Your ref -
Our ref 214487/(HY/2011/09)/M45/630/B 07567

ARUP

B07567

By Hand

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The Environmental Impact Assessment
Ordinance Register Office
Environmental Protection Department
27/F., Southorn Centre
130 Hennessy Road
Wan Chai
Hong Kong

For the attention of Ms HO Yuen Han, Marlene

15 May 2014

Dear Madam

HyD Contract No. HY/2011/09
Hong Kong-Zhuhai-Macao Bridge
Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill
Submission under Environmental Permit (EP-352/2009/C - Condition 4.4)
Monthly EM&A Report – April 2014

On behalf of HyD/HZMB Project Management Office (the Permit Holder) of the captioned Environmental Permit (EP), I submit herewith three hard copies and one electronic copy of Monthly EM&A Report for April 2014 as per Condition 4.4 of EP-352/2009/C.

I confirm that this submission package has been certified by Environmental Team Leader and verified by Independent Environmental Checker.

Yours faithfully

Michael Chan
CRE / Supervising Officer's Representative

cc	HyD/HZMBHKPMO	- Mr K Y Yung	w/e – CD only
	EPD	- Ms Connie Wong	w/e – one hard copy
	AFCD	- Mr C P Lam	w/e – one hard copy
	ENPO	- Mr Y H Hui	w/e – one hard copy and one electronic copy
	IEC	- Mr Antony Wong	w/o – By fax only
	Arup	- Mr Eric Chan	w/e – CD only

Response required : No, thank you
Date required : -
Attachments : Yes

MC/DS/KY/et

Ref.: HYDHZMBEEM00_0_1922L.14

15 May 2014

ARUP
Level 5, Festival Walk
80 Tat Chee Avenue
Kowloon Tong, Kowloon

By Fax (3767 5922) and By Post

Attention: Mr. Colin Meadows / Mr. Michael Chan

Dear Sirs,

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/2011/09 HZMB Hong Kong Link Road –
Section between HKSAR Boundary and Scenic Hill
Revised Monthly EM&A Report for April 2014 (EP-352/2009/C)

Reference is made to the revised Monthly EM&A Report No. 15 (April 2014) Version 1.0 certified by the Environmental Team Leader (ETL) and emailed to us on 13 May 2014.

We are pleased to verify the captioned Revised Monthly EM&A Report No. 15 (April 2014) in accordance with Condition 4.4 of EP-352/2009/C.

The ETL shall be aware that the verification to the captioned report does not release the ETL of any of his obligations to comply with the EM&A Manual and the approved monitoring methodologies.

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,

Antony Wong
Independent Environmental Checker
Hong Kong Link Road

c.c.
	HyD – Mr. Matthew Fung	(By Fax: 3188 6614)
	HyD – Mr. Y K Lam	(By Fax: 3188 6614)
	ARUP – Mr. Eric Chan	(By Fax: 2268 3970)
	Cinotech – Dr. H F Chan	(By Fax: 3107 1388)
	DCVJV – Mr. Chu Chung Sing	(By Fax: 3121 6688)

Internal: DY, YH, PL, ENPO Site

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ENVIRON Hong Kong Limited 英環香港有限公司
Room 2403 Jubilee Centre, 18 Fenwick Street, Wan Chai, Hong Kong. Tel: 852 3465 2888 Fax: 852 3465 2899
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Dragages -China Harbour-VSL JV

Contract HY/2011/09

Hong Kong-Zhuhai-Macao Bridge

Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill

Monthly EM&A Report

April 2014
(Version 1.0)

Certified By 

Dr. H.F. Chan
Environmental Team Leader
(Date: 13 May 2014)

REMARKS:

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

CINOTECH accepts no responsibility for changes made to this report by third parties

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EXECUTIVE SUMMARY

Introduction

1. This is the 15th monthly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for the project "Contract No. HY/2011/09 – Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill" (hereinafter called the "Contract"). This report documents the findings of EM&A Works conducted in April 2014.

Environmental Monitoring and Audit Progress

2. A summary of the monitoring activities in this reporting month is listed in **Table I** below:

Table I Summary Table for Monitoring Activities in the Reporting Month

Parameter(s)	Date(s)
1-hr TSP Monitoring	2nd, 8th, 14th, 17th, 23rd and 29th April 2014.
24-hr TSP Monitoring	2nd, 8th, 14th, 17th, 23rd and 29th April 2014.
Noise Monitoring	3rd, 9th , 15th , 22nd and 30th April 2014
Water Quality Monitoring	2nd, 4th, 7th, 10th, 12th, 14th, 16th, 18th, 22nd, 24th , 26th, 28th and 30th April 2014
Dolphin Monitoring (Line-transect Vessel Surveys)	15th and 23rd April 2014
Additional Land-based Dolphin Behaviour and Movement Monitoring	16th and 25th April 2014
Environmental Site Inspection	1st, 8th , 15th, 25th and 29th April 2014
Archaeological Site Inspection	(1) N/A

Remark: (1) No archaeological site inspection was conducted in the reporting month.

Breaches of Action and Limit Levels

3. Summary of the environmental exceedances of the reporting month is tabulated in **Table II**.

Table II Summary Table for Events Recorded in the Reporting Month

Environmental Monitoring	Parameter	No. of Exceedance		No. of Exceedance related to the Construction Activities of this Contract	
		Action Level	Limit Level	Action Level	Limit Level
Air Quality	1-hr TSP	0	0	0	0
	24-hr TSP	0	0	0	0
Noise	$L_{eq(30min)}$	0	0	0	0
Water Quality	Dissolved Oxygen (DO) (Surface & Middle)	0	0	0	0
	Dissolved Oxygen (DO) (Bottom)	0	0	0	0
	Turbidity	0	0	0	0
	Suspended Solids (SS)	6	1	0	0

1-hour TSP Monitoring

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

24-hour TSP Monitoring

5. All 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

Construction Noise

6. All construction noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

Water Quality

7. All water quality monitoring was conducted as scheduled in the reporting month. There are six Action Level and one Limit Level exceedances for suspended solids were recorded. No Action/Limit Level exceedances for dissolved oxygen and turbidity were recorded.

8. According to the investigation, no pollution discharge was observed from the site. In addition, sediment plume due to natural fluctuation of shallow water and discharging from the area outside the site boundary to the monitoring station were observed. In addition, some of the exceeded results were similar or within the ranges baseline monitoring results. Therefore, the exceedances are considered not due to the Contract.

Complaint Log

9. One environmental complaint was received in the reporting month.

Notification of Summons and Successful Prosecutions

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

Reporting Changes

11. This report has been developed in compliance with the reporting requirements for the subsequent monthly EM&A Report as required by the EM&A Manual for Hong Kong Link Road (EM&A Manual).

Future Key Issues

12. Major site activities for the coming reporting month will include:

WA4

- Fabrication of rebar cages
- Fabrication of temporary piling platforms

WA7

- Fabrication of rebar cages
- Loading and Unloading of rebar materials

Marine Viaduct (P0 to P80)

- Construction of the temporary jetty
- Installation of temporary casings, piling jackets, temporary piles, platform and permanent casings
- Dismantling of piling jacket
- Piling platform removal works
- Pile excavation by Reverse Circulation Drill (RCD) method
- Pile excavation by Kelly method
- Inter-face coring test, full depth coring test, sonic test, friction test and load test
- Predrilling works
- Operation of floating concrete batching plants
- Trimming of pile head
- Grouting works
- Concreting for pile cap
- Driving of sheet piling
- Trial water cracking and trial shaft grouting

- Installation of recast shells and waterproofing works
- Advanced concrete breaking works inside the permanent steel casing
- Steel fixing to the column and formwork installation
- Kingpost installation for precast cap and associated steel welding works

Land Viaduct (P81 to P114)

- Land piling and concreting works
- Rebar threading for coupler
- Backfilling
- Tree transplant and maintenance works
- Installation of portal beam
- Excavation works and Earth Lateral Support (ELS)
- Pouring of pile cap and pile head breaking
- Formation works
- Pours of column
- Erection of side formwork for the portal and kickers
- Road diversion works
- Pre-drilling works, pile cap, column and portal construction
- Side formwork and wing slab soffit formwork
- Waling of ELS and backfill
- Steel fixing for bottom mat and side bars
- Carriageway diversion
- Tendon ducts
- Falsework erection

1 INTRODUCTION

1.1 Cinotech Consultants Limited (Cinotech) was appointed by Dragages -China Harbour-VSL JV (hereinafter called "the Contractor") as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) programme during construction phase of the Contract No. HY/2011/09 – Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill" (hereinafter called the "Contract") in accordance with EP Conditions 2.1.

Purpose of the report

1.2 This is the 15th EM&A report which summarises the impact monitoring results and audit findings for the EM&A programme in April 2014.

Structure of the report

1.3 The structure of the report is as follows:

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

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

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

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

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

Section 6: **Dolphin-Related Monitoring -** summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations and monitoring results.

Section 7: **Environmental Site Inspection -** summarises the audit findings of the weekly site inspections undertaken within the reporting month.

Section 8: **Environmental Non-conformance -** summarises any monitoring exceedance, environmental complaints, environmental summons and successful prosecutions within the reporting month.

Section 9: **Future Key Issues -** summarises the impact forecast and monitoring schedule for the next three months.

Section 10: **Conclusions and Recommendation**

2 CONTRACT INFORMATION

Background

2.1 The proposed Hong Kong - Zhuhai - Macao Bridge Hong Kong Link Road (HKLR) is 12km long connecting the Hong Kong-Zhuhai-Macao Bridge (HZMB) at the HKSAR Boundary with the Hong Kong Boundary Crossing Facilities (HKBCF) situated at the north eastern waters of the Hong Kong International Airport, opening a new and direct connection route between Hong Kong, Macao and the Western Pearl River Delta.

2.2 The HKLR comprises a 9.4km long viaduct section from the HKSAR boundary to Scenic Hill on the Airport Island; a 1km tunnel section to the reclamation formed along the east coast of the Airport Island and a 1.6km long at-grade road section on the reclamation connecting to the HKBCF. The tunnel section of HKLR will pass under Scenic Hill, Airport Road and Airport Railway to minimize the environmental and visual impacts to Tung Chung residents.

2.3 An application (No ESB-110/2003) for an Environmental Impact Assessment (EIA) Study Brief under Section 5(1) of the Environmental Impact Assessment Ordinance (EIAO) was submitted by Highways Department (the Project Proponent) on 8 October 2003 with a Project Profile (No. No. PP-201/2003) for the Hong Kong - Zhuhai - Macao Bridge Hong Kong Section and North Lantau Highway Connection. The Hong Kong - Zhuhai - Macao Bridge Hong Kong Section and North Lantau Highway Connection has subsequently been renamed as HKLR. EPD issued an EIA Study Brief (No: ESB-110/2003) in November 2003 to the Project Proponent to carry out an EIA study.

2.4 An EIA Study (Reg. No. AEIAR-144/2009) has been undertaken to provide information on nature and extent of environmental impacts arising from the construction and operation of HKLR. The Environmental Permit was issued on 4 November 2009 (Permit No. EP-352/2009). Pursuant to Section 13 of the EIAO, the Director of Environmental Protection amends the Environmental Permit (No. EP-352/2009) based on the Application No. VEP-339/2011 and the environmental Permit (Permit No. EP-352/2009/A) was issued on 9 November 2011 for HKLR to the Highways Department as the Permit Holder. Subsequently, the Director of Environmental Protection amends the Environmental Permits (No. EP-352/2009/A and EP-352/2009/B) based on the Application No. VEP-409/2013 and VEP-411/2013 respectively. The environmental Permit (Permit No. EP-352/2009/C) was then issued on 5 September 2013.

2.5 **Figure 1a-d** shows the layout of the Contract and the scope of the Contract works comprises the following major items:

- a dual 3-lane carriageway in the form of viaduct from the HKSAR boundary (connecting with the HZMB Main Bridge) to the Scenic Hill (connecting with the tunnel under separate Contract No. HY/2011/03), of approximately 9.4km in length with a hard shoulder for each bound of carriageway and a utilities trough on the outer edge of each bound of viaducts;
- a grade-separated turnaround facility located near San Shek Wan, composed of sliproads in the form of viaduct with single-lane carriageway bifurcated from the HKLR mainline with an elevated junction above the mainline;
- provision of ancillary facilities including, but not limited to, meteorological enhancement measures including the provisioning of anemometers and

modification of the wind profiler station at hillside of Sha Lo Wan, provisioning of a compensatory marine radar, and provisioning of security systems; and

- associated civil, structural, geotechnical, marine, environmental protection, landscaping, drainage and highways electrical and mechanical (E&M) works, street lightings, traffic aids and sign gantries, marine navigational aids, ship impact protection system, water mains and fire hydrants, lightning protection system, structural health monitoring and maintenance management system (SHM&MMS), supervisory control and data acquisition (SCADA) system, as well as operation and maintenance provisions of viaducts, provisioning of facilities for installation of traffic control and surveillance system (TCSS), provisioning of facilities for installation of telecommunication cables/equipments and reprovisioning works of affected existing facilities/utilities.

Contract Organisation

2.6 Different parties with different levels of involvement in the Contract organization include:

- Supervising Officer's Representative (SOR) – Ove Arup & Partners Hong Kong Limited (ARUP)
- Contractor –Dragages -China Harbour-VSL JV (DCVJV)
- Environmental Team (ET) – Cinotech Consultants Ltd. (Cinotech)

2.7 The proposed project organization and lines of communication with respect to the on-site environmental management structure are shown in **Figure 2**. The key personnel contact names and numbers are summarized in **Table 2.1.**

Table 2.1 Key Contacts of the Contract

Party	Position	Position	Phone No.	Fax No.
SOR (ARUP)	CRE	Mr. Michael Chan	3767 5803	3767 5922
		Mr. Colin Meadows	3767 5801	
ENPO/IEC (Environ)	Environmental Project Office Leader	Mr. Y. H Hui	3465 2888	3465 2899
	Independent Environmental Checker	Mr. Antony Wong	3465 2888	3465 2899
Contractor (DCVJV)	Deputy Project Director	Mr. W.K Poon	3121 6638	3121 6688
	Environmental Officer	Mr. CHU Chung Sing	3121 6672	
	24-hour Hotline	--	6898 6161	--
ET (Cinotech)	Environmental Team Leader	Dr. H.F Chan	2151 2088	3107 1388

2.8 ENVIRON Hong Kong Ltd. (Environ) is employed by the Highways Department as the Independent Environmental Checker (IEC) and Environmental Project Office (ENPO) for the Project.

Construction Programme

2.9 A copy of Contractor's construction programme is provided in **Appendix A**.

Summary of Construction Works Undertaken During Reporting Month

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

Land Viaduct (P85 to Abutment at SHT) & Marine Viaduct (P81 - P84)

(a) Drainage and water main diversion in Portion C was completed, backfilling to the abandon pipes in progress;Piling works for P84 are in progress.

(b) CLKSR narrowing was completed.

(c) One set of piling machine has been mobilized back to Portion C to start the piling of P108R. Remaining land piling machines are carrying out piling works in Portion A.

(d) Pile excavations and casing installation are in progress at P84, P85, P86, P87, P88 & P89 with 6 piles concreted in the reporting period.

(e) 49 pours for column were completed with 7 pours in this reporting period, 16 columns completed to top level (6 gridlines - P105, P109 to P113).

(f) Construction of the temporary carriageway for diversion at P82 & P83 is in progress.

(g) Airport Authority (AA)'s permit for formations of piling platform at P82 & P83 received and works are in progress.

(h) Sheet piles for pile cap construction at P111-L&R removed and area backfilled for portal scaffolding erection.

(i) Temporary drainage diversion for the 700mm U-channel near P114R was installed.

(j) Portal P110 was concreted on 8 April 2014.

(k) Portal P112 falsework erection was completed and formwork erection is in progress.

(l) Portal P105 steel bracket system was erected on 4, 10 to 12 April 2014. Falsework erection on steel bracket support is in progress.

(m) Portal P111 blinding slab was cast and erection of falsework is in progress.

(n) Dismantling of formwork and the falsework system for Portal P109 is in progress.

Marine Viaduct (P0 to P84)

RCD Method:

(a) Construction of temporary platform for piling works at P68 is in progress.

(b) Piling jackets were installed at P13, P27, P29, P58L, P60 &P76L.

(c) Piling jackets were dismantled at P58R, P59 & P72.

(d) Pile excavations and casing installation are in progress at P27, P28, P29, P58, P60, P64, P69, P70, P72 & P77 with 33 piles concreted in the reporting period.

(e) Inter-face coring tests were carried out at P52, P53 & P72.

(f) No full depth coring tests was carried in this reporting period.

(g) Sonic tests were carried out at P52, P56 & P72.

(h) Grouting works were carried out at P51 & P52.

Kelly Method:

(i) Installation of temporary piles were carried out at P4, P21 & P31.

(j) Installation of platforms were carried out at P4, P30 & P31.

(k) Installation of permanent casing were carried out at P4, P16, P30 & P31.

(l) Piling platform removal and temporary pile extraction were carried out at P19, P20, P35, P36, P39 & P42.

(m) Pile excavation by Kelly method are in progress at P17, P18, P33, P34 & P41 with 23 piles concreted in the reporting period.

(n) Inter-face core test were carried out at P19, P35 & P41.

(o) Full depth coring test for P19-L3 was completed.

(p) Sonic tests were carried out at P19, P20, P38, & P41.

Pilecap Construction:

(a) No precast cap shell was installed in this reporting period.

(b) Stage 1 reinforced concrete and waterproofing works were carried out and completed at P43 & P44.

(c) Stage 2 concreting was completed at P46 & P48.

(d) Kingpost installation and associated steel welding works for precast shell installation are in progress at P20, P40, P44 & P49.

(e) Concrete trimming and advanced trimming (inside casing) works were carried out at P38, P39, P40, P42, P43, P45, P49, P50, P51, P65 & P66.

(f) Works with cofferdam.

- P71L: Installation of waling strut at 1st layer was completed and installation of waling strut at 2nd layer is in progress; Drilling for shear pin is in progress.

- P73: Driving of sheet piling was completed and installation of access platform is in progress.

Column Construction

(a) P47 L&R: 1st lift columns were cast in this reporting period.
(b) Column insert installation, mobilization and temporary works at P47, P48 & P46 are in progress.
(c) 1st lift construction: P46, P47 & P48.
(d) 2nd lift construction: P47.
(e) 3rd lift construction (Pier Head): Nil

Deck Erection

(a) Preparatory works for segment erection:

- Lifting Frame LF2-1 fabrication continues in Dongguan.

- Modification work to the Segment Unloading Frame continues at Portion C.

- Construction of the footing for the Segment Unloading Frame at the Southeast Quay commenced.

- Delivery and assembly of LG2 commenced at RTT.

Precast Segment

(a) Progress of the precast concrete segment casting yard:

- Mould assembly for 1 no. Type B, 10 nos. Type A (including 2 no. SOP's), 2 nos. Type D, 4 nos. Type E, 2 no. Type CH2, 1 no. Type CH3 and 1 no. of CP (long span field segments and SOP) were assembled. Other Type CH and Type CP mould fabrication continues at the casting yard.

- Rebar jigs fabrication and installation continues with 29 of 30 nos. (6 in Line No. 1, 17 in Line No. 2, and 6 in Line No. 6 completed).

- A total of 118 segments were cast in this reporting period and up to end of the reporting period total 395 segments cast.

Precast Concrete Shell Casting

(a) Summary of precast shell cast in the precast yard:

Type of Shell	Number of Precast Shell Cast in this reporting period	Cumulative No. of Precast Shell Completed (up to 28th of each month)
CP1	6	22
CP2	1	1

CP4	1	2

Status of Environmental Licences, Notification and Permits

2.11 A summary of the relevant permits, licences, and/or notifications on environmental protection for this Contract is presented in **Table 2.2**.

Table 2.2 Status of Environmental Licences, Notification and Permits

Permit / License No.	Valid Period		Status
	From	To	
Environmental Permit (EP)			
EP-352/2009/C	05/09/2013	N/A	Valid
Consruction Noise Permit (CNP)			
P81 – P82: GW-RS1143-13	11/10/2013 (19:00)	10/04/2014 (24:00)	Expired
P71 – P74: GW-RS1221-13	31/10/2013(19:00)	28/04/2014(23:00)	Expired
WA7: GW-RW0960-13	14/01/2014 (23:00)	13/06/2014 (07:00)	Valid
WA4: GW-RW0006-14	19/01/2014(19:00)	18/07/2014 (23:00)	Valid
WA4B : GW-RW0008-14	10/01/2014(23:00)	09/07/2014(07:00)	Valid
P76-P80: GW-RS0048-14	01/02/2014(23:00)	27/07/2014(07:00)	Cancelled on 1 April 2014
P75-P80: GW-RS0054-14	27/01/2014(19:00)	26/07/2014(23:00)	Cancelled on 1 April 2014
WA7: GW-RW0097-14	28/02/2014(19:00)	27/08/2014(23:00)	Valid
P0-P68: GW-RS0122-14	18/02/2014(23:00)	13/08/2014(07:00)	Valid
P0-P68: GW-RS0123-14	18/02/2014(19:00)	12/08/2014(23:00)	Valid
Portion A: GW-RS0130-14	23/02/2014(19:00)	22/08/2014(23:00)	Valid
P101-P113: GW-RS0127-14	26/02/2014(19:00)	30/04/2014(23:00)	Valid
P101-P113:GW-RS0121-14	27/02/2014(00:00)	01/05/2014(06:30)	Valid
P69-P70: GW-RS0172-14	16/03/2014(19:00)	15/09/2014(23:00)	Valid
P81-P114: GW-RS0187-14	11/03/2014(19:00)	10/09/2014(23:00)	Valid
P75-P80: GW-RS0264-14	01/04/2014 (19:00)	27/07/2014 (07:00)	Valid
P81-P82: GW-RS0344-14	11/04/2014(00:00)	10/10/2014 (24:00)	Valid
Notification pursuant to Air Pollution Control (Construction Dust) Regulation			
345773	04/06/2012	N/A	Receipt acknowledged by EPD
Billing Account for Construction Waste Disposal			
A/C# 7015341 (Construction Site)	11/06/2012	N/A	Valid
A/C# 7015341 (Vessel Disposal)	17/02/2014	31/05/2014	Valid
Registration of Chemical Waste Producer			
WPN 5213-951-D2499-01	18/07/2012	N/A	Valid
Effluent Discharge License under Water Pollution Control Ordinance			
WA6A(DCVJV site office): WT00014053-2012	12/09/2012	30/09/2017	Valid
WA6B (SOR site office): WT00014447-2012	30/10/2012	31/10/2017	Valid
WA3: WT00015118-2013	30/01/2013	31/01/2018	Valid

Permit / License No.	Valid Period		Status
	From	To	
Portion C: WT00015356-2013	22/02/2013	28/02/2018	Valid
Portion A: WT00016076-2013	21/05/2013	31/05/2018	Valid
WA4B: WT00014750-2012	12/08/2013	31/08/2018	Valid
WA7: WT00015722-2013	16/01/2013	31/01/2019	Valid
P0 – P80: WT00018203-2014	30/01/2013	31/01/2019	Valid
P114: WT00018631-2014	31/03/2014	31/03/2019	Valid
Marine Dumping Permit			
Dumping of Phase 1, 2a, 2b, 2c and 2d (Type 1-Open Sea Disposal) marine sediment EP/MD/14-125	05/02/2014	04/08/2014	Valid
Dumping of Phase 1, 2a, 2b, 2c and 2d (Type 1D and Type 2) marine sediment EP/MD/14-151	21/03/2014	20/04/2014	Expired

3 AIR QUALITY MONITORING

Monitoring Requirements

3.1 In accordance with the EM&A Manual, impact 1-hour TSP and 24-hour TSP monitoring were conducted to monitor the air quality for the Contract. **Appendix B** shows the established Action/Limit Levels for the air quality monitoring works.

3.2 Impact 1-hour TSP monitoring was conducted for at least three times every 6 days, while impact 24-hour TSP monitoring was conducted for at least once every 6 days at 2 air quality monitoring stations.

Monitoring Location

3.3 Impact air quality monitoring was conducted at the 2 monitoring stations under the Contract, as shown in **Figure 3**. **Table 3.1** describes the locations of the air quality monitoring stations.

Table 3.1 Location for Air Quality Monitoring Locations

Monitoring Stations	Location
AMS1	Sha Lo Wan
AMS4	San Tau

Monitoring Equipment

3.4 **Table 3.2** summarizes the equipment used in the impact air monitoring programme. Copies of calibration certificates are attached in **Appendix C**.

Table 3.2 Air Quality Monitoring Equipment

Equipment	Model and Make	Quantity
HVS Sampler	TISCH Model: TE-5170	2
Calibrator	TISCH Model: TE-5025A	1
Wind Anemometer	DAVIS Model: Vantage PRO2 6152CUK	1

Monitoring Parameters, Frequency and Duration

3.5 **Table 3.3** summarizes the monitoring parameters and frequencies of impact dust monitoring during the course of the Contract activities. The air quality monitoring schedule for the reporting month is shown in **Appendix D**.

Table 3.3 Impact Dust Monitoring Parameters, Frequency and Duration

Parameters	Frequency
1-hr TSP	Three times / 6 days
24-hr TSP	Once / 6 days

Monitoring Methodology and QA/QC Procedure

1-hour and 24-hour TSP Air Quality Monitoring

Instrumentation

3.6 High Volume Samplers (HVS) completed with appropriate sampling inlets were employed for air quality monitoring. Each sampler was composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complies with that required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50).

HVS Installation

3.7 The following guidelines were adopted during the installation of HVS:

- Sufficient support was provided to secure the sampler against gusty wind.
- No two samplers were placed less than 2 meters apart.
- The distance between the sampler and an obstacle, such as buildings, was at least twice the height that the obstacle protrudes above the sampler.
- A minimum of 2 meters of separation from walls, parapets and penthouses was required for rooftop samples.
- A minimum of 2 meters separation from any supporting structure, measured horizontally was required.
- No furnaces or incineration flues were nearby.
- Airflow around the sampler was unrestricted.
- The samplers were more than 20 meters from the drip line.
- Any wire fence and gate, to protect the sampler, should not cause any obstruction during monitoring.
- Permission must be obtained to set up the samples and to obtain access to the monitoring stations; and
- A secured supply of electricity is needed to operate the samplers.

Filters Preparation

3.8 Filter paper of size 8" X 10" was used. A HOKLAS accredited laboratory, ETS – Testconsult Limited (ETS), was responsible for the preparation of 24-hr conditioned and pre-weighed filter papers for Cinotech's monitoring team.

3.9 All filters, which were prepared by ETS, were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25 °C and not variable by more than ±3 °C; the relative humidity (RH) was < 50% and not variable by more than ±5%. A convenient working RH was 40%.

3.10 ETS has comprehensive quality assurance and quality control programmes.

Operating/Analytical Procedures

3.11 Operating/analytical procedures for the air quality monitoring were highlighted as follows:

- Prior to the commencement of the dust sampling, the flow rate of the HVS was properly set (between 1.1 m^3/min. and 1.4 m^3/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.
- The power supply was checked to ensure the sampler worked properly.
- On sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the designated air quality monitoring station.
- The filter holding frame was then removed by loosening the four nuts and carefully a weighted and conditioned filter was centered with the stamped number upwards, on a supporting screen.
- The filter was aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.
- The shelter lid was closed and secured with the aluminum strip.
- The timer was then programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).
- After sampling, the filter was removed and sent to the ETS for weighing. The elapsed time was also recorded.
- Before weighing, all filters were equilibrated in a conditioning environment for 24 hours. The conditioning environment temperature should be between 25°C and 30°C and not vary by more than ±3°C; the relative humidity (RH) should be < 50% and not vary by more than ±5%. A convenient working RH is 40%. Weighing results were returned to Cinotech for further analysis of TSP concentrations collected by each filter.

Maintenance/Calibration

3.12 The following maintenance/calibration was required for the HVS:

- The high volume motors and their accessories were properly maintained. Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking were made to ensure that the equipment and necessary power supply are in good working condition.
- All HVS were calibrated (five point calibration) using Calibration Kit prior to the commencement of the baseline monitoring and thereafter at bi-monthly intervals.

Results and Observations

3.13 The monitoring results for 1-hour TSP and 24-hour TSP are summarized in **Table 3.4 and 3.5** respectively. Detailed monitoring results and graphical presentations of 1-hour and 24-hour TSP monitoring results are shown in **Appendices E and F** respectively.

Table 3.4 Summary Table of 1-hour TSP Monitoring Results during the Reporting Month

Monitoring Station	Concentration (μg/m3)		Action Level, μg/m^3	Limit Level, μg/m^3
	Average	Range		
AMS1	46	18 - 114	381	500
AMS4	39	18 - 66	352	

Table 3.5 Summary Table of 24-hour TSP Monitoring Results during the Reporting Month

Monitoring Station	Concentration (μg/m3)		Action Level, μg/m^3	Limit Level, μg/m^3
	Average	Range		
AMS1	39	18 - 62	170	260
AMS4	44	21 - 60	171	

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

3.15 All 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedances were recorded.

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

Table 3.6 Observation at Dust Monitoring Stations

Monitoring Station	Major Dust Source
AMS1	Exhaust from marine traffic
AMS4	N/A

3.17 The wind speed and wind direction were recorded by the installed Wind Anemometer set at AMS4. The location is shown in **Figure 3**.

3.18 The wind data for the reporting month is summarized in **Appendix J**.

Event and Action Plan

3.19 Should non-compliance of the criteria occur, action in accordance with the Action Plan in **Appendix K** shall be carried out.

4 NOISE MONITORING

Monitoring Requirements

4.1 In accordance with EM&A Manual, two noise monitoring stations, namely NMS1 and NMS4 were selected for impact monitoring for the Contract. Impact noise monitoring was conducted for at least once per week during the construction phase of the Contract. **Appendix B** shows the established Action and Limit Levels for the noise monitoring works.

Monitoring Location

4.2 Impact noise monitoring was conducted at the 2 monitoring stations under the Contract, as shown in **Figure 3**. **Table 4.1** describes the locations of the air quality monitoring stations.

Table 4.1 Location for Air Quality Monitoring Locations

Monitoring Stations	Location
NMS1	Sha Lo Wan
NMS4	San Tau

Monitoring Equipment

4.3 **Table 4.2** summarizes the noise monitoring equipment. Copies of calibration certificates are provided in **Appendix C**.

Table 4.2 Noise Monitoring Equipment

Equipment	Model and Make	Qty.
Integrating Sound Level Meter	SVAN 957	1
Calibrator	SV 30A	1

Monitoring Parameters, Frequency and Duration

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

Table 4.3 Noise Monitoring Parameters, Frequency and Duration

Monitoring Stations	Parameter	Period	Frequency
NMS1 NMS4	L_{10}(30 min.) dB(A) L_{90}(30 min.) dB(A) L_{eq}(30 min.) dB(A) (as six consecutive $L_{eq, 5min}$ readings)	0700-1900 hrs on normal weekdays	Once per week

Monitoring Methodology and QA/QC Procedures

- The microphone head of the sound level meter was positioned 1m exterior of the noise sensitive facade and lowered sufficiently so that the building's external wall acts as a reflecting surface.
- The battery condition was checked to ensure the correct functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
  - frequency weighting : A
  - time weighting : Fast
  - time measurement : L_{eq}(30 min.) dB(A) (as six consecutive $L_{eq, 5min}$ readings) during non-restricted hours (i.e. 0700-1900 hrs on normal weekdays)
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1.0 dB, the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.
- During the monitoring period, the L_{eq}, L_{90} and L_{10} were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- Noise measurement was paused temporarily during periods of high intrusive noise (e.g. dog barking, helicopter noise) if possible and observation was recorded when intrusive noise was not avoided.
- Noise monitoring was cancelled in the presence of fog, rain, and wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s. The wind speed shall be checked with a portable wind speed meter capable of measuring the wind speed in m/s.

Maintenance and Calibration

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

4.6 The sound level meter and calibrator were checked and calibrated at yearly intervals.

4.7 Immediately prior to and following each noise measurement the accuracy of the sound level meter shall be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements may be accepted as valid only if the calibration levels from before and after the noise measurement agree to within 1.0 dB.

Results and Observations

4.8 The noise monitoring results are summarized in **Table 4.4**. Detailed monitoring results and graphical presentations of noise monitoring are shown in **Appendices G**.

Table 4.4 Summary Table of Noise Monitoring Results during the Reporting Month

Monitoring Station	Noise Level, $L_{eq\ (30min)}$ dB(A)		Limit Level
	Average	Range	
NMS1	72	71 – 72	75 dB(A)
NMS4	61	59 – 62	

Remark: +3dB(A) Façade correction included

4.9 All noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

4.10 According to our field observations, the major noise source identified at the designated noise monitoring stations in the reporting month are as follows:

Table 4.5 Observation at Noise Monitoring Stations

Monitoring Station	Major Noise Source
NMS1	Air traffic & marine traffic noise
NMS4	Air traffic & marine traffic noise

Event and Action Plan

4.11 Should non-compliance of the criteria occur, action in accordance with the Action Plan in **Appendix K** shall be carried out.

5 WATER QUALITY MONITORING

Monitoring Requirements

5.1 According to EM&A Manual, impact water quality monitoring shall be carried out three days per week during the construction period. The interval between two sets of monitoring will not be less than 36 hours.

5.2 Replicate in-situ measurements and samples collected from each independent sampling event shall be collected to ensure a robust statistically interpretable database.

5.3 Impact water quality monitoring was conducted two times per monitoring day during mid ebb (within ± 1.75 hours of the predicted time) and mid flood tides (within ± 1.75 hours of the predicted time) at three depths (i.e. 1m below surface, mid-depth and 1m above seabed, except where the water depth less than 6m, mid-depth station may be omitted. Should the water depth be less than 3m, only the mid-depth station was monitored) Dissolved oxygen, Suspended solids (SS), turbidity, pH, salinity and temperature were monitored in accordance with the requirements set out in the EM&A Manual.

5.4 The proposal for changing Action and Limit Levels for water quality monitoring was submitted to EPD on 15 March 2013. No objection was received from EPD according to the letter (ref. (10) in Ax(3) to EP2/G/A/129pt.4) dated 25 March 2013. Therefore, the updated Action and Limit Levels for water quality monitoring was used for comparison starting from 25 March 2013.

5.5 **Appendix B** shows the established Action/Limit Levels for the water quality monitoring works.

Monitoring Locations

5.6 Impact water quality monitoring was conducted at 14 monitoring stations under the Contract which are summarized in **Table 5.1**. The monitoring station is also shown in **Figure 4**.

Table 5.1 Location for Marine Water Quality Monitoring Locations

Monitoring Stations	Coordinates	
	Easting	Northing
IS1	803474	815060
IS2	804851	815715
IS3	806502	815743
IS4	807008	816986
CS1	801784	812711
CS2	805849	818780
SR1	803126	812379
SR2	807856	816953
SR3	810525	816456
SR6	805837	821818
ST1	802677	816006
ST2	804055	818840

Monitoring Stations	Coordinates	
	Easting	Northing
ST3	800667	810126
SRA	809872	817152

Monitoring Equipment

Instrumentation

5.7 A multi-parameter meters (Model YSI 6820-C-M) were used to measure DO, turbidity, salinity, pH and temperature.

Dissolved Oxygen (DO) and Temperature Measuring Equipment

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

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

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

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

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

Turbidity

5.12 Turbidity was measured in situ by the nephelometric method. The instrument was portable and weatherproof using a DC power source complete with cable, sensor and comprehensive operation manuals. The equipment was capable of measuring turbidity between 0-1000 NTU. The probe cable was not less than 25m in length. The meter was calibrated in order to establish the relationship between NTU units and the levels of suspended solids. The turbidity measurement was carried out on split water sample collected from the same depths of suspended solids samples.

Sampler

5.13 A water sampler, consisting of a transparent PVC or glass cylinder of a capacity of not less than two litres which can be effectively sealed with cups at both ends was used. The water sampler has a positive latching system to keep it open and prevent premature closure until released by a messenger when the sampler was at the selected water depth.

Water Depth Detector

5.14 A portable, battery-operated echo sounder was used for the determination of water depth

at each designated monitoring station.

pH

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

Salinity

5.16 A portable salinometer capable of recording salinity within the range of 0-40 ppt was used for salinity measurements.

Monitoring Position Equipment

5.17 A hand held Differential Global Positioning System (DGPS) was used during water quality monitoring to ensure the monitoring vessel is at the correct location before taking measurements.

Sample Container and Storage

5.18 Following collection, water samples for laboratory analysis were stored in high density polythene bottles (250ml/1L) with no preservatives added, packed in ice (cooled to 4°C without being frozen) and kept in dark during both on-site temporary storage and shipment to the testing laboratory. The samples were delivered to the laboratory as soon as possible and the laboratory determination works were started within 24 hours after collection of the water samples. Sufficient volume of samples was collected to achieve the detection limit.

Calibration of In Situ Instruments

5.19 All in situ monitoring instruments were checked, calibrated and certified by a laboratory accredited under HOKLAS or other international accreditation scheme before use, and subsequently re-calibrated at 3 monthly intervals throughout all stages of the water quality monitoring programme. Responses of sensors and electrodes were checked with certified standard solutions before each use. Wet bulb calibration for a DO meter was carried out before measurement at each monitoring event.

5.20 For the on site calibration of field equipment (Multi-parameter Water Quality System), the BS 1427:2009, "Guide to on-site test methods for the analysis of waters" was observed.

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

5.22 The equipment used for impact water quality monitoring is shown in **Table 5.2** and copies of the calibration certificates are shown in **Appendix C**. All the monitoring

equipment complied with the requirements set out in the EM&A Manual.

Table 5.2 Water Quality Monitoring Equipment

Equipment	Model and Make	Qty
Sonar Water Depth Detector	Garmin Fishfinder 140	2
Monitoring Position Equipment	KODEN DGPS (KGP913MKIID, GA-08 & BA-03)	2
Multi-parameter Water Quality System	YSI 6820-C-M	2
Water Sampler	Kahlsico Water-Bottle Model 135DW 150	2

Monitoring Parameters, Frequency

5.23 **Table 5.3** summarizes the monitoring parameters, monitoring period and frequencies of the water quality monitoring. The water quality monitoring schedule for the reporting month is shown in **Appendix D**.

Table 5.3 Water Quality Monitoring Parameters and Frequency

Monitoring Stations	Parameters, unit	Depth	Frequency
IS1, IS2, IS3 IS4, CS1, CS2, SR1, SR2, SR3, SR6, ST1, ST2, ST3, SRA	• Temperature(°C) • pH(pH unit) • turbidity (NTU) • water depth (m) • salinity (ppt) • dissolved oxygen (DO) (mg/L and % of saturation) • suspended solids (SS) (mg/L)	• 3 water depths: 1m below sea surface, mid-depth and 1m above sea bed. • If the water depth is less than 3m, mid-depth sampling only. • If water depth less than 6m, mid-depth may be omitted.	• Impact monitoring: 3 days per week, at mid-flood and mid-ebb tides during the construction period of the Contract

5.24 Monitoring location/position, time, water depth, sampling depth, pH, salinity, DO saturation, water temperature, tidal stages, weather conditions and any special phenomena or work underway nearby were recorded.

Monitoring Methodology

Instrumentation

5.25 A multi-parameter meters (Model YSI 6820-C-M) were used to measure DO, turbidity, salinity, pH and temperature.

Operating/Analytical Procedures

5.26 The monitoring stations were accessed by the guide of a hand-held Differential Global Positioning System (DGPS) during water quality monitoring in accordance with the EM&A Manual. The depth of the monitoring location was measured using depth meter

in order to determine the sampling depths. Afterwards, the probes of the in-situ measurement equipment were lowered to the predetermined depths (1 m below water surface, mid-depth and 1 m above seabed) and the measurements were carried out accordingly.

5.27 At each measurement, two consecutive measurements of DO concentration, DO saturation, salinity, turbidity, pH and temperature were taken. The probes were retrieved out of the water after the first measurement and then re-deployed for the second measurement. Where the difference in the value between the first and second readings of each set was more than 25% of the value of the first reading, the reading was discarded and further readings were taken.

5.28 Water sampler was lowered into the water to the required depths of sampling. Upon reaching the pre-determined depth, a messenger to activate the sampler was then released to travel down the wire. The water sample was sealed within the sampler before retrieving. At each station, water samples at three depths (1 m below water surface, mid-depth and 1 m above seabed) were collected accordingly. Water samples were stored in a cool box and kept at less than 4°C but without frozen and sent to the laboratory as soon as possible. In addition, field information as described in Section 5.23 was also recorded.

Laboratory Analytical Methods

5.29 The testing of all parameters was conducted by CMA Testing and Certification Laboratories (HOKLAS Registration No.004) and comprehensive quality assurance and control procedures in place in order to ensure quality and consistency in results. The testing method, reporting limit and detection limit are provided in **Table 5.4**.

Table 5.4 Methods for Laboratory Analysis for Water Samples

Determinant	Instrumentation	Analytical Method	Detection Limit
Suspended Solid (SS)	Weighing	APHA 21e 2540D	0.5 mg/L

QA/QC Requirements

Decontamination Procedures

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

Sampling Management and Supervision

5.31 All sampling bottles were labelled with the sample I.D (including the indication of sampling station and tidal stage e.g. IS1_me_a), laboratory number and sampling date. Water samples were dispatched to the testing laboratory for analysis as soon as possible after the sampling. All samples were stored in a cool box and kept at less than 4°C but without frozen. All water samples were handled under chain of custody protocols and relinquished to the laboratory representatives at locations specified by the laboratory.

5.32 The laboratory determination works were started within 24 hours after collection of the water samples.

Quality Control Measures for Sample Testing

5.33 The samples testing were performed by CMA Testing and Certification Laboratories.

5.34 The following quality control programme was performed by the CMA Testing and Certification Laboratories for every batch of 20 samples:

- ✧ One set of quality control (QC) samples.

Maintenance and Calibration

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

Results and Observations

5.36 The monitoring results and graphical presentation of water quality at the monitoring stations is shown in **Appendix H.**

5.37 The summary of exceedance record in reporting month is shown in **Appendix L** and summarized in the **Table 5.5**.

Table 5.5 Summary of Water Quality Exceedances

Station	Exceedance Level	DO (Surface & Middle)		DO(Bottom)		Turbidity		SS		Total Number of Exceedances	
		Mid-Ebb	Mid-Flood	Mid-Ebb	Mid-Flood	Mid-Ebb	Mid-Flood	Mid-Ebb	Mid-Flood	Mid-Ebb	Mid-Flood
IS1	Action Level								02/04/2014	0	1
	Limit Level									0	0
IS2	Action Level								02/04/2014	0	1
	Limit Level									0	0
IS3	Action Level								14/04/2014	0	1
	Limit Level									0	0
IS4	Action Level								02/04/2014 14/04/2014	0	2
	Limit Level									0	0
SR1	Action Level									0	0
	Limit Level									0	0
SR2	Action Level									0	0
	Limit Level								14/04/2014	0	1
SR3	Action Level									0	0
	Limit Level									0	0
SR6	Action Level									0	0
	Limit Level									0	0
ST1	Action Level								02/04/2014	0	1
	Limit Level									0	0
ST2	Action Level									0	0
	Limit Level									0	0
ST3	Action Level									0	0
	Limit Level									0	0
SRA	Action Level									0	0
	Limit Level									0	0
Total	Action Level	0	0	0	0	0	0	0	6		
	Limit Level	0	0	0	0	0	0	0	1		

5.38 All water quality monitoring was conducted as scheduled in the reporting month. There are six Action Level and one Limit Level exceedances for suspended solids were recorded. No Action/Limit Level exceedances for dissolved oxygen and turbidity were recorded.

5.39 According to the investigation, no pollution discharge was observed from the site. In addition, sediment plume due to natural fluctuation of shallow water and discharging from the area outside the site boundary to the monitoring station were observed. In addition, some of the exceeded results were similar or within the ranges baseline monitoring results. Therefore, the exceedances are considered not due to the Contract.

Event and Action Plan

5.40 Should non-compliance of the criteria occur, action in accordance with the Action Plan in **Appendix K** shall be carried out.

6 DOLPHIN-RELATED MONITORING

Monitoring Requirements

6.1 According to Section 10 of the EM&A Manual, four kinds of ecological monitoring works are required during the construction phase, namely dolphin monitoring, construction-phase underwater noise monitoring, dolphin behavior monitoring and land-based dolphin behavior and movement monitoring. The 30 days of construction-phase underwater noise monitoring, dolphin behavior monitoring and land-based dolphin behavior and movement monitoring were completed in July 2013.

6.2 The monitoring work shall be undertaken by suitably qualified specialist(s), (i.e. dolphin specialist and bio-acoustician), who shall have sufficient (at least 5-10 years) relevant post-graduate experience and publication in the respective aspects. They should be approved by Agriculture, Fisheries and Conservation Department (AFCD) and Environmental Protection Department (EPD).

Dolphin Monitoring (Line-transect Vessel Survey)

Monitoring Requirements

6.3 According to EM&A Manual Section 10.3.2, a dolphin monitoring programme should be set up to verify the predictions of impacts and to ensure that there are no unforeseen impacts on the dolphin population during construction phase.

6.4 Following the requirement in the EM&A Manual Section 10.4.1, the dolphin monitoring should adopt line-transect vessel survey method, and cover the following line-transect survey areas as in AFCD annual marine mammal monitoring programme.

Monitoring Location

6.5 For this contract, dolphin monitoring will be carried out in the West Lantau (WL) along the line transect as depicted in **Figure 1** of **Appendix I**. The co-ordinates of all transect lines are shown in **Table 6.1**.

Table 6.1 Co-ordinates of transect lines in WL survey area

Line No.		Easting	Northing	Line No.		Easting	Northing
1	Start Point	803750	818500	7	Start Point	800200	810450
1	End Point	803750	815500	7	End Point	801400	810450
2	Start Point	803750	815500	8	Start Point	801300	809450
2	End Point	802940	815500	8	End Point	799750	809450
3	Start Point	802550	814500	9	Start Point	799400	808450
3	End Point	803700	814500	9	End Point	801430	808450
4	Start Point	803120	813600	10	Start Point	801500	807450
4	End Point	801640	813600	10	End Point	799600	807450

Line No.		Easting	Northing	Line No.		Easting	Northing
5	Start Point	801100	812450	11	Start Point	800300	806500
5	End Point	802900	812450	11	End Point	801750	806500
6	Start Point	802400	811500	12	Start Point	801760	805450
6	End Point	800660	811500	12	End Point	800700	805450

Monitoring Frequency

6.6 Dolphin transect survey was carried out at least twice a month (i.e. complete all the transect lines of West Lantau survey area twice per month) throughout the construction period.

Monitoring Day

6.7 Dolphin monitoring was carried out on 15th and 23rd April 2014. The dolphin monitoring schedule for the reporting period is shown in **Appendix D**.

Monitoring Results

6.8 From these surveys, a total of 64.51 km of survey effort was collected, with 75.3% of the total survey effort being conducted under favorable weather conditions (i.e. Beaufort Sea State 3 or below with good visibility) Out of the 64.51 km of survey effort, the total survey effort conducted on primary lines (the vertical lines perpendicular to the coastlines) was 42.33 km.

6.9 5 groups of 18 Chinese White Dolphins were sighted from primary lines. Dolphins groups were scattered in the waters between Tai O Peninsula and Fan Lau with no apparent concentration of sightings. None of the dolphin sightings was made in the vicinity of the HKLR09 alignment, and the majority of dolphins were sighted far away from the bridge alignment.

6.10 Dolphin encounter rates deduced from the survey effort and on-effort sighting data made under favourable conditions (Beaufort 3 or below) are shown in **Table 6.2**.

Table 6.2 Dolphin encounter rates (sightings per 100 km of survey effort) in April's surveys

		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**
WL	Set 1: April 15th	23.4	58.6
	Set 2: April 23rd	0.0	0.0

6.11 The average group size of Chinese White Dolphins was 4.43 individuals per group during April's surveys, which was slightly higher to the ones in previous months of monitoring surveys.

6.12 During this month of dolphin monitoring, marine construction activities have continued

under this contract. However, no adverse impact on Chinese white dolphins was noticeable from general observations.

6.13 Evaluation of impacts on dolphins due to construction work will be conducted in the quarterly EM&A report.

6.14 Detailed monitoring methodology and results can be found in **Appendix I**.

Additional Land-based Dolphin Behaviour and Movement Monitoring

6.15 Additional land-based dolphin behavior and movement monitoring was conducted on 16th and 25th April 2014 in the reporting month. The progress of the monitoring is summarized in the **Table 6.3**.

Table 6.3 Progress Record of Additional Land-based Dolphin Behaviour and Movement Monitoring in April 2014

Date	Time	Weather		Number of Staff	Number of Dolphin Sighting
		Beaufort	Visibility		
2014/4/16	09:05 - 14:49	2-3	2.5-3	3	2
2014/4/25	09:08 - 14:47	2-4	2	3	0

6.16 Detailed monitoring methodology and results will be provided in a separate report after the completion of full set of additional land-based dolphin behavior and movement monitoring.

7 ENVIRONMENTAL SITE INSPECTION

Site Audits

7.1 Site audits were carried out by ET on weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Contract site. The summaries of site audits are attached in **Appendix M**.

7.2 Site audits were conducted on 1st, 8th, 15th, 25th and 29th April 2014 by ET after the commencement of construction works for the Contract. A joint site audit with the representative with IEC, ER, the Contractor and the ET was carried out on 25th April 2014. The details of observations during site audit can refer to **Table 7.1**.

7.3 According to EP condition 4.7 and EM&A Manual, periodic monitoring (every three months) of construction works shall be conducted to ensure the avoidance of any impacts on Sha Lo Wan (West) Archaeological Site. Access to Sha Lo Wan (West) Archaeological site for works areas and storage of construction equipment is not allowed. The 5th inspection to the Sha Lo Wan (West) Archaeological Site was conducted on 21st March 2014 and next inspection will be conducted in June 2014. Implementation Status of Environmental Mitigation Measures

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

7.5 Regular marine travel route for marine vessels were implemented properly in accordance with the submitted plan and relevant records were kept properly.

7.6 Acoustic decoupling measures for the stationary equipment (generators, winch generators and air compressors) mounted on boards were adopted according to the submitted Acoustic Decoupling Measures Plan.

7.7 Dolphin exclusion zone and dolphin watching plan according to EM&A Manual, Section 10.2.12 and EP Condition 3.5 was implemented by DCVJV's trained dolphin watcher.

7.8 Spill kits and booms are ready on site for the event of accidental spillage of oil or other hazardous chemicals from construction activities including vessels operating for the Contract.

7.9 During site inspections in the reporting month, no non-conformance was identified. The observations and recommendations made during the audit sessions are summarized in **Table 7.1**.

Table 7.1 Observations and Recommendations of Site Audit

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	01/04/2014	Clear the stagnant water with oil which is nearly overflow at the drip tray at Portion C.	Rectification/improvement was observed during the follow-up audit session on 8 April 2014.
	01/04/2014	Clear the sand at the public road and provide sand bag bund at the water barrier for avoiding leakage of muddy water (Portion C).	Rectification/improvement was observed during the follow-up audit session on 8 April 2014.
	01/04/2014	Properly deploy the silt curtain at P106 and P107.	Rectification/improvement was observed during the follow-up audit session on 15 April 2014.
	01/04/2014	Clear the floating rubbish within the silt curtain at P101.	Rectification/improvement was observed during the follow-up audit session on 8 April 2014.
	08/04/2014	Properly deploy the silt curtain at P106.	Rectification/improvement was observed during the follow-up audit session on 15 April 2014.
	15/04/2014	Pipe should be replaced or repaired to avoid leakage of muddy water. (P27)	Rectification/improvement was observed during the follow-up audit session on 25 April 2014.
	15/04/2014	The Contractor was reminded to treat the waste water before discharge. (P71)	Rectification/improvement was observed during the follow-up audit session on 25 April 2014.
	25/04/2014	Clear the excess dusty materials at the boundary of platform at P49.	Rectification/improvement was observed during the follow-up audit session on 29 April 2014.
	29/04/2014	Clear the general refuse inside the casting at P20.	Rectification/improvement was observed during the follow-up audit session on 7 May 2014.
Ecology	N/A[(1)]	N/A[(1)]	N/A[(1)]
Air Quality	01/04/2014	Clear the sand at the public road and provide sand bag bund at the water barrier for avoiding leakage of muddy water (Portion C).	Rectification/improvement was observed during the follow-up audit session on 8 April 2014.
	29/04/2014	To check the generator which emitted heavy smoke at the barge at P20.	Rectification/improvement was observed during the follow-up audit session on 7 May 2014.
	29/04/2014	Clear the stockpile of concrete material at the boundary of platform at P39.	Rectification/improvement was observed during the follow-up audit session on 7 May 2014.
Noise	29/04/2014	Provide acoustic decoupling measure for the generator at the barge at P20.	Rectification/improvement was observed during the follow-up audit session on 7 May 2014.
	29/04/2014	Provide noise emission labels for the hand-held breaker at P39.	Rectification/improvement was observed during the follow-up audit session on 7

Parameters	Date	Observations and Recommendations	Follow-up
			May 2014.
Waste / Chemical Management	01/04/2014	To remove the oil containers away from the drainage channel at Portion C.	Rectification/improvement was observed during the follow-up audit session on 8 April 2014.
	01/04/2014	Clear the oil spillage at near the site drain near site exit at Portion C.	Rectification/improvement was observed during the follow-up audit session on 8 April 2014.
	08/04/2014	Provide mitigation measures to avoid the oil leakage at near office container at Portion C.	Rectification/improvement was observed during the follow-up audit session on 15 April 2014.
	08/04/2014	Clear the accumulated waste at Portion C.	Rectification/improvement was observed during the follow-up audit session on 15 April 2014.
	08/04/2014	Clear the soil at the U-channel at near P106.	Rectification/improvement was observed during the follow-up audit session on 15 April 2014.
	08/04/2014	To remove the construction materials at near the tree at P103.	Rectification/improvement was observed during the follow-up audit session on 15 April 2014.
	08/04/2014	To seal the hole of the drip tray at P98.	Rectification/improvement was observed during the follow-up audit session on 15 April 2014.
	15/04/2014	Drip tray should be well-maintained to prevent leakage (P27)	Rectification/improvement was observed during the follow-up audit session on 25 April 2014.
	25/04/2014	To review the size of the drip tray for the air compressor to avoid oil spillage at P49.	Rectification/improvement was observed during the follow-up audit session on 29 April 2014.
	29/04/2014	Clear the oil leakage at the barge at P20.	Rectification/improvement was observed during the follow-up audit session on 7 May 2014.
Landscape & Visual Impact	N/A[(1)]	N/A[(1)]	N/A[(1)]
Permits/Licences	15/04/2014	Permits (EP, CNP) should be displayed on site conspicuously. (P27)	Rectification/improvement was observed during the follow-up audit session on 25 April 2014.
	29/04/2014	To display the CNP, if any at P39 and P48.	Rectification/improvement was observed during the follow-up audit session on 7 May 2014.
Other	N/A[(1)]	N/A[(1)]	N/A[(1)]
Cultural Heritage (Sha Lo Wan (West) Archaeological Site)	N/A[(2)]	N/A[(2)]	N/A[(2)]

Remark: N/A(1) - No major environmental deficiency was identified during the site inspection in the reporting month.

N/A(2) No archaeological site inspection was conducted in the reporting month.

Advice on the Solid and Liquid Waste Management Status

7.10 According to the Contractor, 7,401m^3 inert C&D materials were generated during the reporting month.

7.11 The Contractor was advised to minimize the wastes generated through the recycling or reusing. All mitigation measures stipulated in approved waste management plan shall be fully implemented.

7.12 The amount of wastes generated by the activities of the Contract during the reporting month is shown in **Appendix O**.

8 ENVIRONMENTAL NON-CONFORMANCE (EXCEEDANCES)

Summary of Exceedances

8.1 Summary of exceedance is provided in **Appendix L**.

8.2 No Action/Limit Level exceedance was recorded for air quality and construction noise.

8.3 All water quality monitoring was conducted as scheduled in the reporting month. There are six Action Level and one Limit Level exceedances for suspended solids were recorded. No Action/Limit Level exceedances for dissolved oxygen and turbidity were recorded.

8.4 According to the investigation, no pollution discharge was observed from the site. In addition, sediment plume due to natural fluctuation of shallow water and discharging from the area outside the site boundary to the monitoring station were observed. In addition, some of the exceeded results were similar or within the ranges baseline monitoring results. Therefore, the exceedances are considered not due to the Contract.

Summary of Environmental Complaint

8.5 One environmental related complaint was received in the reporting month. The Complaint Log is attached in **Appendix P**.

Summary of Notification of Summons and Successful Prosecution

8.6 There was no prosecution or notification of summons received since the Contract commencement.

9 FUTURE KEY ISSUES

Key Issues in the Coming Month

9.1 Major site activities for the coming reporting month will include:

WA4

- Fabrication of rebar cages
- Fabrication of temporary piling platforms

WA7

- Fabrication of rebar cages
- Loading and Unloading of rebar materials

Marine Viaduct (P0 to P80)

- Construction of the temporary jetty
- Installation of temporary casings, piling jackets, temporary piles, platform and permanent casings
- Dismantling of piling jacket
- Piling platform removal works
- Pile excavation by Reverse Circulation Drill (RCD) method
- Pile excavation by Kelly method
- Inter-face coring test, full depth coring test, sonic test, friction test and load test
- Predrilling works
- Operation of floating concrete batching plants
- Trimming of pile head
- Grouting works
- Concreting for pile cap
- Driving of sheet piling
- Trial water cracking and trial shaft grouting
- Installation of recast shells and waterproofing works
- Advanced concrete breaking works inside the permanent steel casing
- Steel fixing to the column and formwork installation
- Kingpost installation for precast cap and associated steel welding works

Land Viaduct (P81 to P114)

- Land piling and concreting works
- Rebar threading for coupler
- Backfilling
- Tree transplant and maintenance works
- Installation of portal beam
- Excavation works and Earth Lateral Support (ELS)
- Pouring of pile cap and pile head breaking
- Formation works
- Pours of column
- Erection of side formwork for the portal and kickers
- Road diversion works
- Pre-drilling works, pile cap, column and portal construction

- Side formwork and wing slab soffit formwork
- Waling of ELS and backfill
- Steel fixing for bottom mat and side bars
- Carriageway diversion
- Tendon ducts
- Falsework erection

Monitoring Schedule for the Next Month

9.2 The tentative environmental monitoring schedule for the next month is shown in **Appendix D**.

Construction Programme for the Next Month

9.3 A tentative construction programme is provided in **Appendix A**.

10 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

10.1 The Environmental Monitoring and Audit (EM&A) Report presents the EM&A works undertaken in April 2014 in accordance with EM&A Manual.

10.2 No Action/Limit Level exceedance was recorded for air quality and construction noise.

10.3 For water quality monitoring, there are six Action Level and one Limit Level exceedances for suspended solids were recorded. No Action/Limit Level exceedances for dissolved oxygen and turbidity were recorded.

10.4 According to the investigation, no pollution discharge was observed from the site. In addition, sediment plume due to natural fluctuation of shallow water and discharging from the area outside the site boundary to the monitoring station were observed. In addition, some of the exceeded results were similar or within the ranges baseline monitoring results. Therefore, the exceedances are considered not due to the Contract.

10.5 Dolphin transect survey was carried out on 15th and 23rd April 2014. No adverse impact on Chinese White Dolphins was noticeable from general observations.

10.6 Two days of additional Land-based Dolphin Behaviour and Movement Monitoring were conducted on 16th and 25th April 2014.

10.7 Environmental site inspection was conducted on 4th, 8th, 15th, 25th and 29th April 2014 by ET in the reporting month. All deficiencies identified during the site inspection have already rectified / improved during the follow-up audit session.

10.8 No inspection to the Sha Lo Wan (West) Archaeological Site was conducted in the reporting month.

10.9 There were one environmental complaint, no notification of summons and successful prosecution received.

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

Recommendations

10.11 According to the environmental audit performed in the reporting month, the following recommendations were made:

Air Quality Impact

- To regularly maintain the quality of machinery and vehicles on site.
- To implement dust suppression measures on all haul roads, stockpiles, dry surfaces and excavation works.
- To provide hoarding along the entire length of that portion of the site boundary.

Noise Impact

- To inspect the noise sources inside the site.
- To space out noisy equipment and position the equipment as far away as possible from sensitive receivers.
- To provide temporary noise barriers for operations of noisy equipment near the noise sensitive receivers, if necessary.

Water Impact

- To prevent any surface runoff discharge into any stream course and sea.
- To review and implement temporary drainage system.
- To identify any wastewater discharges from site.
- To ensure properly maintenance for de-silting facilities.
- To clear the silt and sediment in the sedimentation tanks.
- To review the capacity of de-silting facilities for discharge.
- To divert all the water generated from construction site to de-silting facilities with enough handling capacity before discharge.
- To avoid accumulation of stagnant and ponding water on site.

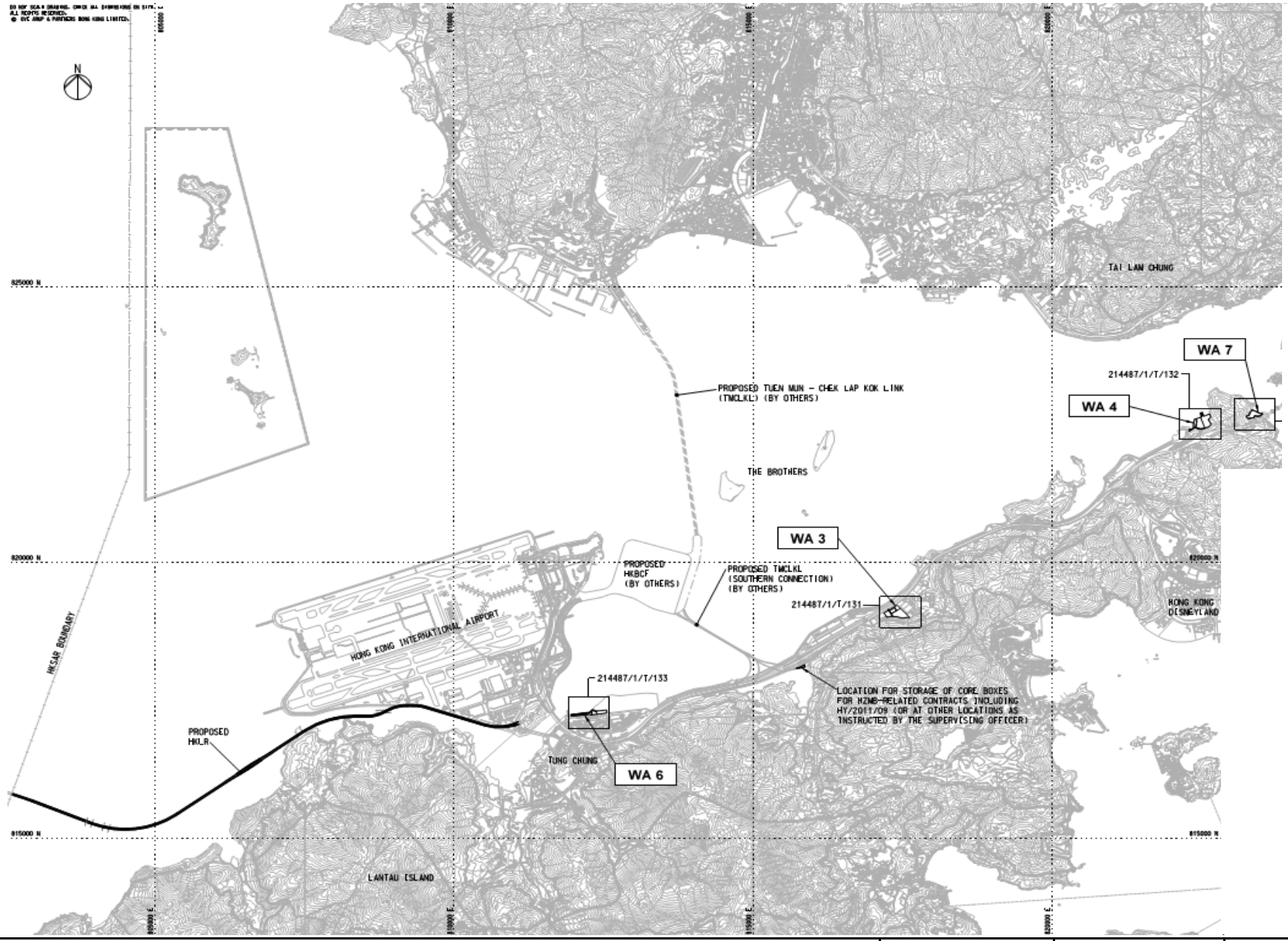
Ecology Impact

- To implement Spill Response Plan in the event of accidental spillage of or other hazardous chemicals.
- To implement Dolphin Exclusion Zone during the installation of bored pile casing located in the waters to the west of Airport.
- To implement Dolphin Watching Plan after the bored piling casing is installed.
- To ensure the acoustically-decoupled measures were implemented for air compressors and other noisy equipment mounted on construction vessels according to acoustic decoupling measures plan.

Waste/Chemical Management

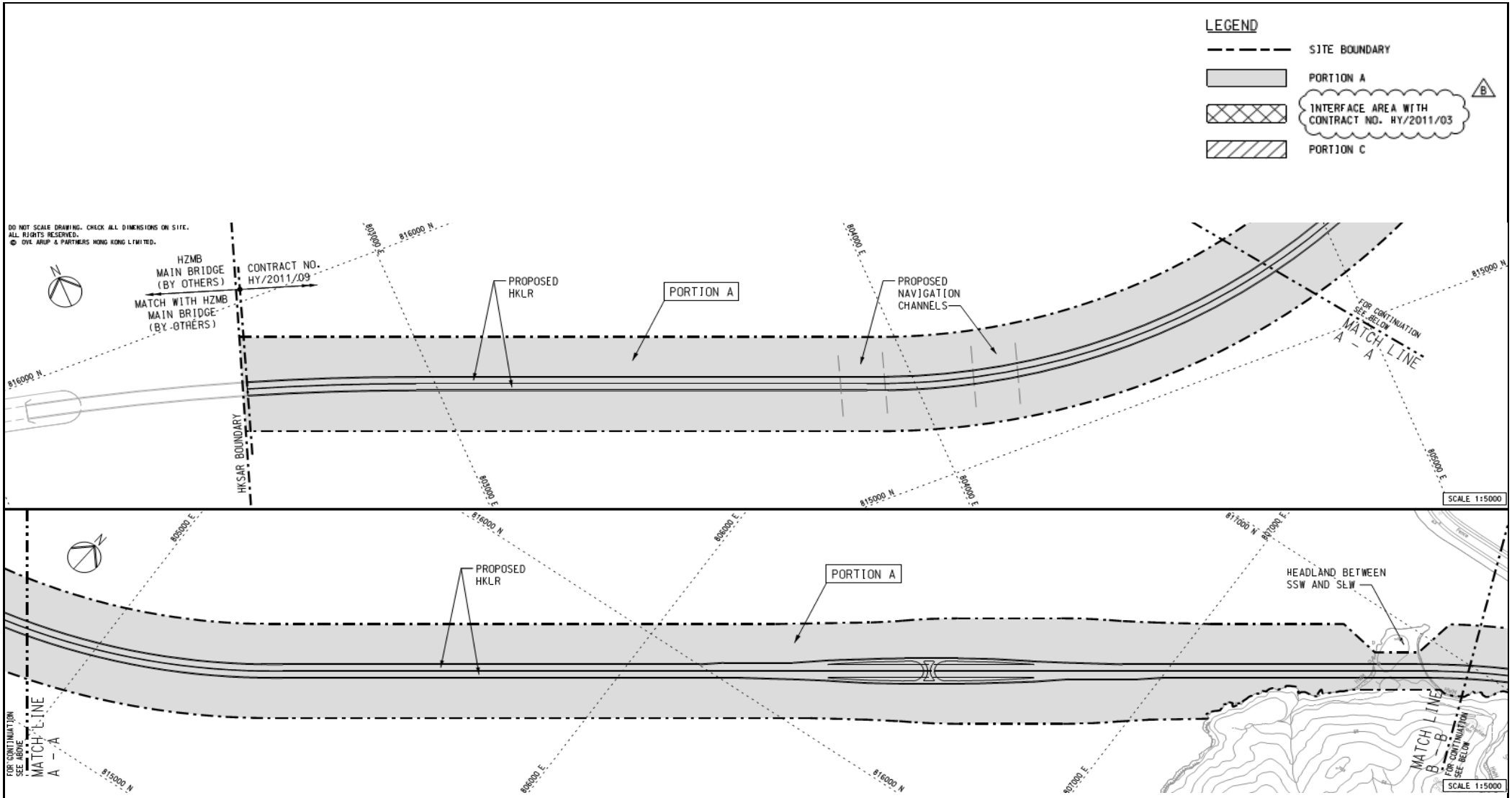
- To check for any accumulation of waste materials or rubbish on site.
- To ensure the performance of sorting of C&D materials at source (during generation);
- To carry out inspection of dump truck at site exit to ensure inert and non-inert C&D materials are properly segregated before removing off site.
- To avoid any discharge or accidental spillage of chemical waste or oil directly from the site.
- To avoid improper handling or storage of oil drum on site.

FIGURE(S)



Title	Scale	Proposa	
Contract No. HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill Site Layout Plan (WA3, WA4, WA6 and WA7)	N.T.S	No.	MA12014
	Date	Figure	
	Feb-13		1a

CINOTECH



Title	Contract No. HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill Site Layout Plan (Portion A)	Scale: N.T.S Date: May-13	Proposa No. MA12014 Figure: 1b

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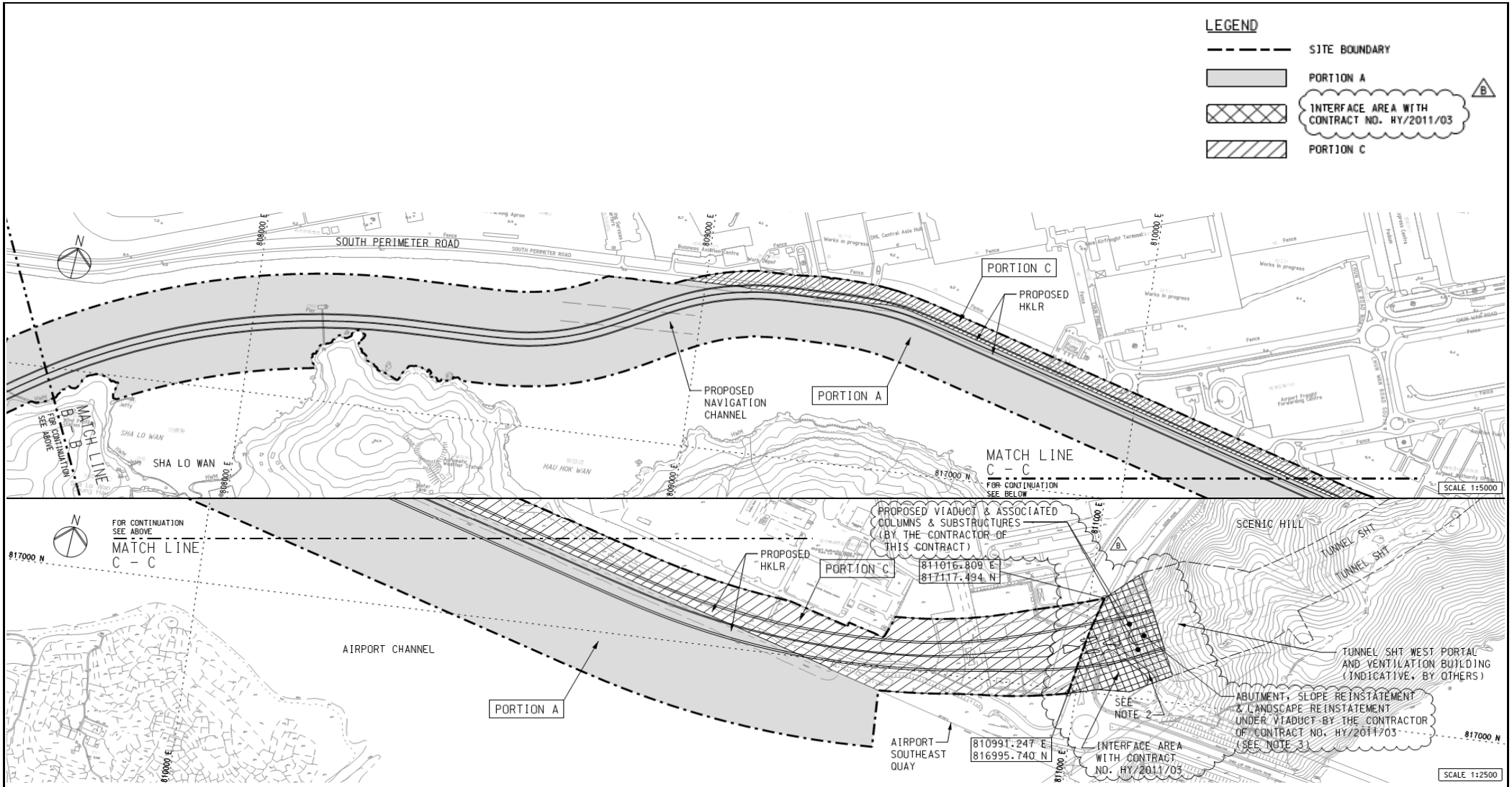

Title	Contract No. HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill Site Layout Plan (Portion A and C)	Scale N.T.S Date May-13	Proposa No. MA12014 Figure 1c

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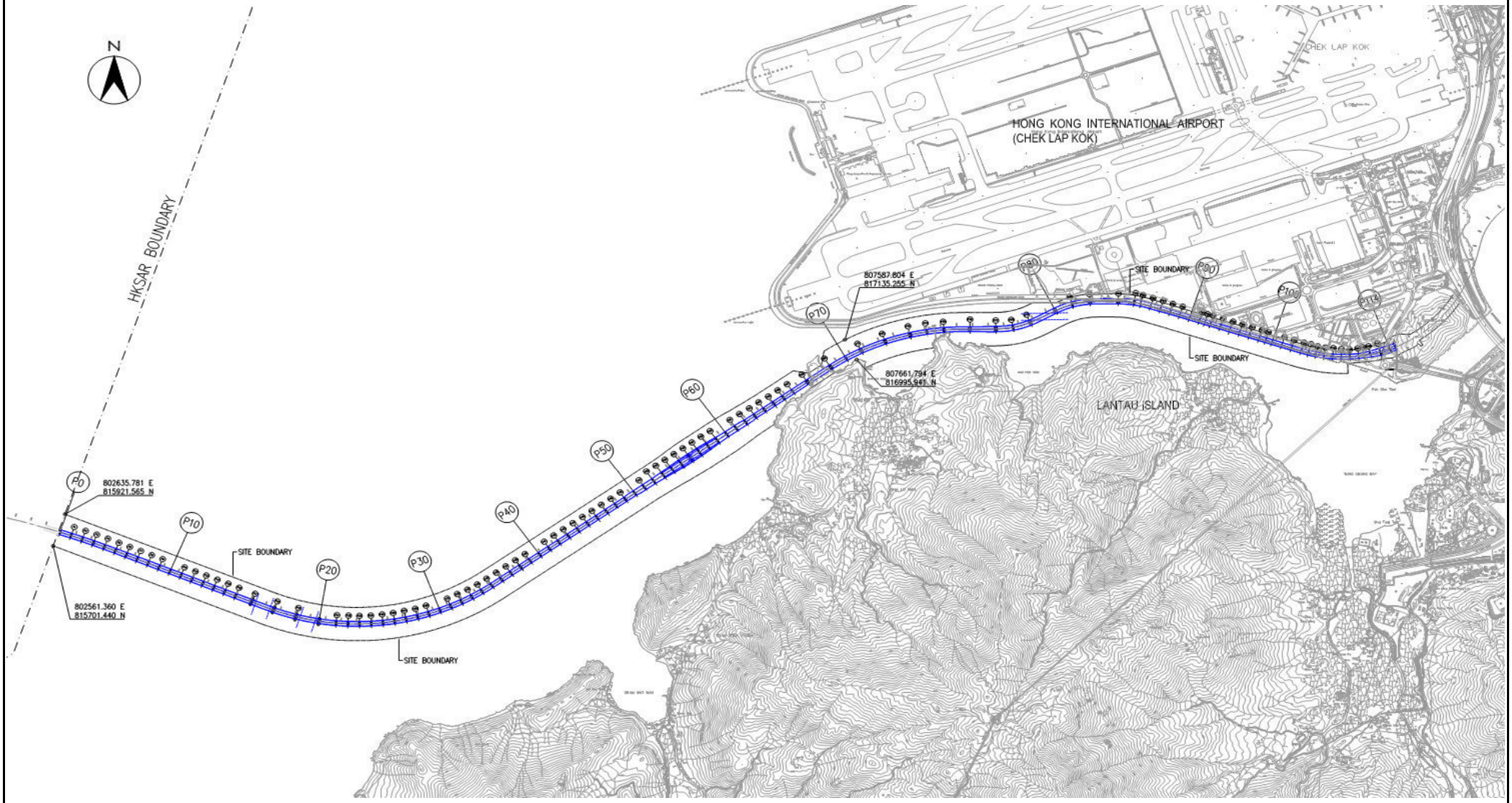
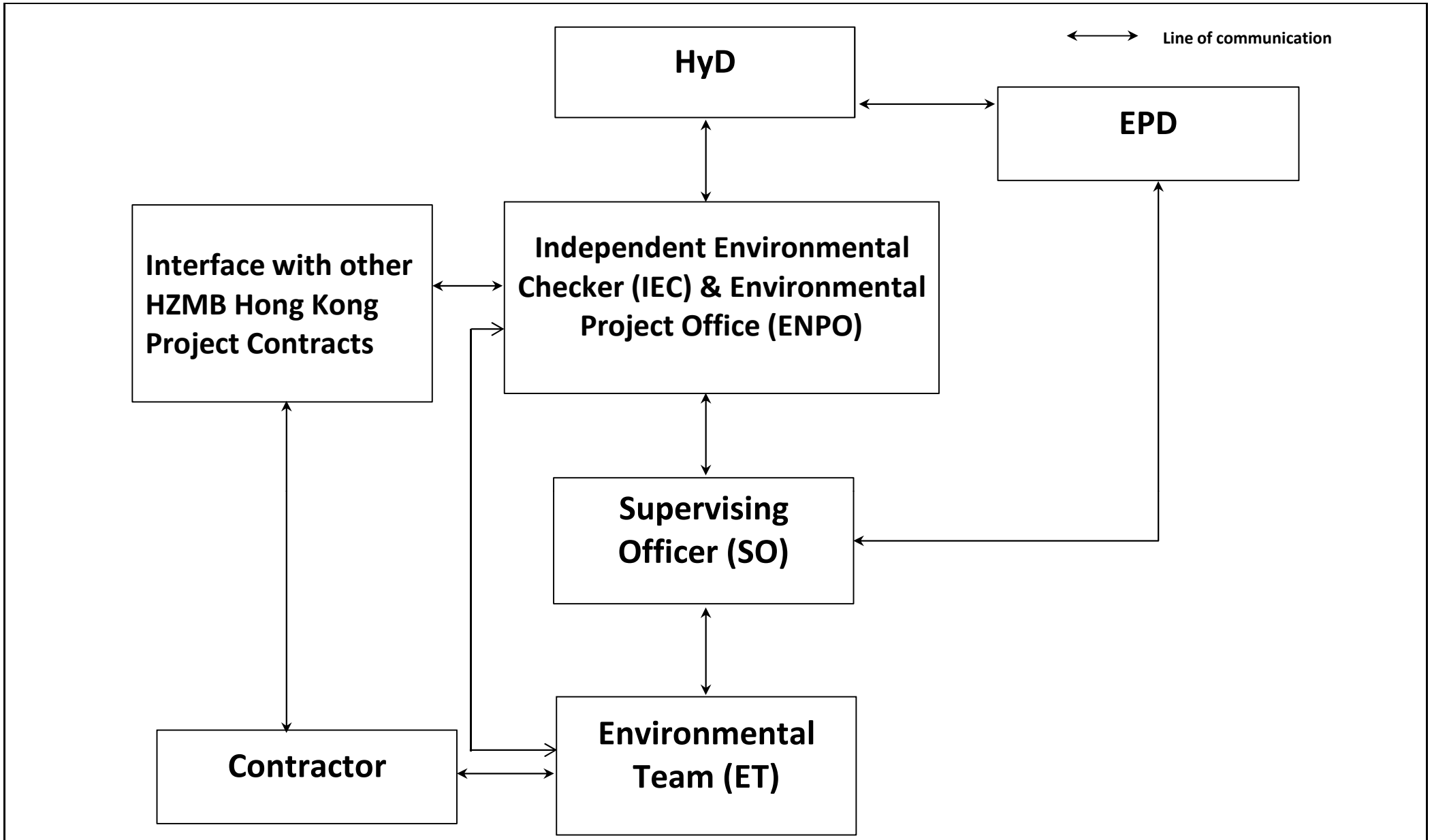
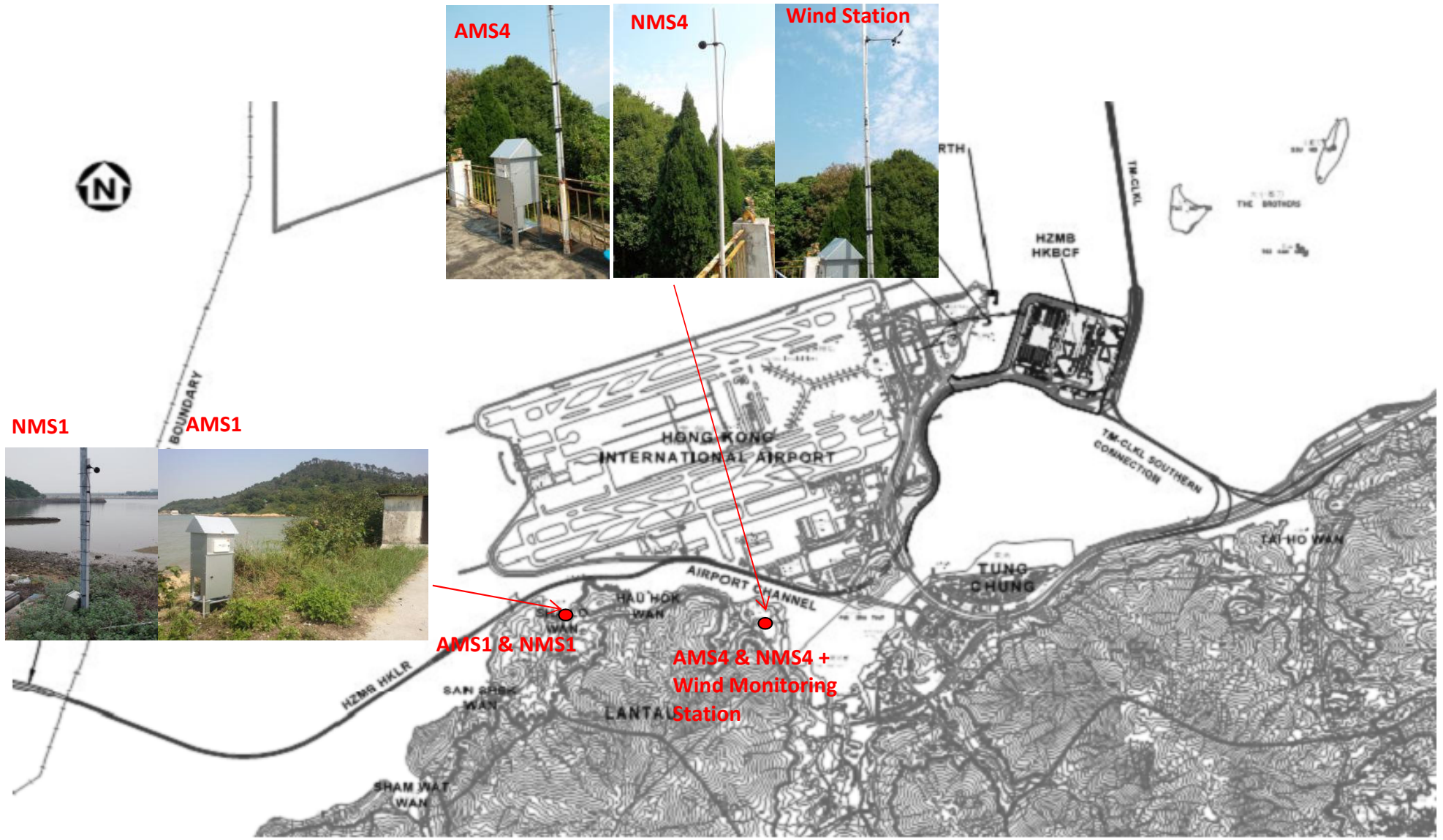


Title	Contract No. HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill Site Layout Plan (Pier(s) Site)	Scale: N.T.S Date: Feb-13	Proposa No. MA12014 Figure: 1d

CINOTECH

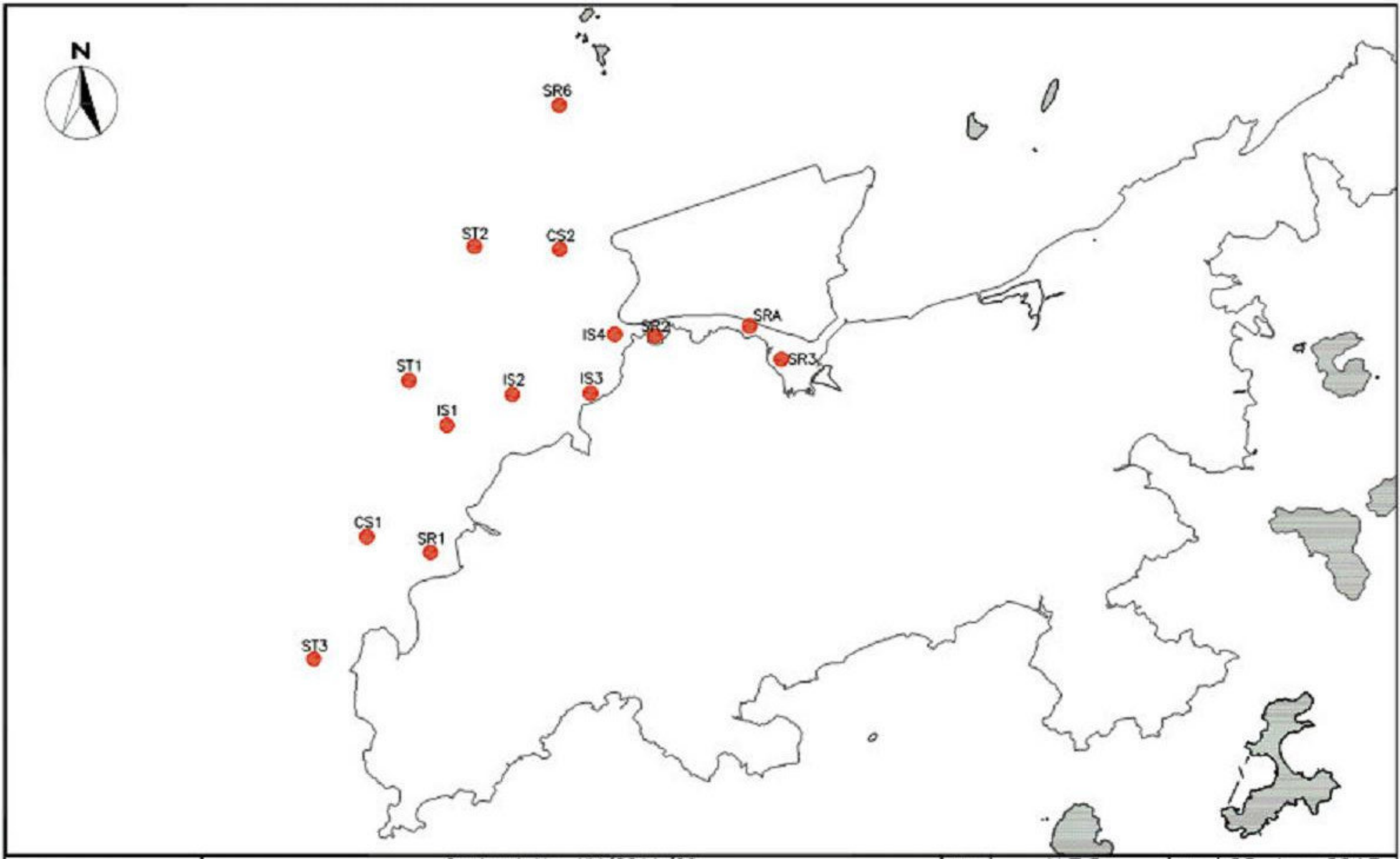


Title	Contract No. HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill Project Organisation for Environmental Works	Scale N.T.S Date Feb-13	Proposa No. MA12014 Figure 2	CINOTECH



Title	Contract No. HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill Locations of Air Quality and Noise Monitoring Stations	Scale: N.T.S Date: Feb-13	Proposa No. MA12014 Figure: 3

CINOTECH



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Cinotech Consultants Limited

Contract No. HY/2011/09
Hong Kong–Zhuhai–Macao Bridge Hong Kong Link Road – Section Between HKSAR Boundary and Scenic Hill
Locations of Marine Water Quality Monitoring Stations

SCALE	N.T.S	DATE	28 Jan 2013
CHECK	PC	DRAWN	IT
PROJECT NO.	MA12014	FIGURE NO.	4
		REV	–

APPENDIX A
CONSTRUCTION PROGRAMME

Dragages - China Harbour - VSL Joint Venture 實嘉 - 中國港灣 - 威勝利聯營

Activity ID	Activity Name	Original Duration	Remaining Duration	Activity % Complete	Start	Finish	DWP01B Start	DWP01B Finish	DWP00B Start	DWP00B Finish
HKZB Hong Kong Link Road - 3 Months Rolling Programme 1404 (Based on DWP_01b)										
Design and Design Checking of the Works										
General Design Submission										
GDS1150	Seismic Performance Assessment Report of Bridge/Viaduct	0	0	0%		28/04/14*		31/03/14		31/03/14
Detailed Design Approval (DDA)										
Foundation										
Airport Channel										
DDA12.01-50	Prepare and re-submit Design DDA - ML12L/R P75	45	1	97.78%	23/08/13 A	28/04/14	30/11/13	13/01/14		
DDA12.01-80	Approve Design DDA - ML12L/R P75	35	35	0%	29/04/14	02/06/14	15/01/14	19/02/14		
Substructure										
Western Water										
DDA01.02-80	Approve Design DDA - ML01L/R (remain)	35	0	100%	21/01/14 A	28/04/14	19/07/14	23/08/14		
DDA02.02-40	Approve Design DDA - ML02L/R	35	0	100%	28/01/14 A	28/04/14	28/06/14	02/08/14		
DDA04.02-40	Approve Design DDA - ML04L/R	35	0	100%	25/01/14 A	28/04/14	17/05/14	21/06/14		
DDA05.02-40	Approve Design DDA - ML05L/R	35	0	100%	15/01/14 A	28/04/14	15/03/14	19/04/14		
DDA06.02-40	Approve Design DDA - ML06L/R	35	0	100%	16/01/14 A	28/04/14	11/01/14	15/02/14		
DDA07.02-40	Approve Design DDA - ML07L/R	35	0	100%	12/01/14 A	28/04/14	21/12/13	25/01/14		
DDA08.02-40	Approve Design DDA - ML08L/R (with trunaround)	35	0	100%	15/01/14 A	28/04/14	01/02/14	08/03/14		
DDA09.02-40	Approve Design DDA - ML09L/R	35	0	100%	15/02/14 A	28/04/14	26/04/14	31/05/14		
Navigation Channel										
DDA03.02-40	Approve Design DDA - ML03L/R (with Dolphin)	35	0	100%	17/01/14 A	28/04/14	22/02/14	29/03/14		
Airport Channel										
DDA10.02-40	Approve Design DDA - ML10L/R	35	0	100%	20/02/14 A	28/04/14	21/12/13	25/01/14		
DDA11.02-40	Approve Design DDA - ML11L/R	35	0	100%	21/01/14 A	28/04/14	05/04/14	10/05/14		
DDA12.02-40	Approve Design DDA - ML12L/R	35	0	100%	21/01/14 A	28/04/14	07/06/14	12/07/14		
DDA13.02-40	Approve Design DDA - ML13L/R	35	0	100%	25/02/14 A	28/04/14	11/01/14	15/02/14		
DDA14.02-40	Approve Design DDA - ML14L/R	35	0	100%	28/02/14 A	28/04/14	01/02/14	08/03/14		
Superstructure										
Western Water										
DDA01.03-40	Approve Design DDA - ML01L/R	35	0	100%	15/01/14 A	28/04/14	25/12/13	29/01/14		
DDA04.03-40	Approve Design DDA - ML04L/R	35	0	100%	16/01/14 A	28/04/14	25/12/13	29/01/14		
DDA08.03-40	Approve Design DDA - ML08L/R	35	0	100%	07/01/14 A	28/04/14	25/12/13	29/01/14		
DDATR.03-40	Approve Design DDA - MTL01,02 & MTR01,02	35	0	100%	28/02/14 A	28/04/14	12/02/14	18/03/14		
Airport Channel										
DDA10.03-40	Approve Design DDA - ML10L/R	35	0	100%	15/02/14 A	28/04/14	19/01/14	23/02/14		
DDA11.03-40	Approve Design DDA - ML11L/R	35	0	100%	18/02/14 A	28/04/14	25/12/13	29/01/14		
DDA12.03-40	Approve Design DDA - ML12L/R	35	0	100%	25/02/14 A	28/04/14	13/02/14	20/03/14		
DDA13.03-40	Approve Design DDA - ML13L/R	35	0	100%	25/02/14 A	28/04/14	10/03/14	14/04/14		
DDA14.03-40	Approve Design DDA - ML14L/R	35	0	100%	25/02/14 A	28/04/14	04/04/14	09/05/14		

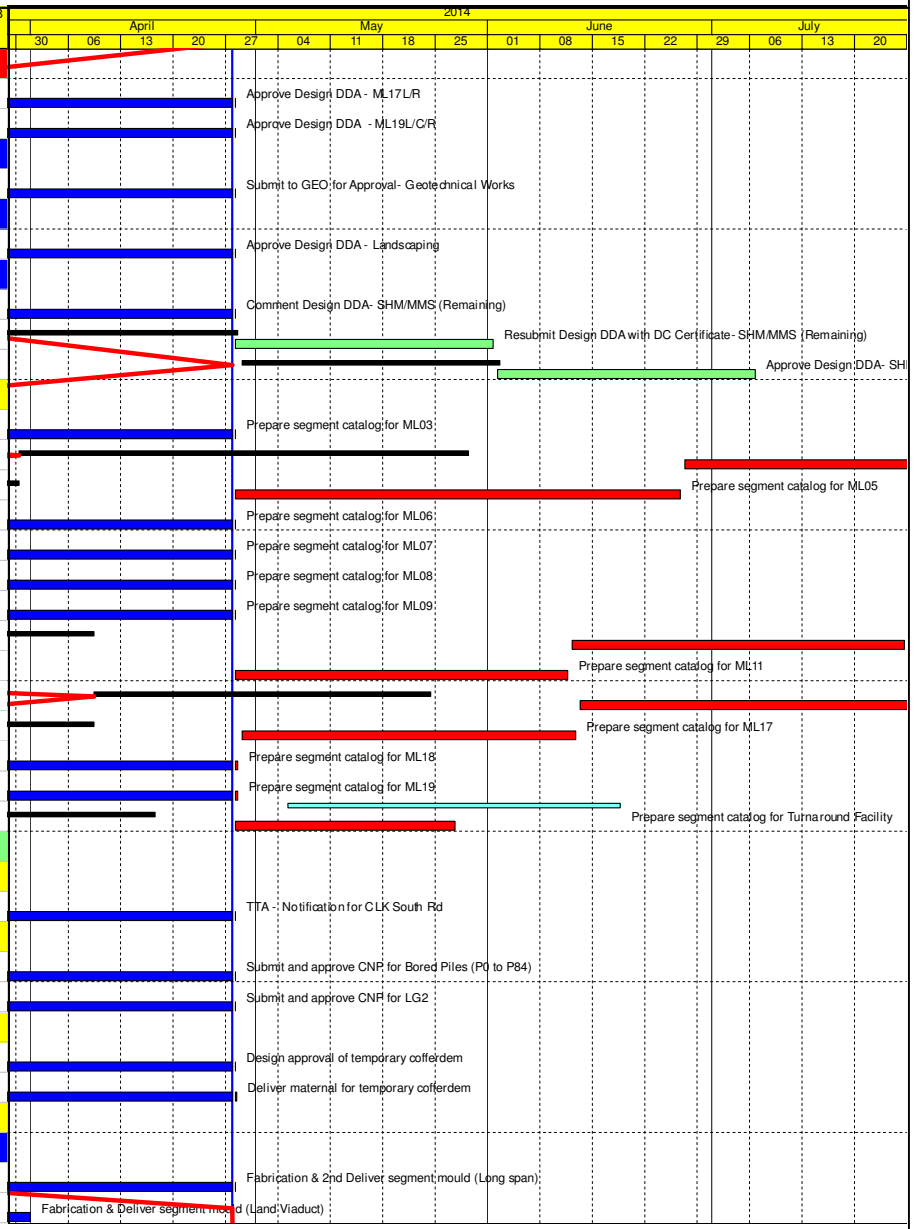
DWP_01b Programme
Actual Work
Remaining Work
Critical Remaining Work
Milestone
DWP_00B Programme

