg)
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mar	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Apr	-	-	-	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jun	-	-	0	0	0	0	-	-	-	0	0	0	0	0
SUB-TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul	-	-	0	0	0	0	0	0	0	0	0	0	0	0
Aug	-	-	0	0	0	0	0	0	0	0	322.89	0	0	0
Sep	0.004	0.004	0	0	0.004	0	0	0	0	0	412.86	0	0	0
Oct	0.044	0.018	0	0	0.044	0	0	0	0	0	27.63	0	0	0
Nov	0.277	0.000	0.240	0	0.037	0	0	0	0	0	22.05	0	0	0
Dec	0.135	0.027	0.020	0.021	0.094	0	0	0	0	0	28.04	0	0	0
TOTAL	0.460	0.049	0.260	0.021	0.179	-	-	-	-	-	813.47	-	-	-

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.

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	0
24-Hr TSP	Action	2	2
	Limit	0	0
Noise	Action	0	0
	Limit	0	0
Water Quality	Action	0	1
	Limit	0	0

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 (Dec 2013)	0	0	0
Total No. received since project commencement	1	0	0

Email
message

**Environmental
Resources
Management**

To ENVIRON - 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 Air Quality
Impact Monitoring

Date 8 January 2014

16/F DCH Commercial Centre,
25 Westlands Road
Quarry Bay, Hong Kong
Telephone: (852) 2271 3113
Facsimile: (852) 2723 5660
E-mail: jovy.tam@erm.com



Dear Sir or Madam,

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

0215660_13December2013_24hrTSP_Station ASR8
0215660_13December2013_24hrTSP_Station ASR8A

recorded on 19 December 2013.

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

Air Quality Impact Monitoring
 Notification of Exceedance

Log No.	0215660_13December2013_24hrTSP_Station ASR8A 0215660_13December2013_24hrTSP_Station ASR8 [Total No. of Exceedances = 2]	
Date	13 December 2013 (Measured) 19 December 2013 (Laboratory results received by ERM)	
Monitoring Station	ASR8, ASR8A	
Parameter(s) with Exceedance(s)	24-hr TSP	
Action Levels	24-hr TSP ($\mu\text{g}/\text{m}^3$)	178
Limit Levels	24-hr TSP ($\mu\text{g}/\text{m}^3$)	260
Measured Levels	Action Level Exceedance is observed at ASR8A ($210 \mu\text{g}/\text{m}^3$) during 14:36 – 14:36 hrs next day. Action Level Exceedance is observed at ASR1 ($205 \mu\text{g}/\text{m}^3$) during 14:46 – 14:46 hrs next day.	
Works Undertaken (at the time of monitoring event)	On 13 December 2013, only tree felling works were being undertaken at Works Area 2, no construction works were being conducted at Works Area 4 and near Pak Mong.	
Possible Reason for Action or Limit Level Exceedance(s)	<p>The exceedances are unlikely to be due to the Project, in view of the following:</p> <ul style="list-style-type: none"> • According to the construction diary provided by the Contractor, tree felling works were being undertaken in WA2 while no construction works were being undertaken in WA4 and near Pak Mong. • With reference to the recorded wind direction and wind speed, wind was blowing to northwesterly and northeasterly direction in daytime (ranged between 260° and 70°, and wind speed ranged from 0.02 to 1.07 m/s) during the period of observed 24-hr TSP exceedances. While wind direction was changed to southerly (ranged between 111° and 210° and wind speed ranged from 0.02 to 0.03 m/s) between 03:30 and 06:30 on 14 December 2013 when no construction activities were being carried out. Stations ASR8A and ASR8 are located upstream of the major construction activities at the corresponding works area during daytime, thus they should not be affected by the dust, if any, generated by the concerned construction activities. • According to the air quality monitoring recorded by the closest EPD air monitoring station in Tung Chung on 13 and 14 December 2013, the average Respirable Suspended Particulates (RSP) from 14:00 on 13 December 2013 to 14:00 on 14 December 2013 showed a relatively higher value (RSP = $142 \mu\text{g}/\text{m}^3$) compared to that of 12 December (RSP = $93 \mu\text{g}/\text{m}^3$) and 15 December 2013 (RSP = $35 \mu\text{g}/\text{m}^3$). The observed exceedances could be resulting from the area-wide scale pollution in Hong Kong. • As stated in the EIA report (Section 4.2.2), both Hong Kong International Airport and the North Lantau transport corridor would be the key air pollution sources for this area, thus the exceedances may be also contributed cumulatively by the traffic emission and anthropogenic activities within Tung Chung Area. 	
Actions Taken / To Be Taken	The Contractor was reminded to ensure all dust mitigating measures are provided at all Works Area of this Project. The ET will monitor for future trends in exceedances.	
Remarks	The monitoring results, the locations of air quality monitoring stations and wind data are attached.	

