

**China Harbour Engineering Company Limited**

Contract No. HY/2010/02

**Hong Kong – Zhuhai – Macao Bridge  
Hong Kong Boundary Crossing  
Facilities –  
Reclamation Works**

**Monthly EM&A Report for January 2014**

[02/2014]

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25 February 2014

Engineer's Representative  
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Hong Kong

By Fax (3698 5999) and By Post

Attention: Mr. Roger Marechal

Dear Mr. Marechal,

**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/2010/02  
Hong Kong – Zhuhai – Macao Bridge  
Hong Kong Boundary Crossing Facilities – Reclamation Work  
Monthly Environmental Monitoring & Audit Report for January 2014**

Reference is made to the Environmental Team's submission of the Monthly Environmental Monitoring & Audit Report for January 2014 (letter ref. 60249820/C/RMKY14022501 dated 25 February 2014) copied to us by E-mail on 10 February 2014.

We are pleased to inform you that we have no adverse comment on the captioned Monthly EM&A Report. We write to verify the captioned report in accordance with Condition 5.4 of EP-353/2009/G and Condition 4.4 of EP-354/2009/B (for TM-CLKL Southern Landfall Reclamation only).

ET is reminded to closely monitor the condition of site mitigation measures and the implementation of EM&A programme in accordance with the EP.

Thank you very much for your kind attention and please do not hesitate to contact the undersigned should you have any queries.

Yours sincerely,



Raymond Dai  
Independent Environmental Checker

c.c.	HyD	Mr. Matthew Fung	(By Fax: 3188 6614)
	HyD	Mr. Wai-ping Lee	(By Fax: 3188 6614)
	AECOM	Ms. Echo Leong	(By Fax: 2317 7609)
	CHEC	Mr. Lim Kim Chuan	(By Fax: 2578 0413)

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## EXECUTIVE SUMMARY

Contract No. HY/2010/02 – Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Reclamation Work (here below, known as “the Project”) mainly comprises reclamation at the northeast of the Hong Kong International Airport of an area of about 130-hectare for the construction of an artificial island for the development of the Hong Kong Boundary Crossing Facilities (HKBCF), and about 19-hectare for the southern landfall of the Tuen Mun - Chek Lap Kok Link (TMCLKL). It is a designated project and is governed by the current permits for the Project, i.e. the amended Environmental Permits (EPs) issued on 06 August 2013 (EP-353/2009/G) and 28 January 2014 (EP-354/2009/B) (for TMCLKL Southern Landfall Reclamation only).

Ove Arup & Partners Hong Kong Limited (Arup) was appointed by Highways Department (HyD) as the consultants for the design and construction assignment for the Project’s reclamation works (i.e. the Engineer for the Project).

China Harbour Engineering Company Limited (CHEC) was awarded by HyD as the Contractor to undertake the construction work of the Project.

ENVIRON Hong Kong Ltd. was employed by HyD as the Independent Environmental Checker (IEC) and Environmental Project Office (ENPO) for the Project.

AECOM Asia Co. Ltd. (AECOM) was appointed by CHEC to undertake the role of Environmental Team for the Project for carrying out the environmental monitoring and audit (EM&A) works.

The construction phase of the Project under the EPs was commenced on 12 March 2012 and will be tentatively completed by early Year 2016. The EM&A programme, including air quality, noise, water quality and dolphin monitoring and environmental site inspections, was commenced on 12 March 2012.

This report documents the findings of EM&A works conducted in the period between 1 and 31 January 2014. As informed by the Contractor, major activities in the reporting period were:-

### **Marine-based Works**

- Marine-base
- Cellular structure installation
- Connecting arc cell installation
- Laying geo-textile
- Sand blanket laying
- Sand filling
- Maintenance of silt curtain & silt screen at sea water intake of HKIA
- Stone column installation
- Band drain installation
- Backfill cellular structure
- Geotechnical Instrumentation works
- Construction of temporary seawall
- Ground investigation
- Surcharge laying
- Precast Yard setup
- Sand Drain
- Construction of temporary access from Portion D to Portion A

### **Land-based Works**

- Maintenance works of Site Office at Works Area WA2
- Maintenance works of Public Works Regional Laboratory at Works Area WA3
- Geo-textile fabrication at Works Area WA2
- Installed sand bag at Works Area WA2
- Silt curtain fabrication at Works Area WA4
- Maintenance of Temporary Marine Access at Works Area WA2

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

24-hour Total Suspended Particulates (TSP) monitoring	5 sessions
1-hour TSP monitoring	5 sessions

Noise monitoring	4 sessions
Impact water quality monitoring	13 sessions
Impact dolphin monitoring	2 surveys
Joint Environmental site inspection	5 sessions

### **Breaches of Action and Limit Levels for Air Quality**

All 1-Hour TSP results were below the Action and Limit Level in the reporting month. Four (4) Action Level Exceedances and two (2) Limit Level Exceedances were recorded at measured 24-hour TSP results in the reporting month. Investigation results showed that Four (4) Action Level Exceedances and two (2) Limit Level Exceedances were not related to project.

### **Breaches of Action and Limit Levels for Noise**

For construction noise, no exceedance was recorded at all monitoring stations in the reporting period.

### **Breaches of Action and Limit Levels for Water Quality**

Six (6) Action Level and one (1) limit level exceedances recorded at measured suspended solids (SS) values (in mg/L) in the reporting month. Investigation results shows that all Action and Limit Level Exceedance recorded were not related to project.

### **Impact Dolphin Monitoring**

A total of ten dolphin sightings were recorded during the two surveys, six on 6 January 2014; two were made on 9 and 10 January 2014. No sightings were recorded on the 7 January 2014. Of the ten sightings, nine were “on effort” (which are all under favourable condition) and one was “opportunistic”. A total of thirty six individuals were sighted from the two impact dolphin surveys in the reporting period. Sighting details are summarised and plotted in Appendix K and Figure 5c, respectively.