3MRP DWP_01b 1404

Date	Revision	Checked	Approved
01/05/14	1404 rolling based on DWP01b	Tim	

Dragages - China Harbour - VSL Joint Venture 實嘉 - 中國港灣 - 威勝利聯營

Activity ID	Activity Name	Original Duration	Remaining Duration	Activity % Complete	Start	Finish	DWP01B Start	DWP01B Finish	DWP00B Start	DWP00B Finish
Airport Island										
DDA17.03-40	Approve Design DDA - ML17L/R	35	0	100%	25/02/14 A	28/04/14	19/01/14	23/02/14		
DDA19.03-40	Approve Design DDA - ML19L/C/R	35	0	100%	20/02/14 A	28/04/14	25/12/13	29/01/14		
Geotechnical Works										
DDAGEO-50	Submit to GEO for Approval- Geotechnical Works	60	0	100%	26/11/13 A	28/04/14	10/12/13	07/02/14		
Landscaping										
DDALA-40	Approve Design DDA - Landscaping	35	0	100%	29/01/14 A	28/04/14	04/01/14	08/02/14		
SHM/MMS										
DDASHM-60	Comment Design DDA- SHM/MMS (Remaining)	35	0	100%	09/01/14 A	28/04/14	18/02/14	24/03/14		
DDASHM-70	Resubmit Design DDA with DC Certificate- SHM/MMS (Remaining)	35	35	0%	28/04/14	01/06/14	25/03/14	28/04/14		
DDASHM-80	Approve Design DDA- SHM/MMS (Remaining)	35	35	0%	02/06/14	06/07/14	29/04/14	02/06/14		
Segment Catalog										
SD1020	Prepare segment catalog for ML03	60	0	100%	29/11/13 A	28/04/14	30/11/13	29/01/14	22/05/13	04/08/13
SD1030	Prepare segment catalog for ML04	60	60	0%	27/06/14	25/08/14	30/03/14	29/05/14	21/12/13	05/03/14
SD1040	Prepare segment catalog for ML05	60	60	0%	28/04/14	26/06/14	29/01/14	30/03/14	06/11/13	19/01/14
SD1050	Prepare segment catalog for ML06	60	0	100%	05/11/13 A	28/04/14	30/11/13	29/01/14	08/08/13	21/10/13
SD1060	Prepare segment catalog for ML07	60	0	100%	23/07/13 A	28/04/14	30/11/13	28/01/14	10/05/13	23/07/13
SD1070	Prepare segment catalog for ML08	60	0	100%	30/11/13 A	28/04/14	30/11/13	29/01/14	22/09/13	05/12/13
SD1080	Prepare segment catalog for ML09	60	0	100%	28/09/13 A	28/04/14	30/11/13	28/01/14	24/06/13	06/09/13
SD1090	Prepare segment catalog for ML10	45	45	0%	12/06/14	26/07/14	23/02/14	09/04/14	22/09/13	05/12/13
SD1100	Prepare segment catalog for ML11	45	45	0%	28/04/14	11/06/14	25/12/13	08/02/14	18/08/13	31/10/13
SD1150	Prepare segment catalog for ML16	45	45	0%	13/06/14	27/07/14	09/04/14	24/05/14	05/10/13	18/12/13
SD1160	Prepare segment catalog for ML17	45	45	0%	29/04/14	12/06/14	23/02/14	09/04/14	05/09/13	18/11/13
SD1170	Prepare segment catalog for ML18	45	1	97.78%	25/11/13 A	28/04/14	25/12/13	08/02/14	22/06/13	04/09/13
SD1180	Prepare segment catalog for ML19	45	1	97.78%	25/12/13 A	28/04/14	25/12/13	08/02/14	06/08/13	19/10/13
SD1190	Prepare segment catalog for Turnaround Facility	30	30	0%	28/04/14	27/05/14	19/03/14	17/04/14	05/05/14	18/06/14
Project General Submission										
TTA for CLK South Rd										
PGS1520	TTA - Notification for CLK South Rd	28	0	99%	17/09/13 A	28/04/14	01/12/13	28/12/13	11/04/13	08/05/13
Construction Noise Permit										
PGS2445	Submit and approve CNP for Bored Piles (P0 to P84)	75	0	0%	31/10/12 A	28/04/14	26/02/13	11/05/13	31/10/12	13/01/13
PGS2455	Submit and approve CNP for LG2	90	0	0%	30/11/13 A	28/04/14	30/11/13	27/02/14	07/09/13	05/12/13
Temporary Piling Platform/Cofferdem										
PGS1680	Design approval of temporary cofferdem	21	0	99%	16/10/13 A	28/04/14	05/02/14	25/02/14	17/11/12	07/12/12
PGS1690	Deliver maternal for temporary cofferdem	45	0	99%	30/09/13 A	28/04/14	30/11/13	14/01/14	08/12/12	21/01/13
Segment Casting Yard										
Segment Moulds										
PGS2325	Fabrication & 2nd Deliver segment mould (Long span)	90	0	100%	04/11/13 A	28/04/14	30/11/13	27/02/14	30/03/13	14/11/13
PGS2345	Fabrication & Deliver segment mould (Land Viaduct)	91	0	100%	14/10/13 A	01/04/14 A	30/11/13	28/02/14	28/07/13	24/11/13



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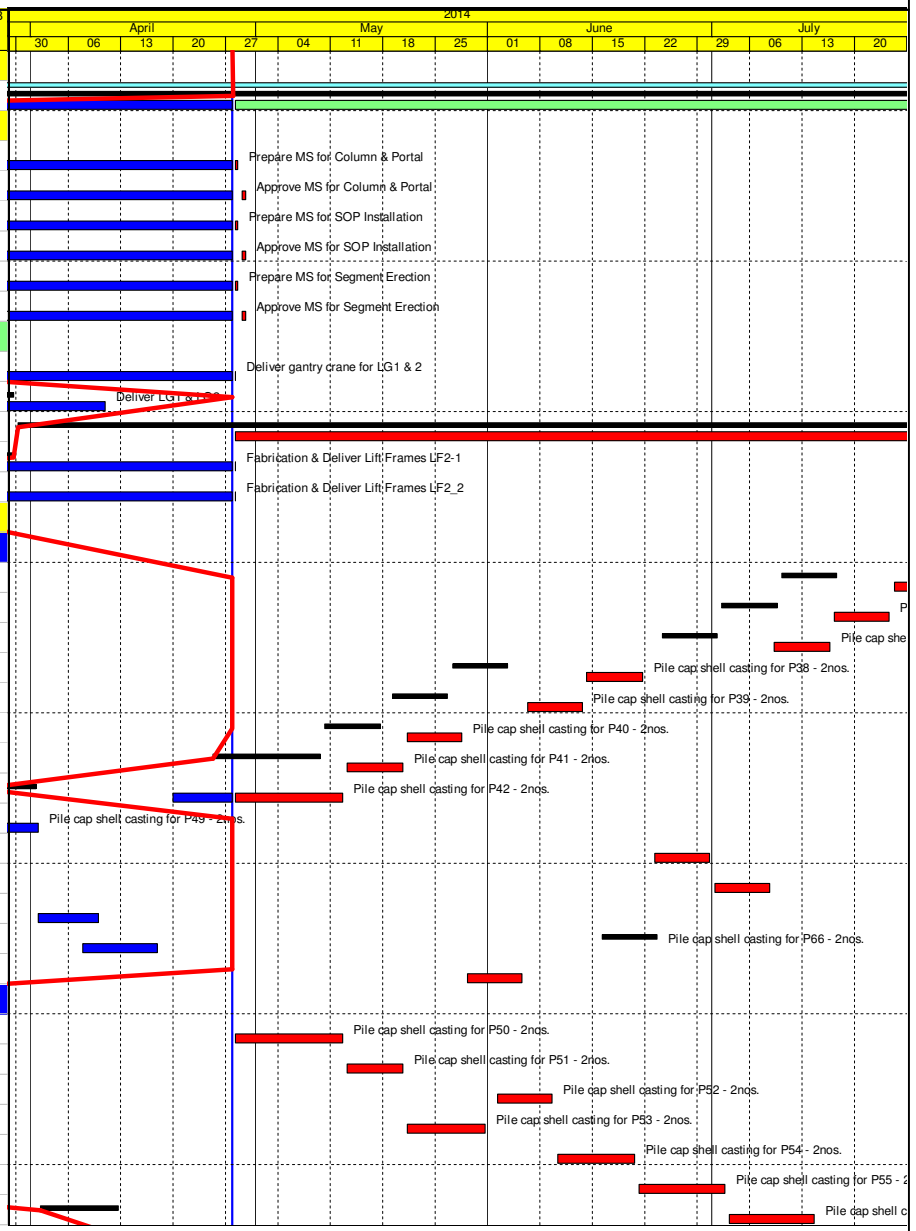
Activity ID	Activity Name	Original Duration	Remaining Duration	Activity % Complete	Start	Finish	DWP01B Start	DWP01B Finish	DWP00B Start	DWP00B Finish
Interface Contract										
PGS1950	Complete deck erection by Mainland section at P0	243	127	47.59%	07/03/14 A	02/09/14	02/01/14	02/09/14	02/01/14	02/09/14
Major Method Statement										
PGS2385	Prepare MS for Column & Portal	60	1	98.33%	01/01/13 A	28/04/14	02/02/13	02/04/13	01/01/13	01/03/13
PGS2395	Approve MS for Column & Portal	57	1	98.25%	25/12/13 A	29/04/14	25/12/13	20/02/14	02/03/13	30/04/13
PGS2405	Prepare MS for SOP Installation	60	1	98.33%	05/08/13 A	28/04/14	30/11/13	28/01/14	11/03/13	09/05/13
PGS2415	Approve MS for SOP Installation	60	1	98.33%	09/12/13 A	29/04/14	09/12/13	06/02/14	10/05/13	08/07/13
PGS2425	Prepare MS for Segment Erection	60	1	98.33%	05/08/13 A	28/04/14	30/11/13	29/01/14	10/05/13	08/07/13
PGS2435	Approve MS for Segment Erection	60	1	98.33%	24/12/13 A	29/04/14	24/12/13	22/02/14	09/07/13	06/09/13
Procurement and Fabrication										
PGS2184	Deliver gantry crane for LG1 & 2	90	0	100%	08/07/13 A	28/04/14	30/11/13	27/02/14	07/09/13	05/12/13
PGS2186	Deliver LG1 & LG2	120	0	100%	30/11/13 A	11/04/14 A	30/11/13	29/03/14	06/08/13	03/12/13
PGS2485	Fabrication & Deliver Lift Frames LF1	150	150	0%	28/04/14	24/09/14	30/03/14	26/08/14		
PGS2488	Fabrication & Deliver Lift Frames LF2-1	120	0	100%	30/11/13 A	28/04/14	30/11/13	29/03/14		
PGS2495	Fabrication & Deliver Lift Frames LF2_2	90	0	100%	13/11/13 A	28/04/14	30/11/13	27/02/14		
Pile Cap Shell Casting										
Type CP1 & CP5										
PC1310	Pile cap shell casting for P35 - 2nos.	7	7	0%	25/07/14	01/08/14	10/07/14	17/07/14		
PC1320	Pile cap shell casting for P36 - 2nos.	7	7	0%	17/07/14	24/07/14	02/07/14	09/07/14		
PC1330	Pile cap shell casting for P37 - 2nos.	7	7	0%	09/07/14	16/07/14	24/06/14	01/07/14		
PC1340	Pile cap shell casting for P38 - 2nos.	7	7	0%	14/06/14	21/06/14	27/05/14	03/06/14		
PC1350	Pile cap shell casting for P39 - 2nos.	7	7	0%	06/06/14	13/06/14	19/05/14	26/05/14		
PC1360	Pile cap shell casting for P40 - 2nos.	7	7	0%	21/05/14	28/05/14	10/05/14	17/05/14		
PC1370	Pile cap shell casting for P41 - 2nos.	7	7	0%	13/05/14	20/05/14	25/04/14	09/05/14		
PC1380	Pile cap shell casting for P42 - 2nos.	7	7	0%	20/04/14 A	12/05/14	25/03/14	01/04/14		
PC1450	Pile cap shell casting for P49 - 2nos.	7	0	100%	19/03/14 A	02/04/14 A	16/12/13	23/12/13		
PC1590	Pile cap shell casting for P63 - 2nos.	7	7	0%	23/06/14	30/06/14	18/10/14	25/10/14		
PC1600	Pile cap shell casting for P64 - 2nos.	7	7	0%	01/07/14	08/07/14	06/12/14	13/12/14		
PC1610	Pile cap shell casting for P65 - 2nos.	7	0	100%	02/04/14 A	10/04/14 A	31/12/14	07/01/15		
PC1620	Pile cap shell casting for P66 - 2nos.	7	0	100%	08/04/14 A	18/04/14 A	16/06/14	23/06/14		
PC1630	Pile cap shell casting for P67 - 2nos.	7	7	0%	29/05/14	05/06/14	15/12/14	22/12/14		
Type CP2, CP3, CP3A & CP3B										
PC1460	Pile cap shell casting for P50 - 2nos.	7	7	0%	28/04/14	12/05/14	24/12/13	31/12/13		
PC1470	Pile cap shell casting for P51 - 2nos.	7	7	0%	13/05/14	20/05/14	01/01/14	08/01/14		
PC1480	Pile cap shell casting for P52 - 2nos.	7	7	0%	02/06/14	09/06/14	21/01/14	28/01/14		
PC1490	Pile cap shell casting for P53 - 2nos.	10	10	0%	21/05/14	31/05/14	09/01/14	20/01/14		
PC1500	Pile cap shell casting for P54 - 2nos.	10	10	0%	10/06/14	20/06/14	29/01/14	15/02/14		
PC1510	Pile cap shell casting for P55 - 2nos.	10	10	0%	21/06/14	02/07/14	17/02/14	27/02/14		
PC1520	Pile cap shell casting for P56 - 2nos.	10	10	0%	03/07/14	14/07/14	02/04/14	12/04/14		



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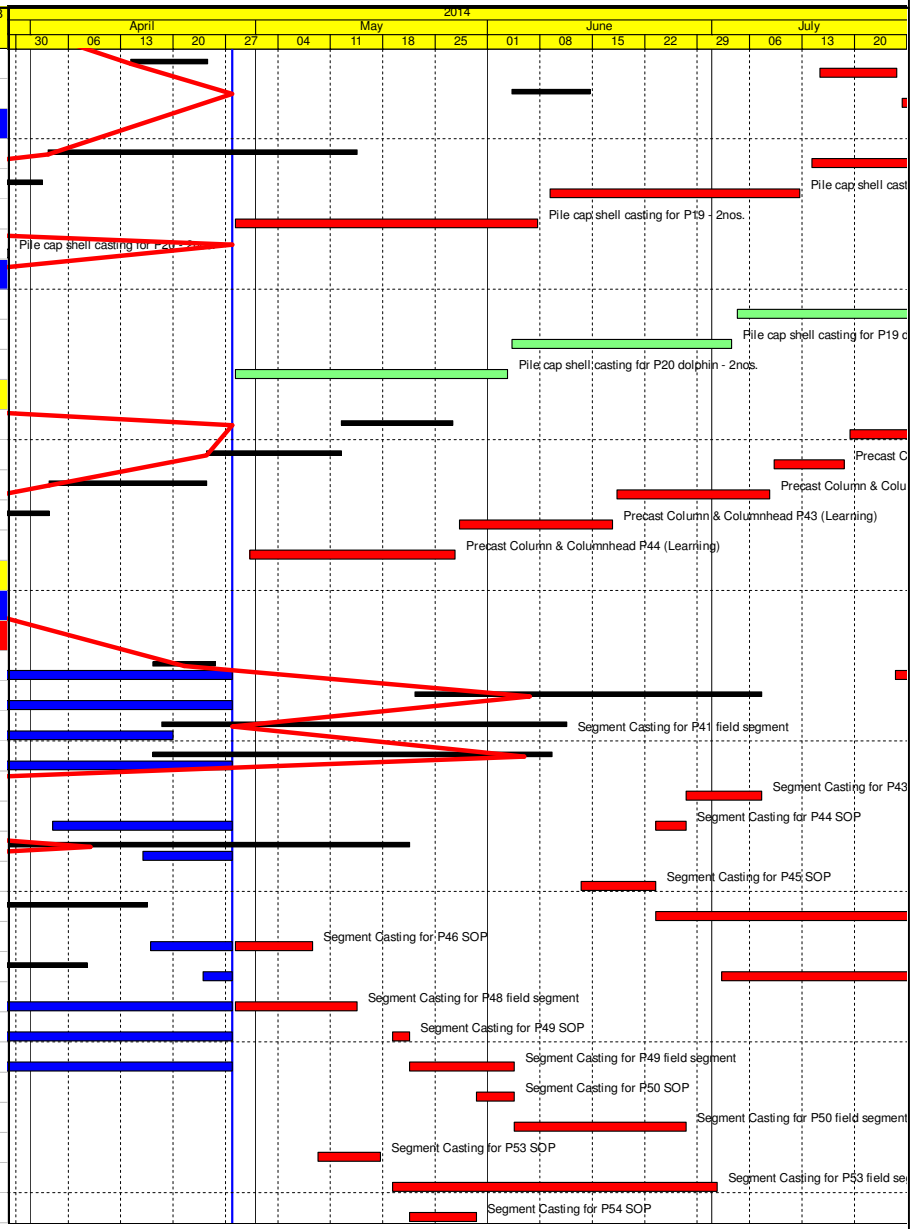
Activity ID	Activity Name	Original Duration	Remaining Duration	Activity % Complete	Start	Finish	DWP01B Start	DWP01B Finish	DWP00B Start	DWP00B Finish
PC1530	Pile cap shell casting for P57 - 2nos.	10	10	0%	15/07/14	25/07/14	14/04/14	24/04/14		
PC1540	Pile cap shell casting for P58 - 2nos.	10	10	0%	26/07/14	06/08/14	04/06/14	14/06/14		
Type CP4 & CP6A										
PC1640	Pile cap shell casting for P17 - 2nos.	30	30	0%	14/07/14	16/08/14	03/04/14	14/05/14		
PC1650	Pile cap shell casting for P18 - 2nos.	30	30	0%	09/06/14	12/07/14	27/02/14	02/04/14		
PC1660	Pile cap shell casting for P19 - 2nos.	30	30	0%	28/04/14	07/06/14	16/01/14	26/02/14		
PC1670	Pile cap shell casting for P20 - 2nos.	40	0	100%	06/01/14 A	29/03/14 A	30/11/13	15/01/14		
Dolphin										
PC1710	Pile cap shell casting for P18 dolphin - 2nos.	26	26	0%	04/07/14	02/08/14	06/02/14	07/03/14		
PC1720	Pile cap shell casting for P19 dolphin - 2nos.	26	26	0%	04/06/14	03/07/14	31/12/13	29/01/14		
PC1730	Pile cap shell casting for P20 dolphin - 2nos.	26	26	0%	28/04/14	03/06/14	30/11/13	30/12/13		
Column Casting										
PC2090	Precast Column & Columnhead P40	13	13	0%	19/07/14	02/08/14	12/05/14	27/05/14		
PC2100	Precast Column & Columnhead P41	9	9	0%	09/07/14	18/07/14	24/04/14	12/05/14		
PC2110	Precast Column & Columnhead P42 (Learning)	18	18	0%	18/06/14	08/07/14	03/04/14	24/04/14		
PC2120	Precast Column & Columnhead P43 (Learning)	18	18	0%	28/05/14	17/06/14	13/03/14	03/04/14		
PC2130	Precast Column & Columnhead P44 (Learning)	18	18	0%	30/04/14	27/05/14	20/02/14	13/03/14		
Segment Casting										
Type A, C, D Segment (Total 12 set Moulds)										
Type A Segment (Western Water Typical Span)										
SC5468	Segment Casting for P39 SOP	8	4	50%	14/03/14 A	30/07/14	17/04/14	25/04/14		
SC5478	Segment Casting for P39 field segment	40	27	33%	27/03/14 A	23/10/14	22/05/14	07/07/14		
SC5518	Segment Casting for P41 field segment	40	0	100%	20/12/13 A	20/04/14 A	18/04/14	11/06/14		
SC5538	Segment Casting for P42 field segment	40	3	93%	16/03/14 A	12/08/14	17/04/14	09/06/14		
SC5548	Segment Casting for P43 SOP	8	8	0%	27/06/14	07/07/14	20/02/14	28/02/14		
SC5568	Segment Casting for P44 SOP	8	4	50%	04/04/14 A	27/06/14	11/02/14	19/02/14		
SC5578	Segment Casting for P44 field segment	40	32	20%	16/04/14 A	15/09/14	29/03/14	21/05/14		
SC5588	Segment Casting for P45 SOP	8	8	0%	13/06/14	23/06/14	25/01/14	10/02/14		
SC5598	Segment Casting for P45 field segment	40	40	0%	23/06/14	08/08/14	01/03/14	16/04/14		
SC5608	Segment Casting for P46 SOP	8	4	50%	17/04/14 A	08/05/14	05/12/13	13/12/13		
SC5618	Segment Casting for P46 field segment	40	39	3%	24/04/14 A	15/08/14	20/02/14	08/04/14		
SC5658	Segment Casting for P48 field segment	40	9	77.5%	05/11/13 A	14/05/14	05/12/13	20/01/14		
SC5668	Segment Casting for P49 SOP	8	3	65.99%	27/11/13 A	21/05/14	24/12/13	01/01/14		
SC5678	Segment Casting for P49 field segment	36	12	66%	03/12/13 A	04/06/14	11/01/14	28/02/14		
SC5688	Segment Casting for P50 SOP	4	4	0%	30/05/14	04/06/14	11/01/14	15/01/14		
SC5698	Segment Casting for P50 field segment	20	20	0%	04/06/14	27/06/14	16/01/14	14/02/14		
SC5728	Segment Casting for P53 SOP	8	8	0%	09/05/14	17/05/14	14/12/13	23/12/13		
SC5738	Segment Casting for P53 field segment	38	38	0%	19/05/14	01/07/14	31/12/13	20/02/14		
SC5748	Segment Casting for P54 SOP	8	8	0%	21/05/14	30/05/14	02/01/14	10/01/14		



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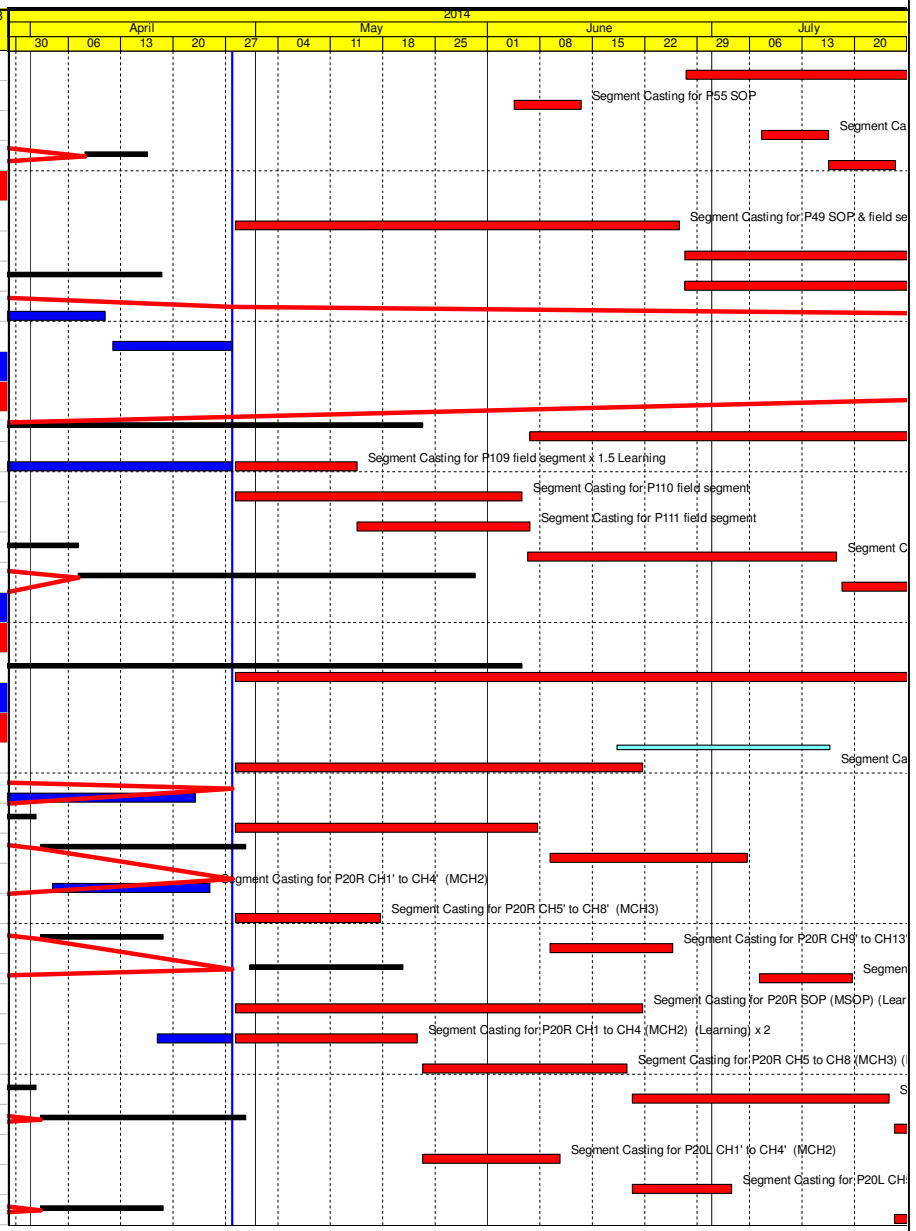
SC5758	Segment Casting for P54 field segment	36	36	0%	27/06/14	08/08/14	15/02/14	28/03/14		
SC5768	Segment Casting for P55 SOP	8	8	0%	04/06/14	13/06/14	16/01/14	24/01/14		
SC5788	Segment Casting for P56 SOP	8	8	0%	07/07/14	16/07/14	01/03/14	10/03/14		
SC5808	Segment Casting for P57 SOP	8	8	0%	16/07/14	25/07/14	08/04/14	16/04/14		
Type D Segment (P49 to P63)										
SC6038	Segment Casting for P49 SOP & field segment	46	46	0%	28/04/14	26/06/14	30/11/13	22/01/14		
SC6048	Segment Casting for P50 SOP & field segment	52	52	0%	27/06/14	26/08/14	17/01/14	26/03/14		
SC6058	Segment Casting for P51 SOP & field segment	72	72	0%	27/06/14	18/09/14	17/01/14	18/04/14		
SC6068	Segment Casting for P52 field segment	30	0	100%	11/12/13 A	11/04/14 A	27/10/14	01/12/14		
SC6078	Segment Casting for P60 field segment	30	21	30%	12/04/14 A	17/10/15	20/06/15	24/07/15		
Type E Segment (Total 5 set Moulds)										
Land Viaduct (P85 to Easternmost Abutment)										
SC6528	Segment Casting for P108 field segment	64	64	0%	06/06/14	20/08/14	03/03/14	23/05/14		
SC6538	Segment Casting for P109 field segment x 1.5 Learning	32	9	72%	28/02/14 A	14/05/14	25/12/13	07/02/14		
SC6548	Segment Casting for P110 field segment	28	28	0%	28/04/14	05/06/14	15/01/14	24/02/14		
SC6558	Segment Casting for P111 field segment	20	20	0%	14/05/14	06/06/14	07/02/14	03/03/14		
SC6568	Segment Casting for P112 field segment	36	36	0%	06/06/14	17/07/14	24/02/14	07/04/14		
SC6578	Segment Casting for P113 field segment	40	40	0%	18/07/14	02/09/14	07/04/14	30/05/14		
Type B Segment (Total 1 set Mould)										
Turnaround										
SC6128	Segment Casting for P53 SOP & field segment	96	96	0%	28/04/14*	23/08/14	07/02/14	05/06/14		
Type CH Segment (Total 12 set Moulds)										
ML03 (P16 TO P21)										
SC1000	Segment Casting for P20L SOP (MSOP) (Learning) x 2	42	42	0%	28/04/14	21/06/14	30/11/13	18/01/14	18/06/14	16/07/14
SC1020	Segment Casting for P20L CH5 to CH8 (MCH3) (Learning) x 2	24	0	100%	28/03/14 A	23/04/14 A	22/01/14	25/02/14	11/04/15	07/06/15
SC1030	Segment Casting for P20L CH9 to CH13 (MCH4) (Learning) x 2	30	30	0%	28/04/14	07/06/14	26/02/14	01/04/14	13/03/15	09/05/15
SC1040	Segment Casting for P20L CH14 to CH19 (MCH5) (Learning) x 2	24	24	0%	09/06/14	05/07/14	02/04/14	29/04/14	09/04/15	05/06/15
SC1042	Segment Casting for P20R CH1' to CH4' (MCH2)	16	0	100%	04/04/14 A	25/04/14 A	22/01/14	15/02/14		
SC1044	Segment Casting for P20R CH5' to CH8' (MCH3)	12	12	0%	28/04/14	17/05/14	26/02/14	11/03/14		
SC1046	Segment Casting for P20R CH9' to CH13' (MCH4)	15	15	0%	09/06/14	25/06/14	02/04/14	18/04/14		
SC1048	Segment Casting for P20R CH14' to CH19' (MCH5)	12	12	0%	07/07/14	19/07/14	30/04/14	20/05/14		
SC1058	Segment Casting for P20R SOP (MSOP) (Learning) x 2	42	42	0%	28/04/14	21/06/14	30/11/13	18/01/14		
SC1068	Segment Casting for P20R CH1 to CH4 (MCH2) (Learning) x 2	32	16	50%	18/04/14 A	22/05/14	16/12/13	21/01/14		
SC1078	Segment Casting for P20R CH5 to CH8 (MCH3) (Learning) x 2	24	24	0%	23/05/14	19/06/14	22/01/14	25/02/14		
SC1088	Segment Casting for P20R CH9 to CH13 (MCH4) (Learning) x 2	30	30	0%	20/06/14	24/07/14	26/02/14	01/04/14		
SC1098	Segment Casting for P20R CH14 to CH19 (MCH5) (Learning) x 2	24	24	0%	25/07/14	21/08/14	02/04/14	29/04/14		
SC1108	Segment Casting for P20L CH1' to CH4' (MCH2)	16	16	0%	23/05/14	10/06/14	22/01/14	15/02/14		
SC1118	Segment Casting for P20L CH5' to CH8' (MCH3)	12	12	0%	20/06/14	03/07/14	26/02/14	11/03/14		
SC1128	Segment Casting for P20L CH9' to CH13' (MCH4)	15	15	0%	25/07/14	11/08/14	02/04/14	18/04/14		



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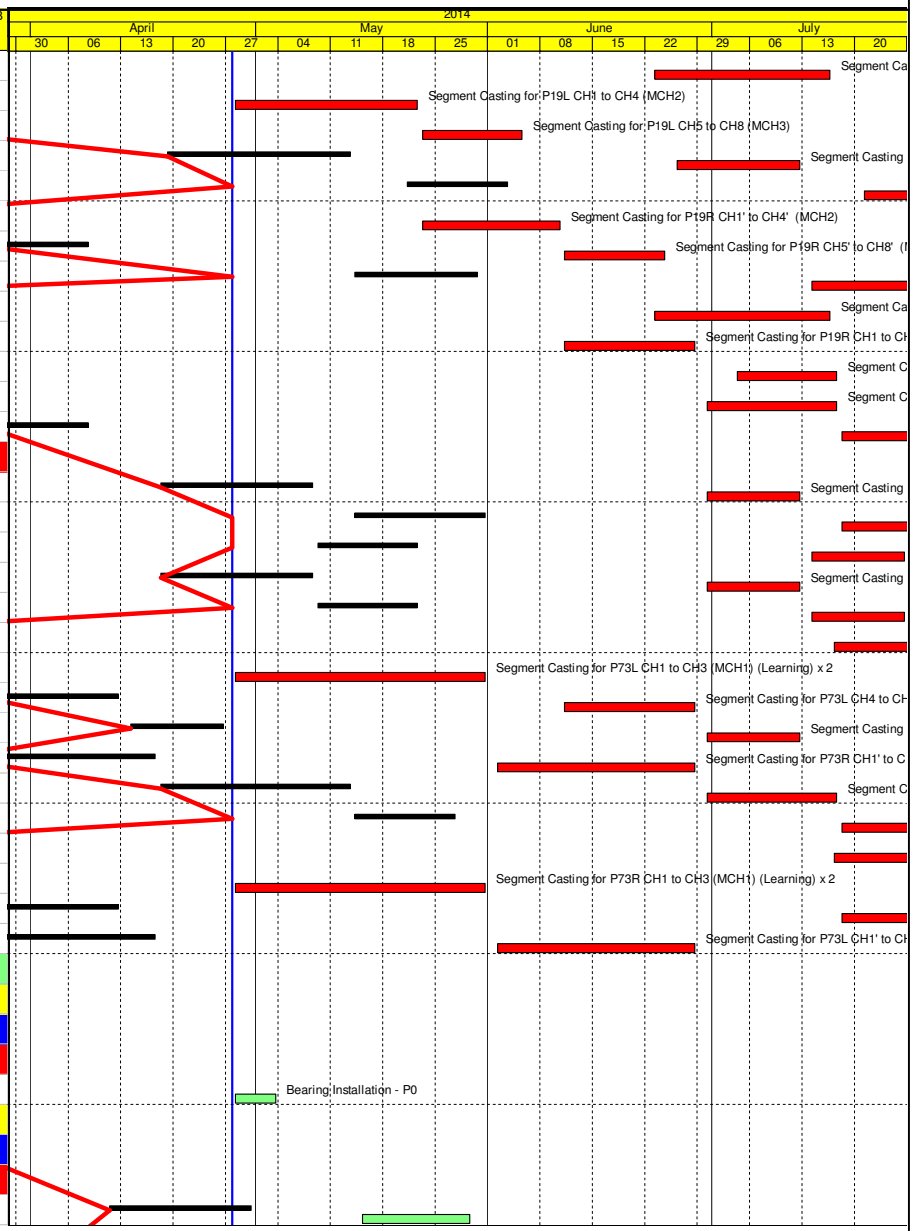
SC1148	Segment Casting for P19L SOP (MSOP)	21	21	0%	23/06/14	16/07/14	18/01/14	19/02/14		
SC1158	Segment Casting for P19L CH1 to CH4 (MCH2)	16	16	0%	28/04/14	22/05/14	17/02/14	06/03/14		
SC1168	Segment Casting for P19L CH5 to CH8 (MCH3)	12	12	0%	23/05/14	05/06/14	12/03/14	25/03/14		
SC1178	Segment Casting for P19L CH9 to CH13 (MCH4)	15	15	0%	26/06/14	12/07/14	19/04/14	13/05/14		
SC1188	Segment Casting for P19L CH14 to CH19 (MCH5)	12	12	0%	21/07/14	02/08/14	21/05/14	03/06/14		
SC1198	Segment Casting for P19R CH1' to CH4' (MCH2)	16	16	0%	23/05/14	10/06/14	07/03/14	25/03/14		
SC1208	Segment Casting for P19R CH5' to CH8' (MCH3)	12	12	0%	11/06/14	24/06/14	26/03/14	08/04/14		
SC1218	Segment Casting for P19R CH9' to CH13' (MCH4)	15	15	0%	14/07/14	30/07/14	14/05/14	30/05/14		
SC1238	Segment Casting for P19R SOP (MSOP)	21	21	0%	23/06/14	16/07/14	18/01/14	19/02/14		
SC1248	Segment Casting for P19R CH1 to CH4 (MCH2)	16	16	0%	11/06/14	28/06/14	17/02/14	06/03/14		
SC1258	Segment Casting for P19R CH5 to CH8 (MCH3)	12	12	0%	04/07/14	17/07/14	12/03/14	25/03/14		
SC1288	Segment Casting for P19L CH1' to CH4' (MCH2)	16	16	0%	30/06/14	17/07/14	07/03/14	25/03/14		
SC1298	Segment Casting for P19L CH5' to CH8' (MCH3)	12	12	0%	18/07/14	31/07/14	26/03/14	08/04/14		
ML11 (P70 TO P74)										
SC1698	Segment Casting for P71L CH1 to CH3 (MCH1)	12	12	0%	30/06/14	12/07/14	18/04/14	08/05/14		
SC1699	Segment Casting for P71L CH4 to CH7 (MCH2)	16	16	0%	18/07/14	05/08/14	14/05/14	31/05/14		
SC1738	Segment Casting for P71R CH1' to CH3' (MCH1)	12	12	0%	14/07/14	26/07/14	09/05/14	22/05/14		
SC1798	Segment Casting for P71R CH1 to CH3 (MCH1)	12	12	0%	30/06/14	12/07/14	18/04/14	08/05/14		
SC1848	Segment Casting for P71L CH1' to CH3' (MCH1)	12	12	0%	14/07/14	26/07/14	09/05/14	22/05/14		
SC2118	Segment Casting for P73L SOP (MSOP)	21	21	0%	17/07/14	09/08/14	19/02/14	15/03/14		
SC2128	Segment Casting for P73L CH1 to CH3 (MCH1) (Learning) x 2	24	24	0%	28/04/14	31/05/14	21/02/14	20/03/14		
SC2138	Segment Casting for P73L CH4 to CH7 (MCH2)	16	16	0%	11/06/14	28/06/14	26/03/14	12/04/14		
SC2148	Segment Casting for P73L CH8 to CH11 (MCH3)	12	12	0%	30/06/14	12/07/14	14/04/14	26/04/14		
SC2178	Segment Casting for P73R CH1' to CH3' (MCH1) (Learning) x 2	24	24	0%	02/06/14	28/06/14	21/03/14	17/04/14		
SC2188	Segment Casting for P73R CH4' to CH7' (MCH2)	16	16	0%	30/06/14	17/07/14	18/04/14	13/05/14		
SC2198	Segment Casting for P73R CH8' to CH11' (MCH3)	12	12	0%	18/07/14	31/07/14	14/05/14	27/05/14		
SC2228	Segment Casting for P73R SOP (MSOP)	21	21	0%	17/07/14	09/08/14	19/02/14	15/03/14		
SC2238	Segment Casting for P73R CH1 to CH3 (MCH1) (Learning) x 2	24	24	0%	28/04/14	31/05/14	21/02/14	20/03/14		
SC2248	Segment Casting for P73R CH4 to CH7 (MCH2)	16	16	0%	18/07/14	05/08/14	26/03/14	12/04/14		
SC2288	Segment Casting for P73L CH1' to CH3' (MCH1) (Learning) x 2	24	24	0%	02/06/14	28/06/14	21/03/14	17/04/14		
Viaduct between HKSAR Boundary and Landing Point on Airport Island										
ML01L/R 75mx8 - Stage 1 of Works										
Pier P0L/R										
Column Construction										
WW1065	Bearing Installation - P0	5	5	0%	28/04/14	03/05/14	03/03/14	07/03/14	22/10/13	01/11/13
ML01L/R 75mx8 - Stage 4 of Works										
Pier P2L/R										
Site Investigation										
WW1170	Site investigation for bored pile P2	12	12	0%	15/05/14	29/05/14	11/04/14	30/04/14	26/11/14	04/12/14



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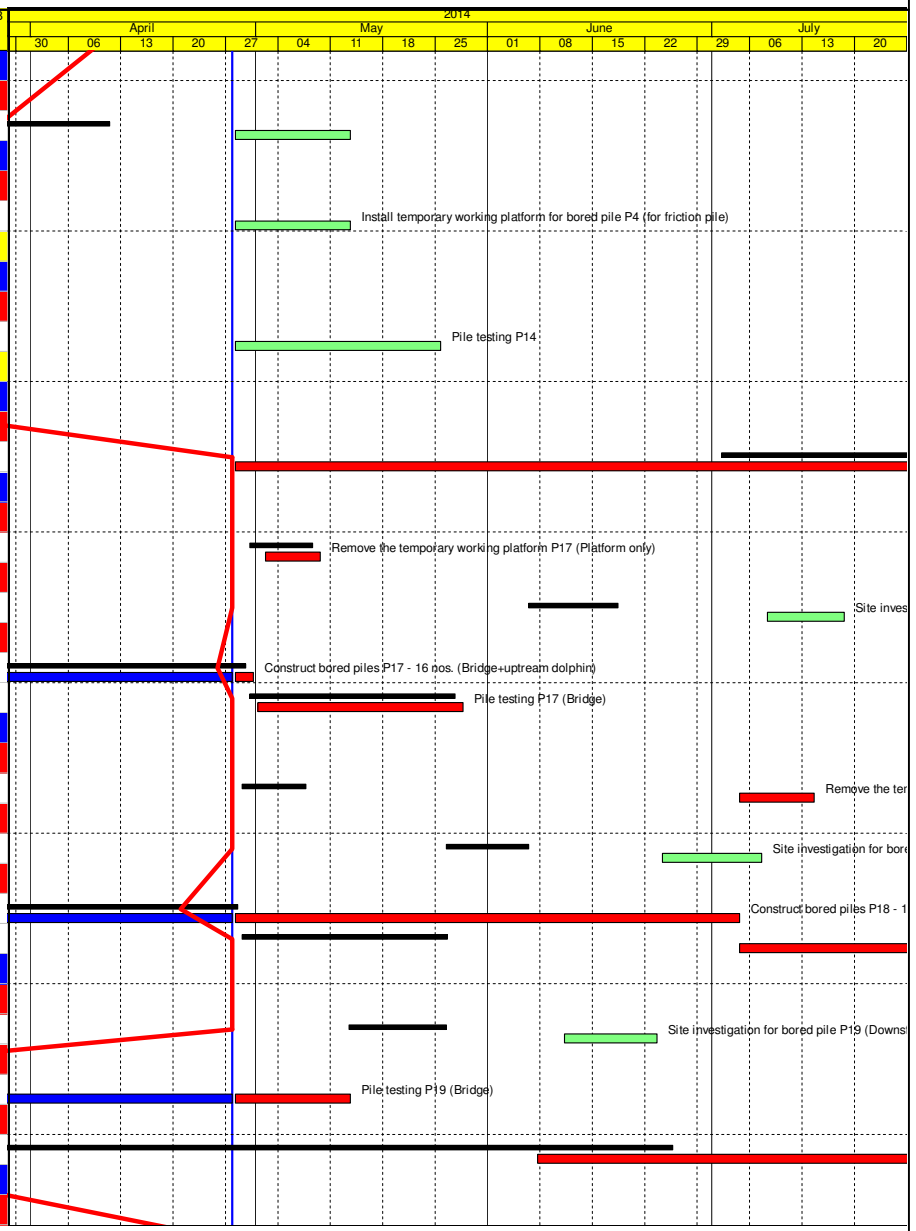
Activity ID	Activity Name	Original Duration	Remaining Duration	Activity % Complete	Start	Finish	DWP01B Start	DWP01B Finish	DWP00B Start	DWP00B Finish
Pier P3L/R										
Site Investigation										
WW1250	Site investigation for bored pile P3	12	12	0%	28/04/14	13/05/14	27/03/14	11/04/14	26/11/14	04/12/14
Pier P4L/R										
Temporary Works										
WW10437	Install temporary working platform for bored pile P4 (for friction pile)	12	12	0%	28/04/14	13/05/14	12/03/14	26/03/14		
ML02L/R 75mx8 - Stage 4 of Works										
Pier P14L/R										
Foundation - Bored Pile										
WW2160	Pile testing P14	28	28	0%	28/04/14	25/05/14	03/01/14	30/01/14	16/11/13	13/12/13
ML03L/R 109.661m+150mx3+109.661m Navigation Channel - Stage 4 of Works										
Pier P16L/R (M.J.)										
Foundation - Bored Pile										
NC1040	Construct bored piles P16 - 6 nos. (Friction Piles)	90	90	0%	28/04/14	01/11/14	02/07/14	05/11/14	16/11/13	07/12/13
Pier P17L/R										
Temporary Works										
NC1150	Remove the temporary working platform P17 (Platform only)	6	6	0%	02/05/14	09/05/14	30/04/14	08/05/14	16/11/13	03/12/13
Site Investigation										
NC1140	Site investigation for bored pile P17 (Downstream Dolphin)	9	9	0%	08/07/14	18/07/14	06/06/14	18/06/14	15/02/13	26/02/13
Foundation - Bored Pile										
NC1160	Construct bored piles P17 - 16 nos. (Bridge+uptream dolphin)	61	3	95.08%	10/03/14 A	30/04/14	12/02/14	29/04/14	08/10/13	31/10/13
NC1180	Pile testing P17 (Bridge)	28	28	0%	01/05/14	28/05/14	30/04/14	27/05/14	01/11/13	28/11/13
Pier P18L/R										
Temporary Works										
NC1270	Remove the temporary working platform P18 (Platform only)	6	6	0%	04/07/14	14/07/14	29/04/14	07/05/14	08/10/13	28/10/13
Site Investigation										
NC1260	Site investigation for bored pile P18 (Downstream Dolphin)	9	9	0%	24/06/14	07/07/14	26/05/14	06/06/14	19/01/13	30/01/13
Foundation - Bored Pile										
NC1280	Construct bored piles P18 - 16 nos. (Bridge+uptream dolphin)	99	6	94%	21/12/13 A	04/07/14	21/12/13	28/04/14	20/08/13	14/09/13
NC1300	Pile testing P18 (Bridge)	28	28	0%	04/07/14	01/08/14	29/04/14	26/05/14	15/09/13	12/10/13
Pier P19L/R										
Site Investigation										
NC1380	Site investigation for bored pile P19 (Downstream Dolphin)	9	9	0%	11/06/14	23/06/14	13/05/14	26/05/14	24/12/12	07/01/13
Foundation - Bored Pile										
NC1420	Pile testing P19 (Bridge)	28	16	42.86%	17/03/14 A	13/05/14	18/01/14	21/02/14	30/07/13	26/08/13
Pile Cap Construction										
NC1440	Construct pile cap P19 - 2 nos. (Learning)	90	90	0%	07/06/14	16/10/14	26/02/14	25/06/14	10/09/13	16/11/13
Pier P20L/R										
Site Investigation										



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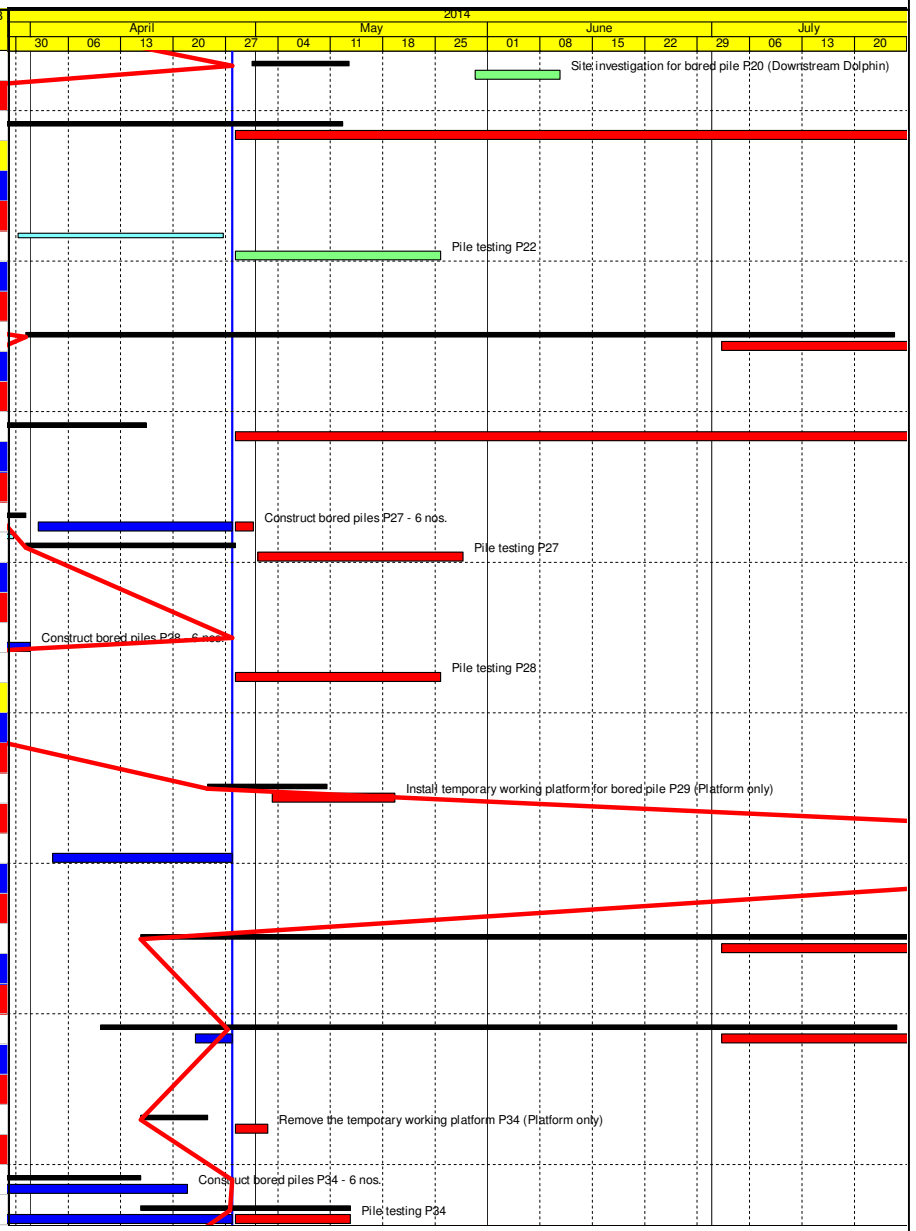
NC1500	Site investigation for bored pile P20 (Downstream Dolphin)	9	9	0%	30/05/14	10/06/14	30/04/14	13/05/14	30/11/12	11/12/12
Pile Cap Construction										
NC1560	Construct pile cap P20 - 2 nos. (Learning)	90	90	0%	28/04/14	29/08/14	15/01/14	12/05/14	02/05/13	30/07/13
ML04L/R 74.5mx8 - Stage 4 of Works										
Pier P22L/R										
Foundation - Bored Pile										
WW5040	Pile testing P22	28	28	0%	28/04/14	25/05/14	08/01/14	12/02/14	30/03/14	26/04/14
Pier P25L/R										
Foundation - Bored Pile										
WW5269	Construct bored piles P25- 6 nos.	39	39	0%	02/07/14	25/08/14	31/03/14	25/07/14		
Pier P26L/R										
Foundation - Bored Pile										
WW5349	Construct bored piles P26 - 6 nos.	37	37	0%	28/04/14	18/08/14	03/03/14	16/04/14		
Pier P27L/R										
Foundation - Bored Pile										
WW5430	Construct bored piles P27 - 6 nos.	40	3	92.5%	02/04/14 A	30/04/14	12/02/14	31/03/14	30/01/14	01/03/14
WW5440	Pile testing P27	28	28	0%	01/05/14	28/05/14	31/03/14	28/04/14	02/03/14	29/03/14
Pier P28L/R										
Foundation - Bored Pile										
WW5509	Construct bored piles P28 - 6 nos.	37	0	100%	22/02/14 A	01/04/14 A	24/12/13	12/02/14		
WW5520	Pile testing P28	28	28	0%	28/04/14	25/05/14	12/02/14	12/03/14	26/02/14	25/03/14
ML05L/R 74.5mx8 - Stage 4 of Works										
Pier P29L/R (M.J.)										
Temporary Works										
WW5560	Install temporary working platform for bored pile P29 (Platform only)	12	12	0%	03/05/14	19/05/14	24/04/14	10/05/14	30/11/13	13/12/13
Foundation - Bored Pile										
WW5590	Construct bored piles P29 - 6 nos.	28	9	67%	04/04/14 A	17/10/14	19/09/14	29/10/14	07/01/14	29/01/14
Pier P32L/R										
Foundation - Bored Pile										
WW5830	Construct bored piles P32 - 6 nos.	33	33	0%	02/07/14	15/08/14	15/04/14	04/08/14	11/01/14	07/02/14
Pier P33L/R										
Foundation - Bored Pile										
WW5910	Construct bored piles P33 - 6 nos.	32	27	16%	23/04/14 A	07/08/14	10/04/14	25/07/14	19/12/13	14/01/14
Pier P34L/R										
Temporary Works										
WW5980	Remove the temporary working platform P34 (Platform only)	4	4	0%	28/04/14	02/05/14	15/04/14	24/04/14	11/01/14	15/01/14
Foundation - Bored Pile										
WW5990	Construct bored piles P34 - 6 nos.	32	0	100%	10/03/14 A	22/04/14 A	07/03/14	15/04/14	17/12/13	10/01/14
WW6000	Pile testing P34	28	16	42.86%	28/03/14 A	13/05/14	15/04/14	13/05/14	11/01/14	14/02/14



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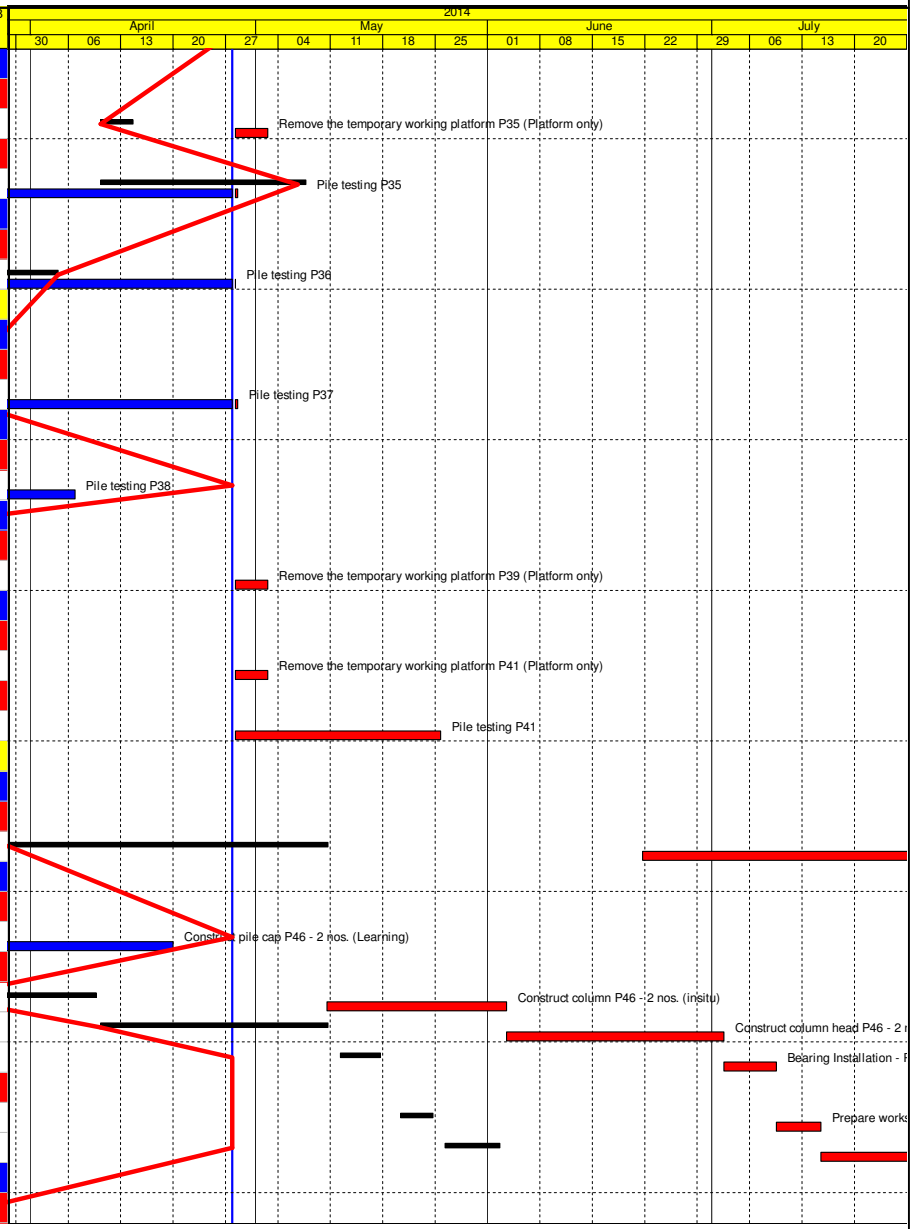
Pier P35L/R										
Temporary Works										
WW6060	Remove the temporary working platform P35 (Platform only)	4	4	0%	28/04/14	02/05/14	10/04/14	14/04/14	19/12/13	23/12/13
Foundation - Bored Pile										
WW6080	Pile testing P35	28	1	96.43%	17/03/14 A	28/04/14	10/04/14	07/05/14	19/12/13	15/01/14
Pier P36L/R										
Foundation - Bored Pile										
WW6160	Pile testing P36	28	0	100%	06/03/14 A	28/04/14	07/03/14	04/04/14	17/12/13	13/01/14
ML06L/R 74.5mx8 - Stage 4 of Works										
Pier P37L/R (M.J.)										
Foundation - Bored Pile										
WW6240	Pile testing P37	28	1	96.43%	28/01/14 A	28/04/14	22/02/14	21/03/14	26/11/13	23/12/13
Pier 38L/R										
Foundation - Bored Pile										
WW6320	Pile testing P38	28	0	100%	27/02/14 A	07/04/14 A	01/01/14	28/01/14	24/11/13	21/12/13
Pier 39L/R										
Temporary Works										
WW6380	Remove the temporary working platform P39 (Platform only)	4	4	0%	28/04/14	02/05/14	22/01/14	25/01/14	04/11/13	07/11/13
Pier 41L/R										
Temporary Works										
WW6540	Remove the temporary working platform P41 (Platform only)	4	4	0%	28/04/14	02/05/14	27/01/14	04/02/14	08/10/13	12/10/13
Foundation - Bored Pile										
WW6560	Pile testing P41	28	28	0%	28/04/14	25/05/14	27/01/14	03/03/14	08/10/13	04/11/13
ML07L/R 73.396mx8 - Stage 4 of Works										
Pier P45L/R (M.J.)										
Pile Cap Construction										
WW6890	Construct pile cap P45 - 2 nos.	30	30	0%	21/06/14	04/08/14	29/03/14	10/05/14	25/10/13	28/11/13
Pier P46L/R										
Pile Cap Construction										
WW6970	Construct pile cap P46 - 2 nos. (Learning)	40	0	100%	13/01/14 A	20/04/14 A	03/01/14	21/02/14	16/09/13	29/10/13
Column Construction										
WW10007	Construct column P46 - 2 nos. (insitu)	17	17	0%	10/05/14	03/06/14	20/03/14	09/04/14		
WW10017	Construct column head P46 - 2 nos. (insitu)	21	21	0%	03/06/14	02/07/14	10/04/14	10/05/14		
WW9752	Bearing Installation - P46	5	5	0%	02/07/14	09/07/14	12/05/14	17/05/14		
Pier Segment Construction										
WW6988	Prepare works for precast SOP P46 - 4 nos.(Learning)	4	4	0%	09/07/14	15/07/14	20/05/14	24/05/14		
WW6990	Install precast SOP P46 - 4 nos.(Learning)	6	6	0%	15/07/14	28/07/14	26/05/14	02/06/14	20/12/13	02/01/14
Pier P47L/R										
Column Construction										



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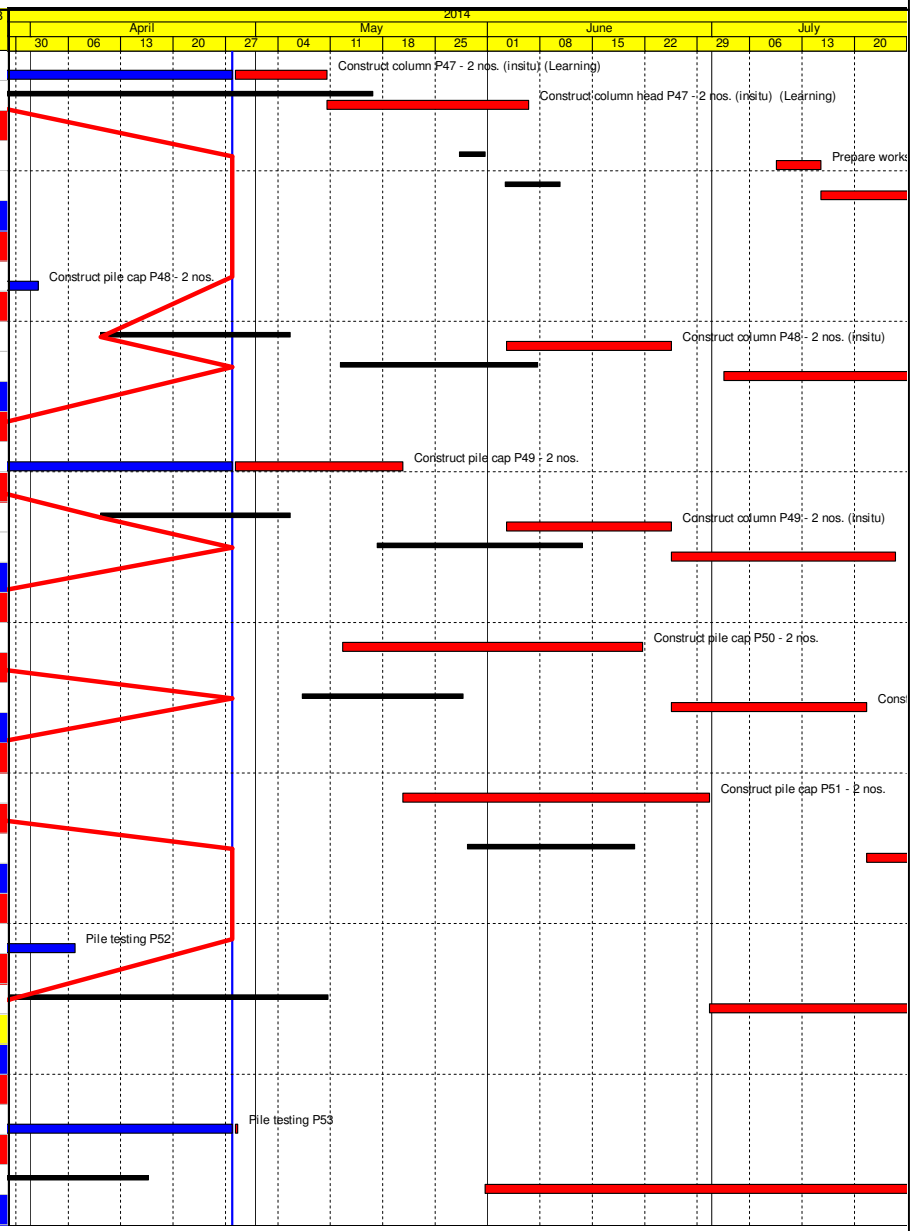
WW10027	Construct column P47 - 2 nos. (insitu) (Learning)	32	10	70%	18/03/14 A	10/05/14	11/02/14	19/03/14		
WW10037	Construct column head P47 - 2 nos. (insitu) (Learning)	20	20	0%	10/05/14	06/06/14	20/03/14	16/05/14		
Pier Segment Construction										
WW7068	Prepare works for precast SOP P47 - 4 nos.(Learning)	4	4	0%	09/07/14	15/07/14	28/05/14	31/05/14		
WW7070	Install precast SOP P47 - 4 nos.(Learning)	6	6	0%	15/07/14	28/07/14	03/06/14	10/06/14	26/11/13	05/12/13
Pier P48L/R										
Pile Cap Construction										
WW7130	Construct pile cap P48 - 2 nos.	30	0	100%	22/01/14 A	02/04/14 A	22/02/14	28/03/14	10/09/13	24/10/13
Column Construction										
WW10047	Construct column P48 - 2 nos. (insitu)	17	17	0%	03/06/14	25/06/14	10/04/14	05/05/14		
WW10057	Construct column head P48 - 2 nos. (insitu)	21	21	0%	02/07/14	31/07/14	12/05/14	07/06/14		
Pier P49L/R										
Pile Cap Construction										
WW7210	Construct pile cap P49 - 2 nos.	30	17	43.33%	11/03/14 A	20/05/14	22/02/14	28/03/14	28/05/13	29/07/13
Column Construction										
WW10067	Construct column P49 - 2 nos. (insitu)	17	17	0%	03/06/14	25/06/14	10/04/14	05/05/14		
WW10077	Construct column head P49 - 2 nos. (insitu)	21	21	0%	25/06/14	25/07/14	17/05/14	13/06/14		
Pier P50L/R										
Pile Cap Construction										
WW7290	Construct pile cap P50 - 2 nos.	30	30	0%	12/05/14	21/06/14	22/02/14	28/03/14	25/03/13	27/05/13
Column Construction										
WW10087	Construct column P50 - 2 nos. (insitu)	17	17	0%	25/06/14	21/07/14	07/05/14	28/05/14		
Pier P51L/R										
Pile Cap Construction										
WW7360	Construct pile cap P51 - 2 nos.	30	30	0%	20/05/14	30/06/14	22/02/14	28/03/14	16/09/13	30/10/13
Column Construction										
WW10107	Construct column P51 - 2 nos. (insitu)	17	17	0%	21/07/14	13/08/14	29/05/14	20/06/14		
Pier P52L/R										
Foundation - Bored Pile										
WW7420	Pile testing P52	28	0	100%	17/03/14 A	07/04/14 A	30/11/13	27/12/13	04/09/13	01/10/13
Pile Cap Construction										
WW7430	Construct pile cap P52 - 2 nos.	30	30	0%	30/06/14	12/08/14	29/03/14	10/05/14	30/10/13	04/12/13
ML08L/R 70mx6 - Stage 4 of Works										
Pier P53L/R (M.J.)										
Foundation - Bored Pile										
WW7490	Pile testing P53	28	1	96.43%	27/08/13 A	28/04/14	30/11/13	27/12/13	08/09/13	05/10/13
Pile Cap Construction										
WW7500	Construct pile cap P53 - 2 nos.	45	45	0%	31/05/14	04/08/14	22/02/14	16/04/14	04/12/13	29/01/14
Pier P54L/R										



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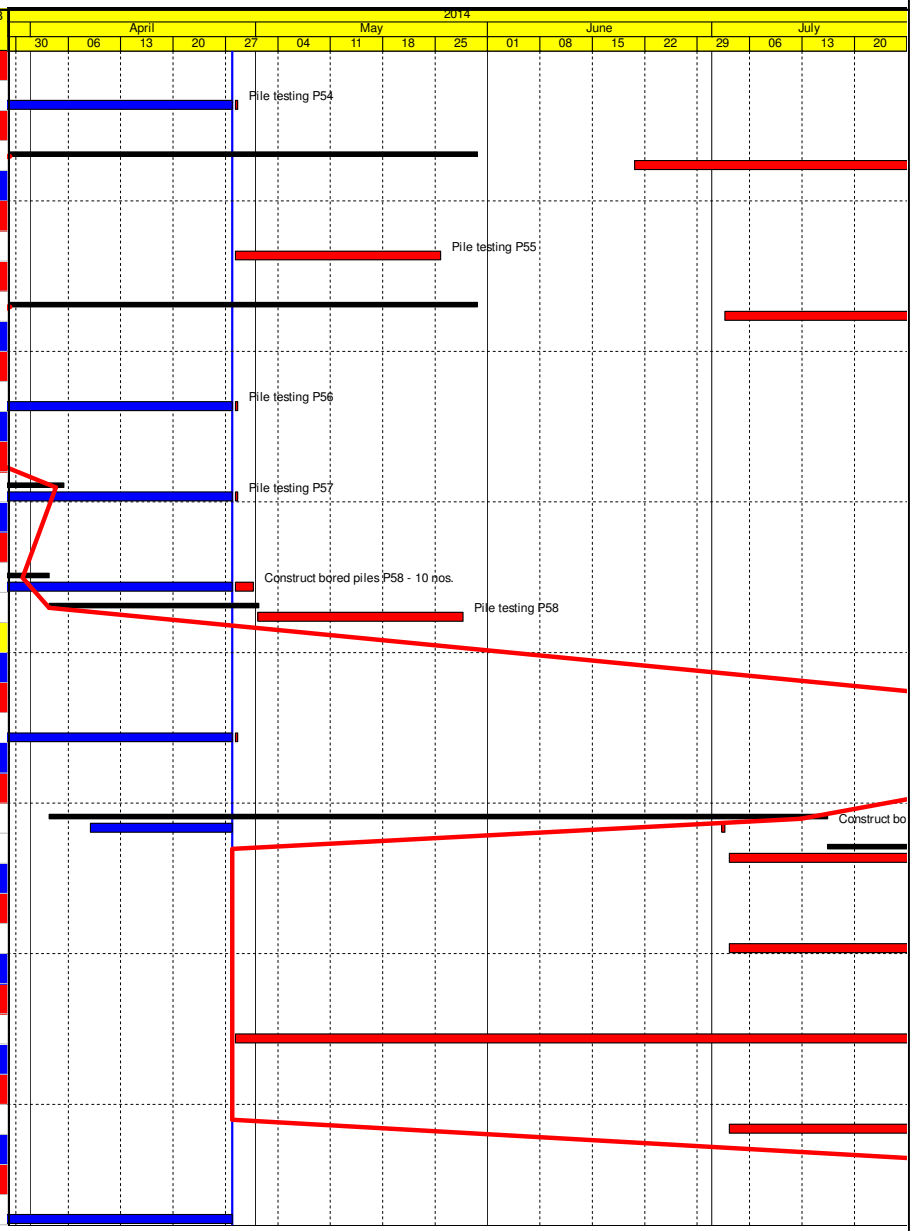
Foundation - Bored Pile										
WW7570	Pile testing P54	28	1	96.43%	29/10/13 A	28/04/14	30/11/13	27/12/13	26/10/13	22/11/13
Pile Cap Construction										
WW7580	Construct pile cap P54 - 2 nos.	45	45	0%	20/06/14	22/08/14	29/03/14	30/05/14	04/12/13	29/01/14
Pier P55L/R										
Foundation - Bored Pile										
WW7650	Pile testing P55	28	28	0%	28/04/14	25/05/14	13/01/14	17/02/14	16/11/13	13/12/13
Pile Cap Construction										
WW7660	Construct pile cap P55 - 2 nos.	45	45	0%	02/07/14	03/09/14	29/03/14	30/05/14	14/12/13	11/02/14
Pier P56L/R										
Foundation - Bored Pile										
WW7730	Pile testing P56	28	1	96.43%	12/03/14 A	28/04/14	07/02/14	06/03/14	09/11/13	06/12/13
Pier P57L/R										
Foundation - Bored Pile										
WW7810	Pile testing P57	28	1	96.43%	28/02/14 A	28/04/14	08/03/14	05/04/14	17/12/13	13/01/14
Pier P58L/R										
Foundation - Bored Pile										
WW7880	Construct bored piles P58 - 10 nos.	50	3	94%	09/03/14 A	30/04/14	04/02/14	03/04/14	09/11/13	04/01/14
WW7890	Pile testing P58	28	28	0%	01/05/14	28/05/14	03/04/14	01/05/14	05/01/14	08/02/14
ML09L/R 73.396Mx8 - Stage 4 of Works										
Pier P59L/R (M.J.)										
Foundation - Bored Pile										
WW7970	Pile testing P59	28	1	96.43%	13/03/14 A	28/04/14	20/08/14	17/09/14	09/01/14	12/02/14
Pier P60L/R										
Foundation - Bored Pile										
WW8030	Construct bored piles P60 - 8 nos.	29	1	96.55%	09/04/14 A	02/07/14	03/04/14	16/07/14	17/12/13	21/01/14
WW8040	Pile testing P60	28	28	0%	03/07/14	30/07/14	16/07/14	13/08/14	22/01/14	25/02/14
Pier P61L/R										
Foundation - Bored Pile										
WW8120	Pile testing P61	28	28	0%	03/07/14	30/07/14	01/09/14	29/09/14	07/02/14	06/03/14
Pier P62L/R										
Foundation - Bored Pile										
WW8180	Construct bored piles P62 - 8 nos.	35	35	0%	28/04/14	14/08/14	20/08/14	13/10/14	09/01/14	29/01/14
Pier P63L/R										
Foundation - Bored Pile										
WW8280	Construct bored piles P63 - 6 nos.	25	25	0%	03/07/14	06/08/14	01/09/14	09/10/14	22/01/14	14/02/14
Pier P64L/R										
Foundation - Bored Pile										
WW8360	Construct bored piles P64 - 6 nos.	41	1	97.56%	15/03/14 A	07/08/14	09/10/14	28/11/14	06/02/14	24/02/14



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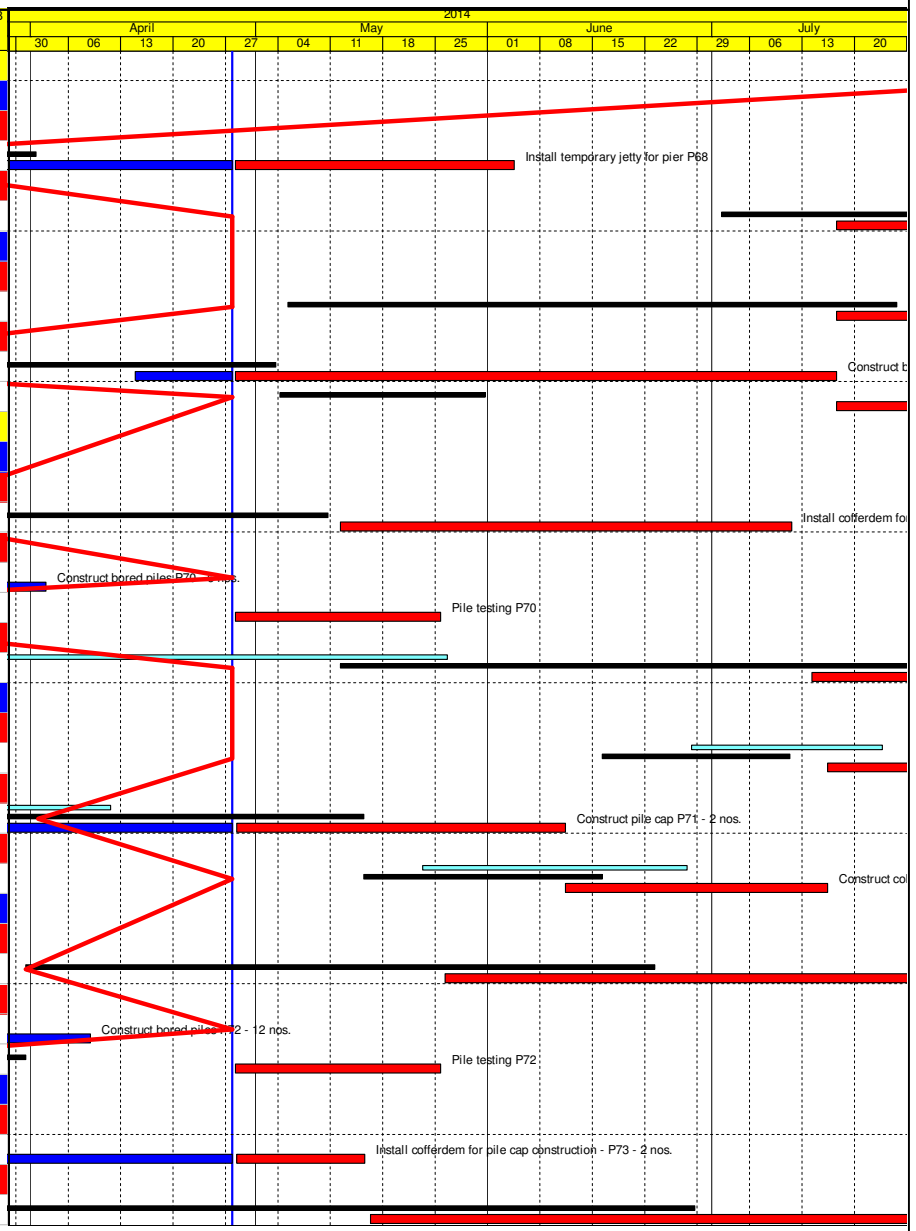
ML10L/R 115m+180m+115m - Stage 4 of Works										
Pier P68L/R										
Temporary Works										
AC1010	Install temporary jetty for pier P68	44	28	37.39%	05/02/14 A	04/06/14	10/02/14	01/04/14	02/07/13	24/09/13
Foundation - Bored Pile										
AC1080	Construct bored piles P68 - 12 nos.	66	66	0%	17/07/14	22/10/14	02/07/14	06/10/14	27/01/14	17/03/14
Pier P69L/R										
Temporary Works										
AC1135	Install cofferdem for pile cap construction - P69 - 2 nos.	60	60	0%	17/07/14	14/10/14	05/05/14	25/07/14		
Foundation - Bored Pile										
AC2480	Construct bored piles P69 - 12 nos.	64	59	8%	15/04/14 A	17/07/14	12/02/14	03/05/14		
AC2490	Pile testing P69	28	28	0%	17/07/14	14/08/14	04/05/14	31/05/14		
ML11L/R 109m+165mx2+109m - Stage 4 of Works										
Pier P70L/R (M.J.)										
Temporary Works										
AC1170	Install cofferdem for pile cap construction - P70 - 2 nos.	45	45	0%	12/05/14	11/07/14	12/03/14	10/05/14	05/09/13	21/10/13
Foundation - Bored Pile										
AC1190	Construct bored piles P70 - 6 nos.	34	0	100%	15/02/14 A	03/04/14 A	30/12/13	11/02/14	31/12/13	25/01/14
AC1200	Pile testing P70	28	28	0%	28/04/14	25/05/14	12/02/14	11/03/14	26/01/14	01/03/14
Pile Cap Construction										
AC1210	Construct pile cap P70 - 2 nos.	60	60	0%	14/07/14	08/10/14	12/05/14	01/08/14	25/03/14	26/05/14
Pier P71L/R										
Temporary Works										
AC1250	Remove cofferdem for P71	18	18	0%	16/07/14	11/08/14	16/06/14	11/07/14	28/06/14	23/07/14
Pile Cap Construction										
AC1290	Construct pile cap P71 - 2 nos.	80	33	59.11%	28/02/14 A	11/06/14	29/01/14	15/05/14	27/01/14	11/04/14
Column Construction										
AC1300	Construct column P71 - 4 nos.	24	24	0%	11/06/14	16/07/14	15/05/14	16/06/14	23/05/14	27/06/14
Pier P72L/R										
Temporary Works										
AC1320	Install cofferdem for pile cap construction - P72 - 2 nos.	60	60	0%	26/05/14	15/08/14	31/03/14	23/06/14	30/04/13	17/07/13
Foundation - Bored Pile										
AC1360	Construct bored piles P72 - 12 nos.	57	0	100%	13/05/13 A	09/04/14 A	13/05/13	31/07/13	05/08/13	04/11/13
AC1370	Pile testing P72	28	28	0%	28/04/14	25/05/14	03/03/14	31/03/14	05/11/13	02/12/13
Pier P73L/R										
Temporary Works										
AC1410	Install cofferdem for pile cap construction - P73 - 2 nos.	60	12	79.43%	28/02/14 A	15/05/14	28/12/13	12/03/14	20/03/13	20/05/13
Pile Cap Construction										
AC1470	Construct pile cap P73 - 2 nos.	80	80	0%	16/05/14	03/09/14	13/03/14	28/06/14	11/11/13	22/01/14



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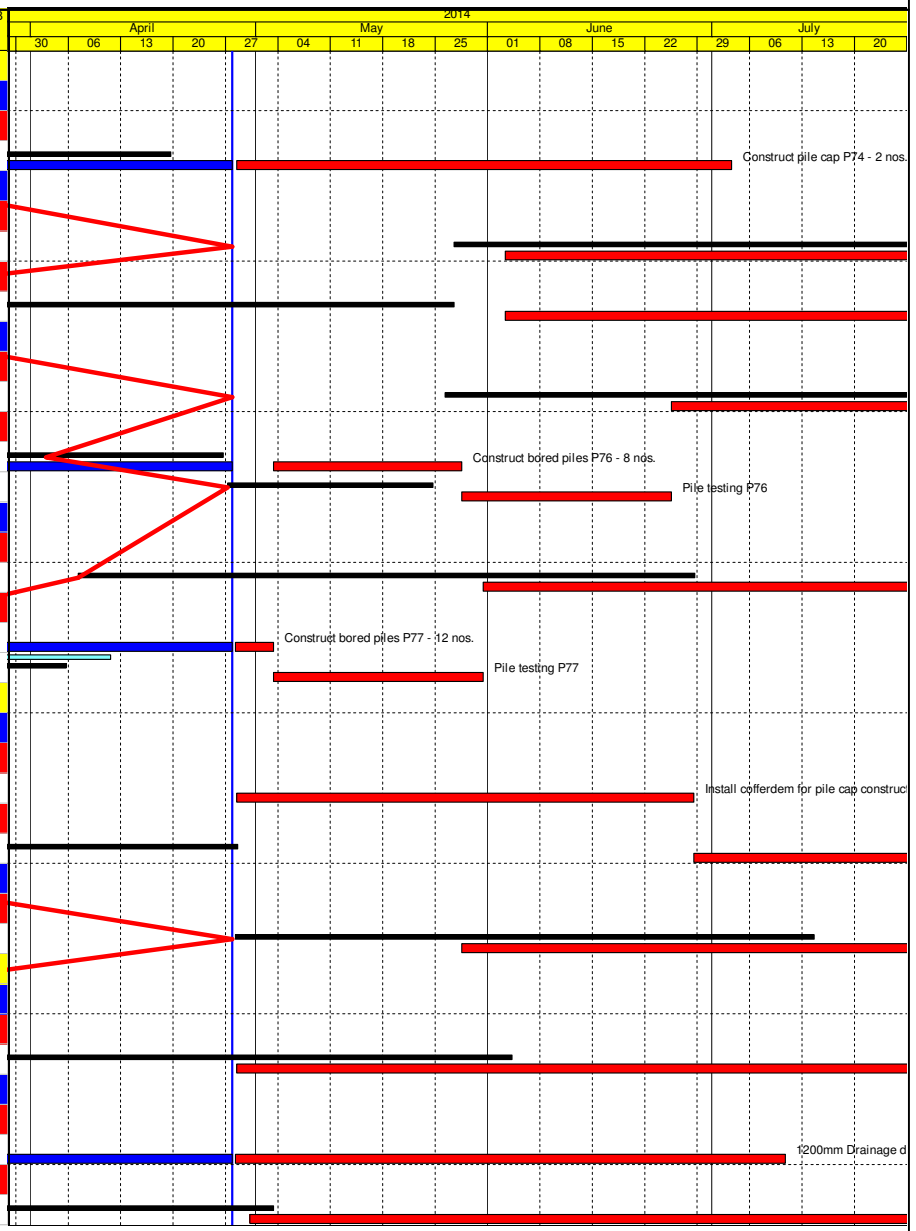
ML12L/R 109m+165mx2+109m - Stage 4 of Works										
Pier P74L/R (M.J.)										
Pile Cap Construction										
AC1560	Construct pile cap P74 - 2 nos.	60	48	20.15%	13/03/14 A	03/07/14	06/02/14	19/04/14	15/11/13	09/01/14
Pier P75L/R										
Temporary Works										
AC1590	Install cofferdem for footing construction - P75 - 1 nos.	90	90	0%	03/06/14	09/10/14	27/05/14	03/10/14	23/01/13	06/04/13
Foundation - Bored Pile										
AC2796	Construct bored piles P75 - 8 nos.	74	74	0%	03/06/14	15/09/14	19/02/14	27/05/14		
Pier P76L/R										
Temporary Works										
AC1680	Install cofferdem for pile cap construction - P76 - 2 nos.	60	60	0%	25/06/14	19/09/14	26/05/14	15/08/14	23/01/13	06/04/13
Foundation - Bored Pile										
AC1720	Construct bored piles P76 - 8 nos.	37	19	50%	09/01/14 A	28/05/14	10/03/14	26/04/14	08/04/13	14/06/13
AC1730	Pile testing P76	28	28	0%	28/05/14	25/06/14	27/04/14	24/05/14	15/06/13	12/07/13
Pier P77L/R										
Temporary Works										
AC1770	Install cofferdem for pile cap construction - P77 - 2 nos.	60	60	0%	31/05/14	25/08/14	07/04/14	28/06/14	13/08/13	01/11/13
Foundation - Bored Pile										
AC1800	Construct bored piles P77 - 12 nos.	53	4	92%	06/11/13 A	03/05/14	03/01/14	08/03/14	28/12/13	14/03/14
AC1810	Pile testing P77	28	28	0%	03/05/14	31/05/14	09/03/14	05/04/14	15/03/14	11/04/14
ML13L/R 115m+180m+115m - Stage 4 of Works										
Pier P78L/R (M.J.)										
Temporary Works										
AC1850	Install cofferdem for pile cap construction - P78 - 2 nos.	45	45	0%	28/04/14	28/06/14	14/12/13	11/02/14	22/05/13	09/07/13
Pile Cap Construction										
AC1910	Construct pile cap P78 - 2 nos.	60	60	0%	28/06/14	23/09/14	12/02/14	28/04/14	21/11/13	15/01/14
Pier P79L/R										
Foundation - Bored Pile										
AC1970	Construct bored piles P79 - 12 nos.	56	56	0%	28/05/14	14/08/14	28/04/14	14/07/14	08/10/13	27/12/13
ML14L/R 115m+180m+100.561m - Stage 4 of Works										
Pier P81L/R (M.J.)										
Temporary Works										
AC2100	Install cofferdem & working platform for - P81 - 2 nos.	120	120	0%	28/04/14	16/10/14	30/12/13	04/06/14	20/05/13	08/07/13
Pier P82L/R										
Utilities Diversion										
AC2460	1200mm Drainage diversion for P82	60	60	0%	21/03/14 A	10/07/14	30/11/13	15/02/14	08/12/12	07/02/13
Temporary Works										
AC2190	Remove existing seawall & prepare platform for P82 land side piles	90	90	0%	30/04/14	02/09/14	08/01/14	03/05/14	08/02/13	15/04/13



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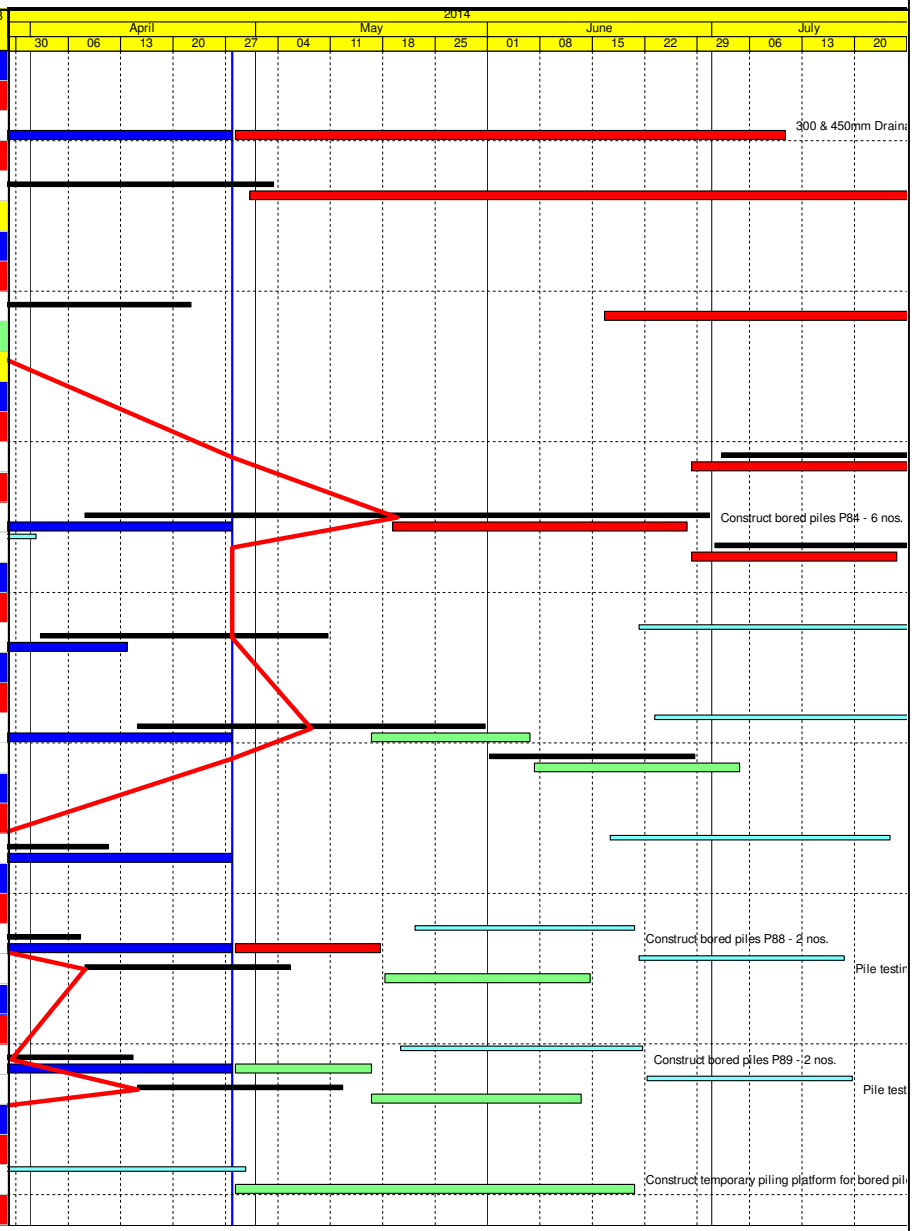
Pier P83L/R										
Utilities Diversion										
AC2470	300 & 450mm Drainage diversion for P83	60	60	0%	21/03/14 A	10/07/14	30/11/13	15/02/14	08/12/12	01/02/13
Temporary Works										
AC2290	Remove existing seawall & prepare platform for P83 land side piles	90	90	0%	30/04/14	02/09/14	08/01/14	03/05/14	16/04/13	14/06/13
Deck Construction between HKSAR Boundary and Landing Point on Airport Channel										
Segment Erection - Lifting Frame										
Lifting Frame 2-2 (LF2-2)										
DC5040	Segment erection P109	29	29	0%	16/06/14	04/08/14	12/03/14	22/04/14	04/09/14	26/09/14
Viaduct between Landing Point on Airport Island and Scenic Hill										
ML15L/R 43m+65mx6+37m - Stage 5 of Works										
Pier P84L/R (M.J.)										
Temporary Works										
AI1000	Install cofferdem for pile cap construction - P84	45	45	0%	28/06/14	29/08/14	02/07/14	02/09/14	21/10/13	30/11/13
Foundation - Bored Pile										
AI1030	Construct bored piles P84 - 6 nos.	60	30	50%	22/02/14 A	27/06/14	08/04/14	30/06/14	18/01/14	04/03/14
AI1040	Pile testing P84	28	28	0%	28/06/14	25/07/14	01/07/14	28/07/14	05/03/14	01/04/14
Pier P85L/R										
Foundation - Bored Pile										
AI1110	Construct bored piles P85 - 2 nos.	27	0	100%	20/02/14 A	14/04/14 A	02/04/14	10/05/14	21/06/14	29/07/14
Pier P86L/R										
Foundation - Bored Pile										
AI1180	Construct bored piles P86 - 2 nos.	33	17	50%	06/03/14 A	06/06/14	15/04/14	31/05/14	23/06/14	30/07/14
AI1190	Pile testing P86	28	28	0%	07/06/14	04/07/14	01/06/14	28/06/14	31/07/14	27/08/14
Pier P87L/R										
Foundation - Bored Pile										
AI1250	Construct bored piles P87 - 2 nos.	34	17	50%	01/03/14 A	19/08/14	01/03/14	11/04/14	17/06/14	24/07/14
Pier P88L/R										
Foundation - Bored Pile										
AI1320	Construct bored piles P88 - 2 nos.	30	15	50%	21/03/14 A	17/05/14	03/03/14	07/04/14	22/05/14	20/06/14
AI1330	Pile testing P88	28	28	0%	18/05/14	14/06/14	08/04/14	05/05/14	21/06/14	18/07/14
Pier P89L/R										
Foundation - Bored Pile										
AI1390	Construct bored piles P89 - 2 nos.	27	14	50%	17/03/14 A	16/05/14	13/03/14	14/04/14	20/05/14	21/06/14
AI1400	Pile testing P89	28	28	0%	16/05/14	13/06/14	15/04/14	12/05/14	22/06/14	19/07/14
Pier P90L/R										
Temporary Works										
AI1440	Construct temporary piling platform for bored pile P90	40	40	0%	28/04/14	20/06/14	06/01/14	24/02/14	08/03/14	29/04/14
Foundation - Bored Pile										