Key

- Original Monitoring Station
- Alternative Monitoring Station
- Site Boundary

AQMS	X	Y
ASR9A	815847.40	818508.64
ASR9C	816399.52	818946.65
ASR8	815059.45	817488.99
ASR8A	815856.14	818118.14

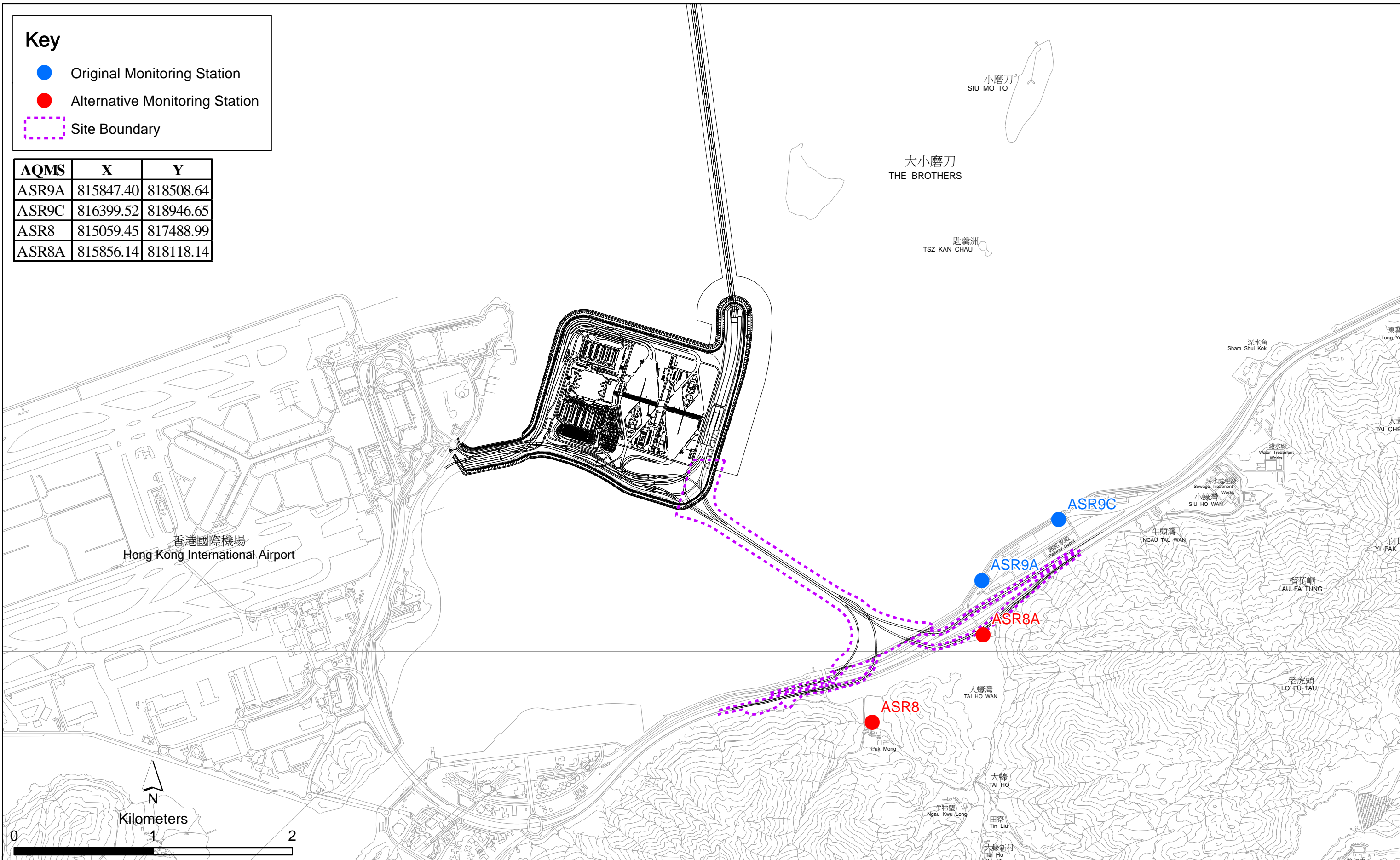


Figure 2.1

Locations of Air Quality Monitoring Stations

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	2013/12/03	ASR8A	11:26	24-hr TSP	93	178	260
TMCLKL	HY/2012/07	2013/12/09	ASR8A	11:16	24-hr TSP	161		
TMCLKL	HY/2012/07	2013/12/13	ASR8A	14:36	24-hr TSP	210		
TMCLKL	HY/2012/07	2013/12/19	ASR8A	11:36	24-hr TSP	80		
TMCLKL	HY/2012/07	2013/12/24	ASR8A	11:06	24-hr TSP	136		
TMCLKL	HY/2012/07	2013/12/30	ASR8A	11:06	24-hr TSP	137		

Average 136
 Min. 80
 Max. 210

24-hour TSP Monitoring Results at Air Quality Monitoring Station ASR8

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	2013/12/03	ASR8	11:36	24-hr TSP	102	178	260
TMCLKL	HY/2012/07	2013/12/09	ASR8	11:28	24-hr TSP	151		
TMCLKL	HY/2012/07	2013/12/13	ASR8	14:46	24-hr TSP	205		
TMCLKL	HY/2012/07	2013/12/19	ASR8	11:46	24-hr TSP	90		
TMCLKL	HY/2012/07	2013/12/24	ASR8	11:18	24-hr TSP	83		
TMCLKL	HY/2012/07	2013/12/30	ASR8	11:18	24-hr TSP	152		

Average 131
 Min. 83
 Max. 205

Action Level Exceedance
 Limit Level Exceedance

Date	Time (24hrs)	Wind Speed (m/s)	Wind Direction (degree)
2013/12/13	14:24:43	0.02	1.34