Behaviour: Of the ten sightings made, three sightings were recorded as ‘multiple’ behavior (one of which was feeding and travelling and the other two sightings were feeding and “surface active”); three sightings were recorded as feeding; one in association with a small purse seiner/trawler; three was recorded as travelling and one sighting was recorded as “unknown”. Both of the “milling” groups contained calves and close approaches were not made. The locations of sighting with different behaviour are mapped in Figure 5d.

### **Complaint, Notification of Summons and Successful Prosecution**

As informed by the Contractor on 6 Jan 14. A complaint involves barges loaded with sand material without properly covered was blown to the inside of the residential area of Tuen Mun Pierhead Garden which caused disturbance to residence. With refer to available information provided. It is considered the complaint is unlikely to be related to this project.

EPD referred a complaint from complainant who advised that blackish mud was found along the edge of the construction site of Hong Kong-Zhuhai-Macao Bridge Hong Kong Project near the airport in the morning of 18 January 2014. After receipt of the complaint, site daily was reviewed and follow-up investigation has been conducted and excavation and dredging activities were not observed within the site boundary of HKBCF during the joint site inspection audit. Therefore in accordance with the investigation results, the complaint is considered as not related to contract HY/2010/02.

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

### **Reporting Change**

There was no reporting change required in the reporting period.

### **Future Key Issues**

Key issues to be considered in the coming month included:-

- Site runoff should be properly collected and treated prior to discharge;
- Minimize loss of sediment from filling works;
- Regular review and maintenance of silt curtain systems, drainage systems and desilting facilities;
- Exposed surfaces/soil stockpiles should be properly treated to avoid generation of silty surface run-off during rainstorm;
- Regular review and maintenance of wheel washing facilities provided at all site entrances/exits;
- Conduct regular inspection of various working machineries and vessels within works areas to avoid any dark smoke emission;
- Suppress dust generated from work processes with use of bagged cements, earth movements, excavation activities, exposed surfaces/soil stockpiles and haul road traffic;
- Quieter powered mechanical equipment should be used;
- Provision of proper and effective noise control measures for operating equipment and machinery on-site, such as erection of movable noise barriers or enclosure for noisy plants;
- Closely check and replace the sound insulation materials regularly;
- Better scheduling of construction works to minimize noise nuisance;
- Properly store and label oil drums and chemical containers placed on site;
- Proper chemicals, chemical wastes and wastes management;
- Maintenance works should be carried out within roofed, paved and confined areas;
- Collection and segregation of construction waste and general refuse on land and in the sea should be carried out properly and regularly; and
- Proper protection and regular inspection of existing trees, transplanted/retained trees.

## 1 INTRODUCTION

### 1.1 Background

- 1.1.1 Contract No. HY/2010/02 – Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Reclamation Work (here below, known as “the Project”) mainly comprises reclamation at the northeast of the Hong Kong International Airport of an area of about 130-hectare for the construction of an artificial island for the development of the Hong Kong Boundary Crossing Facilities (HKBCF), and about 19-hectare for the southern landfall of the Tuen Mun - Chek Lap Kok Link (TMCLKL).
- 1.1.2 The environmental impact assessment (EIA) reports (Hong Kong – Zhuhai – Macao Bridge Hong Kong Boundary Crossing Facilities – EIA Report (Register No. AEIAR-145/2009) (HKBCFEIA) and Tuen Mun – Chek Lap Kok Link – EIA Report (Register No. AEIAR-146/2009) (TMCLKLEIA), and their environmental monitoring and audit (EM&A) Manuals (original EM&A Manuals), for the Project were approved by Environmental Protection Department (EPD) in October 2009.
- 1.1.3 EPD subsequently issued the Environmental Permit (EP) for HKBCF in November 2009 (EP-353/2009) and the Variation of Environmental Permit (VEP) in June 2010 (EP-353/2009/A), November 2010 (EP-353/2009/B), November 2011 (EP-353/2009/C), March 2012 (EP-353/2009/D), October 2012 (EP-353/2009/E), April 2013 (EP-353/2009/F) and August 2013 (EP-353/2009/G). Similarly, EPD issued the Environmental Permit (EP) for TMCLKL in November 2009 (EP-354/2009) and the Variation of Environmental Permit (VEP) in December 2010 (EP-354/2009/A) and January 2014 (EP-354/2009/B).
- 1.1.4 The Project is a designated project and is governed by the current permits for the Project, i.e. the amended EPs issued on 6 August 2013 (EP-353/2009/G) and 28 January 2014 (EP-354/2009/B) (for TMCLKL Southern Landfall Reclamation only).
- 1.1.5 A Project Specific EM&A Manual, which included all project-relation contents from the original EM&A Manuals for the Project, was issued in May 2012.
- 1.1.6 Ove Arup & Partners Hong Kong Limited (Arup) was appointed by Highways Department (HyD) as the consultants for the design and construction assignment for the Project's reclamation works (i.e. the Engineer for the Project).
- 1.1.7 China Harbour Engineering Company Limited (CHEC) was awarded by HyD as the Contractor to undertake the construction work of the Project.
- 1.1.8 ENVIRON Hong Kong Ltd. was employed by HyD as the Independent Environmental Checker (IEC) and Environmental Project Office (ENPO) for the Project.
- 1.1.9 AECOM Asia Co. Ltd. (AECOM) was appointed by CHEC to undertake the role of Environmental Team for the Project for carrying out the EM&A works.
- 1.1.10 The construction phase of the Project under the EPs was commenced on 12 March 2012 and will be tentatively completed by early Year 2016.
- 1.1.11 According to the Project Specific EM&A Manual, there is a need of an EM&A programme including air quality, noise, water quality and dolphin monitoring and environmental site inspections. The EM&A programme of the Project commenced on 12 March 2012.

### 1.2 Scope of Report

- 1.2.1 This is the twenty-third monthly EM&A Report under the Contract No. HY/2010/02 Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Reclamation Works. This report presents a summary of the environmental monitoring and audit works, list of activities and mitigation measures proposed by the ET for the Project in January 2014.



### 1.3 Project Organization

- 1.3.1 The project organization structure is shown in Appendix A. The key personnel contact names and numbers are summarized in Table 1.1.