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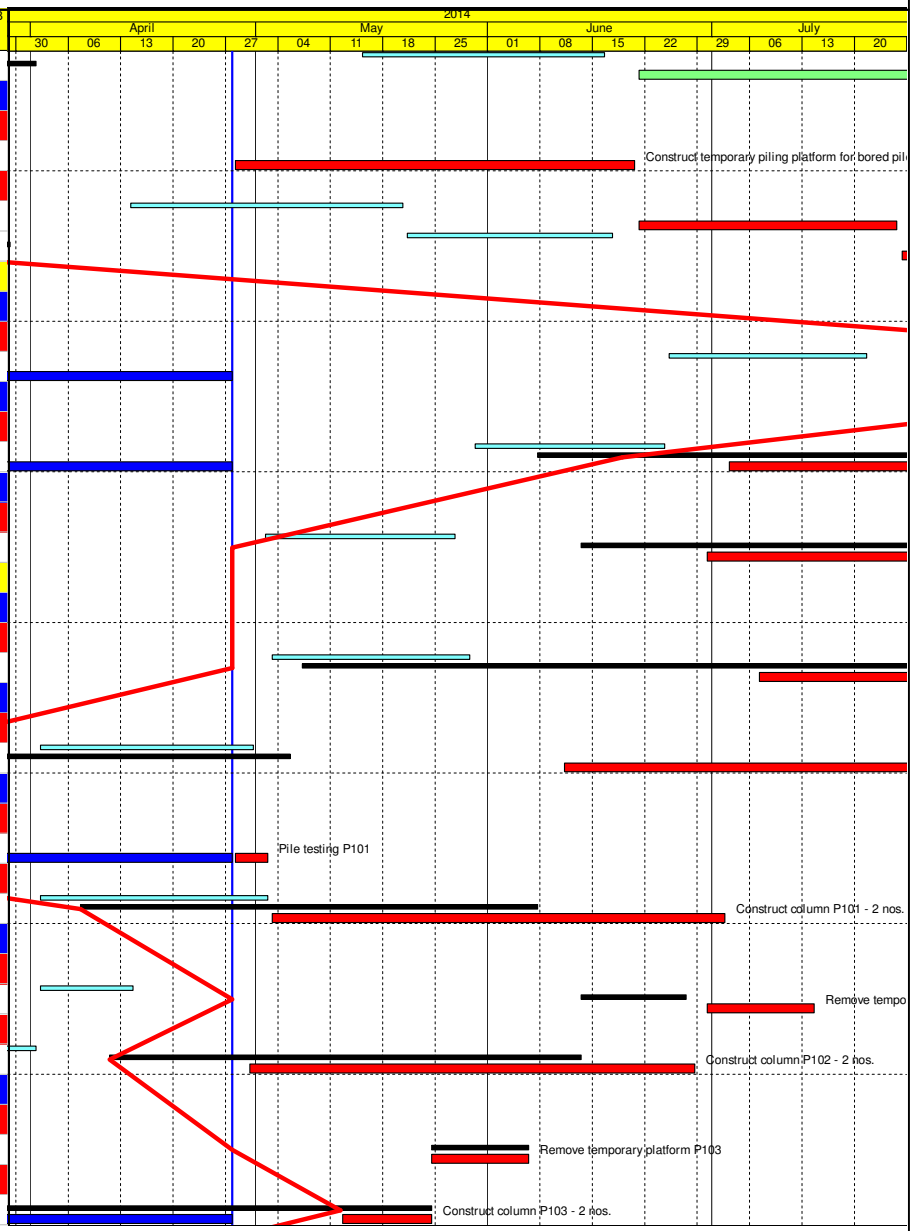
AI1460	Construct bored piles P90 - 2 nos.	31	31	0%	21/06/14	04/08/14	25/02/14	01/04/14	15/05/14	16/06/14
Pier P91L/R										
Temporary Works										
AI1510	Construct temporary piling platform for bored pile P91	40	40	0%	28/04/14	20/06/14	30/11/13	18/01/14	17/01/14	07/03/14
Foundation - Bored Pile										
AI1530	Construct bored piles P91 - 2 nos.	25	25	0%	21/06/14	25/07/14	28/01/14	01/03/14	14/04/14	20/05/14
AI1540	Pile testing P91	28	28	0%	26/07/14	22/08/14	01/03/14	29/03/14	21/05/14	17/06/14
MI16L/R 37m+65mx5+43m - Stage 5 of Works										
Pier P95L/R										
Column Construction										
AI1840	Construct column P95 - 2 nos.	38	0	100%	25/11/13 A	10/10/14	06/08/14	30/09/14	25/06/14	21/07/14
Pier P97L/R										
Column Construction										
AI1980	Construct column P97 - 2 nos.	38	30	21.05%	26/02/14 A	13/08/14	07/06/14	31/07/14	30/05/14	24/06/14
Pier P98L/R										
Column Construction										
AI2050	Construct column P98 - 2 nos.	44	44	0%	30/06/14	29/08/14	13/06/14	14/08/14	02/05/14	27/05/14
ML17L/R 43m+65mx3+47m - Stage 5 of Works										
Pier P99L/R (M.J.)										
Column Construction										
AI2120	Construct column P99 - 2 nos.	66	66	0%	07/07/14	09/10/14	07/05/14	06/08/14	03/05/14	29/05/14
Pier P100L/R										
Column Construction										
AI2190	Construct column P100 - 2 nos.	44	44	0%	11/06/14	12/08/14	08/03/14	05/05/14	02/04/14	30/04/14
Pier P101L/R										
Foundation - Bored Pile										
AI2240	Pile testing P101	28	5	82.14%	18/01/14 A	02/05/14	15/01/14	18/02/14	01/01/14	28/01/14
Column Construction										
AI2260	Construct column P101 - 2 nos.	44	44	0%	03/05/14	02/07/14	07/04/14	07/06/14	02/04/14	02/05/14
Pier P102L/R										
Temporary Works										
AI3470	Remove temporary platform P102	10	10	0%	30/06/14	14/07/14	13/06/14	27/06/14	02/04/14	14/04/14
Column Construction										
AI2330	Construct column P102 - 2 nos.	44	44	0%	30/04/14	28/06/14	11/04/14	13/06/14	08/03/14	01/04/14
Pier P103L/R										
Temporary Works										
AI3480	Remove temporary platform P103	10	10	0%	24/05/14	06/06/14	24/05/14	06/06/14	08/03/14	19/03/14
Column Construction										
AI2400	Construct column P103 - 2 nos.	44	9	80%	13/01/14 A	24/05/14	24/03/14	24/05/14	11/02/14	07/03/14



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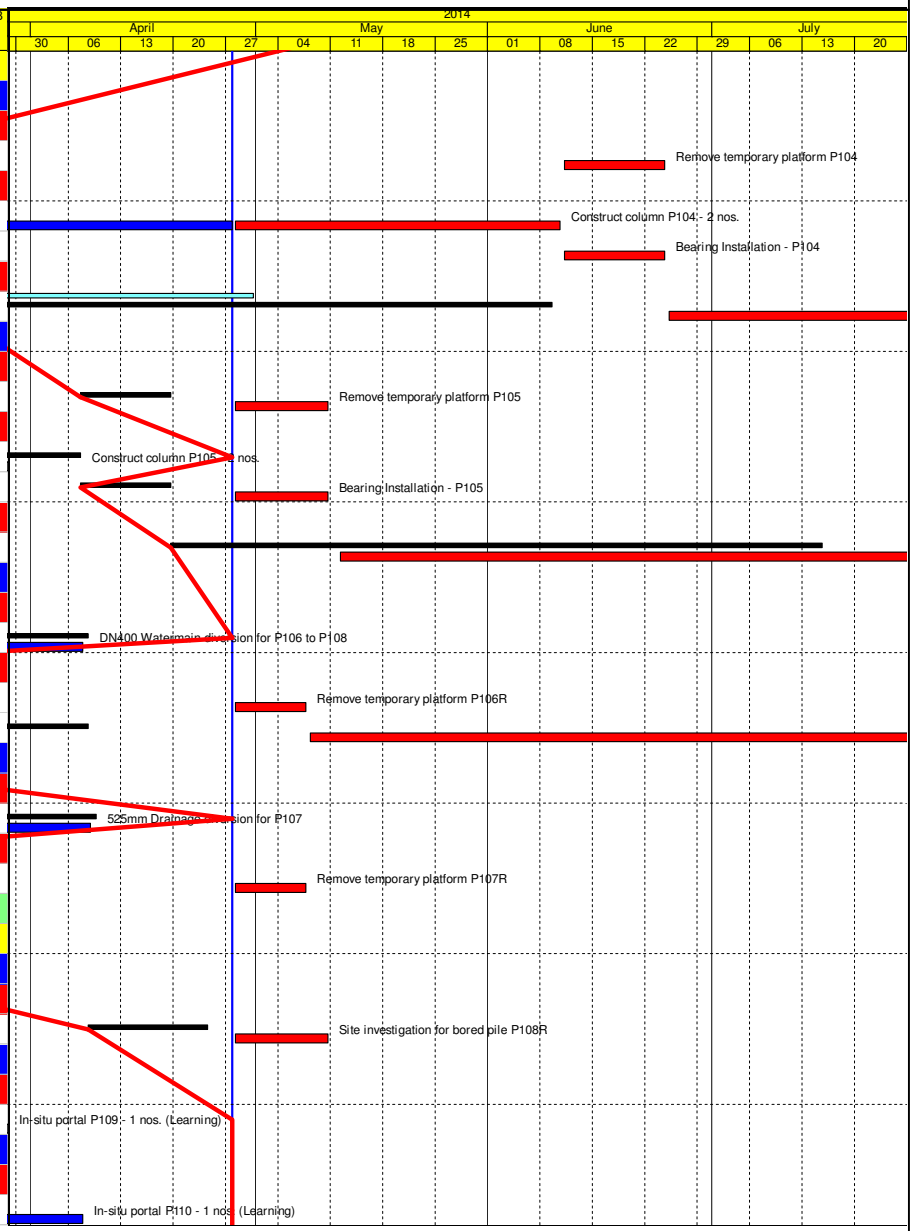
ML18L/R 47m+55mx5+35m - Stage 5 of Works										
Pier P104L/R (M.J.)										
Temporary Works										
AI3490	Remove temporary platform P104	10	10	0%	11/06/14	24/06/14	08/03/14	19/03/14	11/02/14	21/02/14
Column Construction										
AI2470	Construct column P104 - 2 nos.	66	33	50%	16/01/14 A	10/06/14	14/12/13	07/03/14	14/01/14	10/02/14
AI2475	Bearing Installation - P104	10	10	0%	11/06/14	24/06/14	08/03/14	19/03/14	11/02/14	21/02/14
In-situ Portal/T-pier Construction										
AI2480	In-situ portal P104 - 1 nos.	60	60	0%	25/06/14	18/09/14	20/03/14	09/06/14	10/03/14	30/04/14
Pier P105L/R										
Temporary Works										
AI3290	Remove temporary platform P105	10	10	0%	28/04/14	10/05/14	07/04/14	19/04/14	07/01/14	17/01/14
Column Construction										
AI2540	Construct column P105 - 2 nos.	66	0	100%	24/12/13 A	29/03/14 A	15/01/14	07/04/14	12/12/13	06/01/14
AI2545	Bearing Installation - P105	10	10	0%	28/04/14	10/05/14	07/04/14	19/04/14	07/01/14	17/01/14
In-situ Portal/T-pier Construction										
AI2550	In-situ portal P105 - 1 nos.	60	60	0%	12/05/14	01/08/14	19/04/14	15/07/14	18/01/14	08/03/14
Pier P106L/R										
Utilities Diversion										
AI3530	DN400 Watermain diversion for P106 to P108	60	0	100%	23/01/14 A	08/04/14 A	23/01/14	08/04/14	05/12/13	19/02/14
Temporary Works										
AI2570	Remove temporary platform P106R	7	7	0%	28/04/14	07/05/14	09/12/13	17/12/13	28/11/13	05/12/13
AI3270	Temporary road diversion for P106L, P107L & P108R construction	60	60	0%	08/05/14	29/07/14	23/01/14	08/04/14	11/11/13	04/01/14
Pier P107L/R										
Utilities Diversion										
AI3520	525mm Drainage diversion for P107	40	0	100%	20/02/14 A	09/04/14 A	20/02/14	09/04/14	05/12/13	23/01/14
Temporary Works										
AI3500	Remove temporary platform P107R	7	7	0%	28/04/14	07/05/14	15/01/14	23/01/14	28/10/13	05/11/13
Land Viaduct P108 to P114										
ML18L/R 47m+55mx5+35m - Stage 5 of Works										
Pier P108L/R										
Site Investigation										
AI3160	Site investigation for bored pile P108R	10	10	0%	28/04/14	10/05/14	08/04/14	24/04/14	06/01/14	16/01/14
Pier P109L/R										
In-situ Portal/T-pier Construction										
AI2810	In-situ portal P109 - 1 nos. (Learning)	80	0	100%	09/12/13 A	29/03/14 A	30/11/13	10/03/14	07/11/13	24/12/13
Pier P110L/R										
In-situ Portal/T-pier Construction										
AI2870	In-situ portal P110 - 1 nos. (Learning)	80	0	100%	22/12/13 A	08/04/14 A	17/12/13	27/03/14	14/08/13	07/11/13



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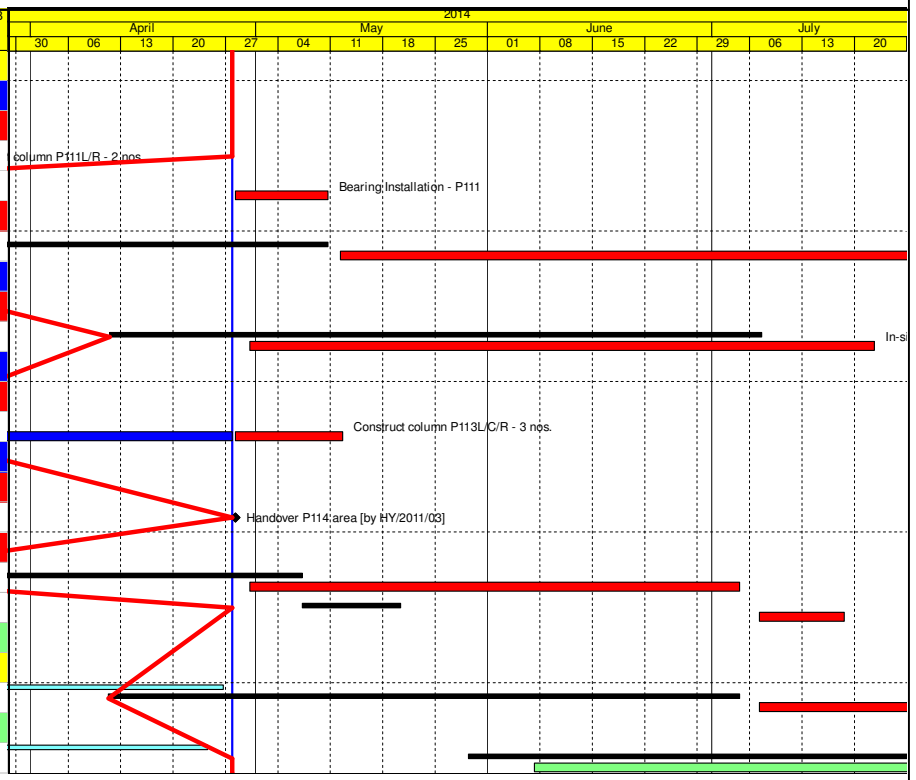
ML19L/C/R 40m+65mx2 Stage 5 of Works										
Pier P111L/C/R										
Column Construction										
AI2920	Construct column P111L/R - 2 nos.	36	0	100%	11/01/14 A	21/03/14 A	24/12/13	10/02/14	17/08/13	28/09/13
AI2925	Bearing Installation - P111	10	10	0%	28/04/14	10/05/14	11/02/14	21/02/14	30/09/13	15/10/13
In-situ Portal/T-pier Construction										
AI2930	In-situ portal P111 - 1 nos.	60	60	0%	12/05/14	01/08/14	22/02/14	10/05/14	16/10/13	02/01/14
Pier P112L/C/R										
In-situ Portal/T-pier Construction										
AI2990	In-situ portal P112 - 1 nos.	60	60	0%	30/04/14	22/07/14	11/04/14	07/07/14	03/01/14	05/03/14
Pier P113 L/C/R										
Column Construction										
AI3030	Construct column P113L/C/R - 3 nos.	54	11	80%	27/02/14 A	12/05/14	16/01/14	24/03/14	13/12/13	21/01/14
Pier P114 L/C/R										
Foundation - Bored Pile										
AI3055	Handover P114 area [by HY/2011/03]	0	0	0%	28/04/14*		15/03/14		15/03/14	
Column Construction										
AI3080	Construct column P114L/C/R - 2 nos.	48	48	0%	30/04/14	04/07/14	04/03/14	07/05/14	15/08/14	19/09/14
AI3085	Bearing Installation - P114	10	10	0%	07/07/14	18/07/14	07/05/14	20/05/14	22/09/14	07/10/14
Deck Construction between Landing Point on Airport Island and Scenic Hill										
Segment Erection - Launching Girder										
DC5000	Assemble LG1 at P110 & P111	60	60	0%	07/07/14	29/09/14	11/04/14	04/07/14	03/01/14	26/04/14
Ground Level Road Works										
RD1090	Modification work for Sha Lo Wan wind profiler station (Wall extension)	120	120	0%	07/06/14	20/11/14	29/05/14	13/11/14	23/11/13	24/04/14



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APPENDIX B
ACTION AND LIMIT LEVELS

Appendix B - Action and Limit Levels

Table B-1 Action and Limit Levels for 1-Hour TSP

Location	Action Level, µg/m^3	Limit Level, µg/m^3
AMS1	381	500
AMS4	352	

Table B-2 Action and Limit Levels for 24-Hour TSP

Location	Action Level, µg/m^3	Limit Level, µg/m^3
AMS1	170	260
AMS4	171	

Table B-3 Action and Limit Levels for Construction Noise

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

Noted: If works are to be carried during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed.
(*) reduce to 70 dB(A) for schools and 65 dB(A) during school examination periods.

Table B-4 Action and Limit Levels for Water Quality

Parameter (unit)	Water Depth	Action Level	Limit Level
Dissolved Oxygen (mg/L) (surface, middle, bottom)	Surface and Middle	***5.0***	***4.2*** except 5 for FCZ
	Bottom	***4.7***	***3.6***
Turbidity (NTU)	Depth average	***27.5*** and 120% of upstream control station's turbidity at the same tide of the same day	***47.0*** and 130% of turbidity at the upstream control station at the same tide of same day
Suspended Solids (mg/L)	Depth average	***23.5*** and 120% of upstream control station's SS at the same tide of the same day	***34.4*** and 130% of SS at the upstream control station at the same tide of same day and 10mg/L for WSD Seawater Intakes

Note:
(1) Depth-averaged is calculated by taking the arithmetic means of reading of all three depths
(2) For DO, non-compliance of the water quality limit occurs when monitoring result is lower that the limit.
(3) For SS & turbidity non-compliance of the water quality limits occur when monitoring result is higher than the limits.
(4) All the figures given in the table are used for reference only and the EPD may amend the figures whenever it is considered as necessary.
(5) The 1%-ile of baseline data for dissolved oxygen (surface and middle) and dissolved oxygen (bottom) are 4.2mg/L and 3.6mg/L respectively.

APPENDIX C
COPIES OF CALIBRATION CERTIFCATES

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA12014/67/0007

Project No. AMS 1 - Sha Lo Wan Operator: WK

Date: 4-Feb-14 Next Due Date: 3-Apr-14

Equipment No.: A-01-67 Serial No. 3218

Ambient Condition			
Temperature, Ta (K)	290.7	Pressure, Pa (mmHg)	763.4

Orifice Transfer Standard Information					
Equipment No.:	A-04-04	Slope, mc	0.0588	Intercept, bc	-0.0461
Last Calibration Date:	30-Sep-13	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	29-Sep-14	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of oil	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	11.7	3.47	59.81	6.8	2.65
2	9.7	3.16	54.53	5.5	2.38
3	7.8	2.83	48.98	4.6	2.18
4	4.5	2.15	37.39	2.7	1.67
5	3.0	1.76	30.67	1.8	1.36

By Linear Regression of Y on X

Slope , mw = 0.0435 **Intercept, bw =** 0.0331

Correlation coefficient* = 0.9995

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

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

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

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

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.52**

Remarks:

Conducted by: WK Tang Signature: Kwai Date: 4/2/14

Checked by: [signature] Signature: [signature] Date: 4 February 2014

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA12014/74/0007

Project No. AMS 4 - San Tau Operator: WK

Date: 4-Feb-14 Next Due Date: 3-Apr-14

Equipment No.: A-01-74 Serial No. 2202

Ambient Condition			
Temperature, Ta (K)	291.3	Pressure, Pa (mmHg)	762.3

Orifice Transfer Standard Information					
Equipment No.:	A-04-04	Slope, mc	0.0588	Intercept, bc	-0.0461
Last Calibration Date:	30-Sep-13	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	29-Sep-14	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of oil	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.8	3.48	59.96	7.9	2.85
2	9.2	3.07	53.04	6.4	2.56
3	7.5	2.77	47.96	5.1	2.29
4	4.3	2.10	36.51	3.2	1.81
5	3.2	1.81	31.60	2.3	1.54

By Linear Regression of Y on X

Slope , mw = 0.0458 **Intercept, bw =** 0.1091

Correlation coefficient* = 0.9990

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

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

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

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

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.22**

Remarks:

Conducted by: WK Tang Signature: Kwan Date: 4/2/14

Checked by: [illegible] Signature: Date: 4 February 2014

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA12014/67/0008

Project No. AMS 1 - Sha Lo Wan Operator: WK

Date: 31-Mar-14 Next Due Date: 30-May-14

Equipment No.: A-01-67 Serial No. 3218

Ambient Condition			
Temperature, Ta (K)	292.8	Pressure, Pa (mmHg)	760.6

Orifice Transfer Standard Information					
Equipment No.:	A-04-04	Slope, mc	0.0588	Intercept, bc	-0.0461
Last Calibration Date:	30-Sep-13	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	29-Sep-14	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of oil	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	11.8	3.47	59.74	6.9	2.65
2	9.8	3.16	54.52	5.5	2.37
3	7.6	2.78	48.10	4.5	2.14
4	4.6	2.16	37.60	2.8	1.69
5	3.1	1.78	31.00	1.8	1.35

By Linear Regression of Y on X

Slope , mw = 0.0439 **Intercept, bw =** 0.0127

Correlation coefficient* = 0.9986

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

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

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

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

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

Remarks:

Conducted by: WK Tang Signature: Kwan Date: 31/3/14

Checked by: [illegible] Signature: Date: 31 March 2014

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA12014/74/0008

Project No. AMS 4 - San Tau Operator: WK

Date: 31-Mar-14 Next Due Date: 30-May-14

Equipment No.: A-01-74 Serial No. 2202

Ambient Condition			
Temperature, Ta (K)	293	Pressure, Pa (mmHg)	760.2

Orifice Transfer Standard Information					
Equipment No.:	A-04-04	Slope, mc	0.0588	Intercept, bc	-0.0461
Last Calibration Date:	30-Sep-13	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	29-Sep-14	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of oil	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	11.9	3.48	59.96	8.2	2.89
2	9.5	3.11	53.65	6.5	2.57
3	7.4	2.74	47.45	5.2	2.30
4	4.3	2.09	36.35	3.1	1.78
5	3.1	1.78	30.99	2.3	1.53

By Linear Regression of Y on X

Slope , mw = 0.0467 **Intercept, bw =** 0.0805

Correlation coefficient* = 0.9999

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

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

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

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

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.29**

Remarks:

Conducted by: Wk Tang Signature: Kwan Date: 31/3/14

Checked by: LA Signature: Date: 31 March 2014

WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

Description	Calibration Orifice	**Manufacturer**	TISCH
Serial No.	0993	**Temperature,Ta (K)**	300.8
Model No.	TE-5025A	**Pressure, Pa (mmHg)**	759.3
Date	30 September 2013		

Plate	Diff.Vol (m^3)	Diff.Time (min)	Diff.Hg (mm)	Diff.H_2O (in.)
1	1.00	1.4103	3.4	2.00
2	1.00	0.9980	6.8	4.00
3	1.00	0.8970	8.5	5.00
4	1.00	0.8540	9.4	5.50
5	1.00	0.7060	13.6	8.00

DATA TABULATION

Vstd	(X axis) Qstd	(Y axis)
0.9853	0.6986	1.4069
0.9808	0.9828	1.9897
0.9786	1.0910	2.2245
0.9775	1.1446	2.3331
0.9720	1.3768	2.8138

Y axis= SQRT[H_2O(Pa/760)(298/Ta)]

Qstd Slope (m) = 2.07768
Intercept (b) = -0.04613
Coefficient (r) = 0.99997

Va	(X axis) Qa	(Y axis)
0.9955	0.7059	0.8901
0.9910	0.9930	1.2589
0.9888	1.1023	1.4074
0.9876	1.1565	1.4761
0.9821	1.3911	1.7803

Y axis= SQRT[H_2O(Ta/Pa)]

Qa Slope (m) = 1.30101
Intercept (b) = -0.02919
Coefficient (r) = 0.99997

CALCULATIONS

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

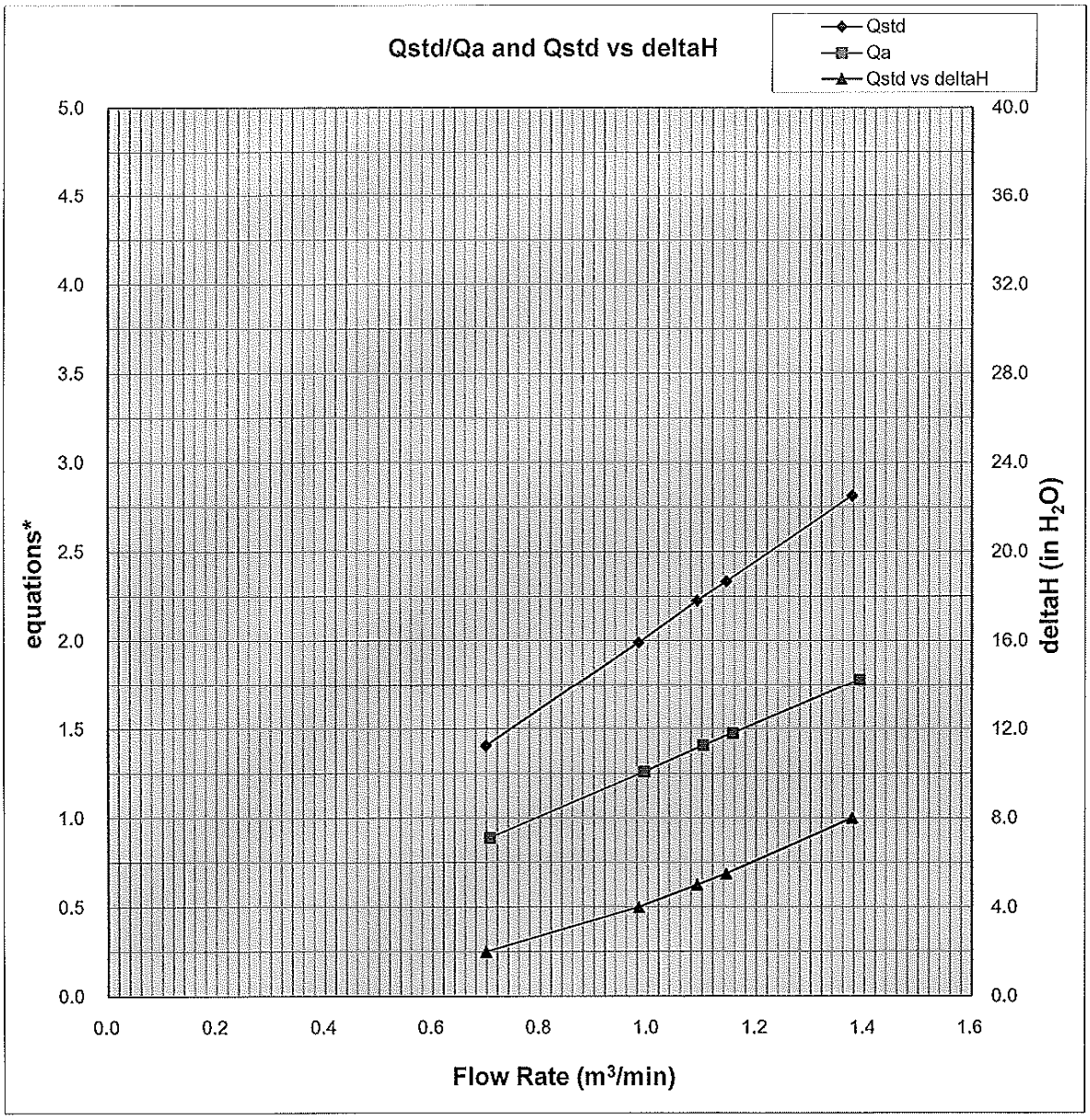
For subsequent flow rate calculations:
Qstd=I/m{[SQRT(H_2O(Pa/760)(298/Ta))]-b}
Qa=I/m{[SQRT H_2O(Ta/Pa)]-b}

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

PATRICK TSE
Laboratory Manager

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT



Y-axis equations:

Qstd series: SQRT[ΔH(Pa/Pstd)(Tstd/Ta)]

Qa series: SQRT[ΔH(Ta/Pa)]

Hong Kong Calibration Ltd.
香港校正有限公司

Calibration Certificate

Certificate No. **400247** Page 1 of 2 Pages

Customer : Dragages - China Habour - VSL Joint Venture

Address : 3/F., Island Place Tower, 510 King's Road, North Point, H. K.

Order No. : Q40131 **Date of receipt :** 10-Jan-14

Item Tested

Description : Weather Stations, Vantage Pro2

Manufacturer : Davis

Model : 6152 CUK **Serial No. :** AK130520007

Test Conditions

Date of Test : 14-Jan-14 **Supply Voltage :** --

Ambient Temperature : (23 ± 3)°C **Relative Humidity :** (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure : Z04.

Test Results

The results are shown in the attached page(s).

Main Test equipment used:

Equipment No.	Description	Cert. No.	Traceable to
S155	Std. Anemometer	NSC201331006	NIM-PRC

The values given in this Calibration 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 environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. 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 International System of Units (SI).
The test results apply to the above Unit-Under-Test only

Calibrated by : Dorothy Cheuk

Approved by : Steve Kwan

Date: 14-Jan-14

This Certificate is issued by:
Hong Kong Calibration Ltd.
Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street,Kwai Chung, NT,Hong Kong.
Tel: 2425 8801 Fax: 2425 8646

Calibration Certificate

Results :

1. Wind Speed

Applied Value (m/s)	UUT Reading (m/s)
2.4	2.2
5.2	5.4
7.5	7.6
10.2	10.3
15.0	15.2
19.0	19.2

Uncertainty : ± (2 % + 0.2 m/s)

2. Wind Direction

Reference Value	UUT Indication
N (0°)	N (0°)
NE (45°)	NE (45°)
E (90°)	E (90°)
SE (135°)	SE (135°)
S (180°)	S (180°)
SW (225°)	SW (225°)
W (270°)	W (270°)
NW (315°)	NW (315°)

Remark : 1. UUT: Unit-Under-Test
2. Atmospheric Pressure : 1 009 hPa
3. Before the calibration of the Wind Direction function, the Arrow Head was adjusted to the magnetic NORTH direction while the monitor indicated N. The customer is reminded to do the alignment again after installation.

---------- END ----------

輝創工程有限公司
Sun Creation Engineering Limited
Calibration and Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C140308
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC14-0070) Date of Receipt / 收件日期 : 10 January 2014

Description / 儀器名稱	:	Sound & Vibration Analyser
Manufacturer / 製造商	:	Svantek
Model No. / 型號	:	SVAN957
Serial No. / 編號	:	21455
Supplied By / 委託者	:	Dragages - China Harbour - VSL Joint Venture 3/F, Island Place Tower, 510 King's Road, North Point, Hong Kong

TEST CONDITIONS / 測試條件

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

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 15 January 2014

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, Project Engineer

Certified By 核證 : K M Wu, Engineer

Date of Issue 簽發日期 : 17 January 2014

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 – 校正及檢測實驗所
c/o 香港新界屯門興安里一號青山灣機樓四樓
Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

Certificate of Calibration
校正證書

Certificate No. : C140308
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration using the Svantek Acoustic Calibrator SV30A, S/N : 24780 was performed before the test.

3. The results presented are the mean of 3 measurements at each calibration point.

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C140016
CL281	Multifunction Acoustic Calibrator	DC130171

5. Test procedure : MA101N.

6. 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	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
HIGH	SPL	A	Fast	114.00	1	113.9	± 1.1

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
HIGH	SPL	A	Fast	114.00	1	113.9 (Ref.)
				104.00		103.8
				94.00		93.8

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	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
HIGH	SPL	A	Fast	114.00	1	113.9	Ref.
			Slow			113.9	± 0.3

Certificate of Calibration
校正證書

Certificate No. : C140308
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	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
HIGH	SPL	A	Fast	114.00	63 Hz	87.7	-26.2 ± 1.5
					125 Hz	97.7	-16.1 ± 1.5
					250 Hz	105.2	-8.6 ± 1.4
					500 Hz	110.7	-3.2 ± 1.4
					1 kHz	113.9	Ref.
					2 kHz	115.1	+1.2 ± 1.6
					4 kHz	115.0	+1.0 ± 1.6
					8 kHz	112.9	-1.1 (+2.1 ; -3.1)
					12.5 kHz	109.7	-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	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
HIGH	SPL	C	Fast	114.00	63 Hz	113.1	-0.8 ± 1.5
					125 Hz	113.8	-0.2 ± 1.5
					250 Hz	113.9	0.0 ± 1.4
					500 Hz	113.9	0.0 ± 1.4
					1 kHz	113.9	Ref.
					2 kHz	113.8	-0.2 ± 1.6
					4 kHz	113.2	-0.8 ± 1.6
					8 kHz	111.0	-3.0 (+2.1 ; -3.1)
					12.5 kHz	107.7	-6.2 (+6.0 ; -∞)

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 – 校正及檢測實驗所
c/o 香港新界屯門興安里一號青山灣機樓四樓
Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

輝創工程有限公司
Sun Creation Engineering Limited
Calibration and Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C140308
證書編號

Remarks : - UUT Microphone Model No. : ACO 7502H & S/N : 43730

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value :

114 dB :	63 Hz - 125 Hz	: ± 0.45 dB
	250 Hz - 500 Hz	: ± 0.40 dB
	1 kHz	: ± 0.30 dB
	2 kHz - 4 kHz	: ± 0.45 dB
	8 kHz	: ± 0.55 dB
	12.5 kHz	: ± 0.80 dB
:	1 kHz	: ± 0.10 dB (Ref. 94 dB)
104 dB :	1 kHz	: ± 0.10 dB (Ref. 94 dB)
94 dB :	1 kHz	: ± 0.20 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.

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 – 校正及檢測實驗所
c/o 香港新界屯門興安里一號青山灣機樓四樓
Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

輝創工程有限公司
Sun Creation Engineering Limited
Calibration and Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C140307
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC14-0070) Date of Receipt / 收件日期 : 10 January 2014

Description / 儀器名稱 : Acoustic Calibrator
Manufacturer / 製造商 : Svantek
Model No. / 型號 : SV30A
Serial No. / 編號 : 24780
Supplied By / 委託者 : Dragages - China Harbour - VSL Joint Venture
3/F, Island Place Tower, 510 King's Road,
North Point, Hong Kong

TEST CONDITIONS / 測試條件

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

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 15 January 2014

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
Project Engineer

Certified By 核證 : K M Wu
Engineer

Date of Issue 簽發日期 : 17 January 2014

輝創工程有限公司
Sun Creation Engineering Limited
Calibration and Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C140307
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.

2. The results presented are the mean of 3 measurements at each calibration point.

3. Test equipment :

Equipment ID	Description	Certificate No.
CL130	Universal Counter	C133632
CL281	Multifunction Acoustic Calibrator	DC130171
TST150A	Measuring Amplifier	C120886

4. Test procedure : MA100N.

5. Results :

5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	94.2	± 0.3	± 0.2
114 dB, 1 kHz	114.2		

5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	0.999 99	1 kHz ± 0.02 %	± 0.01

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.

Sun Creation Engineering Limited – Calibration & Testing Laboratory
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輝創工程有限公司 – 校正及檢測實驗所
c/o 香港新界屯門興安里一號青山灣機樓四樓
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佳力高試驗中心有限公司
CASTCO TESTING CENTRE LTD.

TEST REPORT
Chemical Analysis of Water
Accuracy check of YSI Sondes Environmental Monitoring System

Date of issue: 10-02-2014

Castco LRN: EN0140207-21

Sample details as supplied by customer

Customer : Dragages-China Harbour-VSL Joint Venture Customer Ref. No. : --
Address: Tung Chung Waterfront Road, adjacent to Tung Chung New Development Pier
Job Title : Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road - Section between HKSAR Boundary and Scenic Hill
Contract No.: HY/2011/09

Laboratory Test Result

Instrument Name: Sonde Environmental Monitoring System
Manufacturer : YSI
Model No. : YSI 6820
Serial No. : 02D0293AA
Instrument No. : W.03.02
Date of Calibration : 7-2-2014
Date of Next Calibration : 7-5-2014

pH Value Check (pH Probe : Model: 6589, L/N: 12C)

Expected Reading (pH Unit)	Sonde Reading (pH Unit)	Tolerance (pH Unit)	Tolerance Limit (pH Unit)	Method Refrence
4.00	4.12	+0.12	± 0.2	APHA 21e, 4500-H^+B
7.02	7.01	-0.01		
10.06	10.01	-0.05		

Turbidity Check (Turbidity Sensor : Model: 6136, S/N: 11J100475)

Expected Reading (NTU)	Sonde Reading (NTU)	Tolerance (%)	Tolerance Limit (%)	Method Refrence
4.00	4.2	+5.0	± 10	APHA 21e, 2130B
10.00	10.0	0		
20.00	19.7	-1.5		
50.00	49.5	-1		
100.00	100.3	+0.3		

Conductivity Performance Check (Conductivity Sensor : Model: 6560, L/N: 12B100106)

Expected Reading (µS/cm)	Sonde Reading (µS/cm)	Tolerance (%)	Tolerance Limit (%)	Method Refrence
1412 at 25 °C	1420 at 25 °C	+0.6	± 10	APHA 21e, 2510B

Salinity Performance Check (Salinity Sensor : Model: 6560, L/N: 12B100106)

Expected Reading (ppt)	Sonde Reading (ppt)	Tolerance (%)	Tolerance Limit (%)	Method Refrence
33	33.77	+2.3	± 10	APHA 19e, 2520B

Dissolved Oxygen Check (Dissolved Oxygen Sensor : Model: 6562, L/N: 08C100810)

DO from Winkler Titration (mg/L)	Sonde Reading (mg/L)	Tolerance (mg/L)	Tolerance Limit (mg/L)	Method Refrence
8.63	8.67	+0.04	± 0.20	APHA 21e, 4500-O C&G
5.23	5.11	-0.12		

Water Level Meter Check

Expected Reading (m)	Sonde Reading (m)	Tolerance (m)	Tolerance Limit (m)	Method Refrence
1.03	1.037	+0.01	± 0.05	YSI Sondes Procedure Manual

Temperature Check

Expected Reading (℃)	Sonde Reading (℃)	Tolerance (℃)	Tolerance Limit (℃)	Method Refrence
25.0	23.3	-1.7	± 2.0	Telarc Technical Guide No.3 1986

Checked by: _____
TO KA CHEUK
Senior Chemist

End of Report

Certified by: _____
LEE STEPHEN SHU HANG
Ph.D.
Technical Director

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CASTCO
佳力高試驗中心有限公司
CASTCO TESTING CENTRE LTD.

TEST REPORT
Chemical Analysis of Water
Accuracy check of YSI Sondes Environmental Monitoring System

Date of issue: 10-02-2014

Castco LRN: EN0140207-22

Sample details as supplied by customer

Customer : Dragages-China Harbour-VSL Joint Venture Customer Ref. No. : --
Address: Tung Chung Waterfront Road, adjacent to Tung Chung New Development Pier
Job Title : Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road - Section between HKSAR Boundary and Scenic Hill
Contract No.: HY/2011/09

Laboratory Test Result

Instrument Name: Sonde Environmental Monitoring System
Manufacturer : YSI
Model No. : YSI 6820
Serial No. : 12B100804
Instrument No. : W.03.13
Date of Calibration : 7-2-2014
Date of Next Calibration : 7-5-2014

pH Value Check (pH Probe : Model: 6589, L/N: 12C)

Expected Reading (pH Unit)	Sonde Reading (pH Unit)	Tolerance (pH Unit)	Tolerance Limit (pH Unit)	Method Refrence
4.00	4.02	+0.02	± 0.2	APHA 21e, 4500-H^+B
7.02	7.00	-0.02		
10.06	9.98	-0.08		

Turbidity Check (Turbidity Sensor : Model: 6136, S/N: 12B100645)

Expected Reading (NTU)	Sonde Reading (NTU)	Tolerance (%)	Tolerance Limit (%)	Method Refrence
4.00	4.2	+5	± 10	APHA 21e, 2130B
10.00	10.3	+3		
20.00	20.3	+1.5		
50.00	51.2	+2.4		
100.00	102.0	+2		

Conductivity Performance Check (Conductivity Sensor : Model: 6560, L/N: 12B100055)

Expected Reading (µS/cm)	Sonde Reading (µS/cm)	Tolerance (%)	Tolerance Limit (%)	Method Refrence
1412 at 25 °C	1453 at 25 °C	+2.9	± 10	APHA 21e, 2510B

Salinity Performance Check (Salinity Sensor : Model: 6560, L/N: 12B100055)

Expected Reading (ppt)	Sonde Reading (ppt)	Tolerance (%)	Tolerance Limit (%)	Method Refrence
33	32.69	-0.9	± 10	APHA 19e, 2520B

Dissolved Oxygen Check (Dissolved Oxygen Sensor : Model: 6562, L/N: 12A100930)

DO from Winkler Titration (mg/L)	Sonde Reading (mg/L)	Tolerance (mg/L)	Tolerance Limit (mg/L)	Method Refrence
8.63	8.64	+0.01	± 0.20	APHA 21e, 4500-O C&G
5.23	5.23	0.00		

Water Level Meter Check

Expected Reading (m)	Sonde Reading (m)	Tolerance (m)	Tolerance Limit (m)	Method Refrence
1.03	1.034	0.00	± 0.05	YSI Sondes Procedure Manual

Temperature Check

Expected Reading (℃)	Sonde Reading (℃)	Tolerance (℃)	Tolerance Limit (℃)	Method Refrence
25.0	24.1	-0.9	± 2.0	Telarc Technical Guide No.3 1986

Checked by: _____
TO KA CHEUK
Senior Chemist

End of Report

Certified by: _____
LEE STEPHEN SHU HANG
Ph.D.
Technical Director

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APPENDIX D
ENVIRONMENTAL MONITORING SCHEDULES

Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill
Impact Air Quality and Noise Monitoring Schedule in April 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1-Apr	2-Apr	3-Apr	4-Apr	**5-Apr**
			24 hr TSP 1 hr TSP X 3	Noise		
6-Apr	7-Apr	8-Apr	9-Apr	10-Apr	11-Apr	12-Apr
		24 hr TSP 1 hr TSP X 3	Noise			
13-Apr	14-Apr	15-Apr	16-Apr	17-Apr	**18-Apr**	**19-Apr**
	24 hr TSP 1 hr TSP X 3	Noise		24 hr TSP 1 hr TSP X 3		
20-Apr	**21-Apr**	22-Apr	23-Apr	24-Apr	25-Apr	26-Apr
		Noise	24 hr TSP 1 hr TSP X 3			
27-Apr	28-Apr	29-Apr	30-Apr			
		24 hr TSP 1 hr TSP X 3	Noise			

Air Quality Monitoring Stations
AMS1 - Sha Lo Wan
AMS4 - San Tau

Noise Monitoring Stations
NMS1 - Sha Lo Wan
NMS4 - San Tau

Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill
Tentative Impact Air Quality and Noise Monitoring Schedule in May 2014

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

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

Air Quality Monitoring Stations
AMS1 - Sha Lo Wan
AMS4 - San Tau

Noise Monitoring Stations
NMS1 - Sha Lo Wan
NMS4 - San Tau

Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill
Impact Water Quality Monitoring Schedule in April 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1-Apr	2-Apr	3-Apr	4-Apr	**5-Apr**
			Water Quality Monitoring Mid-Flood 08:10 Mid-Ebb 14:31		Water Quality Monitoring Mid-Flood 09:03 Mid-Ebb 15:42	
6-Apr	7-Apr	8-Apr	9-Apr	10-Apr	11-Apr	12-Apr
	Water Quality Monitoring Mid-Flood 10:18 Mid-Ebb 18:17			Water Quality Monitoring Mid-Ebb 10:22 Mid-Flood 15:35		Water Quality Monitoring Mid-Ebb 11:23 Mid-Flood 17:20
13-Apr	14-Apr	15-Apr	16-Apr	17-Apr	**18-Apr**	**19-Apr**
	Water Quality Monitoring Mid-Ebb 12:24 Mid-Flood 18:42		Water Quality Monitoring Mid-Ebb 13:31 Mid-Flood 20:05		Water Quality Monitoring Mid-Flood 08:12 Mid-Ebb 14:41	
20-Apr	**21-Apr**	22-Apr	23-Apr	24-Apr	25-Apr	26-Apr
		Water Quality Monitoring Mid-Flood 11:23 Mid-Ebb 18:17		Water Quality Monitoring Mid-Ebb 09:25 Mid-Flood 14:32		Water Quality Monitoring Mid-Ebb 11:03 Mid-Flood 16:53
27-Apr	28-Apr	29-Apr	30-Apr			
	Water Quality Monitoring Mid-Ebb 12:18 Mid-Flood 18:38		Water Quality Monitoring Mid-Ebb 13:31 Mid-Flood 20:08			

Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill
Tentative Impact Water Quality Monitoring Schedule in May 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1-May	2-May	3-May
					Water Quality Monitoring Mid-Flood 08:01 Mid-Ebb 14:41	
4-May	5-May	**6-May**	7-May	8-May	9-May	10-May
	Water Quality Monitoring Mid-Flood 09:23 Mid-Ebb 16:37		Water Quality Monitoring Mid-Flood 08:08 Mid-Ebb 18:26			Water Quality Monitoring Mid-Ebb 10:11 Mid-Flood 16:00
11-May	12-May	13-May	14-May	15-May	16-May	17-May
	Water Quality Monitoring Mid-Ebb 11:20 Mid-Flood 17:44		Water Quality Monitoring Mid-Ebb 12:31 Mid-Flood 19:14		Water Quality Monitoring Mid-Flood 07:11 Mid-Ebb 13:47	
18-May	19-May	20-May	21-May	22-May	23-May	24-May
	Water Quality Monitoring Mid-Flood 09:17 Mid-Ebb 16:01		Water Quality Monitoring Mid-Flood 11:25 Mid-Ebb 18:01		Water Quality Monitoring Mid-Ebb 08:58 Mid-Flood 14:22	
25-May	26-May	27-May	28-May	29-May	30-May	31-May
	Water Quality Monitoring Mid-Ebb 11:18 Mid-Flood 17:43		Water Quality Monitoring Mid-Ebb 12:33 Mid-Flood 19:18		Water Quality Monitoring Mid-Ebb 13:47 Mid-Flood 20:40	

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

Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Construction-Phase Dolphin Monitoring in West Lantau (Line Transect Vessel Survey) in April 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1-Apr	2-Apr	3-Apr	4-Apr	5-Apr
6-Apr	**7-Apr**	8-Apr	9-Apr	10-Apr	11-Apr	12-Apr
13-Apr	14-Apr	15-Apr	16-Apr	17-Apr	18-Apr	19-Apr
		Line Transect Vessel Survey				
20-Apr	21-Apr	22-Apr	23-Apr	24-Apr	25-Apr	26-Apr
			Line Transect Vessel Survey			
27-Apr	28-Apr	29-Apr	30-Apr			

Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill
Tentative Construction-Phase Dolphin Monitoring in West Lantau (Line Transect Vessel Survey) in May 2014

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

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

Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill
Additional Land-based Dolphin Behaviour and Movement Monitoring in April 2014

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

Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill
Tentative Additional Land-based Dolphin Behaviour and Movement Monitoring in May 2014

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

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

APPENDIX E
1-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATION

Appendix E - 1-hour TSP Monitoring Results

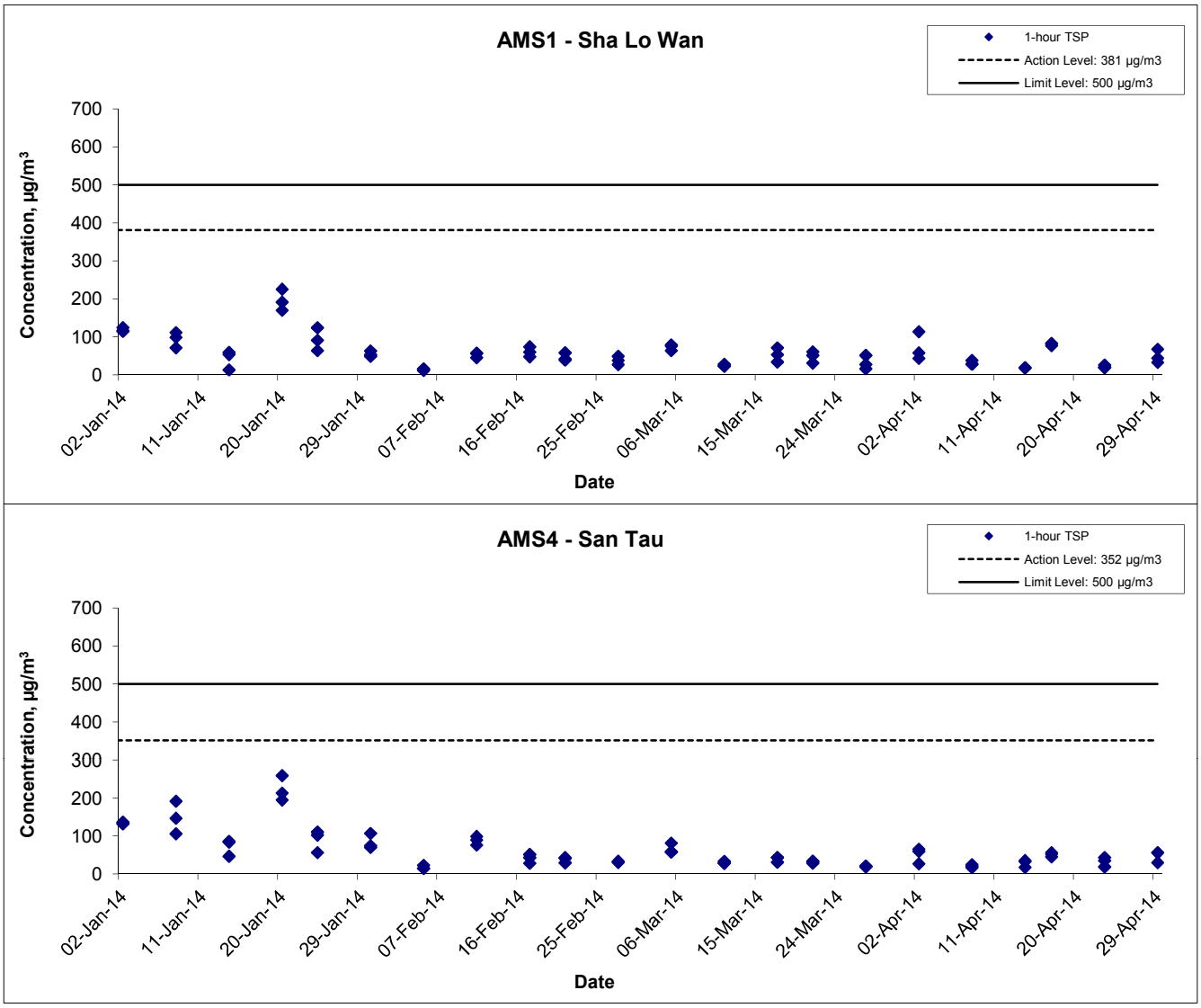
Location AMS1 - Sha Lo Wan

Sampling Date	Start Time	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)
					Initial	Final		Initial	Final		Initial	Final			
2-Apr-14	08:55	Cloudy	291.3	762.2	2.7406	2.7449	0.0042	3185.1	3186.1	1.0	1.21	1.21	1.21	72.8	58
2-Apr-14	09:56	Cloudy	291.5	761.6	2.7518	2.7550	0.0032	3186.1	3187.1	1.0	1.21	1.21	1.21	72.7	44
2-Apr-14	10:57	Cloudy	291.7	761.7	2.7356	2.7439	0.0083	3187.1	3188.1	1.0	1.21	1.21	1.21	72.7	114
8-Apr-14	13:00	Cloudy	292.9	763.1	2.7298	2.7319	0.0021	3212.1	3213.1	1.0	1.21	1.21	1.21	72.6	29
8-Apr-14	14:04	Cloudy	293.1	762.9	2.7424	2.7452	0.0028	3213.1	3214.1	1.0	1.21	1.21	1.21	72.6	39
8-Apr-14	15:06	Cloudy	293.4	762.7	2.7346	2.7367	0.0021	3214.1	3215.1	1.0	1.21	1.21	1.21	72.6	29
14-Apr-14	13:00	Sunny	295.4	763.9	2.7770	2.7784	0.0014	3239.1	3240.1	1.0	1.21	1.21	1.21	72.4	19
14-Apr-14	14:02	Sunny	295.6	763.7	2.7552	2.7565	0.0013	3240.1	3241.1	1.0	1.21	1.21	1.21	72.3	18
14-Apr-14	15:05	Sunny	295.8	763.5	2.7425	2.7439	0.0014	3241.1	3242.1	1.0	1.21	1.20	1.21	72.3	19
17-Apr-14	08:57	Sunny	296.3	762.2	2.7938	2.7998	0.0060	3266.1	3267.1	1.0	1.20	1.20	1.20	72.2	83
17-Apr-14	09:58	Sunny	296.5	762.0	2.7864	2.7920	0.0056	3267.1	3268.1	1.0	1.20	1.20	1.20	72.1	78
17-Apr-14	10:59	Sunny	296.7	761.7	2.7843	2.7903	0.0060	3268.1	3269.1	1.0	1.20	1.20	1.20	72.1	83
23-Apr-14	08:54	Cloudy	294.7	763.0	2.7650	2.7669	0.0019	3293.1	3294.1	1.0	1.21	1.21	1.21	72.4	26
23-Apr-14	09:56	Cloudy	294.9	762.8	2.7373	2.7387	0.0014	3294.1	3295.1	1.0	1.21	1.21	1.21	72.4	19
23-Apr-14	10:58	Cloudy	295.1	762.7	2.7479	2.7494	0.0015	3295.1	3296.1	1.0	1.21	1.21	1.21	72.4	21
29-Apr-14	08:50	Sunny	297.6	763.1	2.7773	2.7805	0.0032	3320.1	3321.1	1.0	1.20	1.20	1.20	72.1	44
29-Apr-14	09:53	Sunny	297.7	762.9	2.7774	2.7798	0.0024	3321.1	3322.1	1.0	1.20	1.20	1.20	72.0	33
29-Apr-14	10:58	Sunny	297.9	762.7	2.7866	2.7915	0.0049	3322.1	3323.1	1.0	1.20	1.20	1.20	72.0	68
														Min	18
														Max	114
														Average	46

Location AMS4 - San Tau

Sampling Date	Start Time	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)
					Initial	Final		Initial	Final		Initial	Final			
2-Apr-14	13:01	Cloudy	292.7	760.9	2.7267	2.7315	0.0048	2783.0	2784.0	1.0	1.22	1.22	1.22	73.2	66
2-Apr-14	14:03	Cloudy	292.9	760.7	2.7363	2.7407	0.0044	2784.0	2785.0	1.0	1.22	1.22	1.22	73.2	60
2-Apr-14	15:04	Cloudy	293.1	760.5	2.7633	2.7653	0.0020	2785.0	2786.0	1.0	1.22	1.22	1.22	73.1	27
8-Apr-14	08:52	Cloudy	292.3	764.1	2.7526	2.7541	0.0015	2810.0	2811.0	1.0	1.22	1.22	1.22	73.4	20
8-Apr-14	09:54	Cloudy	292.5	763.9	2.7428	2.7441	0.0013	2811.0	2812.0	1.0	1.22	1.22	1.22	73.4	18
8-Apr-14	10:55	Cloudy	292.7	763.7	2.7314	2.7332	0.0018	2812.0	2813.0	1.0	1.22	1.22	1.22	73.3	25
14-Apr-14	08:51	Sunny	296.9	764.1	2.7565	2.7591	0.0026	2837.0	2838.0	1.0	1.21	1.21	1.21	72.8	36
14-Apr-14	09:53	Sunny	297.1	763.9	2.7493	2.7506	0.0013	2838.0	2839.0	1.0	1.21	1.21	1.21	72.8	18
14-Apr-14	10:55	Sunny	297.3	763.7	2.7645	2.7669	0.0024	2839.0	2840.0	1.0	1.21	1.21	1.21	72.7	33
17-Apr-14	13:02	Sunny	300.4	760.7	2.7896	2.7937	0.0041	2864.0	2865.0	1.0	1.20	1.20	1.20	72.2	57
17-Apr-14	14:04	Sunny	300.6	760.5	2.7726	2.7764	0.0038	2865.0	2866.0	1.0	1.20	1.20	1.20	72.2	53
17-Apr-14	15:06	Sunny	300.8	760.3	2.7976	2.8009	0.0033	2866.0	2867.0	1.0	1.20	1.20	1.20	72.1	46
23-Apr-14	13:05	Cloudy	294.3	761.5	2.7876	2.7908	0.0032	2891.0	2892.0	1.0	1.22	1.22	1.22	73.0	44
23-Apr-14	14:10	Cloudy	294.5	761.3	2.7802	2.7828	0.0026	2892.0	2893.0	1.0	1.22	1.22	1.22	73.0	36
23-Apr-14	15:12	Cloudy	294.7	761.1	2.7797	2.7811	0.0014	2893.0	2894.0	1.0	1.22	1.22	1.22	72.9	19
29-Apr-14	14:00	Sunny	297.7	762.0	2.7694	2.7735	0.0041	2918.0	2919.0	1.0	1.21	1.21	1.21	72.6	56
29-Apr-14	15:02	Sunny	297.9	761.7	2.7603	2.7644	0.0041	2919.0	2920.0	1.0	1.21	1.21	1.21	72.6	56
29-Apr-14	16:05	Sunny	298.0	761.5	2.7775	2.7797	0.0022	2920.0	2921.0	1.0	1.21	1.21	1.21	72.6	30
														Min	18
														Max	66
														Average	39

1-hour TSP Concentration Levels



Title: Contract No. HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill Graphical Presentation of 1-hour TSP Monitoring Results	Scale: N.T.S	Project No.: MA12014	CINOTECH
	Date: Apr 14	Appendix: E	

APPENDIX F
24-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATION

Appendix F - 24-hour TSP Monitoring Results

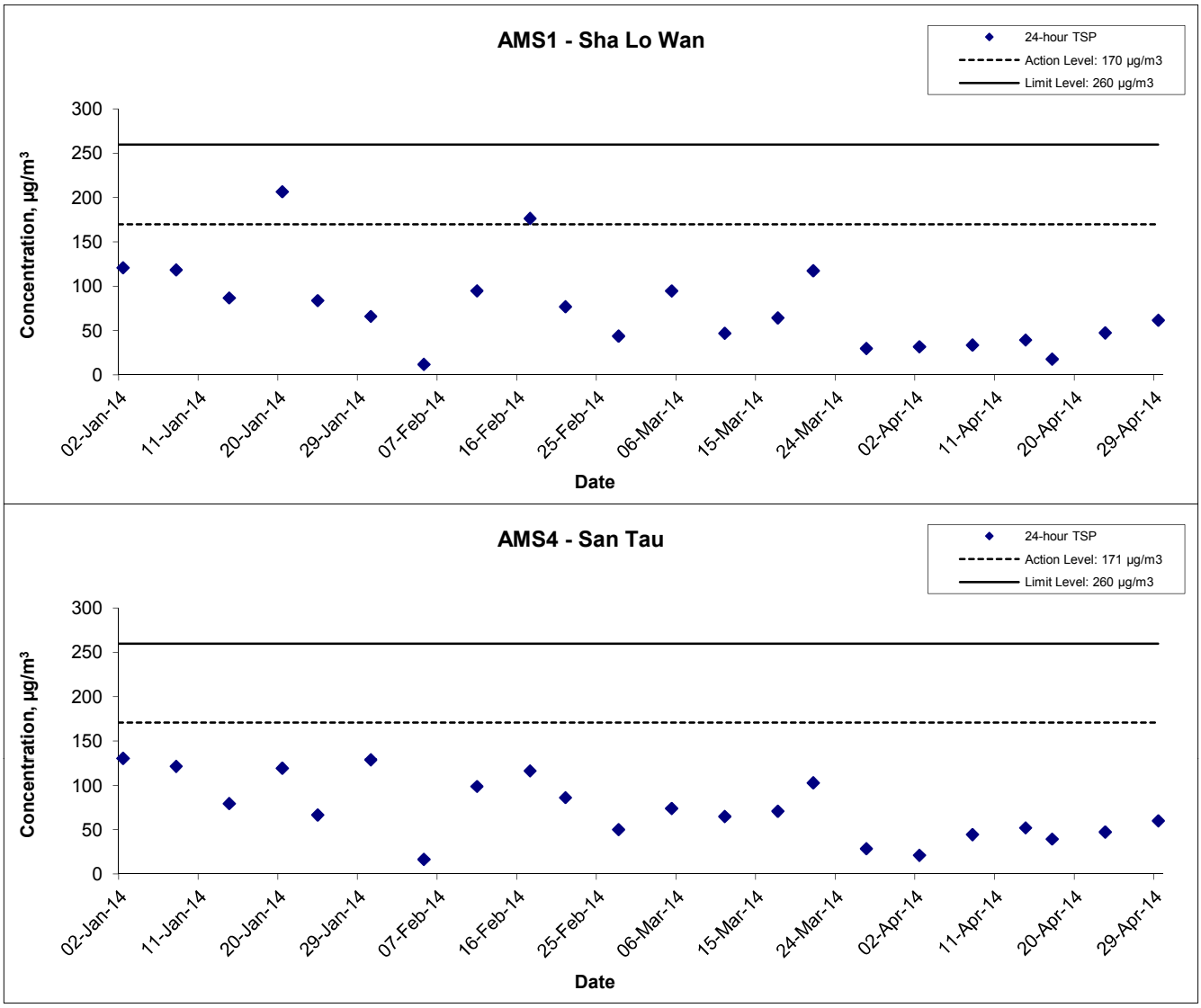
Location AMS1 - Sha Lo Wan

Sampling Date	Start Time	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)
					Initial	Final		Initial	Final		Initial	Final			
2-Apr-14	13:00	Cloudy	293.4	760.4	2.7346	2.7901	0.0555	3188.1	3212.1	24.0	1.21	1.21	1.21	1738.9	32
8-Apr-14	16:46	Cloudy	293.5	762.4	2.7340	2.7929	0.0589	3215.1	3239.1	24.0	1.21	1.21	1.21	1741.1	34
14-Apr-14	16:10	Sunny	296.2	762.9	2.7560	2.8246	0.0686	3242.1	3266.1	24.0	1.20	1.20	1.20	1733.6	40
17-Apr-14	12:00	Sunny	296.9	761.5	2.7668	2.7979	0.0311	3269.1	3293.1	24.0	1.20	1.20	1.20	1729.8	18
23-Apr-14	10:05	Cloudy	295.4	762.5	2.7423	2.8249	0.0826	3296.1	3320.1	24.0	1.21	1.20	1.21	1735.4	48
29-Apr-14	12:10	Cloudy	298.1	762.4	2.7985	2.9053	0.1068	3323.1	3347.1	24.0	1.20	1.20	1.20	1727.3	62
														Min	18
														Max	62
														Average	39

Location AMS4 - San Tau

Sampling Date	Start Time	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)
					Initial	Final		Initial	Final		Initial	Final			
2-Apr-14	16:10	Cloudy	293.4	760.4	2.7428	2.7801	0.0373	2786.0	2810.0	24.0	1.22	1.22	1.22	1754.0	21
8-Apr-14	13:00	Cloudy	293.2	763.3	2.7331	2.8116	0.0785	2813.0	2837.0	24.0	1.22	1.22	1.22	1758.1	45
14-Apr-14	12:00	Sunny	298.0	763.3	2.7502	2.8413	0.0911	2840.0	2864.0	24.0	1.21	1.21	1.21	1743.2	52
17-Apr-14	16:40	Sunny	301.0	760.2	2.7838	2.8523	0.0685	2867.0	2891.0	24.0	1.20	1.20	1.20	1730.4	40
23-Apr-14	16:20	Cloudy	294.9	760.9	2.7890	2.8721	0.0831	2894.0	2918.0	24.0	1.22	1.21	1.22	1749.8	47
29-Apr-14	17:10	Cloudy	298.1	761.3	2.7771	2.8818	0.1047	2921.0	2945.0	24.0	1.21	1.21	1.21	1740.5	60
														Min	21
														Max	60
														Average	44

24-hour TSP Concentration Levels



Title: Graphical Presentation of 24-hour TSP Monitoring Results	Contract No. HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill	Scale: N.T.S Date: Apr 14	Project No.: MA12014 Appendix: F

CINOTECH

APPENDIX G
NOISE MONITORING RESULTS AND GRAPHICAL PRESENTATION

Appendix G - Noise Monitoring Results

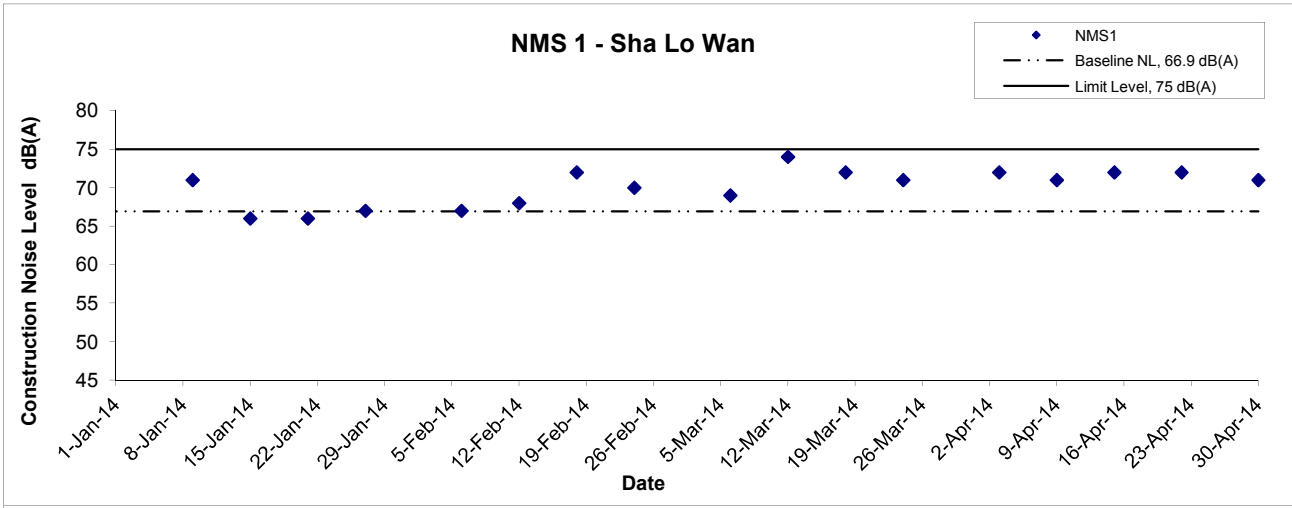
Location NMS 1 - Sha Lo Wan								
Date	Weather	Time	Unit: dB (A) (5-min)			Average	Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}	L_{eq}
3-Apr-14	Cloudy	11:42	73.1	76.2	71.1	72	66.9	72 Measured ≦ Limit Level
		11:47	72.3	75.6	70.5			
		11:52	73.3	75.7	70.9			
		11:57	71.6	74.8	70.1			
		12:02	73.4	76.1	71.3			
		12:07	70.2	74.8	70.1			
9-Apr-14	Sunny	16:51	70.4	74.8	69.7	71		71 Measured ≦ Limit Level
		16:56	71.6	75.8	70.1			
		17:01	70.6	74.7	69.6			
		17:06	72.8	76.7	70.1			
		17:11	71.6	75.4	68.6			
		17:16	70.6	74.8	69.7			
15-Apr-14	Sunny	17:10	72.1	74.8	70.2	72		72 Measured ≦ Limit Level
		17:15	71.6	73.7	70.1			
		17:20	72.5	73.9	70.3			
		17:25	72.4	74.0	70.2			
		17:30	71.6	73.4	69.8			
		17:35	72.4	74.9	71.4			
22-Apr-14	Cloudy	16:47	72.3	74.2	70.3	72		72 Measured ≦ Limit Level
		16:52	71.3	73.6	69.7			
		16:57	73.1	76.3	70.8			
		17:02	72.2	75.8	70.6			
		17:07	71.5	74.6	70.1			
		17:12	72.1	75.7	70.4			
30-Apr-14	Cloudy	13:05	70.4	74.3	69.1	71		71 Measured ≦ Limit Level
		13:10	70.7	74.2	69.3			
		13:15	70.4	74.1	69.2			
		13:20	72.4	75.8	70.6			
		13:25	71.1	74.2	70.5			
		13:30	71.8	74.5	71.0			

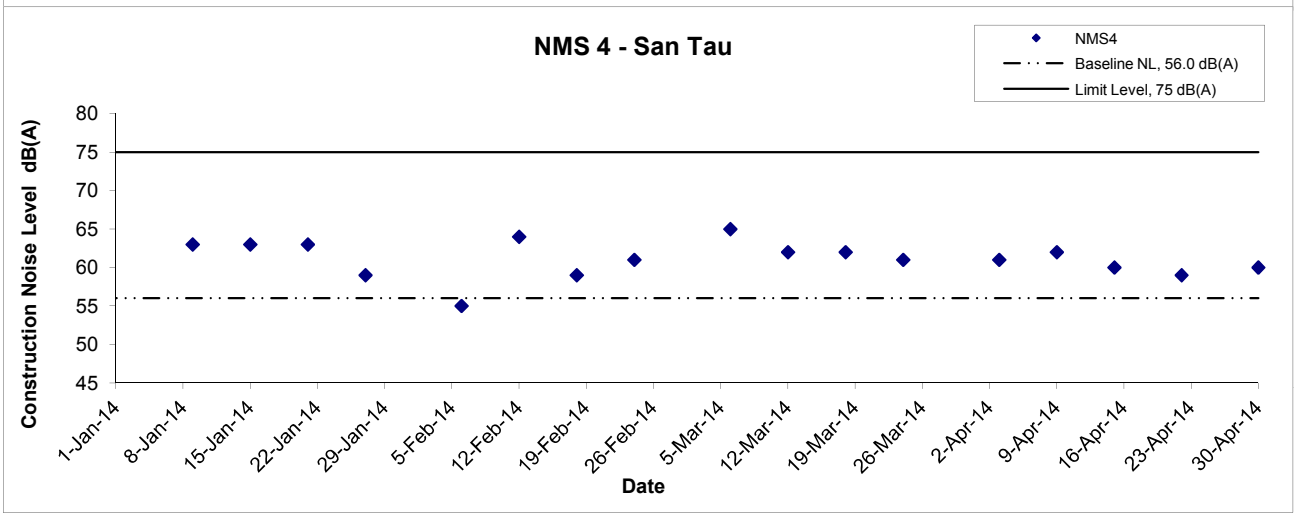
Remark: * +3dB(A) Façade correction included

Location NMS 4 - San Tau								
Date	Weather	Time	Unit: dB (A) (5-min)			Average	Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}	L_{eq}
3-Apr-14	Cloudy	14:32	61.3	63.2	59.8	61	56.0	61 Measured ≦ Limit Level
		14:37	60.2	62.7	58.7			
		14:42	60.6	63.8	58.6			
		14:47	61.6	64.3	60.1			
		14:52	60.6	63.7	59.8			
		14:57	61.5	64.3	60.2			
9-Apr-14	Sunny	14:22	63.2	65.6	61.1	62		62 Measured ≦ Limit Level
		14:27	60.2	63.5	60.0			
		14:32	61.6	62.8	59.6			
		14:37	62.3	63.7	60.2			
		14:42	61.3	63.2	58.4			
		14:47	60.4	63.1	60.1			
15-Apr-14	Sunny	16:31	58.6	60.7	58.1	60		60 Measured ≦ Limit Level
		16:36	59.4	60.4	58.2			
		16:41	58.8	60.6	57.8			
		16:46	59.6	60.7	58.4			
		16:51	60.1	62.4	59.2			
		16:56	60.3	62.6	59.4			
22-Apr-14	Cloudy	15:04	58.4	62.3	58.1	59		59 Measured ≦ Limit Level
		15:09	59.3	62.7	58.6			
		15:14	58.7	61.9	57.4			
		15:19	58.8	62.1	57.4			
		15:24	59.6	61.8	58.6			
		15:29	58.6	60.3	57.2			
30-Apr-14	Cloudy	14:04	60.3	63.4	59.1	60		60 Measured ≦ Limit Level
		14:09	60.2	62.7	58.6			
		14:14	59.6	62.4	58.7			
		14:19	60.3	62.2	58.5			
		14:24	61.6	64.4	60.1			
		14:29	60.5	62.7	59.4			

Remark: * +3dB(A) Façade correction included

Noise Levels





Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Construction Noise Monitoring Results	Scale: N.T.S	Project No.: MA12014	CINOTECH
		Date: Apr 14	Appendix: G	

APPENDIX H
WATER QUALITY MONITORING RESULTS AND GRAPHICAL PRESENTATION

Water Quality Monitoring Results at CS1 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
2-Apr-14	Rainy	Moderate	14:05	Surface	1	20.6 20.6	20.6	7.5 7.5	7.5	29.1 29.1	29.1	79.5 80.1	79.8	6.0 6.1	6.1	5.9	9.9 9.7	9.8	12.2	9.4 9.0	9.2	8.3
				Middle	6.5	20.6 20.7	20.7	7.6 7.6	7.6	30.9 30.9	30.9	74.6 74.6	74.6	5.6 5.6	5.6		10.4 11.7	11.1		7.6 6.6	7.1	
				Bottom	12	20.8 20.8	20.8	7.6 7.6	7.6	31.2 31.2	31.2	71.7 71.5	71.6	5.4 5.3	5.4	5.4	15.6 15.9	15.8		8.6 8.6	8.6	
4-Apr-14	Sunny	Moderate	14:09	Surface	1	20.2 20.2	20.2	8.1 8.1	8.1	28.1 28.1	28.1	93.8 93.8	93.8	7.2 7.2	7.2	7.1	15.8 15.7	15.8	14.6	12.0 11.2	11.6	12.2
				Middle	3	19.5 19.5	19.5	8.1 8.1	8.1	28.2 28.1	28.2	89.1 88.9	89.0	6.9 6.9	6.9		15.1 15.6	15.4		12.8 12.4	12.6	
				Bottom	5	19.3 19.3	19.3	8.1 8.1	8.1	28.2 28.1	28.2	85.4 85.2	85.3	6.7 6.7	6.7	6.7	12.5 12.7	12.6		12.4 12.4	12.4	
7-Apr-14	Fine	Moderate	17:38	Surface	1	18.4 18.4	18.4	7.9 7.9	7.9	28.4 28.5	28.5	94.6 94.3	94.5	7.5 7.5	7.5	7.3	5.8 5.8	5.8	7.7	8.7 7.7	8.2	7.3
				Middle	7	18.3 18.3	18.3	7.9 7.9	7.9	30.9 30.9	30.9	89.2 89.5	89.4	7.0 7.0	7.0		8.3 8.6	8.5		6.3 6.7	6.5	
				Bottom	13	18.3 18.3	18.3	7.9 7.9	7.9	31.7 31.8	31.8	99.3 98.8	99.1	7.7 7.7	7.7	7.7	8.6 9.0	8.8		8.4 6.1	7.3	
10-Apr-14	Cloudy	Calm	10:55	Surface	1	19.7 19.9	19.8	7.9 7.9	7.9	23.2 22.6	22.9	85.4 85.6	85.5	6.8 6.8	6.8	6.9	2.8 2.9	2.9	4.0	4.7 5.0	4.9	6.5
				Middle	6.5	18.4 18.2	18.3	7.9 8.0	8.0	31.4 32.6	32.0	89.1 88.7	88.9	6.9 6.9	6.9		4.6 4.6	4.6		4.7 9.7	7.2	
				Bottom	12	18.1 18.1	18.1	8.0 8.0	8.0	32.8 32.9	32.9	89.0 89.2	89.1	6.9 6.9	6.9	6.9	4.5 4.7	4.6		8.7 6.3	7.5	
12-Apr-14	Cloudy	Calm	11:35	Surface	1	21.7 21.7	21.7	8.0 7.9	8.0	27.4 27.4	27.4	98.7 99.5	99.1	7.4 7.5	7.5	7.6	3.7 3.4	3.6	6.4	5.0 3.8	4.4	5.6
				Middle	6.5	21.1 21.0	21.1	8.0 7.9	8.0	29.8 29.9	29.9	101.0 99.9	100.5	7.6 7.5	7.6		4.1 4.9	4.5		5.7 6.7	6.2	
				Bottom	12	20.6 20.6	20.6	7.9 7.9	7.9	32.0 32.0	32.0	95.8 95.0	95.4	7.1 7.1	7.1	7.1	11.0 10.9	11.0		7.4 4.7	6.1	
14-Apr-14	Sunny	Moderate	12:36	Surface	1	21.0 21.2	21.1	7.9 7.9	7.9	31.8 31.3	31.6	97.5 94.0	95.8	7.2 7.0	7.1	7.2	10.8 12.9	11.9	12.3	13.0 18.7	15.9	16.6
				Middle	5.5	20.2 20.2	20.2	7.9 7.9	7.9	33.0 30.2	31.6	98.6 93.8	96.2	7.4 7.1	7.3		11.5 11.7	11.6		15.3 22.7	19.0	
				Bottom	10	19.9 19.9	19.9	7.8 7.8	7.8	34.3 30.2	32.3	90.6 90.2	90.4	6.8 6.9	6.9	6.9	14.0 12.8	13.4		16.3 13.7	15.0	
16-Apr-14	Sunny	Moderate	13:29	Surface	1	20.1 19.9	20.0	8.0 8.0	8.0	29.5 29.7	29.6	93.9 93.3	93.6	7.2 7.1	7.2	6.5	8.0 7.9	8.0	12.3	11.8 11.2	11.5	11.7
				Middle	6.5	19.8 19.8	19.8	8.0 8.0	8.0	30.2 30.2	30.2	73.9 72.6	73.3	5.7 5.6	5.7		13.1 13.9	13.5		10.6 14.2	12.4	
				Bottom	12	19.8 19.8	19.8	8.0 8.0	8.0	30.3 30.3	30.3	81.3 82.6	82.0	6.2 6.3	6.3	6.3	15.3 15.5	15.4		10.6 11.8	11.2	
18-Apr-14	Cloudy	Calm	14:30	Surface	1	22.8 22.8	22.8	7.8 7.8	7.8	22.3 22.2	22.3	83.7 83.2	83.5	6.3 6.3	6.3	6.3	5.1 4.8	5.0	6.9	4.8 4.7	4.8	4.3
				Middle	6.5	22.7 22.7	22.7	7.8 7.8	7.8	24.6 24.4	24.5	82.7 82.9	82.8	6.2 6.2	6.2		6.4 6.1	6.3		3.1 3.6	3.4	
				Bottom	12	22.4 22.4	22.4	7.9 7.9	7.9	27.3 27.2	27.3	83.5 83.5	83.5	6.2 6.2	6.2	6.2	9.2 9.3	9.3		5.4 4.2	4.8	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at CS1 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Apr-14	Fine	Moderate	17:22	Surface	1	23.2 23.3	23.3	7.9 7.9	7.9	27.3 27.4	27.4	90.8 93.0	91.9	6.6 6.8	6.7	6.6	1.9 2.2	2.1	3.1	3.0 4.2	3.6	4.6
				Middle	5.5	21.9 21.9	21.9	7.9 7.9	7.9	31.8 31.6	31.7	89.1 86.1	87.6	6.5 6.3	6.4		2.6 3.2	2.9		4.4 3.8	4.1	
				Bottom	10	21.8 21.8	21.8	7.9 7.9	7.9	32.2 32.2	32.2	82.5 84.0	83.3	6.0 6.1	6.1	6.1	4.3 4.4	4.4		4.4 8.0	6.2	
24-Apr-14	Sunny	Moderate	09:00	Surface	1	21.0 21.0	21.0	8.1 8.1	8.1	29.6 29.5	29.6	81.4 81.3	81.4	6.1 6.1	6.1	6.0	3.2 3.2	3.2	6.4	4.1 4.8	4.5	4.5
				Middle	7	20.4 20.4	20.4	8.1 8.1	8.1	32.2 32.3	32.3	77.3 77.6	77.5	5.8 5.8	5.8		8.6 8.3	8.5		3.8 4.0	3.9	
				Bottom	13	20.4 20.4	20.4	8.1 8.1	8.1	32.5 32.5	32.5	79.5 79.3	79.4	5.9 5.9	5.9	5.9	7.8 7.3	7.6		6.2 4.0	5.1	
26-Apr-14	Cloudy	Moderate	11:23	Surface	1	21.6 21.6	21.6	8.0 8.0	8.0	30.7 30.7	30.7	98.1 98.1	98.1	7.2 7.2	7.2	7.2	5.8 5.8	5.8	7.9	7.0 7.6	7.3	7.4
				Middle	3	21.4 21.4	21.4	8.0 8.0	8.0	31.1 31.1	31.1	97.0 97.0	97.0	7.2 7.2	7.2		6.7 6.6	6.7		6.8 8.4	7.6	
				Bottom	5	21.2 21.2	21.2	8.0 8.0	8.0	31.8 31.8	31.8	96.7 96.7	96.7	7.1 7.1	7.1	7.1	11.2 11.2	11.2		7.4 7.4	7.4	
28-Apr-14	Sunny	Moderate	12:50	Surface	1	24.2 23.5	23.9	7.8 7.8	7.8	27.5 29.5	28.5	85.6 85.9	85.8	6.1 6.2	6.2	6.3	4.3 4.1	4.2	5.2	7.4 7.1	7.3	7.0
				Middle	5	23.2 23.6	23.4	7.8 7.8	7.8	30.5 29.4	30.0	87.3 86.6	87.0	6.3 6.2	6.3		5.0 5.1	5.1		6.9 10.0	8.5	
				Bottom	9	23.4 23.4	23.4	7.8 7.8	7.8	30.1 30.0	30.1	86.2 86.2	86.2	6.2 6.2	6.2	6.2	6.0 6.7	6.4		5.4 5.1	5.3	
30-Apr-14	Fine	Moderate	13:05	Surface	1	21.9 21.9	21.9	8.0 8.0	8.0	28.2 28.2	28.2	96.3 99.1	97.7	7.2 7.4	7.3	7.3	4.6 4.3	4.5	5.8	14.9 5.5	10.2	6.4
				Middle	6.5	21.8 21.9	21.9	8.0 8.1	8.1	28.8 28.6	28.7	95.2 96.7	96.0	7.1 7.2	7.2		7.1 6.2	6.7		4.4 4.0	4.2	
				Bottom	12	21.7 21.8	21.8	8.1 8.0	8.1	29.3 28.7	29.0	94.3 95.1	94.7	7.0 7.1	7.1	7.1	6.1 6.1	6.1		5.6 3.7	4.7	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at CS1 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
2-Apr-14	Rainy	Moderate	08:20	Surface	1	20.4 20.4	20.4	7.5 7.5	7.5	28.6 28.6	28.6	74.9 74.7	74.8	5.7 5.7	5.7	5.5	13.9 13.8	13.9	18.4	7.0 9.6	8.3	8.6
				Middle	5.5	20.4 20.4	20.4	7.6 7.6	7.6	29.3 29.3	29.3	68.4 69.7	69.1	5.2 5.3	5.3		19.3 19.5	19.4		9.2 8.2	8.7	
				Bottom	10	20.4 20.4	20.4	7.6 7.6	7.6	29.5 29.5	29.5	65.3 64.6	65.0	5.0 4.9	5.0	5.0	22.0 22.0	22.0		9.0 8.8	8.9	
4-Apr-14	Sunny	Moderate	09:05	Surface	1	19.8 19.8	19.8	8.1 8.1	8.1	28.2 26.7	27.5	85.3 84.5	84.9	6.6 6.6	6.6	6.6	15.7 15.7	15.7	15.8	5.0 7.2	6.1	6.0
				Middle	5.5	19.5 19.5	19.5	8.1 8.1	8.1	28.2 28.2	28.2	84.0 84.0	84.0	6.5 6.5	6.5		15.7 15.9	15.8		6.6 5.2	5.9	
				Bottom	10	19.4 19.4	19.4	8.1 8.1	8.1	26.8 28.2	27.5	82.8 83.2	83.0	6.5 6.5	6.5	6.5	15.9 15.9	15.9		5.6 6.4	6.0	
7-Apr-14	Fine	Moderate	10:35	Surface	1	18.7 18.6	18.7	7.7 7.7	7.7	24.7 24.7	24.7	103.3 100.4	101.9	8.3 8.1	8.2	7.8	8.3 8.3	8.3	8.1	5.9 6.7	6.3	6.5
				Middle	6.5	18.3 18.3	18.3	7.9 7.9	7.9	30.6 30.5	30.6	93.5 94.1	93.8	7.3 7.4	7.4		7.1 6.6	6.9		7.0 7.1	7.1	
				Bottom	12	18.4 18.3	18.4	7.8 7.8	7.8	28.5 28.6	28.6	91.4 91.1	91.3	7.3 7.2	7.3	7.3	9.5 8.5	9.0		5.7 6.3	6.0	
10-Apr-14	Cloudy	Calm	15:30	Surface	1	19.7 19.7	19.7	8.0 8.0	8.0	26.8 26.9	26.9	91.1 91.2	91.2	7.1 7.1	7.1	7.1	2.9 3.2	3.1	3.4	4.4 4.8	4.6	4.8
				Middle	6.5	19.0 19.1	19.1	7.9 8.0	8.0	29.7 29.6	29.7	89.8 89.1	89.5	7.0 6.9	7.0		3.6 3.4	3.5		7.0 3.2	5.1	
				Bottom	12	18.4 18.4	18.4	7.9 8.0	8.0	31.4 31.4	31.4	85.6 87.9	86.8	6.7 6.8	6.8	6.8	3.4 3.5	3.5		5.2 4.4	4.8	
12-Apr-14	Cloudy	Calm	17:20	Surface	1	21.1 21.1	21.1	7.8 7.9	7.9	28.4 28.4	28.4	83.3 83.7	83.5	6.3 6.3	6.3	6.3	4.5 4.5	4.5	7.5	4.7 6.7	5.7	5.3
				Middle	6.5	20.5 20.5	20.5	7.9 7.9	7.9	30.5 30.5	30.5	82.8 82.2	82.5	6.2 6.2	6.2		6.6 6.1	6.4		5.0 5.3	5.2	
				Bottom	12	20.1 20.1	20.1	7.8 7.8	7.8	32.4 32.5	32.5	78.6 77.9	78.3	5.9 5.8	5.9	5.9	11.5 11.7	11.6		5.0 4.7	4.9	
14-Apr-14	Fine	Moderate	17:46	Surface	1	20.9 20.9	20.9	7.9 7.9	7.9	29.8 30.0	29.9	97.9 84.0	91.0	7.3 6.3	6.8	6.7	9.7 10.4	10.1	10.5	9.3 8.0	8.7	11.7
				Middle	5.5	20.7 20.7	20.7	7.8 7.9	7.9	30.9 30.9	30.9	93.1 82.3	87.7	7.0 6.2	6.6		10.8 10.2	10.5		8.3 10.3	9.3	
				Bottom	10	20.7 20.7	20.7	7.9 7.9	7.9	31.5 31.2	31.4	84.9 79.0	82.0	6.3 5.9	6.1	6.1	11.3 10.2	10.8		17.3 17.0	17.2	
16-Apr-14	Fine	Calm	19:30	Surface	1	19.9 19.9	19.9	8.0 8.0	8.0	29.8 29.8	29.8	85.3 85.2	85.3	6.5 6.5	6.5	6.4	7.5 7.4	7.5	15.3	13.4 21.4	17.4	17.0
				Middle	7	19.8 19.8	19.8	8.0 8.0	8.0	30.3 30.3	30.3	81.3 81.9	81.6	6.2 6.3	6.3		18.2 17.9	18.1		23.2 12.8	18.0	
				Bottom	13	19.8 19.8	19.8	8.0 8.0	8.0	30.3 30.3	30.3	66.4 66.6	66.5	5.1 5.1	5.1	5.1	20.3 20.4	20.4		12.0 19.4	15.7	
18-Apr-14	Cloudy	Calm	08:05	Surface	1	22.8 22.8	22.8	7.8 7.8	7.8	21.9 21.9	21.9	88.8 87.7	88.3	6.7 6.7	6.7	6.6	2.8 2.9	2.9	6.6	3.8 2.3	3.1	2.9
				Middle	6.5	22.3 22.2	22.3	8.0 7.9	8.0	27.9 28.1	28.0	86.1 86.3	86.2	6.4 6.4	6.4		8.5 9.5	9.0		3.2 2.7	3.0	
				Bottom	12	22.3 22.3	22.3	7.9 8.0	8.0	27.4 27.5	27.5	80.6 80.0	80.3	6.0 5.9	6.0	6.0	7.8 8.0	7.9		2.3 2.7	2.5	

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at CS1 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Apr-14	Fine	Moderate	12:04	Surface	1	23.1 22.8	23.0	7.8 7.8	7.8	26.8 27.4	27.1	94.2 92.3	93.3	6.9 6.8	6.9	6.9	2.7 2.2	2.5	3.1	4.4 6.4	5.4	5.9
				Middle	5.5	22.1 22.1	22.1	7.9 7.9	7.9	30.5 30.4	30.5	94.4 91.9	93.2	6.9 6.7	6.8		3.2 3.1	3.2		8.2 5.2	6.7	
				Bottom	10	22.0 21.9	22.0	7.9 7.9	7.9	31.2 31.3	31.3	92.4 90.3	91.4	6.8 6.6	6.7	6.7	3.5 3.4	3.5		7.2 4.2	5.7	
24-Apr-14	Sunny	Moderate	13:58	Surface	1	20.8 20.9	20.9	8.1 8.1	8.1	30.0 30.0	30.0	83.6 81.9	82.8	6.3 6.1	6.2	6.1	3.2 3.1	3.2	4.5	3.7 4.1	3.9	3.4
				Middle	7	20.4 20.4	20.4	8.1 8.1	8.1	32.3 32.3	32.3	78.1 78.4	78.3	5.8 5.9	5.9		5.2 5.6	5.4		3.1 3.1	3.1	
				Bottom	13	20.4 20.4	20.4	8.1 8.1	8.1	32.6 32.6	32.6	77.5 76.7	77.1	5.8 5.7	5.8	5.8	4.9 4.9	4.9		3.6 3.0	3.3	
26-Apr-14	Cloudy	Moderate	17:10	Surface	1	22.0 21.8	21.9	8.0 8.0	8.0	33.3 31.8	32.6	99.9 98.7	99.3	7.2 7.2	7.2	7.1	3.3 3.3	3.3	6.3	8.2 8.2	8.2	6.9
				Middle	3	22.0 21.8	21.9	8.0 8.0	8.0	33.3 31.8	32.6	96.0 94.8	95.4	6.9 6.9	6.9		4.3 5.1	4.7		6.2 6.6	6.4	
				Bottom	5	21.8 21.8	21.8	8.0 8.0	8.0	31.8 31.8	31.8	91.5 91.1	91.3	6.7 6.7	6.7	6.7	10.8 10.8	10.8		7.0 5.4	6.2	
28-Apr-14	Fine	Moderate	18:00	Surface	1	24.5 24.2	24.4	7.8 7.8	7.8	27.6 27.7	27.7	93.6 100.1	96.9	6.7 7.2	7.0	7.0	5.2 5.3	5.3	9.8	4.8 5.6	5.2	5.2
				Middle	5	24.5 24.2	24.4	7.8 7.8	7.8	27.6 27.7	27.7	93.2 97.5	95.4	6.7 7.0	6.9		6.4 6.9	6.7		6.3 5.5	5.9	
				Bottom	9	24.4 24.2	24.3	7.8 7.8	7.8	27.7 27.7	27.7	93.0 95.9	94.5	6.6 6.9	6.8	6.8	17.4 17.6	17.5		4.5 4.5	4.5	
30-Apr-14	Cloudy	Moderate	19:40	Surface	1	22.0 21.9	22.0	8.0 8.0	8.0	28.2 28.3	28.3	96.4 99.8	98.1	7.2 7.4	7.3	7.3	4.2 4.3	4.3	7.1	7.5 6.7	7.1	6.3
				Middle	6	21.8 21.8	21.8	8.0 8.1	8.1	28.7 28.7	28.7	95.1 96.8	96.0	7.1 7.2	7.2		6.6 6.5	6.6		6.5 6.2	6.4	
				Bottom	11	21.7 21.8	21.8	8.1 8.1	8.1	29.3 28.7	29.0	93.9 95.8	94.9	7.0 7.1	7.1	7.1	10.3 10.6	10.5		5.2 5.3	5.3	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at CS2 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
2-Apr-14	Rainy	Moderate	13:16	Surface	1	20.0 20.0	20.0	7.5 7.5	7.5	30.0 29.9	30.0	91.1 90.6	90.9	6.9 6.9	6.9	6.8	17.5 14.0	15.8	18.8	7.0 6.4	6.7	12.2
				Middle	4	20.0 20.0	20.0	7.6 7.6	7.6	31.1 31.1	31.1	88.9 88.8	88.9	6.7 6.7	6.7		16.1 16.4	16.3		12.7 13.0	12.9	
				Bottom	7	19.9 19.9	19.9	7.6 7.6	7.6	31.8 31.9	31.9	88.7 88.5	88.6	6.7 6.7	6.7	6.7	23.4 24.9	24.2		17.7 16.3	17.0	
4-Apr-14	Sunny	Moderate	14:25	Surface	1	20.6 20.6	20.6	7.6 7.7	7.7	23.3 23.2	23.3	83.5 84.5	84.0	6.6 6.6	6.6	6.6	7.4 8.6	8.0	12.9	9.4 7.0	8.2	9.3
				Middle	4	19.7 19.7	19.7	7.9 7.9	7.9	30.6 29.9	30.3	85.0 82.9	84.0	6.5 6.4	6.5		15.2 15.5	15.4		7.8 7.4	7.6	
				Bottom	7	19.6 19.7	19.7	7.9 7.9	7.9	32.3 32.1	32.2	81.4 80.3	80.9	6.2 6.1	6.2	6.2	14.4 16.1	15.3		10.0 14.0	12.0	
7-Apr-14	Fine	Moderate	17:00	Surface	1	18.3 18.3	18.3	7.8 7.8	7.8	25.0 25.0	25.0	91.1 91.5	91.3	7.2 7.2	7.2	7.2	4.5 4.2	4.4	4.3	6.7 5.2	6.0	5.3
				Middle	3.5	18.3 18.3	18.3	7.8 7.8	7.8	25.1 25.3	25.2	90.2 90.8	90.5	7.1 7.2	7.2		4.3 4.2	4.3		5.2 5.1	5.2	
				Bottom	6	18.3 18.3	18.3	7.8 7.8	7.8	25.3 25.4	25.4	90.0 90.0	90.0	7.1 7.1	7.1	7.1	4.4 4.0	4.2		4.9 4.3	4.6	
10-Apr-14	Cloudy	Calm	09:43	Surface	1	21.4 21.3	21.4	7.7 7.7	7.7	20.7 20.7	20.7	91.6 91.4	91.5	7.2 7.2	7.2	7.4	4.4 4.2	4.3	4.9	4.8 9.2	7.0	6.7
				Middle	4	20.3 20.2	20.3	7.9 7.9	7.9	28.0 29.3	28.7	99.5 100.1	99.8	7.6 7.6	7.6		4.2 4.4	4.3		5.8 6.3	6.1	
				Bottom	7	20.0 20.0	20.0	7.9 7.9	7.9	30.2 30.2	30.2	103.8 105.9	104.9	7.9 8.1	8.0	8.0	6.0 5.9	6.0		7.0 6.7	6.9	
12-Apr-14	Cloudy	Calm	11:09	Surface	1	21.6 21.6	21.6	7.9 7.9	7.9	22.5 22.5	22.5	83.0 83.4	83.2	6.4 6.5	6.5	6.6	2.4 2.7	2.6	3.0	10.7 10.0	10.4	5.9
				Middle	3.5	20.6 20.6	20.6	8.0 8.0	8.0	25.5 25.5	25.5	84.3 84.8	84.6	6.5 6.6	6.6		1.8 1.8	1.8		3.5 4.3	3.9	
				Bottom	6	20.0 19.9	20.0	7.9 7.9	7.9	29.3 29.4	29.4	81.8 79.9	80.9	6.3 6.1	6.2	6.2	4.3 4.7	4.5		3.2 3.3	3.3	
14-Apr-14	Sunny	Moderate	11:05	Surface	1	20.5 20.4	20.5	8.1 8.1	8.1	25.4 25.8	25.6	86.2 87.2	86.7	6.7 6.8	6.8	6.6	5.6 5.8	5.7	6.5	17.0 19.3	18.2	12.8
				Middle	4	19.5 19.5	19.5	8.0 8.0	8.0	29.5 29.4	29.5	81.9 83.4	82.7	6.3 6.4	6.4		5.9 5.7	5.8		12.7 10.0	11.4	
				Bottom	7	19.1 19.1	19.1	8.0 8.0	8.0	31.2 31.3	31.3	79.2 77.7	78.5	6.1 6.0	6.1	6.1	7.5 8.6	8.1		9.3 8.3	8.8	
16-Apr-14	Sunny	Moderate	13:14	Surface	1	20.3 20.3	20.3	7.9 7.9	7.9	26.8 27.0	26.9	86.9 85.2	86.1	6.7 6.6	6.7	6.5	2.5 2.8	2.7	4.1	4.0 4.7	4.4	5.2
				Middle	3.5	20.0 20.0	20.0	7.9 8.0	8.0	28.5 28.6	28.6	82.1 80.8	81.5	6.3 6.2	6.3		3.1 3.2	3.2		5.8 5.5	5.7	
				Bottom	6	19.8 19.8	19.8	8.0 8.0	8.0	30.4 30.5	30.5	81.6 79.7	80.7	6.2 6.1	6.2	6.2	6.8 6.1	6.5		5.8 5.3	5.6	
18-Apr-14	Cloudy	Calm	13:27	Surface	1	22.4 22.4	22.4	7.9 7.9	7.9	25.2 25.2	25.2	79.7 78.2	79.0	6.0 5.9	6.0	5.8	4.5 4.3	4.4	6.8	5.5 3.4	4.5	15.3
				Middle	3.5	22.3 22.3	22.3	7.9 7.9	7.9	25.2 25.2	25.2	74.7 74.7	74.7	5.6 5.6	5.6		4.6 4.2	4.4		6.2 26.0	16.1	
				Bottom	6	21.9 21.9	21.9	8.0 8.0	8.0	29.3 29.3	29.3	72.3 72.2	72.3	5.3 5.3	5.3	5.3	11.5 11.5	11.5		25.3 25.3	25.3	