2013/12/13	14:29:43	0.02	278.44
2013/12/13	14:34:43	0.02	246.69
2013/12/13	14:39:43	0.02	-0.11
2013/12/13	14:44:43	0.02	267.30
2013/12/13	14:49:43	0.02	305.63
2013/12/13	14:54:43	0.02	163.68
2013/12/13	14:59:43	0.02	317.88
2013/12/13	15:04:43	0.02	359.67
2013/12/13	15:09:43	0.02	271.98
2013/12/13	15:14:43	0.02	269.30
2013/12/13	15:19:43	0.02	315.43
2013/12/13	15:24:43	0.02	268.86
2013/12/13	15:29:43	0.02	299.61
2013/12/13	15:34:43	0.02	300.06
2013/12/13	15:39:43	0.05	119.78
2013/12/13	15:44:43	0.02	243.79
2013/12/13	15:49:43	0.02	-0.11
2013/12/13	15:54:43	0.02	313.65
2013/12/13	15:59:43	0.02	245.01
2013/12/13	16:04:43	0.02	65.40
2013/12/13	16:09:43	0.02	323.01
2013/12/13	16:14:43	0.02	320.67
2013/12/13	16:19:43	0.02	264.96
2013/12/13	16:24:43	0.02	254.82
2013/12/13	16:29:43	0.02	294.93
2013/12/13	16:34:43	0.02	309.08
2013/12/13	16:39:43	0.02	259.39
2013/12/13	16:44:43	0.02	259.61
2013/12/13	16:49:43	0.02	235.88
2013/12/13	16:54:43	0.02	235.88
2013/12/13	16:59:43	0.02	235.88
2013/12/13	17:04:43	0.02	235.88
2013/12/13	17:09:43	0.02	270.42
2013/12/13	17:14:43	0.02	263.51
2013/12/13	17:19:43	0.02	238.55
2013/12/13	17:24:43	0.02	268.86
2013/12/13	17:29:43	0.02	268.64
2013/12/13	17:34:43	0.02	275.10
2013/12/13	17:39:43	0.02	259.16
2013/12/13	17:44:43	0.02	239.89
2013/12/13	17:49:43	0.02	287.47