**Table 1.1 Contact Information of Key Personnel**

Party	Position	Name	Telephone	Fax
<b>Engineer's Representative (ER)</b> (Ove Arup & Partners Hong Kong Limited)	Chief Resident Engineer	Roger Marechal	3698 5700	2698 5999
<b>IEC / ENPO</b> (ENVIRON Hong Kong Limited)	Independent Environmental Checker	Raymond Dai	3465 2888	3465 2899
	Environmental Project Office Leader	Y. H. Hui	3465 2868	3465 2899
<b>Contractor</b> (China Harbour Engineering Company Limited)	Environmental Officer	Richard Ng	36932253	2578 0413
	24-hour Hotline	Alan C.C. Yeung	9448 0325	--
<b>ET</b> (AECOM Asia Company Limited)	ET Leader	Echo Leong	3922 9280	2317 7609

### 1.4 Summary of Construction Works

- 1.4.1 The construction phase of the Project under the EP commenced on 12 March 2012.
- 1.4.2 As informed by the Contractor, details of the major works carried out in this reporting period are listed below:-

#### **Marine-based Works**

- Cellular structure installation
- Connecting arc cell installation
- Laying geo-textile
- Sand blanket laying
- Sand filling
- Maintenance of silt curtain & silt screen at sea water intake of HKIA
- Stone column installation
- Band drain installation
- Backfill cellular structure
- Geotechnical Instrumentation works
- Rubble mound seawall construction
- Construction of temporary seawall
- Ground investigation

#### **Land-based Works**

- Maintenance works of Site Office at Works Area WA2
- Maintenance works of Public Works Regional Laboratory at Works Area WA3

- Geo-textile fabrication at Works Area WA2
- Installed sand bag at Works Area WA2
- Silt curtain fabrication at Works Area WA4
- Maintenance of Temporary Marine Access at Works Area WA2

1.4.3 The 3-month rolling construction programme of the Project is shown in Appendix B.

1.4.4 The general layout plan of the Project site showing the detailed works areas is shown in Figure 1.

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

## **1.5 Summary of EM&A Programme Requirements**

1.5.1 The EM&A programme required environmental monitoring for air quality, noise, water quality, marine ecology and environmental site inspections for air quality, noise, water quality, waste management, marine ecology, and landscape and visual impact. The EM&A requirements for each parameter described in the following sections include:-

- All monitoring parameters;
- Monitoring schedules for the reporting month and forthcoming month;
- Action and Limit levels for all environmental parameters;
- Event / Action Plan;
- Environmental mitigation measures, as recommended in the Project EIA reports; and
- Environmental requirement in contract documents.

## 2 AIR QUALITY MONITORING

### 2.1 Monitoring Requirements

2.1.1 In accordance with the Project Specific EM&A Manual, baseline 1-hour and 24-hour Total Suspended Particulates (TSP) levels at 4 air quality monitoring stations were established. Impact 1-hour TSP monitoring was conducted for at least three times every 6 days, while impact 24-hour TSP monitoring was carried out for at least once every 6 days. The Action and Limit level of the air quality monitoring is provided in Appendix D.

### 2.2 Monitoring Equipment

2.2.1 24-hour TSP air quality monitoring was performed using High Volume Sampler (HVS) located at each designated monitoring station. The HVS meets all the requirements of the Project Specific EM&A Manual. Portable direct reading dust meters were used to carry out the 1-hour TSP monitoring. Brand and model of the equipment is given in Table 2.1.

**Table 2.1 Air Quality Monitoring Equipment**

Equipment	Brand and Model
Portable direct reading dust meter (1-hour TSP)	Sibata Digital Dust Monitor (Model No. LD-3 and LD-3B)
High Volume Sampler (24-hour TSP)	Tisch Environmental Mass Flow Controlled Total Suspended Particulate (TSP) High Volume Air Sampler (Model No. TE-5170)

### 2.3 Monitoring Locations

2.3.1 Monitoring locations AMS2 and AMS7 were set up at the proposed locations in accordance with Project Specific EM&A Manual. For AMS6 (Dragonair/CNAC (Group) Building), permission on setting up and carrying out impact monitoring works was sought, however, access to the premise has not been granted yet on this report issuing date. For monitoring location AMS3 (Ho Yu College), as proposed in the Project Specific EM&A Manual, approval for carrying out impact monitoring could not be obtained from the principal of the school. Permission on setting up and carrying out impact monitoring works at nearby sensitive receivers, like Caribbean Coast and Coastal Skyline, was also sought. However, approvals for carrying out impact monitoring works within their premises were not obtained. Impact air quality monitoring was conducted at site boundary of the site office area in Works Area WA2 (AMS3A) respectively. Same baseline and Action Level for air quality, as derived from the baseline monitoring data recorded at Ho Yu College, was adopted for this alternative air quality location.

2.3.2 Reference is made to ET’s proposal of the omission of air monitoring station (AMS 6) dated on 1 November 2012 and EPD’s letter dated on 19 November 2012 regarding the conditional approval of the proposed omission of air monitoring station (AMS 6) for Contract No. HY/2010/02. The aforesaid omission of Monitoring Station AMS6 is effective since 19 November 2012.

2.3.3 Figure 2 shows the locations of monitoring stations. Table 2.2 describes the details of the monitoring stations.

**Table 2.2 Locations of Impact Air Quality Monitoring Stations**

Monitoring Station	Location	Description
AMS2	Tung Chung Development Pier	Rooftop of the premise
AMS3A	Site Boundary of Site Office Area at Works Area WA2	On ground at the area boundary
AMS6*	Dragonair/CNAC (Group) Building	On ground at boundary of the premise
AMS7	Hong Kong SkyCity Marriott Hotel	On ground at boundary of the premise

\*Remarks: Reference is made to EPD conditional approval of the omission of air monitoring station (AMS 6) for the project. The omission will be effective on 19 November 2012.