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at CS2 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Apr-14	Fine	Moderate	16:50	Surface	1	24.4 24.3	24.4	7.9 7.9	7.9	25.5 25.6	25.6	93.9 93.7	93.8	6.8 6.8	6.8	6.8	2.3 2.5	2.4	3.5	4.2 5.8	5.0	4.9
				Middle	4	23.3 23.3	23.3	7.9 7.9	7.9	28.8 28.6	28.7	91.9 92.1	92.0	6.7 6.7	6.7		2.0 2.0	2.0		7.4 3.6	5.5	
				Bottom	7	22.6 22.6	22.6	7.8 7.8	7.8	30.9 30.9	30.9	89.7 89.4	89.6	6.5 6.5	6.5	6.5	5.7 6.4	6.1		5.0 3.4	4.2	
24-Apr-14	Sunny	Moderate	08:10	Surface	1	21.2 21.2	21.2	8.0 8.0	8.0	28.5 28.5	28.5	80.3 78.9	79.6	6.0 5.9	6.0	6.0	2.2 2.2	2.2	2.6	3.7 3.8	3.8	3.7
				Middle	3	21.2 21.1	21.2	8.0 8.0	8.0	30.5 28.9	29.7	79.3 76.6	78.0	5.9 5.8	5.9		2.4 2.4	2.4		3.8 3.8	3.8	
				Bottom	5	20.9 20.9	20.9	8.1 8.1	8.1	31.7 31.7	31.7	76.3 76.2	76.3	5.7 5.7	5.7	5.7	3.3 3.3	3.3		4.0 3.1	3.6	
26-Apr-14	Cloudy	Moderate	10:37	Surface	1	22.2 22.2	22.2	7.9 8.0	8.0	29.4 30.4	29.9	103.7 90.5	97.1	7.6 6.6	7.1	7.2	3.1 2.7	2.9	3.8	8.1 13.4	10.8	7.3
				Middle	3.5	22.1 22.1	22.1	7.9 8.0	8.0	30.5 30.9	30.7	104.2 95.6	99.9	7.6 7.0	7.3		2.8 3.3	3.1		7.0 6.4	6.7	
				Bottom	6	21.8 21.7	21.8	7.9 8.0	8.0	31.8 32.1	32.0	103.5 92.5	98.0	7.6 6.7	7.2	7.2	4.9 5.8	5.4		6.4 2.6	4.5	
28-Apr-14	Sunny	Moderate	11:15	Surface	1	23.1 23.1	23.1	7.8 7.8	7.8	28.9 28.9	28.9	98.2 98.3	98.3	7.1 7.1	7.1	7.1	2.9 2.9	2.9	5.3	4.5 5.5	5.0	5.2
				Middle	4	22.2 22.2	22.2	7.8 7.8	7.8	31.8 31.8	31.8	97.2 97.2	97.2	7.0 7.0	7.0		4.6 4.3	4.5		5.2 4.6	4.9	
				Bottom	7	22.1 22.1	22.1	7.8 7.8	7.8	32.7 32.7	32.7	97.5 97.2	97.4	7.0 7.0	7.0	7.0	8.4 8.3	8.4		5.1 6.0	5.6	
30-Apr-14	Fine	Moderate	12:54	Surface	1	21.8 21.8	21.8	7.9 7.9	7.9	27.6 27.7	27.7	99.2 100.1	99.7	7.4 7.5	7.5	7.5	4.1 4.3	4.2	7.0	4.3 6.5	5.4	6.7
				Middle	4	21.5 21.5	21.5	8.0 8.0	8.0	29.6 29.6	29.6	101.2 101.1	101.2	7.5 7.5	7.5		7.0 7.4	7.2		6.8 6.5	6.7	
				Bottom	7	21.4 21.4	21.4	8.0 8.0	8.0	30.4 30.4	30.4	103.4 103.8	103.6	7.7 7.7	7.7	7.7	9.7 9.6	9.7		9.3 6.7	8.0	

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at CS2 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
2-Apr-14	Rainy	Moderate	07:30	Surface	1	20.0 20.0	20.0	7.6 7.6	7.6	29.8 29.9	29.9	92.7 92.2	92.5	7.1 7.0	7.1	7.0	5.8 5.9	5.9	12.7	17.0 19.3	18.2	17.1
				Middle	3.5	19.9 19.9	19.9	7.6 7.6	7.6	31.3 31.5	31.4	90.4 90.5	90.5	6.9 6.9	6.9		10.3 11.1	10.7		16.7 16.7	16.7	
				Bottom	6	19.7 19.7	19.7	7.7 7.7	7.7	33.2 33.1	33.2	90.5 90.6	90.6	6.8 6.8	6.8	6.8	20.0 22.9	21.5		16.7 16.0	16.4	
4-Apr-14	Sunny	Moderate	08:55	Surface	1	20.3 20.3	20.3	7.9 7.9	7.9	27.9 27.9	27.9	85.2 86.1	85.7	6.5 6.6	6.6	6.6	7.9 7.8	7.9	8.4	6.6 4.8	5.7	7.2
				Middle	4	20.1 20.0	20.1	7.9 7.9	7.9	27.6 27.7	27.7	82.4 83.6	83.0	6.4 6.5	6.5		6.8 6.9	6.9		7.6 4.6	6.1	
				Bottom	7	19.8 19.8	19.8	8.1 8.1	8.1	27.9 27.9	27.9	79.3 81.2	80.3	6.1 6.3	6.2	6.2	10.4 10.1	10.3		10.0 9.6	9.8	
7-Apr-14	Fine	Moderate	09:46	Surface	1	18.3 18.3	18.3	7.7 7.8	7.8	24.9 25.0	25.0	92.3 92.3	92.3	7.2 7.2	7.2	7.2	4.2 4.2	4.2	4.4	4.1 7.5	5.8	5.6
				Middle	3	18.3 18.3	18.3	7.8 7.8	7.8	25.1 25.3	25.2	91.8 91.8	91.8	7.2 7.2	7.2		4.4 4.5	4.5		5.3 5.4	5.4	
				Bottom	5	18.3 18.3	18.3	7.8 7.8	7.8	25.4 25.4	25.4	92.6 91.0	91.8	7.2 7.1	7.2	7.2	4.4 4.6	4.5		5.0 5.9	5.5	
10-Apr-14	Cloudy	Calm	15:06	Surface	1	20.7 20.8	20.8	7.7 7.7	7.7	25.7 25.7	25.7	89.2 88.9	89.1	6.9 6.9	6.9	7.7	3.3 3.2	3.3	4.1	4.0 2.6	3.3	5.2
				Middle	4	20.3 20.3	20.3	7.6 7.6	7.6	27.5 27.6	27.6	109.0 108.3	108.7	8.4 8.3	8.4		4.4 4.5	4.5		7.2 7.6	7.4	
				Bottom	7	20.1 20.1	20.1	7.7 7.7	7.7	29.7 29.6	29.7	108.5 109.3	108.9	8.3 8.3	8.3	8.3	4.6 4.5	4.6		4.8 5.0	4.9	
12-Apr-14	Cloudy	Calm	15:53	Surface	1	21.2 21.2	21.2	7.9 7.9	7.9	23.4 23.4	23.4	78.6 78.8	78.7	6.1 6.1	6.1	6.1	3.2 3.1	3.2	3.7	11.0 11.3	11.2	6.9
				Middle	3.5	20.5 20.5	20.5	8.0 8.0	8.0	26.1 26.2	26.2	78.9 78.4	78.7	6.1 6.1	6.1		2.4 2.3	2.4		4.3 5.0	4.7	
				Bottom	6	19.9 19.8	19.9	7.9 7.9	7.9	29.4 29.6	29.5	70.3 68.7	69.5	5.4 5.3	5.4	5.4	5.5 5.7	5.6		4.0 5.3	4.7	
14-Apr-14	Fine	Moderate	17:38	Surface	1	20.7 20.7	20.7	7.9 7.9	7.9	28.0 28.2	28.1	84.2 85.7	85.0	6.4 6.5	6.5	6.3	7.6 8.4	8.0	13.6	11.3 7.0	9.2	12.0
				Middle	4	20.6 20.6	20.6	7.9 7.9	7.9	28.8 28.7	28.8	80.2 80.2	80.2	6.1 6.1	6.1		13.0 12.2	12.6		12.0 15.7	13.9	
				Bottom	7	20.2 20.2	20.2	7.9 7.9	7.9	31.1 31.1	31.1	76.4 78.5	77.5	5.8 5.9	5.9	5.9	19.8 20.7	20.3		12.0 14.0	13.0	
16-Apr-14	Fine	Calm	18:37	Surface	1	20.3 20.3	20.3	8.0 8.0	8.0	26.9 27.0	27.0	74.3 73.5	73.9	5.7 5.7	5.7	5.6	4.3 4.3	4.3	5.2	4.7 4.6	4.7	11.2
				Middle	3.5	20.1 20.1	20.1	8.0 8.0	8.0	28.7 28.7	28.7	70.8 69.6	70.2	5.4 5.3	5.4		3.7 3.8	3.8		6.0 9.6	7.8	
				Bottom	6	19.8 19.8	19.8	8.0 8.0	8.0	30.6 30.7	30.7	69.5 68.2	68.9	5.3 5.2	5.3	5.3	7.2 7.9	7.6		23.8 18.1	21.0	
18-Apr-14	Cloudy	Calm	07:31	Surface	1	22.3 22.3	22.3	7.9 7.9	7.9	25.2 25.2	25.2	76.7 72.3	74.5	5.8 5.4	5.6	5.4	3.8 3.9	3.9	5.5	5.1 5.5	5.3	16.0
				Middle	3.5	22.3 22.3	22.3	7.9 7.9	7.9	25.2 25.2	25.2	70.2 67.9	69.1	5.3 5.1	5.2		4.7 4.0	4.4		4.2 24.0	14.1	
				Bottom	6	21.9 22.0	22.0	8.0 8.0	8.0	29.3 29.3	29.3	69.5 69.3	69.4	5.1 5.1	5.1	5.1	8.8 7.8	8.3		26.7 30.3	28.5	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at CS2 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Apr-14	Fine	Moderate	10:14	Surface	1	23.6 23.6	23.6	7.7 7.7	7.7	24.4 24.4	24.4	91.6 91.8	91.7	6.8 6.8	6.8	6.8	3.6 3.2	3.4	3.2	5.1 4.0	4.6	4.4
				Middle	3.5	23.3 23.3	23.3	7.7 7.7	7.7	26.4 26.4	26.4	92.6 92.6	92.6	6.8 6.8	6.8		3.0 3.2	3.1		3.4 3.5	3.5	
				Bottom	6	23.0 23.0	23.0	7.8 7.8	7.8	28.2 28.2	28.2	91.9 91.7	91.8	6.7 6.7	6.7	6.7	3.0 3.1	3.1		4.6 5.8	5.2	
24-Apr-14	Sunny	Moderate	14:34	Surface	1	20.0 20.0	20.0	8.1 8.1	8.1	32.0 32.0	32.0	82.5 82.3	82.4	6.2 6.2	6.2	6.2	7.4 7.3	7.4	6.7	2.7 3.2	3.0	3.8
				Middle	3	20.1 20.1	20.1	8.1 8.1	8.1	32.4 32.4	32.4	80.9 81.2	81.1	6.1 6.1	6.1		6.7 6.9	6.8		3.3 3.3	3.3	
				Bottom	5	20.1 20.1	20.1	8.1 8.1	8.1	32.6 32.6	32.6	78.4 78.2	78.3	5.9 5.9	5.9	5.9	5.8 5.7	5.8		5.6 4.7	5.2	
26-Apr-14	Cloudy	Moderate	16:28	Surface	1	19.7 19.7	19.7	7.9 7.9	7.9	28.8 28.8	28.8	87.9 89.2	88.6	6.8 6.9	6.9	7.0	4.9 4.6	4.8	6.6	5.2 4.9	5.1	5.7
				Middle	3.5	19.5 19.6	19.6	8.0 8.0	8.0	29.2 29.2	29.2	90.9 89.3	90.1	7.0 6.9	7.0		5.3 4.6	5.0		5.0 4.5	4.8	
				Bottom	6	19.3 19.3	19.3	8.0 8.0	8.0	29.3 29.3	29.3	88.2 88.2	88.2	6.8 6.8	6.8	6.8	10.1 10.0	10.1		8.0 6.4	7.2	
28-Apr-14	Fine	Moderate	18:25	Surface	1	23.1 23.1	23.1	7.8 7.8	7.8	28.9 28.8	28.9	98.2 98.0	98.1	7.1 7.1	7.1	7.1	2.7 2.7	2.7	5.3	5.3 4.6	5.0	5.0
				Middle	4.5	22.4 22.3	22.4	7.8 7.8	7.8	31.1 31.4	31.3	97.0 97.3	97.2	7.0 7.1	7.1		4.8 5.6	5.2		3.6 4.1	3.9	
				Bottom	8	22.1 22.1	22.1	7.8 7.8	7.8	32.7 32.7	32.7	96.1 95.8	96.0	6.9 6.9	6.9	6.9	7.5 8.2	7.9		8.0 4.3	6.2	
30-Apr-14	Cloudy	Moderate	18:43	Surface	1	21.4 21.4	21.4	7.8 7.8	7.8	27.6 27.7	27.7	100.3 100.9	100.6	7.6 7.6	7.6	7.7	5.0 4.9	5.0	6.7	6.8 7.8	7.3	7.9
				Middle	4	21.1 21.1	21.1	7.9 7.9	7.9	30.0 30.3	30.2	101.9 102.9	102.4	7.6 7.7	7.7		6.6 6.7	6.7		6.8 4.2	5.5	
				Bottom	7	21.0 21.0	21.0	7.9 7.9	7.9	30.9 30.9	30.9	104.5 104.5	104.5	7.8 7.8	7.8	7.8	8.5 8.5	8.5		11.0 10.8	10.9	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at IS1 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
2-Apr-14	Rainy	Moderate	14:11	Surface	1	20.1 20.1	20.1	7.5 7.5	7.5	29.8 29.9	29.9	84.9 84.8	84.9	6.5 6.5	6.5	6.5	16.7 16.5	16.6	17.0	18.0 17.0	17.5	17.1
				Middle	4.5	20.1 20.1	20.1	7.5 7.5	7.5	29.9 29.9	29.9	84.3 84.1	84.2	6.4 6.4	6.4		17.2 16.7	17.0		10.3 12.3	11.3	
				Bottom	8	20.2 20.2	20.2	7.5 7.5	7.5	30.0 30.0	30.0	83.3 82.7	83.0	6.3 6.3	6.3	6.3	18.0 17.0	17.5		20.7 24.3	22.5	
4-Apr-14	Sunny	Moderate	15:35	Surface	1	20.3 20.3	20.3	8.0 8.0	8.0	28.3 28.5	28.4	82.7 82.5	82.6	6.3 6.3	6.3	6.3	7.8 9.3	8.6	10.6	10.4 9.6	10.0	8.3
				Middle	5	20.1 19.9	20.0	8.0 8.0	8.0	29.3 30.0	29.7	82.9 82.2	82.6	6.3 6.3	6.3		10.2 8.7	9.5		7.8 8.2	8.0	
				Bottom	9	19.7 19.7	19.7	8.1 8.1	8.1	32.6 33.0	32.8	82.2 82.7	82.5	6.2 6.2	6.2	6.2	13.8 13.3	13.6		7.2 6.4	6.8	
7-Apr-14	Fine	Moderate	17:39	Surface	1	18.3 18.3	18.3	7.8 7.8	7.8	26.9 26.8	26.9	91.8 91.9	91.9	7.2 7.2	7.2	7.2	4.1 4.1	4.1	3.9	5.4 7.0	6.2	5.3
				Middle	5	18.3 18.3	18.3	7.8 7.8	7.8	27.5 27.6	27.6	90.7 90.2	90.5	7.1 7.0	7.1		3.3 3.2	3.3		4.9 3.9	4.4	
				Bottom	9	18.2 18.2	18.2	7.9 7.9	7.9	29.3 29.1	29.2	89.7 88.9	89.3	6.9 6.9	6.9	6.9	4.3 4.1	4.2		4.6 5.7	5.2	
10-Apr-14	Cloudy	Calm	10:47	Surface	1	21.4 21.4	21.4	7.8 7.8	7.8	22.9 23.0	23.0	81.7 81.6	81.7	6.3 6.3	6.3	6.3	4.0 4.1	4.1	4.9	3.8 3.8	3.8	3.1
				Middle	5	19.8 19.8	19.8	7.9 7.9	7.9	31.6 31.6	31.6	83.0 82.7	82.9	6.3 6.3	6.3		6.1 5.7	5.9		2.7 3.9	3.3	
				Bottom	9	19.8 19.8	19.8	7.9 7.9	7.9	31.9 31.9	31.9	81.4 80.3	80.9	6.2 6.1	6.2	6.2	4.7 4.5	4.6		2.4 2.1	2.3	
12-Apr-14	Cloudy	Calm	12:11	Surface	1	20.8 20.9	20.9	8.0 8.0	8.0	25.8 25.3	25.6	105.6 107.4	106.5	8.1 8.3	8.2	7.9	1.8 2.2	2.0	6.1	7.6 4.3	6.0	4.7
				Middle	5	19.7 19.8	19.8	8.0 8.0	8.0	30.3 30.1	30.2	98.2 97.1	97.7	7.5 7.4	7.5		4.8 5.8	5.3		5.3 3.0	4.2	
				Bottom	9	19.6 19.6	19.6	8.0 8.0	8.0	31.5 31.5	31.5	93.5 93.4	93.5	7.1 7.1	7.1	7.1	10.6 11.2	10.9		3.3 4.3	3.8	
14-Apr-14	Sunny	Moderate	12:16	Surface	1	20.7 20.9	20.8	8.1 8.2	8.2	24.7 24.3	24.5	88.8 89.7	89.3	6.9 7.0	7.0	6.9	7.6 7.4	7.5	6.9	14.3 12.3	13.3	12.3
				Middle	5	19.9 19.9	19.9	8.1 8.0	8.1	27.7 28.0	27.9	86.5 85.3	85.9	6.7 6.6	6.7		6.8 6.1	6.5		9.0 13.3	11.2	
				Bottom	9	19.6 19.2	19.4	8.0 8.0	8.0	29.3 31.5	30.4	83.8 84.3	84.1	6.5 6.5	6.5	6.5	6.2 7.3	6.8		12.3 12.3	12.3	
16-Apr-14	Sunny	Moderate	14:04	Surface	1	20.3 20.2	20.3	8.1 8.1	8.1	29.0 29.1	29.1	71.5 72.8	72.2	5.5 5.6	5.6	5.5	2.6 2.8	2.7	6.0	8.0 7.9	8.0	7.3
				Middle	4.5	20.1 20.0	20.1	8.1 8.1	8.1	29.7 29.9	29.8	69.1 70.6	69.9	5.3 5.4	5.4		4.5 4.7	4.6		6.8 6.1	6.5	
				Bottom	8	19.8 19.8	19.8	8.0 8.1	8.1	30.9 31.1	31.0	68.3 68.5	68.4	5.2 5.2	5.2	5.2	10.2 11.0	10.6		6.5 8.0	7.3	
18-Apr-14	Cloudy	Calm	14:17	Surface	1	22.5 22.5	22.5	7.9 7.9	7.9	25.2 25.1	25.2	90.6 89.4	90.0	6.8 6.7	6.8	6.6	3.5 3.5	3.5	7.3	2.7 2.6	2.7	10.7
				Middle	4.5	21.7 21.6	21.7	8.0 8.0	8.0	31.6 31.6	31.6	87.7 87.4	87.6	6.4 6.4	6.4		7.3 7.5	7.4		16.2 17.0	16.6	
				Bottom	8	21.6 21.5	21.6	8.0 8.0	8.0	32.1 32.1	32.1	87.1 86.0	86.6	6.4 6.3	6.4	6.4	10.9 10.8	10.9		14.2 11.4	12.8	

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at IS1 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Apr-14	Fine	Moderate	17:26	Surface	1	23.6 23.6	23.6	7.9 7.9	7.9	27.9 27.9	27.9	96.2 96.3	96.3	7.0 7.0	7.0	7.0	2.6 2.3	2.5	2.8	5.8 3.0	4.4	4.3
				Middle	5	23.3 23.3	23.3	7.9 7.9	7.9	29.1 29.1	29.1	95.1 94.8	95.0	6.9 6.8	6.9		3.1 3.8	3.5		4.2 3.8	4.0	
				Bottom	9	23.0 23.0	23.0	7.9 7.9	7.9	30.0 30.0	30.0	91.2 90.9	91.1	6.6 6.6	6.6	6.6	2.3 2.3	2.3		4.0 4.8	4.4	
24-Apr-14	Sunny	Moderate	09:11	Surface	1	21.2 21.2	21.2	8.1 8.1	8.1	29.3 29.3	29.3	90.4 90.4	90.4	6.8 6.8	6.8	6.8	1.2 1.2	1.2	1.2	3.5 2.8	3.2	2.9
				Middle	4	21.1 21.1	21.1	8.1 8.1	8.1	30.1 30.2	30.2	89.7 89.7	89.7	6.7 6.7	6.7		1.3 1.3	1.3		2.3 2.7	2.5	
				Bottom	7	21.0 21.0	21.0	8.1 8.1	8.1	31.1 31.1	31.1	88.7 88.7	88.7	6.6 6.6	6.6	6.6	1.2 1.2	1.2		3.7 2.4	3.1	
26-Apr-14	Cloudy	Moderate	11:21	Surface	1	22.0 22.0	22.0	8.0 8.0	8.0	31.3 31.2	31.3	87.0 86.6	86.8	6.3 6.3	6.3	6.5	3.6 3.8	3.7	6.6	5.8 5.3	5.6	5.9
				Middle	3.5	21.9 21.9	21.9	8.0 8.0	8.0	31.5 30.8	31.2	88.7 91.1	89.9	6.5 6.7	6.6		4.7 4.7	4.7		5.3 5.7	5.5	
				Bottom	6	21.4 21.4	21.4	8.0 8.0	8.0	33.3 33.3	33.3	87.7 88.6	88.2	6.4 6.5	6.5	6.5	12.0 10.6	11.3		5.6 7.6	6.6	
28-Apr-14	Sunny	Moderate	12:42	Surface	1	23.1 23.1	23.1	7.8 7.8	7.8	27.5 27.5	27.5	95.7 95.7	95.7	7.0 7.0	7.0	6.9	2.5 2.4	2.5	10.0	8.6 8.1	8.4	7.9
				Middle	5	22.4 22.4	22.4	7.8 7.8	7.8	31.1 31.0	31.1	93.5 93.2	93.4	6.8 6.8	6.8		7.6 9.1	8.4		6.4 6.8	6.6	
				Bottom	9	22.2 22.2	22.2	7.9 7.9	7.9	32.4 32.4	32.4	92.6 92.6	92.6	6.7 6.7	6.7	6.7	19.0 19.0	19.0		7.0 10.6	8.8	
30-Apr-14	Fine	Moderate	13:59	Surface	1	21.6 21.6	21.6	8.0 8.0	8.0	28.6 28.6	28.6	91.2 91.9	91.6	6.8 6.9	6.9	7.0	4.8 4.5	4.7	9.1	44.7 45.7	45.2	23.4
				Middle	5	21.4 21.4	21.4	8.0 8.0	8.0	30.0 30.0	30.0	93.5 93.6	93.6	6.9 7.0	7.0		12.2 13.0	12.6		14.5 9.4	12.0	
				Bottom	9	21.4 21.4	21.4	8.0 8.0	8.0	29.9 30.0	30.0	93.6 93.9	93.8	7.0 7.0	7.0	7.0	9.5 10.7	10.1		14.2 11.8	13.0	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at IS1 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
2-Apr-14	Rainy	Moderate	08:17	Surface	1	20.0 20.0	20.0	7.6 7.6	7.6	29.8 29.8	29.8	89.6 88.7	89.2	6.8 6.8	6.8	6.8	17.2 17.2	17.2	17.0	14.3 36.7	25.5	28.1
				Middle	4.5	20.0 20.0	20.0	7.6 7.6	7.6	29.8 29.9	29.9	87.4 87.3	87.4	6.7 6.7	6.7		17.5 17.1	17.3		33.0 31.7	32.4	
				Bottom	8	20.1 20.1	20.1	7.6 7.6	7.6	29.9 29.9	29.9	85.7 85.2	85.5	6.5 6.5	6.5	6.5	16.7 16.1	16.4		21.7 31.3	26.5	
4-Apr-14	Sunny	Moderate	09:59	Surface	1	20.2 20.3	20.3	7.8 7.8	7.8	28.9 28.5	28.7	86.0 86.2	86.1	6.6 6.6	6.6	6.7	6.3 6.7	6.5	11.5	6.0 4.8	5.4	10.0
				Middle	4.5	19.6 19.7	19.7	8.2 8.1	8.2	31.0 31.0	31.0	83.8 90.6	87.2	6.4 6.9	6.7		13.7 12.6	13.2		14.2 12.8	13.5	
				Bottom	8	19.6 19.6	19.6	8.2 8.2	8.2	31.2 31.4	31.3	78.6 77.1	77.9	6.0 5.9	6.0	6.0	15.3 14.2	14.8		12.2 10.0	11.1	
7-Apr-14	Fine	Moderate	10:30	Surface	1	18.3 18.3	18.3	7.8 7.8	7.8	26.8 26.8	26.8	92.9 93.5	93.2	7.2 7.2	7.2	7.2	3.8 3.8	3.8	4.1	7.8 7.9	7.9	6.5
				Middle	4.5	18.3 18.3	18.3	7.8 7.8	7.8	27.3 27.3	27.3	91.6 92.0	91.8	7.1 7.1	7.1		3.7 3.9	3.8		7.8 8.3	8.1	
				Bottom	8	18.2 18.2	18.2	7.9 7.9	7.9	28.5 29.5	29.0	92.4 92.5	92.5	7.1 7.1	7.1	7.1	4.7 4.8	4.8		4.1 3.0	3.6	
10-Apr-14	Cloudy	Calm	16:13	Surface	1	21.5 21.5	21.5	7.8 7.8	7.8	25.3 25.3	25.3	90.4 91.2	90.8	6.9 7.0	7.0	7.0	2.5 2.6	2.6	4.7	3.6 3.6	3.6	3.7
				Middle	5	20.3 20.3	20.3	7.8 7.8	7.8	29.7 29.7	29.7	92.7 91.6	92.2	7.0 7.0	7.0		4.9 4.8	4.9		3.5 4.2	3.9	
				Bottom	9	19.9 19.8	19.9	7.8 7.8	7.8	31.7 31.8	31.8	92.2 89.6	90.9	7.0 6.8	6.9	6.9	6.6 6.7	6.7		3.2 4.0	3.6	
12-Apr-14	Cloudy	Calm	16:51	Surface	1	21.0 21.0	21.0	8.0 8.0	8.0	25.4 25.2	25.3	94.3 94.6	94.5	7.3 7.3	7.3	6.9	1.8 1.8	1.8	6.4	5.2 5.2	5.2	4.9
				Middle	5	19.6 19.8	19.7	8.0 8.0	8.0	31.0 29.8	30.4	83.6 86.0	84.8	6.4 6.6	6.5		5.5 5.6	5.6		5.4 4.5	5.0	
				Bottom	9	19.6 19.6	19.6	8.0 8.0	8.0	31.7 31.5	31.6	80.0 80.4	80.2	6.1 6.1	6.1	6.1	11.6 11.7	11.7		4.2 4.7	4.5	
14-Apr-14	Fine	Moderate	18:52	Surface	1	20.2 20.2	20.2	8.0 8.0	8.0	31.5 31.5	31.5	87.0 86.8	86.9	6.6 6.5	6.6	6.5	10.0 10.3	10.2	10.8	13.0 12.3	12.7	12.5
				Middle	4.5	19.9 19.9	19.9	8.0 8.0	8.0	30.4 30.6	30.5	84.4 84.2	84.3	6.4 6.4	6.4		10.2 10.2	10.2		13.0 14.3	13.7	
				Bottom	8	19.8 19.8	19.8	8.0 8.0	8.0	30.1 30.0	30.1	84.6 82.9	83.8	6.5 6.3	6.4	6.4	12.3 11.4	11.9		9.7 12.7	11.2	
16-Apr-14	Fine	Calm	19:34	Surface	1	20.2 20.3	20.3	8.1 8.1	8.1	29.1 29.1	29.1	74.9 74.5	74.7	5.7 5.7	5.7	5.7	3.7 3.8	3.8	4.2	4.1 5.2	4.7	5.5
				Middle	5	20.2 20.1	20.2	8.1 8.1	8.1	29.4 29.5	29.5	72.9 71.6	72.3	5.6 5.5	5.6		3.8 3.9	3.9		6.4 4.8	5.6	
				Bottom	9	20.1 20.0	20.1	8.1 8.1	8.1	29.8 29.9	29.9	68.8 69.3	69.1	5.2 5.3	5.3	5.3	4.9 4.7	4.8		4.7 7.4	6.1	
18-Apr-14	Cloudy	Calm	08:30	Surface	1	22.5 22.5	22.5	7.9 7.9	7.9	25.4 25.3	25.4	97.7 96.8	97.3	7.3 7.3	7.3	7.3	2.6 2.5	2.6	5.6	3.8 2.5	3.2	14.5
				Middle	5	21.7 21.7	21.7	8.0 8.0	8.0	31.1 31.1	31.1	97.5 97.3	97.4	7.2 7.1	7.2		7.8 6.3	7.1		15.0 17.5	16.3	
				Bottom	9	21.6 21.6	21.6	8.0 8.0	8.0	32.0 32.0	32.0	96.9 96.6	96.8	7.1 7.1	7.1	7.1	7.1 7.2	7.2		23.7 24.3	24.0	

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at IS1 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Apr-14	Fine	Moderate	10:54	Surface	1	23.4 23.4	23.4	7.8 7.8	7.8	26.9 26.9	26.9	93.4 93.6	93.5	6.8 6.8	6.8	6.8	3.5 3.4	3.5	2.8	5.4 3.6	4.5	5.5
				Middle	4	22.8 22.8	22.8	7.9 7.9	7.9	30.1 30.1	30.1	93.9 93.9	93.9	6.8 6.8	6.8		2.6 2.7	2.7		6.4 6.6	6.5	
				Bottom	7	22.7 22.7	22.7	7.9 7.9	7.9	30.8 30.8	30.8	93.9 93.9	93.9	6.8 6.8	6.8	6.8	2.3 2.3	2.3		6.8 4.4	5.6	
24-Apr-14	Sunny	Moderate	15:18	Surface	1	20.1 20.1	20.1	8.2 8.2	8.2	32.5 32.6	32.6	80.7 80.6	80.7	6.1 6.0	6.1	6.1	5.1 5.6	5.4	6.1	5.0 2.6	3.8	3.8
				Middle	4	20.1 20.1	20.1	8.2 8.2	8.2	32.8 32.8	32.8	80.8 80.6	80.7	6.0 6.0	6.0		5.9 6.0	6.0		4.2 4.9	4.6	
				Bottom	7	20.1 20.1	20.1	8.2 8.2	8.2	32.9 33.0	33.0	80.4 80.3	80.4	6.0 6.0	6.0	6.0	6.8 6.7	6.8		3.4 2.8	3.1	
26-Apr-14	Cloudy	Moderate	17:10	Surface	1	19.6 19.6	19.6	8.0 8.0	8.0	31.3 31.2	31.3	76.6 76.3	76.5	5.8 5.8	5.8	5.9	5.0 5.7	5.4	7.6	8.2 6.2	7.2	7.7
				Middle	4.5	19.5 19.4	19.5	8.0 8.0	8.0	31.3 31.4	31.4	77.5 78.2	77.9	5.9 6.0	6.0		7.2 6.2	6.7		7.2 9.7	8.5	
				Bottom	8	19.2 19.2	19.2	8.0 8.0	8.0	32.5 32.2	32.4	79.0 78.2	78.6	6.0 6.0	6.0	6.0	10.8 10.8	10.8		7.8 6.8	7.3	
28-Apr-14	Fine	Moderate	19:31	Surface	1	23.2 23.2	23.2	7.8 7.8	7.8	27.5 27.5	27.5	94.3 94.5	94.4	6.9 6.9	6.9	6.9	3.2 3.2	3.2	8.9	8.6 10.1	9.4	11.0
				Middle	5	22.4 22.4	22.4	7.8 7.8	7.8	31.0 31.0	31.0	93.9 93.9	93.9	6.8 6.8	6.8		5.1 5.2	5.2		12.4 11.6	12.0	
				Bottom	9	22.2 22.2	22.2	7.9 7.9	7.9	32.4 32.4	32.4	92.8 92.6	92.7	6.7 6.7	6.7	6.7	18.0 18.8	18.4		11.2 12.2	11.7	
30-Apr-14	Cloudy	Moderate	19:47	Surface	1	21.2 21.2	21.2	7.9 7.9	7.9	28.6 28.5	28.6	95.9 96.3	96.1	7.2 7.2	7.2	7.3	2.6 2.1	2.4	8.9	6.3 5.8	6.1	9.9
				Middle	5	21.1 21.1	21.1	7.9 7.9	7.9	30.0 29.9	30.0	97.0 96.9	97.0	7.3 7.2	7.3		6.5 6.8	6.7		5.4 11.8	8.6	
				Bottom	9	21.0 21.0	21.0	7.9 7.9	7.9	30.8 30.9	30.9	96.8 96.8	96.8	7.2 7.2	7.2	7.2	17.0 17.9	17.5		15.2 14.5	14.9	

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at IS2 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
2-Apr-14	Rainy	Moderate	14:23	Surface	1	20.1 20.1	20.1	7.6 7.6	7.6	29.9 29.9	29.9	84.6 84.6	84.6	6.4 6.4	6.4	6.4	15.5 15.4	15.5	16.0	12.7 16.7	14.7	17.4
				Middle	3.5	20.1 20.1	20.1	7.5 7.5	7.5	30.0 30.0	30.0	83.6 83.4	83.5	6.4 6.3	6.4		16.5 18.1	17.3		19.3 14.0	16.7	
				Bottom	6	20.2 20.2	20.2	7.5 7.5	7.5	30.0 30.1	30.1	82.2 81.8	82.0	6.2 6.2	6.2	6.2	15.7 14.7	15.2		21.3 20.0	20.7	
4-Apr-14	Sunny	Moderate	15:51	Surface	1	20.0 20.0	20.0	8.0 8.0	8.0	29.6 29.5	29.6	84.2 83.8	84.0	6.4 6.4	6.4	6.4	11.4 10.5	11.0	10.6	11.4 10.4	10.9	8.3
				Middle	3.5	19.8 19.7	19.8	8.1 8.1	8.1	32.4 32.7	32.6	84.3 84.1	84.2	6.4 6.3	6.4		10.3 10.3	10.3		10.2 6.8	8.5	
				Bottom	6	19.6 19.7	19.7	8.1 8.1	8.1	32.9 31.6	32.3	81.4 80.7	81.1	6.1 6.1	6.1	6.1	10.7 10.5	10.6		6.2 5.0	5.6	
7-Apr-14	Fine	Moderate	17:57	Surface	1	18.3 18.3	18.3	7.9 7.9	7.9	27.7 28.6	28.2	93.2 94.3	93.8	7.3 7.3	7.3	7.3	5.0 4.9	5.0	5.1	2.9 2.7	2.8	4.4
				Middle	3.5	18.3 18.3	18.3	7.9 7.9	7.9	28.6 28.6	28.6	93.9 93.2	93.6	7.3 7.2	7.3		5.4 5.2	5.3		4.7 5.1	4.9	
				Bottom	6	18.2 18.2	18.2	7.9 7.9	7.9	29.0 28.5	28.8	93.7 91.9	92.8	7.3 7.1	7.2	7.2	4.9 4.8	4.9		4.7 6.0	5.4	
10-Apr-14	Cloudy	Calm	11:00	Surface	1	20.9 20.9	20.9	7.8 7.8	7.8	25.7 25.7	25.7	106.4 106.7	106.6	8.2 8.2	8.2	8.2	3.7 3.6	3.7	3.8	3.2 3.8	3.5	4.5
				Middle	3	20.1 20.1	20.1	7.9 7.9	7.9	29.8 30.0	29.9	107.0 107.0	107.0	8.1 8.1	8.1		2.8 2.9	2.9		3.6 4.2	3.9	
				Bottom	5	19.9 19.9	19.9	7.9 7.9	7.9	31.3 31.3	31.3	106.1 105.6	105.9	8.0 8.0	8.0	8.0	4.8 4.8	4.8		4.4 7.6	6.0	
12-Apr-14	Cloudy	Calm	12:24	Surface	1	20.6 20.7	20.7	8.0 8.0	8.0	26.6 26.5	26.6	107.4 105.7	106.6	8.3 8.1	8.2	8.1	2.1 2.6	2.4	4.6	5.0 5.0	5.0	4.7
				Middle	3.5	19.8 19.9	19.9	8.0 8.0	8.0	29.4 28.8	29.1	102.6 101.9	102.3	7.9 7.8	7.9		4.1 3.9	4.0		5.7 4.7	5.2	
				Bottom	6	19.7 19.7	19.7	8.0 8.0	8.0	31.4 31.4	31.4	99.1 99.3	99.2	7.5 7.6	7.6	7.6	7.6 7.3	7.5		3.3 4.7	4.0	
14-Apr-14	Sunny	Moderate	12:29	Surface	1	20.0 20.0	20.0	8.1 8.1	8.1	28.5 28.4	28.5	85.8 87.3	86.6	6.6 6.7	6.7	6.6	7.3 7.0	7.2	6.8	10.3 8.0	9.2	11.2
				Middle	3.5	19.7 19.7	19.7	8.0 8.0	8.0	29.2 29.3	29.3	84.5 84.3	84.4	6.5 6.5	6.5		7.1 6.9	7.0		10.3 9.3	9.8	
				Bottom	6	19.1 19.1	19.1	8.0 8.0	8.0	32.2 32.3	32.3	83.2 82.6	82.9	6.4 6.3	6.4	6.4	5.9 6.4	6.2		13.0 16.3	14.7	
16-Apr-14	Sunny	Moderate	14:22	Surface	1	20.3 20.3	20.3	8.1 8.1	8.1	28.9 29.0	29.0	77.7 75.7	76.7	5.9 5.8	5.9	5.7	2.0 2.4	2.2	7.2	4.0 4.4	4.2	5.3
				Middle	3.5	19.8 19.9	19.9	8.0 8.1	8.1	31.0 30.8	30.9	72.3 71.3	71.8	5.5 5.4	5.5		6.4 6.5	6.5		8.1 5.6	6.9	
				Bottom	6	19.8 19.9	19.9	8.0 8.0	8.0	31.0 31.0	31.0	69.0 67.9	68.5	5.2 5.2	5.2	5.2	12.8 13.1	13.0		4.2 5.5	4.9	
18-Apr-14	Cloudy	Calm	14:26	Surface	1	22.5 22.5	22.5	7.9 7.9	7.9	25.1 25.1	25.1	96.5 95.8	96.2	7.2 7.2	7.2	7.1	3.2 3.5	3.4	7.8	2.9 3.1	3.0	11.8
				Middle	3.5	22.0 21.9	22.0	8.0 8.0	8.0	29.2 29.6	29.4	95.0 94.9	95.0	7.0 7.0	7.0		9.9 9.9	9.9		11.8 16.1	14.0	
				Bottom	6	21.7 21.7	21.7	8.0 8.0	8.0	31.4 31.4	31.4	95.2 94.1	94.7	7.0 6.9	7.0	7.0	10.3 10.1	10.2		18.3 18.5	18.4	

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at IS2 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Apr-14	Fine	Moderate	17:35	Surface	1	24.3 24.2	24.3	7.9 7.9	7.9	26.9 27.0	27.0	86.4 85.9	86.2	6.2 6.2	6.2	6.1	2.6 2.7	2.7	3.1	4.0 3.8	3.9	4.1
				Middle	4	22.9 22.9	22.9	7.9 7.9	7.9	30.4 30.4	30.4	83.4 83.6	83.5	6.0 6.0	6.0		1.7 1.7	1.7		4.6 5.0	4.8	
				Bottom	7	22.7 22.7	22.7	7.9 7.9	7.9	31.1 31.1	31.1	76.7 76.3	76.5	5.5 5.5	5.5	5.5	4.8 4.9	4.9		4.0 3.2	3.6	
24-Apr-14	Sunny	Moderate	09:26	Surface	1	21.4 21.3	21.4	8.1 8.1	8.1	28.5 28.5	28.5	92.7 96.1	94.4	7.0 7.2	7.1	7.1	1.2 1.3	1.3	2.6	3.1 3.4	3.3	3.5
				Middle	3	21.0 21.0	21.0	8.1 8.1	8.1	31.5 31.5	31.5	95.8 95.8	95.8	7.1 7.1	7.1		2.7 2.7	2.7		3.2 3.6	3.4	
				Bottom	5	20.9 20.9	20.9	8.1 8.1	8.1	31.7 31.7	31.7	94.9 94.8	94.9	7.0 7.0	7.0	7.0	3.5 3.8	3.7		3.2 4.5	3.9	
26-Apr-14	Cloudy	Moderate	11:30	Surface	1	22.0 22.0	22.0	7.9 7.9	7.9	30.4 30.3	30.4	77.7 75.1	76.4	5.7 5.5	5.6	5.8	5.2 5.3	5.3	5.7	4.1 3.1	3.6	5.3
				Middle	3.5	21.9 21.9	21.9	8.0 8.0	8.0	32.0 31.4	31.7	82.3 82.7	82.5	6.0 6.0	6.0		5.4 5.3	5.4		6.8 4.7	5.8	
				Bottom	6	21.5 21.5	21.5	8.0 8.0	8.0	33.4 33.4	33.4	87.7 87.0	87.4	6.4 6.3	6.4	6.4	6.6 6.3	6.5		6.7 6.1	6.4	
28-Apr-14	Sunny	Moderate	12:58	Surface	1	23.1 23.2	23.2	7.9 7.9	7.9	28.0 27.8	27.9	92.8 92.5	92.7	6.8 6.7	6.8	6.8	6.5 6.0	6.3	10.4	3.3 1.8	2.6	5.3
				Middle	3.5	22.3 22.4	22.4	7.9 7.9	7.9	31.3 31.2	31.3	94.1 94.0	94.1	6.8 6.8	6.8		5.5 4.8	5.2		6.4 4.8	5.6	
				Bottom	6	22.2 22.2	22.2	7.9 7.9	7.9	31.9 31.9	31.9	92.9 92.9	92.9	6.7 6.7	6.7	6.7	20.4 18.7	19.6		6.7 8.6	7.7	
30-Apr-14	Fine	Moderate	14:11	Surface	1	21.8 21.8	21.8	8.0 8.0	8.0	27.0 27.0	27.0	90.2 91.0	90.6	6.8 6.8	6.8	6.9	2.4 2.3	2.4	10.4	2.3 2.8	2.6	4.1
				Middle	3	21.5 21.4	21.5	8.0 8.0	8.0	30.0 30.2	30.1	92.5 93.5	93.0	6.9 6.9	6.9		8.2 8.1	8.2		3.8 3.7	3.8	
				Bottom	5	21.3 21.3	21.3	8.0 8.0	8.0	30.7 30.7	30.7	93.7 93.6	93.7	6.9 6.9	6.9	6.9	20.7 20.5	20.6		3.8 8.0	5.9	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at IS2 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
2-Apr-14	Rainy	Moderate	08:29	Surface	1	20.0 20.0	20.0	7.6 7.6	7.6	29.9 29.9	29.9	83.4 83.2	83.3	6.4 6.3	6.4	6.4	15.9 16.1	16.0	16.1	36.0 28.7	32.4	28.0
				Middle	3.5	20.0 20.0	20.0	7.6 7.6	7.6	29.9 30.0	30.0	82.7 82.6	82.7	6.3 6.3	6.3		16.1 15.7	15.9		11.7 22.7	17.2	
				Bottom	6	20.1 20.1	20.1	7.6 7.6	7.6	30.0 30.0	30.0	82.1 81.6	81.9	6.3 6.2	6.3	6.3	16.3 16.4	16.4		32.7 36.0	34.4	
4-Apr-14	Sunny	Moderate	10:16	Surface	1	20.1 20.1	20.1	7.9 7.9	7.9	26.9 26.6	26.8	83.7 84.0	83.9	6.5 6.5	6.5	6.5	11.2 11.3	11.3	14.1	4.2 7.2	5.7	10.6
				Middle	3	19.8 19.7	19.8	8.1 8.1	8.1	28.0 28.3	28.2	81.0 82.2	81.6	6.3 6.4	6.4		16.7 15.3	16.0		7.2 7.6	7.4	
				Bottom	5	19.7 19.7	19.7	8.1 8.1	8.1	30.1 30.2	30.2	79.2 79.4	79.3	6.1 6.1	6.1	6.1	14.5 15.2	14.9		20.2 17.0	18.6	
7-Apr-14	Fine	Moderate	10:47	Surface	1	18.4 18.3	18.4	7.9 7.9	7.9	28.3 28.6	28.5	94.7 94.5	94.6	7.3 7.3	7.3	7.3	6.6 6.6	6.6	5.7	3.8 3.0	3.4	6.1
				Middle	3	18.3 18.3	18.3	7.9 7.9	7.9	28.8 27.9	28.4	94.1 93.9	94.0	7.2 7.2	7.2		5.1 5.2	5.2		6.9 8.5	7.7	
				Bottom	5	18.3 18.2	18.3	7.9 7.9	7.9	28.9 28.7	28.8	93.5 93.4	93.5	7.2 7.2	7.2	7.2	5.1 5.2	5.2		6.9 7.4	7.2	
10-Apr-14	Cloudy	Calm	16:27	Surface	1	20.8 20.8	20.8	7.8 7.8	7.8	27.0 27.0	27.0	84.7 85.4	85.1	6.5 6.5	6.5	6.5	2.7 2.8	2.8	3.9	4.2 3.2	3.7	4.3
				Middle	3.5	20.8 20.6	20.7	7.8 7.8	7.8	28.2 28.3	28.3	84.6 85.8	85.2	6.4 6.5	6.5		4.4 3.7	4.1		4.8 4.4	4.6	
				Bottom	6	20.0 20.0	20.0	7.8 7.8	7.8	30.9 30.8	30.9	84.6 84.4	84.5	6.4 6.4	6.4	6.4	4.7 5.0	4.9		5.2 4.2	4.7	
12-Apr-14	Cloudy	Calm	17:08	Surface	1	20.8 20.8	20.8	8.0 8.0	8.0	26.1 26.0	26.1	95.2 94.8	95.0	7.3 7.3	7.3	7.2	2.7 2.7	2.7	4.6	3.3 3.3	3.3	4.8
				Middle	3.5	19.9 19.8	19.9	8.0 8.0	8.0	28.7 29.8	29.3	92.6 88.5	90.6	7.1 6.8	7.0		3.5 4.2	3.9		5.8 5.8	5.8	
				Bottom	6	19.7 19.7	19.7	8.0 8.0	8.0	31.4 31.4	31.4	87.9 85.6	86.8	6.7 6.5	6.6	6.6	7.8 6.7	7.3		5.2 5.2	5.2	
14-Apr-14	Fine	Moderate	19:03	Surface	1	20.3 20.3	20.3	8.0 8.0	8.0	31.4 31.6	31.5	88.7 87.9	88.3	6.7 6.6	6.7	6.7	8.8 9.3	9.1	10.6	11.0 11.7	11.4	11.5
				Middle	3	19.9 20.0	20.0	8.0 8.0	8.0	32.6 32.5	32.6	87.1 88.7	87.9	6.5 6.7	6.6		10.0 9.9	10.0		10.3 12.0	11.2	
				Bottom	5	19.5 19.6	19.6	8.0 8.0	8.0	30.5 30.6	30.6	82.2 82.3	82.3	6.3 6.3	6.3	6.3	13.9 11.5	12.7		11.7 12.0	11.9	
16-Apr-14	Fine	Calm	19:47	Surface	1	20.3 20.3	20.3	8.1 8.1	8.1	28.9 28.9	28.9	75.3 74.0	74.7	5.7 5.6	5.7	5.7	1.6 1.4	1.5	3.3	2.4 2.0	2.2	2.6
				Middle	3.5	20.1 20.0	20.1	8.1 8.1	8.1	29.7 29.8	29.8	73.6 72.4	73.0	5.6 5.5	5.6		3.6 3.5	3.6		2.3 3.3	2.8	
				Bottom	6	19.8 19.9	19.9	8.0 8.1	8.1	31.1 30.7	30.9	72.0 69.8	70.9	5.5 5.3	5.4	5.4	5.3 4.4	4.9		3.0 2.5	2.8	
18-Apr-14	Cloudy	Calm	08:44	Surface	1	22.5 22.5	22.5	8.0 7.9	8.0	24.9 25.1	25.0	97.1 96.7	96.9	7.3 7.3	7.3	7.3	3.8 3.9	3.9	6.2	6.0 4.3	5.2	5.3
				Middle	3.5	22.0 22.3	22.2	8.0 8.0	8.0	28.8 26.5	27.7	97.3 95.6	96.5	7.2 7.1	7.2		6.8 7.0	6.9		4.4 6.7	5.6	
				Bottom	6	21.7 21.7	21.7	8.0 8.0	8.0	31.2 31.2	31.2	96.8 94.9	95.9	7.1 7.0	7.1	7.1	7.9 7.4	7.7		4.4 5.5	5.0	

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at IS2 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Apr-14	Fine	Moderate	11:01	Surface	1	24.0 24.0	24.0	7.8 7.8	7.8	25.9 25.9	25.9	85.3 85.1	85.2	6.2 6.2	6.2	6.2	2.9 3.1	3.0	5.1	5.0 2.6	3.8	3.7
				Middle	3	22.9 22.9	22.9	7.9 7.9	7.9	29.6 29.6	29.6	85.5 85.3	85.4	6.2 6.2	6.2		4.0 4.5	4.3		3.6 3.4	3.5	
				Bottom	5	22.7 22.7	22.7	7.9 7.9	7.9	30.6 30.7	30.7	83.3 83.3	83.3	6.0 6.0	6.0	6.0	8.2 7.8	8.0		4.2 3.6	3.9	
24-Apr-14	Sunny	Moderate	15:26	Surface	1	19.9 19.9	19.9	8.1 8.1	8.1	32.1 32.1	32.1	80.3 80.1	80.2	6.1 6.0	6.1	6.1	12.3 12.3	12.3	8.9	3.8 5.2	4.5	4.5
				Middle	3	20.0 20.0	20.0	8.2 8.2	8.2	32.7 32.7	32.7	80.3 80.3	80.3	6.0 6.0	6.0		6.1 6.3	6.2		4.3 5.5	4.9	
				Bottom	5	20.1 20.1	20.1	8.2 8.2	8.2	33.0 33.0	33.0	80.2 80.2	80.2	6.0 6.0	6.0	6.0	8.2 8.1	8.2		4.3 4.1	4.2	
26-Apr-14	Cloudy	Moderate	17:18	Surface	1	19.4 19.4	19.4	8.0 8.0	8.0	30.6 30.6	30.6	79.7 79.3	79.5	6.1 6.1	6.1	6.2	6.6 6.9	6.8	8.4	6.6 6.0	6.3	6.5
				Middle	4	19.4 19.4	19.4	8.0 8.0	8.0	32.0 31.0	31.5	79.7 82.6	81.2	6.1 6.3	6.2		8.1 7.8	8.0		6.8 6.9	6.9	
				Bottom	7	19.2 19.1	19.2	8.0 8.0	8.0	32.3 33.0	32.7	95.3 83.2	89.3	7.3 6.3	6.8	6.8	11.0 10.0	10.5		5.5 7.2	6.4	
28-Apr-14	Fine	Moderate	19:45	Surface	1	23.3 23.3	23.3	7.8 7.8	7.8	27.0 27.0	27.0	96.4 96.3	96.4	7.0 7.0	7.0	6.9	3.4 3.2	3.3	9.0	10.4 6.9	8.7	9.9
				Middle	3.5	22.4 22.4	22.4	7.9 7.9	7.9	31.1 31.1	31.1	93.9 93.4	93.7	6.8 6.8	6.8		4.7 5.1	4.9		8.3 9.9	9.1	
				Bottom	6	22.2 22.2	22.2	7.9 7.9	7.9	31.9 31.9	31.9	93.3 93.2	93.3	6.8 6.7	6.8	6.8	19.0 18.3	18.7		11.3 12.3	11.8	
30-Apr-14	Cloudy	Moderate	20:00	Surface	1	21.4 21.4	21.4	7.9 7.9	7.9	27.4 27.4	27.4	95.7 96.1	95.9	7.2 7.3	7.3	7.3	2.8 2.5	2.7	10.4	2.8 3.2	3.0	3.8
				Middle	3.5	21.0 21.0	21.0	7.9 7.9	7.9	30.8 30.7	30.8	96.7 96.5	96.6	7.2 7.2	7.2		10.0 9.6	9.8		4.1 4.4	4.3	
				Bottom	6	21.0 21.0	21.0	7.9 7.9	7.9	30.9 30.9	30.9	96.8 96.8	96.8	7.2 7.2	7.2	7.2	18.6 18.9	18.8		4.0 4.0	4.0	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at IS3 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
2-Apr-14	Rainy	Moderate	14:35	Surface	1	20.6 20.6	20.6	7.6 7.6	7.6	30.0 30.0	30.0	87.9 88.0	88.0	6.6 6.6	6.6	6.6	9.7 9.7	9.7	10.1	6.8 7.6	7.2	7.1
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.8	20.5 20.5	20.5	7.6 7.6	7.6	30.1 30.1	30.1	88.9 89.1	89.0	6.7 6.7	6.7	6.7	10.4 10.5	10.5		6.8 7.0	6.9	
4-Apr-14	Sunny	Moderate	14:25	Surface	1	19.5 19.5	19.5	8.1 8.1	8.1	28.1 28.1	28.1	96.3 95.4	95.9	7.5 7.4	7.5	7.5	9.8 9.7	9.8	10.1	10.4 12.0	11.2	11.2
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.14	19.4 19.4	19.4	8.1 8.1	8.1	28.1 28.1	28.1	92.0 91.9	92.0	7.2 7.2	7.2	7.2	10.2 10.3	10.3		12.0 10.4	11.2	
7-Apr-14	Fine	Moderate	18:09	Surface	1	18.4 18.4	18.4	7.9 7.9	7.9	29.2 29.1	29.2	87.6 87.6	87.6	6.9 6.9	6.9	6.9	7.6 7.6	7.6	12.0	13.2 9.9	11.6	8.9
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.6	18.3 18.3	18.3	7.9 7.9	7.9	31.9 31.9	31.9	92.9 91.1	92.0	7.2 7.1	7.2	7.2	15.5 17.3	16.4		6.3 5.9	6.1	
10-Apr-14	Cloudy	Calm	10:35	Surface	1	19.0 18.8	18.9	7.8 7.9	7.9	27.6 28.5	28.1	96.7 95.6	96.2	7.6 7.5	7.6	7.6	4.3 5.3	4.8	5.4	7.4 7.3	7.4	6.8
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.1	18.6 18.5	18.6	7.8 7.9	7.9	30.2 30.6	30.4	93.6 94.8	94.2	7.3 7.4	7.4	7.4	6.0 6.0	6.0		6.3 6.0	6.2	
12-Apr-14	Cloudy	Calm	11:15	Surface	1	21.8 21.8	21.8	7.9 7.9	7.9	27.1 27.1	27.1	105.9 105.7	105.8	8.0 7.9	8.0	8.0	3.5 3.2	3.4	5.0	5.2 4.7	5.0	4.3
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.5	20.9 21.0	21.0	7.9 7.9	7.9	30.1 30.0	30.1	101.2 101.5	101.4	7.6 7.6	7.6	7.6	6.4 6.6	6.5		4.0 3.0	3.5	
14-Apr-14	Sunny	Moderate	12:15	Surface	1	20.9 20.9	20.9	7.9 7.9	7.9	31.8 31.8	31.8	99.2 96.8	98.0	7.4 7.2	7.3	7.3	14.0 12.3	13.2	13.9	12.0 15.3	13.7	14.4
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.5	19.8 19.8	19.8	7.8 7.8	7.8	30.8 30.7	30.8	90.3 94.9	92.6	6.9 7.2	7.1	7.1	15.6 13.4	14.5		15.3 14.7	15.0	
16-Apr-14	Sunny	Moderate	13:13	Surface	1	20.4 20.2	20.3	8.0 8.0	8.0	28.4 28.5	28.5	98.7 89.2	94.0	7.5 6.8	7.2	7.2	2.6 2.7	2.7	4.2	8.8 9.6	9.2	8.5
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.4	20.0 20.0	20.0	8.0 8.0	8.0	29.1 29.1	29.1	88.6 89.6	89.1	6.8 6.9	6.9	6.9	5.5 5.6	5.6		8.6 6.8	7.7	
18-Apr-14	Cloudy	Calm	14:50	Surface	1	22.8 22.8	22.8	7.8 7.8	7.8	24.4 24.3	24.4	86.7 84.9	85.8	6.5 6.4	6.5	6.5	4.8 4.6	4.7	7.6	1.8 1.7	1.8	2.2
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.5	22.7 22.7	22.7	7.8 7.8	7.8	25.1 25.1	25.1	84.6 84.9	84.8	6.3 6.3	6.3	6.3	10.4 10.6	10.5		3.8 1.3	2.6	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at IS3 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Apr-14	Fine	Moderate	17:45	Surface	1	22.8 22.8	22.8	7.9 7.9	7.9	28.7 28.9	28.8	85.0 86.8	85.9	6.2 6.3	6.3	6.3	3.0 3.3	3.2	3.3	2.1 3.2	2.7	3.5
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.9	22.1 22.1	22.1	7.9 7.9	7.9	30.6 30.6	30.6	84.6 84.1	84.4	6.2 6.1	6.2	6.2	3.3 3.3	3.3		4.8 3.6	4.2	
24-Apr-14	Sunny	Moderate	08:39	Surface	1	20.7 20.7	20.7	8.1 8.1	8.1	29.9 29.9	29.9	77.2 78.0	77.6	5.8 5.9	5.9	5.9	4.7 4.5	4.6	5.1	3.0 3.0	3.0	3.5
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.9	20.5 20.5	20.5	8.1 8.1	8.1	31.4 31.5	31.5	78.9 77.7	78.3	5.9 5.8	5.9	5.9	4.9 6.0	5.5		4.3 3.6	4.0	
26-Apr-14	Cloudy	Moderate	10:43	Surface	1	21.8 21.8	21.8	8.0 8.0	8.0	30.2 30.2	30.2	109.1 109.1	109.1	8.0 8.0	8.0	8.0	6.6 6.5	6.6	7.5	8.2 7.0	7.6	7.2
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.1	21.4 21.4	21.4	8.0 8.0	8.0	30.7 30.7	30.7	106.1 105.4	105.8	7.8 7.8	7.8	7.8	8.2 8.3	8.3		7.4 6.2	6.8	
28-Apr-14	Sunny	Moderate	12:30	Surface	1	24.2 24.2	24.2	7.8 7.8	7.8	27.6 27.5	27.6	82.5 84.9	83.7	5.9 6.1	6.0	6.0	4.6 3.9	4.3	4.2	7.8 11.0	9.4	10.9
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4	24.2 24.2	24.2	7.8 7.8	7.8	27.5 27.5	27.5	84.0 85.3	84.7	6.0 6.1	6.1	6.1	4.1 4.1	4.1		10.2 14.4	12.3	
30-Apr-14	Fine	Moderate	12:45	Surface	1	21.9 21.9	21.9	8.0 8.0	8.0	28.2 28.2	28.2	98.2 97.4	97.8	7.3 7.2	7.3	7.3	4.4 4.2	4.3	5.4	7.4 7.4	7.4	5.6
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3	21.8 21.8	21.8	8.0 8.1	8.1	28.8 28.8	28.8	96.1 95.7	95.9	7.1 7.1	7.1	7.1	6.3 6.7	6.5		3.5 4.1	3.8	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at IS3 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
2-Apr-14	Rainy	Moderate	07:56	Surface	1	20.6 20.6	20.6	7.6 7.6	7.6	29.3 29.3	29.3	79.9 79.4	79.7	6.1 6.0	6.1	6.1	18.3 18.3	18.3	20.1	8.7 9.7	9.2	9.3
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.3	20.6 20.6	20.6	7.6 7.6	7.6	29.4 29.4	29.4	67.6 66.7	67.2	5.1 5.0	5.1	5.1	21.8 21.9	21.9		9.6 9.0	9.3	
4-Apr-14	Sunny	Moderate	08:46	Surface	1	19.8 19.8	19.8	8.1 8.1	8.1	27.9 27.9	27.9	88.0 87.8	87.9	6.8 6.8	6.8	6.8	7.8 7.8	7.8	9.0	5.1 6.1	5.6	5.8
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.1	19.8 19.8	19.8	8.1 8.1	8.1	26.6 27.9	27.3	86.7 87.2	87.0	6.8 6.8	6.8	6.8	10.1 10.1	10.1		6.4 5.6	6.0	
7-Apr-14	Fine	Moderate	10:13	Surface	1	18.4 18.4	18.4	7.8 7.8	7.8	23.8 23.7	23.8	96.8 95.9	96.4	7.9 7.8	7.9	7.9	4.9 4.9	4.9	5.8	10.8 7.2	9.0	8.2
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.6	18.3 18.4	18.4	7.8 7.8	7.8	28.1 26.7	27.4	92.8 94.3	93.6	7.4 7.6	7.5	7.5	7.0 6.2	6.6		7.6 7.2	7.4	
10-Apr-14	Cloudy	Calm	15:50	Surface	1	19.5 19.4	19.5	8.0 7.9	8.0	29.6 29.7	29.7	98.4 98.2	98.3	7.6 7.6	7.6	7.6	4.4 5.4	4.9	5.2	3.7 7.7	5.7	6.7
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.7	18.7 18.8	18.8	7.9 7.9	7.9	30.8 30.7	30.8	95.1 95.6	95.4	7.4 7.4	7.4	7.4	5.5 5.5	5.5		7.6 7.8	7.7	
12-Apr-14	Cloudy	Calm	17:40	Surface	1	21.1 21.1	21.1	7.8 7.8	7.8	28.2 28.2	28.2	95.0 95.3	95.2	7.2 7.2	7.2	7.2	4.9 4.9	4.9	5.6	4.3 5.7	5.0	5.7
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.5	20.4 20.3	20.4	7.8 7.8	7.8	31.1 31.2	31.2	96.0 94.7	95.4	7.2 7.1	7.2	7.2	6.4 6.1	6.3		7.2 5.3	6.3	
14-Apr-14	Fine	Moderate	18:00	Surface	1	21.2 21.2	21.2	8.0 8.0	8.0	32.3 32.4	32.4	107.1 105.7	106.4	7.9 7.8	7.9	7.9	6.8 6.9	6.9	10.8	38.7 35.0	36.9	28.5
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.1	20.8 20.8	20.8	8.0 8.0	8.0	33.3 33.2	33.3	110.0 107.1	108.6	8.1 7.9	8.0	8.0	15.2 14.2	14.7		21.3 18.7	20.0	
16-Apr-14	Fine	Calm	19:51	Surface	1	20.4 20.4	20.4	8.0 8.0	8.0	28.7 28.7	28.7	85.1 85.7	85.4	6.5 6.5	6.5	6.5	14.9 16.1	15.5	18.0	11.4 13.4	12.4	15.6
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.7	19.9 19.9	19.9	8.1 8.1	8.1	29.8 29.7	29.8	81.2 80.4	80.8	6.2 6.2	6.2	6.2	20.7 20.0	20.4		20.0 17.6	18.8	
18-Apr-14	Cloudy	Calm	07:45	Surface	1	22.7 22.7	22.7	7.9 7.9	7.9	24.4 24.4	24.4	97.2 94.9	96.1	7.3 7.1	7.2	7.2	4.2 4.3	4.3	3.8	4.6 3.6	4.1	4.5
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.6	22.5 22.5	22.5	7.9 7.9	7.9	25.7 25.7	25.7	90.0 89.7	89.9	6.7 6.7	6.7	6.7	3.3 3.3	3.3		6.2 3.5	4.9	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at IS3 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Apr-14	Fine	Moderate	11:43	Surface	1	22.7 22.6	22.7	7.8 7.8	7.8	26.8 27.1	27.0	91.1 89.4	90.3	6.7 6.6	6.7	6.7	2.7 3.1	2.9	4.7	4.2 4.6	4.4	6.3
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.7	22.1 22.1	22.1	7.9 7.9	7.9	30.1 30.2	30.2	89.2 88.5	88.9	6.5 6.5	6.5	6.5	6.8 6.2	6.5		11.8 4.4	8.1	
24-Apr-14	Sunny	Moderate	14:20	Surface	1	20.8 20.8	20.8	8.1 8.1	8.1	29.7 29.6	29.7	74.6 75.5	75.1	5.6 5.7	5.7	5.7	3.9 4.0	4.0	5.0	2.3 2.2	2.3	3.2
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.7	20.4 20.4	20.4	8.1 8.1	8.1	31.5 31.5	31.5	77.4 77.6	77.5	5.8 5.8	5.8	5.8	5.6 6.1	5.9		4.2 3.8	4.0	
26-Apr-14	Cloudy	Moderate	17:35	Surface	1	21.8 21.4	21.6	8.0 8.0	8.0	31.8 32.2	32.0	102.6 101.2	101.9	7.5 7.4	7.5	7.5	7.6 7.8	7.7	10.4	10.8 14.6	12.7	11.0
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.1	21.5 21.8	21.7	8.0 8.0	8.0	32.1 31.8	32.0	97.9 98.1	98.0	7.2 7.2	7.2	7.2	13.5 12.5	13.0		11.0 7.6	9.3	
28-Apr-14	Fine	Moderate	18:20	Surface	1	24.2 23.9	24.1	7.8 7.8	7.8	27.7 28.4	28.1	94.7 93.8	94.3	6.8 6.7	6.8	6.8	7.0 7.6	7.3	7.3	9.3 10.9	10.1	8.7
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.1	23.9 23.9	23.9	7.8 7.8	7.8	28.3 28.4	28.4	94.8 93.2	94.0	6.8 6.7	6.8	6.8	7.4 7.2	7.3		9.8 4.8	7.3	
30-Apr-14	Cloudy	Moderate	20:00	Surface	1	21.9 21.9	21.9	8.0 8.0	8.0	28.3 28.3	28.3	96.6 96.3	96.5	7.2 7.2	7.2	7.2	4.2 4.1	4.2	5.7	9.1 10.5	9.8	8.9
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.7	21.8 21.8	21.8	8.0 8.0	8.0	28.9 28.8	28.9	95.5 95.4	95.5	7.1 7.1	7.1	7.1	6.9 7.3	7.1		8.0 8.0	8.0	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at IS4 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
2-Apr-14	Rainy	Moderate	14:35	Surface	1	20.1 20.1	20.1	7.6 7.6	7.6	30.0 30.0	30.0	88.2 88.1	88.2	6.7 6.7	6.7	6.7	18.5 19.6	19.1	18.8	15.4 12.4	13.9	14.0
				Middle	3.5	20.2 20.2	20.2	7.5 7.5	7.5	30.1 30.1	30.1	86.8 86.4	86.6	6.6 6.6	6.6		18.3 19.7	19.0		15.2 15.4	15.3	
				Bottom	6	20.2 20.2	20.2	7.5 7.5	7.5	30.2 30.1	30.2	86.9 86.3	86.6	6.6 6.6	6.6	6.6	18.0 18.7	18.4		12.0 13.4	12.7	
4-Apr-14	Sunny	Moderate	16:08	Surface	1	20.3 20.1	20.2	8.0 8.0	8.0	28.3 29.0	28.7	79.8 79.8	79.8	6.1 6.1	6.1	6.1	8.8 8.9	8.9	13.3	10.6 13.2	11.9	12.9
				Middle	3.5	19.6 19.7	19.7	8.1 8.1	8.1	32.3 32.3	32.3	78.4 79.2	78.8	5.9 6.0	6.0		16.1 14.7	15.4		15.2 13.2	14.2	
				Bottom	6	19.6 19.6	19.6	8.1 8.1	8.1	32.4 32.4	32.4	77.3 79.2	78.3	5.9 6.0	6.0	6.0	16.2 15.0	15.6		12.6 12.4	12.5	
7-Apr-14	Fine	Moderate	18:10	Surface	1	18.4 18.4	18.4	7.9 7.9	7.9	28.5 28.2	28.4	91.8 92.1	92.0	7.1 7.1	7.1	7.1	8.6 8.6	8.6	9.6	2.9 3.1	3.0	3.9
				Middle	3.5	18.3 18.3	18.3	7.9 7.9	7.9	30.0 30.0	30.0	90.9 89.8	90.4	7.0 6.9	7.0		8.6 8.3	8.5		4.7 3.7	4.2	
				Bottom	6	18.3 18.3	18.3	7.9 7.9	7.9	30.1 30.1	30.1	89.3 89.6	89.5	6.9 6.9	6.9	6.9	11.4 11.9	11.7		4.6 4.1	4.4	
10-Apr-14	Cloudy	Calm	11:15	Surface	1	20.4 20.4	20.4	7.8 7.8	7.8	28.8 28.6	28.7	96.9 96.7	96.8	7.4 7.4	7.4	7.4	6.0 6.6	6.3	5.9	9.0 7.0	8.0	6.2
				Middle	3	20.1 20.1	20.1	7.8 7.8	7.8	30.1 30.1	30.1	95.9 95.8	95.9	7.3 7.3	7.3		5.6 5.6	5.6		5.6 5.6	5.6	
				Bottom	5	20.0 20.0	20.0	7.8 7.9	7.9	30.4 30.4	30.4	95.3 95.3	95.3	7.2 7.2	7.2	7.2	5.8 5.8	5.8		5.2 4.8	5.0	
12-Apr-14	Cloudy	Calm	12:40	Surface	1	20.3 20.2	20.3	8.0 7.9	8.0	27.9 28.3	28.1	104.2 103.7	104.0	8.0 8.0	8.0	8.0	5.0 5.8	5.4	6.8	7.3 8.7	8.0	8.4
				Middle	3.5	19.9 19.9	19.9	8.0 8.0	8.0	29.7 29.8	29.8	103.8 103.5	103.7	7.9 7.9	7.9		7.1 7.2	7.2		6.2 8.0	7.1	
				Bottom	6	19.8 19.8	19.8	8.0 8.0	8.0	30.0 30.0	30.0	103.5 103.2	103.4	7.9 7.9	7.9	7.9	8.0 7.7	7.9		9.7 10.3	10.0	
14-Apr-14	Sunny	Moderate	12:41	Surface	1	20.0 19.8	19.9	8.1 8.0	8.1	28.7 29.4	29.1	90.4 88.3	89.4	7.0 6.8	6.9	6.8	9.2 8.7	9.0	8.3	14.3 14.7	14.5	10.6
				Middle	3.5	19.2 19.3	19.3	8.0 8.0	8.0	31.3 31.1	31.2	86.7 83.7	85.2	6.7 6.4	6.6		7.0 7.8	7.4		9.3 9.0	9.2	
				Bottom	6	19.2 19.2	19.2	8.0 8.0	8.0	31.7 31.7	31.7	83.3 82.9	83.1	6.4 6.4	6.4	6.4	8.1 8.8	8.5		7.6 8.8	8.2	
16-Apr-14	Sunny	Moderate	14:37	Surface	1	20.0 20.1	20.1	8.0 8.0	8.0	30.3 30.1	30.2	75.1 72.5	73.8	5.7 5.5	5.6	5.5	6.8 7.8	7.3	8.2	10.6 10.6	10.6	9.9
				Middle	3.5	19.9 19.9	19.9	8.0 8.0	8.0	30.6 30.5	30.6	70.4 69.6	70.0	5.4 5.3	5.4		8.5 8.3	8.4		11.2 10.2	10.7	
				Bottom	6	19.9 19.8	19.9	8.0 8.0	8.0	30.7 30.8	30.8	67.1 67.9	67.5	5.1 5.2	5.2	5.2	8.7 9.0	8.9		9.8 7.2	8.5	
18-Apr-14	Cloudy	Calm	14:37	Surface	1	22.5 22.5	22.5	7.9 7.9	7.9	25.8 25.8	25.8	92.7 92.9	92.8	6.9 6.9	6.9	6.9	6.2 5.7	6.0	7.9	7.6 7.8	7.7	10.2
				Middle	3.5	22.3 22.5	22.4	7.9 7.9	7.9	26.7 25.9	26.3	91.4 91.6	91.5	6.8 6.8	6.8		7.5 7.6	7.6		9.6 11.5	10.6	
				Bottom	6	22.3 22.3	22.3	7.9 7.9	7.9	26.8 27.0	26.9	90.6 89.7	90.2	6.7 6.7	6.7	6.7	10.5 9.7	10.1		9.7 14.6	12.2	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at IS4 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Apr-14	Fine	Moderate	17:43	Surface	1	24.3 24.3	24.3	7.9 7.9	7.9	26.8 26.8	26.8	91.4 91.3	91.4	6.6 6.6	6.6	6.6	3.5 3.6	3.6	5.6	2.0 3.8	2.9	3.2
				Middle	5	23.1 23.1	23.1	7.9 7.9	7.9	29.5 29.3	29.4	89.0 89.2	89.1	6.4 6.5	6.5		6.8 6.1	6.5		2.9 3.4	3.2	
				Bottom	9	22.8 22.8	22.8	7.9 7.9	7.9	30.3 30.3	30.3	86.9 86.9	86.9	6.3 6.3	6.3	6.3	6.8 6.8	6.8		4.2 2.8	3.5	
24-Apr-14	Sunny	Moderate	09:36	Surface	1	21.4 21.4	21.4	8.1 8.1	8.1	29.9 29.9	29.9	96.3 96.3	96.3	7.2 7.2	7.2	7.3	5.5 5.5	5.5	5.6	3.7 5.3	4.5	4.6
				Middle	4.5	21.0 21.0	21.0	8.1 8.1	8.1	30.8 30.9	30.9	98.9 98.9	98.9	7.4 7.4	7.4		4.7 4.8	4.8		4.0 6.2	5.1	
				Bottom	8	21.0 21.0	21.0	8.1 8.1	8.1	30.9 30.9	30.9	96.6 96.6	96.6	7.2 7.2	7.2	7.2	6.3 6.5	6.4		4.5 4.0	4.3	
26-Apr-14	Cloudy	Moderate	11:38	Surface	1	22.0 22.0	22.0	8.0 8.0	8.0	30.0 29.7	29.9	89.7 92.2	91.0	6.6 6.8	6.7	6.8	4.8 4.9	4.9	5.0	4.2 4.0	4.1	4.6
				Middle	3.5	22.0 21.9	22.0	8.0 8.0	8.0	31.2 31.5	31.4	93.2 93.3	93.3	6.8 6.8	6.8		4.8 5.0	4.9		5.4 5.0	5.2	
				Bottom	6	22.0 22.0	22.0	8.0 8.0	8.0	31.7 30.8	31.3	92.8 91.6	92.2	6.8 6.7	6.8	6.8	5.1 5.0	5.1		4.8 4.4	4.6	
28-Apr-14	Sunny	Moderate	13:12	Surface	1	23.2 23.2	23.2	7.8 7.8	7.8	28.0 28.1	28.1	88.7 88.8	88.8	6.5 6.5	6.5	6.6	7.6 7.4	7.5	11.5	14.2 13.8	14.0	11.1
				Middle	3.5	22.5 22.5	22.5	7.9 7.9	7.9	30.4 30.5	30.5	90.3 90.3	90.3	6.6 6.6	6.6		12.3 11.7	12.0		15.6 15.2	15.4	
				Bottom	6	22.4 22.4	22.4	7.9 7.9	7.9	30.6 30.7	30.7	90.9 90.9	90.9	6.6 6.6	6.6	6.6	16.2 14.0	15.1		4.0 3.7	3.9	
30-Apr-14	Fine	Moderate	14:29	Surface	1	21.6 21.5	21.6	8.0 8.0	8.0	29.0 29.1	29.1	89.1 89.2	89.2	6.6 6.6	6.6	6.7	9.1 10.6	9.9	10.1	10.3 9.8	10.1	9.7
				Middle	3	21.4 21.4	21.4	8.0 8.0	8.0	29.6 29.6	29.6	90.0 90.6	90.3	6.7 6.7	6.7		9.7 9.9	9.8		7.6 8.8	8.2	
				Bottom	5	21.4 21.4	21.4	8.0 8.0	8.0	29.8 29.8	29.8	91.2 91.5	91.4	6.8 6.8	6.8	6.8	10.7 10.2	10.5		10.2 11.2	10.7	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at IS4 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
2-Apr-14	Rainy	Moderate	08:41	Surface	1	20.0 20.0	20.0	7.6 7.6	7.6	29.9 29.9	29.9	85.8 85.8	85.8	6.5 6.5	6.5	6.5	15.4 15.5	15.5	16.0	40.3 31.3	35.8	31.3
				Middle	3.5	20.0 20.0	20.0	7.6 7.6	7.6	29.9 29.9	29.9	85.0 85.0	85.0	6.5 6.5	6.5		15.9 15.7	15.8		32.0 36.0	34.0	
				Bottom	6	20.0 20.0	20.0	7.6 7.6	7.6	30.0 30.0	30.0	84.8 84.5	84.7	6.5 6.4	6.5	6.5	16.6 16.9	16.8		24.3 23.7	24.0	
4-Apr-14	Sunny	Moderate	10:26	Surface	1	20.4 20.3	20.4	7.8 7.8	7.8	28.8 29.0	28.9	84.0 83.6	83.8	6.4 6.4	6.4	6.3	6.9 8.3	7.6	10.0	5.2 5.6	5.4	9.7
				Middle	3.5	20.2 20.2	20.2	7.9 7.9	7.9	30.6 30.5	30.6	82.5 82.3	82.4	6.2 6.2	6.2		11.3 10.4	10.9		8.4 12.0	10.2	
				Bottom	6	20.2 20.2	20.2	7.9 7.9	7.9	30.7 30.0	30.4	80.3 79.7	80.0	6.1 6.1	6.1	6.1	11.4 11.3	11.4		13.2 13.8	13.5	
7-Apr-14	Fine	Moderate	10:58	Surface	1	18.4 18.4	18.4	7.9 7.9	7.9	26.8 27.0	26.9	91.4 91.5	91.5	7.1 7.1	7.1	7.0	8.5 8.6	8.6	8.5	5.3 5.7	5.5	5.2
				Middle	3	18.4 18.4	18.4	7.9 7.9	7.9	30.1 29.0	29.6	89.0 89.3	89.2	6.8 6.8	6.8		8.1 8.0	8.1		4.8 5.5	5.2	
				Bottom	5	18.3 18.3	18.3	7.9 7.9	7.9	30.3 30.3	30.3	89.5 89.0	89.3	6.8 6.8	6.8	6.8	8.6 9.2	8.9		4.6 5.0	4.8	
10-Apr-14	Cloudy	Calm	16:41	Surface	1	21.0 20.9	21.0	7.8 7.8	7.8	27.3 27.6	27.5	80.6 80.8	80.7	6.1 6.1	6.1	6.1	7.8 7.3	7.6	6.4	7.8 9.2	8.5	6.8
				Middle	3.5	20.5 20.5	20.5	7.8 7.8	7.8	30.1 30.0	30.1	79.3 78.3	78.8	6.0 5.9	6.0		5.4 5.4	5.4		5.8 6.8	6.3	
				Bottom	6	20.4 20.4	20.4	7.8 7.8	7.8	30.2 30.2	30.2	78.4 78.5	78.5	5.9 5.9	5.9	5.9	6.3 5.9	6.1		5.4 6.0	5.7	
12-Apr-14	Cloudy	Calm	17:19	Surface	1	20.3 20.3	20.3	7.9 7.9	7.9	28.0 27.9	28.0	100.6 100.6	100.6	7.7 7.7	7.7	7.7	6.0 6.3	6.2	7.1	7.0 6.3	6.7	6.6
				Middle	3.5	19.9 19.8	19.9	7.9 8.0	8.0	29.8 29.9	29.9	100.3 99.3	99.8	7.7 7.6	7.7		7.6 8.0	7.8		6.7 7.7	7.2	
				Bottom	6	19.8 19.8	19.8	8.0 8.0	8.0	30.1 30.0	30.1	99.9 99.4	99.7	7.6 7.6	7.6	7.6	7.2 7.6	7.4		5.4 6.3	5.9	
14-Apr-14	Fine	Moderate	19:12	Surface	1	20.7 20.5	20.6	8.1 8.1	8.1	32.4 30.1	31.3	88.0 88.2	88.1	6.5 6.7	6.6	6.5	17.7 19.2	18.5	18.8	27.7 29.0	28.4	28.8
				Middle	3.5	20.3 20.4	20.4	8.1 8.1	8.1	30.3 30.8	30.6	83.5 84.8	84.2	6.3 6.4	6.4		19.9 19.1	19.5		32.7 38.0	35.4	
				Bottom	6	20.2 20.3	20.3	8.1 8.1	8.1	30.4 30.2	30.3	82.1 82.0	82.1	6.2 6.2	6.2	6.2	17.6 19.1	18.4		27.3 18.0	22.7	
16-Apr-14	Fine	Calm	20:03	Surface	1	20.1 20.1	20.1	8.0 8.0	8.0	30.2 30.2	30.2	68.3 68.3	68.3	5.2 5.2	5.2	5.1	6.8 6.5	6.7	8.6	8.2 9.2	8.7	9.7
				Middle	4	19.9 19.9	19.9	8.0 8.0	8.0	30.7 30.7	30.7	66.1 66.0	66.1	5.0 5.0	5.0		7.9 8.3	8.1		8.6 12.0	10.3	
				Bottom	7	19.8 19.8	19.8	8.0 8.0	8.0	30.8 30.8	30.8	66.7 65.9	66.3	5.1 5.0	5.1	5.1	11.5 10.3	10.9		10.0 9.9	10.0	
18-Apr-14	Cloudy	Calm	08:58	Surface	1	22.5 22.5	22.5	7.9 7.9	7.9	25.6 25.7	25.7	96.5 96.0	96.3	7.2 7.2	7.2	7.1	6.6 6.6	6.6	7.1	7.6 8.6	8.1	8.5
				Middle	3.5	22.3 22.4	22.4	8.0 7.9	8.0	26.4 26.3	26.4	93.5 93.2	93.4	7.0 7.0	7.0		7.9 6.9	7.4		11.4 9.1	10.3	
				Bottom	6	22.1 22.2	22.2	8.0 8.0	8.0	28.1 27.3	27.7	92.5 92.0	92.3	6.9 6.8	6.9	6.9	7.1 7.4	7.3		10.0 4.4	7.2	

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at IS4 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Apr-14	Fine	Moderate	11:12	Surface	1	23.7 23.7	23.7	7.8 7.8	7.8	26.8 26.8	26.8	89.8 89.7	89.8	6.5 6.5	6.5	6.5	4.3 4.3	4.3	7.9	7.4 6.2	6.8	6.6
				Middle	4	23.1 23.1	23.1	7.8 7.8	7.8	28.4 28.4	28.4	88.5 88.6	88.6	6.4 6.4	6.4		8.5 8.3	8.4		5.4 8.8	7.1	
				Bottom	7	23.0 23.0	23.0	7.8 7.8	7.8	29.0 29.0	29.0	87.8 87.7	87.8	6.4 6.4	6.4	6.4	11.0 11.1	11.1		6.0 6.0	6.0	
24-Apr-14	Sunny	Moderate	15:37	Surface	1	20.0 20.0	20.0	8.2 8.2	8.2	32.7 32.7	32.7	80.4 80.4	80.4	6.0 6.0	6.0	6.0	8.5 8.2	8.4	8.6	5.2 5.3	5.3	4.6
				Middle	4.5	20.0 20.0	20.0	8.2 8.2	8.2	32.7 32.8	32.8	80.4 80.4	80.4	6.0 6.0	6.0		8.5 8.5	8.5		4.3 4.1	4.2	
				Bottom	8	20.0 20.0	20.0	8.2 8.2	8.2	32.8 32.8	32.8	79.9 80.1	80.0	6.0 6.0	6.0	6.0	8.8 8.9	8.9		5.4 2.9	4.2	
26-Apr-14	Cloudy	Moderate	17:25	Surface	1	19.5 19.5	19.5	8.0 8.0	8.0	29.7 29.8	29.8	71.4 70.1	70.8	5.5 5.4	5.5	5.5	6.0 6.5	6.3	7.8	5.4 4.2	4.8	5.4
				Middle	3.5	19.5 19.5	19.5	8.0 8.0	8.0	31.4 31.4	31.4	70.6 70.6	70.6	5.4 5.4	5.4		7.7 7.5	7.6		4.8 5.6	5.2	
				Bottom	6	19.5 19.5	19.5	8.0 8.0	8.0	31.7 31.6	31.7	70.6 70.5	70.6	5.4 5.4	5.4	5.4	9.5 9.7	9.6		6.2 6.2	6.2	
28-Apr-14	Fine	Moderate	19:59	Surface	1	23.4 23.5	23.5	7.8 7.8	7.8	26.9 26.8	26.9	96.1 96.0	96.1	7.0 7.0	7.0	6.8	2.8 3.0	2.9	11.1	9.1 7.5	8.3	9.0
				Middle	3.5	22.5 22.5	22.5	7.9 7.9	7.9	30.4 30.4	30.4	90.3 90.6	90.5	6.6 6.6	6.6		15.2 15.2	15.2		8.1 9.5	8.8	
				Bottom	6	22.4 22.4	22.4	7.9 7.9	7.9	30.7 30.7	30.7	91.0 90.9	91.0	6.6 6.6	6.6	6.6	15.3 15.1	15.2		10.4 9.3	9.9	
30-Apr-14	Cloudy	Moderate	20:15	Surface	1	21.2 21.2	21.2	7.9 7.9	7.9	29.0 29.0	29.0	92.1 92.2	92.2	6.9 6.9	6.9	7.0	5.9 5.4	5.7	6.7	10.2 10.0	10.1	11.2
				Middle	3.5	21.1 21.1	21.1	7.9 7.9	7.9	29.8 29.8	29.8	93.1 93.6	93.4	7.0 7.0	7.0		6.8 6.8	6.8		12.2 10.2	11.2	
				Bottom	6	21.1 21.1	21.1	7.9 7.9	7.9	29.9 29.9	29.9	92.8 94.4	93.6	6.9 7.1	7.0	7.0	7.2 8.1	7.7		13.0 11.5	12.3	