2013/12/13	17:54:43	0.02	287.58
2013/12/13	17:59:43	0.02	211.81
2013/12/13	18:04:43	0.02	211.81
2013/12/13	18:09:43	0.03	211.92
2013/12/13	18:14:43	0.02	211.92
2013/12/13	18:19:43	0.02	250.03
2013/12/13	18:24:43	0.02	220.72
2013/12/13	18:29:43	0.02	246.57
2013/12/13	18:34:43	0.02	246.13
2013/12/13	18:39:43	0.02	248.80
2013/12/13	18:44:43	0.02	248.80
2013/12/13	18:49:43	0.02	248.91
2013/12/13	18:54:43	0.02	215.60
2013/12/13	18:59:43	0.02	269.30
2013/12/13	19:04:43	0.02	219.16
2013/12/13	19:09:43	0.02	219.39
2013/12/13	19:14:43	0.02	319.11
2013/12/13	19:19:43	0.02	283.01
2013/12/13	19:24:43	0.02	270.75
2013/12/13	19:29:43	0.06	212.70
2013/12/13	19:34:43	0.02	305.85
2013/12/13	19:39:43	0.02	320.56
2013/12/13	19:44:43	0.02	201.56
2013/12/13	19:49:43	0.02	272.53
2013/12/13	19:54:43	0.02	283.90
2013/12/13	19:59:43	0.02	254.71
2013/12/13	20:04:43	0.67	242.79
2013/12/13	20:09:43	0.02	221.39
2013/12/13	20:14:43	0.02	223.29
2013/12/13	20:19:43	0.12	283.79
2013/12/13	20:24:43	0.02	306.96
2013/12/13	20:29:43	0.02	239.00
2013/12/13	20:34:43	0.02	239.00
2013/12/13	20:39:43	0.02	268.97
2013/12/13	20:44:43	1.04	254.48
2013/12/13	20:49:43	0.03	266.30
2013/12/13	20:54:43	0.69	310.53
2013/12/13	20:59:43	0.06	173.59
2013/12/13	21:04:43	0.02	300.06
2013/12/13	21:09:43	0.02	278.22
2013/12/13	21:14:43	0.03	284.90
2013/12/13	21:19:43	0.06	283.68
2013/12/13	21:24:43	0.02	298.72

2013/12/13	21:29:43	0.02	285.46
2013/12/13	21:34:43	0.02	303.18
2013/12/13	21:39:43	0.02	278.66
2013/12/13	21:44:43	0.02	251.92
2013/12/13	21:49:43	0.02	302.28
2013/12/13	21:54:43	0.02	303.73
2013/12/13	21:59:43	0.02	259.28
2013/12/13	22:04:43	0.02	224.74
2013/12/13	22:09:43	0.02	334.82
2013/12/13	22:14:43	0.02	334.82
2013/12/13	22:19:43	0.02	334.82
2013/12/13	22:24:43	0.02	205.13
2013/12/13	22:29:43	0.02	205.01
2013/12/13	22:34:43	0.02	197.44
2013/12/13	22:39:43	0.02	197.55
2013/12/13	22:44:43	0.02	197.66
2013/12/13	22:49:43	0.02	197.66
2013/12/13	22:54:43	0.02	197.66
2013/12/13	22:59:43	0.02	197.66
2013/12/13	23:04:43	0.02	197.55
2013/12/13	23:09:43	0.02	197.66
2013/12/13	23:14:43	0.02	197.66
2013/12/13	23:19:43	0.02	197.66
2013/12/13	23:24:43	0.05	292.26
2013/12/13	23:29:43	0.02	252.14
2013/12/13	23:34:43	0.08	7.13
2013/12/13	23:39:43	0.02	294.71
2013/12/13	23:44:43	0.02	5.35
2013/12/13	23:49:43	0.02	303.62
2013/12/13	23:54:43	0.87	244.90
2013/12/13	23:59:43	1.07	267.63
2013/12/14	00:04:43	0.02	271.98
2013/12/14	00:09:43	0.02	247.69
2013/12/14	00:14:43	0.02	279.11
2013/12/14	00:19:43	0.02	271.42
2013/12/14	00:24:43	0.54	261.62
2013/12/14	00:29:43	0.02	236.10
2013/12/14	00:34:43	0.02	200.00
2013/12/14	00:39:43	0.02	200.00
2013/12/14	00:44:43	0.02	200.00
2013/12/14	00:49:43	0.02	200.11
2013/12/14	00:54:43	0.02	200.00
2013/12/14	00:59:43	0.02	200.00