**2.4 Monitoring Parameters, Frequency and Duration**

2.4.1 Table 2.3 summarizes the monitoring parameters, frequency and duration of impact TSP monitoring.

**Table 2.3 Air Quality Monitoring Parameters, Frequency and Duration**

Parameter	Frequency and Duration
1-hour TSP	Three times every 6 days while the highest dust impact was expected
24-hour TSP	Once every 6 days

**2.5 Monitoring Methodology**

2.5.1 24-hour TSP Monitoring

- (a) The HVS was installed in the vicinity of the air sensitive receivers. The following criteria were considered in the installation of the HVS.
  - (i) A horizontal platform with appropriate support to secure the sampler against gusty wind was provided.
  - (ii) No two samplers should be placed less than 2 meters apart.
  - (iii) The distance between the HVS and any obstacles, such as buildings, was at least twice the height that the obstacle protrudes above the HVS.
  - (iv) A minimum of 2 meters separation from walls, parapets and penthouse for rooftop sampler.
  - (v) A minimum of 2 meters separation from any supporting structure, measured horizontally is required.
  - (vi) No furnace or incinerator flues nearby.
  - (vii) Airflow around the sampler was unrestricted.
  - (viii) Permission was obtained to set up the samplers and access to the monitoring stations.
  - (ix) A secured supply of electricity was obtained to operate the samplers.
  - (x) The sampler was located more than 20 meters from any dripline.
  - (xi) Any wire fence and gate, required to protect the sampler, did not obstruct the monitoring process.
  - (xii) Flow control accuracy was kept within  $\pm 2.5\%$  deviation over 24-hour sampling period.
  
- (b) Preparation of Filter Papers
  - (i) Glass fibre filters, G810 were labelled and sufficient filters that were clean and without pinholes were selected.
  - (ii) All filters 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  $\pm 3$  °C; the relative humidity (RH) was < 50% and not variable by more than  $\pm 5\%$ . A convenient working RH was 40%.

- (iii) All filter papers were prepared and analysed by ALS Technichem (HK) Pty Ltd., which is a HOKLAS accredited laboratory and has comprehensive quality assurance and quality control programmes.
- (c) Field Monitoring
- (i) The power supply was checked to ensure the HVS works properly.
  - (ii) The filter holder and the area surrounding the filter were cleaned.
  - (iii) The filter holder was removed by loosening the four bolts and a new filter, with stamped number upward, on a supporting screen was aligned carefully.
  - (iv) The filter was properly aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter.
  - (v) The swing bolts were fastened to hold the filter holder down to the frame. The pressure applied was sufficient to avoid air leakage at the edges.
  - (vi) Then the shelter lid was closed and was secured with the aluminum strip.
  - (vii) The HVS was warmed-up for about 5 minutes to establish run-temperature conditions.
  - (viii) A new flow rate record sheet was set into the flow recorder.
  - (ix) On site temperature and atmospheric pressure readings were taken and the flow rate of the HVS was checked and adjusted at around 1.1 m<sup>3</sup>/min, and complied with the range specified in the updated EM&A Manual (i.e. 0.6-1.7 m<sup>3</sup>/min).
  - (x) The programmable digital timer was set for a sampling period of 24 hrs, and the starting time, weather condition and the filter number were recorded.
  - (xi) The initial elapsed time was recorded.
  - (xii) At the end of sampling, on site temperature and atmospheric pressure readings were taken and the final flow rate of the HVS was checked and recorded.
  - (xiii) The final elapsed time was recorded.
  - (xiv) The sampled filter was removed carefully and folded in half length so that only surfaces with collected particulate matter were in contact.
  - (xv) It was then placed in a clean plastic envelope and sealed.
  - (xvi) All monitoring information was recorded on a standard data sheet.
  - (xvii) Filters were then sent to ALS Technichem (HK) Pty Ltd. for analysis.
- (d) Maintenance and Calibration
- (i) The HVS and its accessories were maintained in good working condition, such as replacing motor brushes routinely and checking electrical wiring to ensure a continuous power supply.
  - (ii) 5-point calibration of the HVS was conducted using TE-5025A Calibration Kit prior to the commencement of baseline monitoring. Bi-monthly 5-point calibration of the HVS will be carried out during impact monitoring.
  - (iii) Calibration certificate of the HVSs are provided in Appendix E.

## 2.5.2 1-hour TSP Monitoring

### (a) Measuring Procedures

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

- (i) Turn the power on.
- (ii) Close the air collecting opening cover.
- (iii) Push the "TIME SETTING" switch to [BG].
- (iv) Push "START/STOP" switch to perform background measurement for 6 seconds.
- (v) Turn the knob at SENS ADJ position to insert the light scattering plate.
- (vi) Leave the equipment for 1 minute upon "SPAN CHECK" is indicated in the display.
- (vii) Push "START/STOP" switch to perform automatic sensitivity adjustment. This measurement takes 1 minute.
- (viii) Pull out the knob and return it to MEASURE position.
- (ix) Push the "TIME SETTING" switch the time set in the display to 3 hours.
- (x) Lower down the air collection opening cover.
- (xi) Push "START/STOP" switch to start measurement.

(b) Maintenance and Calibration

- (i) The 1-hour TSP meter was calibrated at 1-year intervals against a continuous particulate TEOM Monitor, Series 1400ab. Calibration certificates of the Laser Dust Monitors are provided in Appendix E.
- (ii) 1-hour validation checking of the TSP meter against HVS is carried out on half-year basis at the air quality monitoring locations.

**2.6 Monitoring Schedule for the Reporting Month**

2.6.1 The schedule for air quality monitoring in January 2014 is provided in Appendix F.

**2.7 Results and Observations**

2.7.1 The monitoring results for 1-hour TSP and 24-hour TSP are summarized in Table 2.4 and 2.5 respectively. Detailed impact air quality monitoring results are presented in Appendix G.