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at SR1 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
2-Apr-14	Rainy	Moderate	13:45	Surface	-	-	-	-	-	-	-	-	-	-	-	5.6	-	-	13.1	-	-	5.4
						-		-		-		-		-			-			-		
				Middle	1.1	20.6	20.7	7.6	7.6	30.6	30.9	76.8	74.6	5.8	5.6		13.0	13.1		5.2	5.4	
						20.8		7.6		31.2		72.4		5.4			13.1			5.6		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
4-Apr-14	Sunny	Moderate	13:45	Surface	-	-	-	-	-	-	-	-	-	-	-	7.2	-	-	15.1	-	-	10.7
						-		-		-		-		-			-			-		
				Middle	1.1	20.2	20.2	8.1	8.1	28.2	28.2	93.6	93.7	7.2	7.2		15.4	15.1		12.8	10.7	
						20.2		8.1		28.1		93.8		7.2			14.8			8.6		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
7-Apr-14	Fine	Moderate	17:25	Surface	-	-	-	-	-	-	-	-	-	-	-	7.6	-	-	6.7	-	-	4.9
						-		-		-		-		-			-			-		
				Middle	1.1	18.4	18.4	7.9	7.9	28.5	28.4	95.3	95.2	7.6	7.6		7.0	6.7		5.1	4.9	
						18.4		7.9		28.3		95.0		7.5			6.3			4.7		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
10-Apr-14	Cloudy	Calm	11:25	Surface	-	-	-	-	-	-	-	-	-	-	-	6.5	-	-	9.0	-	-	4.5
						-		-		-		-		-			-			-		
				Middle	0.8	19.7	19.7	7.9	7.9	23.3	23.3	81.3	81.1	6.5	6.5		9.2	9.0		5.3	4.5	
						19.7		7.9		23.2		80.8		6.4			8.8			3.7		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
12-Apr-14	Cloudy	Calm	12:05	Surface	-	-	-	-	-	-	-	-	-	-	-	6.8	-	-	3.4	-	-	3.7
						-		-		-		-		-			-			-		
				Middle	1	21.6	21.6	8.0	8.0	27.8	27.8	90.4	90.4	6.8	6.8		3.5	3.4		4.0	3.7	
						21.6		8.0		27.8		90.4		6.8			3.3			3.3		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
14-Apr-14	Sunny	Moderate	13:09	Surface	-	-	-	-	-	-	-	-	-	-	-	6.9	-	-	11.2	-	-	16.2
						-		-		-		-		-			-			-		
				Middle	1.5	20.9	20.9	7.9	7.9	31.8	31.8	92.8	92.6	6.9	6.9		11.1	11.2		19.0	16.2	
						20.9		7.9		31.8		92.4		6.9			11.2			13.3		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
16-Apr-14	Sunny	Moderate	13:59	Surface	-	-	-	-	-	-	-	-	-	-	-	5.5	-	-	7.7	-	-	10.3
						-		-		-		-		-			-			-		
				Middle	1.3	19.9	19.9	8.0	8.0	29.8	29.8	72.2	72.0	5.5	5.5		7.7	7.7		9.0	10.3	
						19.9		8.0		29.8		71.7		5.5			7.6			11.6		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
18-Apr-14	Cloudy	Calm	14:00	Surface	-	-	-	-	-	-	-	-	-	-	-	6.4	-	-	4.9	-	-	2.1
						-		-		-		-		-			-			-		
				Middle	1.1	22.8	22.8	7.8	7.8	22.9	22.9	84.3	84.8	6.4	6.4		4.7	4.9		2.5	2.1	
						22.8		7.8		22.8		85.2		6.4			5.0			1.6		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at SR1 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Apr-14	Fine	Moderate	16:51	Surface	-	-	-	-	-	-	-	-	-	-	-	6.3	-	-	2.5	-	-	2.6
						-		-		-		-		-			-			-		
				Middle	1.3	23.3	23.4	7.9	7.9	27.5	27.5	84.9	85.5	6.2	6.3		2.7	2.5		3.0	2.6	
						23.4		7.9		27.5		86.1		6.3			2.3			2.2		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
24-Apr-14	Sunny	Moderate	09:30	Surface	-	-	-	-	-	-	-	-	-	-	-	5.7	-	-	2.6	-	-	3.1
						-		-		-		-		-			-			-		
				Middle	1.4	20.8	20.8	8.1	8.1	30.0	29.9	76.1	75.3	5.7	5.7		2.6	2.6		3.0	3.1	
						20.8		8.1		29.8		74.4		5.6			2.6			3.2		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
26-Apr-14	Cloudy	Moderate	11:45	Surface	-	-	-	-	-	-	-	-	-	-	-	7.2	-	-	7.5	-	-	6.7
						-		-		-		-		-			-			-		
				Middle	1.1	22.1	22.1	8.0	8.0	31.1	31.1	98.3	98.3	7.2	7.2		7.2	7.5		7.0	6.7	
						22.1		8.0		31.1		98.3		7.2			7.7			6.4		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
28-Apr-14	Sunny	Moderate	13:20	Surface	-	-	-	-	-	-	-	-	-	-	-	6.2	-	-	6.1	-	-	5.0
						-		-		-		-		-			-			-		
				Middle	1.1	24.5	24.4	7.8	7.8	27.2	27.3	85.2	85.8	6.1	6.2		6.0	6.1		6.0	5.0	
						24.2		7.8		27.3		86.4		6.2			6.1			4.0		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
30-Apr-14	Fine	Moderate	13:35	Surface	-	-	-	-	-	-	-	-	-	-	-	7.0	-	-	6.4	-	-	6.0
						-		-		-		-		-			-			-		
				Middle	0.8	21.9	21.9	8.0	8.0	28.3	28.3	93.4	94.1	6.9	7.0		6.1	6.4		4.6	6.0	
						21.9		8.0		28.2		94.7		7.0			6.6			7.4		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at SR1 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
2-Apr-14	Rainy	Moderate	08:40	Surface	-	-	-	-	-	-	-	-	-	-	-	5.6	-	-	16.5	-	-	7.1
						-		-		-		-		-			-			-		
				Middle	0.8	20.4	20.4	7.5	7.6	28.6	28.9	74.5	72.8	5.7	5.6		16.4	16.5		8.2	7.1	
						20.4		7.6		29.1		71.1		5.4			16.5			6.0		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
4-Apr-14	Sunny	Moderate	09:29	Surface	-	-	-	-	-	-	-	-	-	-	-	6.5	-	-	15.8	-	-	7.7
						-		-		-		-		-			-			-		
				Middle	0.7	19.9	19.9	8.1	8.1	28.2	28.2	84.6	84.6	6.5	6.5		15.6	15.8		9.4	7.7	
						19.9		8.1		28.2		84.5		6.5			16.0			6.0		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
7-Apr-14	Fine	Moderate	11:05	Surface	-	-	-	-	-	-	-	-	-	-	-	8.6	-	-	1.2	-	-	5.3
						-		-		-		-		-			-			-		
				Middle	1.3	18.4	18.4	7.8	7.8	28.3	28.3	110.0	108.2	8.7	8.6		1.2	1.2		5.5	5.3	
						18.4		7.8		28.3		106.4		8.4			1.2			5.1		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
10-Apr-14	Cloudy	Calm	15:02	Surface	-	-	-	-	-	-	-	-	-	-	-	7.5	-	-	9.4	-	-	3.5
						-		-		-		-		-			-			-		
				Middle	1	19.7	19.7	7.9	7.9	26.7	26.7	95.6	95.8	7.5	7.5		9.2	9.4		3.8	3.5	
						19.7		7.9		26.7		95.9		7.5			9.5			3.2		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
12-Apr-14	Cloudy	Calm	16:50	Surface	-	-	-	-	-	-	-	-	-	-	-	7.1	-	-	4.7	-	-	5.5
						-		-		-		-		-			-			-		
				Middle	1.1	21.1	21.1	7.8	7.8	28.5	28.5	94.4	93.7	7.1	7.1		4.7	4.7		4.7	5.5	
						21.0		7.8		28.4		93.0		7.0			4.6			6.3		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
14-Apr-14	Fine	Moderate	17:16	Surface	-	-	-	-	-	-	-	-	-	-	-	6.7	-	-	9.8	-	-	23.0
						-		-		-		-		-			-			-		
				Middle	1.3	20.9	20.9	7.8	7.8	29.8	29.8	88.9	88.9	6.7	6.7		9.6	9.8		25.7	23.0	
						20.9		7.8		29.8		88.9		6.7			10.0			20.3		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
16-Apr-14	Fine	Calm	19:02	Surface	-	-	-	-	-	-	-	-	-	-	-	5.5	-	-	7.5	-	-	5.0
						-		-		-		-		-			-			-		
				Middle	1.4	19.9	19.9	8.0	8.0	29.8	29.8	71.4	71.4	5.5	5.5		7.4	7.5		5.4	5.0	
						19.9		8.0		29.8		71.3		5.5			7.5			4.6		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
18-Apr-14	Cloudy	Calm	08:35	Surface	-	-	-	-	-	-	-	-	-	-	-	5.8	-	-	3.7	-	-	3.8
						-		-		-		-		-			-			-		
				Middle	1	22.8	22.8	7.9	7.9	23.8	23.9	77.0	76.7	5.8	5.8		3.6	3.7		4.0	3.8	
						22.8		7.9		23.9		76.4		5.7			3.7			3.5		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at SR1 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Apr-14	Fine	Moderate	12:35	Surface	-	-	-	-	-	-	-	-	-	-	-	6.8	-	-	2.2	-	-	4.2
						-		-		-		-		-			-			-		
				Middle	1.2	22.5	22.5	7.9	7.9	28.3	28.2	91.4	91.9	6.7	6.8		2.2	2.2		4.8	4.2	
						22.5		7.9		28.1		92.3		6.8			2.2			3.6		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
24-Apr-14	Sunny	Moderate	13:30	Surface	-	-	-	-	-	-	-	-	-	-	-	5.8	-	-	2.7	-	-	3.1
						-		-		-		-		-			-			-		
				Middle	1.2	20.9	20.9	8.1	8.1	29.6	29.8	75.7	76.2	5.7	5.8		2.8	2.7		3.3	3.1	
						20.8		8.1		29.9		76.6		5.8			2.5			2.9		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
26-Apr-14	Cloudy	Moderate	16:54	Surface	-	-	-	-	-	-	-	-	-	-	-	7.2	-	-	3.3	-	-	6.1
						-		-		-		-		-			-			-		
				Middle	1.1	21.9	21.9	8.0	8.0	33.0	33.0	99.2	99.3	7.2	7.2		3.2	3.3		5.8	6.1	
						21.8		8.0		33.0		99.4		7.2			3.3			6.4		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
28-Apr-14	Fine	Moderate	17:30	Surface	-	-	-	-	-	-	-	-	-	-	-	6.2	-	-	7.5	-	-	4.9
						-		-		-		-		-			-			-		
				Middle	1	24.1	24.1	7.7	7.7	27.3	27.3	85.7	85.4	6.2	6.2		6.9	7.5		4.7	4.9	
						24.1		7.7		27.3		85.0		6.1			8.0			5.0		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
30-Apr-14	Cloudy	Moderate	19:10	Surface	-	-	-	-	-	-	-	-	-	-	-	7.1	-	-	9.3	-	-	6.7
						-		-		-		-		-			-			-		
				Middle	0.9	21.7	21.9	8.0	8.0	29.2	28.8	93.9	94.8	7.0	7.1		9.0	9.3		6.7	6.7	
						22.1		8.0		28.4		95.6		7.1			9.5			6.7		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at SR2 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
2-Apr-14	Rainy	Moderate	14:44	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.0	- -	-	17.1	- -	-	17.2
				Middle	1.2	20.6 20.6	20.6	7.6 7.6	7.6	30.0 30.0	30.0	79.4 79.3	79.4	6.0 6.0	6.0		16.9 17.2	17.1		19.0 15.3	17.2	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
4-Apr-14	Sunny	Moderate	14:38	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.0	- -	-	24.8	- -	-	5.4
				Middle	0.7	20.2 20.2	20.2	8.1 8.1	8.1	27.9 27.8	27.9	90.4 90.1	90.3	7.0 6.9	7.0		25.2 24.4	24.8		4.1 6.6	5.4	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
7-Apr-14	Fine	Moderate	18:25	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.0	- -	-	16.4	- -	-	6.3
				Middle	1.2	18.3 18.3	18.3	7.9 7.9	7.9	31.9 31.9	31.9	90.2 89.5	89.9	7.0 7.0	7.0		15.5 17.3	16.4		6.7 5.9	6.3	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
10-Apr-14	Cloudy	Calm	10:21	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.7	- -	-	4.6	- -	-	8.3
				Middle	0.7	20.0 20.0	20.0	7.8 7.8	7.8	21.6 21.4	21.5	84.1 82.1	83.1	6.7 6.6	6.7		4.4 4.8	4.6		8.8 7.7	8.3	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
12-Apr-14	Cloudy	Calm	11:00	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.9	- -	-	5.8	- -	-	5.8
				Middle	1.1	21.8 22.0	21.9	7.9 7.9	7.9	27.1 26.7	26.9	91.8 92.2	92.0	6.9 6.9	6.9		6.0 5.6	5.8		6.3 5.3	5.8	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
14-Apr-14	Sunny	Moderate	12:02	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.8	- -	-	13.2	- -	-	11.5
				Middle	0.8	21.8 21.7	21.8	8.0 8.0	8.0	27.4 27.4	27.4	101.9 105.4	103.7	7.6 7.9	7.8		13.2 13.2	13.2		10.3 12.7	11.5	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
16-Apr-14	Sunny	Moderate	12:57	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.4	- -	-	10.9	- -	-	12.2
				Middle	0.7	20.4 20.4	20.4	8.0 8.0	8.0	28.1 28.1	28.1	97.0 95.8	96.4	7.4 7.3	7.4		11.1 10.7	10.9		12.4 12.0	12.2	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
18-Apr-14	Cloudy	Calm	15:05	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.4	- -	-	6.1	- -	-	5.0
				Middle	1	22.8 22.8	22.8	7.8 7.8	7.8	25.8 25.8	25.8	85.9 84.9	85.4	6.4 6.3	6.4		5.9 6.2	6.1		5.1 4.8	5.0	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at SR2 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Apr-14	Fine	Moderate	17:54	Surface	-	-	-	-	-	-	-	-	-	-	-	6.3	-	-	10.9	-	-	5.6
						-		-		-		-		-			-			-		
				Middle	1.1	22.7	22.7	7.8	7.8	28.5	28.5	85.8	86.0	6.3	6.3		10.4	10.9		5.4	5.6	
						22.6		7.8		28.5		86.2		6.3			11.4			5.8		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
24-Apr-14	Sunny	Moderate	08:25	Surface	-	-	-	-	-	-	-	-	-	-	-	5.7	-	-	4.9	-	-	6.7
						-		-		-		-		-			-			-		
				Middle	1.2	20.7	20.7	8.0	8.0	29.3	29.3	75.1	75.4	5.7	5.7		5.1	4.9		7.7	6.7	
						20.7		8.0		29.3		75.6		5.7			4.7			5.6		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
26-Apr-14	Cloudy	Moderate	10:38	Surface	-	-	-	-	-	-	-	-	-	-	-	8.4	-	-	19.9	-	-	7.1
						-		-		-		-		-			-			-		
				Middle	0.7	22.1	22.1	8.0	8.0	29.8	29.8	114.2	114.2	8.4	8.4		19.9	19.9		6.6	7.1	
						22.1		8.0		29.8		114.2		8.4			19.8			7.6		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
28-Apr-14	Sunny	Moderate	12:15	Surface	-	-	-	-	-	-	-	-	-	-	-	6.2	-	-	4.7	-	-	18.9
						-		-		-		-		-			-			-		
				Middle	0.9	23.9	23.6	7.8	7.8	30.4	31.0	87.1	87.1	6.2	6.2		4.2	4.7		19.0	18.9	
						23.3		7.8		31.5		87.0		6.2			5.1			18.7		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
30-Apr-14	Fine	Moderate	12:30	Surface	-	-	-	-	-	-	-	-	-	-	-	7.3	-	-	10.8	-	-	4.9
						-		-		-		-		-			-			-		
				Middle	0.7	22.2	22.2	8.0	8.0	28.3	28.4	98.3	97.7	7.3	7.3		10.5	10.8		5.2	4.9	
						22.2		8.0		28.4		97.1		7.2			11.0			4.5		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at SR2 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
2-Apr-14	Rainy	Moderate	07:39	Surface	-	-	-	-	-	-	-	-	-	-	-	6.2	-	-	18.9	-	-	19.4
						-		-		-		-		-			-			-		
				Middle	0.8	20.3	20.3	7.6	7.6	29.9	29.9	81.7	81.9	6.2	6.2		18.9	18.9		23.0	19.4	
						20.3		7.6		29.9		82.0		6.2			18.9			15.7		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
4-Apr-14	Sunny	Moderate	08:39	Surface	-	-	-	-	-	-	-	-	-	-	-	6.6	-	-	8.2	-	-	12.5
						-		-		-		-		-			-			-		
				Middle	0.5	20.0	20.0	8.1	8.1	26.2	26.2	84.2	84.3	6.6	6.6		8.3	8.2		10.7	12.5	
						20.0		8.1		26.2		84.4		6.6			8.1			14.3		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
7-Apr-14	Fine	Moderate	10:02	Surface	-	-	-	-	-	-	-	-	-	-	-	8.7	-	-	4.0	-	-	7.6
						-		-		-		-		-			-			-		
				Middle	0.9	18.5	18.5	7.7	7.7	23.6	23.6	108.6	106.0	8.9	8.7		4.0	4.0		7.5	7.6	
						18.4		7.7		23.6		103.3		8.4			4.0			7.6		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
10-Apr-14	Cloudy	Calm	16:05	Surface	-	-	-	-	-	-	-	-	-	-	-	7.1	-	-	6.5	-	-	6.7
						-		-		-		-		-			-			-		
				Middle	0.6	20.3	20.3	7.9	7.9	24.4	24.4	90.4	90.1	7.1	7.1		6.4	6.5		7.0	6.7	
						20.2		7.9		24.4		89.8		7.0			6.5			6.3		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
12-Apr-14	Cloudy	Calm	17:55	Surface	-	-	-	-	-	-	-	-	-	-	-	6.7	-	-	5.6	-	-	5.3
						-		-		-		-		-			-			-		
				Middle	1.1	22.1	22.1	7.8	7.9	28.3	28.4	89.2	89.6	6.6	6.7		5.5	5.6		6.3	5.3	
						22.0		7.9		28.4		89.9		6.7			5.7			4.3		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
14-Apr-14	Fine	Moderate	18:14	Surface	-	-	-	-	-	-	-	-	-	-	-	7.5	-	-	18.3	-	-	36.7
						-		-		-		-		-			-			-		
				Middle	0.5	22.0	22.0	8.1	8.1	29.2	29.2	99.9	100.4	7.4	7.5		18.2	18.3		35.0	36.7	
						22.0		8.1		29.1		100.9		7.5			18.4			38.3		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
16-Apr-14	Fine	Calm	20:07	Surface	-	-	-	-	-	-	-	-	-	-	-	6.6	-	-	6.6	-	-	7.9
						-		-		-		-		-			-			-		
				Middle	1.1	20.4	20.4	8.0	8.0	28.3	28.3	85.8	85.2	6.6	6.6		6.6	6.6		8.0	7.9	
						20.4		8.0		28.3		84.6		6.5			6.6			7.8		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
18-Apr-14	Cloudy	Calm	07:30	Surface	-	-	-	-	-	-	-	-	-	-	-	7.3	-	-	8.6	-	-	7.8
						-		-		-		-		-			-			-		
				Middle	0.8	22.6	22.6	7.9	7.9	25.8	25.8	98.4	98.1	7.3	7.3		8.8	8.6		7.2	7.8	
						22.6		7.8		25.8		97.8		7.3			8.4			8.4		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at SR2 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Apr-14	Fine	Moderate	11:27	Surface	-	-	-	-	-	-	-	-	-	-	-	6.4	-	-	8.3	-	-	7.0
						-		-		-		-		-			-			-		
				Middle	1.2	23.1	22.9	7.8	7.8	27.1	27.2	87.4	86.9	6.4	6.4		7.7	8.3		7.4	7.0	
						22.7		7.8		27.2		86.3		6.4			8.8			6.6		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
24-Apr-14	Sunny	Moderate	14:38	Surface	-	-	-	-	-	-	-	-	-	-	-	6.0	-	-	6.8	-	-	6.9
						-		-		-		-		-			-			-		
				Middle	1	20.9	20.9	8.0	8.0	29.6	29.6	80.4	79.7	6.0	6.0		6.6	6.8		7.6	6.9	
						20.9		8.0		29.6		78.9		5.9			7.0			6.2		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
26-Apr-14	Cloudy	Moderate	17:49	Surface	-	-	-	-	-	-	-	-	-	-	-	7.0	-	-	10.2	-	-	10.7
						-		-		-		-		-			-			-		
				Middle	0.7	21.5	21.5	8.0	8.0	32.1	32.2	94.9	94.7	7.0	7.0		10.5	10.2		9.6	10.7	
						21.4		8.0		32.2		94.5		6.9			9.9			11.8		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
28-Apr-14	Fine	Moderate	18:37	Surface	-	-	-	-	-	-	-	-	-	-	-	6.7	-	-	7.8	-	-	8.7
						-		-		-		-		-			-			-		
				Middle	1.1	23.9	23.9	7.8	7.8	28.4	28.4	93.1	92.9	6.7	6.7		8.4	7.8		8.4	8.7	
						23.8		7.8		28.4		92.7		6.7			7.2			8.9		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
30-Apr-14	Cloudy	Moderate	20:15	Surface	-	-	-	-	-	-	-	-	-	-	-	7.1	-	-	10.9	-	-	5.6
						-		-		-		-		-			-			-		
				Middle	0.6	22.1	22.1	8.0	8.0	28.4	28.5	95.9	95.4	7.1	7.1		10.8	10.9		5.8	5.6	
						22.1		8.0		28.5		94.8		7.0			11.0			5.4		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at SR3 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
2-Apr-14	Rainy	Moderate	14:58	Surface	-	-	-	-	-	-	-	-	-	-	-	7.4	-	-	10.0	-	-	11.9
						-		-		-		-		-			-			-		
				Middle	0.7	20.6	20.6	7.6	7.6	30.4	30.4	97.3	97.7	7.3	7.4		10.0	10.0		13.0	11.9	
						20.6		7.6		30.4		98.1		7.4			10.0			10.8		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
4-Apr-14	Sunny	Moderate	14:58	Surface	-	-	-	-	-	-	-	-	-	-	-	6.4	-	-	3.4	-	-	5.6
						-		-		-		-		-			-			-		
				Middle	1.2	20.3	20.3	8.1	8.1	26.3	26.3	83.1	83.1	6.4	6.4		3.3	3.4		5.4	5.6	
						20.3		8.1		26.3		83.0		6.4			3.4			5.8		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
7-Apr-14	Fine	Moderate	18:46	Surface	-	-	-	-	-	-	-	-	-	-	-	6.6	-	-	7.9	-	-	5.9
						-		-		-		-		-			-			-		
				Middle	1.1	18.4	18.4	7.9	7.9	29.4	29.5	83.5	83.4	6.6	6.6		8.0	7.9		6.8	5.9	
						18.4		7.9		29.5		83.2		6.6			7.7			4.9		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
10-Apr-14	Cloudy	Calm	09:59	Surface	-	-	-	-	-	-	-	-	-	-	-	7.7	-	-	4.3	-	-	7.7
						-		-		-		-		-			-			-		
				Middle	0.7	20.5	20.5	7.7	7.7	21.1	21.2	97.2	96.7	7.7	7.7		3.9	4.3		7.1	7.7	
						20.4		7.7		21.2		96.2		7.7			4.7			8.2		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
12-Apr-14	Cloudy	Calm	10:40	Surface	-	-	-	-	-	-	-	-	-	-	-	8.1	-	-	4.7	-	-	5.5
						-		-		-		-		-			-			-		
				Middle	0.8	22.5	22.5	8.0	8.0	27.8	27.8	109.1	109.7	8.0	8.1		4.8	4.7		5.4	5.5	
						22.5		8.0		27.8		110.2		8.1			4.5			5.6		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
14-Apr-14	Sunny	Moderate	11:42	Surface	-	-	-	-	-	-	-	-	-	-	-	6.7	-	-	5.3	-	-	10.5
						-		-		-		-		-			-			-		
				Middle	0.8	22.7	22.7	8.1	8.1	27.0	27.0	90.5	90.3	6.7	6.7		5.2	5.3		13.7	10.5	
						22.7		8.1		27.0		90.0		6.6			5.3			7.3		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
16-Apr-14	Sunny	Moderate	12:40	Surface	-	-	-	-	-	-	-	-	-	-	-	8.5	-	-	5.7	-	-	11.2
						-		-		-		-		-			-			-		
				Middle	1	20.6	20.6	8.0	8.0	26.0	26.0	108.5	109.3	8.4	8.5		5.6	5.7		13.6	11.2	
						20.6		8.0		26.0		110.0		8.5			5.7			8.7		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
18-Apr-14	Cloudy	Calm	15:25	Surface	-	-	-	-	-	-	-	-	-	-	-	6.3	-	-	7.3	-	-	4.8
						-		-		-		-		-			-			-		
				Middle	0.9	22.9	23.0	7.8	7.8	25.8	25.8	84.9	84.4	6.3	6.3		7.3	7.3		5.2	4.8	
						23.0		7.8		25.8		83.8		6.2			7.2			4.3		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at SR3 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Apr-14	Fine	Moderate	18:18	Surface	-	-	-	-	-	-	-	-	-	-	-	6.7	-	-	11.2	-	-	5.3
						-		-		-		-		-			-			-		
				Middle	1.1	23.0	23.0	7.8	7.8	26.7	26.8	90.3	90.7	6.6	6.7		10.3	11.2		6.2	5.3	
						22.9		7.8		26.8		91.1		6.7			12.0			4.4		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
24-Apr-14	Sunny	Moderate	08:06	Surface	-	-	-	-	-	-	-	-	-	-	-	5.2	-	-	6.7	-	-	6.2
						-		-		-		-		-			-			-		
				Middle	1.1	21.0	21.0	8.0	8.0	27.9	27.9	69.2	68.8	5.2	5.2		6.5	6.7		6.4	6.2	
						21.0		8.0		27.9		68.3		5.2			6.9			5.9		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
26-Apr-14	Cloudy	Moderate	10:27	Surface	-	-	-	-	-	-	-	-	-	-	-	8.5	-	-	5.1	-	-	9.6
						-		-		-		-		-			-			-		
				Middle	1	22.9	22.9	7.9	7.9	28.7	28.7	116.3	116.3	8.5	8.5		5.0	5.1		8.4	9.6	
						22.9		7.9		28.7		116.3		8.5			5.1			10.8		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
28-Apr-14	Sunny	Moderate	11:40	Surface	-	-	-	-	-	-	-	-	-	-	-	6.3	-	-	4.8	-	-	5.7
						-		-		-		-		-			-			-		
				Middle	0.8	24.1	24.1	7.8	7.8	27.6	27.6	88.4	88.1	6.3	6.3		4.7	4.8		8.2	5.7	
						24.1		7.8		27.6		87.8		6.3			4.8			3.1		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
30-Apr-14	Fine	Moderate	12:10	Surface	-	-	-	-	-	-	-	-	-	-	-	7.5	-	-	4.1	-	-	6.6
						-		-		-		-		-			-			-		
				Middle	0.7	22.3	22.3	8.0	8.0	27.7	27.8	100.1	100.8	7.4	7.5		4.1	4.1		6.6	6.6	
						22.3		8.0		27.8		101.4		7.5			4.1			6.6		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at SR3 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
2-Apr-14	Rainy	Moderate	07:24	Surface	-	-	-	-	-	-	-	-	-	-	-	6.9	-	-	11.4	-	-	10.8
						-		-		-		-		-			-			-		
				Middle	0.6	20.4	20.4	7.5	7.5	29.6	29.6	90.4	90.2	6.9	6.9		11.4	11.4		11.3	10.8	
						20.4		7.5		29.6		89.9		6.8			11.4			10.3		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
4-Apr-14	Sunny	Moderate	08:24	Surface	-	-	-	-	-	-	-	-	-	-	-	7.6	-	-	3.5	-	-	16.3
						-		-		-		-		-			-			-		
				Middle	0.8	20.0	20.0	8.0	8.0	25.2	25.2	97.0	97.1	7.6	7.6		3.5	3.5		16.0	16.3	
						20.0		8.0		25.2		97.1		7.6			3.4			16.6		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
7-Apr-14	Fine	Moderate	09:43	Surface	-	-	-	-	-	-	-	-	-	-	-	8.5	-	-	6.4	-	-	7.0
						-		-		-		-		-			-			-		
				Middle	0.9	18.4	18.4	7.7	7.7	23.5	23.5	105.9	103.0	8.7	8.5		6.1	6.4		6.5	7.0	
						18.4		7.7		23.5		100.0		8.2			6.7			7.4		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
10-Apr-14	Cloudy	Calm	16:24	Surface	-	-	-	-	-	-	-	-	-	-	-	6.6	-	-	4.5	-	-	10.5
						-		-		-		-		-			-			-		
				Middle	0.7	20.5	20.5	7.9	7.9	24.1	24.1	84.0	84.5	6.6	6.6		4.4	4.5		10.7	10.5	
						20.5		7.9		24.1		84.9		6.6			4.5			10.3		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
12-Apr-14	Cloudy	Calm	18:15	Surface	-	-	-	-	-	-	-	-	-	-	-	6.2	-	-	9.9	-	-	5.9
						-		-		-		-		-			-			-		
				Middle	1.1	20.8	20.8	7.7	7.7	29.3	29.5	81.8	81.7	6.2	6.2		9.1	9.9		6.0	5.9	
						20.7		7.7		29.7		81.5		6.1			10.6			5.7		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
14-Apr-14	Fine	Moderate	18:35	Surface	-	-	-	-	-	-	-	-	-	-	-	6.5	-	-	11.8	-	-	19.7
						-		-		-		-		-			-			-		
				Middle	0.9	22.1	22.1	8.2	8.2	28.0	28.0	85.3	87.1	6.3	6.5		11.0	11.8		22.7	19.7	
						22.1		8.2		28.0		88.8		6.6			12.5			16.7		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
16-Apr-14	Fine	Calm	20:25	Surface	-	-	-	-	-	-	-	-	-	-	-	6.7	-	-	3.6	-	-	7.5
						-		-		-		-		-			-			-		
				Middle	0.8	20.6	20.6	8.1	8.1	26.6	26.6	86.1	86.7	6.6	6.7		3.3	3.6		7.5	7.5	
						20.6		8.1		26.6		87.2		6.7			3.8			7.4		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
18-Apr-14	Cloudy	Calm	07:10	Surface	-	-	-	-	-	-	-	-	-	-	-	7.2	-	-	9.2	-	-	9.2
						-		-		-		-		-			-			-		
				Middle	1.1	22.8	22.8	7.8	7.8	25.1	25.1	96.2	95.9	7.2	7.2		9.2	9.2		9.6	9.2	
						22.8		7.8		25.1		95.5		7.1			9.2			8.8		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at SR3 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Apr-14	Fine	Moderate	10:56	Surface	-	-	-	-	-	-	-	-	-	-	-	6.8	-	-	5.3	-	-	6.2
						-		-		-		-		-			-			-		
				Middle	1.1	22.8	22.8	7.8	7.8	26.6	26.6	93.2	92.1	6.9	6.8		4.8	5.3		7.2	6.2	
						22.8		7.8		26.5		91.0		6.7			5.8			5.2		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
24-Apr-14	Sunny	Moderate	14:58	Surface	-	-	-	-	-	-	-	-	-	-	-	5.2	-	-	6.8	-	-	6.1
						-		-		-		-		-			-			-		
				Middle	0.9	21.0	21.0	8.0	8.0	27.9	27.9	68.5	68.7	5.2	5.2		6.7	6.8		6.2	6.1	
						21.0		8.0		27.9		68.8		5.2			6.9			5.9		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
26-Apr-14	Cloudy	Moderate	18:03	Surface	-	-	-	-	-	-	-	-	-	-	-	6.4	-	-	6.6	-	-	9.4
						-		-		-		-		-			-			-		
				Middle	1.2	21.4	21.4	8.0	8.0	32.1	32.2	87.7	87.7	6.4	6.4		6.6	6.6		10.4	9.4	
						21.4		8.0		32.2		87.7		6.4			6.6			8.3		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
28-Apr-14	Fine	Moderate	19:10	Surface	-	-	-	-	-	-	-	-	-	-	-	6.6	-	-	18.2	-	-	12.3
						-		-		-		-		-			-			-		
				Middle	1.1	25.0	25.0	7.7	7.7	28.1	28.1	94.2	93.2	6.6	6.6		18.1	18.2		13.3	12.3	
						24.9		7.7		28.1		92.2		6.5			18.2			11.2		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
30-Apr-14	Cloudy	Moderate	20:36	Surface	-	-	-	-	-	-	-	-	-	-	-	7.4	-	-	4.4	-	-	5.8
						-		-		-		-		-			-			-		
				Middle	0.7	22.3	22.3	8.0	8.0	27.8	27.8	99.6	99.6	7.4	7.4		4.1	4.4		6.9	5.8	
						22.3		8.0		27.8		99.6		7.4			4.6			4.7		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at SR6 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
2-Apr-14	Rainy	Moderate	13:33	Surface	1	20.0 20.0	20.0	7.5 7.5	7.5	30.1 30.1	30.1	88.0 87.7	87.9	6.7 6.7	6.7	6.7	8.9 9.2	9.1	13.5	23.3 28.7	26.0	22.7
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.8	20.0 20.0	20.0	7.6 7.6	7.6	31.2 31.1	31.2	86.7 86.9	86.8	6.6 6.6	6.6	6.6	17.2 18.3	17.8		20.3 18.3	19.3	
4-Apr-14	Sunny	Moderate	14:47	Surface	1	20.6 20.7	20.7	7.8 7.8	7.8	22.9 23.7	23.3	81.9 82.6	82.3	6.4 6.5	6.5	6.5	8.1 9.3	8.7	11.6	7.4 9.6	8.5	7.5
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.3	19.7 19.7	19.7	8.0 8.0	8.0	31.0 31.0	31.0	81.8 82.4	82.1	6.2 6.3	6.3	6.3	13.9 15.0	14.5		5.6 7.4	6.5	
7-Apr-14	Fine	Moderate	17:12	Surface	1	18.3 18.3	18.3	7.8 7.8	7.8	25.0 25.1	25.1	92.0 93.9	93.0	7.3 7.4	7.4	7.4	4.5 4.4	4.5	4.4	3.4 6.8	5.1	4.9
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.5	18.3 18.3	18.3	7.8 7.8	7.8	25.2 25.3	25.3	91.9 90.8	91.4	7.3 7.2	7.3	7.3	4.0 4.4	4.2		4.2 5.0	4.6	
10-Apr-14	Cloudy	Calm	10:01	Surface	1	21.3 21.3	21.3	7.7 7.7	7.7	20.6 20.7	20.7	92.4 91.8	92.1	7.3 7.2	7.3	7.3	4.4 4.2	4.3	5.2	8.3 7.3	7.8	7.4
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.1	20.0 20.0	20.0	7.9 7.9	7.9	30.2 30.2	30.2	102.9 104.4	103.7	7.8 7.9	7.9	7.9	5.9 6.1	6.0		7.3 6.7	7.0	
12-Apr-14	Cloudy	Calm	11:21	Surface	1	21.2 21.1	21.2	7.9 7.9	7.9	23.6 23.8	23.7	69.4 69.9	69.7	5.4 5.4	5.4	5.4	2.0 2.5	2.3	2.9	5.6 5.6	5.6	4.6
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.7	20.2 20.2	20.2	7.9 7.9	7.9	27.9 27.9	27.9	69.4 67.8	68.6	5.3 5.2	5.3	5.3	3.4 3.6	3.5		4.2 3.0	3.6	
14-Apr-14	Sunny	Moderate	11:24	Surface	1	20.5 20.6	20.6	8.1 8.1	8.1	25.6 25.4	25.5	85.4 85.9	85.7	6.6 6.7	6.7	6.7	5.8 5.8	5.8	7.3	11.7 12.3	12.0	11.4
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.2	19.1 19.1	19.1	8.0 8.0	8.0	31.3 31.3	31.3	75.6 74.3	75.0	5.8 5.7	5.8	5.8	8.8 8.6	8.7		11.3 10.3	10.8	
16-Apr-14	Sunny	Moderate	13:22	Surface	1	20.3 20.2	20.3	8.0 8.0	8.0	27.5 27.8	27.7	97.0 88.4	92.7	7.5 6.8	7.2	7.2	3.0 3.4	3.2	3.6	4.7 7.8	6.3	6.0
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.9	20.1 20.1	20.1	8.0 8.0	8.0	28.7 28.7	28.7	85.7 83.7	84.7	6.6 6.4	6.5	6.5	3.7 4.0	3.9		6.0 5.4	5.7	
18-Apr-14	Cloudy	Calm	13:36	Surface	1	22.4 22.4	22.4	7.8 7.8	7.8	22.3 22.3	22.3	71.3 72.1	71.7	5.4 5.5	5.5	5.5	6.4 6.7	6.6	8.6	28.0 33.7	30.9	18.5
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.7	22.2 22.2	22.2	7.9 7.9	7.9	26.4 26.6	26.5	71.8 71.0	71.4	5.4 5.3	5.4	5.4	10.5 10.6	10.6		6.8 5.4	6.1	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at SR6 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Apr-14	Fine	Moderate	17:02	Surface	1	24.6 24.7	24.7	7.9 7.9	7.9	24.9 24.8	24.9	92.2 92.2	92.2	6.7 6.7	6.7	6.7	4.0 3.2	3.6	3.4	3.0 4.0	3.5	3.0
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.9	23.1 23.1	23.1	7.9 7.9	7.9	29.0 29.0	29.0	89.1 89.2	89.2	6.5 6.5	6.5	6.5	3.1 3.2	3.2		2.6 2.4	2.5	
24-Apr-14	Sunny	Moderate	08:29	Surface	1	21.2 21.2	21.2	8.0 8.0	8.0	28.4 28.4	28.4	74.6 74.6	74.6	5.6 5.6	5.6	5.6	2.0 2.0	2.0	2.7	3.0 3.8	3.4	3.7
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.3	20.9 20.9	20.9	8.1 8.1	8.1	31.9 31.9	31.9	70.8 71.9	71.4	5.3 5.3	5.3	5.3	3.2 3.3	3.3		3.2 4.8	4.0	
26-Apr-14	Cloudy	Moderate	10:51	Surface	1	22.2 22.2	22.2	8.0 8.0	8.0	30.5 30.5	30.5	91.0 91.5	91.3	6.6 6.7	6.7	6.7	3.2 3.3	3.3	3.3	3.0 5.1	4.1	4.4
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.2	22.0 22.0	22.0	8.0 8.0	8.0	31.2 31.2	31.2	93.4 92.1	92.8	6.8 6.7	6.8	6.8	3.1 3.4	3.3		4.6 4.5	4.6	
28-Apr-14	Sunny	Moderate	11:43	Surface	1	23.1 23.2	23.2	7.8 7.8	7.8	28.8 28.6	28.7	112.0 99.1	105.6	8.1 7.2	7.7	7.7	2.6 2.9	2.8	3.5	5.1 5.3	5.2	6.0
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.7	22.2 22.2	22.2	7.8 7.8	7.8	32.2 32.1	32.2	100.6 100.2	100.4	7.3 7.3	7.3	7.3	4.3 4.1	4.2		8.0 5.4	6.7	
30-Apr-14	Fine	Moderate	13:15	Surface	1	21.7 21.7	21.7	7.9 7.9	7.9	28.0 28.1	28.1	100.4 101.0	100.7	7.5 7.5	7.5	7.5	6.7 6.5	6.6	6.8	9.7 8.7	9.2	9.5
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4	21.4 21.4	21.4	8.0 8.0	8.0	30.3 30.3	30.3	102.4 103.0	102.7	7.6 7.6	7.6	7.6	6.8 7.0	6.9		9.3 10.3	9.8	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at SR6 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
2-Apr-14	Rainy	Moderate	07:39	Surface	1	20.0 20.0	20.0	7.6 7.6	7.6	30.2 30.3	30.3	89.6 88.8	89.2	6.8 6.8	6.8	6.8	13.5 14.5	14.0	14.3	17.3 17.3	17.3	18.3
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.5	19.9 19.9	19.9	7.6 7.6	7.6	31.4 31.1	31.3	87.7 87.7	87.7	6.6 6.7	6.7	6.7	14.5 14.5	14.5		24.0 14.3	19.2	
4-Apr-14	Sunny	Moderate	09:11	Surface	1	20.3 20.3	20.3	7.7 7.7	7.7	28.8 28.9	28.9	82.6 83.5	83.1	6.3 6.4	6.4	6.4	10.5 11.5	11.0	14.4	9.4 9.8	9.6	11.6
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.2	20.0 19.9	20.0	8.0 8.0	8.0	29.2 29.3	29.3	79.4 80.1	79.8	6.1 6.1	6.1	6.1	16.9 18.7	17.8		12.4 14.6	13.5	
7-Apr-14	Fine	Moderate	10:01	Surface	1	18.3 18.3	18.3	7.8 7.8	7.8	25.0 25.1	25.1	93.3 95.0	94.2	7.3 7.4	7.4	7.4	4.8 4.6	4.7	4.4	6.7 6.4	6.6	6.3
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.2	18.3 18.3	18.3	7.8 7.8	7.8	25.3 25.3	25.3	92.5 91.9	92.2	7.2 7.2	7.2	7.2	4.0 4.0	4.0		6.8 5.0	5.9	
10-Apr-14	Cloudy	Calm	15:28	Surface	1	20.8 20.8	20.8	7.6 7.6	7.6	25.8 25.8	25.8	109.1 108.5	108.8	8.4 8.4	8.4	8.4	3.3 3.4	3.4	3.8	4.2 4.4	4.3	4.0
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.2	20.2 20.3	20.3	7.7 7.7	7.7	28.0 27.9	28.0	106.2 105.2	105.7	8.2 8.1	8.2	8.2	4.3 4.1	4.2		3.2 4.2	3.7	
12-Apr-14	Cloudy	Calm	16:04	Surface	1	21.1 21.0	21.1	7.9 7.9	7.9	23.9 24.0	24.0	66.7 66.9	66.8	5.2 5.2	5.2	5.2	2.7 2.6	2.7	3.1	7.0 6.7	6.9	7.3
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.6	20.2 20.1	20.2	7.9 7.9	7.9	28.1 28.2	28.2	67.7 67.5	67.6	5.2 5.2	5.2	5.2	3.3 3.6	3.5		7.2 8.2	7.7	
14-Apr-14	Fine	Moderate	18:03	Surface	1	20.6 20.6	20.6	7.9 7.9	7.9	28.5 28.5	28.5	89.9 74.7	82.3	6.8 5.7	6.3	6.3	11.3 12.6	12.0	16.5	12.0 11.7	11.9	20.6
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.1	20.4 20.4	20.4	7.9 7.9	7.9	29.6 29.4	29.5	72.1 70.5	71.3	5.5 5.4	5.5	5.5	20.4 21.5	21.0		18.0 40.3	29.2	
16-Apr-14	Fine	Calm	18:49	Surface	1	20.4 20.4	20.4	8.0 8.0	8.0	27.2 27.3	27.3	91.4 89.8	90.6	7.0 6.9	7.0	7.0	4.1 4.0	4.1	6.3	12.9 9.2	11.1	8.9
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.8	19.8 19.8	19.8	8.0 8.0	8.0	30.0 30.3	30.2	76.2 75.6	75.9	5.8 5.8	5.8	5.8	8.1 8.6	8.4		6.3 6.8	6.6	
18-Apr-14	Cloudy	Calm	07:47	Surface	1	22.4 22.4	22.4	7.8 7.8	7.8	22.3 22.3	22.3	72.1 70.9	71.5	5.5 5.4	5.5	5.5	5.6 6.6	6.1	7.3	10.0 17.7	13.9	20.6
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.9	22.1 22.2	22.2	7.9 7.9	7.9	26.8 26.7	26.8	70.5 68.7	69.6	5.3 5.1	5.2	5.2	7.9 8.8	8.4		25.0 29.3	27.2	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at SR6 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Apr-14	Fine	Moderate	10:26	Surface	1	23.7 23.7	23.7	7.8 7.8	7.8	24.5 24.5	24.5	81.5 81.6	81.6	6.0 6.0	6.0	6.0	3.0 2.9	3.0	3.2	3.5 5.7	4.6	4.7
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.1	23.2 23.2	23.2	7.8 7.8	7.8	26.9 26.8	26.9	84.1 84.1	84.1	6.2 6.2	6.2	6.2	3.3 3.2	3.3		4.4 5.0	4.7	
24-Apr-14	Sunny	Moderate	14:50	Surface	1	20.0 20.0	20.0	8.1 8.1	8.1	32.2 32.2	32.2	79.0 79.0	79.0	5.9 5.9	5.9	5.9	7.5 7.5	7.5	7.3	4.4 3.7	4.1	3.6
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.3	20.1 20.1	20.1	8.1 8.1	8.1	32.5 32.5	32.5	78.2 78.3	78.3	5.9 5.9	5.9	5.9	7.1 7.1	7.1		2.5 3.6	3.1	
26-Apr-14	Cloudy	Moderate	16:40	Surface	1	19.7 19.7	19.7	8.0 8.0	8.0	29.1 28.3	28.7	84.2 85.1	84.7	6.5 6.6	6.6	6.6	5.1 5.4	5.3	5.9	4.3 6.2	5.3	5.3
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.2	19.5 19.5	19.5	8.0 8.0	8.0	29.7 29.9	29.8	88.9 88.2	88.6	6.9 6.8	6.9	6.9	6.3 6.5	6.4		3.5 7.1	5.3	
28-Apr-14	Fine	Moderate	18:39	Surface	1	23.1 23.1	23.1	7.8 7.8	7.8	29.0 29.0	29.0	99.6 99.6	99.6	7.2 7.2	7.2	7.2	2.8 2.9	2.9	3.5	5.0 2.7	3.9	5.1
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.5	22.2 22.2	22.2	7.8 7.8	7.8	31.8 31.9	31.9	99.8 100.1	100.0	7.2 7.3	7.3	7.3	3.9 4.2	4.1		5.3 7.0	6.2	
30-Apr-14	Cloudy	Moderate	19:01	Surface	1	21.4 21.4	21.4	7.8 7.9	7.9	27.8 27.9	27.9	102.8 102.7	102.8	7.7 7.7	7.7	7.7	5.2 5.3	5.3	5.9	9.8 10.5	10.2	10.8
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.2	21.2 21.1	21.2	7.9 7.9	7.9	29.7 29.8	29.8	103.9 103.7	103.8	7.8 7.8	7.8	7.8	6.2 6.5	6.4		10.2 12.4	11.3	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at SRA - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
2-Apr-14	Rainy	Moderate	14:50	Surface	1	20.6 20.6	20.6	7.6 7.6	7.6	29.9 29.9	29.9	91.9 92.0	92.0	6.9 6.9	6.9	6.1	16.1 16.4	16.3	16.5	19.3 13.7	16.5	16.5
				Middle	4	20.6 20.6	20.6	7.6 7.6	7.6	30.0 30.0	30.0	68.9 68.7	68.8	5.2 5.2	5.2		15.7 15.8	15.8		15.3 17.7	16.5	
				Bottom	7	20.5 20.5	20.5	7.6 7.6	7.6	30.0 30.0	30.0	66.0 65.5	65.8	5.0 4.9	5.0	5.0	17.5 17.5	17.5		17.3 15.7	16.5	
4-Apr-14	Sunny	Moderate	14:51	Surface	1	20.1 20.1	20.1	8.1 8.1	8.1	26.7 26.7	26.7	85.7 85.5	85.6	6.7 6.6	6.7	6.7	4.1 3.9	4.0	4.7	9.2 7.0	8.1	8.7
				Middle	3	20.1 20.1	20.1	8.1 8.1	8.1	27.2 27.2	27.2	85.3 85.4	85.4	6.6 6.6	6.6		4.6 4.6	4.6		9.2 9.0	9.1	
				Bottom	5	20.0 20.0	20.0	8.1 8.1	8.1	26.3 27.6	27.0	84.5 85.1	84.8	6.6 6.6	6.6	6.6	5.3 5.4	5.4		7.8 10.2	9.0	
7-Apr-14	Fine	Moderate	18:34	Surface	1	18.4 18.4	18.4	7.9 7.9	7.9	29.2 29.2	29.2	83.8 83.7	83.8	6.6 6.6	6.6	6.7	8.8 8.3	8.6	9.4	4.7 5.0	4.9	5.3
				Middle	3.5	18.3 18.3	18.3	7.9 7.9	7.9	31.5 31.4	31.5	86.6 86.9	86.8	6.8 6.8	6.8		9.7 9.1	9.4		4.1 5.3	4.7	
				Bottom	6	18.3 18.3	18.3	7.9 7.9	7.9	31.9 31.9	31.9	86.0 86.1	86.1	6.7 6.7	6.7	6.7	10.2 10.2	10.2		6.0 6.4	6.2	
10-Apr-14	Cloudy	Calm	10:10	Surface	1	19.9 19.8	19.9	7.8 7.8	7.8	23.3 23.0	23.2	91.3 90.6	91.0	7.3 7.2	7.3	7.1	4.8 4.8	4.8	5.8	8.2 6.7	7.5	7.5
				Middle	3	19.3 19.2	19.3	7.8 7.8	7.8	26.0 26.9	26.5	87.4 87.7	87.6	6.9 6.9	6.9		5.3 5.9	5.6		7.0 7.3	7.2	
				Bottom	5	18.7 18.7	18.7	7.8 7.8	7.8	29.1 29.2	29.2	85.4 84.5	85.0	6.7 6.6	6.7	6.7	7.0 7.1	7.1		8.0 7.8	7.9	
12-Apr-14	Cloudy	Calm	10:50	Surface	1	21.9 21.9	21.9	7.9 7.9	7.9	27.3 27.3	27.3	93.5 93.6	93.6	7.0 7.0	7.0	7.0	5.7 5.5	5.6	7.3	5.0 5.7	5.4	6.2
				Middle	4	21.2 21.2	21.2	7.9 7.9	7.9	28.8 29.0	28.9	91.3 90.8	91.1	6.9 6.8	6.9		7.1 7.0	7.1		4.3 6.0	5.2	
				Bottom	7	20.9 20.9	20.9	7.9 7.9	7.9	29.9 29.9	29.9	89.1 89.0	89.1	6.7 6.7	6.7	6.7	9.4 9.2	9.3		8.7 7.0	7.9	
14-Apr-14	Sunny	Moderate	11:50	Surface	1	21.4 21.4	21.4	7.9 8.0	8.0	27.8 28.2	28.0	93.7 95.1	94.4	7.0 7.1	7.1	7.2	12.9 13.3	13.1	14.1	11.0 12.7	11.9	17.4
				Middle	3.5	20.7 20.7	20.7	7.8 7.9	7.9	30.0 30.9	30.5	91.8 98.6	95.2	6.9 7.4	7.2		15.3 14.6	15.0		19.0 21.3	20.2	
				Bottom	6	20.1 20.1	20.1	7.8 7.9	7.9	33.1 33.0	33.1	84.8 91.9	88.4	6.3 6.9	6.6	6.6	13.7 14.4	14.1		19.0 21.0	20.0	
16-Apr-14	Sunny	Moderate	12:48	Surface	1	20.1 20.3	20.2	8.0 8.0	8.0	28.4 27.9	28.2	92.3 93.1	92.7	7.1 7.1	7.1	7.2	5.3 5.7	5.5	9.5	5.5 7.1	6.3	9.1
				Middle	5	20.1 20.1	20.1	8.0 8.0	8.0	28.6 28.7	28.7	93.6 96.7	95.2	7.2 7.4	7.3		11.3 11.9	11.6		11.8 10.8	11.3	
				Bottom	9	20.0 19.9	20.0	8.0 8.0	8.0	29.1 29.2	29.2	99.3 99.9	99.6	7.6 7.7	7.7	7.7	11.0 11.5	11.3		10.4 8.8	9.6	
18-Apr-14	Cloudy	Calm	15:15	Surface	1	22.9 22.9	22.9	7.8 7.8	7.8	25.6 25.6	25.6	83.9 82.8	83.4	6.2 6.1	6.2	6.2	7.7 7.0	7.4	7.5	5.6 6.2	5.9	6.0
				Middle	4	22.8 22.8	22.8	7.8 7.8	7.8	25.6 25.6	25.6	81.1 81.5	81.3	6.0 6.1	6.1		7.5 7.6	7.6		6.2 6.3	6.3	
				Bottom	7	22.8 22.8	22.8	7.8 7.8	7.8	25.6 25.6	25.6	79.6 79.6	79.6	5.9 5.9	5.9	5.9	7.2 7.6	7.4		4.3 7.0	5.7	

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at SRA - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Apr-14	Fine	Moderate	18:10	Surface	1	23.1 23.1	23.1	7.9 7.9	7.9	28.1 28.1	28.1	88.8 90.5	89.7	6.5 6.6	6.6	6.6	4.2 4.4	4.3	5.1	4.4 5.8	5.1	5.1
				Middle	4	22.5 22.6	22.6	7.9 7.9	7.9	29.3 29.1	29.2	88.2 89.5	88.9	6.5 6.5	6.5		5.1 5.1	5.1		4.8 5.2	5.0	
				Bottom	7	22.4 22.4	22.4	7.9 7.9	7.9	29.7 29.7	29.7	86.0 87.2	86.6	6.3 6.4	6.4	6.4	6.3 5.4	5.9		5.2 5.0	5.1	
24-Apr-14	Sunny	Moderate	08:16	Surface	1	20.7 20.7	20.7	8.0 8.0	8.0	29.5 29.5	29.5	72.7 73.2	73.0	5.5 5.5	5.5	5.5	5.2 5.2	5.2	7.6	6.2 5.6	5.9	6.0
				Middle	5	20.6 20.6	20.6	8.1 8.1	8.1	30.4 30.4	30.4	72.5 70.5	71.5	5.5 5.3	5.4		7.2 7.2	7.2		5.0 5.1	5.1	
				Bottom	9	20.5 20.5	20.5	8.1 8.1	8.1	31.1 31.1	31.1	73.6 73.6	73.6	5.5 5.5	5.5	5.5	9.9 10.7	10.3		6.0 8.1	7.1	
26-Apr-14	Cloudy	Moderate	10:30	Surface	1	22.0 21.8	21.9	8.0 8.0	8.0	29.4 29.6	29.5	122.8 120.5	121.7	9.1 8.9	9.0	9.0	5.7 5.0	5.4	5.5	11.6 8.8	10.2	8.4
				Middle	4	21.8 21.7	21.8	8.0 7.9	8.0	29.6 29.7	29.7	120.5 119.9	120.2	8.9 8.9	8.9		5.0 5.8	5.4		7.2 7.2	7.2	
				Bottom	7	21.7 21.7	21.7	7.9 7.9	7.9	29.7 29.7	29.7	119.9 119.9	119.9	8.9 8.9	8.9	8.9	5.8 5.8	5.8		8.0 7.6	7.8	
28-Apr-14	Sunny	Moderate	11:51	Surface	1	23.1 23.5	23.3	7.8 7.8	7.8	31.6 31.0	31.3	85.9 87.5	86.7	6.1 6.2	6.2	6.2	5.6 5.5	5.6	5.5	4.7 3.9	4.3	3.9
				Middle	3.5	23.2 23.3	23.3	7.8 7.8	7.8	31.5 31.2	31.4	86.1 87.9	87.0	6.1 6.3	6.2		6.5 6.1	6.3		3.9 4.1	4.0	
				Bottom	6	24.2 24.0	24.1	7.8 7.8	7.8	27.5 27.6	27.6	85.6 85.6	85.6	6.1 6.2	6.2	6.2	4.2 4.8	4.5		4.0 3.0	3.5	
30-Apr-14	Fine	Moderate	12:22	Surface	1	21.8 21.8	21.8	8.0 8.0	8.0	28.7 28.7	28.7	96.7 96.1	96.4	7.2 7.1	7.2	7.2	5.6 6.2	5.9	6.5	7.6 7.7	7.7	6.6
				Middle	3	21.8 21.8	21.8	8.0 8.0	8.0	28.8 28.8	28.8	95.0 95.3	95.2	7.1 7.1	7.1		6.1 5.9	6.0		5.5 5.5	5.5	
				Bottom	5	21.8 21.7	21.8	8.0 8.0	8.0	29.1 29.2	29.2	94.5 94.2	94.4	7.0 7.0	7.0	7.0	6.9 8.0	7.5		6.4 6.9	6.7	

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at SRA - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
2-Apr-14	Rainy	Moderate	07:29	Surface	1	20.2 20.2	20.2	7.5 7.5	7.5	29.7 29.7	29.7	87.4 87.3	87.4	6.6 6.6	6.6	6.0	12.5 12.1	12.3	23.1	16.3 14.0	15.2	15.0
				Middle	3.5	20.2 20.2	20.2	7.5 7.5	7.5	29.7 29.7	29.7	71.3 71.2	71.3	5.4 5.4	5.4		30.0 30.0	30.0		13.3 15.0	14.2	
				Bottom	6	20.3 20.3	20.3	7.5 7.5	7.5	29.7 29.7	29.7	66.8 66.6	66.7	5.1 5.1	5.1	5.1	27.2 26.6	26.9		14.7 16.3	15.5	
4-Apr-14	Sunny	Moderate	08:29	Surface	1	19.8 19.8	19.8	8.0 8.0	8.0	26.2 26.2	26.2	86.4 86.4	86.4	6.8 6.8	6.8	6.8	4.6 4.6	4.6	4.6	11.0 12.6	11.8	13.3
				Middle	6.5	19.9 19.9	19.9	8.0 8.0	8.0	26.3 24.9	25.6	85.9 85.3	85.6	6.7 6.7	6.7		4.6 4.5	4.6		12.7 14.3	13.5	
				Bottom	12	19.8 19.8	19.8	8.0 8.0	8.0	26.5 26.5	26.5	85.9 85.9	85.9	6.7 6.7	6.7	6.7	4.6 4.5	4.6		15.0 14.0	14.5	
7-Apr-14	Fine	Moderate	09:50	Surface	1	18.4 18.4	18.4	7.8 7.7	7.8	23.6 23.8	23.7	99.1 88.3	93.7	8.1 7.2	7.7	7.6	4.6 4.6	4.6	6.6	5.4 5.6	5.5	5.7
				Middle	3.5	18.3 18.4	18.4	7.8 7.8	7.8	27.1 27.2	27.2	94.8 89.2	92.0	7.6 7.1	7.4		6.7 6.6	6.7		5.0 6.8	5.9	
				Bottom	6	18.3 18.3	18.3	7.9 7.9	7.9	30.3 30.1	30.2	91.6 91.2	91.4	7.2 7.2	7.2	7.2	8.5 8.4	8.5		6.3 4.8	5.6	
10-Apr-14	Cloudy	Calm	16:15	Surface	1	20.6 20.2	20.4	7.9 7.9	7.9	23.4 24.0	23.7	92.2 91.2	91.7	7.2 7.2	7.2	7.2	5.6 5.5	5.6	5.5	7.6 5.3	6.5	6.3
				Middle	3	19.0 18.9	19.0	7.9 7.9	7.9	28.9 29.0	29.0	90.1 89.9	90.0	7.1 7.0	7.1		5.6 5.5	5.6		7.3 7.3	7.3	
				Bottom	5	18.7 18.6	18.7	7.9 7.9	7.9	29.9 29.9	29.9	88.9 88.0	88.5	7.0 6.9	7.0	7.0	5.5 5.2	5.4		6.3 4.0	5.2	
12-Apr-14	Cloudy	Calm	18:05	Surface	1	21.5 21.4	21.5	7.8 7.8	7.8	27.9 28.0	28.0	85.1 85.3	85.2	6.4 6.4	6.4	6.4	5.8 5.2	5.5	6.6	8.0 6.7	7.4	7.1
				Middle	3.5	21.1 21.1	21.1	7.8 7.8	7.8	28.6 28.7	28.7	84.9 84.6	84.8	6.4 6.4	6.4		6.3 6.5	6.4		8.0 7.7	7.9	
				Bottom	6	20.5 20.5	20.5	7.8 7.8	7.8	30.3 30.3	30.3	83.4 82.3	82.9	6.3 6.2	6.3	6.3	7.8 8.0	7.9		6.0 5.7	5.9	
14-Apr-14	Fine	Moderate	18:26	Surface	1	22.1 22.1	22.1	8.2 8.2	8.2	28.0 28.0	28.0	97.1 99.5	98.3	7.2 7.4	7.3	7.2	15.9 17.8	16.9	19.2	21.7 21.3	21.5	23.0
				Middle	3.5	21.9 22.0	22.0	8.1 8.1	8.1	28.4 28.3	28.4	96.0 95.3	95.7	7.1 7.1	7.1		19.3 18.9	19.1		21.3 20.0	20.7	
				Bottom	6	21.8 21.9	21.9	8.1 8.1	8.1	28.8 28.7	28.8	94.5 101.3	97.9	7.0 7.5	7.3	7.3	21.5 21.7	21.6		27.3 26.3	26.8	
16-Apr-14	Fine	Calm	20:15	Surface	1	20.5 20.3	20.4	8.0 8.0	8.0	28.7 28.3	28.5	81.4 85.5	83.5	6.2 6.5	6.4	5.9	8.4 8.5	8.5	12.0	9.2 11.2	10.2	10.6
				Middle	4.5	19.8 19.8	19.8	8.0 8.0	8.0	30.3 30.2	30.3	66.4 70.3	68.4	5.1 5.4	5.3		18.3 16.8	17.6		10.4 13.0	11.7	
				Bottom	8	19.8 19.8	19.8	8.0 8.0	8.0	30.0 30.0	30.0	86.5 86.2	86.4	6.6 6.6	6.6	6.6	9.3 10.3	9.8		9.6 10.4	10.0	
18-Apr-14	Cloudy	Calm	07:20	Surface	1	22.8 22.8	22.8	7.8 7.8	7.8	25.1 25.1	25.1	101.0 99.3	100.2	7.5 7.4	7.5	7.4	8.0 8.3	8.2	9.0	9.4 9.6	9.5	8.8
				Middle	3.5	22.8 22.8	22.8	7.8 7.8	7.8	25.1 25.1	25.1	97.9 97.5	97.7	7.3 7.3	7.3		9.4 9.3	9.4		8.6 7.4	8.0	
				Bottom	6	22.8 22.8	22.8	7.8 7.8	7.8	25.1 25.2	25.2	96.3 96.5	96.4	7.2 7.2	7.2	7.2	9.3 9.3	9.3		8.2 9.4	8.8	

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at SRA - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Apr-14	Fine	Moderate	11:01	Surface	1	23.1 23.0	23.1	7.8 7.8	7.8	26.3 26.4	26.4	93.4 81.8	87.6	6.9 6.0	6.5	6.5	4.3 4.3	4.3	5.5	5.6 5.8	5.7	5.7
				Middle	4	22.5 22.4	22.5	7.8 7.8	7.8	27.5 27.5	27.5	93.3 78.7	86.0	6.9 5.8	6.4		5.7 5.7	5.7		5.6 6.6	6.1	
				Bottom	7	22.3 22.3	22.3	7.8 7.8	7.8	28.2 28.3	28.3	87.5 73.4	80.5	6.5 5.4	6.0	6.0	6.7 6.4	6.6		4.8 6.0	5.4	
24-Apr-14	Sunny	Moderate	14:45	Surface	1	20.9 20.9	20.9	8.0 8.0	8.0	29.6 29.6	29.6	80.4 78.9	79.7	6.0 5.9	6.0	5.7	6.6 7.0	6.8	7.7	5.6 6.4	6.0	5.6
				Middle	4.5	20.6 20.6	20.6	8.0 8.1	8.1	30.5 30.5	30.5	71.3 70.5	70.9	5.4 5.3	5.4		8.3 8.9	8.6		5.7 5.7	5.7	
				Bottom	8	20.5 20.5	20.5	8.1 8.1	8.1	31.0 31.1	31.1	76.0 75.0	75.5	5.7 5.6	5.7	5.7	7.3 8.1	7.7		5.2 5.0	5.1	
26-Apr-14	Cloudy	Moderate	17:56	Surface	1	21.9 21.4	21.7	8.0 8.0	8.0	31.7 32.1	31.9	91.3 90.5	90.9	6.7 6.6	6.7	6.7	7.3 6.9	7.1	8.1	9.4 10.2	9.8	8.6
				Middle	4	21.9 21.4	21.7	8.0 8.0	8.0	31.7 32.2	32.0	90.6 90.1	90.4	6.6 6.6	6.6		7.6 7.7	7.7		7.3 9.0	8.2	
				Bottom	7	21.9 21.8	21.9	8.0 8.0	8.0	31.8 31.8	31.8	90.3 90.1	90.2	6.6 6.6	6.6	6.6	9.7 9.3	9.5		7.4 8.2	7.8	
28-Apr-14	Fine	Moderate	19:00	Surface	1	23.6 23.5	23.6	7.8 7.8	7.8	29.4 29.5	29.5	91.5 91.8	91.7	6.6 6.6	6.6	6.6	10.3 10.2	10.3	12.7	9.6 10.6	10.1	8.0
				Middle	3.5	23.5 23.5	23.5	7.8 7.8	7.8	29.5 29.5	29.5	92.2 91.0	91.6	6.6 6.5	6.6		13.3 13.8	13.6		7.0 6.6	6.8	
				Bottom	6	23.5 23.5	23.5	7.8 7.8	7.8	29.4 29.5	29.5	91.6 90.7	91.2	6.6 6.5	6.6	6.6	14.2 14.4	14.3		5.6 8.3	7.0	
30-Apr-14	Cloudy	Moderate	20:25	Surface	1	21.8 21.9	21.9	8.0 8.0	8.0	28.7 28.7	28.7	94.7 94.7	94.7	7.0 7.0	7.0	7.0	5.9 5.8	5.9	6.8	7.2 6.6	6.9	7.0
				Middle	3	21.8 21.8	21.8	8.0 8.0	8.0	28.8 28.8	28.8	94.3 94.3	94.3	7.0 7.0	7.0		6.9 6.0	6.5		9.5 8.1	8.8	
				Bottom	5	21.8 21.7	21.8	8.0 8.0	8.0	29.0 29.2	29.1	94.4 94.1	94.3	7.0 7.0	7.0	7.0	8.1 7.9	8.0		5.5 4.9	5.2	

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at ST1 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
2-Apr-14	Rainy	Moderate	14:01	Surface	1	20.1 20.1	20.1	7.5 7.5	7.5	29.8 29.8	29.8	90.1 90.1	90.1	6.9 6.9	6.9	6.9	15.7 16.2	16.0	16.2	21.7 20.0	20.9	17.4
				Middle	5	20.1 20.1	20.1	7.5 7.5	7.5	29.9 29.8	29.9	89.1 88.8	89.0	6.8 6.8	6.8		16.1 15.9	16.0		20.3 18.7	19.5	
				Bottom	9	20.1 20.1	20.1	7.5 7.5	7.5	29.9 29.9	29.9	87.5 87.4	87.5	6.7 6.7	6.7	6.7	16.3 16.8	16.6		11.7 12.0	11.9	
4-Apr-14	Sunny	Moderate	15:13	Surface	1	20.3 20.3	20.3	8.0 8.0	8.0	27.8 26.8	27.3	84.7 84.3	84.5	6.5 6.5	6.5	6.5	4.8 4.8	4.8	4.8	6.0 6.4	6.2	5.5
				Middle	6	20.1 20.1	20.1	8.0 8.0	8.0	29.4 29.2	29.3	83.9 83.9	83.9	6.4 6.4	6.4		4.6 4.9	4.8		5.7 4.2	5.0	
				Bottom	11	20.0 19.8	19.9	8.0 8.1	8.1	30.0 31.6	30.8	82.9 83.6	83.3	6.3 6.3	6.3	6.3	4.7 4.7	4.7		5.0 5.6	5.3	
7-Apr-14	Fine	Moderate	17:33	Surface	1	18.3 18.4	18.4	7.8 7.8	7.8	26.9 26.8	26.9	93.4 93.6	93.5	7.3 7.3	7.3	7.3	3.0 3.3	3.2	3.3	5.3 5.0	5.2	4.9
				Middle	5	18.3 18.3	18.3	7.8 7.8	7.8	27.1 27.1	27.1	92.3 91.6	92.0	7.2 7.2	7.2		3.7 3.7	3.7		5.6 4.7	5.2	
				Bottom	9	18.2 18.2	18.2	7.8 7.8	7.8	27.9 28.0	28.0	92.2 91.9	92.1	7.2 7.2	7.2	7.2	3.2 2.9	3.1		3.7 4.8	4.3	
10-Apr-14	Cloudy	Calm	10:33	Surface	1	21.4 21.4	21.4	7.8 7.8	7.8	22.8 22.8	22.8	92.5 91.6	92.1	7.2 7.1	7.2	7.1	2.7 2.9	2.8	4.1	3.7 4.7	4.2	5.5
				Middle	5	19.9 19.9	19.9	7.9 7.9	7.9	30.8 30.7	30.8	91.4 90.2	90.8	6.9 6.9	6.9		3.5 4.0	3.8		8.4 6.2	7.3	
				Bottom	9	19.8 19.8	19.8	7.9 7.9	7.9	31.9 31.9	31.9	89.8 89.7	89.8	6.8 6.8	6.8	6.8	5.6 5.8	5.7		5.2 5.0	5.1	
12-Apr-14	Cloudy	Calm	11:58	Surface	1	21.0 21.0	21.0	7.9 7.9	7.9	24.5 24.5	24.5	96.6 97.0	96.8	7.5 7.5	7.5	7.5	1.9 2.0	2.0	3.4	3.3 4.3	3.8	3.3
				Middle	5	19.8 19.9	19.9	7.9 8.0	8.0	30.7 30.4	30.6	98.6 97.8	98.2	7.5 7.5	7.5		1.9 2.3	2.1		3.0 3.1	3.1	
				Bottom	9	19.5 19.7	19.6	7.9 8.0	8.0	31.7 31.4	31.6	93.7 97.0	95.4	7.1 7.4	7.3	7.3	6.2 5.8	6.0		3.3 2.9	3.1	
14-Apr-14	Sunny	Moderate	11:59	Surface	1	20.8 21.0	20.9	8.1 8.1	8.1	24.8 24.4	24.6	86.5 88.0	87.3	6.7 6.8	6.8	6.7	7.6 6.9	7.3	7.0	13.3 14.3	13.8	14.1
				Middle	6	20.3 20.3	20.3	8.1 8.1	8.1	26.1 27.4	26.8	84.9 86.0	85.5	6.6 6.6	6.6		7.1 7.3	7.2		16.0 18.0	17.0	
				Bottom	11	19.5 19.4	19.5	8.0 8.0	8.0	29.8 31.5	30.7	79.3 81.4	80.4	6.1 6.2	6.2	6.2	6.3 6.8	6.6		10.7 12.0	11.4	
16-Apr-14	Sunny	Moderate	13:44	Surface	1	20.3 20.2	20.3	8.1 8.1	8.1	29.6 29.7	29.7	73.4 73.1	73.3	5.6 5.6	5.6	5.6	3.9 3.5	3.7	6.0	5.2 5.0	5.1	6.3
				Middle	5	19.9 19.8	19.9	8.1 8.1	8.1	31.0 31.5	31.3	72.9 73.1	73.0	5.5 5.5	5.5		4.2 4.3	4.3		5.1 6.3	5.7	
				Bottom	9	19.8 19.8	19.8	8.1 8.1	8.1	31.6 31.6	31.6	71.7 69.5	70.6	5.4 5.3	5.4	5.4	10.4 9.6	10.0		8.8 7.4	8.1	
18-Apr-14	Cloudy	Calm	14:05	Surface	1	22.0 21.8	21.9	8.0 8.0	8.0	27.4 30.8	29.1	94.3 94.9	94.6	7.0 7.0	7.0	7.0	8.9 8.8	8.9	11.4	16.6 16.4	16.5	19.6
				Middle	5	21.7 21.7	21.7	8.0 8.0	8.0	31.0 31.1	31.1	94.6 94.6	94.6	6.9 6.9	6.9		10.5 11.7	11.1		18.6 15.6	17.1	
				Bottom	9	21.7 21.6	21.7	8.0 8.0	8.0	31.3 31.5	31.4	94.0 93.7	93.9	6.9 6.9	6.9	6.9	13.3 15.0	14.2		26.4 24.0	25.2	

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at ST1 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Apr-14	Fine	Moderate	17:20	Surface	1	25.0 25.0	25.0	7.9 7.9	7.9	24.8 24.8	24.8	98.3 98.4	98.4	7.1 7.1	7.1	7.0	2.6 2.6	2.6	3.4	3.6 4.8	4.2	4.0
				Middle	5	23.0 23.0	23.0	7.9 7.9	7.9	29.9 29.8	29.9	94.9 95.1	95.0	6.9 6.9	6.9		2.8 3.1	3.0		6.6 3.8	5.2	
				Bottom	9	22.6 22.6	22.6	7.9 7.9	7.9	31.5 31.5	31.5	89.8 89.5	89.7	6.5 6.5	6.5	6.5	4.6 4.6	4.6		2.2 2.8	2.5	
24-Apr-14	Sunny	Moderate	09:00	Surface	1	21.2 21.2	21.2	8.0 8.0	8.0	28.3 28.3	28.3	82.2 82.2	82.2	6.2 6.2	6.2	6.1	1.7 1.7	1.7	2.4	3.5 3.7	3.6	3.2
				Middle	4.5	21.1 21.1	21.1	8.0 8.0	8.0	29.8 29.4	29.6	80.5 79.9	80.2	6.0 6.0	6.0		2.3 2.3	2.3		2.3 2.9	2.6	
				Bottom	8	21.0 21.0	21.0	8.1 8.1	8.1	31.6 31.6	31.6	79.2 79.2	79.2	5.9 5.9	5.9	5.9	3.1 3.1	3.1		2.8 3.9	3.4	
26-Apr-14	Cloudy	Moderate	11:14	Surface	1	22.2 22.2	22.2	8.0 8.0	8.0	30.8 30.0	30.4	82.9 83.2	83.1	6.0 6.1	6.1	6.2	2.9 3.6	3.3	7.6	6.9 5.9	6.4	6.8
				Middle	4	22.1 22.0	22.1	8.0 8.0	8.0	31.6 31.6	31.6	85.2 85.1	85.2	6.2 6.2	6.2		3.2 3.7	3.5		5.8 5.5	5.7	
				Bottom	7	21.8 21.8	21.8	8.0 8.0	8.0	32.4 32.4	32.4	90.0 87.9	89.0	6.5 6.4	6.5	6.5	15.7 16.5	16.1		7.6 9.0	8.3	
28-Apr-14	Sunny	Moderate	12:23	Surface	1	23.0 23.0	23.0	7.9 7.9	7.9	29.4 29.4	29.4	98.0 98.0	98.0	7.1 7.1	7.1	7.0	2.3 2.2	2.3	10.7	7.6 7.3	7.5	6.5
				Middle	5	22.2 22.2	22.2	7.9 7.9	7.9	32.2 32.2	32.2	95.6 95.6	95.6	6.9 6.9	6.9		4.8 5.3	5.1		5.3 6.0	5.7	
				Bottom	9	22.1 22.1	22.1	7.9 7.9	7.9	32.7 32.7	32.7	95.3 94.8	95.1	6.9 6.9	6.9	6.9	22.7 26.9	24.8		7.6 4.9	6.3	
30-Apr-14	Fine	Moderate	13:46	Surface	1	22.0 22.0	22.0	8.0 8.0	8.0	28.9 29.1	29.0	91.0 92.0	91.5	6.7 6.8	6.8	6.9	2.9 3.2	3.1	6.5	4.6 4.4	4.5	4.4
				Middle	5	21.5 21.5	21.5	8.1 8.1	8.1	30.6 30.5	30.6	94.7 95.3	95.0	7.0 7.0	7.0		3.6 3.8	3.7		3.8 4.5	4.2	
				Bottom	9	21.3 21.3	21.3	8.0 8.0	8.0	31.3 31.4	31.4	95.2 95.4	95.3	7.0 7.0	7.0	7.0	12.2 13.0	12.6		4.0 4.9	4.5	

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at ST1 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
2-Apr-14	Rainy	Moderate	08:09	Surface	1	20.0 20.0	20.0	7.6 7.6	7.6	29.8 29.8	29.8	94.3 93.7	94.0	7.2 7.2	7.2	7.2	17.6 16.7	17.2	17.7	31.3 22.0	26.7	26.4
				Middle	5	20.1 20.1	20.1	7.6 7.6	7.6	29.9 29.8	29.9	92.8 92.5	92.7	7.1 7.1	7.1		17.4 19.6	18.5		31.0 26.3	28.7	
				Bottom	9	20.1 20.1	20.1	7.6 7.6	7.6	29.9 29.9	29.9	90.4 90.4	90.4	6.9 6.9	6.9	6.9	17.2 17.4	17.3		29.0 18.7	23.9	
4-Apr-14	Sunny	Moderate	09:43	Surface	1	20.0 20.1	20.1	8.0 8.0	8.0	27.7 27.3	27.5	84.8 83.3	84.1	6.6 6.4	6.5	6.4	7.8 7.9	7.9	11.6	5.6 6.2	5.9	19.7
				Middle	4.5	19.7 19.9	19.8	8.1 8.1	8.1	27.7 27.6	27.7	81.7 80.3	81.0	6.3 6.2	6.3		7.5 7.6	7.6		39.3 36.0	37.7	
				Bottom	8	19.6 19.6	19.6	8.2 8.2	8.2	30.9 31.6	31.3	79.4 79.8	79.6	6.1 6.1	6.1	6.1	17.9 20.8	19.4		15.2 15.6	15.4	
7-Apr-14	Fine	Moderate	10:21	Surface	1	18.4 18.4	18.4	7.8 7.8	7.8	26.6 26.6	26.6	94.0 94.1	94.1	7.3 7.3	7.3	7.3	3.5 3.6	3.6	3.5	5.1 4.6	4.9	4.4
				Middle	5	18.3 18.3	18.3	7.8 7.8	7.8	26.9 27.0	27.0	93.5 93.1	93.3	7.2 7.2	7.2		3.4 3.5	3.5		6.3 3.5	4.9	
				Bottom	9	18.3 18.3	18.3	7.8 7.8	7.8	27.4 27.3	27.4	93.4 93.1	93.3	7.2 7.2	7.2	7.2	3.4 3.4	3.4		3.2 3.6	3.4	
10-Apr-14	Cloudy	Calm	15:59	Surface	1	21.2 21.2	21.2	7.7 7.7	7.7	23.9 23.9	23.9	92.8 93.3	93.1	7.2 7.2	7.2	7.3	3.9 4.0	4.0	3.8	4.4 4.0	4.2	4.2
				Middle	5	21.0 21.0	21.0	7.8 7.8	7.8	25.9 25.8	25.9	94.6 94.3	94.5	7.3 7.2	7.3		3.7 3.6	3.7		3.6 3.8	3.7	
				Bottom	9	20.2 20.2	20.2	7.8 7.8	7.8	29.7 29.7	29.7	91.4 91.7	91.6	7.0 7.0	7.0	7.0	3.7 3.7	3.7		3.0 6.4	4.7	
12-Apr-14	Cloudy	Calm	16:41	Surface	1	21.0 20.9	21.0	8.0 8.0	8.0	24.6 24.8	24.7	100.4 101.7	101.1	7.8 7.9	7.9	7.9	3.4 3.4	3.4	4.3	5.0 5.3	5.2	6.7
				Middle	5.5	19.9 20.0	20.0	8.0 8.0	8.0	30.3 29.9	30.1	101.3 102.4	101.9	7.7 7.8	7.8		2.5 2.6	2.6		7.0 6.7	6.9	
				Bottom	10	19.5 19.7	19.6	8.0 8.0	8.0	31.8 31.1	31.5	99.6 101.0	100.3	7.6 7.7	7.7	7.7	6.7 6.8	6.8		8.0 8.0	8.0	
14-Apr-14	Fine	Moderate	18:38	Surface	1	20.2 20.1	20.2	8.0 8.0	8.0	30.5 31.5	31.0	87.5 88.2	87.9	6.6 6.6	6.6	6.6	8.5 10.0	9.3	10.3	11.7 12.3	12.0	16.7
				Middle	5	19.8 19.8	19.8	8.0 8.0	8.0	30.5 30.4	30.5	85.3 85.2	85.3	6.5 6.5	6.5		11.2 10.4	10.8		15.0 13.0	14.0	
				Bottom	9	19.7 19.8	19.8	8.0 8.0	8.0	30.0 30.1	30.1	83.1 83.6	83.4	6.4 6.4	6.4	6.4	11.0 10.8	10.9		13.3 34.7	24.0	
16-Apr-14	Fine	Calm	19:22	Surface	1	20.2 20.2	20.2	8.1 8.1	8.1	29.8 29.8	29.8	70.0 68.6	69.3	5.3 5.2	5.3	5.2	4.0 4.1	4.1	7.5	5.6 4.4	5.0	5.1
				Middle	5	19.8 19.8	19.8	8.1 8.1	8.1	31.5 31.3	31.4	66.9 65.0	66.0	5.1 4.9	5.0		5.0 5.1	5.1		4.5 5.0	4.8	
				Bottom	9	19.7 19.8	19.8	8.1 8.1	8.1	31.7 31.7	31.7	64.8 63.5	64.2	4.9 4.8	4.9	4.9	12.6 14.0	13.3		3.8 7.1	5.5	
18-Apr-14	Cloudy	Calm	08:18	Surface	1	21.8 21.8	21.8	8.0 8.0	8.0	30.7 30.8	30.8	97.6 97.3	97.5	7.2 7.1	7.2	7.1	7.2 8.4	7.8	8.7	14.8 14.6	14.7	16.1
				Middle	5	21.7 21.8	21.8	8.0 8.0	8.0	30.9 30.9	30.9	95.6 95.6	95.6	7.0 7.0	7.0		8.0 8.4	8.2		15.4 7.2	11.3	
				Bottom	9	21.6 21.7	21.7	8.0 8.0	8.0	31.7 31.2	31.5	95.7 94.9	95.3	7.0 7.0	7.0	7.0	9.1 10.9	10.0		22.0 22.6	22.3	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at ST1 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Apr-14	Fine	Moderate	10:47	Surface	1	23.6 23.6	23.6	7.8 7.8	7.8	26.1 26.1	26.1	95.8 95.8	95.8	7.0 7.0	7.0	6.9	3.3 3.3	3.3	3.5	2.6 4.2	3.4	4.4
				Middle	4.5	23.1 23.1	23.1	7.8 7.8	7.8	28.2 28.2	28.2	93.6 93.8	93.7	6.8 6.8	6.8		3.7 3.4	3.6		4.4 4.4	4.4	
				Bottom	8	22.9 22.9	22.9	7.8 7.8	7.8	29.1 29.2	29.2	91.3 91.1	91.2	6.6 6.6	6.6	6.6	3.4 4.0	3.7		4.4 6.2	5.3	
24-Apr-14	Sunny	Moderate	15:10	Surface	1	20.0 20.0	20.0	8.2 8.2	8.2	32.4 32.4	32.4	80.9 80.9	80.9	6.1 6.1	6.1	6.1	5.1 5.1	5.1	6.0	2.4 3.7	3.1	3.7
				Middle	4.5	20.1 20.1	20.1	8.2 8.2	8.2	32.6 32.6	32.6	80.6 80.6	80.6	6.0 6.0	6.0		5.0 4.9	5.0		3.6 4.1	3.9	
				Bottom	8	20.1 20.1	20.1	8.2 8.2	8.2	32.8 32.8	32.8	80.0 80.0	80.0	6.0 6.0	6.0	6.0	7.9 7.8	7.9		4.4 3.8	4.1	
26-Apr-14	Cloudy	Moderate	17:04	Surface	1	19.7 19.7	19.7	8.0 8.0	8.0	28.6 28.6	28.6	75.6 74.6	75.1	5.8 5.8	5.8	6.0	5.6 5.9	5.8	8.2	6.7 6.3	6.5	6.9
				Middle	4.5	19.6 19.5	19.6	8.0 8.0	8.0	30.2 29.6	29.9	78.7 79.4	79.1	6.0 6.1	6.1		6.9 7.5	7.2		6.7 6.9	6.8	
				Bottom	8	19.5 19.5	19.5	8.0 8.0	8.0	30.5 30.6	30.6	80.7 80.7	80.7	6.2 6.2	6.2	6.2	11.6 11.8	11.7		6.8 7.8	7.3	
28-Apr-14	Fine	Moderate	19:11	Surface	1	23.0 23.0	23.0	7.9 7.9	7.9	29.4 29.4	29.4	98.3 98.1	98.2	7.1 7.1	7.1	7.0	2.2 2.3	2.3	7.8	14.4 5.2	9.8	8.2
				Middle	5	22.2 22.2	22.2	7.9 7.9	7.9	32.2 32.2	32.2	95.6 95.4	95.5	6.9 6.9	6.9		4.6 4.5	4.6		7.1 7.4	7.3	
				Bottom	9	22.1 22.1	22.1	7.9 7.9	7.9	32.7 32.7	32.7	94.2 94.0	94.1	6.8 6.8	6.8	6.8	16.4 16.5	16.5		8.4 6.8	7.6	
30-Apr-14	Cloudy	Moderate	19:33	Surface	1	21.7 21.7	21.7	7.9 7.9	7.9	28.8 28.8	28.8	95.1 95.7	95.4	7.1 7.1	7.1	7.2	3.2 3.2	3.2	4.3	3.4 3.6	3.5	5.0
				Middle	5	21.3 21.3	21.3	8.0 8.0	8.0	30.2 30.2	30.2	97.5 97.8	97.7	7.3 7.3	7.3		2.7 2.6	2.7		5.2 5.3	5.3	
				Bottom	9	21.2 21.1	21.2	8.0 8.0	8.0	31.3 31.4	31.4	97.2 98.5	97.9	7.2 7.3	7.3	7.3	6.8 6.9	6.9		5.1 7.4	6.3	

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at ST2 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
2-Apr-14	Rainy	Moderate	13:47	Surface	1	20.1 20.1	20.1	7.5 7.5	7.5	29.8 29.8	29.8	86.8 86.2	86.5	6.6 6.6	6.6	6.6	16.5 16.9	16.7	17.0	9.8 12.8	11.3	10.7
				Middle	4	20.2 20.1	20.2	7.5 7.5	7.5	29.9 29.9	29.9	85.1 83.9	84.5	6.5 6.4	6.5		17.3 16.5	16.9		13.8 10.8	12.3	
				Bottom	7	20.2 20.2	20.2	7.5 7.5	7.5	30.0 30.0	30.0	82.9 82.4	82.7	6.3 6.3	6.3	6.3	17.5 17.0	17.3		9.0 7.8	8.4	
4-Apr-14	Sunny	Moderate	14:55	Surface	1	20.3 20.3	20.3	7.9 7.9	7.9	27.5 27.1	27.3	87.9 88.8	88.4	6.8 6.8	6.8	6.7	6.2 7.0	6.6	10.0	6.2 5.6	5.9	6.3
				Middle	4	19.8 19.9	19.9	8.0 8.0	8.0	32.4 30.3	31.4	85.9 86.1	86.0	6.5 6.6	6.6		7.9 6.4	7.2		6.8 5.0	5.9	
				Bottom	7	19.6 19.6	19.6	8.0 8.1	8.1	32.6 32.6	32.6	83.3 84.0	83.7	6.3 6.3	6.3	6.3	16.0 16.1	16.1		8.6 5.6	7.1	
7-Apr-14	Fine	Moderate	17:21	Surface	1	18.3 18.3	18.3	7.8 7.8	7.8	25.1 25.1	25.1	92.0 91.9	92.0	7.3 7.3	7.3	7.3	4.3 4.3	4.3	4.2	5.5 4.3	4.9	4.6
				Middle	3.5	18.3 18.3	18.3	7.8 7.8	7.8	25.2 25.2	25.2	91.7 91.8	91.8	7.3 7.3	7.3		4.1 4.0	4.1		4.0 4.6	4.3	
				Bottom	6	18.3 18.3	18.3	7.8 7.8	7.8	26.0 25.7	25.9	87.3 87.2	87.3	6.9 6.9	6.9	6.9	4.3 4.1	4.2		4.7 4.3	4.5	
10-Apr-14	Cloudy	Calm	10:18	Surface	1	21.4 21.4	21.4	7.8 7.8	7.8	21.6 21.6	21.6	101.1 100.2	100.7	7.9 7.8	7.9	7.8	3.7 3.5	3.6	5.3	3.8 4.2	4.0	4.6
				Middle	4	20.0 20.0	20.0	7.8 7.8	7.8	29.8 29.9	29.9	101.1 100.5	100.8	7.7 7.7	7.7		5.3 5.6	5.5		5.0 3.2	4.1	
				Bottom	7	19.9 19.9	19.9	7.8 7.9	7.9	30.8 30.8	30.8	100.1 100.2	100.2	7.6 7.6	7.6	7.6	6.9 6.9	6.9		5.8 5.8	5.8	
12-Apr-14	Cloudy	Calm	11:42	Surface	1	20.9 21.0	21.0	7.6 7.8	7.7	24.1 24.1	24.1	91.0 84.2	87.6	7.1 6.5	6.8	6.8	2.9 3.6	3.3	4.8	6.7 4.3	5.5	5.4
				Middle	4	19.7 19.7	19.7	7.6 7.8	7.7	29.1 29.2	29.2	87.7 84.2	86.0	6.8 6.5	6.7		4.7 5.6	5.2		3.0 5.3	4.2	
				Bottom	7	19.6 19.6	19.6	7.8 7.8	7.8	30.2 30.2	30.2	82.7 81.9	82.3	6.3 6.3	6.3	6.3	5.8 6.0	5.9		6.7 6.3	6.5	
14-Apr-14	Sunny	Moderate	11:43	Surface	1	20.4 20.5	20.5	8.1 8.1	8.1	25.8 25.7	25.8	83.6 88.2	85.9	6.5 6.8	6.7	6.7	5.9 5.7	5.8	7.4	15.0 14.0	14.5	12.4
				Middle	4.5	19.7 19.6	19.7	8.0 8.0	8.0	28.5 29.6	29.1	84.1 87.1	85.6	6.5 6.7	6.6		5.7 5.5	5.6		10.0 11.3	10.7	
				Bottom	8	19.1 19.1	19.1	8.0 8.0	8.0	31.3 31.3	31.3	80.8 82.1	81.5	6.2 6.3	6.3	6.3	11.0 10.8	10.9		13.0 11.0	12.0	
16-Apr-14	Sunny	Moderate	13:32	Surface	1	20.4 20.3	20.4	8.1 8.1	8.1	27.4 27.9	27.7	86.0 83.9	85.0	6.6 6.4	6.5	6.3	3.0 3.1	3.1	7.1	6.0 6.2	6.1	7.3
				Middle	4	20.1 20.0	20.1	8.0 8.0	8.0	29.2 29.4	29.3	82.1 77.3	79.7	6.3 5.9	6.1		7.9 7.0	7.5		5.3 6.0	5.7	
				Bottom	7	19.8 19.8	19.8	8.0 8.0	8.0	30.9 30.9	30.9	76.1 74.6	75.4	5.8 5.7	5.8	5.8	11.3 10.1	10.7		11.2 8.8	10.0	
18-Apr-14	Cloudy	Calm	13:55	Surface	1	22.4 22.4	22.4	7.9 7.9	7.9	25.4 25.8	25.6	85.7 84.7	85.2	6.4 6.3	6.4	6.4	3.0 3.5	3.3	7.9	4.5 4.6	4.6	10.3
				Middle	3.5	22.0 22.0	22.0	8.0 8.0	8.0	29.2 28.9	29.1	84.4 84.9	84.7	6.2 6.3	6.3		9.2 9.2	9.2		6.4 4.3	5.4	
				Bottom	6	21.8 21.7	21.8	8.0 8.0	8.0	30.8 30.9	30.9	83.5 83.4	83.5	6.1 6.1	6.1	6.1	11.5 10.7	11.1		22.2 19.6	20.9	