2013/12/14	01:04:43	0.02	200.00
2013/12/14	01:09:43	0.02	200.11
2013/12/14	01:14:43	0.02	200.00
2013/12/14	01:19:43	0.02	302.17
2013/12/14	01:24:43	0.18	298.72
2013/12/14	01:29:43	0.73	346.07
2013/12/14	01:34:43	0.02	271.53
2013/12/14	01:39:43	0.17	264.74
2013/12/14	01:44:43	0.02	311.98
2013/12/14	01:49:43	0.02	195.88
2013/12/14	01:54:43	0.02	258.61
2013/12/14	01:59:43	0.02	233.09
2013/12/14	02:04:43	0.02	213.48
2013/12/14	02:09:43	0.23	254.82
2013/12/14	02:14:43	0.02	248.02
2013/12/14	02:19:43	0.02	326.35
2013/12/14	02:24:43	0.43	266.85
2013/12/14	02:29:43	0.21	361.34
2013/12/14	02:34:43	0.02	248.58
2013/12/14	02:39:43	0.66	274.09
2013/12/14	02:44:43	0.02	87.91
2013/12/14	02:49:43	0.02	155.77
2013/12/14	02:54:43	0.02	32.98
2013/12/14	02:59:43	0.02	32.87
2013/12/14	03:04:43	0.02	32.87
2013/12/14	03:09:43	0.02	32.87
2013/12/14	03:14:43	0.02	32.87
2013/12/14	03:19:43	0.02	32.87
2013/12/14	03:24:43	0.02	151.53
2013/12/14	03:29:43	0.02	151.53
2013/12/14	03:34:43	0.02	151.53
2013/12/14	03:39:43	0.02	151.53
2013/12/14	03:44:43	0.02	151.42
2013/12/14	03:49:43	0.02	151.42
2013/12/14	03:54:43	0.02	141.28
2013/12/14	03:59:43	0.02	141.28
2013/12/14	04:04:43	0.02	139.72
2013/12/14	04:09:43	0.03	129.69
2013/12/14	04:14:43	0.02	165.13
2013/12/14	04:19:43	0.02	165.13
2013/12/14	04:24:43	0.02	165.13
2013/12/14	04:29:43	0.02	165.24
2013/12/14	04:34:43	0.02	165.13

2013/12/14	04:39:43	0.02	165.13
2013/12/14	04:44:43	0.02	165.13
2013/12/14	04:49:43	0.02	174.71
2013/12/14	04:54:43	0.02	111.09
2013/12/14	04:59:43	0.02	178.38
2013/12/14	05:04:43	0.02	178.38
2013/12/14	05:09:43	0.02	178.38
2013/12/14	05:14:43	0.02	178.38
2013/12/14	05:19:43	0.02	178.38
2013/12/14	05:24:43	0.02	178.38
2013/12/14	05:29:43	0.02	178.38
2013/12/14	05:34:43	0.02	201.23
2013/12/14	05:39:43	0.02	201.23
2013/12/14	05:44:43	0.02	201.23
2013/12/14	05:49:43	0.02	201.23
2013/12/14	05:54:43	0.02	201.11
2013/12/14	05:59:43	0.02	201.23
2013/12/14	06:04:43	0.02	201.11
2013/12/14	06:09:43	0.02	201.23
2013/12/14	06:14:43	0.02	201.11
2013/12/14	06:19:43	0.02	201.23
2013/12/14	06:24:43	0.02	201.11
2013/12/14	06:29:43	0.02	136.71
2013/12/14	06:34:43	0.02	138.50
2013/12/14	06:39:43	0.02	138.50
2013/12/14	06:44:43	0.26	68.41
2013/12/14	06:49:43	0.02	27.74
2013/12/14	06:54:43	0.05	113.87
2013/12/14	06:59:43	0.02	102.06
2013/12/14	07:04:43	0.02	36.32
2013/12/14	07:09:43	0.02	47.58
2013/12/14	07:14:43	0.02	129.47
2013/12/14	07:19:43	0.02	215.93
2013/12/14	07:24:43	0.02	234.21
2013/12/14	07:29:43	0.02	234.09
2013/12/14	07:34:43	0.02	234.21
2013/12/14	07:39:43	0.02	234.21
2013/12/14	07:44:43	0.02	234.09
2013/12/14	07:49:43	0.02	234.21
2013/12/14	07:54:43	0.02	18.27
2013/12/14	07:59:43	0.26	53.15
2013/12/14	08:04:43	0.02	7.13
2013/12/14	08:09:43	0.02	152.42