**Table 2.4 Summary of 1-hour TSP Monitoring Results in the Reporting Period**

	Average ( $\mu\text{g}/\text{m}^3$ )	Range ( $\mu\text{g}/\text{m}^3$ )	Action Level ( $\mu\text{g}/\text{m}^3$ )	Limit Level ( $\mu\text{g}/\text{m}^3$ )
<b>AMS2</b>	83	79 – 86	374	500
<b>AMS3A</b>	84	81 – 88	368	500
<b>AMS7</b>	83	81 – 85	370	500

**Table 2.5 Summary of 24-hour TSP Monitoring Results in the Reporting Period**

	Average ( $\mu\text{g}/\text{m}^3$ )	Range ( $\mu\text{g}/\text{m}^3$ )	Action Level ( $\mu\text{g}/\text{m}^3$ )	Limit Level ( $\mu\text{g}/\text{m}^3$ )
<b>AMS2</b>	110	66 – 185	176	260
<b>AMS3A</b>	259	154 – 502	167	260
<b>AMS7</b>	132	82 – 207	183	260

2.7.2 The major dust source in the reporting period included construction activities from the Project, construction activities by other contacts, as well as nearby traffic emissions.

2.7.3 All 1-hour TSP results were below the Action and Limit Level at all monitoring locations in the reporting month. Four (4) 24-hour TSP results recorded at AMS2, AMS3A and AMS7 exceeded the Action Level. And Two (2) 24-hour TSP recorded at AMS3A exceeded the Limit Level in the reporting month.

- 2.7.4 For the 24Hr TSP Limit Level exceedance recorded at AMS3A, a result of  $502\mu\text{g}/\text{m}^3$  was recorded on 07 Jan 14 (24-hr TSP).
- 2.7.7.1 According to information provided by the Contractor, land-based construction activity such as stitching and transloading of Type 2 geotextile were being undertaken at Works Area WA2 during the monitoring period.
- 2.7.7.2 Functional checking on HVS at AMS3A was done. Air flow of the HVS was checked and the flow was steady during the 24-hr TSP sampling at AMS3A. The filter paper was re-weighted by the assigned HOKLAS laboratory and the result was reconfirmed.
- 2.7.7.3 Photo records shows fugitive dust were generated by vehicle activities observed inside an area at construction sites of nearby private development project which are close to the monitoring station AMS3A but beyond the site boundary of Works Area WA2. (Please also see photo and layout map attached for reference of site conditions (View A.))

View A (fugitive dust were observed at the parking lot of the nearby construction site which do not belongs to this Contract)



- 2.7.7.4 As refer to the wind data collected at wind station at Works Area WA2 during the monitoring period on 06 and 07 Jan 14 (as attached) Southeast wind was prevailing during the monitoring period. Traffic activities at construction sites of nearby private development project which are close to the monitoring station AMS3A but beyond the site boundary of Works Area WA 2 may contribute to the measured dust levels at the monitoring station AMS3A.
- 2.7.7.5 The 1-hr TSP values recorded at AMS3A on 7 Jan 14, which are within the monitoring period of the 24-hr TSP, were  $84\mu\text{g}/\text{m}^3$ ,  $83\mu\text{g}/\text{m}^3$  and  $83\mu\text{g}/\text{m}^3$  respectively. All measured values are well below the Action and Limit Levels.
- 2.7.7.6 The measured 24-hr TSP values recorded at AMS7 (which are closer to the marine-based works areas) on the same monitoring date was  $133\mu\text{g}/\text{m}^3$ , which are below the Action and Limit Levels.
- 2.7.7.7 The measured 24-hr TSP values recorded at AMS3A on next monitoring date were  $154\mu\text{g}/\text{m}^3$ , which was below the Action and Limit Level.
- 2.7.7.8 The following dust mitigation measures have been implemented at Works Area WA2:
1. Works Area WA2's surface was hard-paved, compacted or hydro-seeded (Please refer to

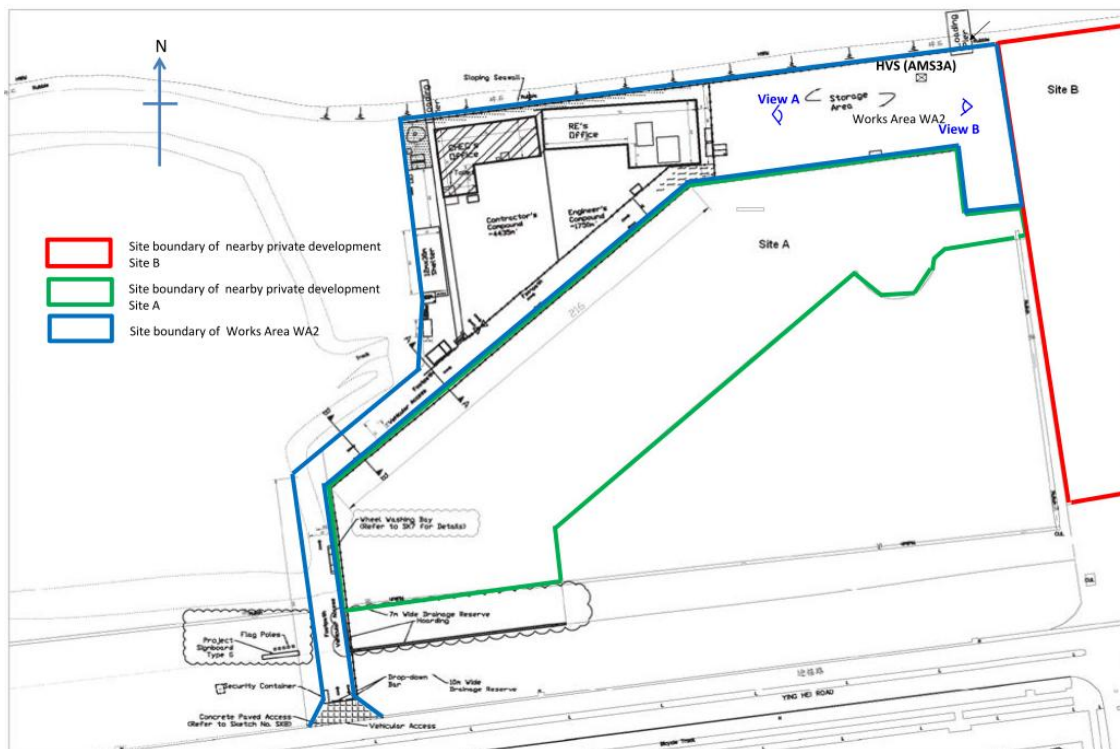
- attached layout map and photo record (View B))
- 2. Vehicle washing facility was provided at vehicle exit points,
- 3. Measures for preventing fugitive dust emission are provided, e.g. canvas/tarpaulin covers.