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at ST2 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Apr-14	Fine	Moderate	17:13	Surface	1	24.6 24.7	24.7	7.9 7.9	7.9	25.0 24.8	24.9	99.7 99.8	99.8	7.2 7.2	7.2	6.9	2.7 2.6	2.7	3.6	4.2 3.4	3.8	3.5
				Middle	5	23.0 23.0	23.0	7.9 7.9	7.9	29.7 29.5	29.6	91.1 91.2	91.2	6.6 6.6	6.6		2.7 2.3	2.5		3.2 3.0	3.1	
				Bottom	9	22.6 22.6	22.6	7.8 7.8	7.8	31.2 31.2	31.2	89.4 89.3	89.4	6.5 6.4	6.5	6.5	5.4 5.7	5.6		3.4 3.8	3.6	
24-Apr-14	Sunny	Moderate	08:45	Surface	1	21.2 21.2	21.2	8.0 8.0	8.0	28.5 28.5	28.5	72.0 73.0	72.5	5.4 5.5	5.5	5.5	2.3 2.3	2.3	2.7	4.7 5.9	5.3	4.0
				Middle	4	21.1 21.1	21.1	8.0 8.1	8.1	30.3 30.4	30.4	72.8 72.8	72.8	5.4 5.4	5.4		2.3 2.3	2.3		3.7 3.5	3.6	
				Bottom	7	20.9 20.9	20.9	8.1 8.1	8.1	31.8 31.8	31.8	72.1 71.9	72.0	5.3 5.3	5.3	5.3	3.4 3.4	3.4		2.7 3.5	3.1	
26-Apr-14	Cloudy	Moderate	11:05	Surface	1	22.2 22.2	22.2	8.0 8.0	8.0	30.6 29.9	30.3	88.3 88.2	88.3	6.4 6.5	6.5	6.6	3.1 3.0	3.1	4.4	5.8 4.2	5.0	6.7
				Middle	4	22.1 22.0	22.1	8.0 8.0	8.0	31.2 31.2	31.2	92.2 91.6	91.9	6.7 6.7	6.7		2.9 3.4	3.2		7.1 5.3	6.2	
				Bottom	7	21.7 21.7	21.7	8.0 8.0	8.0	32.3 32.2	32.3	89.0 91.1	90.1	6.5 6.6	6.6	6.6	7.4 6.6	7.0		9.4 8.3	8.9	
28-Apr-14	Sunny	Moderate	12:05	Surface	1	23.1 23.0	23.1	7.8 7.8	7.8	29.2 29.2	29.2	97.6 97.7	97.7	7.1 7.1	7.1	7.0	2.6 2.6	2.6	6.6	6.5 6.7	6.6	5.9
				Middle	4	22.5 22.4	22.5	7.8 7.8	7.8	30.9 31.3	31.1	95.6 95.7	95.7	6.9 6.9	6.9		5.6 5.4	5.5		3.8 5.1	4.5	
				Bottom	7	22.1 22.1	22.1	7.8 7.8	7.8	32.7 32.7	32.7	95.1 95.5	95.3	6.9 6.9	6.9	6.9	12.2 11.3	11.8		6.8 6.1	6.5	
30-Apr-14	Fine	Moderate	13:30	Surface	1	22.2 22.2	22.2	8.0 8.0	8.0	26.9 26.6	26.8	93.8 95.2	94.5	7.0 7.1	7.1	7.2	3.6 3.7	3.7	5.5	3.8 4.5	4.2	4.8
				Middle	4	21.4 21.4	21.4	8.0 8.0	8.0	30.8 30.9	30.9	97.8 97.7	97.8	7.2 7.2	7.2		5.2 4.7	5.0		4.2 5.5	4.9	
				Bottom	7	21.3 21.3	21.3	8.0 8.0	8.0	31.2 31.2	31.2	97.6 97.9	97.8	7.2 7.2	7.2	7.2	7.6 8.2	7.9		5.5 5.2	5.4	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at ST2 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
2-Apr-14	Rainy	Moderate	07:53	Surface	1	20.0 20.0	20.0	7.6 7.6	7.6	29.7 29.7	29.7	101.3 97.0	99.2	7.7 7.4	7.6	7.1	12.5 12.5	12.5	14.5	20.0 19.3	19.7	18.0
				Middle	4	20.1 20.1	20.1	7.6 7.6	7.6	29.8 29.8	29.8	85.2 83.5	84.4	6.5 6.4	6.5		12.8 14.8	13.8		16.7 14.0	15.4	
				Bottom	7	20.1 20.1	20.1	7.6 7.6	7.6	29.9 29.9	29.9	77.9 76.4	77.2	5.9 5.8	5.9	5.9	17.5 16.8	17.2		18.0 19.7	18.9	
4-Apr-14	Sunny	Moderate	09:27	Surface	1	20.2 20.2	20.2	7.7 7.7	7.7	27.5 27.4	27.5	88.2 87.8	88.0	6.8 6.8	6.8	6.7	7.7 8.4	8.1	11.8	11.0 7.0	9.0	7.1
				Middle	4	20.0 20.1	20.1	8.0 7.9	8.0	29.9 29.1	29.5	86.8 86.0	86.4	6.6 6.6	6.6		7.5 7.7	7.6		5.4 7.0	6.2	
				Bottom	7	19.7 19.7	19.7	8.1 8.1	8.1	29.0 29.2	29.1	81.8 81.3	81.6	6.3 6.3	6.3	6.3	19.6 19.7	19.7		5.6 6.6	6.1	
7-Apr-14	Fine	Moderate	10:11	Surface	1	18.3 18.3	18.3	7.8 7.8	7.8	25.1 25.1	25.1	91.9 92.2	92.1	7.2 7.2	7.2	7.2	4.1 4.1	4.1	4.5	8.4 8.6	8.5	7.2
				Middle	3.5	18.3 18.3	18.3	7.8 7.8	7.8	25.3 25.3	25.3	91.6 91.5	91.6	7.2 7.2	7.2		4.4 3.9	4.2		6.7 9.0	7.9	
				Bottom	6	18.4 18.3	18.4	7.9 7.8	7.9	28.6 25.8	27.2	87.9 86.7	87.3	6.7 6.8	6.8	6.8	5.4 4.9	5.2		4.7 5.7	5.2	
10-Apr-14	Cloudy	Calm	15:47	Surface	1	21.1 21.1	21.1	7.7 7.7	7.7	24.0 24.0	24.0	100.6 100.4	100.5	7.8 7.8	7.8	7.6	3.7 3.6	3.7	4.6	4.8 4.2	4.5	4.7
				Middle	4	20.7 20.7	20.7	7.6 7.6	7.6	24.5 24.5	24.5	94.8 93.9	94.4	7.4 7.3	7.4		5.3 6.0	5.7		3.8 4.0	3.9	
				Bottom	7	19.9 20.0	20.0	7.8 7.8	7.8	30.7 29.0	29.9	94.1 93.6	93.9	7.2 7.2	7.2	7.2	4.7 4.3	4.5		4.8 6.6	5.7	
12-Apr-14	Cloudy	Calm	16:24	Surface	1	21.2 21.0	21.1	7.9 7.9	7.9	23.8 24.1	24.0	90.1 88.2	89.2	7.0 6.8	6.9	6.8	2.8 2.8	2.8	5.0	6.4 8.4	7.4	6.6
				Middle	4	19.7 19.7	19.7	7.9 7.9	7.9	29.3 29.4	29.4	84.2 86.4	85.3	6.5 6.6	6.6		5.5 5.7	5.6		7.6 5.0	6.3	
				Bottom	7	19.6 19.6	19.6	7.9 7.9	7.9	30.4 30.5	30.5	82.3 83.0	82.7	6.3 6.4	6.4	6.4	6.5 6.7	6.6		6.7 5.7	6.2	
14-Apr-14	Fine	Moderate	18:09	Surface	1	20.6 20.6	20.6	7.9 7.9	7.9	28.9 29.0	29.0	92.2 92.8	92.5	7.0 7.0	7.0	6.8	8.9 9.9	9.4	12.1	18.7 20.3	19.5	16.7
				Middle	4	20.3 20.3	20.3	7.9 7.9	7.9	30.1 30.0	30.1	86.1 86.2	86.2	6.5 6.5	6.5		11.9 12.1	12.0		16.3 18.0	17.2	
				Bottom	7	20.1 20.2	20.2	7.9 7.9	7.9	30.8 30.5	30.7	84.3 82.3	83.3	6.4 6.2	6.3	6.3	15.1 14.7	14.9		11.7 15.0	13.4	
16-Apr-14	Fine	Calm	19:08	Surface	1	20.4 20.4	20.4	8.1 8.1	8.1	27.4 27.4	27.4	77.1 74.7	75.9	5.9 5.7	5.8	5.7	3.1 3.1	3.1	7.4	5.4 4.6	5.0	6.8
				Middle	4	20.1 20.1	20.1	8.0 8.0	8.0	29.2 29.3	29.3	73.0 71.6	72.3	5.6 5.5	5.6		7.2 7.7	7.5		6.1 5.4	5.8	
				Bottom	7	19.8 19.8	19.8	8.0 8.0	8.0	30.9 30.9	30.9	71.2 70.4	70.8	5.4 5.4	5.4	5.4	11.4 11.8	11.6		8.9 10.0	9.5	
18-Apr-14	Cloudy	Calm	08:03	Surface	1	22.3 22.4	22.4	7.9 7.9	7.9	25.7 25.5	25.6	83.3 83.5	83.4	6.2 6.3	6.3	6.3	3.9 4.3	4.1	6.1	4.8 5.0	4.9	8.3
				Middle	4	22.0 22.0	22.0	8.0 8.0	8.0	29.0 29.2	29.1	83.9 84.4	84.2	6.2 6.2	6.2		5.0 5.4	5.2		8.4 6.5	7.5	
				Bottom	7	21.8 21.8	21.8	8.0 8.0	8.0	30.7 30.7	30.7	84.0 83.2	83.6	6.2 6.1	6.2	6.2	8.9 8.8	8.9		12.6 12.2	12.4	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at ST2 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Apr-14	Fine	Moderate	10:38	Surface	1	23.7 23.7	23.7	7.8 7.8	7.8	24.4 24.3	24.4	88.7 88.5	88.6	6.5 6.5	6.5	6.5	3.2 2.9	3.1	3.9	4.0 4.8	4.4	4.3
				Middle	4.5	23.2 23.2	23.2	7.8 7.8	7.8	26.7 26.7	26.7	88.3 88.3	88.3	6.5 6.5	6.5		3.2 3.2	3.2		4.0 3.3	3.7	
				Bottom	8	22.7 22.7	22.7	7.9 7.9	7.9	30.3 30.3	30.3	88.6 88.9	88.8	6.4 6.4	6.4	6.4	4.9 5.6	5.3		4.7 5.0	4.9	
24-Apr-14	Sunny	Moderate	15:03	Surface	1	20.0 20.0	20.0	8.1 8.1	8.1	32.3 32.3	32.3	83.2 83.4	83.3	6.3 6.3	6.3	6.3	7.0 7.1	7.1	6.8	4.8 3.3	4.1	5.0
				Middle	4	20.0 20.0	20.0	8.1 8.1	8.1	32.4 32.4	32.4	82.6 82.6	82.6	6.2 6.2	6.2		7.0 7.1	7.1		5.7 2.5	4.1	
				Bottom	7	20.1 20.1	20.1	8.1 8.1	8.1	32.6 32.6	32.6	81.4 81.4	81.4	6.1 6.1	6.1	6.1	6.3 6.3	6.3		4.3 9.1	6.7	
26-Apr-14	Cloudy	Moderate	16:55	Surface	1	19.7 19.7	19.7	8.0 8.0	8.0	28.4 29.1	28.8	83.0 83.1	83.1	6.4 6.4	6.4	6.6	5.5 4.9	5.2	8.5	7.6 4.5	6.1	5.2
				Middle	3	19.6 19.6	19.6	8.0 8.0	8.0	29.7 29.7	29.7	90.2 87.6	88.9	6.9 6.7	6.8		6.0 5.7	5.9		4.1 4.5	4.3	
				Bottom	5	19.2 19.3	19.3	8.0 8.0	8.0	30.8 31.0	30.9	88.3 87.9	88.1	6.8 6.7	6.8	6.8	14.0 14.5	14.3		6.1 4.3	5.2	
28-Apr-14	Fine	Moderate	18:55	Surface	1	23.2 23.2	23.2	7.8 7.8	7.8	28.5 28.5	28.5	96.5 96.5	96.5	7.0 7.0	7.0	7.0	2.6 2.4	2.5	9.2	6.0 3.6	4.8	6.2
				Middle	4	22.2 22.2	22.2	7.8 7.8	7.8	31.8 31.8	31.8	95.7 95.5	95.6	6.9 6.9	6.9		3.8 3.7	3.8		6.1 6.3	6.2	
				Bottom	7	22.1 22.1	22.1	7.8 7.8	7.8	32.7 32.7	32.7	94.7 94.6	94.7	6.8 6.8	6.8	6.8	21.7 21.0	21.4		5.9 9.2	7.6	
30-Apr-14	Cloudy	Moderate	19:18	Surface	1	21.4 21.4	21.4	7.9 7.9	7.9	29.5 29.5	29.5	98.1 98.8	98.5	7.3 7.4	7.4	7.5	3.1 2.8	3.0	4.4	4.2 4.2	4.2	4.8
				Middle	4	21.1 21.0	21.1	7.9 7.9	7.9	30.9 31.0	31.0	100.4 100.2	100.3	7.5 7.5	7.5		3.3 3.2	3.3		5.0 4.1	4.6	
				Bottom	7	21.0 21.0	21.0	7.9 7.9	7.9	31.4 31.3	31.4	100.4 100.3	100.4	7.5 7.5	7.5	7.5	7.1 6.9	7.0		5.0 6.4	5.7	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at ST3 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
2-Apr-14	Rainy	Moderate	13:23	Surface	1	20.6 20.6	20.6	7.5 7.6	7.6	29.1 30.6	29.9	82.6 77.2	79.9	6.3 5.8	6.1	6.0	8.9 9.0	9.0	9.2	8.6 8.8	8.7	8.7
				Middle	7	20.6 20.8	20.7	7.5 7.6	7.6	29.1 31.2	30.2	82.5 71.9	77.2	6.3 5.4	5.9		11.0 11.2	11.1		7.4 10.0	8.7	
				Bottom	13	20.6 20.6	20.6	7.5 7.5	7.5	29.1 29.1	29.1	79.5 79.7	79.6	6.0 6.0	6.0	6.0	7.6 7.4	7.5		9.4 8.2	8.8	
4-Apr-14	Sunny	Moderate	13:23	Surface	1	20.2 20.2	20.2	8.1 8.1	8.1	28.2 28.2	28.2	94.2 94.2	94.2	7.2 7.2	7.2	7.2	15.3 15.3	15.3	16.2	9.8 11.8	10.8	11.7
				Middle	3	19.6 19.6	19.6	8.1 8.1	8.1	28.2 28.2	28.2	92.4 92.2	92.3	7.2 7.2	7.2		16.2 16.2	16.2		13.2 12.4	12.8	
				Bottom	5	19.3 19.3	19.3	8.1 8.1	8.1	28.2 28.2	28.2	86.7 86.7	86.7	6.8 6.8	6.8	6.8	16.9 17.0	17.0		11.6 11.6	11.6	
7-Apr-14	Fine	Moderate	17:42	Surface	1	18.4 18.4	18.4	7.9 7.9	7.9	28.9 28.8	28.9	88.3 88.3	88.3	7.0 7.0	7.0	7.3	7.4 7.0	7.2	10.9	5.6 5.4	5.5	5.9
				Middle	6.5	18.3 18.3	18.3	7.9 7.9	7.9	31.8 31.8	31.8	97.1 97.1	97.1	7.6 7.6	7.6		15.7 16.6	16.2		4.9 6.7	5.8	
				Bottom	12	18.3 18.3	18.3	7.9 7.9	7.9	31.7 31.8	31.8	92.7 92.8	92.8	7.2 7.2	7.2	7.2	9.0 9.7	9.4		6.3 6.4	6.4	
10-Apr-14	Cloudy	Calm	11:10	Surface	1	19.8 19.8	19.8	7.9 7.9	7.9	23.2 22.6	22.9	78.9 80.2	79.6	6.3 6.4	6.4	6.5	3.3 3.1	3.2	4.0	7.0 4.0	5.5	5.7
				Middle	7	18.2 18.1	18.2	8.0 8.0	8.0	32.7 32.7	32.7	83.6 83.4	83.5	6.5 6.5	6.5		4.3 4.3	4.3		5.3 6.7	6.0	
				Bottom	13	18.1 18.1	18.1	8.0 8.0	8.0	32.9 33.0	33.0	83.3 83.9	83.6	6.5 6.5	6.5	6.5	4.5 4.7	4.6		6.7 4.7	5.7	
12-Apr-14	Cloudy	Calm	11:50	Surface	1	21.6 21.6	21.6	8.0 8.0	8.0	27.7 27.7	27.7	95.5 95.9	95.7	7.2 7.2	7.2	7.2	4.0 3.7	3.9	6.2	2.7 2.8	2.8	3.1
				Middle	7	21.0 21.0	21.0	8.0 8.0	8.0	29.9 29.9	29.9	95.3 94.7	95.0	7.1 7.1	7.1		4.7 4.7	4.7		3.3 3.3	3.3	
				Bottom	13	20.6 20.6	20.6	7.9 7.9	7.9	32.0 31.9	32.0	91.5 90.3	90.9	6.8 6.7	6.8	6.8	9.5 10.2	9.9		4.0 2.6	3.3	
14-Apr-14	Sunny	Moderate	12:50	Surface	1	21.2 21.1	21.2	7.9 7.9	7.9	31.2 31.6	31.4	93.1 94.7	93.9	6.9 7.0	7.0	7.1	11.2 11.8	11.5	11.7	15.0 15.3	15.2	14.0
				Middle	5	20.6 20.6	20.6	7.9 7.9	7.9	32.4 32.4	32.4	96.4 95.6	96.0	7.2 7.1	7.2		11.7 11.6	11.7		12.7 14.3	13.5	
				Bottom	9	20.0 20.0	20.0	7.9 7.9	7.9	30.9 31.0	31.0	92.8 90.3	91.6	7.0 6.8	6.9	6.9	12.0 11.7	11.9		15.0 11.3	13.2	
16-Apr-14	Sunny	Moderate	13:44	Surface	1	19.9 20.4	20.2	8.0 8.0	8.0	29.7 28.7	29.2	92.7 92.0	92.4	7.1 7.0	7.1	6.7	6.6 6.8	6.7	12.9	13.6 11.4	12.5	12.1
				Middle	6	19.8 19.8	19.8	8.0 8.0	8.0	30.2 30.2	30.2	80.4 81.1	80.8	6.1 6.2	6.2		13.4 13.9	13.7		11.0 11.6	11.3	
				Bottom	11	19.8 19.8	19.8	8.0 8.0	8.0	30.3 30.3	30.3	88.1 87.2	87.7	6.7 6.7	6.7	6.7	17.2 19.5	18.4		12.0 12.8	12.4	
18-Apr-14	Cloudy	Calm	14:15	Surface	1	22.9 22.9	22.9	7.8 7.8	7.8	21.6 21.6	21.6	85.6 85.4	85.5	6.5 6.5	6.5	6.4	5.0 4.9	5.0	7.8	2.6 4.2	3.4	3.5
				Middle	7	22.6 22.5	22.6	7.8 7.9	7.9	25.6 26.1	25.9	84.5 84.7	84.6	6.3 6.3	6.3		8.6 7.3	8.0		3.9 4.0	4.0	
				Bottom	13	22.3 22.2	22.3	7.9 7.9	7.9	28.2 28.4	28.3	85.3 85.4	85.4	6.3 6.3	6.3	6.3	10.6 10.2	10.4		3.2 3.2	3.2	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at ST3 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Apr-14	Fine	Moderate	17:06	Surface	1	23.2 23.2	23.2	7.9 7.9	7.9	27.2 27.3	27.3	82.5 81.6	82.1	6.0 6.0	6.0	5.7	1.7 2.1	1.9	3.0	3.2 3.4	3.3	4.3
				Middle	6	21.9 21.9	21.9	7.9 7.9	7.9	31.6 31.4	31.5	72.1 71.0	71.6	5.3 5.2	5.3		3.4 3.9	3.7		2.8 9.1	6.0	
				Bottom	11	21.8 21.8	21.8	7.9 7.9	7.9	32.2 32.2	32.2	69.3 69.2	69.3	5.1 5.0	5.1	5.1	3.3 3.2	3.3		4.2 3.2	3.7	
24-Apr-14	Sunny	Moderate	09:16	Surface	1	20.9 20.9	20.9	8.1 8.1	8.1	29.6 29.6	29.6	77.0 75.7	76.4	5.8 5.7	5.8	5.8	2.8 3.1	3.0	5.2	2.8 3.5	3.2	3.8
				Middle	7	20.4 20.4	20.4	8.1 8.1	8.1	32.5 32.4	32.5	77.1 77.1	77.1	5.8 5.8	5.8		5.1 5.1	5.1		3.4 3.8	3.6	
				Bottom	13	20.4 20.4	20.4	8.1 8.1	8.1	32.5 32.5	32.5	80.1 81.6	80.9	6.0 6.1	6.1	6.1	7.5 7.5	7.5		5.9 3.4	4.7	
26-Apr-14	Cloudy	Moderate	12:15	Surface	1	21.5 21.5	21.5	8.0 8.0	8.0	30.9 30.9	30.9	95.3 95.3	95.3	7.0 7.0	7.0	7.0	10.2 10.2	10.2	9.8	5.8 9.0	7.4	7.5
				Middle	5.5	21.4 21.4	21.4	8.0 8.0	8.0	31.3 31.3	31.3	95.0 95.0	95.0	7.0 7.0	7.0		6.9 6.9	6.9		7.6 7.2	7.4	
				Bottom	10	21.2 21.2	21.2	8.0 8.0	8.0	31.9 31.9	31.9	94.7 94.7	94.7	7.0 7.0	7.0	7.0	12.0 12.3	12.2		8.4 7.0	7.7	
28-Apr-14	Sunny	Moderate	13:05	Surface	1	23.3 24.5	23.9	7.8 7.8	7.8	30.8 27.2	29.0	85.9 87.7	86.8	6.1 6.3	6.2	6.2	4.4 4.4	4.4	6.3	4.6 3.6	4.1	4.4
				Middle	5.5	23.3 24.5	23.9	7.8 7.8	7.8	30.8 27.1	29.0	85.6 86.9	86.3	6.1 6.2	6.2		5.6 6.7	6.2		4.0 4.0	4.0	
				Bottom	10	23.3 24.5	23.9	7.8 7.8	7.8	30.7 27.2	29.0	85.9 85.5	85.7	6.1 6.1	6.1	6.1	8.0 8.7	8.4		4.8 5.2	5.0	
30-Apr-14	Fine	Moderate	13:20	Surface	1	21.9 21.9	21.9	8.0 8.0	8.0	28.3 28.3	28.3	93.8 93.4	93.6	7.0 6.9	7.0	7.0	5.5 5.9	5.7	6.3	5.0 6.0	5.5	4.5
				Middle	7	21.7 21.7	21.7	8.1 8.1	8.1	29.3 29.5	29.4	94.6 93.9	94.3	7.0 7.0	7.0		6.7 6.2	6.5		3.5 5.1	4.3	
				Bottom	13	21.7 21.7	21.7	8.1 8.1	8.1	29.4 29.6	29.5	93.5 92.9	93.2	6.9 6.9	6.9	6.9	6.7 6.6	6.7		3.2 4.2	3.7	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at ST3 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
2-Apr-14	Rainy	Moderate	09:01	Surface	1	20.4 20.4	20.4	7.6 7.6	7.6	29.4 29.4	29.4	60.5 60.1	60.3	4.6 4.6	4.6	5.2	21.7 21.7	21.7	17.3	9.4 8.2	8.8	8.1
				Middle	6	20.4 20.4	20.4	7.5 7.5	7.5	28.6 28.5	28.6	74.9 75.1	75.0	5.7 5.7	5.7		14.1 13.5	13.8		7.6 8.2	7.9	
				Bottom	11	20.4 20.4	20.4	7.6 7.5	7.6	29.1 28.5	28.8	71.2 75.2	73.2	5.4 5.7	5.6	5.6	16.2 16.5	16.4		7.8 7.2	7.5	
4-Apr-14	Sunny	Moderate	09:50	Surface	1	19.9 19.8	19.9	8.1 8.1	8.1	28.2 28.2	28.2	84.9 84.8	84.9	6.6 6.6	6.6	6.6	16.1 18.9	17.5	16.0	5.2 5.2	5.2	5.4
				Middle	3.5	19.4 19.4	19.4	8.1 8.1	8.1	28.2 28.2	28.2	83.3 83.0	83.2	6.5 6.5	6.5		14.7 14.7	14.7		5.0 5.4	5.2	
				Bottom	6	19.4 19.4	19.4	8.1 8.1	8.1	26.7 28.2	27.5	81.6 82.3	82.0	6.4 6.4	6.4	6.4	15.7 15.6	15.7		6.4 5.4	5.9	
7-Apr-14	Fine	Moderate	10:52	Surface	1	18.6 18.6	18.6	7.7 7.8	7.8	24.7 24.7	24.7	97.6 97.0	97.3	7.9 7.8	7.9	7.7	9.8 9.8	9.8	8.5	5.4 6.6	6.0	6.1
				Middle	6	18.3 18.3	18.3	7.9 7.9	7.9	30.6 30.5	30.6	93.5 94.2	93.9	7.3 7.4	7.4		7.1 6.6	6.9		6.1 5.4	5.8	
				Bottom	11	18.3 18.3	18.3	7.9 7.9	7.9	31.7 31.8	31.8	99.3 98.8	99.1	7.7 7.7	7.7	7.7	8.6 9.0	8.8		6.9 6.0	6.5	
10-Apr-14	Cloudy	Calm	15:15	Surface	1	19.7 19.7	19.7	7.9 7.9	7.9	26.8 26.7	26.8	92.9 92.7	92.8	7.3 7.2	7.3	7.1	3.7 4.0	3.9	4.0	5.6 6.4	6.0	4.2
				Middle	5.5	19.4 19.2	19.3	7.9 7.9	7.9	28.6 29.0	28.8	90.4 87.5	89.0	7.0 6.8	6.9		3.9 3.7	3.8		4.6 3.0	3.8	
				Bottom	10	18.5 18.4	18.5	7.9 7.9	7.9	31.2 31.5	31.4	87.3 85.7	86.5	6.8 6.7	6.8	6.8	4.3 4.5	4.4		2.6 3.0	2.8	
12-Apr-14	Cloudy	Calm	17:05	Surface	1	21.2 21.2	21.2	7.8 7.8	7.8	28.1 28.1	28.1	87.3 87.6	87.5	6.6 6.6	6.6	6.7	3.5 3.8	3.7	6.8	5.8 5.0	5.4	4.2
				Middle	6.5	20.5 20.4	20.5	7.8 7.8	7.8	30.7 30.8	30.8	88.8 88.4	88.6	6.7 6.7	6.7		4.9 5.6	5.3		4.7 4.3	4.5	
				Bottom	12	20.0 20.0	20.0	7.8 7.8	7.8	32.9 32.9	32.9	84.9 83.2	84.1	6.4 6.2	6.3	6.3	11.2 11.8	11.5		2.6 2.7	2.7	
14-Apr-14	Fine	Moderate	17:31	Surface	1	20.9 20.9	20.9	7.8 7.8	7.8	29.8 29.9	29.9	89.1 85.4	87.3	6.7 6.4	6.6	6.7	9.7 10.1	9.9	10.5	11.3 9.0	10.2	12.0
				Middle	5.5	20.7 20.8	20.8	7.8 7.8	7.8	30.8 30.6	30.7	92.5 88.6	90.6	6.9 6.6	6.8		10.3 11.0	10.7		11.3 7.3	9.3	
				Bottom	10	20.6 20.7	20.7	7.8 7.9	7.9	31.5 31.5	31.5	88.4 80.0	84.2	6.6 6.0	6.3	6.3	11.1 10.9	11.0		19.0 14.0	16.5	
16-Apr-14	Fine	Calm	19:17	Surface	1	19.9 19.9	19.9	8.0 8.0	8.0	29.9 29.9	29.9	71.9 70.5	71.2	5.5 5.4	5.5	5.7	7.7 7.9	7.8	14.2	18.2 15.0	16.6	15.4
				Middle	6.5	19.8 19.8	19.8	8.0 8.0	8.0	30.2 30.2	30.2	77.2 77.5	77.4	5.9 5.9	5.9		17.0 15.3	16.2		11.4 10.4	10.9	
				Bottom	12	19.8 19.8	19.8	8.0 8.0	8.0	30.3 30.3	30.3	93.1 91.0	92.1	7.1 7.0	7.1	7.1	18.5 18.4	18.5		19.6 17.8	18.7	
18-Apr-14	Cloudy	Calm	08:20	Surface	1	22.8 22.8	22.8	7.8 7.8	7.8	21.7 21.7	21.7	78.8 79.2	79.0	6.0 6.0	6.0	5.9	3.3 3.5	3.4	5.5	4.4 3.8	4.1	3.4
				Middle	6.5	22.6 22.7	22.7	7.9 7.9	7.9	25.4 25.1	25.3	77.8 78.0	77.9	5.8 5.8	5.8		4.0 4.1	4.1		3.1 4.2	3.7	
				Bottom	12	22.3 22.2	22.3	8.0 8.0	8.0	28.1 28.1	28.1	78.9 78.9	78.9	5.8 5.8	5.8	5.8	8.7 9.5	9.1		2.1 2.7	2.4	

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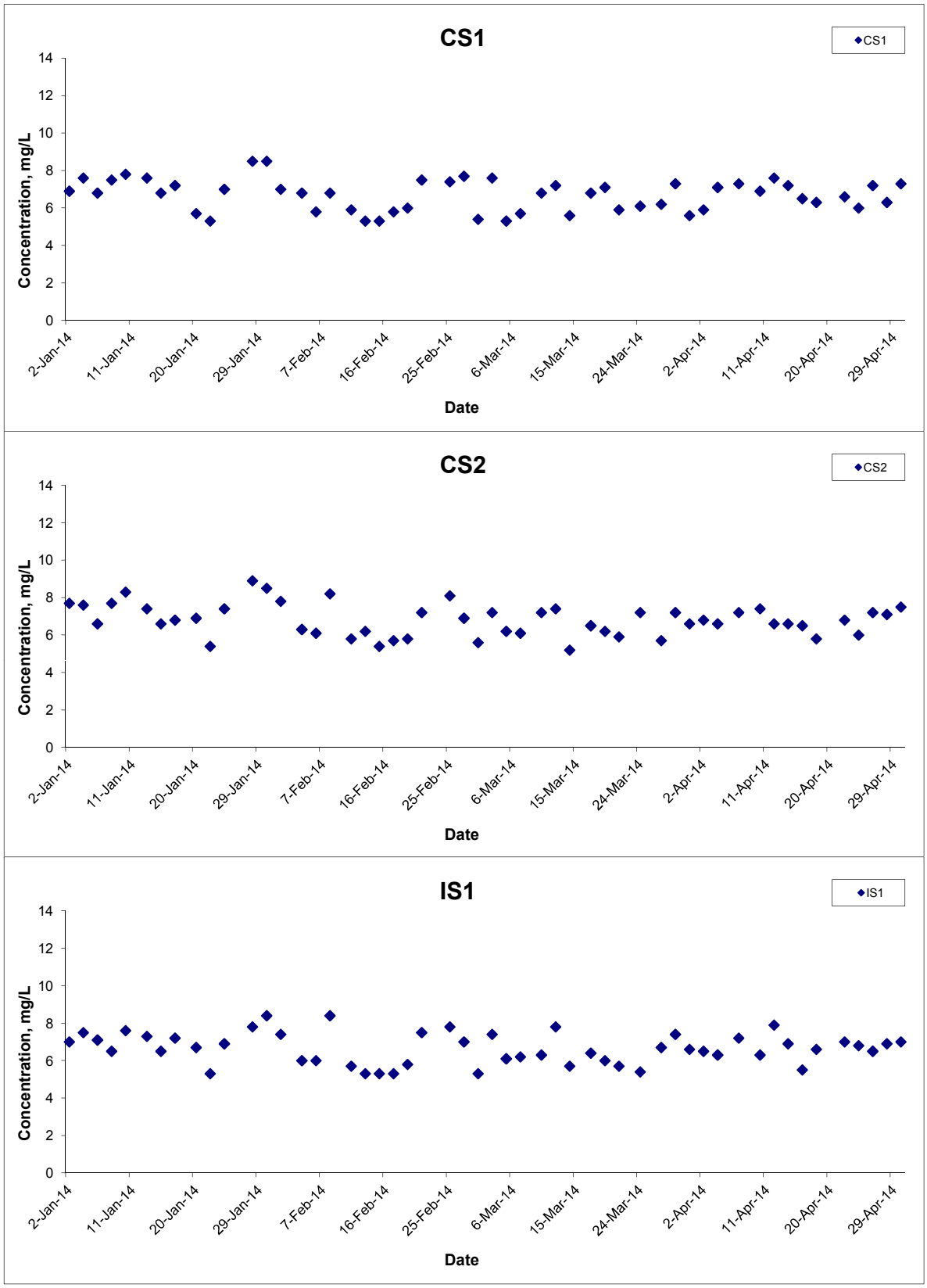
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Apr-14	Fine	Moderate	12:20	Surface	1	22.8 23.1	23.0	7.8 7.8	7.8	27.4 27.0	27.2	92.1 90.6	91.4	6.8 6.6	6.7	6.7	2.3 2.1	2.2	3.0	6.6 6.0	6.3	4.9
				Middle	6	22.1 22.1	22.1	7.9 7.9	7.9	30.5 30.4	30.5	90.3 89.2	89.8	6.6 6.5	6.6		2.9 2.7	2.8		4.6 3.6	4.1	
				Bottom	11	21.8 21.8	21.8	7.9 7.9	7.9	31.9 32.1	32.0	87.9 88.4	88.2	6.4 6.4	6.4	6.4	4.0 4.1	4.1		4.6 4.2	4.4	
24-Apr-14	Sunny	Moderate	13:45	Surface	1	20.8 20.9	20.9	8.1 8.1	8.1	30.1 29.7	29.9	84.3 81.8	83.1	6.3 6.1	6.2	6.0	3.2 3.1	3.2	4.3	3.7 4.1	3.9	3.4
				Middle	6.5	20.4 20.4	20.4	8.1 8.1	8.1	32.4 32.4	32.4	78.0 76.8	77.4	5.8 5.7	5.8		4.9 5.2	5.1		3.8 3.3	3.6	
				Bottom	12	20.4 20.4	20.4	8.1 8.1	8.1	32.4 32.5	32.5	80.7 81.4	81.1	6.0 6.1	6.1	6.1	4.6 4.8	4.7		3.3 2.3	2.8	
26-Apr-14	Cloudy	Moderate	16:37	Surface	1	22.0 21.9	22.0	8.0 8.0	8.0	32.7 33.0	32.9	100.0 99.9	100.0	7.2 7.2	7.2	7.2	3.6 3.5	3.6	6.6	11.0 13.1	12.1	9.1
				Middle	5.5	22.0 21.8	21.9	8.0 8.0	8.0	32.8 33.0	32.9	99.1 98.7	98.9	7.2 7.2	7.2		5.4 5.5	5.5		8.2 8.6	8.4	
				Bottom	10	21.8 21.8	21.8	8.0 8.0	8.0	33.0 33.0	33.0	93.5 93.5	93.5	6.8 6.8	6.8	6.8	10.7 10.7	10.7		7.6 6.0	6.8	
28-Apr-14	Fine	Moderate	17:45	Surface	1	24.1 24.5	24.3	7.7 7.8	7.8	27.4 27.5	27.5	84.6 91.1	87.9	6.1 6.5	6.3	6.3	8.4 9.3	8.9	12.2	5.8 6.5	6.2	5.3
				Middle	5.5	24.1 24.4	24.3	7.8 7.8	7.8	27.4 27.5	27.5	84.6 91.4	88.0	6.1 6.5	6.3		11.8 11.9	11.9		4.9 4.8	4.9	
				Bottom	10	24.1 24.7	24.4	7.8 7.8	7.8	27.4 27.3	27.4	84.6 91.5	88.1	6.1 6.5	6.3	6.3	15.0 16.5	15.8		5.2 4.3	4.8	
30-Apr-14	Cloudy	Moderate	19:25	Surface	1	21.9 21.9	21.9	8.0 8.0	8.0	28.2 28.4	28.3	94.2 93.0	93.6	7.0 6.9	7.0	7.0	4.7 4.5	4.6	5.2	6.8 6.7	6.8	7.5
				Middle	5.5	21.8 21.7	21.8	8.1 8.1	8.1	29.2 29.4	29.3	95.2 93.5	94.4	7.1 6.9	7.0		5.7 5.5	5.6		6.8 7.7	7.3	
				Bottom	10	21.7 21.7	21.7	8.1 8.1	8.1	29.5 29.5	29.5	93.1 93.1	93.1	6.9 6.9	6.9	6.9	5.4 5.2	5.3		8.2 8.5	8.4	

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA12014	CINOTECH
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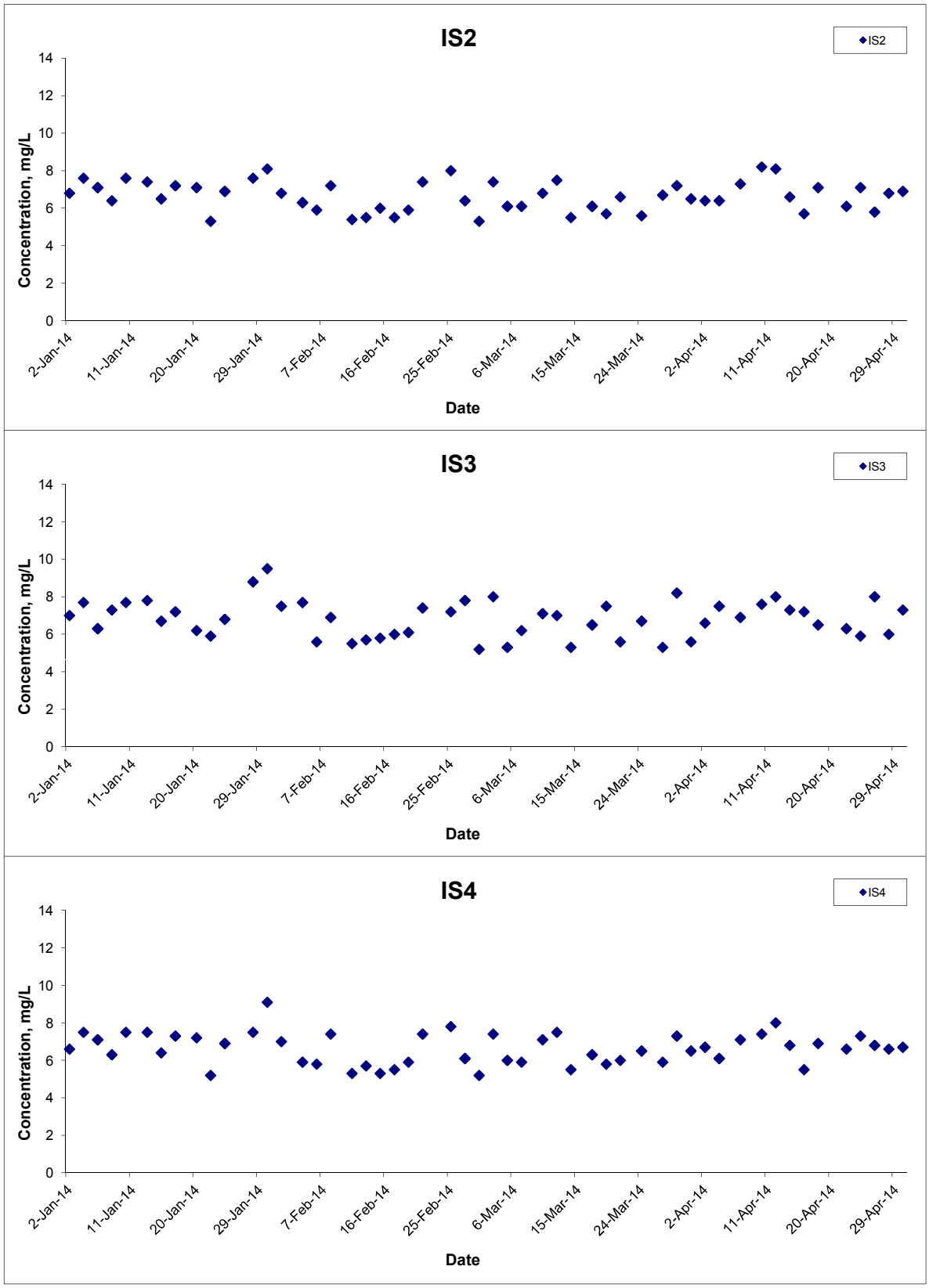
Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA12014	CINOTECH
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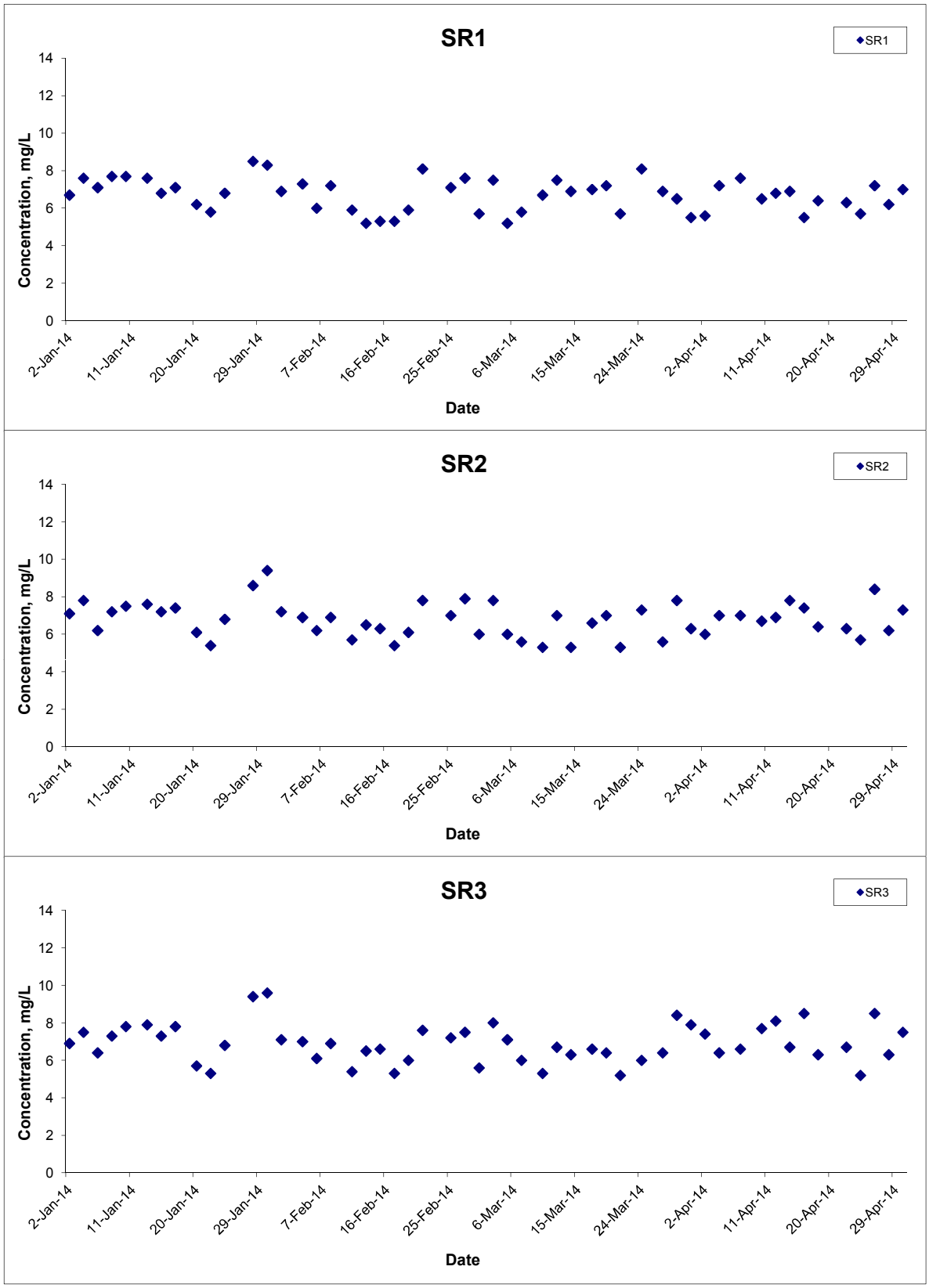
Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA12014	CINOTECH
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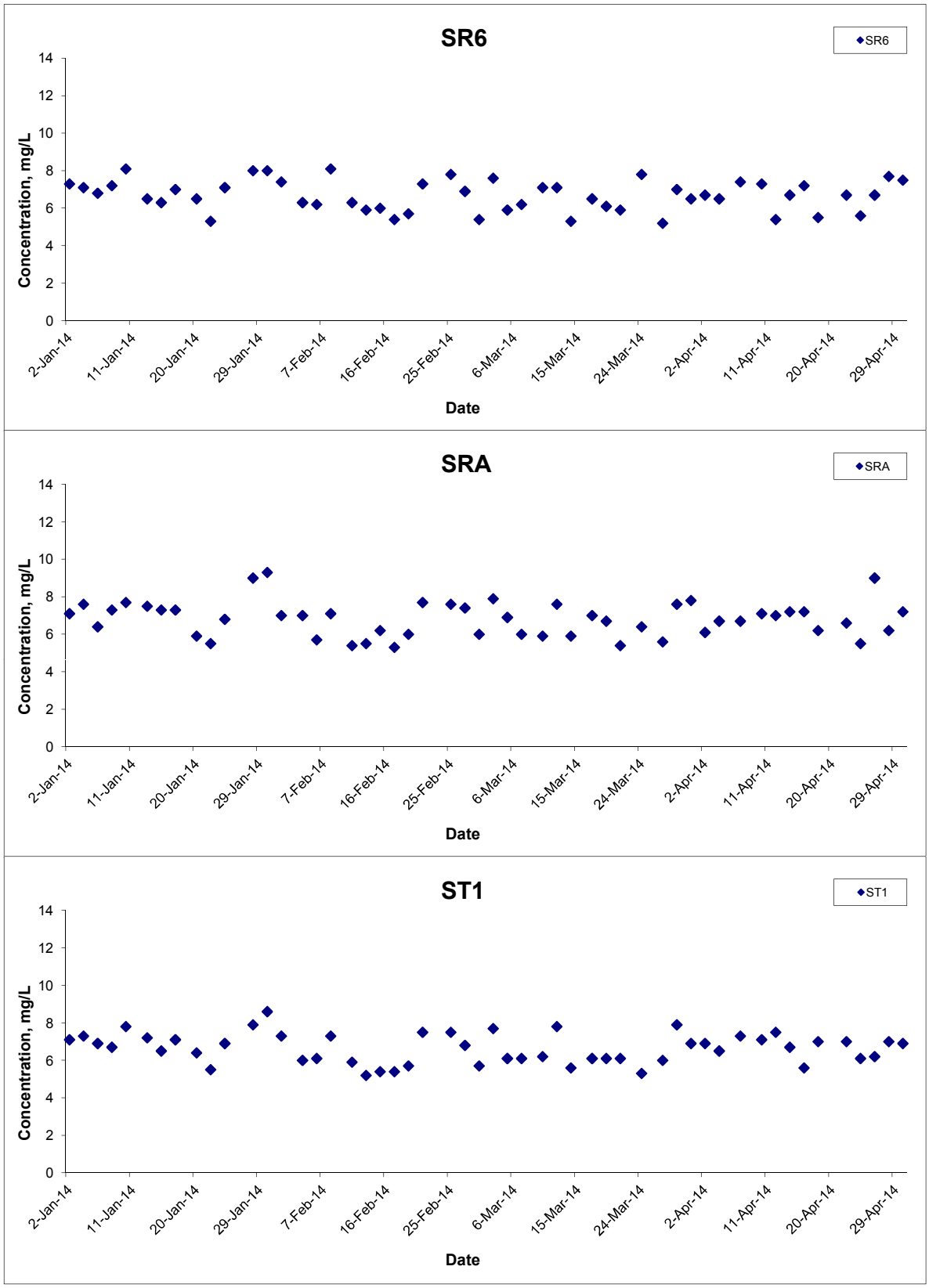
Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA12014	CINOTECH
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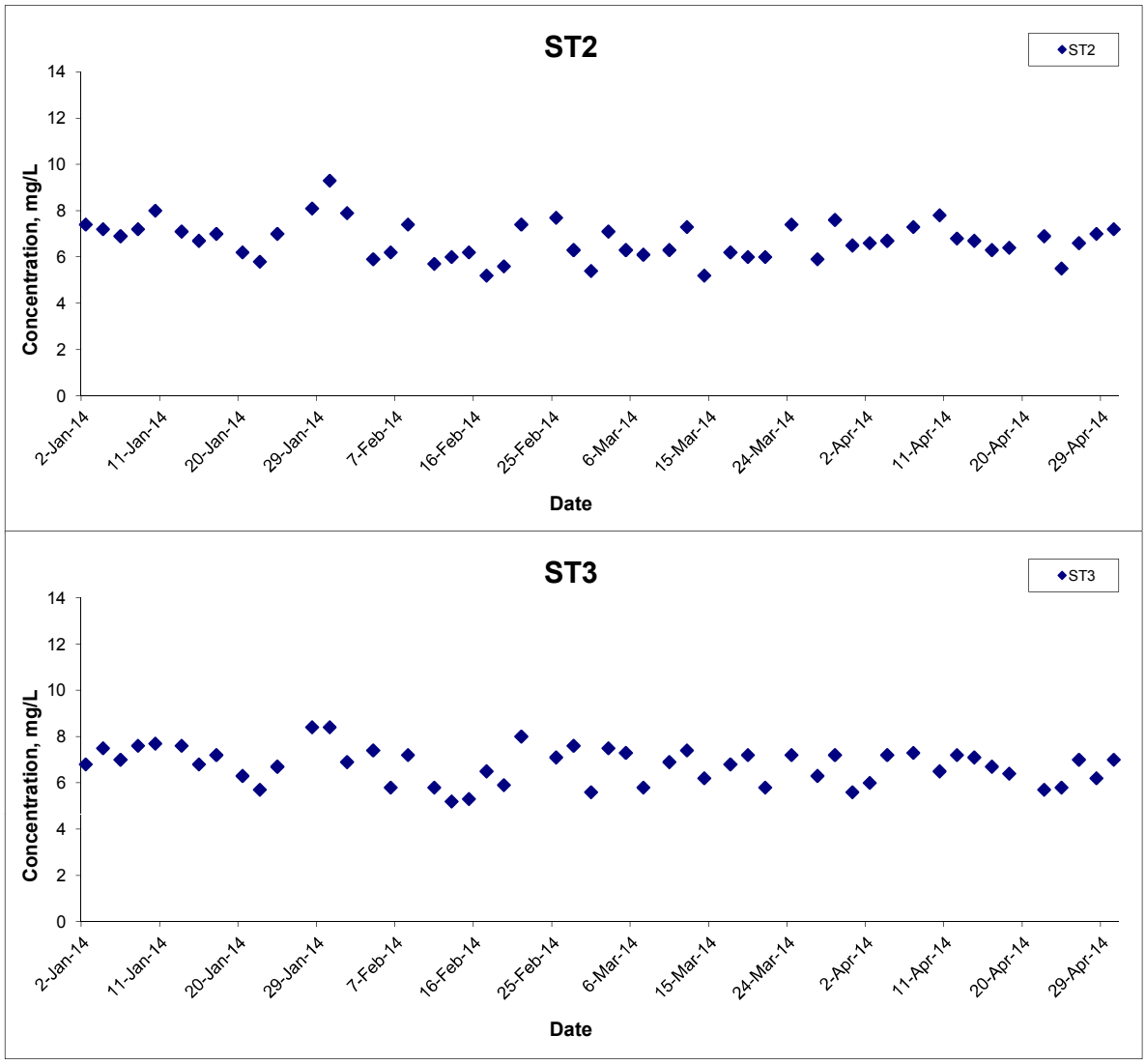
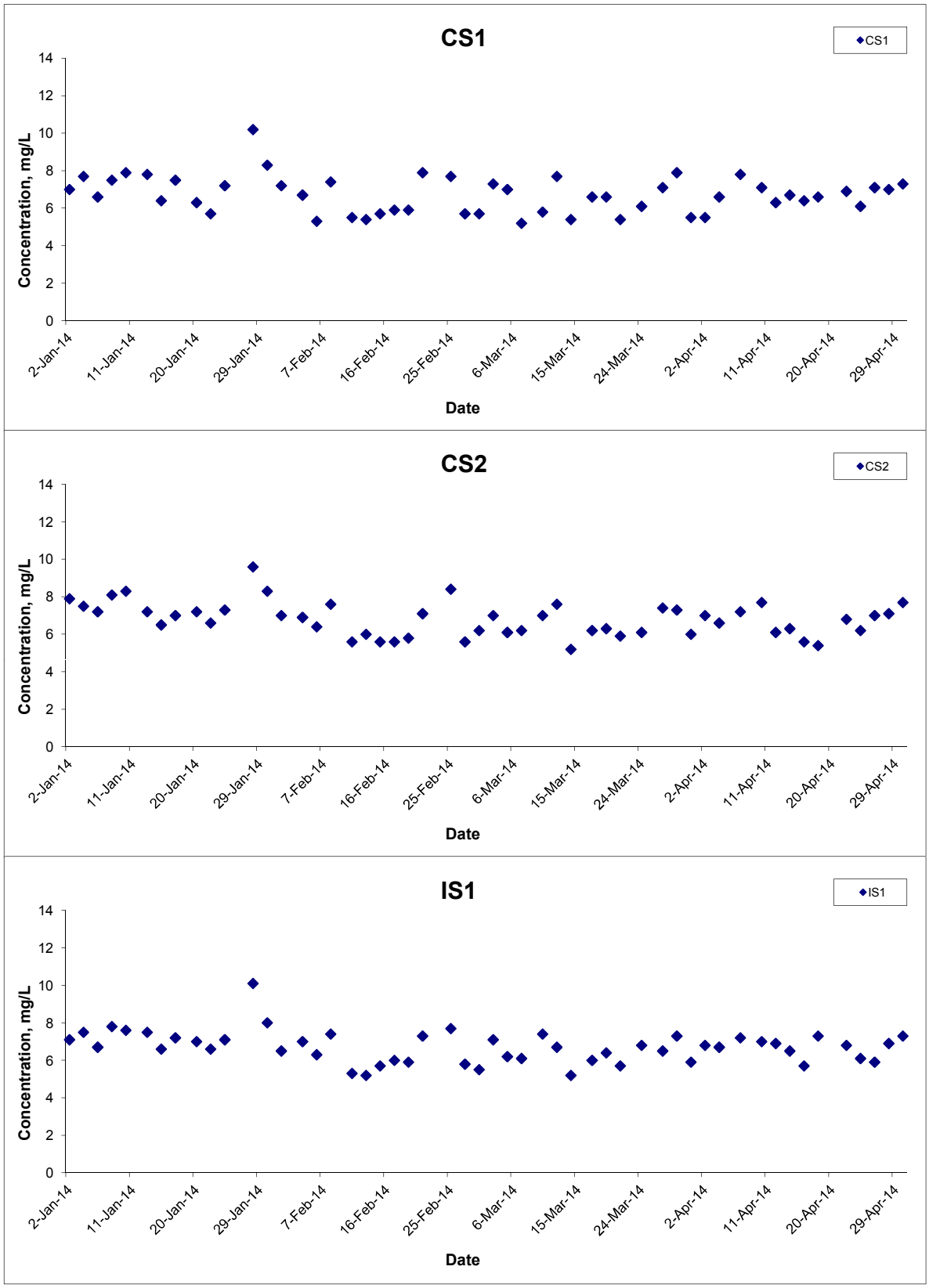
Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S Date: Apr 14	Project No.: MA12014 Appendix: H	CINOTECH

Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA12014	CINOTECH
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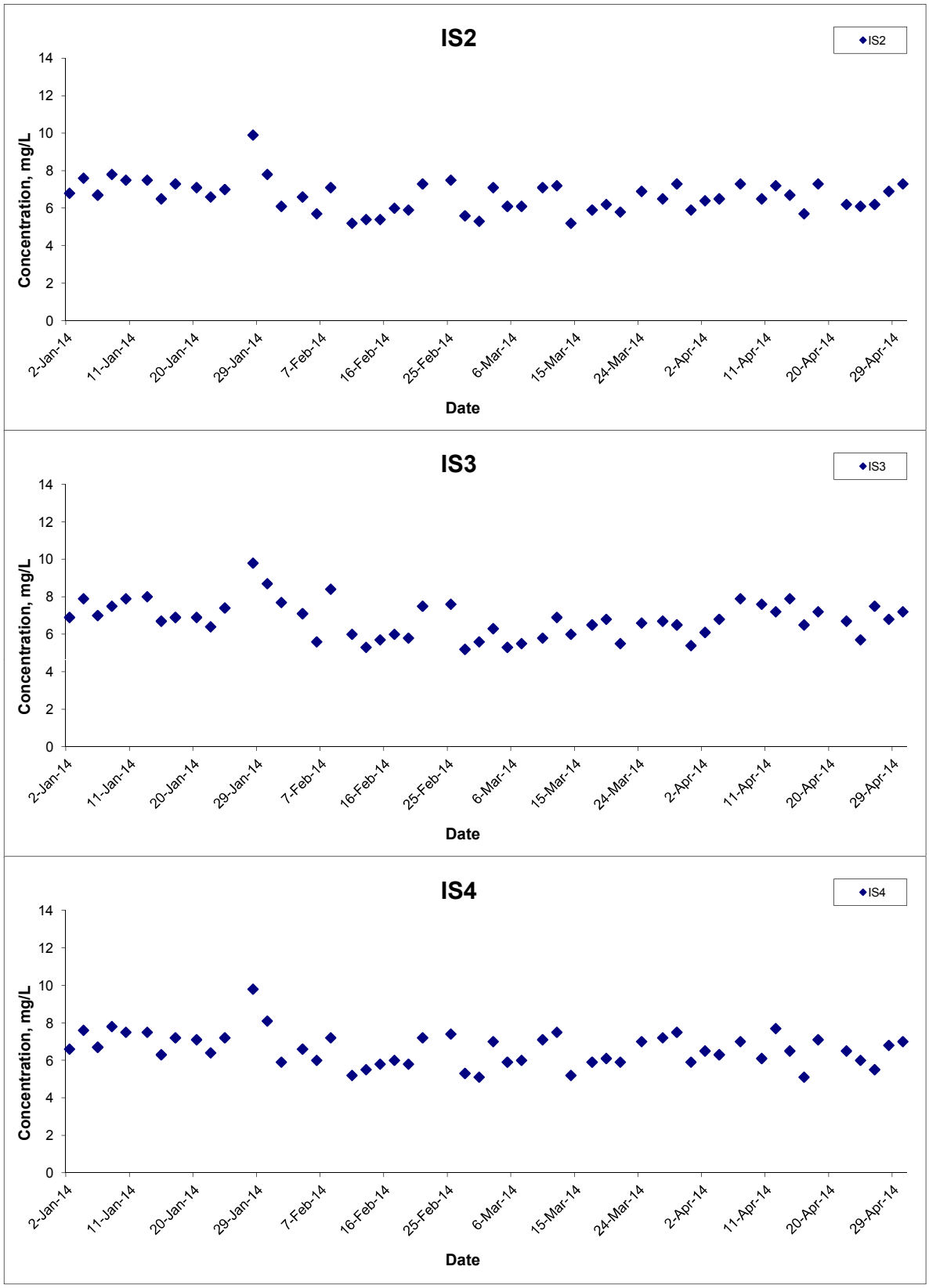
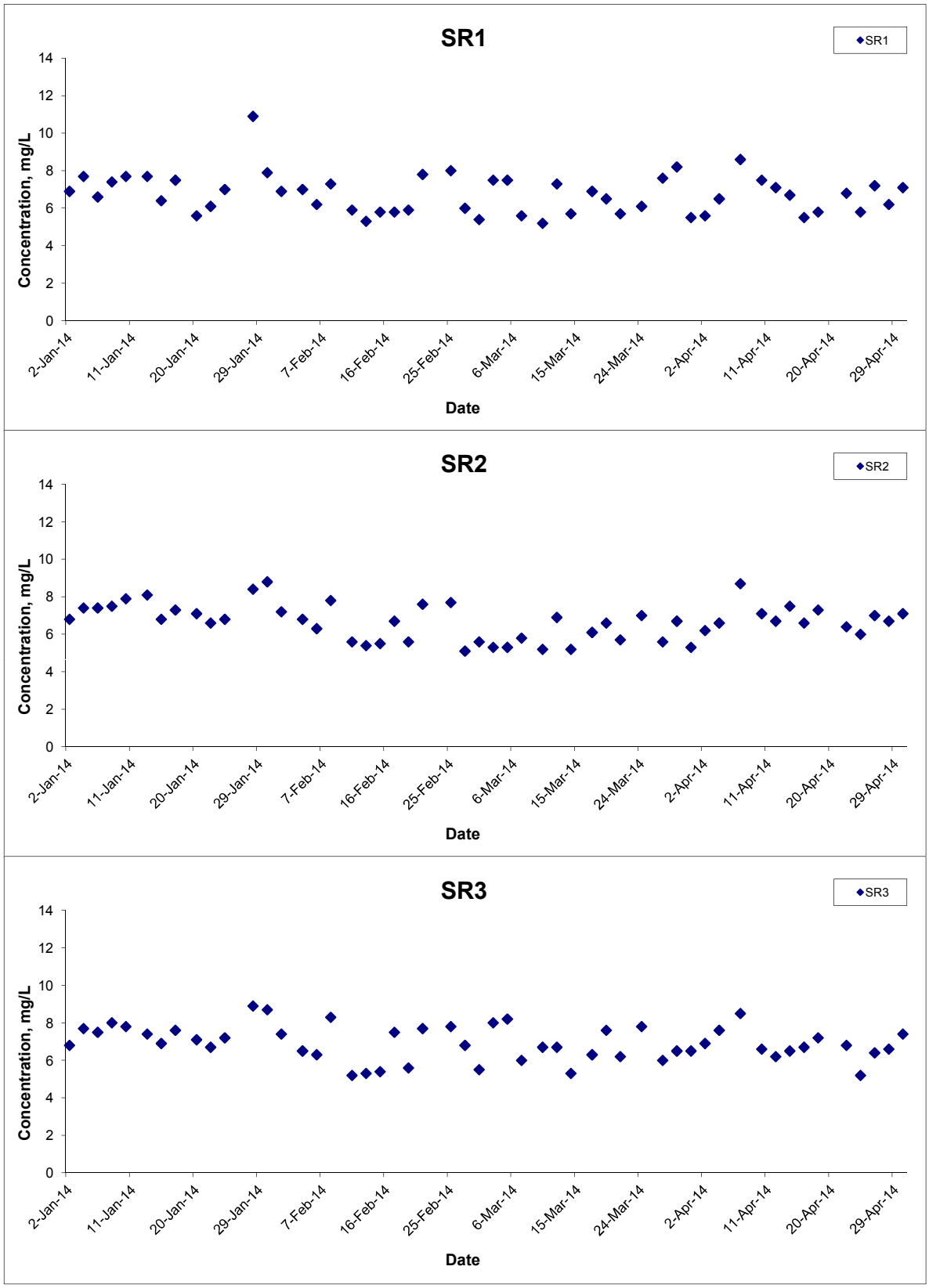
Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA12014	CINOTECH
		Date: Apr 14	Appendix: H	

Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA12014	CINOTECH
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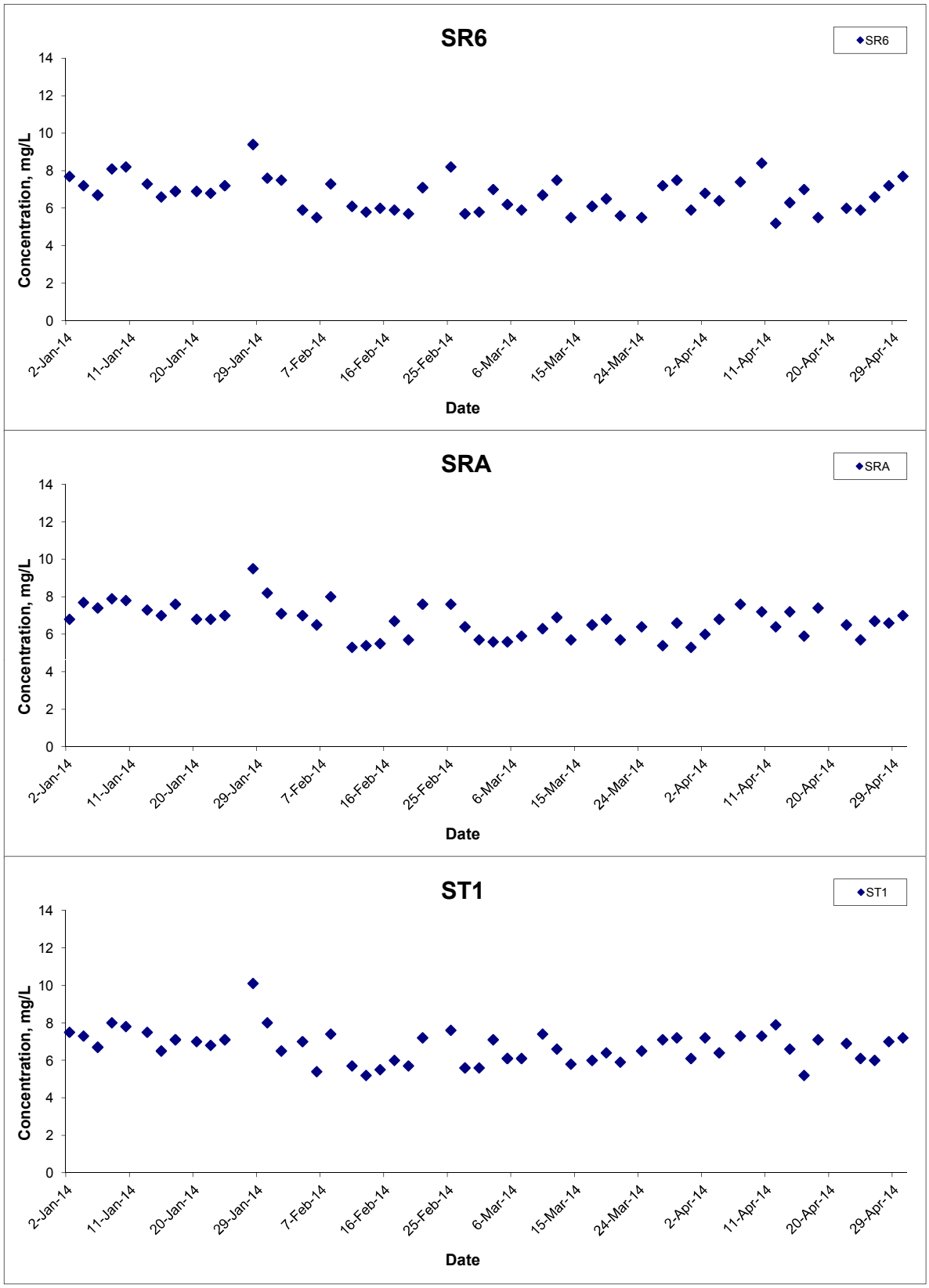
Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA12014	CINOTECH
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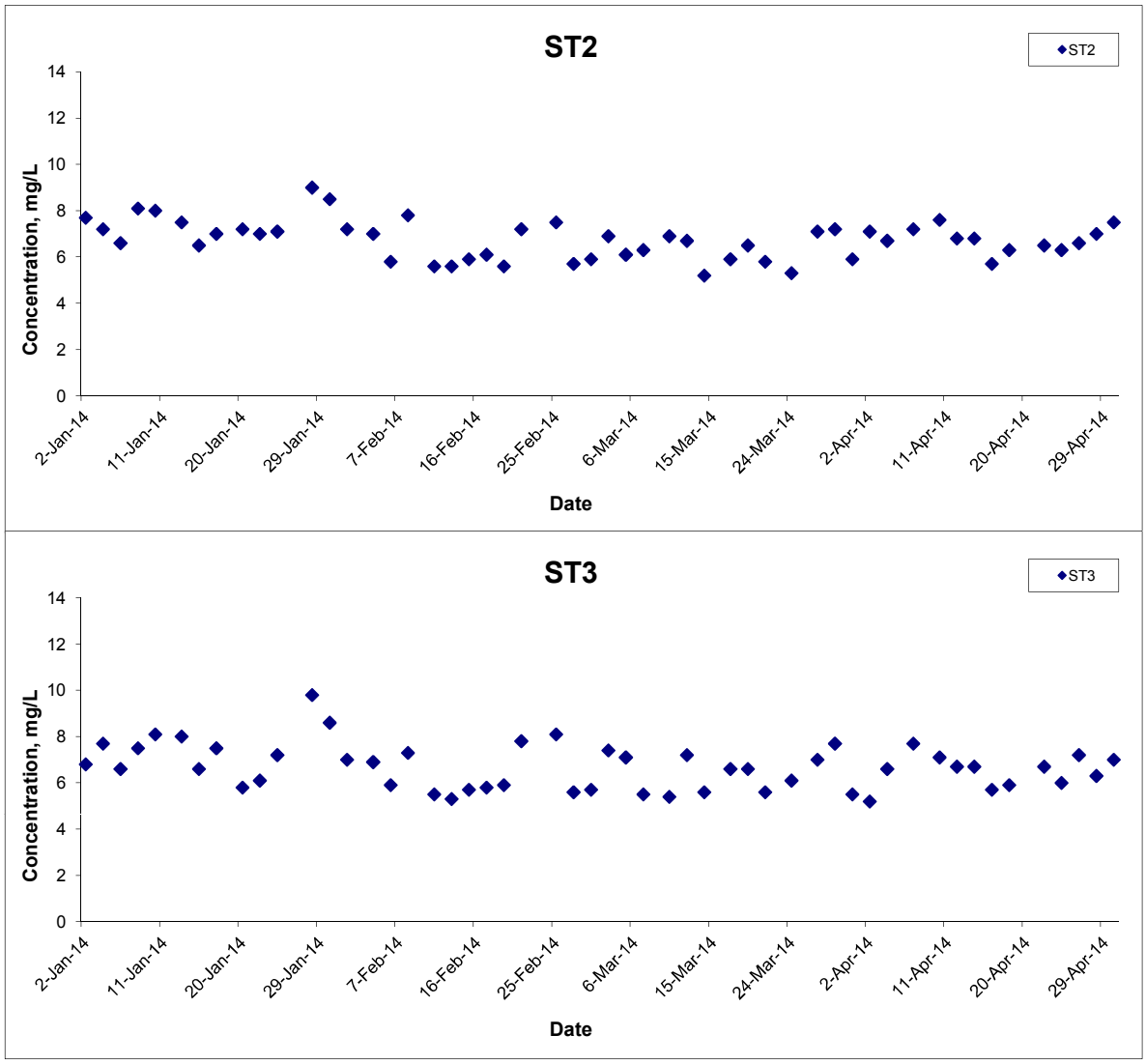
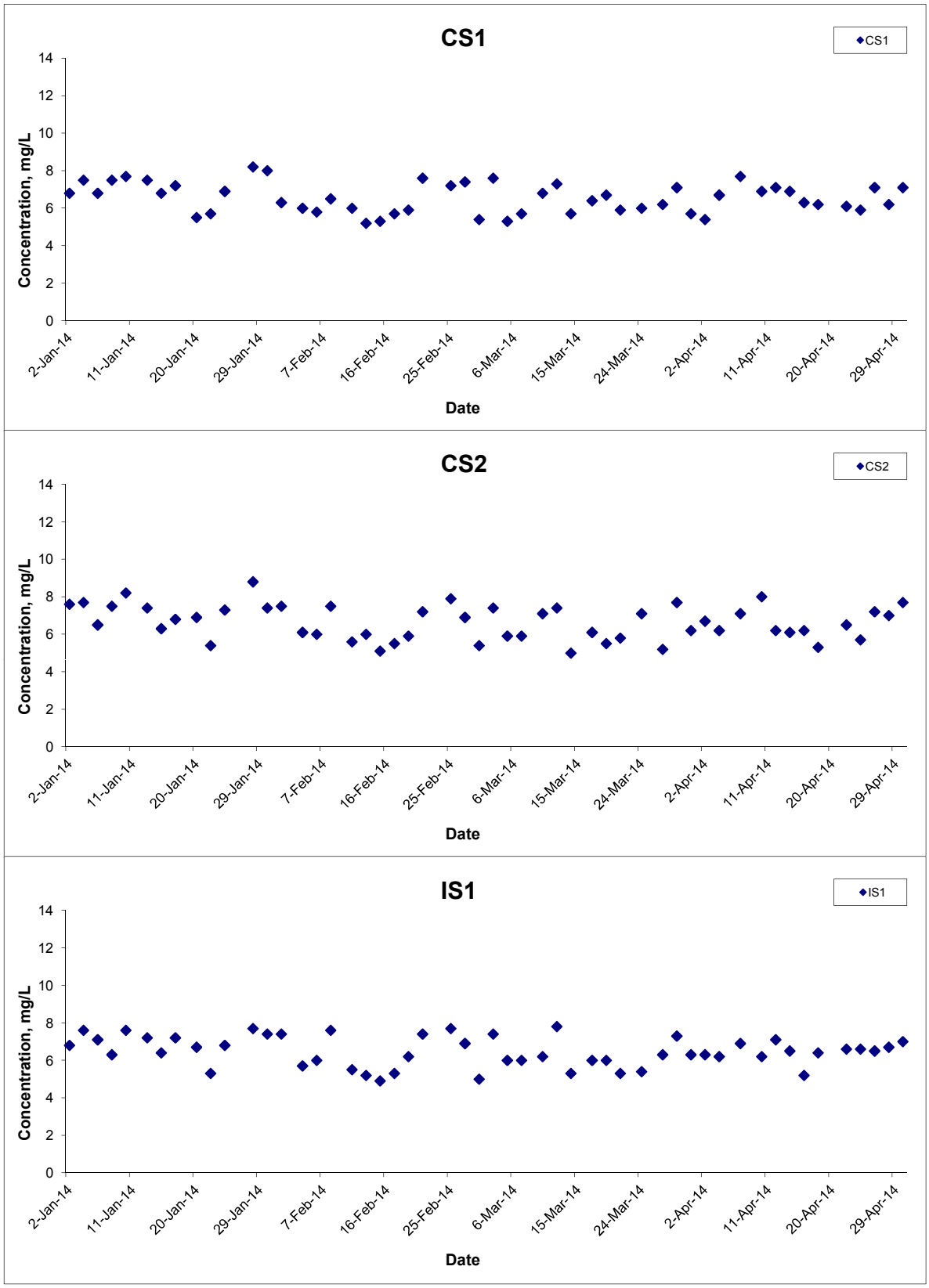
Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S Date: Mar 14	Project No.: MA12014 Appendix: H	CINOTECH

Dissolved Oxygen (Bottom) at Mid-Ebb Tide



Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA12014	CINOTECH
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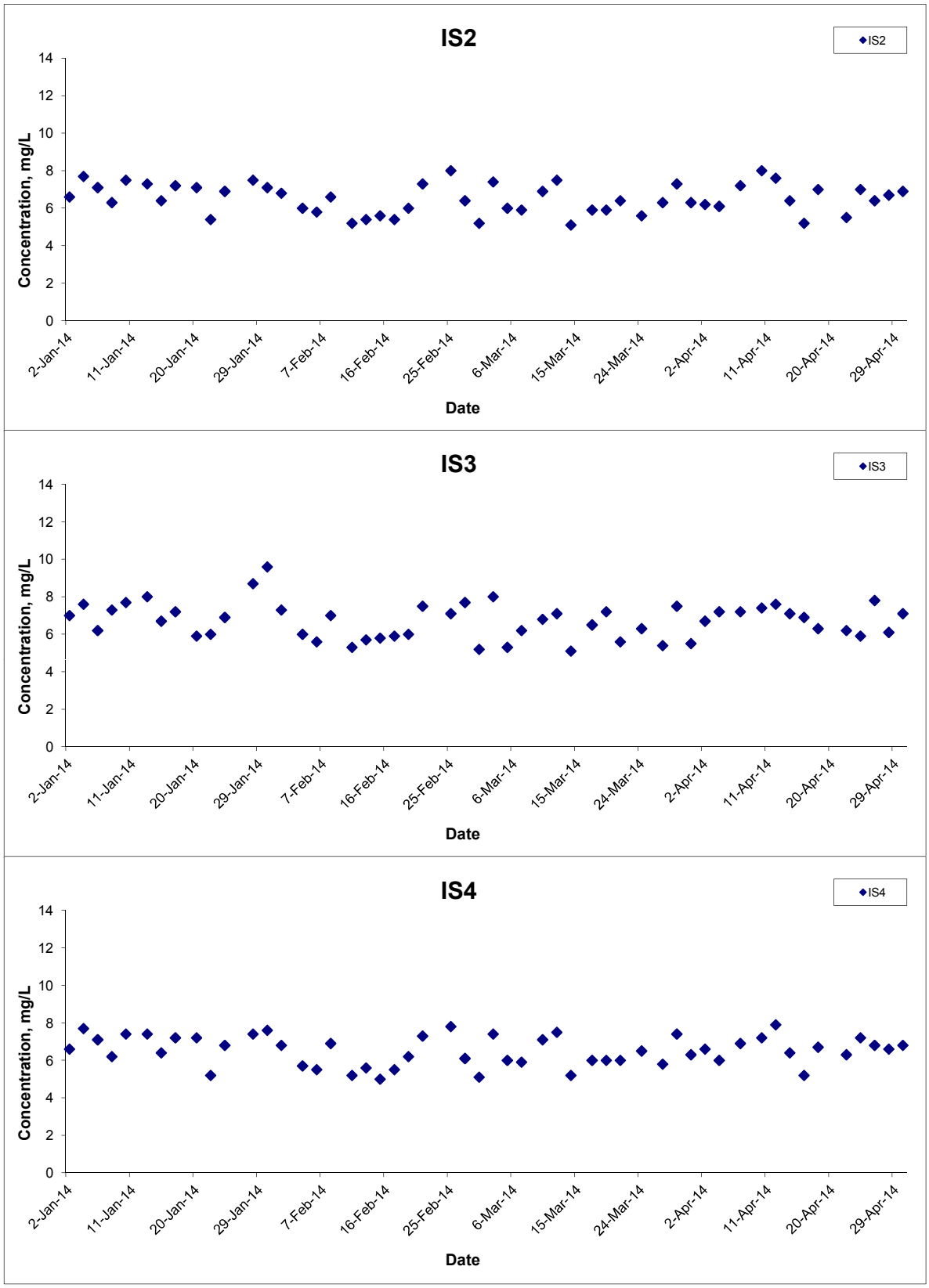
Dissolved Oxygen (Bottom) at Mid-Ebb Tide



Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA12014	CINOTECH
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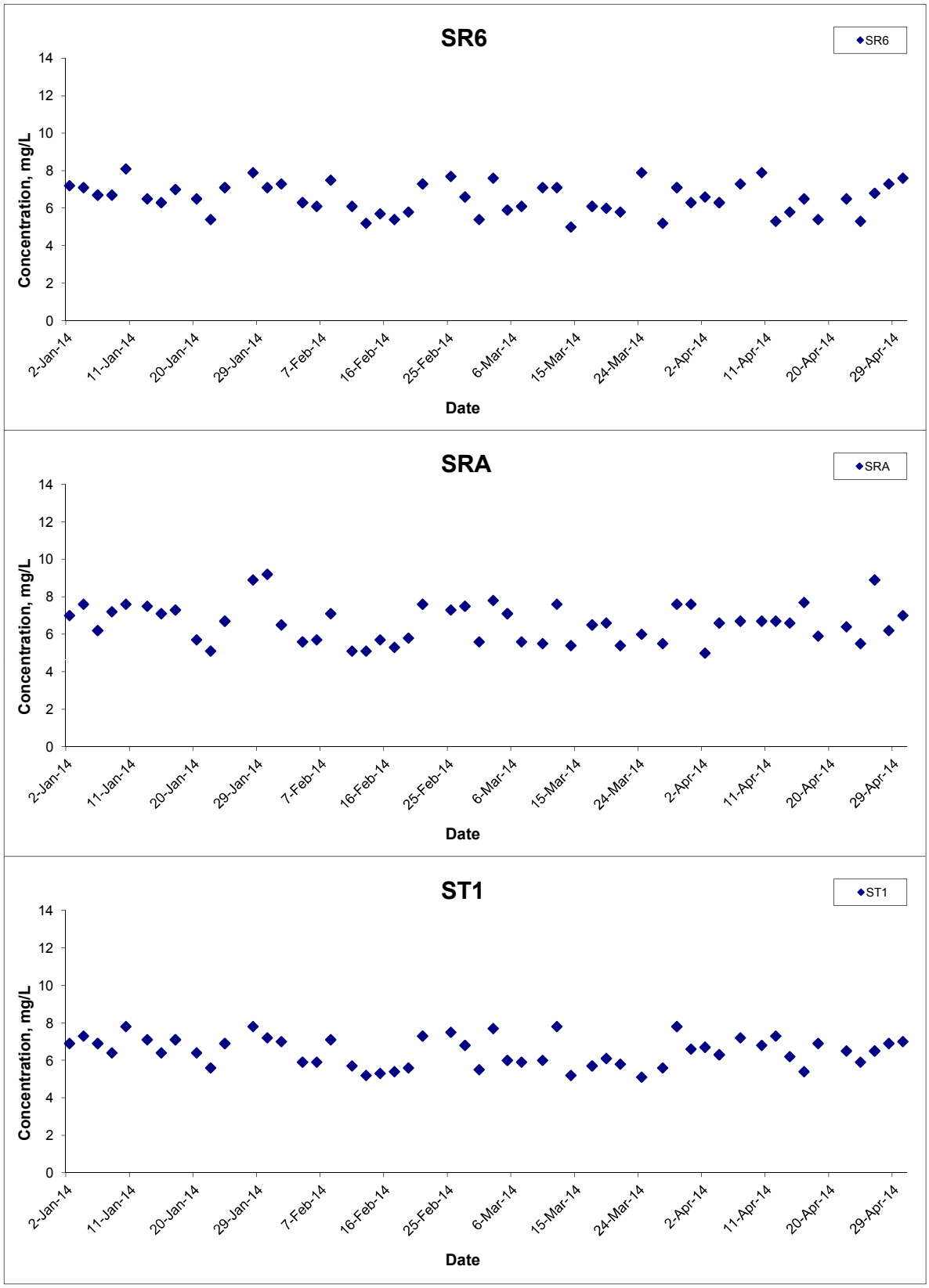
Dissolved Oxygen (Bottom) at Mid-Ebb Tide



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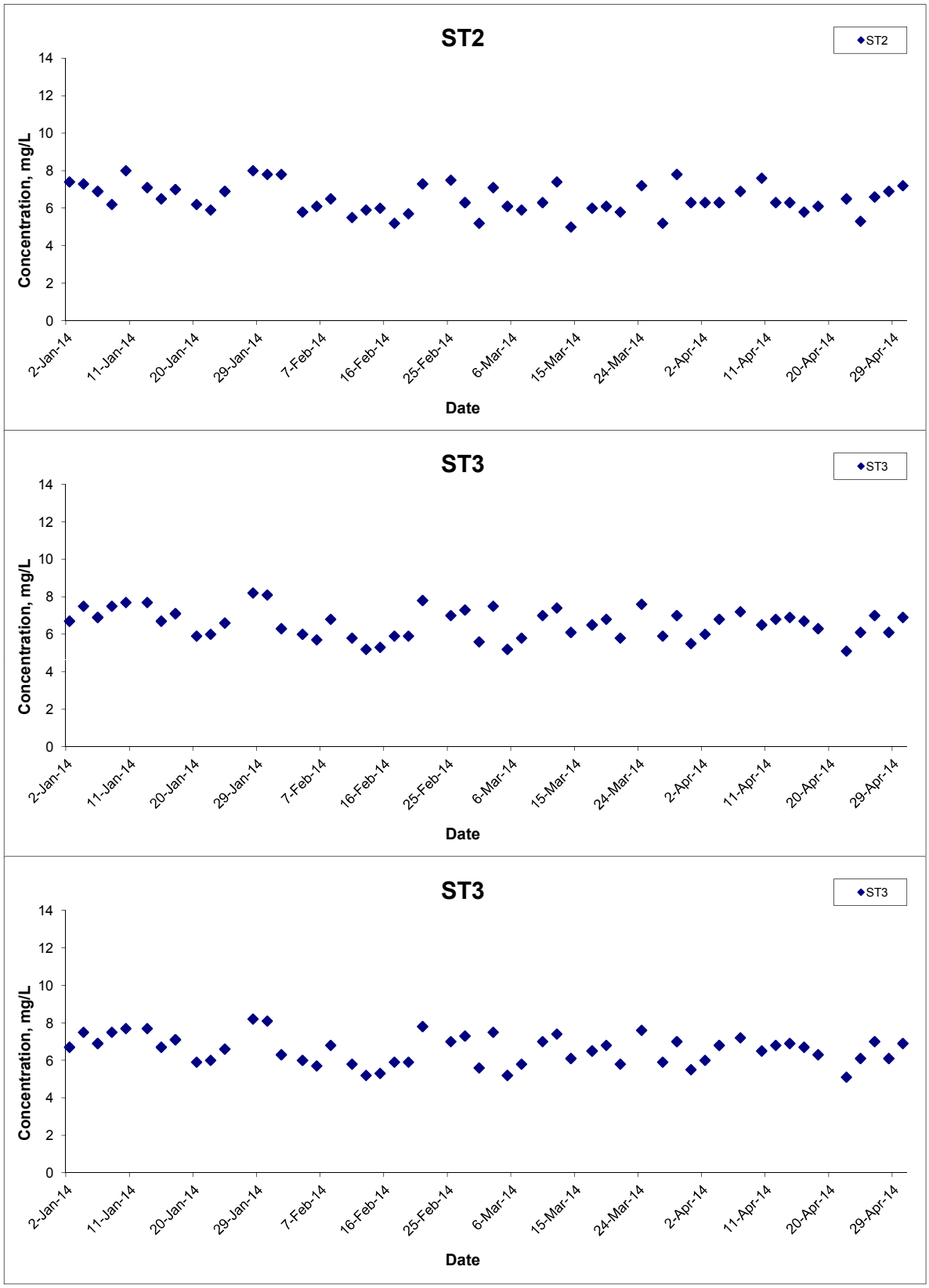
Dissolved Oxygen (Bottom) at Mid-Ebb Tide



Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA12014	CINOTECH
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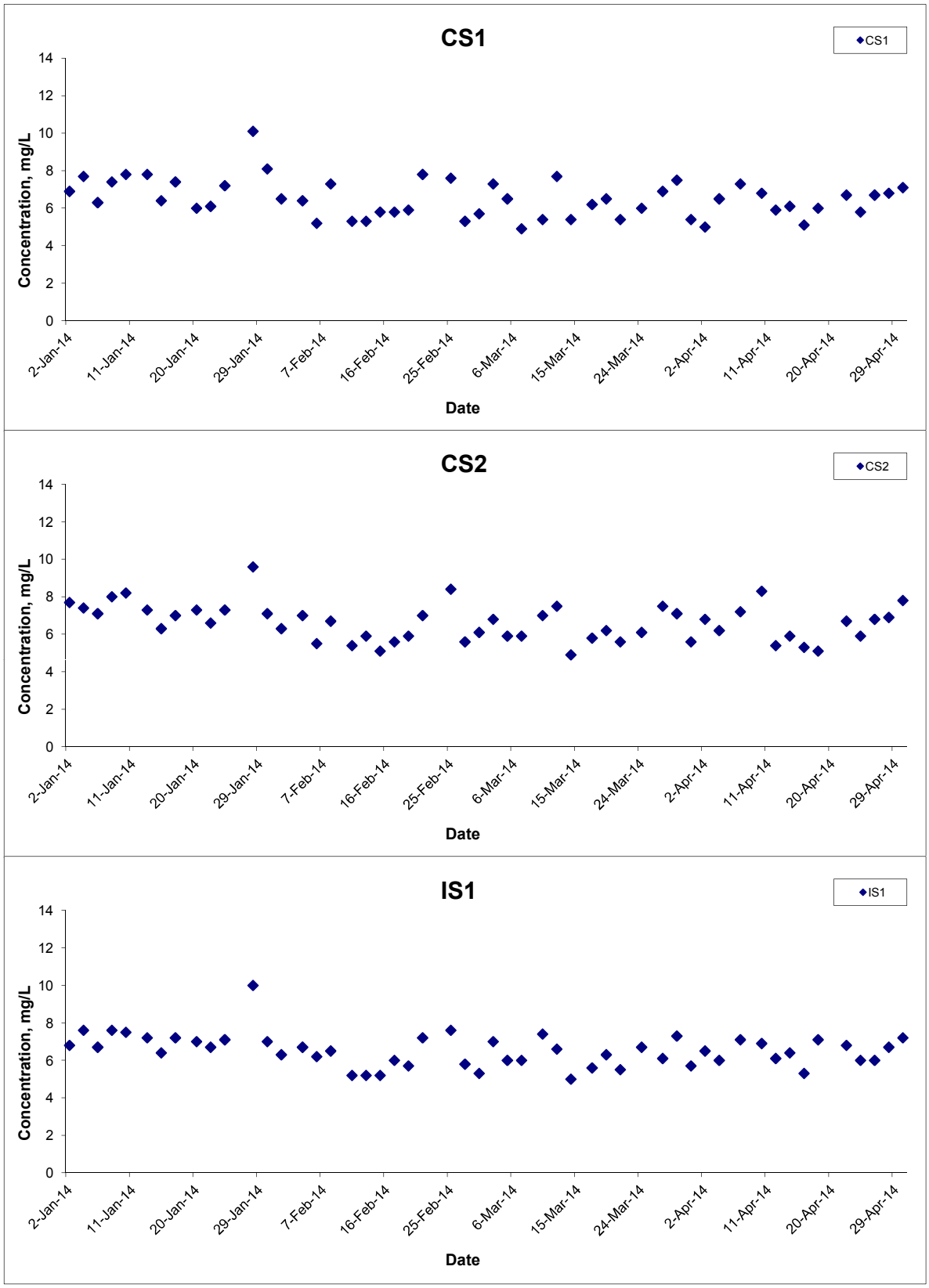
Dissolved Oxygen (Bottom) at Mid-Flood Tide



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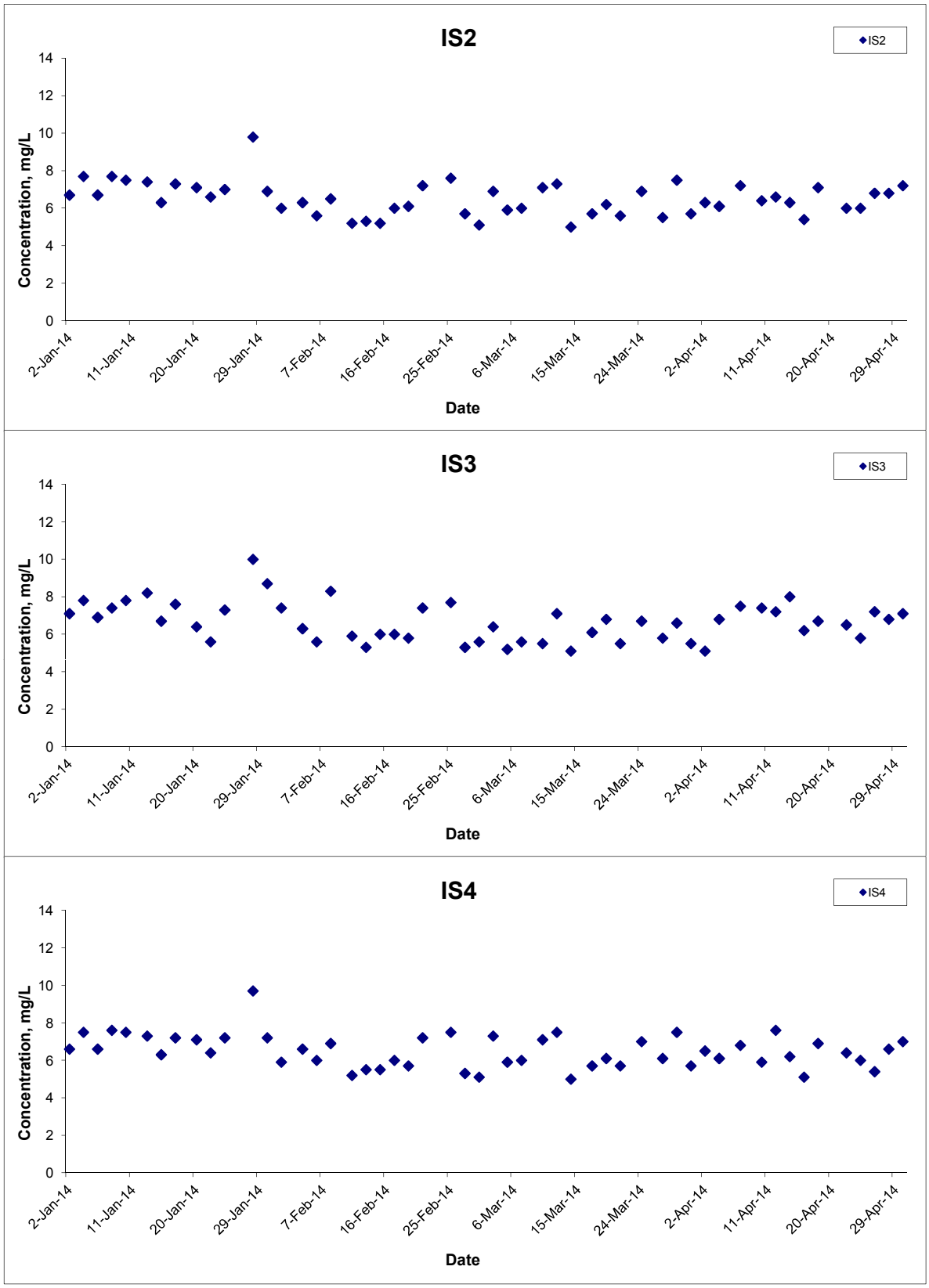
Dissolved Oxygen (Bottom) at Mid-Flood Tide



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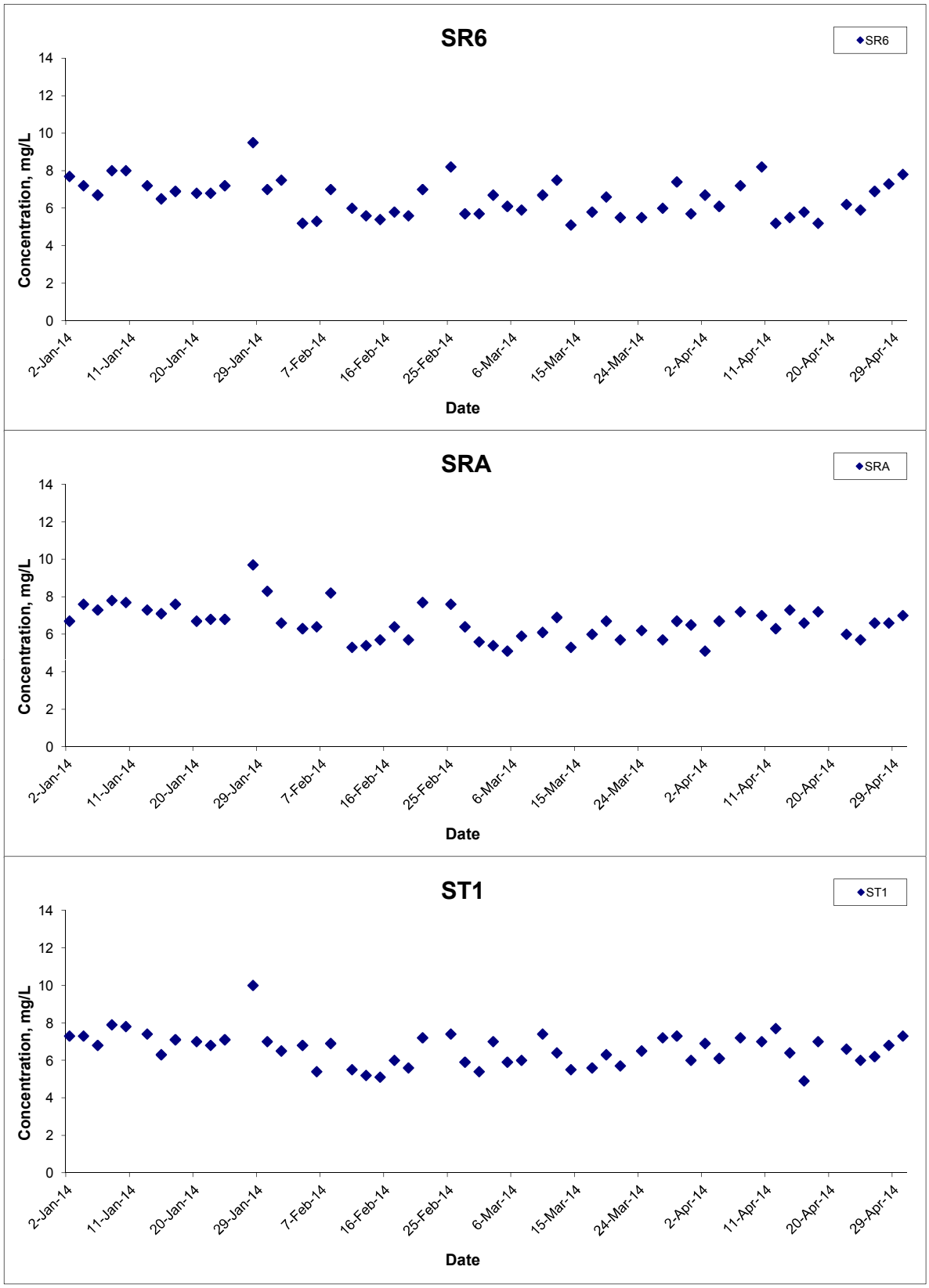
Dissolved Oxygen (Bottom) at Mid-Flood Tide



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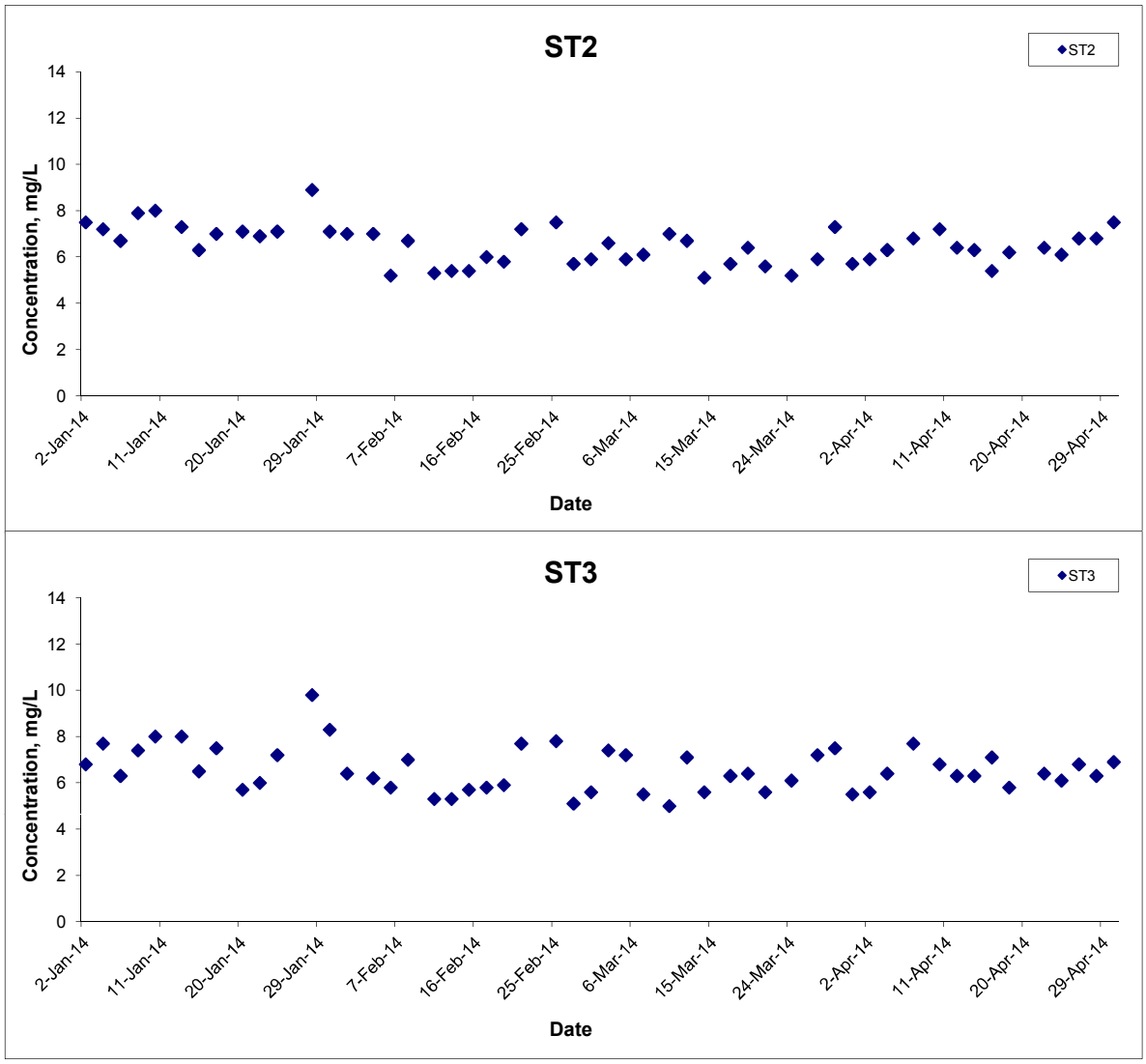
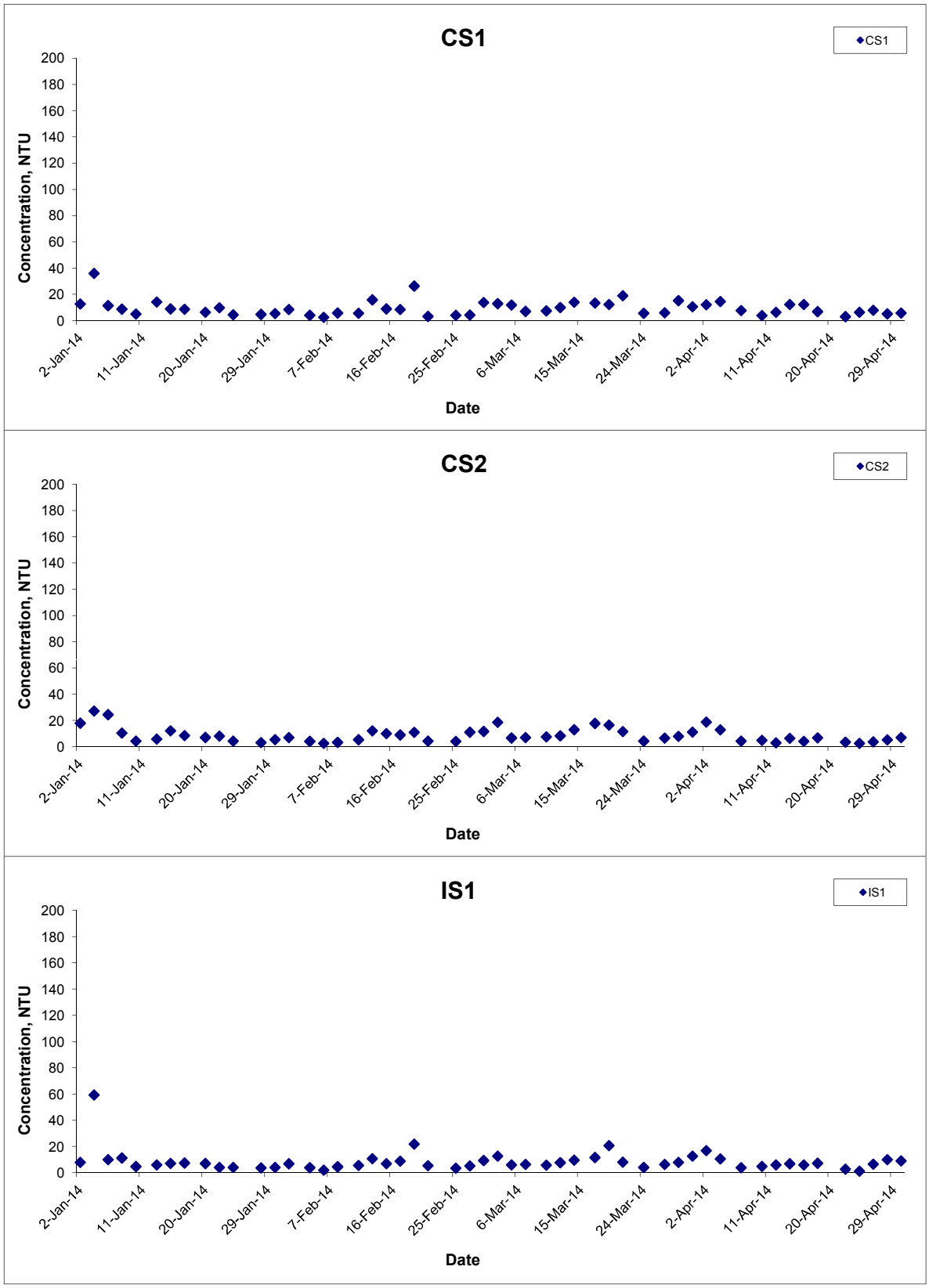
Dissolved Oxygen (Bottom) at Mid-Flood Tide



Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S Date: Apr 14	Project No.: MA12014 Appendix: H	CINOTECH

Turbidity (Depth-averaged) at Mid-Ebb Tide



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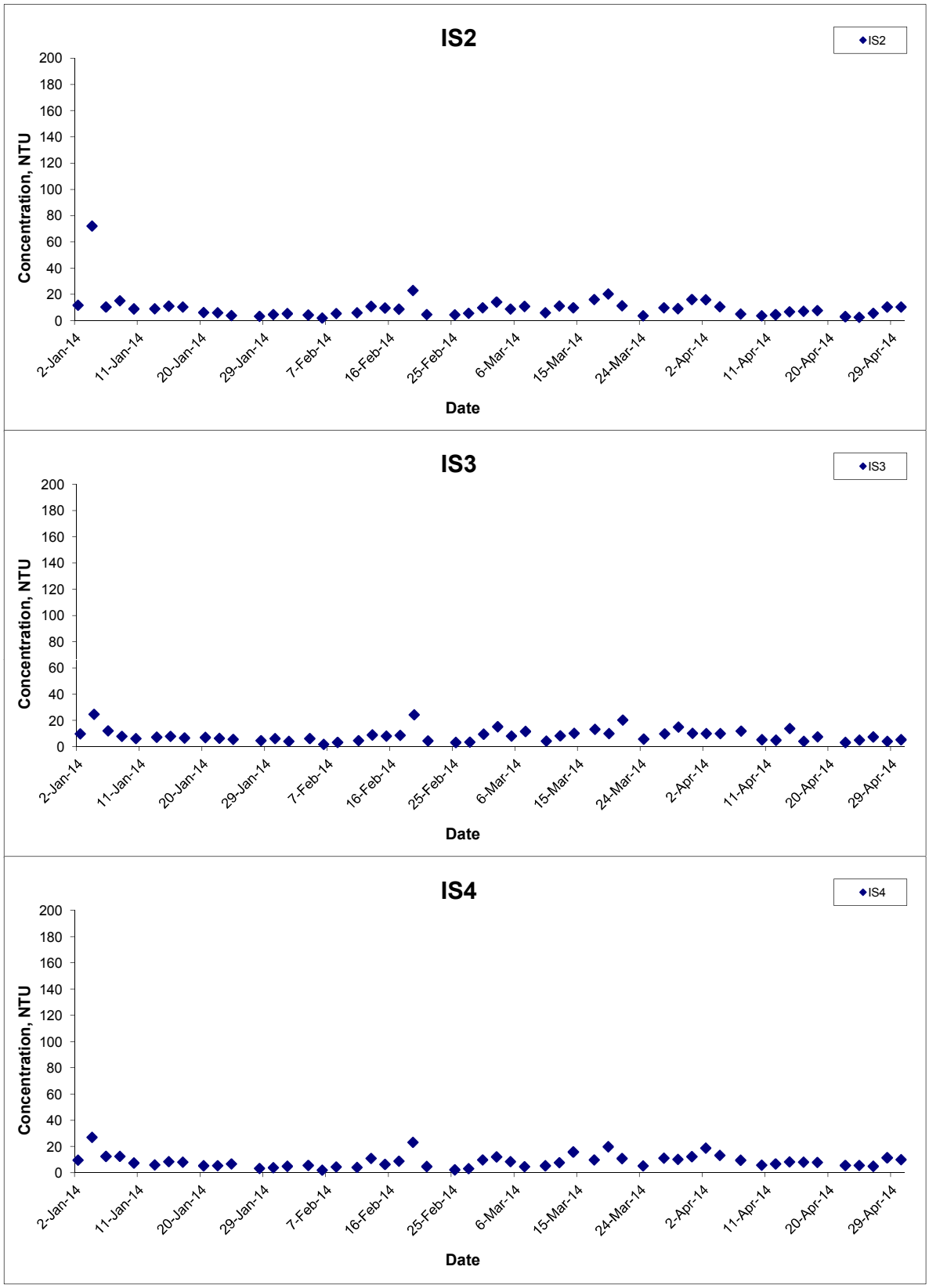
Turbidity (Depth-averaged) at Mid-Ebb Tide