2013/12/14	08:14:43	0.02	1.11
2013/12/14	08:19:43	0.08	360.22
2013/12/14	08:24:43	0.02	332.48
2013/12/14	08:29:43	0.02	45.13
2013/12/14	08:34:43	0.02	358.55
2013/12/14	08:39:43	0.02	33.31
2013/12/14	08:44:43	0.02	33.54
2013/12/14	08:49:43	0.02	41.34
2013/12/14	08:54:43	0.02	54.37
2013/12/14	08:59:43	0.02	54.37
2013/12/14	09:04:43	0.02	54.26
2013/12/14	09:09:43	0.02	54.37
2013/12/14	09:14:43	0.02	69.75
2013/12/14	09:19:43	0.02	126.69
2013/12/14	09:24:43	0.02	77.88
2013/12/14	09:29:43	0.02	87.35
2013/12/14	09:34:43	0.02	-0.45
2013/12/14	09:39:43	0.02	262.28
2013/12/14	09:44:43	0.02	348.30
2013/12/14	09:49:43	0.02	-0.33
2013/12/14	09:54:43	0.02	43.01
2013/12/14	09:59:43	0.02	345.74
2013/12/14	10:04:43	0.02	356.55
2013/12/14	10:09:43	0.12	-0.45
2013/12/14	10:14:43	0.02	359.55
2013/12/14	10:19:43	0.02	0.78
2013/12/14	10:24:43	0.02	-0.45
2013/12/14	10:29:43	0.02	25.52
2013/12/14	10:34:43	0.02	25.52
2013/12/14	10:39:43	0.02	277.33
2013/12/14	10:44:43	0.02	99.05
2013/12/14	10:49:43	0.02	68.41
2013/12/14	10:54:43	0.02	328.02
2013/12/14	10:59:43	0.02	53.70
2013/12/14	11:04:43	0.02	53.82
2013/12/14	11:09:43	0.02	53.82
2013/12/14	11:14:43	0.02	53.70
2013/12/14	11:19:43	0.02	-0.33
2013/12/14	11:24:43	0.02	-0.33
2013/12/14	11:29:43	0.02	-0.45
2013/12/14	11:34:43	0.02	0.11
2013/12/14	11:39:43	0.08	356.66
2013/12/14	11:44:43	0.02	353.65

2013/12/14	11:49:43	0.02	17.94
2013/12/14	11:54:43	0.02	68.97
2013/12/14	11:59:43	0.02	17.38
2013/12/14	12:04:43	0.02	17.38
2013/12/14	12:09:43	0.02	17.27
2013/12/14	12:14:43	0.02	49.92
2013/12/14	12:19:43	0.02	22.28
2013/12/14	12:24:43	0.02	207.35
2013/12/14	12:29:43	0.02	240.33
2013/12/14	12:34:43	0.02	40.00
2013/12/14	12:39:43	0.02	309.64
2013/12/14	12:44:43	0.02	212.92
2013/12/14	12:49:43	0.02	300.39
2013/12/14	12:54:43	0.02	352.87
2013/12/14	12:59:43	0.02	288.25
2013/12/14	13:04:43	0.02	303.40
2013/12/14	13:09:43	0.02	301.84
2013/12/14	13:14:43	0.02	353.54
2013/12/14	13:19:43	0.02	353.20
2013/12/14	13:24:43	0.02	338.27
2013/12/14	13:29:43	0.02	338.38
2013/12/14	13:34:43	0.02	175.71
2013/12/14	13:39:43	0.35	2.79
2013/12/14	13:44:43	0.02	351.31
2013/12/14	13:49:43	0.02	41.56
2013/12/14	13:54:43	0.02	23.73
2013/12/14	13:59:43	0.02	340.17
2013/12/14	14:04:43	0.02	339.61
2013/12/14	14:09:43	0.02	304.74
2013/12/14	14:14:43	0.02	342.40
2013/12/14	14:19:43	0.02	359.55
2013/12/14	14:24:43	0.02	356.10
2013/12/14	14:29:43	0.02	260.06
2013/12/14	14:34:43	0.02	1.45
2013/12/14	14:39:43	0.20	1.78
2013/12/14	14:44:43	0.24	289.58
2013/12/14	14:49:43	0.02	0.11