2.7.7.9 The Contractor was recommended to continue implementing existing dust mitigation measures.

View B (Hard paved surface observed at Works Area WA2)



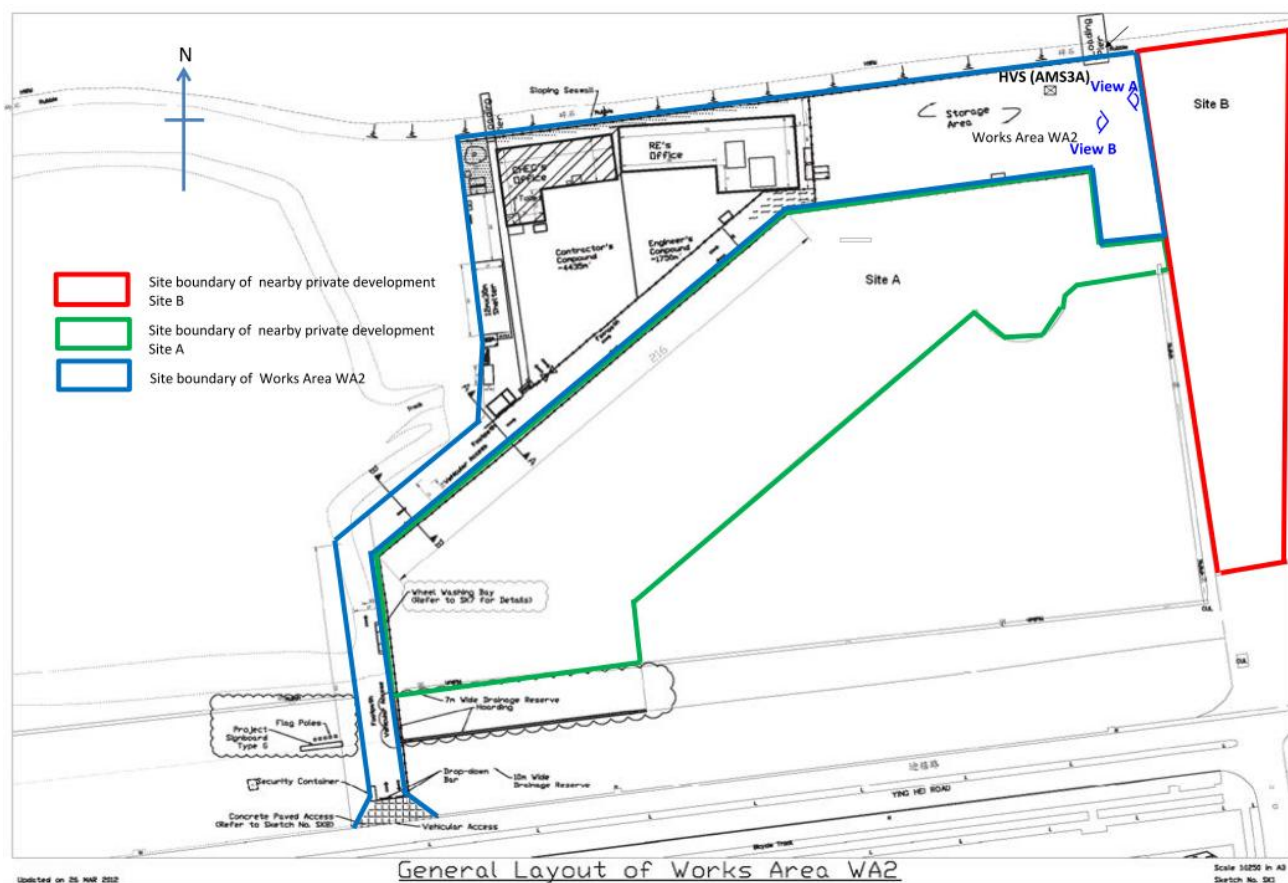
The following figure is the General Layout of Works Area WA2