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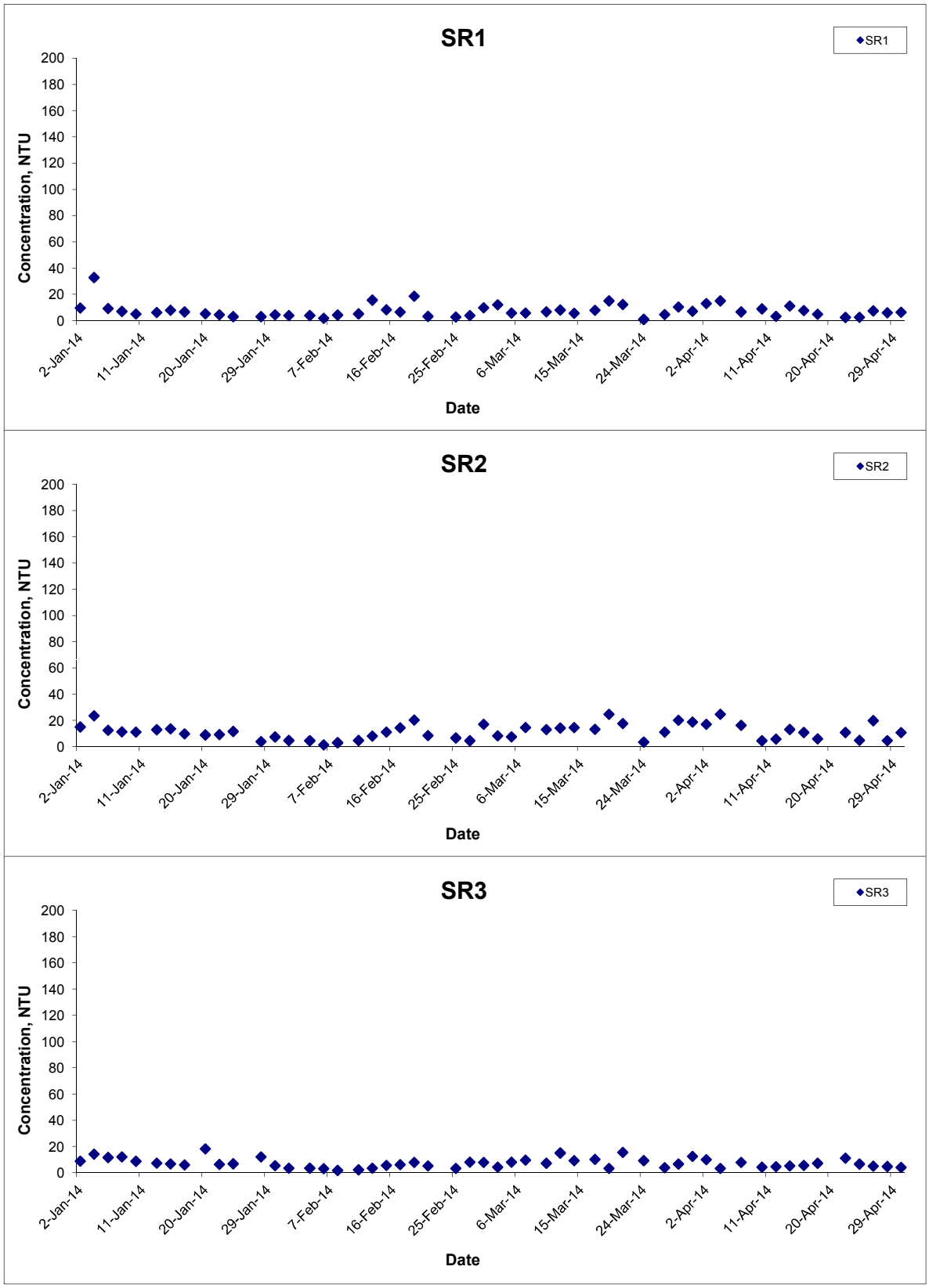

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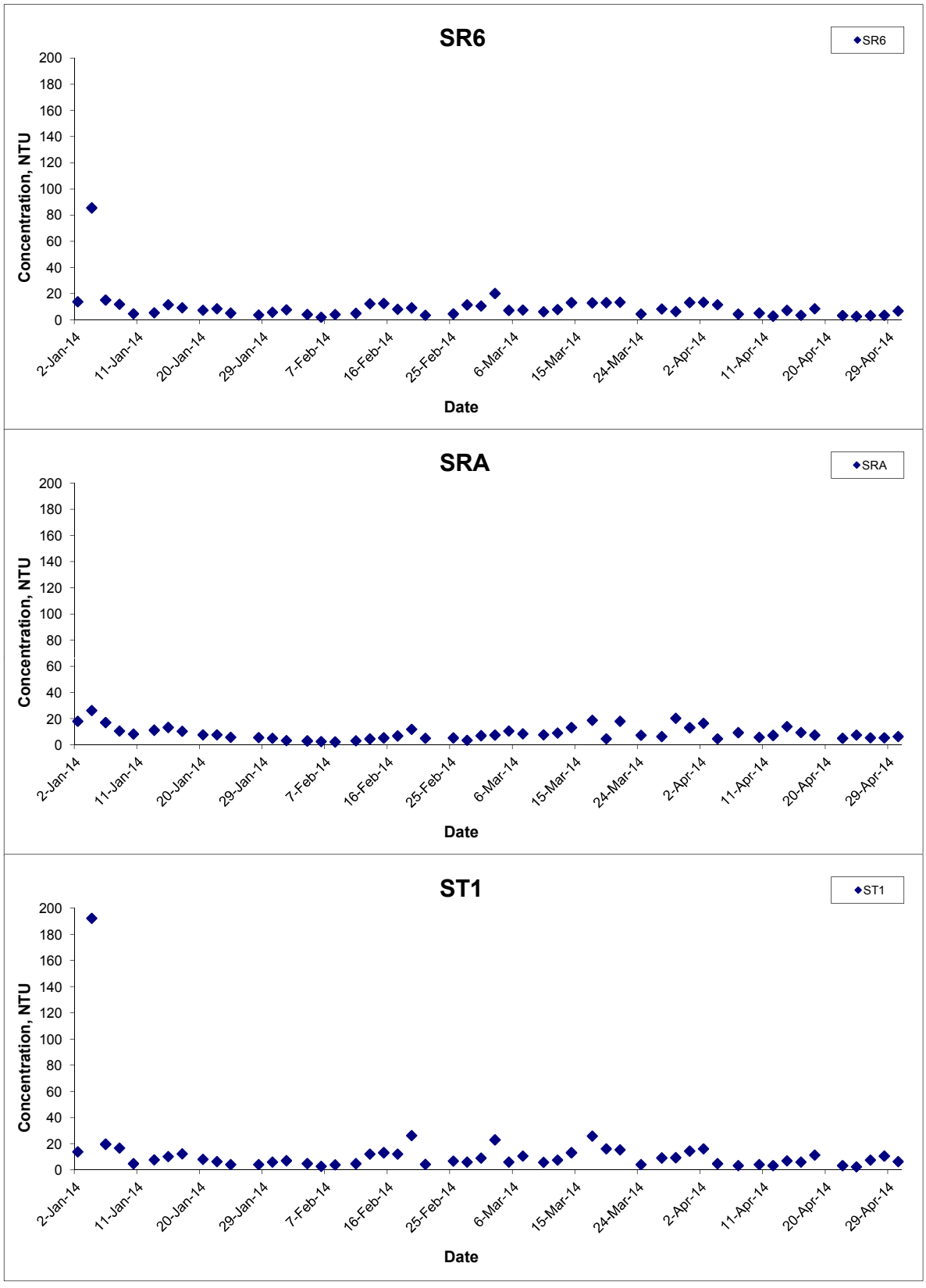

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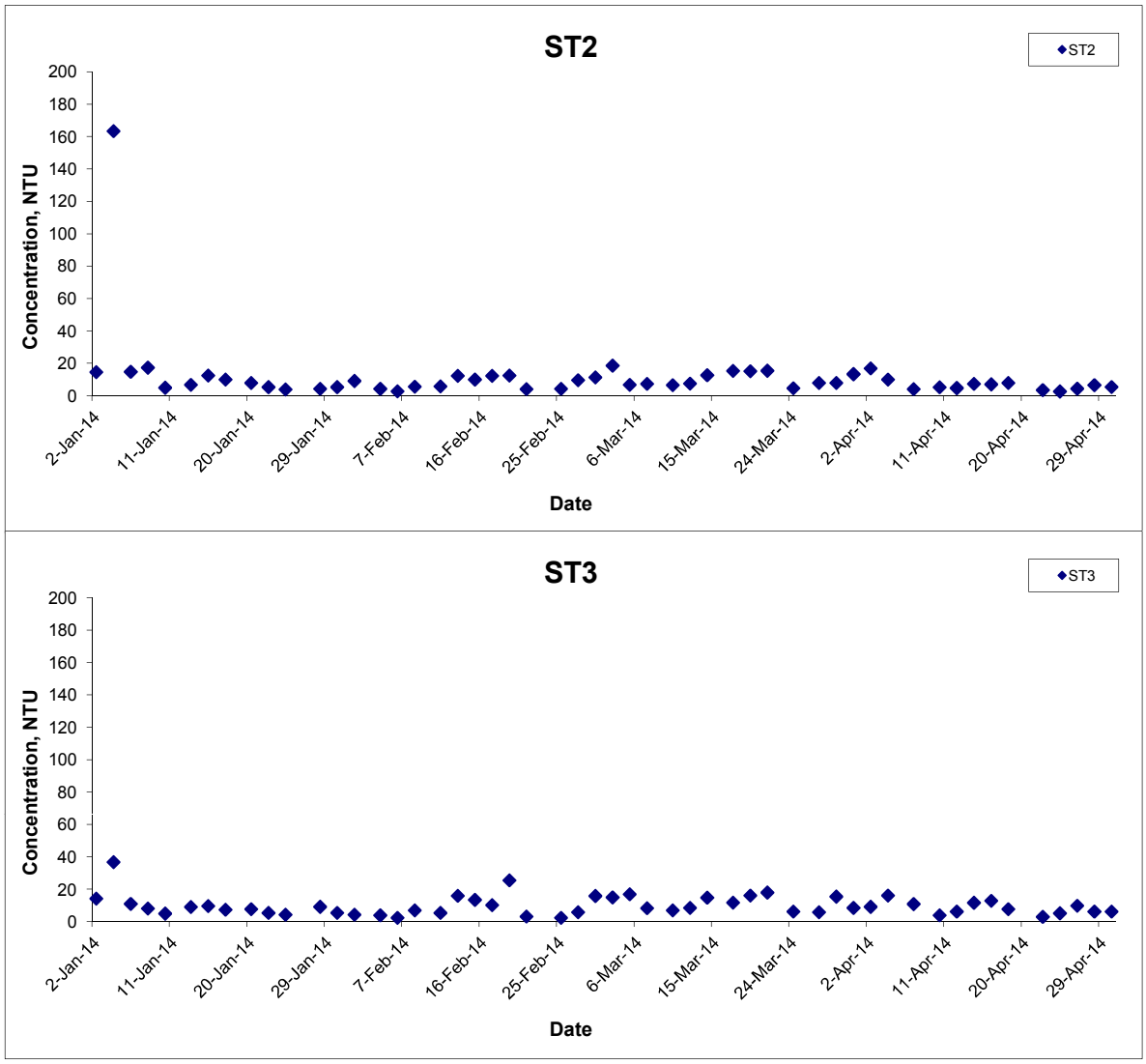

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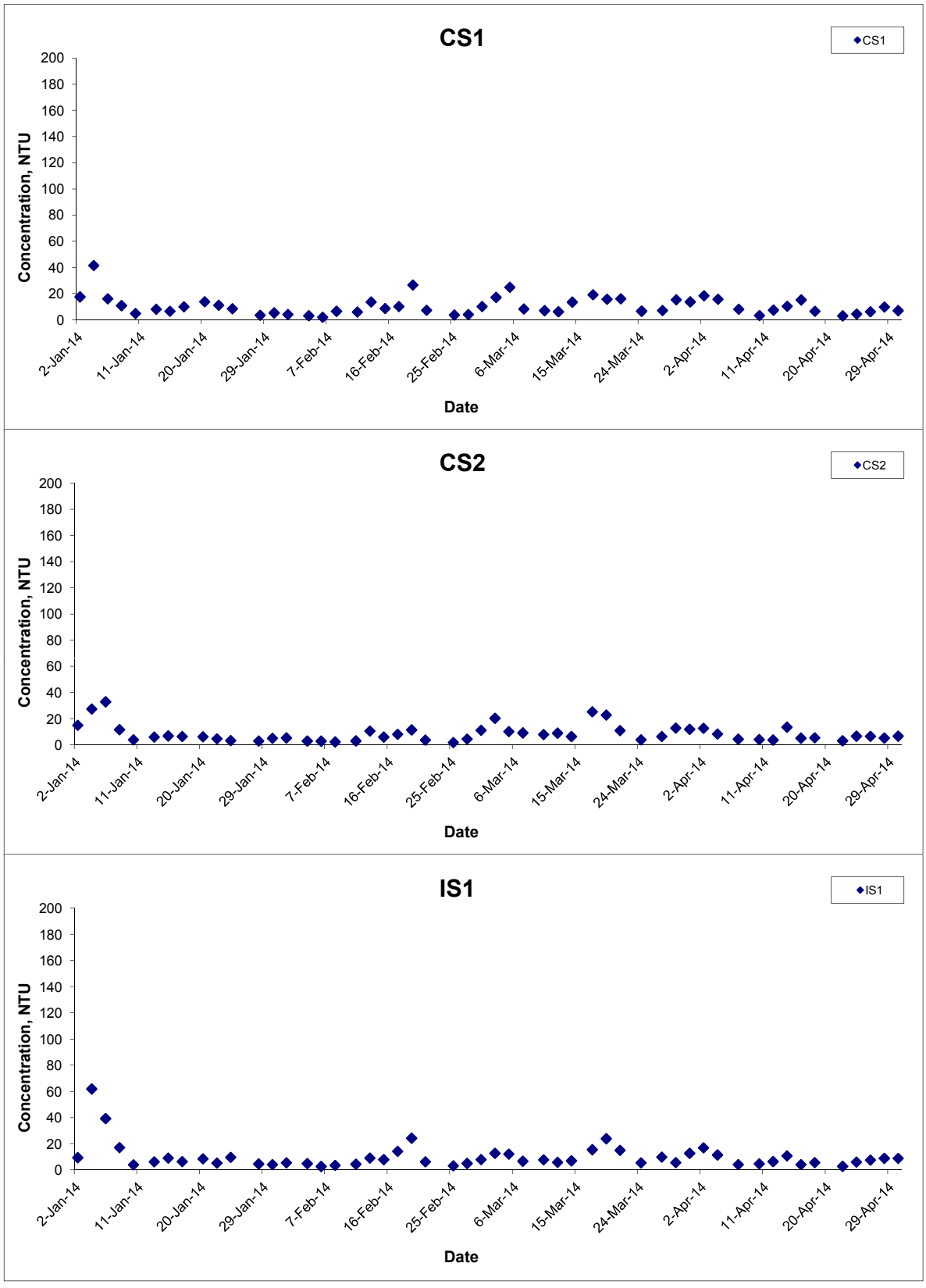
Turbidity (Depth-averaged) at Mid-Flood Tide



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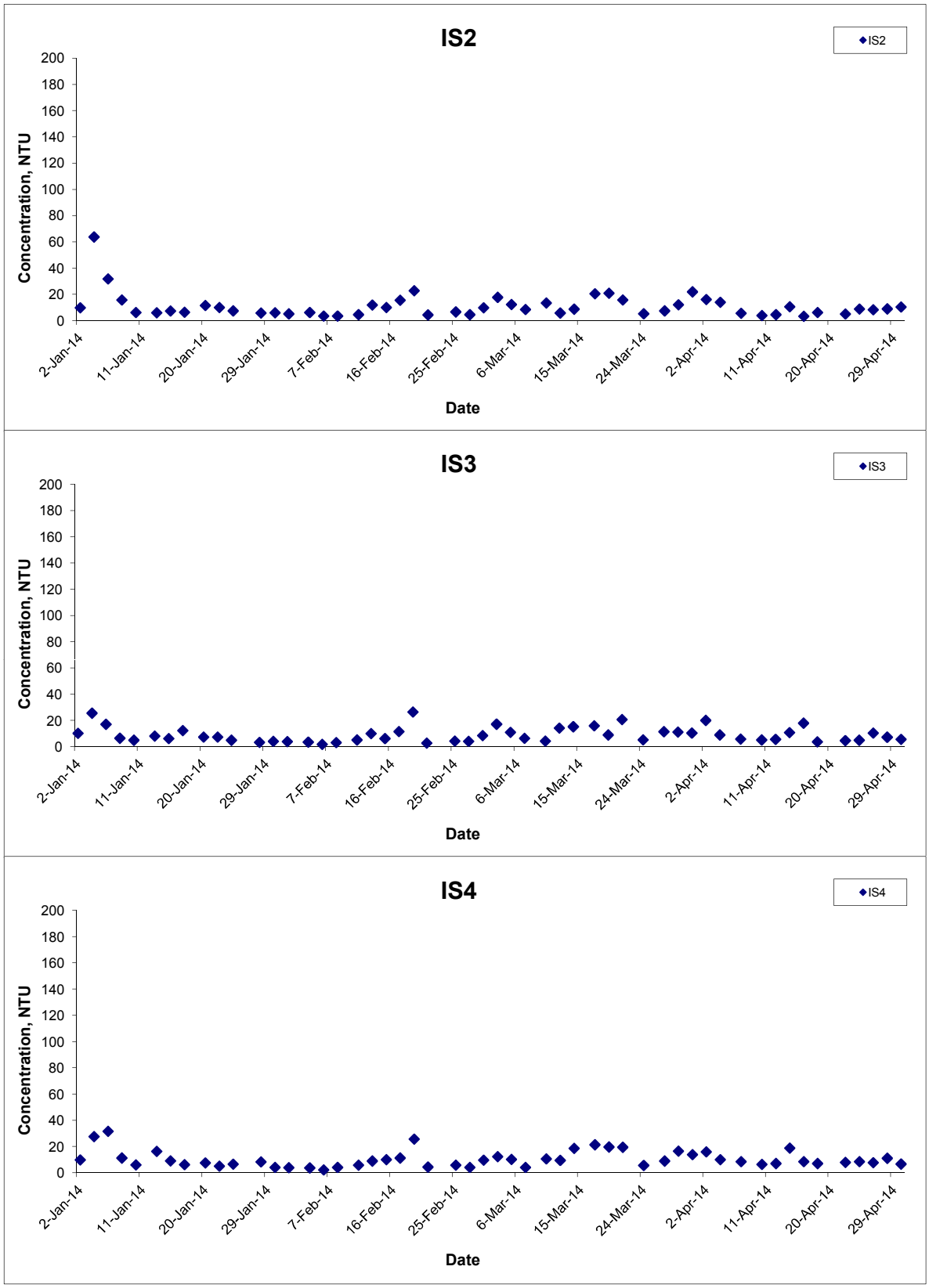
Turbidity (Depth-averaged) at Mid-Flood Tide



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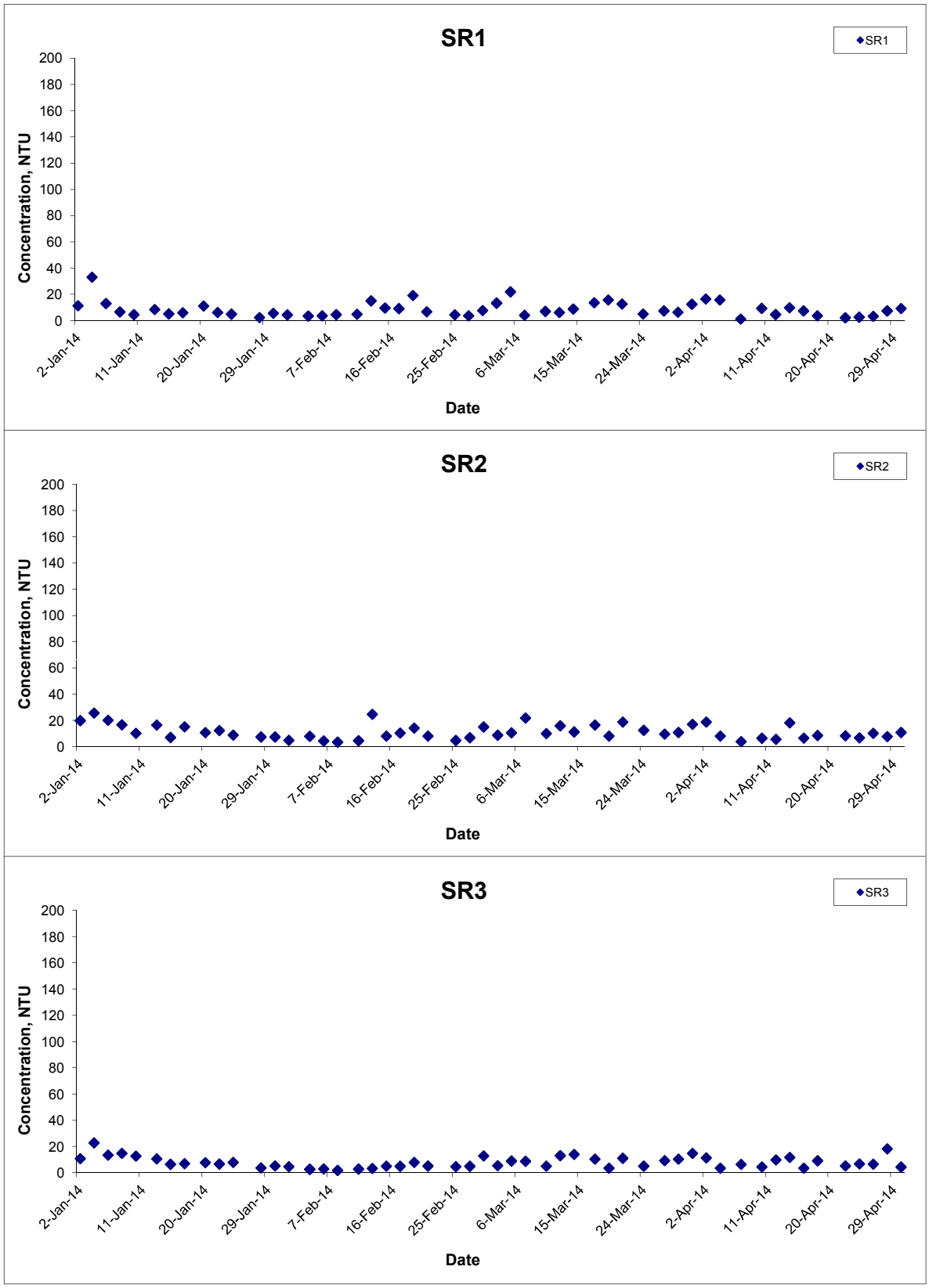
Turbidity (Depth-averaged) at Mid-Flood Tide



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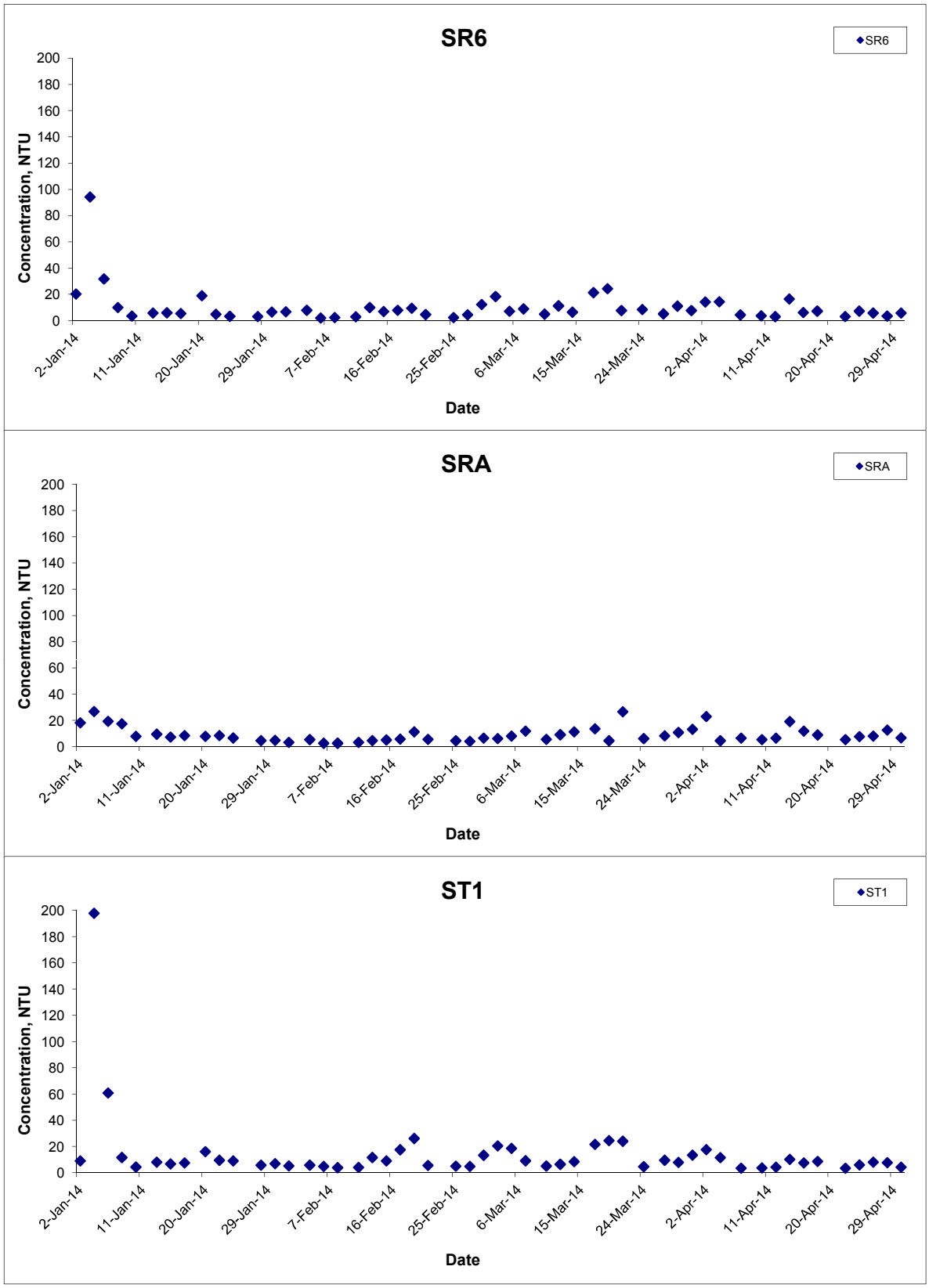

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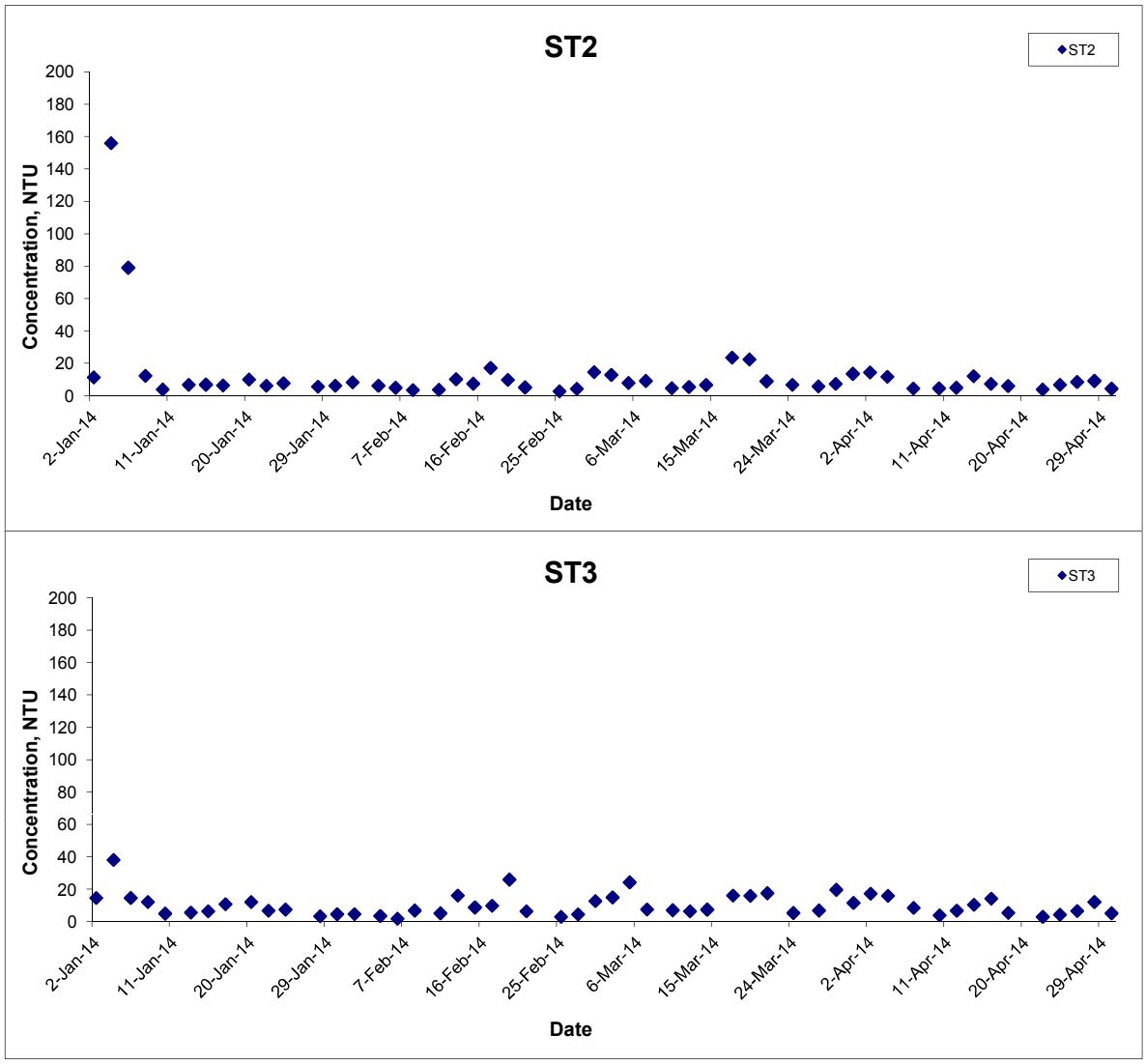
Turbidity (Depth-averaged) at Mid-Flood Tide



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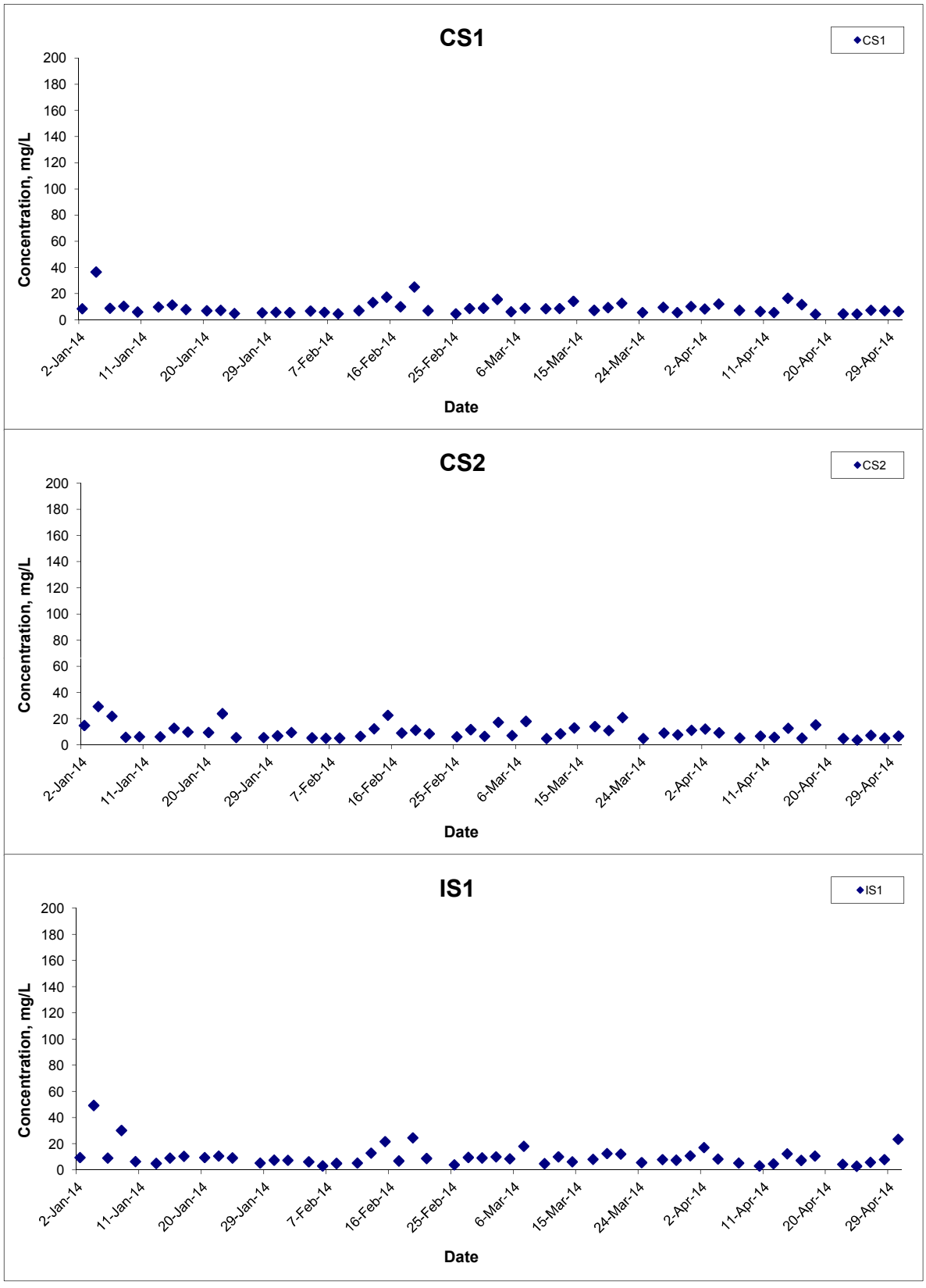
Suspended Solids (Depth-averaged) at Mid-Ebb Tide



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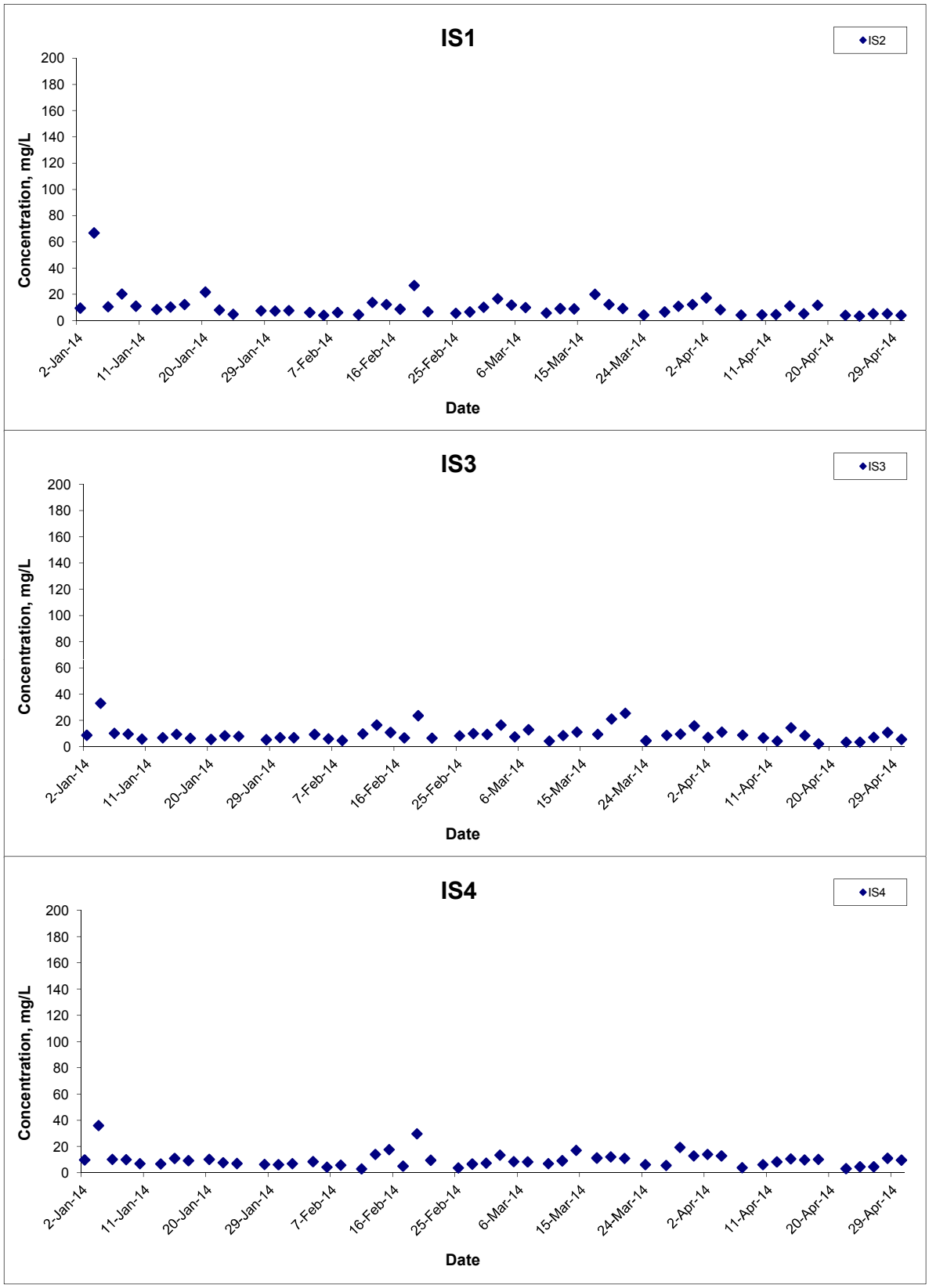
Suspended Solids (Depth-averaged) at Mid-Ebb Tide



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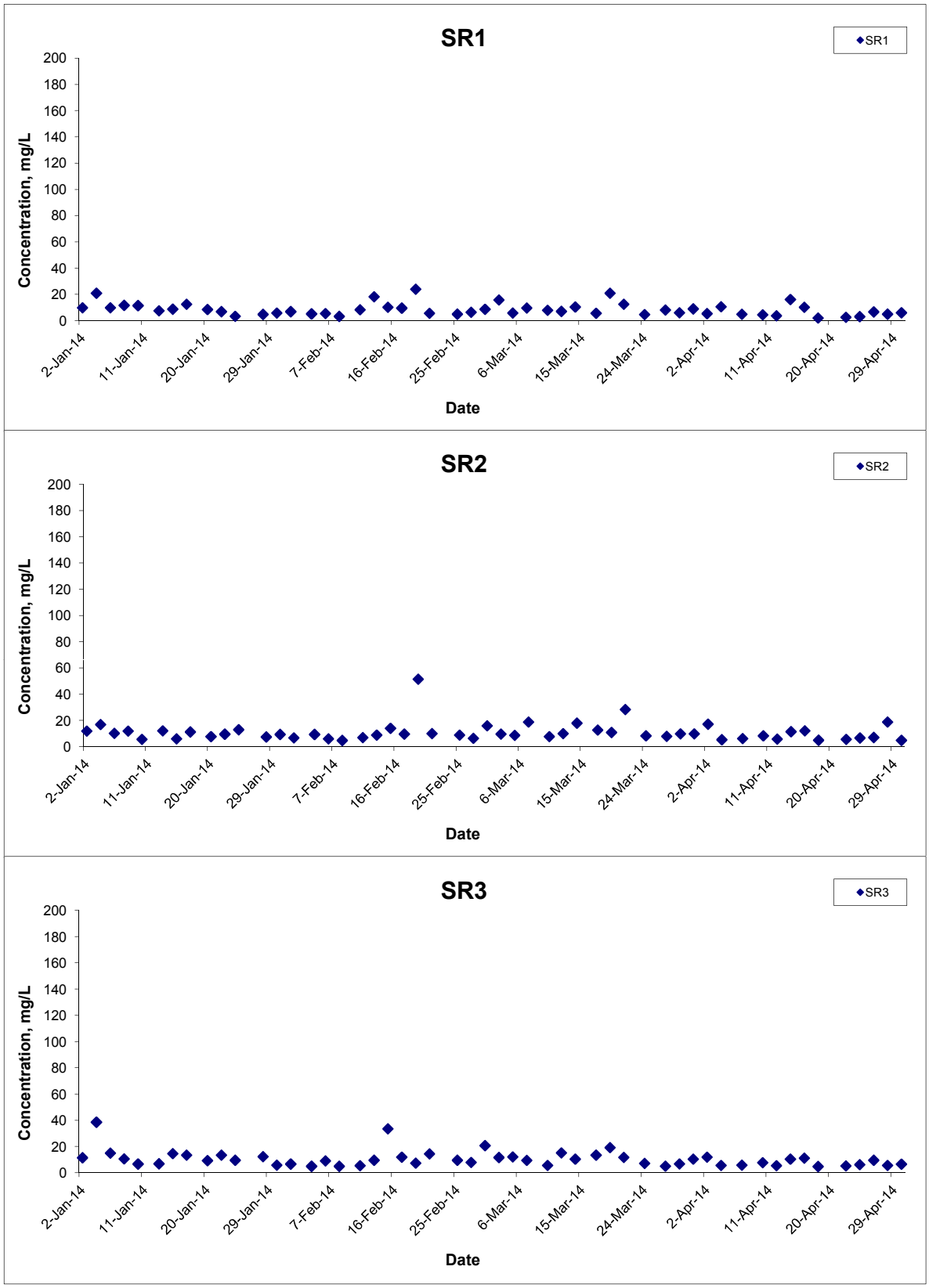
Suspended Solids (Depth-averaged) at Mid-Ebb Tide



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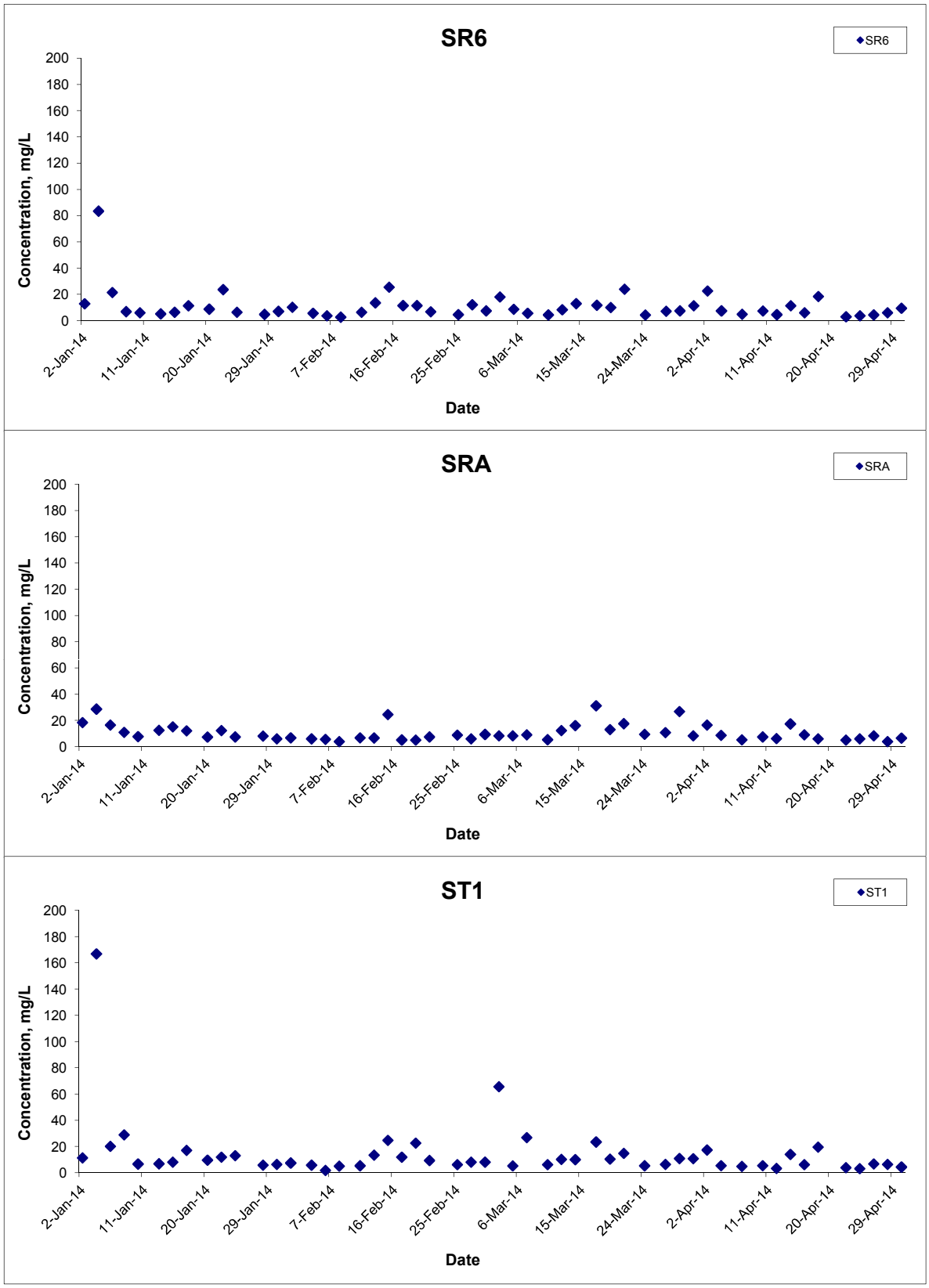

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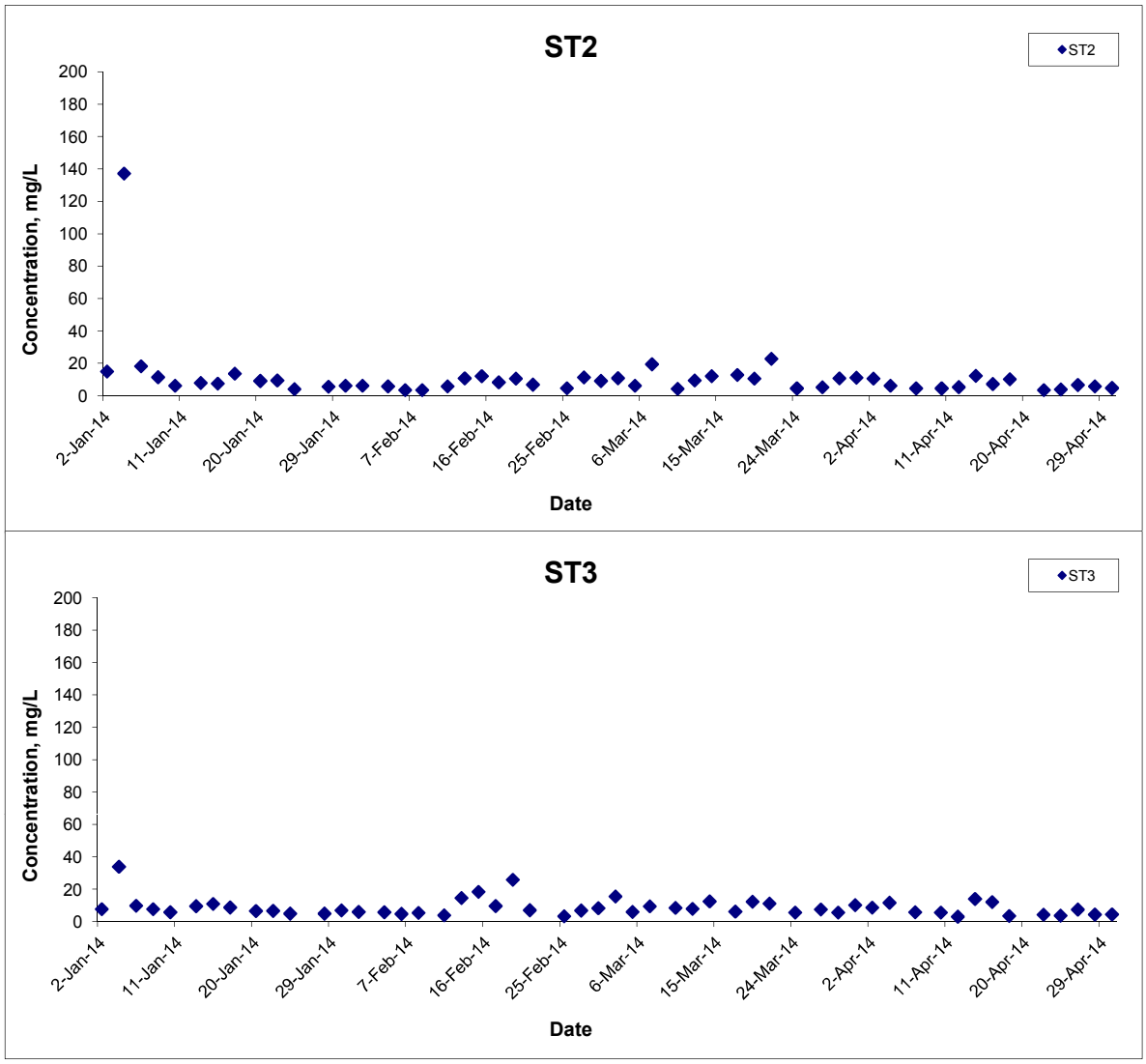
Suspended Solids (Depth-averaged) at Mid-Ebb Tide



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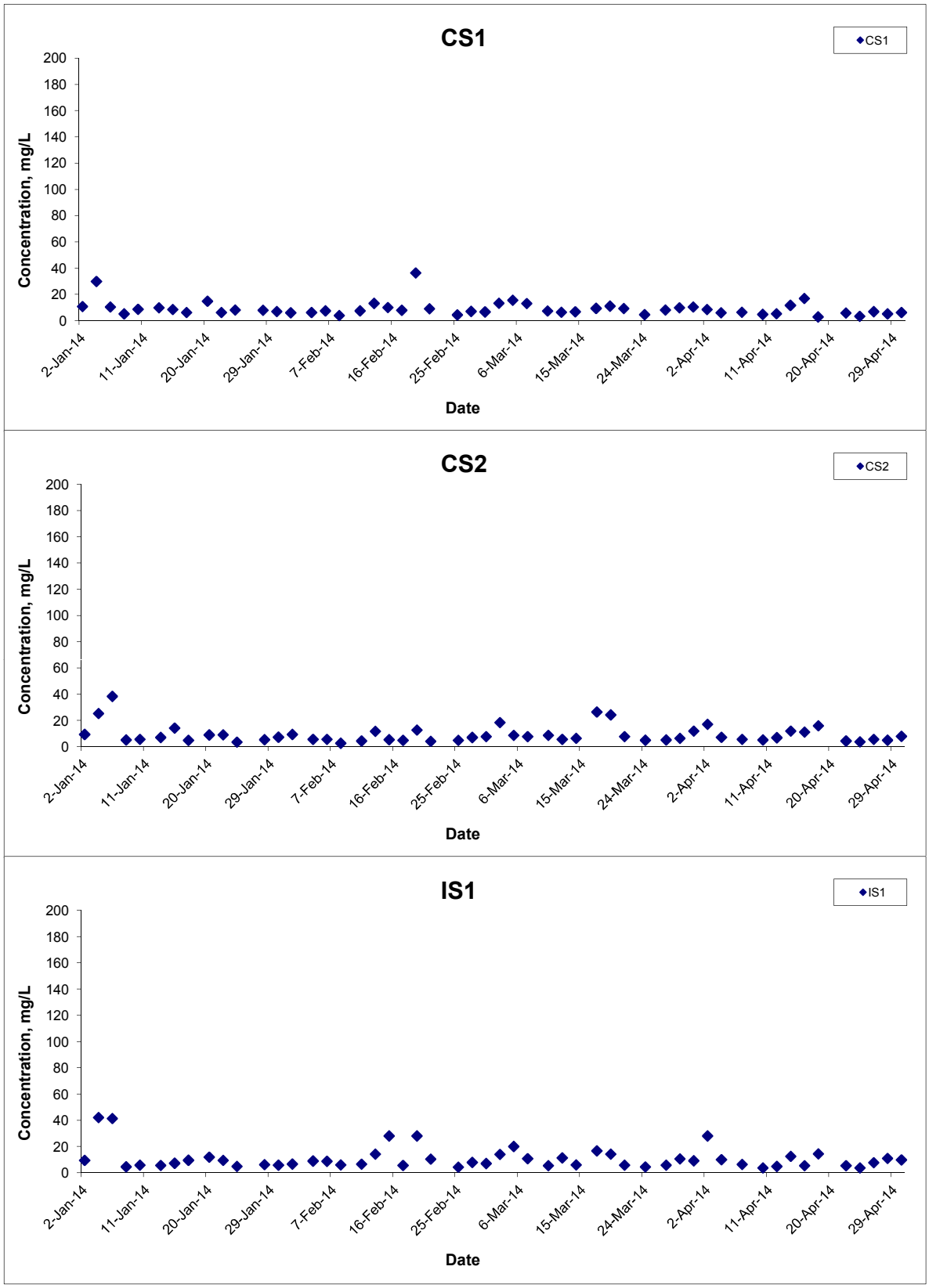
Suspended Solids (Depth-averaged) at Mid-Flood Tide



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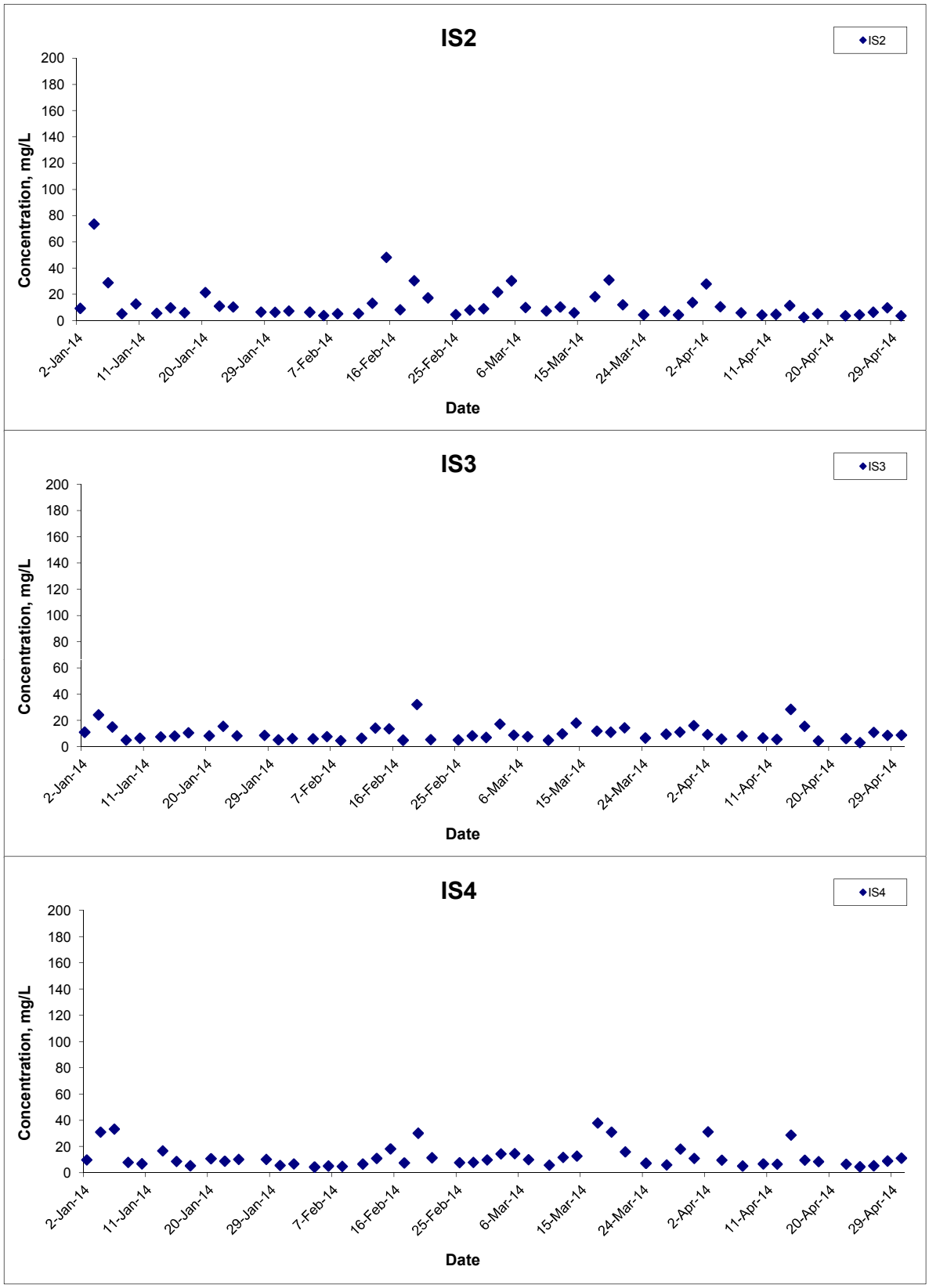
Suspended Solids (Depth-averaged) at Mid-Flood Tide



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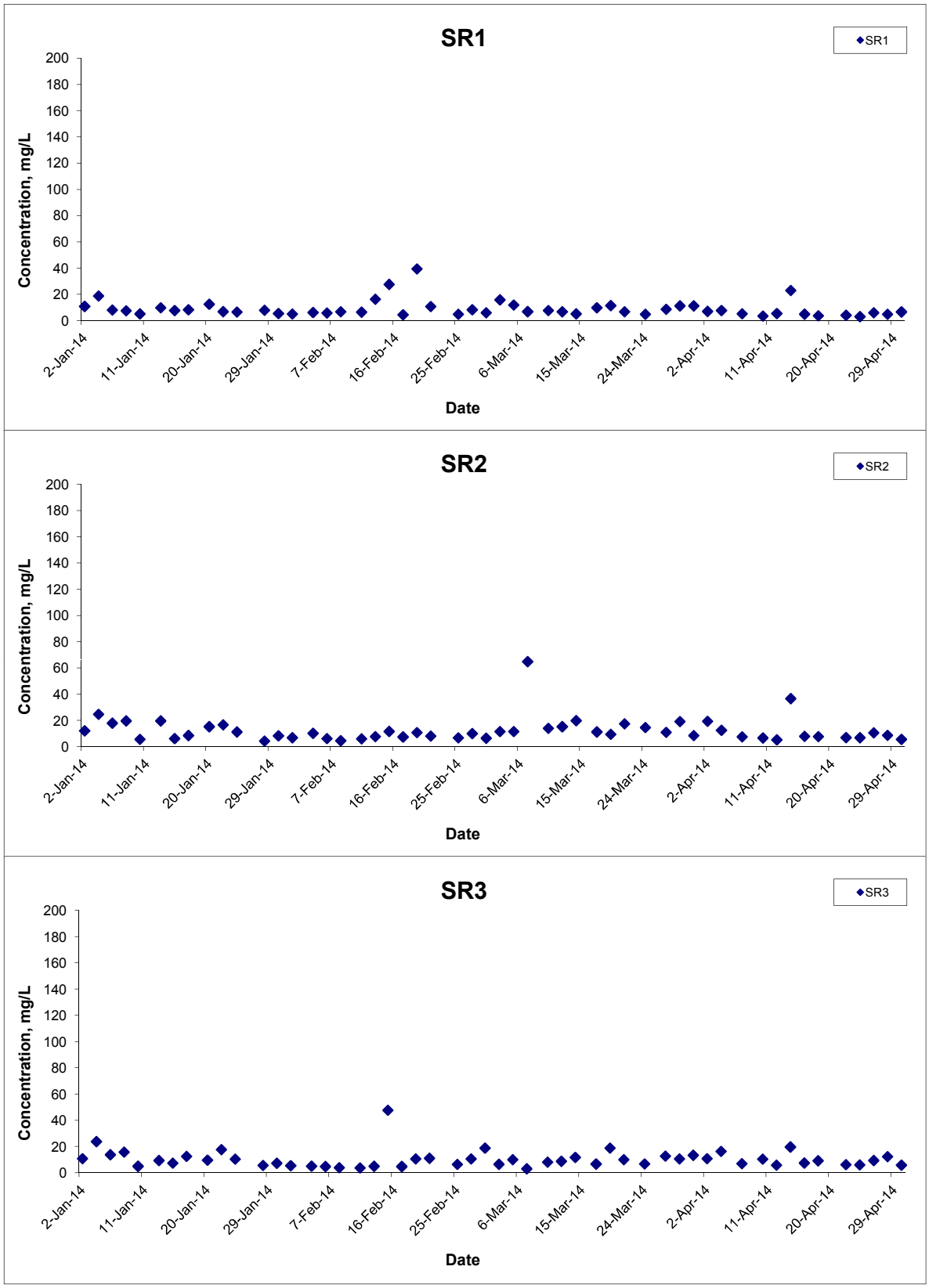
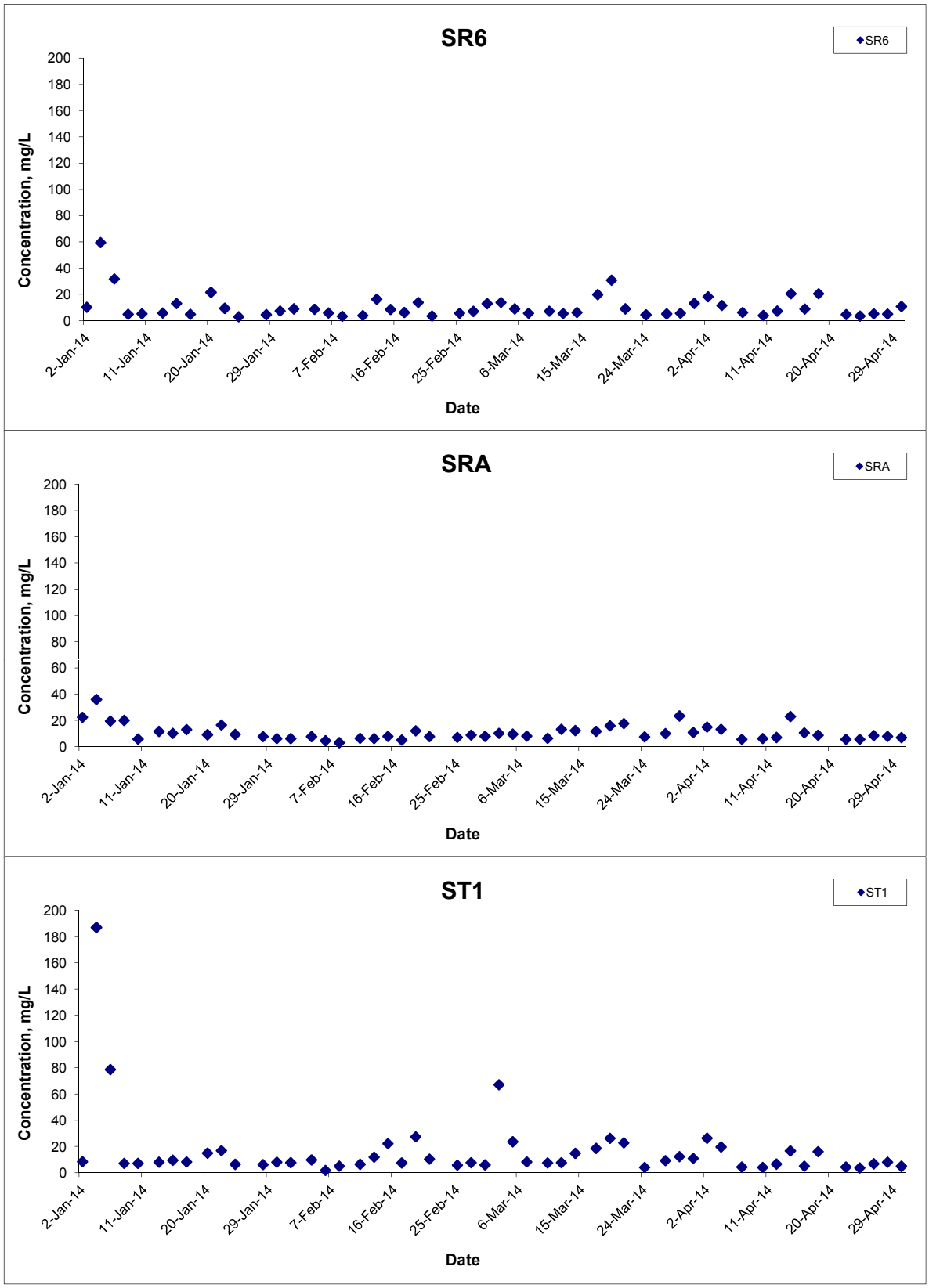
		Date: Apr 14	Appendix: H	

Suspended Solids (Depth-averaged) at Mid-Flood Tide



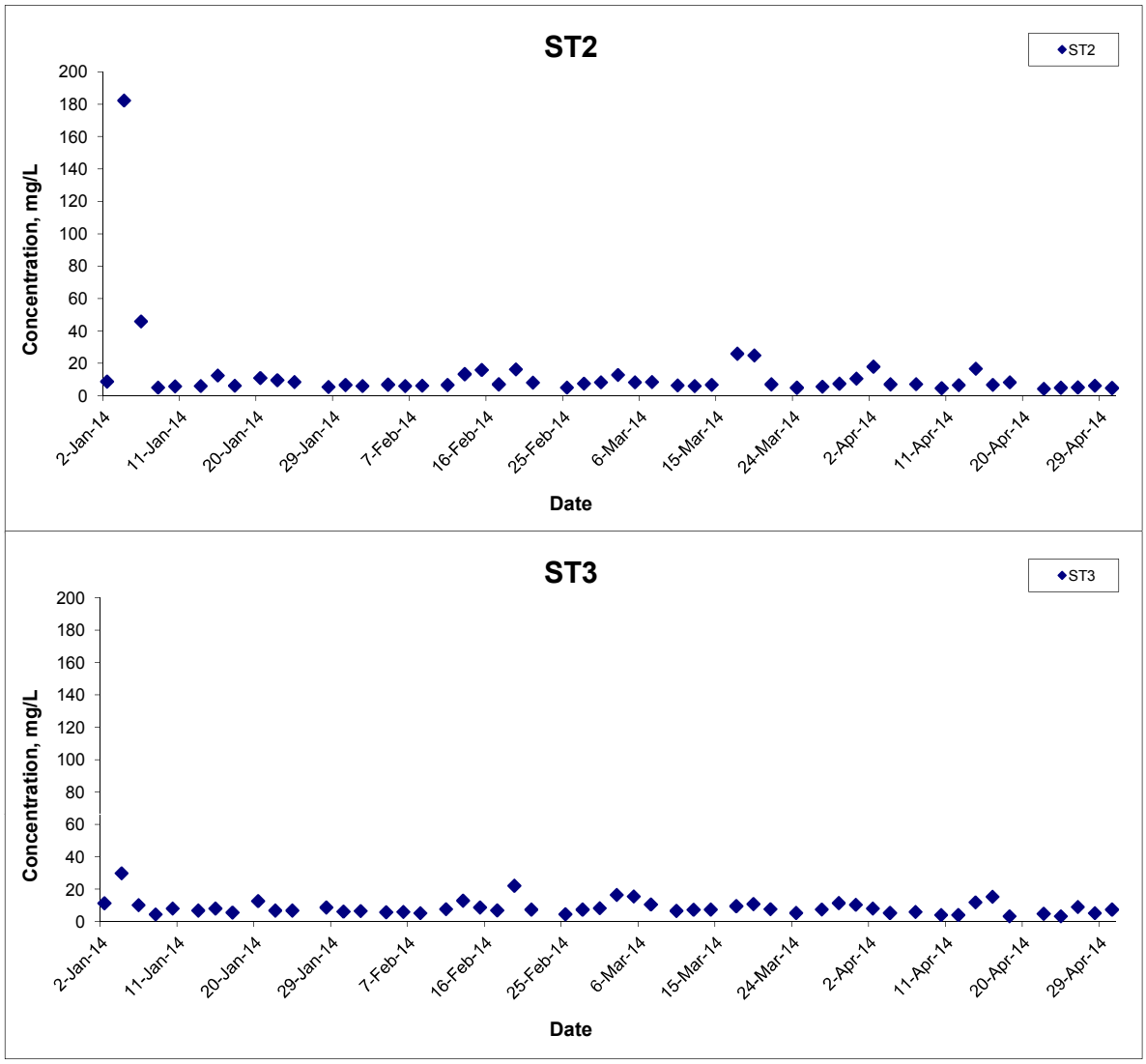
Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA12014	CINOTECH
		Date: Apr 14	Appendix: H	

Suspended Solids (Depth-averaged) at Mid-Flood Tide



Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA12014	CINOTECH
		Date: Apr 14	Appendix: H	

Suspended Solids (Depth-averaged) at Mid-Flood Tide



Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA12014	CINOTECH
		Date Apr 14	Appendix H	

APPENDIX I
DOLPHIN MONITORING REPORT
(LINE TRANSECT)

Contract No. HY/2011/09
Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill Dolphin Monthly Monitoring

15th Monthly Progress Report (April 2014)

Submitted by
Samuel K.Y. Hung, Ph.D., Hong Kong Cetacean Research Project

4 May 2014

1. Introduction

1.1. The Hong Kong Link Road (HKLR) serves to connect the Hong Kong-Zhuhai-Macao Bridge (HZMB) Main Bridge at the Hong Kong Special Administrative Region (HKSAR) Boundary and the HZMB Hong Kong Boundary Crossing Facilities (HKBCF) located at the northeastern waters of the Hong Kong International Airport.

1.2. According to the updated Environmental Monitoring and Audit (EM&A) Manual (for HKLR), monthly line-transect vessel surveys for Chinese White Dolphin should be conducted to cover the West Lantau survey area as in AFCD annual marine mammal monitoring programme.

1.3. Since November 2012, Hong Kong Cetacean Research Project (HKCRP) has been commissioned by Dragages – China Harbour – VSL JV to conduct this 34-month dolphin monitoring study in order to collect data on Chinese White Dolphins during the construction phase (i.e. impact period) of the HKLR09 project in West Lantau (WL) survey area, and to analyze the collected survey data to monitor distribution, encounter rate, abundance, activities and occurrence of dolphin calves. Photo-identification will also be collected from individual Chinese White Dolphins to examine their individual range patterns and core area use.

1.4. From the monitoring results, any changes in dolphin occurrence within the study area will be examined for possible causes, and appropriate actions and additional mitigation measures will be recommended as necessary.

1.5. This report is the 15th monthly progress report under the HKLR09 construction phase dolphin monitoring programme, summarizing the results of the survey findings during the month of April 2014.

2. Monitoring Methodology

2.1. Vessel-based Line-transect Survey

2.1.1. According to the requirement of the updated EM&A manual, dolphin monitoring programme should cover all transect lines in WL survey area (see Figure 1) twice per month throughout the entire construction period. The co-ordinates of all transect lines are shown in Table 1.

Table 1. Co-ordinates of transect lines in WL survey area

Line No.		Easting	Northing		Line No.		Easting	Northing
1	Start Point	803750	818500		7	Start Point	800200	810450
1	End Point	803750	815500		7	End Point	801400	810450
2	Start Point	803750	815500		8	Start Point	801300	809450
2	End Point	802940	815500		8	End Point	799750	809450
3	Start Point	802550	814500		9	Start Point	799400	808450
3	End Point	803700	814500		9	End Point	801430	808450
4	Start Point	803120	813600		10	Start Point	801500	807450
4	End Point	801640	813600		10	End Point	799600	807450
5	Start Point	801100	812450		11	Start Point	800300	806500
5	End Point	802900	812450		11	End Point	801750	806500
6	Start Point	802400	811500		12	Start Point	801760	805450
6	End Point	800660	811500		12	End Point	800700	805450

2.1.2. The survey team used standard line-transect methods (Buckland et al. 2001) to conduct the systematic vessel surveys, and followed the same technique of data collection that has been adopted over the last 16 years of marine

mammal monitoring surveys in Hong Kong developed by HKCRP (see Hung 2012). For each monitoring vessel survey, a 15-m inboard vessel with an open upper deck (about 4.5 m above water surface) was used to make observations from the flying bridge area.

2.1.3. Two experienced observers (a data recorder and a primary observer) made up the on-effort survey team, and the survey vessel transited different transect lines at a constant speed of 13-15 km per hour. The data recorder searched with unaided eyes and filled out the datasheets, while the primary observer searched for dolphins and porpoises continuously through 7 x 50 *Fujinon* marine binoculars. Both observers searched the sea ahead of the vessel, between 270^{o} and 90^{o} (in relation to the bow, which is defined as 0^{o}). One to two additional experienced observers were available on the boat to work in shift (i.e. rotate every 30 minutes) in order to minimize fatigue of the survey team members. All observers were experienced in small cetacean survey techniques and identifying local cetacean species.

2.1.4. During on-effort survey periods, the survey team recorded effort data including time, position (latitude and longitude), weather conditions (Beaufort sea state and visibility), and distance traveled in each series (a continuous period of search effort) with the assistance of a handheld GPS.

2.1.5. Data including time, position and vessel speed were also automatically and continuously logged by handheld GPS throughout the entire survey for subsequent review.

2.1.6. When dolphins were sighted, the survey team would end the survey effort, and immediately record the initial sighting distance and angle of the dolphin group from the survey vessel, as well as the sighting time and position. Then the research vessel was diverted from its course to approach the animals for species identification, group size estimation, assessment of group composition, and behavioural observations. The perpendicular distance (PSD) of the dolphin group to the transect line was later calculated from the initial sighting distance and angle.

2.1.7. Survey effort being conducted along the parallel transect lines that were perpendicular to the coastlines (as indicated in Figure 1) was labeled as "primary" survey effort, while the survey effort being conducted along the

connecting lines between parallel lines was labeled as “secondary” survey effort. According to HKCRP long-term dolphin monitoring data, encounter rates of Chinese white dolphins deduced from effort and sighting data collected along primary and secondary lines were similar in survey areas around Lantau Island. Therefore, primary and secondary survey effort were both presented as on-effort survey effort in this report.

2.1.8. Encounter rates of Chinese white dolphins (number of on-effort sightings per 100 km of survey effort) were calculated in WL survey area in relation to the amount of survey effort conducted during each month of monitoring survey. Only data collected under Beaufort 3 or below condition would be used for encounter rate analysis. Dolphin encounter rates were calculated using primary survey effort alone, as well as the combined survey effort from both primary and secondary lines.

2.2. Photo-identification Work

2.2.1. When a group of Chinese White Dolphins were sighted during the line-transect survey, the survey team would end effort and approach the group slowly from the side and behind to take photographs of them. Every attempt was made to photograph every dolphin in the group, and even photograph both sides of the dolphins, since the colouration and markings on both sides may not be symmetrical.

2.2.2. A professional digital camera (*Canon* EOS 7D or 60D model) equipped with long telephoto lenses (100-400 mm zoom) were available on board for researchers to take sharp, close-up photographs of dolphins as they surfaced. The images were shot at the highest available resolution and stored on Compact Flash memory cards for downloading onto a computer.

2.2.3. All digital images taken in the field were first examined, and those containing potentially identifiable individuals were sorted out. These photographs would then be examined in greater detail, and were carefully compared to the existing Chinese White Dolphin photo-identification catalogue maintained by HKCRP since 1995.

2.2.4. Chinese White Dolphins can be identified by their natural markings, such as nicks, cuts, scars and deformities on their dorsal fin and body, and their unique spotting patterns were also used as secondary identifying features

(Jefferson 2000).

2.2.5. All photographs of each individual were then compiled and arranged in chronological order, with data including the date and location first identified (initial sighting), re-sightings, associated dolphins, distinctive features, and age classes entered into a computer database.

3. Monitoring Results

3.1. Vessel-based Line-transect Survey

3.1.1. During the monitoring month of April 2014, two complete sets of systematic line-transect vessel surveys were conducted on the 15th and 23rd, to cover all transect lines in WL survey area twice. The survey routes of each survey day are presented in Figures 2-3.

3.1.2. From these surveys, a total of 64.51 km of survey effort was collected, with 75.3% of the total survey effort being conducted under favourable weather conditions (i.e. Beaufort Sea State 3 or below with good visibility) (Appendix I). Moreover, the total survey effort conducted on primary lines (the horizontal lines perpendicular to the coastlines) was 42.33 km, while the effort on secondary lines (the lines connecting the primary lines) was 22.18 km.

3.1.3. During the monitoring surveys in April 2014, seven groups of 31 Chinese White Dolphins were sighted, with five of them being made on primary lines during on-effort search (Appendix II). None of the dolphin groups was associated with any operating fishing vessel.

3.1.4. Distribution of the seven dolphin sightings made during April's surveys is shown in Figure 4. Dolphins groups were scattered in the waters between Tai O Peninsula and Fan Lau with no apparent concentration of sightings. None of the dolphin sightings was made in the vicinity of the HKLR09 alignment, and the majority of dolphin groups were sighted far away from the bridge alignment (Figure 4).

3.1.5. During April's surveys, encounter rates of Chinese White Dolphins deduced from the survey effort and on-effort sighting data made under favourable conditions (Beaufort 3 or below) are shown in Tables 2 & 3.

Table 2. Dolphin encounter rates (sightings per 100 km of survey effort) per set during April's surveys in West Lantau (WL)

		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**
West Lantau	Set 1: April 15th	23.4	58.6
	Set 2: April 23rd	0.0	0.0

Table 3. Overall dolphin encounter rates (sightings per 100 km of survey effort) in April's surveys on primary lines only as well as both primary lines and secondary lines in West Lantau (WL)

	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**
West Lantau	12.2	12.4	30.6	47.3

3.1.6. The average group size of Chinese White Dolphins was 4.43 individuals per group during April's surveys, which was slightly higher to the ones in previous months of monitoring surveys. Out of the seven dolphin groups, only one group composed of 10 or more animals, while four groups were composed of only 1-2 animals.

3.2. Photo-identification Work

3.2.1. A total of 19 different individual Chinese White Dolphins were identified 20 times during the April's survey, and only one of individual (NL295) were sighted more than once (Appendices III and IV).

3.2.2. Notably, several individuals identified during this month of monitoring surveys were known to occur primarily in North Lantau waters in the past (i.e. NL33, NL264, NL288, NL295, WL04 and WL05). It is unclear whether they have been expanding their range use to West Lantau waters, and such possible range expansion should be continuously monitored in the upcoming surveys.

3.2.3. Two females (NL33 and NL264) were associated with their calves during their re-sightings in April's surveys.

3.3. Conclusion

3.3.1. During this month of dolphin monitoring, marine construction activities have continued under this contract. However, no adverse impact on Chinese white dolphins was noticeable from general observations.

3.3.2. Due to the 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 this project in the quarterly EM&A report, where comparison on distribution, group size and encounter rates of dolphins between the quarterly impact monitoring period (i.e. March-May 2014) and baseline monitoring period will be made.

4. References

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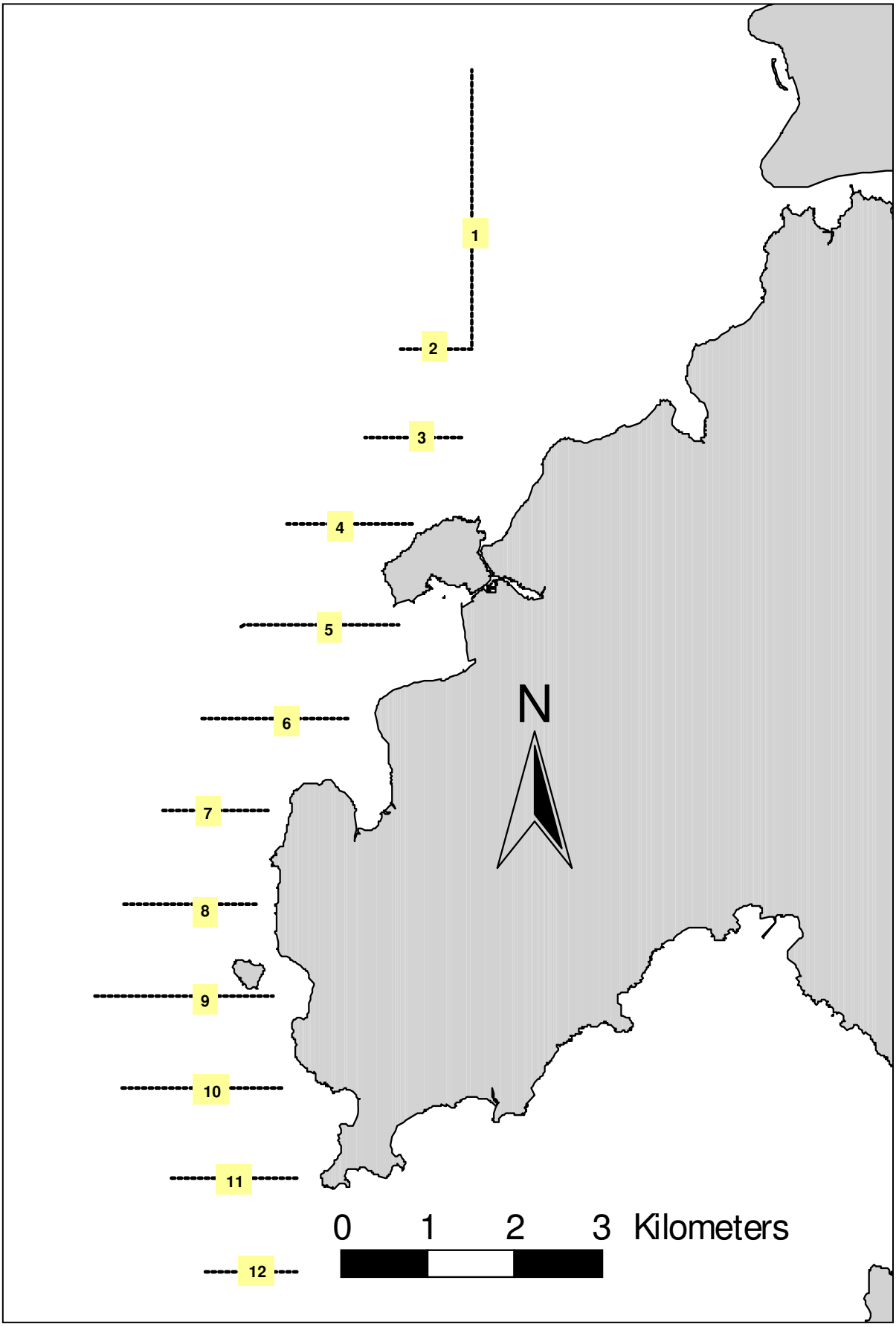


Figure 1. Transect Line Layout in West Lantau Survey Areas

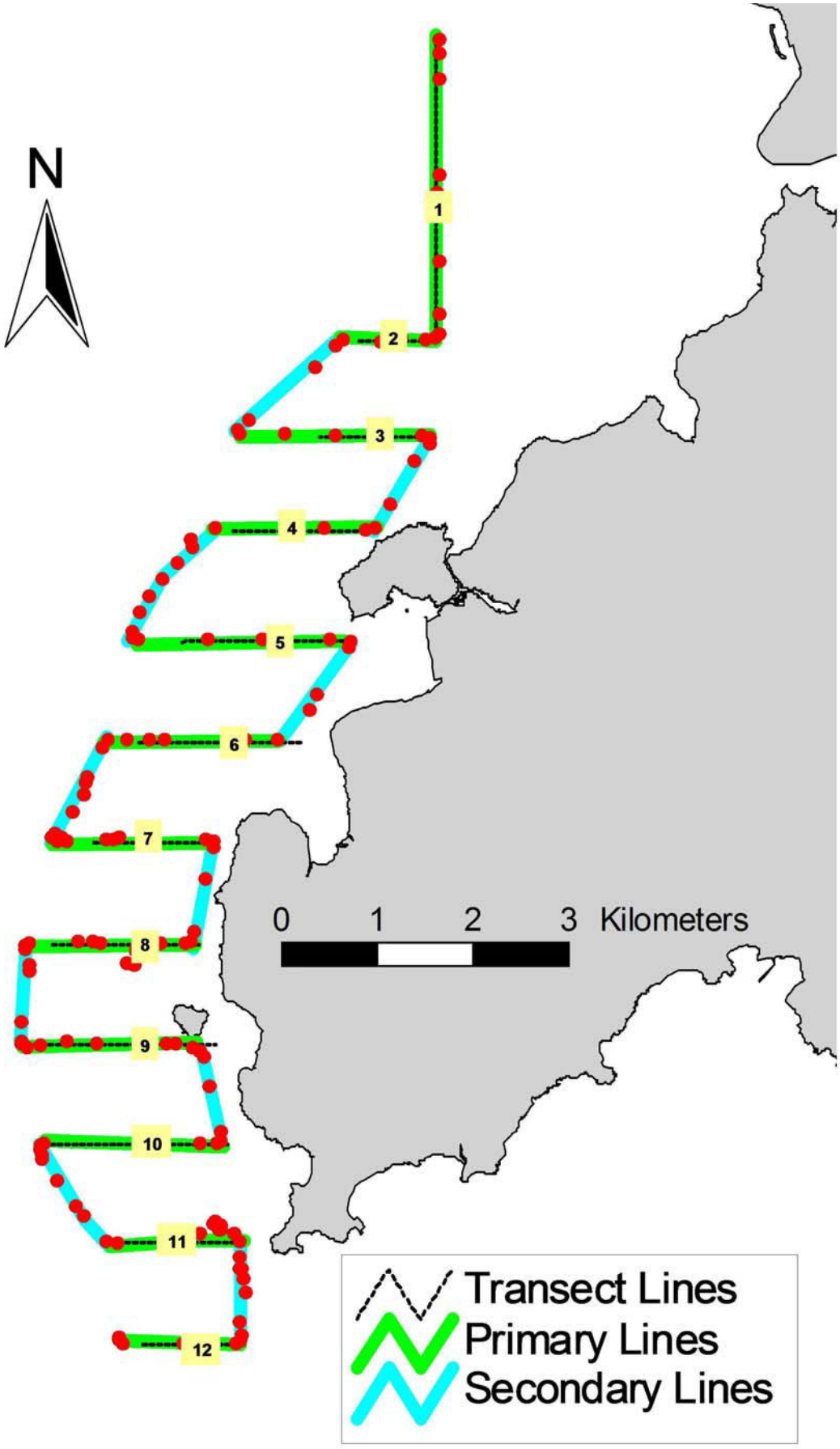


Figure 2. Survey Route on April 15th, 2014 (note: red dots represent the tracked positions of survey boat logged continuously by GPS throughout the course of the survey)

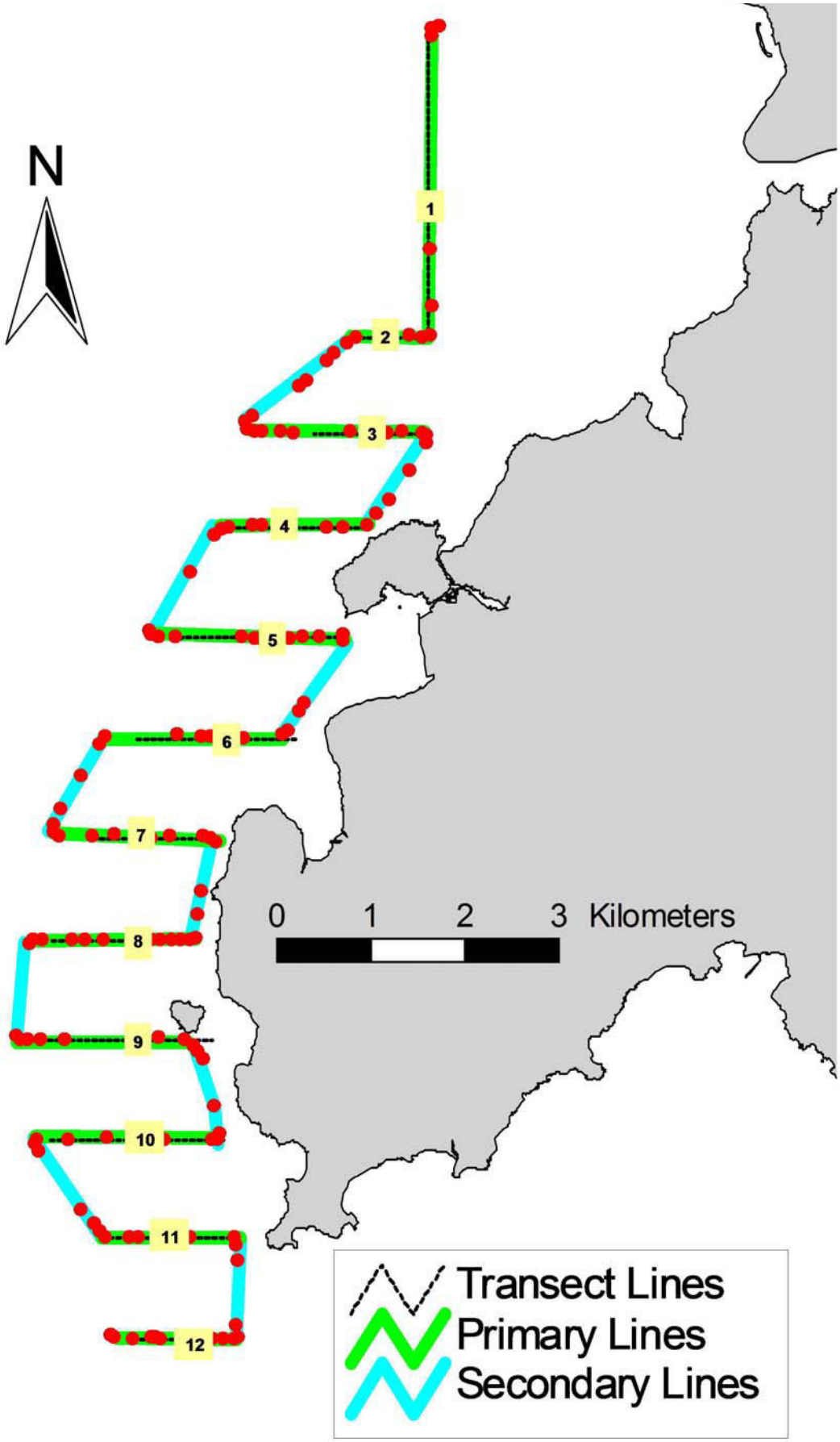


Figure 3. Survey Route on April 23rd, 2014 (note: red dots represent the tracked positions of survey boat logged continuously by GPS throughout the course of the survey)

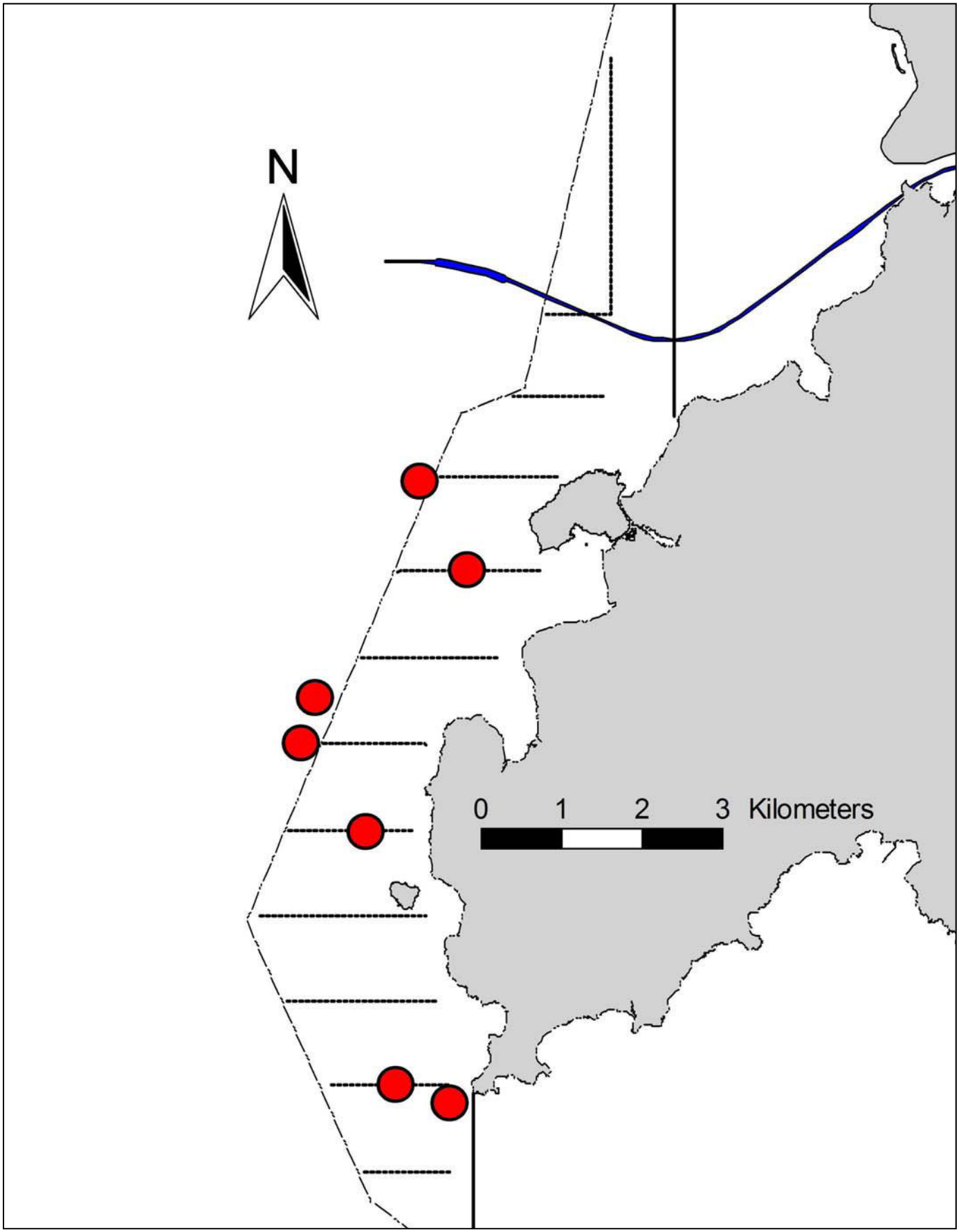


Figure 4. Distribution of Chinese White Dolphin Sighting during April 2014 HKLR09 Monitoring Surveys

Appendix I. HKLR09 Survey Effort Database (April 2014)

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

DATE	AREA	BEAU	EFFORT	SEASON	VESSEL	TYPE	P/S
15-Apr-14	W LANTAU	2	7.04	SPRING	STANDARD31516	HKLR	P
15-Apr-14	W LANTAU	3	10.03	SPRING	STANDARD31516	HKLR	P
15-Apr-14	W LANTAU	4	3.92	SPRING	STANDARD31516	HKLR	P
15-Apr-14	W LANTAU	2	4.31	SPRING	STANDARD31516	HKLR	S
15-Apr-14	W LANTAU	3	4.44	SPRING	STANDARD31516	HKLR	S
15-Apr-14	W LANTAU	4	1.97	SPRING	STANDARD31516	HKLR	S
23-Apr-14	W LANTAU	2	1.93	SPRING	STANDARD31516	HKLR	P
23-Apr-14	W LANTAU	3	13.66	SPRING	STANDARD31516	HKLR	P
23-Apr-14	W LANTAU	4	5.75	SPRING	STANDARD31516	HKLR	P
23-Apr-14	W LANTAU	2	1.97	SPRING	STANDARD31516	HKLR	S
23-Apr-14	W LANTAU	3	5.20	SPRING	STANDARD31516	HKLR	S
23-Apr-14	W LANTAU	4	4.29	SPRING	STANDARD31516	HKLR	S

Appendix II. HKLR09 Chinese White Dolphin Sighting Database (April 2014)

(Abberviations: STG# = Sighting Number; HRD SZ = Dolphin Herd Size; BEAU = Beaufort Sea State; PSD = Perpendicular Distance; ND = Not Determined; BOAT ASSOC. = Fishing Boat Association; P/S: Sighting Made on Primary/Secondary Lines)

DATE	STG #	TIME	HRD SZ	AREA	BEAU	PSD	EFFORT	TYPE	NORTHING	EASTING	SEASON	BOAT ASSOC.	P/S
15-Apr-14	1	1308	5	W LANTAU	3	100	ON	HKLR	813517	801369	SPRING	NONE	P
15-Apr-14	2	1336	2	W LANTAU	2	693	ON	HKLR	812463	801944	SPRING	NONE	P
15-Apr-14	3	1355	11	W LANTAU	3	140	ON	HKLR	810984	800085	SPRING	NONE	S
15-Apr-14	4	1412	2	W LANTAU	3	161	ON	HKLR	810452	799909	SPRING	NONE	P
15-Apr-14	5	1431	1	W LANTAU	3	70	ON	HKLR	809432	800700	SPRING	NONE	P
15-Apr-14	6	1515	8	W LANTAU	4	60	ON	HKLR	806463	801064	SPRING	NONE	P
15-Apr-14	7	1528	2	W LANTAU	3	63	ON	HKLR	806251	801734	SPRING	NONE	S

Appendix III. Individual dolphins identified during HKLR09 monitoring surveys in April 2014

ID#	DATE	STG#	AREA
CH38	15/04/14	3	W LANTAU
CH108	15/04/14	3	W LANTAU
NL33	15/04/14	3	W LANTAU
NL156	15/04/14	3	W LANTAU
NL264	15/04/14	1	W LANTAU
NL288	15/04/14	1	W LANTAU
NL295	15/04/14	1	W LANTAU
	15/04/14	3	W LANTAU
SL05	15/04/14	6	W LANTAU
WL04	15/04/14	1	W LANTAU
WL05	15/04/14	1	W LANTAU
WL25	15/04/14	4	W LANTAU
WL46	15/04/14	3	W LANTAU
WL47	15/04/14	3	W LANTAU
WL72	15/04/14	3	W LANTAU
WL109	15/04/14	3	W LANTAU
WL130	15/04/14	7	W LANTAU
WL131	15/04/14	6	W LANTAU
WL137	15/04/14	3	W LANTAU
WL173	15/04/14	6	W LANTAU

Appendix IV. Photographs of Identified Individual Dolphins in April 2014 (HKLR09)

Appendix IV. (cont'd)

Appendix IV. (cont'd)

APPENDIX J
WIND DATA

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
1-Apr-2014	00:00	1.3	SW
1-Apr-2014	01:00	1.3	SW
1-Apr-2014	02:00	1.1	SW
1-Apr-2014	03:00	1.6	SW
1-Apr-2014	04:00	2.1	WSW
1-Apr-2014	05:00	1.9	W
1-Apr-2014	06:00	2	WSW
1-Apr-2014	07:00	1.9	WSW
1-Apr-2014	08:00	1.9	WSW
1-Apr-2014	09:00	2.2	SW
1-Apr-2014	10:00	2.1	WSW
1-Apr-2014	11:00	2.9	W
1-Apr-2014	12:00	2.7	W
1-Apr-2014	13:00	2.6	W
1-Apr-2014	14:00	2.7	W
1-Apr-2014	15:00	2.6	W
1-Apr-2014	16:00	2.4	W
1-Apr-2014	17:00	2.4	SSW
1-Apr-2014	18:00	2.2	WSW
1-Apr-2014	19:00	2.4	W
1-Apr-2014	20:00	2.2	WNW
1-Apr-2014	21:00	2.3	WNW
1-Apr-2014	22:00	2.3	WSW
1-Apr-2014	23:00	2.2	WSW
2-Apr-2014	00:00	2.2	WSW
2-Apr-2014	01:00	2.2	W
2-Apr-2014	02:00	2.1	WSW
2-Apr-2014	03:00	2	WNW
2-Apr-2014	04:00	1.8	W
2-Apr-2014	05:00	1.8	W
2-Apr-2014	06:00	1.1	SW
2-Apr-2014	07:00	1.4	W
2-Apr-2014	08:00	1.8	W
2-Apr-2014	09:00	2	WNW
2-Apr-2014	10:00	2.3	SW
2-Apr-2014	11:00	2.3	SSW
2-Apr-2014	12:00	2.3	S
2-Apr-2014	13:00	1.7	S
2-Apr-2014	14:00	1.6	S
2-Apr-2014	15:00	1.4	W
2-Apr-2014	16:00	0.9	WSW
2-Apr-2014	17:00	0.9	WSW
2-Apr-2014	18:00	1.1	SW
2-Apr-2014	19:00	0.9	W
2-Apr-2014	20:00	1.4	WNW
2-Apr-2014	21:00	1.4	W
2-Apr-2014	22:00	1.3	E
2-Apr-2014	23:00	1.6	E
3-Apr-2014	00:00	1.4	W
3-Apr-2014	01:00	1.3	SW
3-Apr-2014	02:00	1.3	SSW
3-Apr-2014	03:00	0.8	S
3-Apr-2014	04:00	0.7	SSW
3-Apr-2014	05:00	0.7	SSW

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
3-Apr-2014	06:00	0.6	W
3-Apr-2014	07:00	0.6	W
3-Apr-2014	08:00	0.8	N
3-Apr-2014	09:00	1	WNW
3-Apr-2014	10:00	1.3	W
3-Apr-2014	11:00	1.3	W
3-Apr-2014	12:00	1.3	W
3-Apr-2014	13:00	1.5	WNW
3-Apr-2014	14:00	1.4	W
3-Apr-2014	15:00	1.8	W
3-Apr-2014	16:00	1.7	WNW
3-Apr-2014	17:00	2	W
3-Apr-2014	18:00	1.5	SW
3-Apr-2014	19:00	1.4	SW
3-Apr-2014	20:00	1.2	W
3-Apr-2014	21:00	1.1	W
3-Apr-2014	22:00	1.4	W
3-Apr-2014	23:00	1.3	W
4-Apr-2014	00:00	1.3	W
4-Apr-2014	01:00	1.5	W
4-Apr-2014	02:00	1.6	W
4-Apr-2014	03:00	1.2	W
4-Apr-2014	04:00	1.1	SW
4-Apr-2014	05:00	1	SW
4-Apr-2014	06:00	1.1	W
4-Apr-2014	07:00	1.1	WNW
4-Apr-2014	08:00	0.9	WNW
4-Apr-2014	09:00	1.3	W
4-Apr-2014	10:00	1.8	WSW
4-Apr-2014	11:00	1.9	W
4-Apr-2014	12:00	1.8	SW
4-Apr-2014	13:00	1.7	SW
4-Apr-2014	14:00	1.2	SSW
4-Apr-2014	15:00	1.5	SSW
4-Apr-2014	16:00	1.1	SSW
4-Apr-2014	17:00	1	W
4-Apr-2014	18:00	1	SW
4-Apr-2014	19:00	0.7	NNE
4-Apr-2014	20:00	0.5	SW
4-Apr-2014	21:00	0.9	W
4-Apr-2014	22:00	0.9	WNW
4-Apr-2014	23:00	0.8	WNW
5-Apr-2014	00:00	0.7	W
5-Apr-2014	01:00	0.8	SW
5-Apr-2014	02:00	1	WNW
5-Apr-2014	03:00	0.9	W
5-Apr-2014	04:00	1.1	WNW
5-Apr-2014	05:00	1.3	W
5-Apr-2014	06:00	0.8	W
5-Apr-2014	07:00	0.8	W
5-Apr-2014	08:00	0.6	W
5-Apr-2014	09:00	0.7	W
5-Apr-2014	10:00	1.7	WSW
5-Apr-2014	11:00	1.4	WSW

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
5-Apr-2014	12:00	2.2	W
5-Apr-2014	13:00	1.8	W
5-Apr-2014	14:00	1.7	W
5-Apr-2014	15:00	1.5	W
5-Apr-2014	16:00	1.6	W
5-Apr-2014	17:00	1.1	WNW
5-Apr-2014	18:00	1	W
5-Apr-2014	19:00	0.7	W
5-Apr-2014	20:00	1.3	W
5-Apr-2014	21:00	1.3	W
5-Apr-2014	22:00	1.2	SSW
5-Apr-2014	23:00	1.2	W
6-Apr-2014	00:00	1	SW
6-Apr-2014	01:00	1	WSW
6-Apr-2014	02:00	2	W
6-Apr-2014	03:00	2.3	WSW
6-Apr-2014	04:00	1.8	W
6-Apr-2014	05:00	1.6	W
6-Apr-2014	06:00	2	W
6-Apr-2014	07:00	1.6	WNW
6-Apr-2014	08:00	2	WNW
6-Apr-2014	09:00	2.3	WNW
6-Apr-2014	10:00	2.5	WNW
6-Apr-2014	11:00	3	W
6-Apr-2014	12:00	2.6	W
6-Apr-2014	13:00	2.8	WNW
6-Apr-2014	14:00	2.4	WNW
6-Apr-2014	15:00	2.3	WNW
6-Apr-2014	16:00	2.3	WSW
6-Apr-2014	17:00	2.3	WSW
6-Apr-2014	18:00	2.1	WSW
6-Apr-2014	19:00	2.1	W
6-Apr-2014	20:00	2.1	W
6-Apr-2014	21:00	2.6	WNW
6-Apr-2014	22:00	2.6	WNW
6-Apr-2014	23:00	1.9	WNW
7-Apr-2014	00:00	1.4	WNW
7-Apr-2014	01:00	1.9	WNW
7-Apr-2014	02:00	1.5	W
7-Apr-2014	03:00	1.7	W
7-Apr-2014	04:00	1.8	SSW
7-Apr-2014	05:00	1.2	WSW
7-Apr-2014	06:00	1.1	W
7-Apr-2014	07:00	0.7	SW
7-Apr-2014	08:00	1.2	SW
7-Apr-2014	09:00	0.8	WSW
7-Apr-2014	10:00	1	W
7-Apr-2014	11:00	1.2	WNW
7-Apr-2014	12:00	1.7	WNW
7-Apr-2014	13:00	1.6	W
7-Apr-2014	14:00	0.9	WNW
7-Apr-2014	15:00	0.8	W
7-Apr-2014	16:00	1.3	W
7-Apr-2014	17:00	1.5	WNW

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
7-Apr-2014	18:00	1.4	SW
7-Apr-2014	19:00	1.8	W
7-Apr-2014	20:00	1.3	SW
7-Apr-2014	21:00	0.7	SW
7-Apr-2014	22:00	0.9	WSW
7-Apr-2014	23:00	0.7	WSW
8-Apr-2014	00:00	0.5	SW
8-Apr-2014	01:00	0.5	WSW
8-Apr-2014	02:00	0.4	SW
8-Apr-2014	03:00	0.5	WSW
8-Apr-2014	04:00	0.6	W
8-Apr-2014	05:00	0.6	SW
8-Apr-2014	06:00	0.9	WSW
8-Apr-2014	07:00	0.9	N
8-Apr-2014	08:00	1.2	WNW
8-Apr-2014	09:00	2	ENE
8-Apr-2014	10:00	2.3	W
8-Apr-2014	11:00	1.6	W
8-Apr-2014	12:00	1.9	WNW
8-Apr-2014	13:00	2.2	NNE
8-Apr-2014	14:00	3.4	NNE
8-Apr-2014	15:00	3	SSE
8-Apr-2014	16:00	2.6	SSE
8-Apr-2014	17:00	1.9	SSE
8-Apr-2014	18:00	1.7	SSW
8-Apr-2014	19:00	1.5	WNW
8-Apr-2014	20:00	1.7	W
8-Apr-2014	21:00	2	WSW
8-Apr-2014	22:00	1.9	SW
8-Apr-2014	23:00	1.4	SW
9-Apr-2014	00:00	1.6	WSW
9-Apr-2014	01:00	1.7	SSW
9-Apr-2014	02:00	1.8	W
9-Apr-2014	03:00	1.8	NE
9-Apr-2014	04:00	1.8	WSW
9-Apr-2014	05:00	1.6	WSW
9-Apr-2014	06:00	1.1	WSW
9-Apr-2014	07:00	0.8	WNW
9-Apr-2014	08:00	0.7	WNW
9-Apr-2014	09:00	1.1	W
9-Apr-2014	10:00	1.6	W
9-Apr-2014	11:00	2.3	W
9-Apr-2014	12:00	2.1	W
9-Apr-2014	13:00	2.2	W
9-Apr-2014	14:00	1.8	W
9-Apr-2014	15:00	1.9	SW
9-Apr-2014	16:00	1.7	W
9-Apr-2014	17:00	2	SSW
9-Apr-2014	18:00	2	WSW
9-Apr-2014	19:00	1.5	WNW
9-Apr-2014	20:00	1.6	WSW
9-Apr-2014	21:00	1.6	SSW
9-Apr-2014	22:00	0.9	SSW
9-Apr-2014	23:00	0.9	SW

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
10-Apr-2014	00:00	1.1	WSW
10-Apr-2014	01:00	1.1	NNW
10-Apr-2014	02:00	0.8	SW
10-Apr-2014	03:00	1	WNW
10-Apr-2014	04:00	1.1	WNW
10-Apr-2014	05:00	1.1	WNW
10-Apr-2014	06:00	1.3	W
10-Apr-2014	07:00	1.5	W
10-Apr-2014	08:00	1.5	WSW
10-Apr-2014	09:00	1.5	SW
10-Apr-2014	10:00	2	SSW
10-Apr-2014	11:00	3.2	SW
10-Apr-2014	12:00	3.1	SW
10-Apr-2014	13:00	2.9	WSW
10-Apr-2014	14:00	2.7	SW
10-Apr-2014	15:00	2.2	SW
10-Apr-2014	16:00	2.6	W
10-Apr-2014	17:00	3	N
10-Apr-2014	18:00	2	N
10-Apr-2014	19:00	2	ENE
10-Apr-2014	20:00	2.1	NE
10-Apr-2014	21:00	1.7	ENE
10-Apr-2014	22:00	1.8	ENE
10-Apr-2014	23:00	1.9	ENE
11-Apr-2014	00:00	1.8	ENE
11-Apr-2014	01:00	1.7	NE
11-Apr-2014	02:00	1.7	ENE
11-Apr-2014	03:00	1.7	ENE
11-Apr-2014	04:00	1.6	ENE
11-Apr-2014	05:00	1.5	NNE
11-Apr-2014	06:00	2	WSW
11-Apr-2014	07:00	1.8	WSW
11-Apr-2014	08:00	1.4	WSW
11-Apr-2014	09:00	1.5	WSW
11-Apr-2014	10:00	2	WSW
11-Apr-2014	11:00	2	WSW
11-Apr-2014	12:00	2.3	WSW
11-Apr-2014	13:00	1.9	WSW
11-Apr-2014	14:00	2.1	W
11-Apr-2014	15:00	1.9	W
11-Apr-2014	16:00	1.5	WNW
11-Apr-2014	17:00	1.6	W
11-Apr-2014	18:00	1.8	W
11-Apr-2014	19:00	1.6	NNE
11-Apr-2014	20:00	1.6	SSW
11-Apr-2014	21:00	1	NNE
11-Apr-2014	22:00	1.6	N
11-Apr-2014	23:00	1.4	ENE
12-Apr-2014	00:00	1.3	N
12-Apr-2014	01:00	0.7	E
12-Apr-2014	02:00	0.7	ENE
12-Apr-2014	03:00	1.3	ENE
12-Apr-2014	04:00	1.3	E
12-Apr-2014	05:00	1.3	E

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
12-Apr-2014	06:00	0.9	E
12-Apr-2014	07:00	1.1	N
12-Apr-2014	08:00	0.9	NNE
12-Apr-2014	09:00	1.7	NNE
12-Apr-2014	10:00	1.8	E
12-Apr-2014	11:00	2.2	SW
12-Apr-2014	12:00	2.2	ENE
12-Apr-2014	13:00	2	N
12-Apr-2014	14:00	2.2	ENE
12-Apr-2014	15:00	2.1	ENE
12-Apr-2014	16:00	1.6	ESE
12-Apr-2014	17:00	1.5	ENE
12-Apr-2014	18:00	0.9	ENE
12-Apr-2014	19:00	1	ENE
12-Apr-2014	20:00	1.1	NE
12-Apr-2014	21:00	1.3	NE
12-Apr-2014	22:00	1.4	NE
12-Apr-2014	23:00	1.4	NNE
13-Apr-2014	00:00	1.6	NNE
13-Apr-2014	01:00	1	NNE
13-Apr-2014	02:00	0.7	NE
13-Apr-2014	03:00	1	ENE
13-Apr-2014	04:00	1	ENE
13-Apr-2014	05:00	0.8	NE
13-Apr-2014	06:00	0.5	NNE
13-Apr-2014	07:00	0.8	NE
13-Apr-2014	08:00	0.9	ENE
13-Apr-2014	09:00	1.3	NNE
13-Apr-2014	10:00	1.8	ENE
13-Apr-2014	11:00	2.1	ENE
13-Apr-2014	12:00	2.3	WSW
13-Apr-2014	13:00	2.1	W
13-Apr-2014	14:00	1.8	WSW
13-Apr-2014	15:00	1.8	W
13-Apr-2014	16:00	1.6	WSW
13-Apr-2014	17:00	1.5	W
13-Apr-2014	18:00	1.5	SW
13-Apr-2014	19:00	0.9	SW
13-Apr-2014	20:00	0.4	WSW
13-Apr-2014	21:00	0.5	WSW
13-Apr-2014	22:00	0.7	WSW
13-Apr-2014	23:00	0.4	WSW
14-Apr-2014	00:00	0.8	WSW
14-Apr-2014	01:00	1.7	SSW
14-Apr-2014	02:00	1.4	SSW
14-Apr-2014	03:00	1.6	SE
14-Apr-2014	04:00	1.7	N
14-Apr-2014	05:00	1.6	N
14-Apr-2014	06:00	1.9	N
14-Apr-2014	07:00	1.8	SSE
14-Apr-2014	08:00	1.5	S
14-Apr-2014	09:00	1.6	N
14-Apr-2014	10:00	2.1	S
14-Apr-2014	11:00	1.8	SSW

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
14-Apr-2014	12:00	2.2	E
14-Apr-2014	13:00	2.8	NW
14-Apr-2014	14:00	1.6	SSE
14-Apr-2014	15:00	1.4	SSE
14-Apr-2014	16:00	2	S
14-Apr-2014	17:00	2	SW
14-Apr-2014	18:00	1.1	WNW
14-Apr-2014	19:00	0.9	SSE
14-Apr-2014	20:00	1	SSE
14-Apr-2014	21:00	1	N
14-Apr-2014	22:00	0.9	NW
14-Apr-2014	23:00	1	SSW
15-Apr-2014	00:00	1	E
15-Apr-2014	01:00	0.7	N
15-Apr-2014	02:00	0.4	NNE
15-Apr-2014	03:00	0.5	NE
15-Apr-2014	04:00	0.5	ENE
15-Apr-2014	05:00	0.7	ENE
15-Apr-2014	06:00	0.7	N
15-Apr-2014	07:00	0.8	NE
15-Apr-2014	08:00	1.1	N
15-Apr-2014	09:00	1	NE
15-Apr-2014	10:00	1.5	N
15-Apr-2014	11:00	1.7	W
15-Apr-2014	12:00	1.6	W
15-Apr-2014	13:00	1.4	NNE
15-Apr-2014	14:00	1.3	ENE
15-Apr-2014	15:00	1.4	NE
15-Apr-2014	16:00	1.3	NE
15-Apr-2014	17:00	1.2	NE
15-Apr-2014	18:00	1.2	N
15-Apr-2014	19:00	0.7	N
15-Apr-2014	20:00	0.5	E
15-Apr-2014	21:00	0.5	ENE
15-Apr-2014	22:00	0.4	SE
15-Apr-2014	23:00	0.4	SSE
16-Apr-2014	00:00	0.3	SW
16-Apr-2014	01:00	0.3	NNE
16-Apr-2014	02:00	0.2	N
16-Apr-2014	03:00	0.2	NW
16-Apr-2014	04:00	0.2	SW
16-Apr-2014	05:00	0.2	WSW
16-Apr-2014	06:00	0.3	S
16-Apr-2014	07:00	0.9	SSW
16-Apr-2014	08:00	0.9	WSW
16-Apr-2014	09:00	1.6	WSW
16-Apr-2014	10:00	1.5	W
16-Apr-2014	11:00	1.3	W
16-Apr-2014	12:00	2	W
16-Apr-2014	13:00	1.5	W
16-Apr-2014	14:00	1.3	W
16-Apr-2014	15:00	1.6	W
16-Apr-2014	16:00	1.5	SSW
16-Apr-2014	17:00	1.4	SW

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
16-Apr-2014	18:00	1.1	W
16-Apr-2014	19:00	0.6	W
16-Apr-2014	20:00	0.5	W
16-Apr-2014	21:00	0.5	W
16-Apr-2014	22:00	0.7	W
16-Apr-2014	23:00	0.3	W
17-Apr-2014	00:00	0.4	W
17-Apr-2014	01:00	0.2	W
17-Apr-2014	02:00	0.2	NNE
17-Apr-2014	03:00	0.2	NNE
17-Apr-2014	04:00	0.1	WSW
17-Apr-2014	05:00	0.2	WSW
17-Apr-2014	06:00	0.2	W
17-Apr-2014	07:00	0.2	W
17-Apr-2014	08:00	0.3	WSW
17-Apr-2014	09:00	0.4	WSW
17-Apr-2014	10:00	1.3	W
17-Apr-2014	11:00	2.1	W
17-Apr-2014	12:00	2.3	SW
17-Apr-2014	13:00	2.4	W
17-Apr-2014	14:00	2.6	W
17-Apr-2014	15:00	2.7	W
17-Apr-2014	16:00	2.5	WSW
17-Apr-2014	17:00	2	ESE
17-Apr-2014	18:00	2.2	ESE
17-Apr-2014	19:00	2	ESE
17-Apr-2014	20:00	1.9	ESE
17-Apr-2014	21:00	1.6	S
17-Apr-2014	22:00	2.3	SW
17-Apr-2014	23:00	1.7	SSW
18-Apr-2014	00:00	1	SSW
18-Apr-2014	01:00	1	WSW
18-Apr-2014	02:00	1.1	W
18-Apr-2014	03:00	0.7	SSW
18-Apr-2014	04:00	0.8	SSW
18-Apr-2014	05:00	0.6	W
18-Apr-2014	06:00	0.6	W
18-Apr-2014	07:00	0.5	WSW
18-Apr-2014	08:00	0.5	WSW
18-Apr-2014	09:00	1	WSW
18-Apr-2014	10:00	1.8	W
18-Apr-2014	11:00	1.9	WSW
18-Apr-2014	12:00	1.9	W
18-Apr-2014	13:00	2.3	WSW
18-Apr-2014	14:00	2.7	WSW
18-Apr-2014	15:00	2.7	S
18-Apr-2014	16:00	2.4	S
18-Apr-2014	17:00	2.5	W
18-Apr-2014	18:00	2.1	SW
18-Apr-2014	19:00	1.8	SW
18-Apr-2014	20:00	1.5	W
18-Apr-2014	21:00	0.9	W
18-Apr-2014	22:00	0.9	WSW
18-Apr-2014	23:00	1.1	W

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
19-Apr-2014	00:00	1.3	W
19-Apr-2014	01:00	0.7	W
19-Apr-2014	02:00	0.8	WNW
19-Apr-2014	03:00	1.1	W
19-Apr-2014	04:00	1.5	WNW
19-Apr-2014	05:00	1.1	S
19-Apr-2014	06:00	0.9	SSW
19-Apr-2014	07:00	0.9	WNW
19-Apr-2014	08:00	1.3	SW
19-Apr-2014	09:00	1.4	W
19-Apr-2014	10:00	1.8	W
19-Apr-2014	11:00	2.2	WNW
19-Apr-2014	12:00	2.5	W
19-Apr-2014	13:00	2	W
19-Apr-2014	14:00	2.8	W
19-Apr-2014	15:00	2.4	SW
19-Apr-2014	16:00	2.2	ENE
19-Apr-2014	17:00	2.5	W
19-Apr-2014	18:00	1.6	NE
19-Apr-2014	19:00	1.1	N
19-Apr-2014	20:00	1	ENE
19-Apr-2014	21:00	1.1	SSW
19-Apr-2014	22:00	0.9	SW
19-Apr-2014	23:00	0.7	WSW
20-Apr-2014	00:00	0.7	SW
20-Apr-2014	01:00	0.7	SW
20-Apr-2014	02:00	0.9	SW
20-Apr-2014	03:00	0.8	SW
20-Apr-2014	04:00	1.2	W
20-Apr-2014	05:00	1.3	SW
20-Apr-2014	06:00	1.1	SW
20-Apr-2014	07:00	0.9	SW
20-Apr-2014	08:00	1.3	SSW
20-Apr-2014	09:00	1.2	WSW
20-Apr-2014	10:00	2.2	SSW
20-Apr-2014	11:00	2.2	SW
20-Apr-2014	12:00	2.1	W
20-Apr-2014	13:00	2.4	W
20-Apr-2014	14:00	2.7	WSW
20-Apr-2014	15:00	2.6	W
20-Apr-2014	16:00	2.7	WNW
20-Apr-2014	17:00	2.4	WNW
20-Apr-2014	18:00	2.4	W
20-Apr-2014	19:00	2	WNW
20-Apr-2014	20:00	1.9	W
20-Apr-2014	21:00	1.8	WNW
20-Apr-2014	22:00	2.1	WNW
20-Apr-2014	23:00	1.7	WNW
21-Apr-2014	00:00	1.9	W
21-Apr-2014	01:00	1.7	W
21-Apr-2014	02:00	1.9	WNW
21-Apr-2014	03:00	1.8	SSE
21-Apr-2014	04:00	1.8	W
21-Apr-2014	05:00	1.7	S

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
21-Apr-2014	06:00	1.7	ENE
21-Apr-2014	07:00	1.2	ENE
21-Apr-2014	08:00	1.5	E
21-Apr-2014	09:00	1.3	W
21-Apr-2014	10:00	1.7	WNW
21-Apr-2014	11:00	2.9	N
21-Apr-2014	12:00	2.7	N
21-Apr-2014	13:00	2.5	W
21-Apr-2014	14:00	2.1	W
21-Apr-2014	15:00	2.1	W
21-Apr-2014	16:00	2.4	WNW
21-Apr-2014	17:00	2.3	WNW
21-Apr-2014	18:00	2.2	W
21-Apr-2014	19:00	1.8	WNW
21-Apr-2014	20:00	1.6	W
21-Apr-2014	21:00	1.4	W
21-Apr-2014	22:00	1.8	W
21-Apr-2014	23:00	1.5	SSW
22-Apr-2014	00:00	1.4	SW
22-Apr-2014	01:00	1	SW
22-Apr-2014	02:00	0.8	W
22-Apr-2014	03:00	0.9	NNE
22-Apr-2014	04:00	0.7	NNE
22-Apr-2014	05:00	0.6	NNE
22-Apr-2014	06:00	0.6	SW
22-Apr-2014	07:00	0.4	SW
22-Apr-2014	08:00	0.8	W
22-Apr-2014	09:00	0.9	SW
22-Apr-2014	10:00	1.1	SW
22-Apr-2014	11:00	1.3	SW
22-Apr-2014	12:00	1.6	SW
22-Apr-2014	13:00	1.1	SW
22-Apr-2014	14:00	1.5	SW
22-Apr-2014	15:00	1.3	SW
22-Apr-2014	16:00	0.7	WNW
22-Apr-2014	17:00	0.9	SSW
22-Apr-2014	18:00	1.4	SSW
22-Apr-2014	19:00	0.9	W
22-Apr-2014	20:00	0.9	W
22-Apr-2014	21:00	0.7	NW
22-Apr-2014	22:00	0.7	NW
22-Apr-2014	23:00	0.9	W
23-Apr-2014	00:00	0.8	W
23-Apr-2014	01:00	1	SW
23-Apr-2014	02:00	0.7	S
23-Apr-2014	03:00	0.8	W
23-Apr-2014	04:00	0.4	SW
23-Apr-2014	05:00	0.5	W
23-Apr-2014	06:00	0.5	W
23-Apr-2014	07:00	0.4	ENE
23-Apr-2014	08:00	0.5	ENE
23-Apr-2014	09:00	0.6	ENE
23-Apr-2014	10:00	0.9	W
23-Apr-2014	11:00	1.2	N

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
23-Apr-2014	12:00	1.1	N
23-Apr-2014	13:00	1	ESE
23-Apr-2014	14:00	1.4	WNW
23-Apr-2014	15:00	1.3	S
23-Apr-2014	16:00	1.8	S
23-Apr-2014	17:00	1.1	W
23-Apr-2014	18:00	1.1	WNW
23-Apr-2014	19:00	1.1	WNW
23-Apr-2014	20:00	0.7	WNW
23-Apr-2014	21:00	0.8	NNE
23-Apr-2014	22:00	0.8	ENE
23-Apr-2014	23:00	0.7	W
24-Apr-2014	00:00	0.8	WNW
24-Apr-2014	01:00	0.8	SW
24-Apr-2014	02:00	0.7	WNW
24-Apr-2014	03:00	0.6	W
24-Apr-2014	04:00	0.6	S
24-Apr-2014	05:00	1.1	NNE
24-Apr-2014	06:00	0.7	E
24-Apr-2014	07:00	0.4	S
24-Apr-2014	08:00	0.6	SSW
24-Apr-2014	09:00	1	SSW
24-Apr-2014	10:00	1.4	W
24-Apr-2014	11:00	1.5	WSW
24-Apr-2014	12:00	1.3	W
24-Apr-2014	13:00	1.6	W
24-Apr-2014	14:00	1.5	SW
24-Apr-2014	15:00	1.5	SSW
24-Apr-2014	16:00	1.5	SSW
24-Apr-2014	17:00	1.4	SSW
24-Apr-2014	18:00	0.9	W
24-Apr-2014	19:00	0.6	NW
24-Apr-2014	20:00	0.8	NW
24-Apr-2014	21:00	1	WNW
24-Apr-2014	22:00	0.7	NNE
24-Apr-2014	23:00	0.5	NNE
25-Apr-2014	00:00	0.5	ENE
25-Apr-2014	01:00	0.4	ENE
25-Apr-2014	02:00	0.6	W
25-Apr-2014	03:00	0.4	W
25-Apr-2014	04:00	0.4	SW
25-Apr-2014	05:00	0.4	SSW
25-Apr-2014	06:00	0.5	ENE
25-Apr-2014	07:00	0.4	S
25-Apr-2014	08:00	0.4	SSW
25-Apr-2014	09:00	0.6	W
25-Apr-2014	10:00	0.8	W
25-Apr-2014	11:00	1.4	SSW
25-Apr-2014	12:00	1.8	WSW
25-Apr-2014	13:00	1.7	S
25-Apr-2014	14:00	2.2	SW
25-Apr-2014	15:00	1.9	SW
25-Apr-2014	16:00	1.8	W
25-Apr-2014	17:00	2	E

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
25-Apr-2014	18:00	1.5	SSW
25-Apr-2014	19:00	0.8	WSW
25-Apr-2014	20:00	1	SSW
25-Apr-2014	21:00	1.2	SSW
25-Apr-2014	22:00	1.5	SW
25-Apr-2014	23:00	1.4	WSW
26-Apr-2014	00:00	1.2	SSW
26-Apr-2014	01:00	1.3	SW
26-Apr-2014	02:00	1.1	SW
26-Apr-2014	03:00	0.9	WNW
26-Apr-2014	04:00	1.1	WNW
26-Apr-2014	05:00	1	WNW
26-Apr-2014	06:00	0.9	W
26-Apr-2014	07:00	1.1	W
26-Apr-2014	08:00	1.6	W
26-Apr-2014	09:00	1.8	WNW
26-Apr-2014	10:00	2	W
26-Apr-2014	11:00	2.1	SW
26-Apr-2014	12:00	2.6	SW
26-Apr-2014	13:00	2.8	SSW
26-Apr-2014	14:00	2.4	S
26-Apr-2014	15:00	2.5	SW
26-Apr-2014	16:00	2.5	SSW
26-Apr-2014	17:00	2	SW
26-Apr-2014	18:00	1.5	SW
26-Apr-2014	19:00	1.4	ENE
26-Apr-2014	20:00	0.9	W
26-Apr-2014	21:00	1	W
26-Apr-2014	22:00	0.7	W
26-Apr-2014	23:00	0.7	N
27-Apr-2014	00:00	0.6	NE
27-Apr-2014	01:00	0.8	NE
27-Apr-2014	02:00	1.1	NE
27-Apr-2014	03:00	0.8	ENE
27-Apr-2014	04:00	0.6	ENE
27-Apr-2014	05:00	0.7	ENE
27-Apr-2014	06:00	0.5	ENE
27-Apr-2014	07:00	0.5	NE
27-Apr-2014	08:00	0.4	ENE
27-Apr-2014	09:00	0.9	ENE
27-Apr-2014	10:00	1.3	ENE
27-Apr-2014	11:00	1.7	N
27-Apr-2014	12:00	2.4	NNE
27-Apr-2014	13:00	2.1	ENE
27-Apr-2014	14:00	1.7	ENE
27-Apr-2014	15:00	2.1	ENE
27-Apr-2014	16:00	2.1	NE
27-Apr-2014	17:00	1.5	ENE
27-Apr-2014	18:00	1.1	NE
27-Apr-2014	19:00	1	NE
27-Apr-2014	20:00	0.6	NE
27-Apr-2014	21:00	0.9	NE
27-Apr-2014	22:00	0.5	ENE
27-Apr-2014	23:00	0.5	ENE

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
28-Apr-2014	00:00	0.5	ENE
28-Apr-2014	01:00	0.7	ENE
28-Apr-2014	02:00	0.8	ENE
28-Apr-2014	03:00	0.8	NE
28-Apr-2014	04:00	0.7	ENE
28-Apr-2014	05:00	0.9	ENE
28-Apr-2014	06:00	0.8	NNE
28-Apr-2014	07:00	0.8	SSW
28-Apr-2014	08:00	1.2	SW
28-Apr-2014	09:00	1.6	SW
28-Apr-2014	10:00	1.9	WSW
28-Apr-2014	11:00	2	W
28-Apr-2014	12:00	2.5	W
28-Apr-2014	13:00	2.5	WSW
28-Apr-2014	14:00	2.4	WSW
28-Apr-2014	15:00	2	WSW
28-Apr-2014	16:00	2	SSW
28-Apr-2014	17:00	1.9	SSW
28-Apr-2014	18:00	1.6	SW
28-Apr-2014	19:00	1.1	SW
28-Apr-2014	20:00	1.2	WNW
28-Apr-2014	21:00	1.1	WNW
28-Apr-2014	22:00	1.1	E
28-Apr-2014	23:00	1.1	E
29-Apr-2014	00:00	1.3	WSW
29-Apr-2014	01:00	1.6	---
29-Apr-2014	02:00	1.9	---
29-Apr-2014	03:00	1.7	---
29-Apr-2014	04:00	1.5	WSW
29-Apr-2014	05:00	2	SW
29-Apr-2014	06:00	1.7	SW
29-Apr-2014	07:00	1.8	ENE
29-Apr-2014	08:00	1.7	ENE
29-Apr-2014	09:00	1.9	NE
29-Apr-2014	10:00	2.4	E
29-Apr-2014	11:00	2.5	NE
29-Apr-2014	12:00	2.3	ENE
29-Apr-2014	13:00	2.1	S
29-Apr-2014	14:00	2.1	S
29-Apr-2014	15:00	1.9	ENE
29-Apr-2014	16:00	2.1	NE
29-Apr-2014	17:00	1.8	NE
29-Apr-2014	18:00	1.7	NE
29-Apr-2014	19:00	1.5	NE
29-Apr-2014	20:00	1.6	ENE
29-Apr-2014	21:00	1.1	ENE
29-Apr-2014	22:00	1	NE
29-Apr-2014	23:00	0.8	ENE
30-Apr-2014	00:00	0.9	ENE
30-Apr-2014	01:00	1.1	NE
30-Apr-2014	02:00	0.6	NE
30-Apr-2014	03:00	0.9	NE
30-Apr-2014	04:00	1.7	NE
30-Apr-2014	05:00	1.7	NE

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
30-Apr-2014	06:00	1.6	ENE
30-Apr-2014	07:00	1	NE
30-Apr-2014	08:00	1.7	NE
30-Apr-2014	09:00	2	ENE
30-Apr-2014	10:00	2.3	ENE
30-Apr-2014	11:00	2.6	NE
30-Apr-2014	12:00	2.5	NE
30-Apr-2014	13:00	2.2	NE
30-Apr-2014	14:00	2.7	NE
30-Apr-2014	15:00	2.6	NE
30-Apr-2014	16:00	2.4	ENE
30-Apr-2014	17:00	2.4	ENE
30-Apr-2014	18:00	2.3	ENE
30-Apr-2014	19:00	1.5	NE
30-Apr-2014	20:00	1.5	NE
30-Apr-2014	21:00	1.4	ENE
30-Apr-2014	22:00	1.3	ENE
30-Apr-2014	23:00	1.1	NE

APPENDIX K
EVENT ACTION PLANS

Event / Action Plan for Air Quality

EVENT	ACTION			
	ET	IEC	SO	CONTRACTOR
ACTION LEVEL				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform IEC and SO; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
2.Exceedance for two or more consecutive samples	1. Identify source; 2. Inform IEC and SO; 3. Advise the SO on the effectiveness of the proposed remedial measures; 4. Repeat measurements to confirm findings; 5. Increase monitoring frequency to daily; 6. Discuss with IEC and Contractor on remedial actions required; 7. If exceedance continues, arrange meeting with IEC and SO; 8. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ET on the effectiveness of the proposed remedial measures; 5. Supervise Implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor;	1. Submit proposals for remedial to SO within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate.

LIMIT LEVEL				
1.Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform SO, Contractor and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and SO informed of the results.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the SO on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.
2.Exceedance for two or more consecutive samples	1. Notify IEC, SO, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Arrange meeting with IEC and SO to discuss the remedial actions to	1. Discuss amongst SO, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the SO accordingly; 3. Supervise the implementation of remedial	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Ensure remedial measures properly implemented;	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the SO until the exceedance is

	be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and SO informed of the results; 8. If exceedance stops, cease additional monitoring.	measures.	5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	abated.

Abbreviations: ET – Environmental Team, IEC – Independent Environmental Checker, SO – Supervising Office

Event / Action Plan for Construction Noise

EVENT	ACTION			
	ET	**IEC**	**SO**	**CONTRACTOR**
Action Level	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Notify IEC and Contractor; 3. Report the results of investigation to the IEC, SO and Contractor; 4. Discuss with the Contractor and formulate remedial measures; 5. Increase monitoring frequency to check mitigation effectiveness.	1. Review the analysed results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the SO accordingly; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures are properly implemented	1. Submit noise mitigation proposals to IEC; 2. Implement noise mitigation proposals.
Limit Level	1. Identify source; 2. Inform IEC, SO, EPD and Contractor; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Inform IEC, SO and EPD	1. Discuss amongst SO, ET, and Contractor on the potential remedial actions; 2. Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the SO accordingly; 3. Supervise the implementation of	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise	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;

EVENT	ACTION			
	ET	IEC	SO	CONTRACTOR
	the causes and actions taken for the exceedances; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and SO informed of the results; 8. If exceedance stops, cease additional monitoring.	remedial measures.	problem; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	5. Stop the relevant portion of works as determined by the SO until the exceedance is abated.

Event and Action Plan for Water Quality

Event	ET Leader	IEC	SO	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 SO; 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 SO 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, SO and EPD; Check monitoring data, all plant, equipment and Contractor's working methods; 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 SO 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 SO within 3 working days of notification and discuss with ET, IEC and SO; 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, SO and EPD; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC, SO and Contractor;	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 SO accordingly.	Confirm receipt of notification of failure in writing; Discuss with IEC, ET and Contractor on the proposed mitigation measures; Request Contractor to review the working methods.	Inform the SO 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 mitigation measures to SO within 3 working days of notification and discuss with ET, IEC and SO.

Event	ET Leader	IEC	SO	Contractor
Limit 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, SO and EPD; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC, SO and Contractor; Ensure mitigation measures are implemented;	Check monitoring data submitted by ET and Contractor's working method; Discuss with ET and Contractor on possible remedial actions; Review the Contractor's mitigation measures whenever necessary to assure their effectiveness and advise the SO accordingly; Supervise the implementation of mitigation measures.	Discuss with IEC, ET and Contractor on the proposed mitigation measures; Request Contractor to critically review the working methods; Make agreement on the mitigation measures to be implemented; Ensure mitigation measures are properly implemented; 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.	Take immediate action to avoid further exceedance; Submit proposal of mitigation measures to SO within 3 working days of notification and discuss with ET, IEC and SO; Implement the agreed mitigation measures; Resubmit proposals of mitigation measures if problem still not under control; As directed by the Supervising Officer, to slow down or to stop all or part of the construction activities until no exceedance of Limit level.

APPENDIX L
SUMMARY OF EXCEEDANCE

Contract No. HY/2011/09
Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road –
Section between HKSAR Boundary and Scenic Hill

Exceedance Report

(A) Exceedance Report for Air Quality

Environmental Monitoring	Parameter	No. of Exceedance		No. of Exceedance related to the Construction Activities of this Contract	
		Action Level	Limit Level	Action Level	Limit Level
Air Quality	1-hr TSP	0	0	0	0
	24-hr TSP	0	0	0	0

(B) Exceedance Report for Construction Noise (NIL in the reporting period)

(C) Exceedance Report for Water Quality

Environmental Monitoring	Parameter	No. of Exceedance		No. of Exceedance related to the Construction Activities of this Contract	
		Action Level	Limit Level	Action Level	Limit Level
Water Quality	Dissolved Oxygen (DO) (Surface & Middle)	0	0	0	0
	Dissolved Oxygen (DO) (Bottom)	0	0	0	0
	Turbidity	0	0	0	0
	Suspended Solids (SS)	6	1	0	0

Contract No. HY/2011/09

Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill - Notification of Environmental Quality Limit Exceedances

Date of Water Quality Monitoring: 2 April 2014

Part A – Exceedance Summary Tables

Table I: Parameter(s) – ~~Dissolved Oxygen (DO) / Turbidity (TURB)~~ / Suspended Solids (SS)

Station(s)	Tide	Baseline Action Level (mg/L)	Baseline Limit Level (mg/L)	Control Station(s)	Depth-average Value at Control Stations (mg/L)	120% of Control Station Action Level (mg/L)	130% of Control Station Limit Level (mg/L)	Depth-average Measured Value (mg/L)	Justification*	Validity (Yes/No)
IS1	Mid-flood	23.5	34.4	CS1	8.6	10.3	11.2	***28.1***	(2) and (6)	No
IS2								***28.0***	(2) and (6)	No
IS4								***31.3***	(2) and (6)	No
ST1								***26.4***	(2) and (6)	No

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

*Remarks (1) – No major marine construction activity was conducted.
(2) – No pollution discharge from construction activity was observed.
(3) – Control Station value already exceeded either the Baseline Action or Limit Levels.
(4) – The exceeded results were similar or within the ranges baseline monitoring results.
(5) – Monitoring station is situated at the upstream of the construction sites.
(6) – Other(s): Please specify – Sediment plume discharging to the monitoring stations from the area outside the site boundary was observed.

Part B – Conclusion: No direct evidence that the exceedances were due to the Contract, therefore the exceedances are considered due to the other external factors rather than the contract works.

Part C – Recommendation: As the exeedances were not related to the contract works, no further action to be required.

Contract No. HY/2011/09

Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill
- Notification of Environmental Quality Limit Exceedances

Location Plan:

Reviewed by: Dr. H.F. Chan

Title: Environmental Team Leader

Date: 7 May 2014

Contract No. HY/2011/09

Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill - Notification of Environmental Quality Limit Exceedances

Date of Water Quality Monitoring: 14 April 2014

Part A – Exceedance Summary Tables

Table I: Parameter(s) – ~~Dissolved Oxygen (DO) / Turbidity (TURB)~~ / Suspended Solids (SS)

Station(s)	Tide	Baseline Action Level (mg/L)	Baseline Limit Level (mg/L)	Control Station(s)	Depth-average Value at Control Stations (mg/L)	120% of Control Station Action Level (mg/L)	130% of Control Station Limit Level (mg/L)	Depth-average Measured Value (mg/L)	Justification*	Validity (Yes/No)
IS3	Mid-flood	23.5	34.4	CS1	11.7	14.0	15.2	***28.5***	(2) and (4)	No
IS4								***28.8***	(2) and (6a)	No
SR2								***36.7***	(2), (4) and (6b)	No

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

*Remarks (1) – No major marine construction activity was conducted.
(2) – No pollution discharge from construction activity was observed.
(3) – Control Station value already exceeded either the Baseline Action or Limit Levels.
(4) – The exceeded results were similar or within the ranges baseline monitoring results. (Please refer to Table I)
(5) – Monitoring station is situated at the upstream of the construction sites.
(6) – Other(s): Please specify – a) Sediment plume which is considered due to the movement of vessel was observed.
b) Sediment plume due to natural fluctuation of shallow water was observed.

Table I – Summary of Baseline Water Quality Monitoring Results during Mid-Flood Tide

Station(s)	Suspended Solids (mg/L)	
	Min	Max
IS3	7.8	28.5
SR2	8.5	32.5

Part B – Conclusion: No direct evidence that the exceedances were due to the Contract, therefore the exceedances are considered due to the other external factors rather than the contract works.

Part C – Recommendation: As the exeedances were not related to the contract works, no further action to be required.

Contract No. HY/2011/09

Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill
- Notification of Environmental Quality Limit Exceedances

Location Plan:

Reviewed by: Dr. H.F. Chan

Title: Environmental Team Leader

Date: 7 May 2014

APPENDIX M
SITE AUDIT SUMMARY

Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	140401
Date	1 April 2014 (Tuesday)
Time	9:30-11:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	A. Water Quality	
140401-R01	• Clear the stagnant water with oil which is nearly overflow at the drip tray at Portion C.	B8
140401-R04	• Clear the sand at the public road and provide sand bag bund at the water barrier for avoiding leakage of muddy water (Portion C).	B16
140401-R05	• Properly deploy the silt curtain at P106 and P107.	B25
140401-R06	• Clear the floating rubbish within the silt curtain at P101.	B21
	B. Ecology	
	• No environmental deficiency was identified during site inspection.	
	C. Air Quality	
140401-R04	• Clear the sand at the public road and provide sand bag bund at the water barrier for avoiding leakage of muddy water (Portion C).	D3
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
140401-R02	• To remove the oil containers away from the drainage channel at Portion C.	F3i
140401-R03	• Clear the oil spillage at near the site drain near site exit at Portion C.	F8
	F. Permits/Licences	
	• No environmental deficiency was identified during site inspection.	
	G. Others	
	• Follow-up on previous site audit session (Ref. No. 140328), all environmental deficiencies were improved/rectified by contractor during the site inspection.	

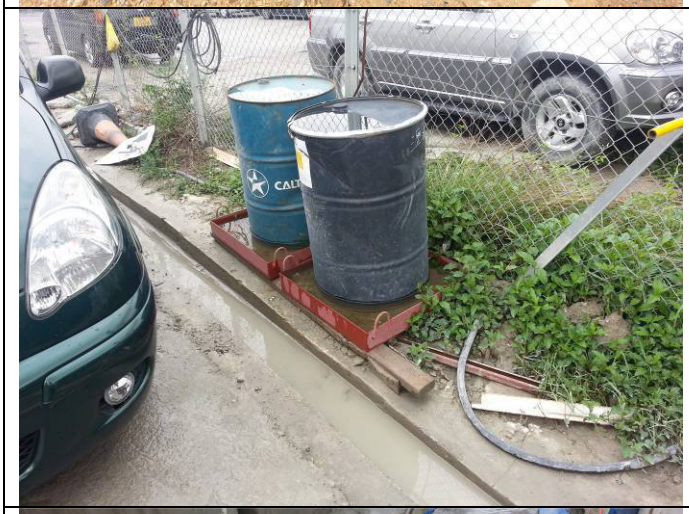
	Name	Signature	Date
Recorded by	Ivy Tam		1 April 2014
Checked by	Dr. Priscilla Choy		1 April 2014

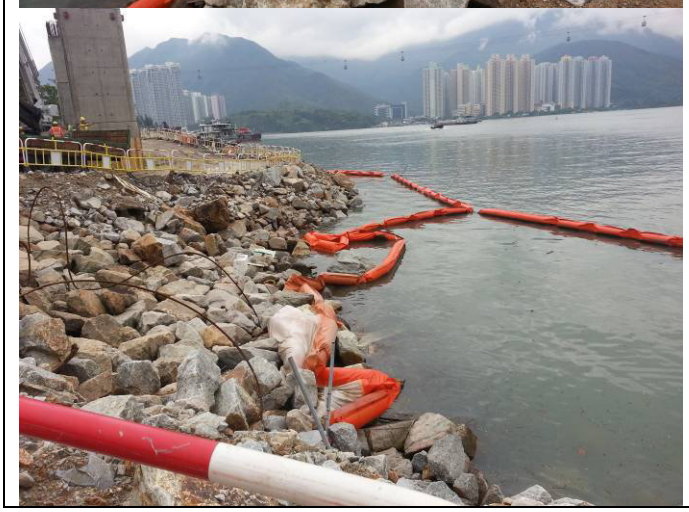
Contract HY/2011/09

Hong Kong-Zhuhai-Macao Bridge

Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill

Environmental Observations Identified during the Environmental Site Inspection (1 April 2014)

	**Ref No:** 140401-R01 **Impact:** Water Quality (B8) **Details:** Clear the stagnant water with oil which is nearly overflow at the drip tray at Portion C.
	**Ref No:** 140401-R02 **Impact:** Waste / Chemical Management (F3i) **Details:** To remove the oil containers away from the drainage channel at Portion C.
	**Ref No:** 140401-R03 **Impact:** Waste / Chemical Management (F8) **Details:** Clear the oil spillage at near the site drain near site exit at Portion C.

	**Ref No:** 140401-R04 **Impact:** Water Quality (B16) Air Quality (D3) **Details:** Clear the sand at the public road and provide sand bag bund at the water barrier for avoiding leakage of muddy water (Portion C).
 	**Ref No:** 140401-R05 **Impact:** Water Quality (B25) **Details:** Properly deploy the silt curtain at P106 and P107.

	**Ref No:** 140401-R06 **Impact:** Water Quality (B21) **Details:** Clear the floating rubbish within the silt curtain at P101.

Contract HY/2011/09

Hong Kong-Zhuhai-Macao Bridge

Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill

Rectification Actions taken by the Contractor for Environmental Deficiencies Identified during Previous Audit Session

<table>
<tr>
<td> 


</td>
<td>Ref No: 140328-R01

Impact:
Noise (E8)

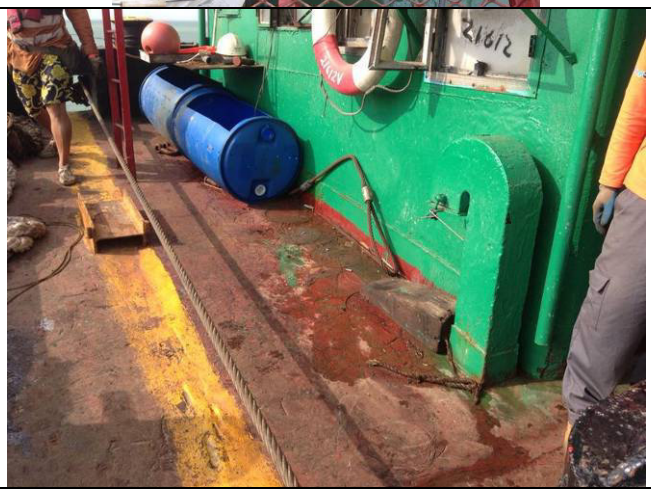
Details:
Provide noise emission labels for the breaker and air compressor at P39.

Follow-up:
Noise emission labels were provided.</td>
</tr>
<tr>
<td>  </td>
<td>Ref No: 140328-R02

Impact:
Waste / Chemical Management (F8)

Details:
Clear and avoid oil leakage from the pump for diesel oil at P39.

Follow-up:
The works at P39 were completed.</td>
</tr>
</table>

	**Ref No:** 140328-R03 **Impact:** Water Quality (B20) **Details:** Properly store the construction material to avoid it getting to the sea at P48. **Follow-up:** The construction material was removed.
	**Ref No:** 140328-R04 **Impact:** Waste / Chemical Management (F9) **Details:** Provide drip tray for the oil containers at the barge of P48. **Follow-up:** The oil containers were removed.

Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	140408
Date	8 April 2014 (Tuesday)
Time	9:30-11:15

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	A. Water Quality	
140408-R04	• Properly deploy the silt curtain at P106.	B25
	B. Ecology	
	• No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during site inspection.	
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
140408-R01	• Provide mitigation measures to avoid the oil leakage at near office container at Portion C.	F8
140408-R02	• Clear the accumulated waste at Portion C.	F1i
140408-R03	• Clear the soil at the U-channel at near P106.	F6
140408-R05	• To remove the construction materials at near the tree at P103.	F7
140408-R06	• To seal the hole of the drip tray at P98.	F9
	F. Permits/Licences	
	• No environmental deficiency was identified during site inspection.	
	G. Others	
	• Follow-up on previous site audit session (Ref. No. 140401), Items 14040-R01, R02, R03, R04, R06 were improved/rectified by Contractor during the site inspection. Follow-up action is required for item 140401-R05 which is renamed as 140408-R04.	

	Name	Signature	Date
Recorded by	Ivy Tam		8 April 2014
Checked by	Dr. Priscilla Choy		8 April 2014

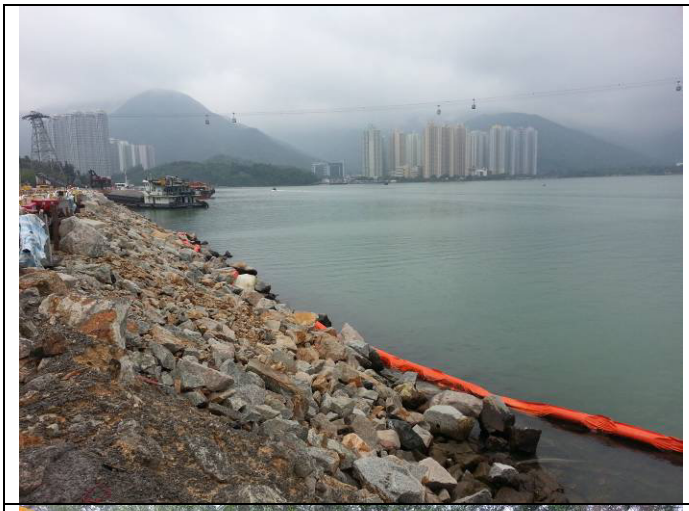
Contract HY/2011/09

Hong Kong-Zhuhai-Macao Bridge

Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill

Environmental Observations Identified during the Environmental Site Inspection (8 April 2014)

	**Ref No:** 140408-R01 **Impact:** Waste / Chemical Management (F8) **Details:** Provide mitigation measures to avoid the oil leakage at near office container at Portion C.
	**Ref No:** 140408-R02 **Impact:** Waste / Chemical Management (F1i) **Details:** Clear the accumulated waste at Portion C.
	**Ref No:** 140408-R03 **Impact:** Waste / Chemical Management (F6) **Details:** Clear the soil at the U-channel at near P106.

	**Ref No:** 140408-R04 **Impact:** Water Quality (B25) **Details:** Properly deploy the silt curtain at P106.
	**Ref No:** 140408-R05 **Impact:** Waste / Chemical Management (F7) **Details:** To remove the construction materials at near the tree at P103.
	**Ref No:** 140408-R06 **Impact:** Waste / Chemical Management (F9) **Details:** To seal the hole of the drip tray at P98.

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Hong Kong-Zhuhai-Macao Bridge

Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill

Rectification Actions taken by the Contractor for Environmental Deficiencies Identified during Previous Audit Session

	**Ref No:** 140401-R01 **Impact:** Water Quality (B8) **Details:** Clear the stagnant water with oil which is nearly overflow at the drip tray at Portion C. **Follow-up:** The drip tray was cleared.
	**Ref No:** 140401-R02 **Impact:** Waste / Chemical Management (F3i) **Details:** To remove the oil containers away from the drainage channel at Portion C. **Follow-up:** According to the Contractor, the oil containers will be removed shortly. The drip tray was well maintained and no oil leakage was observed.
	**Ref No:** 140401-R03 **Impact:** Waste / Chemical Management (F8) **Details:** Clear the oil spillage at near the site drain near site exit at Portion C. **Follow-up:** The oil spillage was cleared.

	**Ref No:** 140401-R04 **Impact:** Water Quality (B16) Air Quality (D3) **Details:** Clear the sand at the public road and provide sand bag bund at the water barrier for avoiding leakage of muddy water (Portion C). **Follow-up:** The sand at public road was cleared.
	**Ref No:** 140401-R06 **Impact:** Water Quality (B21) **Details:** Clear the floating rubbish within the silt curtain at P101. **Follow-up:** The floating rubbish was cleared.

Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	140415
Date	15 April 2014 (Tuesday)
Time	9:30-12:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	A. Water Quality	
140415-R02	• Pipe should be replaced or repaired to avoid leakage of muddy water. (P27)	B26
140415-R04	• The Contractor was reminded to treat the waste water before discharge. (P71)	B3
	B. Ecology	
	• No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during site inspection.	
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
140415-R01	• Drip tray should be well-maintained to prevent leakage (P27)	F9
	F. Permits/Licences	
140415-R03	• Permits (EP, CNP) should be displayed on site conspicuously. (P27)	G1, G5
	G. Others	
	• Follow-up on previous site audit session (Ref. No. 140408), all environmental deficiencies were improved/rectified by contractor during the site inspection.	

	Name	Signature	Date
Recorded by	Ivy Tam		15 April 2014
Checked by	Dr. Priscilla Choy		15 April 2014

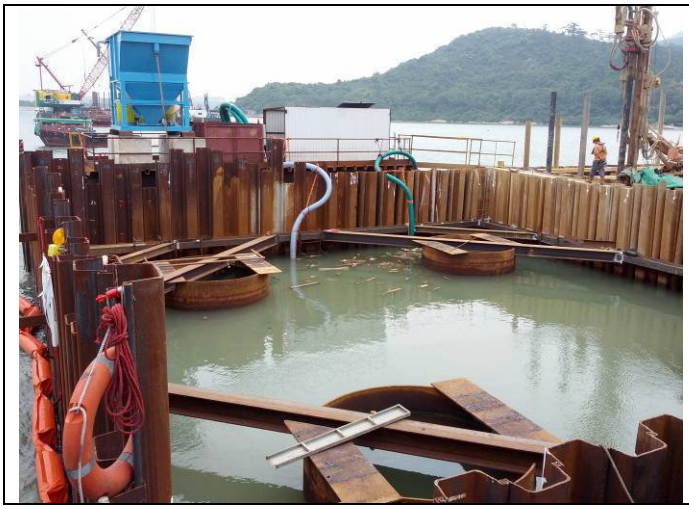
Contract HY/2011/09

Hong Kong-Zhuhai-Macao Bridge

Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill

Environmental Observations Identified during the Environmental Site Inspection (15 April 2014)

	**Ref No:** 140415-R01 **Impact:** Waste / Chemical Management (F9) **Details:** Drip tray should be well-maintained to prevent leakage. (P27)
	**Ref No:** 140415-R02 **Impact:** Water Quality (B26) **Details:** Pipe should be replaced or repaired to avoid leakage of muddy water. (P27)
	**Ref No:** 140415-R03 **Impact:** Permits / Licences (G1, G5) **Details:** Permits (EP, CNP) should be displayed on site conspicuously. (P27)

	**Ref No:** 140415-R04 **Impact:** Water Quality (B3) **Details:** The Contractor was reminded to treat the waste water before discharge. (P71)

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Hong Kong-Zhuhai-Macao Bridge

Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill

Rectification Actions taken by the Contractor for Environmental Deficiencies Identified during Previous Audit Session

	**Ref No:** 140408-R01 **Impact:** Waste / Chemical Management (F8) **Details:** Provide mitigation measures to avoid the oil leakage at near office container at Portion C. **Follow Up:** Oil leakage was cleared and spill kit was provided.
	**Ref No:** 140408-R02 **Impact:** Waste / Chemical Management (F1i) **Details:** Clear the accumulated waste at Portion C. **Follow Up:** The accumulated waste was cleared.
	**Ref No:** 140408-R03 **Impact:** Waste / Chemical Management (F6) **Details:** Clear the soil at the U-channel at near P106. **Follow Up:** The U-Channel at near P106 is no longer used.

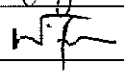
	**Ref No:** 140408-R04 **Impact:** Water Quality (B25) **Details:** Properly deploy the silt curtain at P106. **Follow Up:** The silt curtain was properly deployed.
	**Ref No:** 140408-R05 **Impact:** Waste / Chemical Management (F7) **Details:** To remove the construction materials at near the tree at P103. **Follow Up:** The construction materials were removed.
	**Ref No:** 140408-R06 **Impact:** Waste / Chemical Management (F9) **Details:** To seal the hole of the drip tray at P98. **Follow Up:** The hole of drip tray was sealed.

Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	140425
Date	25 April 2014 (Friday)
Time	13:30-15:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	A. Water Quality	
140425-R02	• Clear the excess dusty materials at the boundary of platform at P49.	B20
	B. Ecology	
	• No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during site inspection.	
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
140425-R01	• To review the size of the drip tray for the air compressor to avoid oil spillage at P49.	F8 & F9
	F. Permits/Licences	
	• No environmental deficiency was identified during site inspection.	
	G. Others	
	• Follow-up on previous site audit session (Ref. No. 140415), all environmental deficiencies were improved/rectified by contractor during the site inspection.	

	Name	Signature	Date
Recorded by	Ivy Tam		25 April 2014
Checked by	Dr. Priscilla Choy		25 April 2014

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Hong Kong-Zhuhai-Macao Bridge

Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill

Environmental Observations Identified during the Environmental Site Inspection (25 April 2014)

	**Ref No:** 140425-R01 **Impact:** Waste / Chemical Management (F8 & F9) **Details:** To review the size of the drip tray for the air compressor to avoid oil spillage at P49.
	**Ref No:** 140425-R02 **Impact:** Water Quality (B20) **Details:** Clear the excess dusty materials at the boundary of platform at P49.

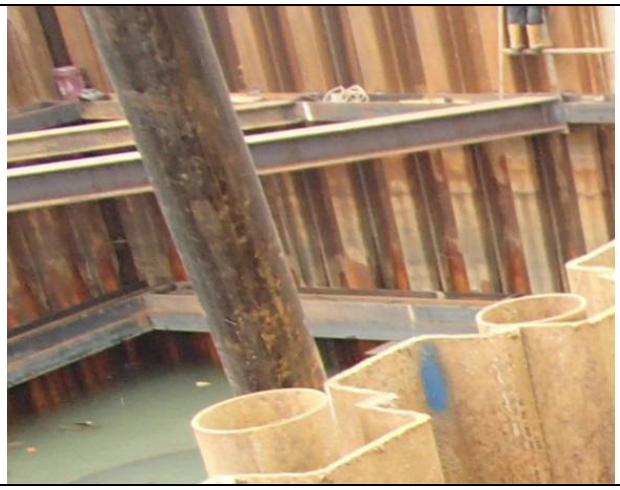
Contract HY/2011/09

Hong Kong-Zhuhai-Macao Bridge

Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill

Rectification Actions taken by the Contractor for Environmental Deficiencies Identified during Previous Audit Session

	**Ref No:** 140415-R01 **Impact:** Waste / Chemical Management (F9) **Details:** Drip tray should be well-maintained to prevent leakage. (P27) **Follow Up:** No further oil leakage was observed.
	**Ref No:** 140415-R02 **Impact:** Water Quality (B26) **Details:** Pipe should be replaced or repaired to avoid leakage of muddy water. (P27) **Follow Up:** No further leakage of muddy water was observed.
	**Ref No:** 140415-R03 **Impact:** Permits / Licences (G1, G5) **Details:** Permits (EP, CNP) should be displayed on site conspicuously. (P27) **Follow Up:** The EP and CNP were displayed.

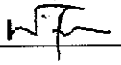
	**Ref No:** 140415-R04 **Impact:** Water Quality (B3) **Details:** The Contractor was reminded to treat the waste water before discharge. (P71) **Follow Up:** No discharge of untreated wastewater was observed.

Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	140429
Date	29 April 2014 (Tuesday)
Time	9:30-12:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	A. Water Quality	
140429-R01	• Clear the general refuse inside the casting at P20.	B21
	B. Ecology	
	• No environmental deficiency was identified during site inspection.	
	C. Air Quality	
140429-R03	• To check the generator which emitted heavy smoke at the barge at P20.	D19
140429-R06	• Clear the stockpile of concrete material at the boundary of platform at P39.	D7
	D. Noise	
140429-R02	• Provide acoustic decoupling measure for the generator at the barge at P20.	E7
140429-R05	• Provide noise emission labels for the hand-held breaker at P39.	E8
	E. Waste / Chemical Management	
140429-R04	• Clear the oil leakage at the barge at P20.	F8
	F. Permits/Licences	
140429-R07	• To display the CNP, if any at P39 and P48.	G7
	G. Others	
	• Follow-up on previous site audit session (Ref. No. 140425), all environmental deficiencies were improved/rectified by contractor during the site inspection.	

	Name	Signature	Date
Recorded by	Ivy Tam		29 April 2014
Checked by	Dr. Priscilla Choy		29 April 2014

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Hong Kong-Zhuhai-Macao Bridge

Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill

Environmental Observations Identified during the Environmental Site Inspection (29 April 2014)

	**Ref No:** 140429-R01 **Impact:** Water Quality(B21) **Details:** Clear the general refuse inside the casting at P20.
	**Ref No:** 140429-R02 **Impact:** Noise (E7) **Details:** Provide acoustic decoupling measure for the generator at the barge at P20.
	**Ref No:** 140429-R03 **Impact:** Air Quality (D19) **Details:** To check the generator which emitted heavy smoke at the barge at P20.

	**Ref No:** 140429-R04 **Impact:** Waste / Chemical Management (F8) **Details:** Clear the oil leakage at the barge at P20.
	**Ref No:** 140429-R05 **Impact:** Noise (E8) **Details:** Provide noise emission labels for the hand-held breaker at P39.
	**Ref No:** 140429-R06 **Impact:** Air Quality (D7) **Details:** Clear the stockpile of concrete material at the boundary of platform at P39.

P39

P48

Ref No: 140429-R07

Impact:
Permit /Licences (G7)

Details:
To display the CNP, if any at P39 and P48.

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Hong Kong-Zhuhai-Macao Bridge

Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill

Rectification Actions taken by the Contractor for Environmental Deficiencies Identified during Previous Audit Session

	**Ref No:** 140425-R01 **Impact:** Waste / Chemical Management (F8 & F9) **Details:** To review the size of the drip tray for the air compressor to avoid oil spillage at P49. **Follow Up:** The spill kit was provided on site to avoid oil spillage.
	**Ref No:** 140425-R02 **Impact:** Water Quality (B20) **Details:** Clear the excess dusty materials at the boundary of platform at P49. **Follow Up:** The excess dusty materials were cleared.

APPENDIX N
UPDATED ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE (EMIS)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
Air Quality							
S5.5.6.1	A1	1) The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	^
S5.5.6.2	A2	2) Proper watering of exposed spoil should be undertaken throughout the construction phase: • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; • A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones. • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores;	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	^ * ^ ^ ^
S5.5.6.2	A2	• When there are open excavation and reinstatement works, hoarding	Good construction site	Contractor	All construction	Construction	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides;	practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.		sites	stage	^ ^ ^ N/A ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
S5.5.6.2	A2	• Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	N/A ^ N/A
S5.5.6.3	A3	3) The Contractor should undertake proper watering on all exposed spoil (with at least 8 times per day) throughout the construction phase.	Control construction dust	Contractor	All construction sites	Construction stage	^
S5.5.6.4	A5	5) Implement regular dust monitoring under EM&A programme during the construction stage.	Monitor the 24 hr and 1hr TSP levels at the representative dust monitoring stations to ensure compliance with relevant criteria throughout the construction period.	Contractor	Selected representative dust monitoring station	Construction stage	^
S5.5.7.1	A6	The following mitigation measures should be adopted to prevent fugitive dust emissions for concrete batching plant: • Loading, unloading, handling, transfer or storage of any dusty	Monitor the 24 hr and 1hr TSP levels at the representative dust	Contractor	Selected representative dust	Construction stage	N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		materials should be carried out in totally enclosed system; • All dust-laden air or waste gas generated by the process operations should be properly extracted and vented to fabric filtering system to meet the emission limits for TSP; • Vents for all silos and cement/pulverised fuel ash (PFA) weighing scale should be fitted with fabric filtering system; • The materials which may generate airborne dusty emissions should be wetted by water spray system; • All receiving hoppers should be enclosed on three sides up to 3m above unloading point; • All conveyor transfer points should be totally enclosed; • All access and route roads within the premises should be paved and wetted; and • Vehicle cleaning facilities should be provided and used by all concrete trucks before leaving the premises to wash off any dust on the wheels and/or body.	monitoring stations to ensure compliance with relevant criteria throughout the construction period.		monitoring station		N/A N/A N/A N/A N/A N/A N/A
S5.5.2.7	A7	The following mitigation measures should be adopted to prevent fugitive dust emissions at barging point: • All road surface within the barging facilities will be paved; • Dust enclosures will be provided for the loading ramp; • Vehicles will be required to pass through designated wheels wash facilities; and • Continuous water spray at the loading points.	Control construction dust	Contractor	All construction sites	Construction stage	N/A N/A N/A N/A
Construction Noise (Air borne)							
S6.4.10	N1	1) Use of good site practices to limit noise emissions by considering the	Control construction airborne	Contractor	All construction	Construction	

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		following: • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • mobile plant should be sited as far away from NSRs as possible and practicable; • material stockpiles, mobile container site officer and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.	noise by means of good site practices		sites	stage	^ ^ ^ ^ ^ ^
S6.4.11	N2	2) Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All construction sites	Construction stage	^
S6.4.12	N3	3) Install movable noise barriers (typically density @14kg/m^2), acoustic mat or full enclosure close to noisy plants including air compressor, generators, saw.	Screen the noisy plant items to be used at all construction sites	Contractor	For plant items listed in Appendix 6D of the EIA report at all construction sites	Construction stage	*
S6.4.13	N4	4) Select “Quiet plants” which comply with the BS 5228 Part 1 or TM	Reduce the noise levels of	Contractor	For plant items	Construction	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		standards.	plant items		listed in Appendix 6D of the EIA report at all construction sites	stage	
S6.4.14	N5	5) Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction sites where practicable	Construction stage	^
	N6	6) Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected representative noise monitoring station	Construction stage	^
Waste Management (Construction Waste)							
S8.3.8	WM1	*Construction and Demolition Material* The following mitigation measures should be implemented in handling the waste: • Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement; • Carry out on-site sorting; • Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; • Adopt 'Selective Demolition' technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible; • Implement a trip-ticket system for each works contract to ensure that	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	^ ^ ^ ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		the disposal of C&D materials are properly documented and verified; and • Implement an enhanced Waste Management Plan similar to ETWBTC (Works) No. 19/2005 – "Environmental Management on Construction Sites" to encourage on-site sorting of C&D materials and to minimize their generation during the course of construction. • In addition, disposal of the C&D materials onto any sensitive locations such as agricultural lands, etc. should be avoided. The Contractor shall propose the final disposal sites to the Project Proponent and get its approval before implementation					^ ^
S8.3.9 - S8.3.11	WM2	*C&D Waste* • Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&D materials. The use of more durable formwork or plastic facing for the construction works should be considered. Use of wooden hoardings should not be used, as in other projects. Metal hoarding should be used to enhance the possibility of recycling. The purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage. • The Contractor should recycle as much of the C&D materials as possible on-site. Public fill and C&D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	^ *

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		areas of the sites should be considered for such segregation and storage.					
S8.2.12-S8.3.15	WM3	<u>*Chemical Waste*</u> • Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. • Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450 liters unless the specification has been approved by the EPD; and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation. • The storage area for chemical wastes should be clearly labelled and used solely for the storage of chemical waste; enclosed on at least 3 sides; have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20 % of the total volume of waste stored in that area, whichever is the greatest; have adequate ventilation; covered to prevent rainfall entering; and arranged so that incompatible materials are adequately separated. • Disposal of chemical waste should be via a licensed waste collector; be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre which also offers a chemical	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction stage	^ ^ ^ *

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		waste collection service and can supply the necessary storage containers; or be to a reuser of the waste, under approval from the EPD.					
S8.3.16	WM4	*Sewage* • Adequate numbers of portable toilets should be provided for the workers. The portable toilets should be maintained in a state, which will not deter the workers from utilizing these portable toilets. Night soil should be collected by licensed collectors regularly.	Proper handling of sewage from worker to avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	^
S8.3.17	WM5	*General Refuse* • General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes. • A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law. • Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labelled bins for their deposit should be provided if feasible. • Office wastes can be reduced through the recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme should be considered by the Contractor. In addition, waste separation facilities for paper, aluminum cans,	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	* ^ ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		plastic bottles etc., should be provided. • Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedure, including reduction, reuse and recycling of wastes.					*
Water Quality (Construction Phase)							
S9.11.1 – S9.11.1.2	W1	• Mitigation during the marine works to reduce impacts to within acceptable levels have been recommended and will comprise a series of measures that restrict the method and sequencing of dredging/backfilling, as well as protection measures. Details of the measures are provided below and summarised in the Environmental Mitigation Implementation Schedule in EM&A Manual. • Export for dredged spoils from NWWCZ avoiding exerting high demand on the disposal facilities in the NWWCZ and, hence, minimise potential cumulative impacts; • For the marine viaducts of HKLR, the bored piling will be undertaken within a metal casing; • where public fill is proposed for filling below -2.5mPD, the fine content in the public fill will be controlled to 25%; • single layer silt curtains will be applied around all works; • during the first two months of dredging work for HKLR, the silt-removal efficiency of the silt-curtains shall be verified by examining the results of water quality monitoring points. The water quality monitoring points to be selected for the above shall be those close to the locations of the initial period of dredging work. Details in this regard shall be determined by the ENPO to be established,	To control construction water quality	Contractor	During seawall dredging and filling	Construction stage	^ ^ ^ N/A ^ N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		taking account of the Contractor's proposed actual locations of his initial period of dredging work. • silt curtain shall be fully maintained throughout the works. In addition, dredging operations should be undertaken in such a manner as to minimise resuspension of sediments. Standard good dredging practice measures should, therefore, be implemented including the following requirements which should be written into the dredging contract. • trailer suction hopper dredgers shall not allow mud to overflow; • use of Lean Material Overboard (LMOB) systems shall be prohibited; • mechanical grabs shall be designed and maintained to avoid spillage and should seal tightly while being lifted; • barges and hopper dredgers shall have tight fitting seals to their bottom openings to prevent leakage of material; • any pipe leakages shall be repaired quickly. Plant should not be operated with leaking pipes; • 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; • excess material shall be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved; • adequate freeboard shall be maintained on barges to reduce the likelihood of decks being washed by wave action;					* N/A N/A ^ ^ ^ ^ * ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		• 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; and • 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.					^ ^
S9.11.1.3	W2	*Land Works* General construction activities on land should also be governed by standard good working practice. Specific measures to be written into the works contracts should include: • wastewater from temporary site facilities should be controlled to prevent direct discharge to surface or marine waters; • 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; • 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; • silt removal facilities, channels and manholes shall be maintained and any deposited silt and grit shall be removed regularly, including	To control construction water quality	Contractor	During seawall dredging and filling	Construction stage	* N/A ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		specifically at the onset of and after each rainstorm; • temporary access roads should be surfaced with crushed stone or gravel; • rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities; • measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system; • open stockpiles of construction materials (e.g. aggregates and sand) on site should be covered with tarpaulin or similar fabric during rainstorms; • 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; • discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system; • 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; • wheel wash overflow shall be directed to silt removal facilities before being discharged to the storm drain; • the section of construction road between the wheel washing bay and the public road should be surfaced with crushed stone or coarse gravel;					^ ^ ^ ^ ^ ^ ^ ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		• wastewater generated from concreting, plastering, internal decoration, cleaning work and other similar activities, shall be screened to remove large objects; • 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; • the contractors shall prepare an oil / chemical cleanup plan and ensure that leakages or spillages are contained and cleaned up immediately; • waste oil should be collected and stored for recycling or disposal, in accordance with the Waste Disposal Ordinance; • 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; and • surface run-off from bunded areas should pass through oil/grease traps prior to discharge to the stormwater system.					^ N/A * ^ ^ ^
S9.14	W3	Implement a water quality monitoring programme	Control water quality	Contractor	At identified monitoring location	During construction period	^
Ecology (Construction Phase)							
S10.7	E1	• Good site practices to avoid runoff entering woodland habitats in Scenic Hill	Avoid potential disturbance on habitat of Romer's Tree	Designer; Contractor	Scenic Hill	During construction	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		• Reinstate works areas in Scenic Hill • Avoid stream modification in Scenic Hill	Frog in Scenic Hill				N/A ^
S10.7	E2	• Use closed grab in dredging works. • Install silt curtain during the construction. • Limit dredging and works fronts. • Good site practices • Strict enforcement of no marine dumping. • Site runoff control • Spill response plan	Minimise marine water quality impacts	Contractor	Seawall,	During construction	^ ^ ^ ^ ^ ^ ^
S10.7	E3	• Reprovision of replacement Artificial Reefs (of the same volume as the existing ARs inside Marine Exclusion Zone)	Mitigate water quality impacts on the existing ARs	Project proponent	To be determined	Construction phase or operation phase	N/A
S10.7	E4	Watering to reduce dust generation; prevention of siltation of freshwater habitats; Site runoff should be desilted, to reduce the potential for suspended sediments, organics and other contaminants to enter streams and standing freshwater	Prevent Sedimentation from Land-based works areas	Contractor	Land-based works areas	During construction	^
S10.7	E5	Good site practices, including strictly following the permitted works hours, using quieter machines where practicable, and avoiding excessive lightings during night time	Prevent disturbance to terrestrial fauna and habitats	Contractor	Land-based works areas	During construction	^
S10.7	E6	• Dolphin Exclusion Zone; • Dolphin watching plan	Minimize temporary marine habitat loss impact to dolphins	Contractor	Marine works	During marine works	^ ^
S10.7	E7	• Decouple compressors and other equipment on working vessels • Avoidance of percussive piling • Marine underwater noise monitoring	Minimise marine noise impacts on dolphins	Contractor	Marine works	During marine works	^ ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		• Temporal suspension of drilling bored pile casing in rock during peak dolphin calving season in May and June					N/A
S10.7	E8	• Control vessel speed • Skipper training. • Predefined and regular routes for working vessels; avoid Brothers Islands.	Minimise marine traffic disturbance on dolphins	Contractor	Marine traffic	During marine works	^ ^ ^
S10.10	E9	• Dolphin vessel monitoring	Minimise marine traffic disturbance on dolphins	Contractor	North Lantau and West Lantau	Prior to construction, during construction, and 1 year after operation	^
Fisheries							
S11.7	F1	• Reprovision of replacement Artificial Reefs(of the same volume as the existing ARs inside Marine Exclusion Zone)	Mitigate water quality impacts on the existing ARs	Project proponent	To be determined	Construction phase or operation phase	N/A
S11.7	F2	• Reduce re-suspension of sediments • Limit dredging and works fronts. • Good site practices • Strict enforcement of no marine dumping • Spill response plan	Minimise marine water quality impacts	Contractor	Seawall,	During construction	^ ^ ^ ^ ^
Landscape & Visual (Construction Phase)							
S14.3.3.3	LV2	Mitigate both Landscape and Visual Impacts • G1. Grass-hydroseed bare soil surface and stock pile areas.	Minimise visual & landscape impact	Contractor	HKLR	Construction stage	N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		• G2. Add planting strip and automatic irrigation system if appropriate at some portions of bridge or footbridge to screen bridge and traffic. • G3. For HKLR, providing aesthetic design on the viaduct, tunnel portals, at-grade roads (e.g. subtle colour tone and slim form for viaduct, featured form of tunnel portals, roadside planting along at-grade roads and landscape berm on) to beautify the HKLR alignment. • G5. Vegetation reinstatement and upgrading to disturbed areas. • G6. Maximize new tree, shrub and other vegetation planting to compensate tree felled and vegetation removed. • G7. Provide planting area around peripheral of and within HKLR for tree screening buffer effect. • G8. Plant salt tolerant native tree and shrubs etc along the planter strip at affected seawall. • G9. Reserve of loose natural granite rocks for re-use. Provide new coastline to adopt "natural-look" by means of using armour rocks in the form of natural rock materials and planting strip area accommodating screen buffer to enhance "natural-look" of the new coastline (see Figure 14.4.2 for example).					N/A N/A N/A N/A N/A N/A N/A
S14.3.3.3	LV3	<u>Mitigate Visual Impacts</u> • V1.Minimize time for construction activities during construction period. • V2.Provide screen hoarding at the portion of the project site / works areas / storage areas near VSRs who have close low-level views to the Project during HKLR construction.					^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
EM&A							
S15.2.2	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual.	Control EM&A Performance	Project Proponent	All construction sites	Construction stage	^
S15.5 - S15.6	EM2	1) An Environmental Team needs to be employed as per the EM&A Manual. 2) Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures. 3) An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with.	Perform environmental monitoring & auditing	Contractor	All construction sites	Construction stage	^ ^ ^

Remarks: ^ Compliance of mitigation measure

* Recommendation was made during site audit but improved/rectified by the contractor

N/A Not Applicable at this stage as no such site activities were conducted in the reporting month (e.g. concrete batching plan, barging point, seawall dredging and filling, bored piling, landscaping works etc)

APPENDIX O
WASTE GENERATION IN THE REPORTING MONTH

Appendix: C6 Monthly Summary Waste Flow Table

Name of Department: HyD

Contract No.: HY/2011/09

Monthly Summary Waste Flow Table for 2014 (Year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated[11]	Hard Rock and Large Broken Concrete[6]	Reused in the Contract[8,9]	Reused in other Projects[5,8,9]	Disposed as Public Fill[7]	Imported Fill[6,7,8,9]	Metals[12]	Paper/ cardboard packaging	Plastics[3]	Chemical Waste	Others, e.g. general refuse[8,9]
	(in '000 m^3)	(in '000 m^3)	(in '000 m^3)	(in '000 m^3)	(in '000 m^3)	(in '000 m^3)	(in '000 m^3)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 m^3)
Jan	2.592	0.000	0.124	0.449	2.020	0.000	0.000	0.272	0.000	0.000	0.169
Feb	3.843	0.000	0.000	2.373	1.470	0.000	0.000	0.756	0.000	0.000	0.117
Mar	2.376	0.000	0.000	0.000	2.376	0.000	0.189	0.764	0.000	0.595	0.260
Apr	7.401	0.000	0.052	2.210	2.129	3.010	0.030	1.150	0.000	0.000	0.189
May											
Jun											
Sub-Total	16.212	0.000	0.176	5.032	7.994	3.010	0.220	2.942	0.000	0.595	0.735
Jul											
Aug											
Sep											
Oct											
Nov											
Dec											
Total	16.212	0.000	0.176	5.032	7.994	3.010	0.220	2.942	0.000	0.595	0.735

Forecast of Total Quantities of C&D Materials to be Generated from the Contract [10]										
Total Quantity Generated[11]	Hard Rock and Large Broken Concrete[6]	Reused in the Contract[8,9]	Reused in other Projects[5,8,9]	Disposed as Public Fill[7]	Imported Fill[6,7,8,9]	Metals	Paper/ cardboard packaging	Plastics[3]	Chemical Waste	Others, e.g. general refuse[8,9]
(in '000 m^3)	(in '000 m^3)	(in '000 m^3)	(in '000 m^3)	(in '000 m^3)	(in '000 m^3)	(in '000 m^3)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 m^3)
24.000	121.054	0.000	121.054	2.000	22.000	0.000	9.681	0.000	64.224	2.940

Notes:

(1) The performance targets are given in ER Appendix 8J Clause 14 and the EM&A Manual.

(2) The waste flow table shall also include C&D materials to be imported for use at the Site.

(3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material

(4) The Contractor shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the Works, together with a breakdown of the nature where the total amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,000 m^3. (ER Part 8 Clause 8.8.5 (d) (ii) refers).

(5) The materials reused in other Project shall not be treated as waste under the Waste Disposal Ordinance (CAP354).

(6) According to the EIA Appendix 8B, the density of rock (bulked) is 2.0 tonnes/m^3.

(7) According to the EIA Appendix 8B, the density of soil (bulked) is 1.8 tonnes/m^3.

(8) Assuming the loading quantities of a 30-tonne truck is 8.0m^3.

(9) Assuming the loading quantities of a 24-tonne truck is 6.5m^3.

(10) The forcast of C&D materials to be generated from the Contract is sourced from the works program in September 2013.

(11) The volume of Total Quantity Generated means the volume of Hard Rock and Large Broken Concrete+Disposed as Public Fill+Imported Fill-Reused in the Contract-Reused in other Projects

(12) The density of metal is 7,850 kg/m^3.

APPENDIX P
COMPLAINT LOG

Appendix P - Complaint Log

Log Ref.	Location	Received Date	Details of Complaint	Investigation/ Mitigation Action	Status
Com-2013-04-001	Near Tung Chung New Development Pier	8 April 2013	EPD received the complaint on 8 April 2013. The complainant complained about oil was dumped from various vessels operating for Hong Kong-Zhuhai-Macao Bridge Hong Kong (HZMB HK) Projects near Tung Chung New Development Pier over the past few months.	1) The vessels photos in the complainant's photo are not the working vessels under Contract No. HK/2011/09. 2) No oil dumped from Contract No. HK/2011/09's working vessels was observed according to ET's site inspection conducted on 9 April 2013 at near Tung Chung New Development Ferry Pier. 3) Joint site inspection (DCVJV and ARUP) was conducted on 10 April 2013 and confirmed that Contract No. HY/2011/09's vessels are not involved the complaint case. 4) DCVJV will keep remind their boat crews not discharging contaminated effluent directly into the sea.	Closed
Com-2013-05-001	WA6	2 May 2013	ARUP received the complaint on 2 May 2013. The complainant alleged the noise nuisance was generated from the Works Area WA6 at around 13:00 on 1 May 2013 (Wednesday).	The site diary report was reviewed and confirmed that no works were carried out at WA6 on 1 May 2013. In addition, no noise was heard from WA6 according to the security guard who on duty at WA6 on 1 May 2013. Based on the information provided, the complaint regarding the construction noise at WA6 is not considered justifiable.	Closed

Com-2013-05-002	WA6	18 May 2013	ARUP received the complaint on 18 May 2013. The complainant advised that the noise nuisance due to loading of metal parts at barge near the seawall of Works Area WA6 early morning (around8:45a.m) on 18 May 2013 (Saturday).	Based on the record of site activities at WA6 on 18 May 2013, 4 metal plates and 2 oxygen-acetylene set were lifted onto a derrick boat "Chiu Kee" by a crane near seawall at WA6 in the morning on that day. Such operation was commenced around 8:40a.m and completed in 10 minutes during the normal construction working hour (0700 – 1900 Monday to Saturday). However, the duration of aforesaid activities is very short and infrequent. Nevertheless, the Contractor was reminded to strengthen their site supervision and provide training for the workers regularly to increase awareness of their environmental responsibilities to minimize the noise impact to the nearby residents and the specific mitigation measures for the complaint including but not limited to:- •To place wooden planks or rubber mats on ground for loading and unloading heavy or metal objects; and •To deploy professional personnel to supervise the works.	Closed
Com-2013-05-003	Near Tung Chung New Development Pier	18 May 2013	EPD received the public complaint on 18 May 2013. This complaint was a follow-up of a previous complaint received by EPD on 8 April 2013 (Com-2013-04-001).	After receiving the complaint, additional site inspection was conducted at near Tung Chung New Development Pier on 30 May 2013 to investigate whether oil dumped was due to Contract No. HY/2011/09's vessels. During the site	Closed

			The complainant complained again about the oil was dumped from various vessels operating for Hong Kong-Zhuhai-Macao Bridge Hong Kong (HZMB HK) Projects near Tung Chung New Development Pier over the past months.	inspection, three working vessels under Contract No.HY/2011/09 was anchored off near Tung Chung New Development Pier. No oil dumped from Contract No. HY/2011/09's vessels were observed and the water around the vessels was clear. The following mitigation measures have been implemented by DCVJV: • DCVJV has sent the letter to the shipping agent to remind them to ensure the vessels under Contract No. HY/2011/09 are in good condition and any oil dumped to sea should be avoided to prevent water pollution. • Provide training to the vessel skippers for prevention of pollution from ships. • DCVJV requested vessel skippers to provide engine oil disposal records The vessel skippers assured to us that all waste lubricants were sent to waste collectors regularly and no oil discharge into seawater.	
Com-2013-07-001	Southeast Quay of Chek Lap Kok near the junction of Chek Lap Kok South Road and Scenic Road	17 July 2013	The complaint was received by EPD on 17th July 2013. According to the EPD's letter, the complainant was concerned for the noise nuisance generated from the operation of concrete lorry mixers during evening and night-time period at Southeast Quay of Chek Lap Kok.	In response to the complaint, ET conducted two times site inspections at Southeast Quay at Chek Lap Kok between 18:45 and 20:30 hours on 23 July 2013 and 20:30 to 22:30 hours on 30 July 2013. During the inspections, the Ro-Ro barge was observed anchored off Southeast Quay at Chek Lap Kok but no concrete	Closed

				lorry mixer was observed throughout the inspection. On 23 July 2013, at about 19:35, one tug boat was observed travelling to Southeast Quay, Chek Lap Kok and left at about 19:40. On 30 July 2013, no tug boat and concrete lorry mixers were observed during the inspection. According to the Contractor, there was no concreting works for the pier sites on 23 July 2013 and therefore no loading and unloading operation at Southeast Quay at Chek Lap Kok. Concreting works were performed at Pier 0 on 30 July 2013. As the Contractor anticipated the arrival time of tug boat and flap-top barge at Southeast Quay will exceed 23:00 hours after the concreting works, they decided to arrange the tug boat and flap-top barge with concrete lorry mixers anchored off around Pier 66 after 23:00 hours. So, no loading and unloading operation at Southeast Quay at Chek Lap Kok was observed. Further night time site inspection was conducted on 22 August 2013 during the	

				loading and unloading operation at Southeast Quay of Chek Lap Kok, the construction works conducted under Contract No. HY/2011/09 complied with the conditions in the CNP No. GW-RS0895-13.	
Com-2013-11-001	Chek Lap Kok (CLK) South Road	16 November 2013	The complaint was received by project customer services on 16th November 2013 regarding the dust problem at Chek Lap Kok (CLK) South Road.	After receiving the complaint, ET conducted the site inspection on 19 and 29 November 2013 to check the appropriate environmental protection and pollution control measures which are properly implemented by the Contractor under HY/2011/09 (DCVJV). The observation are summarized as below:- • Dust generation works was conducted by the other Contractor at South East Quay • Proper watering of haul road to avoid dust generation during vehicle / plant equipment movement. • Vehicle washing facilities provided at every site exit at CLK South Road and South Perimeter Road. • No dark smoke was observed emitting from the plant equipments. Based on the information collected, the complaint of dust problem at Check Lap Kok South Road is considered not related to Contract No. HY/2011/09 as dust	Closed

				suppression measures has been properly implemented by the Contractor on site to prevent dust nuisance from the construction activities.	
Com-2014-01-001	Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill (Contract No. HY/2011/09	3 January 2014	The complaint was received by EPD on 3rd January 2014. According to the EPD's letter, a resident in Tai O District was concerned for the noise nuisance occasionally arising from the hammering or hitting of metals from Contract No. HY/2011/09.	In response to the complaint, ET conducted an ad hoc night time site inspection at P0, P18 and P19 on 14 January 2014 between around 23:00 and 00:30 hours of 15 January 2014. In accordance with the site activities record and site inspections, the construction works conducted under Contract No. HY/2011/09 complied with the conditions in the CNP No. GW-RS1108-13. Nevertheless, the Contractor was advised to strictly follow the conditions of the permit because any deviation from the conditions may lead to cancellation of the permit, subsequent prosecution action and the Authority's refusal to issue further permit. In addition, the following environmental mitigation measures were recommended: • Review and adjust the lighting directions of the barge, under safety consideration, to avoid potential	Closed

				visual impacts to residents in vicinities; • To ensure the equipment are maintaining in good operation condition; and • To strengthen site supervision and provide training for the workers regularly to increase awareness of their environmental responsibilities to minimize the noise impact to the nearby residents and the specific mitigation measures.	
Com-2014-01-002	Hong Kong-Zhuhai-Macao Bridge	16 January 2014	The complaint was received by HyD's PR Team on 16 January 2014 that the complainant advised that the heavy exhaust fume affecting Tung Chung Crescent.	After receiving the complaint, ET conducted the site inspection on 21 January 2014 to check all the plant equipments which were operated for the construction works and air quality mitigation measures. Based on the information collected, the complaint of heavy exhausts affecting Tung Chung Crescent is considered not related to Contract No. HY/2011/09 due to the following reason(s):- 1) The work sites at Portion C and South East Quay at Portion A under Contract No. HY/2011/09 are approximately 800m from Tung Chung Crescent. Any unpleasant smell of exhaust fume would not be	Closed

				anticipated. 2) No heavy smoke was observed emitting from plants / equipment during the site inspection on 21 January 2014. 3) The vehicles and equipments were switched off while not in use. 4) All plant and equipment were well maintained and in good operating condition. 5) Air quality mitigation measures has been properly implemented by the Contractor on site to prevent dust nuisance from the construction activities.	
Com-2014-03-001	Oil Spillage at near Sha Lo Wan	5 March 2014	The complaint was received by EPD on 5 March 2014. The complainant suspected the oil leakage from the works area of Contract No. HY/2011/09 near Sha Lo Wan	Based on ET site inspection, no oil spillage from the works area under Contract No. HY/2011/09 at near Sha Lo Wan was observed. In addition, spill kits are ready on site in order to dealing with spillage cases promptly. Nevertheless, DCVJV was also recommended the mitigation measures as below: • Provide training for the workers regularly regarding the mitigation measures on waste / chemical management. • Provide sufficient chemical spillage kit (e.g. oil absorbent) to all vessels and	Closed

				working platform. • Regular check the condition of vessels and plant equipments to ensure no leakage of oil.	
Com-2014-03-002	Construction Noise in the vicinity of the waters outside Sha Lo Wan	11 March 2014	The complaint was received by EPD on 11 March 2014. According to the EPD's letter, the complainant was concerned for the mobile crane which operating in the vicinity of the waters outside Sha Lo Wan after 23:00.	In accordance with an ad hoc site inspection on 18 March 2014, no construction works were conducted during the restricted hours. The 1st investigation report has been submitted to EPD on 21 March 2014. The 2nd investigation report will be provided to report the investigation results after reviewing the site diary at the time of complaint. The Contractor was advised to strictly follow the conditions of the permit because any deviation from the conditions may lead to cancellation of the permit, subsequent prosecution action and the Authority's refusal to issue further permit. Nevertheless, the Contractor was reminded to take sufficient noise mitigation measures to minimize the environmental impact on the nearby community: · To space out noisy equipment and position it as far away as possible from the sensitive receivers; · To avoid concurrent uses of noisy equipment near the sensitive area; · To ensure the equipment are maintaining in good operation condition;	Under Investigation

				· To turned off any idle equipment on site; and · To enclose the noisy part of the machine by acoustic insulation material if feasible. · To arrange tailor-made training for the Production Team including the management and foremen to explain to them the conditions and requirements listed on the CNP. · To delegate one Engineer for ensuring that all construction activities and PMEs used are in full compliance with the CNP and legislative requirements.	
Com-2014-04-001	Construction marine works by the company Bauer Hong Kong in Tung Chung	14 April 2014	The complaint was received by Agriculture, Fisheries and Conservation Department (AFCD) on 14 April 2014, the complainant complained that the dead dolphin was found under a platform at construction marine works by the company Bauer Hong Kong in Tung Chung (Macau Bridge Piling Works)	In accordance with the photos showing a date of 27 November 2013 (08:00 – 08:25a.m.) which provided by the complainant, the dolphin was observed has been dead for some time and shows signs of decomposition. It was difficult to determine the cause of death of the deceased dolphin based on the photographs and the dead dolphin was found a few months ago. By examining the photos, it is found that the body was beside a barge, not under a working platform. In addition, the dead dolphin was found in the early morning in which the marine construction works have not been commenced. Therefore, from the above information the dead dolphin is	Under Investigation

				considered to be washed to the work site. However, there is no significant increase of cetacean stranding were found in Hong Kong since the commencement of Contact No. HY/2011/09. In regard to the complaint, the following recommendations were made: ➢ In case stranded cetaceans are found, the AFCD shall be contacted immediately and provide the following information to facilitate AFCD's investigation: 1. Name and telephone number; 2. Date and time of discovery; 3. Location (as specific as possible); 4. Status of the stranded animal (i.e. alive, freshly dead, slightly decomposed, rotten, mummified); 5. Type and size of the stranded animal. ➢ To implement Dolphin Exclusion Zone during the installation of bored pile casing located in the waters to the west of Airport. ➢ To implement Dolphin Watching Plan after the bored piling casing is installed.	