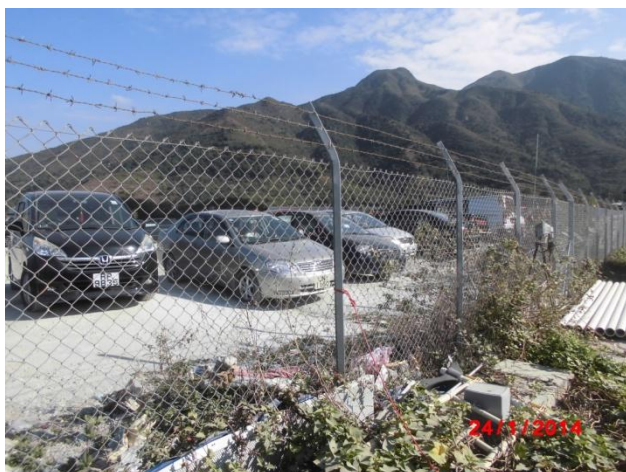


- 2.7.5 For the 24Hr TSP Action Level exceedance recorded at AMS7, a result of  $185\mu\text{g}/\text{m}^3$  was recorded on 08 Jan 14 (24-hr TSP).
- 2.7.5.1 According to information provided by the Contractor during the monitoring period. Marine-based construction activity such as band drain, stone column installation and cellular structure installation was being undertaken at C2a, C2c, C1a, C1b, D, E1, E2, A and B.
- 2.7.5.2 Stone column was being installed at the seabed therefore it is considered that stone column installation at Portion E1, E2 and Portion B is unlikely to contribute to the recorded 24hr-TSP exceedance.
- 2.7.5.3 Both band drain or cellular structure installation conducted at C2a, C2b, C2c, C1a, C1b, E1, E2, A and B are unlikely to contribute to the recorded 24hr-TSP exceedance due to no significant fugitive dust was expected to be generated in the process.
- 2.7.5.4 Checking record of Jan 14 shows that plant engine is operated by ULSD.
- 2.7.5.5 With reference to the weekly joint site inspection records of 2, 9, 16, 22 and 29 of Jan 14, no dark smoke of was observed and this indicates that plant engines are properly maintained.
- 2.7.5.6 Excavators and generators were operated by ultra low sulphur diesel (ULSD) to minimize the possibility of air pollution have been implemented at throughout the construction site.
- 2.7.5.7 Functional checking on HVS at AMS2 was done. Air flow of the HVS was checked and the flow was steady during the 24-hr TSP sampling at AMS2. The filter paper was re-weighted by the assigned HOKLAS laboratory and the result was reconfirmed.
- 2.7.5.8 The 1-hr TSP values recorded at AMS2 on 7 Jan 14, were  $84\mu\text{g}/\text{m}^3$ ,  $83\mu\text{g}/\text{m}^3$  and  $85\mu\text{g}/\text{m}^3$  respectively. All measured values are well below the Action and Limit Levels.
- 2.7.5.9 The measured 24-hr TSP values recorded at AMS7 (which is located closer to active works than AMS2) on 7 Jan 14 was  $133\mu\text{g}/\text{m}^3$ , which was below the Action and Limit Levels.
- 2.7.5.10 On the other hand, according to observation made at the monitoring station AMS2, there was no non-project potential cause/activity at the surrounding of monitoring station AMS2 which might potentially contribute to the dust action level exceedance.
- 2.7.5.11 As refer to the wind data collected at wind station at Works Area WA2 during the monitoring period on 7 and 8 Jan 14 (as attached), East-southeast winds were prevailing during the monitoring period. Construction works carried out by this Contract are unlikely to cause dust exceedance at AMS2 under the abovementioned prevailing wind directions.
- 2.7.5.12 The dust exceedance was therefore considered not to be due to the Project works.
- 2.7.5.13 The Contractor was recommended to continue implementing existing dust mitigation measures and the Contractor was reminded ensure to undertake watering at least 8 times per day on all exposed soil within the Project site and associated work areas throughout the construction phase.

- 2.7.6 For the 24Hr TSP Action Level exceedance recorded at AMS3A, a result of  $175\mu\text{g}/\text{m}^3$  was recorded on 18 Jan 14 (24-hr TSP).
- 2.7.6.1 According to information provided by the Contractor, land-based construction activities such as transloading land based equipment, accessories and installed sand bags were being undertaken at Works Area WA2 during the monitoring period.
- 2.7.6.2 Functional checking on HVS at AMS3A was done. Air flow of the HVS was checked and the flow was steady during the 24-hr TSP sampling at AMS3A. The filter paper was re-weighted by the assigned HOKLAS laboratory and the result was reconfirmed.
- 2.7.6.3 Photo records shows vehicle parking activities were observed inside an area at construction sites of nearby private development project which are close to the monitoring station AMS3A but beyond the site boundary of Works Area WA2. (Please also see photo and layout map attached for reference of site conditions (View A.))



View A (parking lot observed at nearby construction site which do not belongs to this Contract)



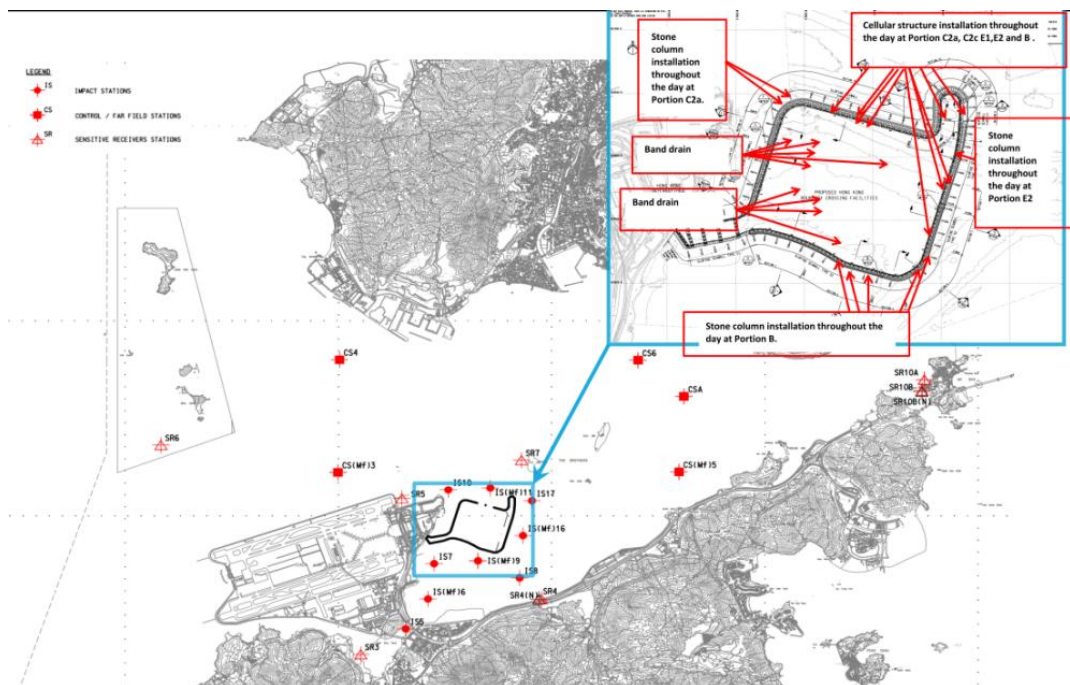
- 2.7.6.4 As refer to the wind data collected at wind station at Works Area WA2 during the monitoring period on 17 and 18 Jan 14 (as attached) South-southeast winds was prevailing during the monitoring period. Traffic activities at construction sites of nearby private development project which are close to the monitoring station AMS3A but beyond the site boundary of Works Area WA 2 may contribute to the measured dust levels at the monitoring station AMS3A.
- 2.7.6.5 The 1-hr TSP values recorded at AMS3A on 18 Jan 14, which are within the monitoring period of the 24-hr TSP, were  $84\mu\text{g}/\text{m}^3$ ,  $83\mu\text{g}/\text{m}^3$  and  $85\mu\text{g}/\text{m}^3$  respectively. All measured values are well below the Action and Limit Levels.
- 2.7.6.6 The measured 24-hr TSP values recorded at AMS2 (which are closer to the marine-based works areas) on the same monitoring date were  $124\mu\text{g}/\text{m}^3$ , which are below the Action and Limit Levels.
- 2.7.6.7 The following dust mitigation measures have been implemented at Works Area WA2:
1. Works Area WA2's surface was hard-paved, compacted or hydro-seeded (Please refer to attached layout map and photo record (View B))
  2. Vehicle washing facility was provided at vehicle exit points,
  3. Measures for preventing fugitive dust emission are provided, e.g. canvas/tarpaulin covers.

View B (Hard paved surface observed at Works Area WA2)



- 2.7.6.8 The dust exceedance was therefore considered not to be due to the Project works.

- 2.7.7 For the 24Hr TSP Action Level exceedance recorded at AMS7, a result of  $207\mu\text{g}/\text{m}^3$  was recorded on 18 Jan 14 (24-hr TSP).
- 2.7.7.1 According to information provided by the Contractor during the monitoring period. Marine-based construction activity such as band drain, stone column installation and cellular structure installation was being undertaken at all area except Portion D.
- 2.7.7.2 Stone column was being installed at the seabed therefore it is considered that stone column installation at Portion C2a, Portion E2 and Portion B are unlikely to contribute to the recorded 24hr-TSP exceedance. For active works carried out on 18 Jan 14, please refer to the below layout map.



- 2.7.7.3 Both band drain or cellular structure installation which was conducted during the monitoring period are considered unlikely to contribute to the recorded 24hr-TSP exceedance due to no significant fugitive dust was expected to be generated in the process.
- 2.7.7.4 Excavators and generators were operated by ultra low sulphur diesel (ULSD) to minimize the possibility of air pollution have been implemented at throughout the construction site.
- 2.7.7.5 Checking record of Jan 14 shows that plant engine is operated by ULSD.
- 2.7.7.6 With reference to the weekly joint site inspection records of 2, 9, 16, 22 and 29 of Jan 14, no dark smoke of was observed and this indicates that plant engines are properly maintained.
- 2.7.7.7 As refer to the wind data collected at wind station at Works Area WA2 during the monitoring period on 23 and 24 Jan 14, South-southeast winds was prevailing during the monitoring period. However, photo record attached shows that dust control measures was implemented by the Contractor.

**Photo record showed that the Contractor implemented dust control measures on pelican barge loaded with rock/sand. The Contractor was reminded to continue to provide dust control measures on pelican barge loaded with rock/sand.**



**Photo record showed that the Contractor implemented dust control measures such as wind-board installed on pelican barge. The Contractor was reminded to continue to provide such dust control measure.**



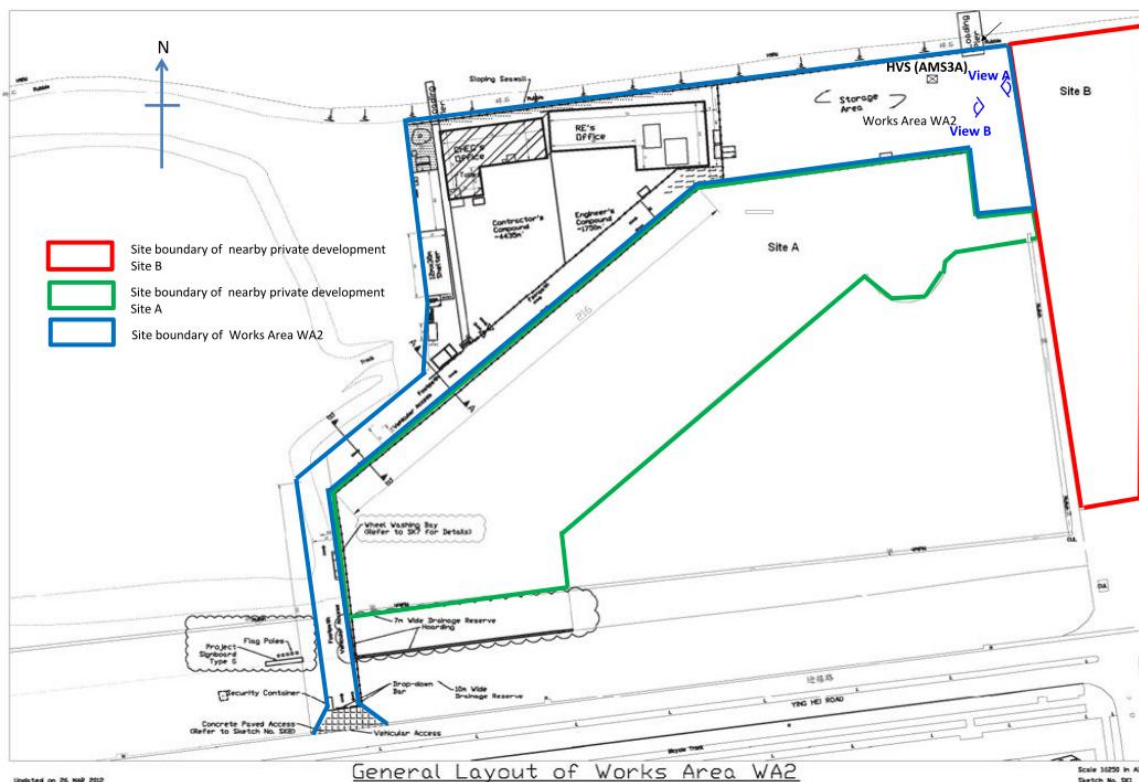
- 2.7.7.8 Functional checking on HVS at AMS7 was done. Air flow of the HVS was checked and the flow was steady during the 24-hr TSP sampling at AMS3A. The filter paper was re-weighted by the assigned HOKLAS laboratory and the result was reconfirmed.
- 2.7.7.9 The 1-hr TSP values recorded at AMS7 on 18 Jan 14, which are within the monitoring days of the 24-hr TSP, were  $84\mu\text{g}/\text{m}^3$ ,  $83\mu\text{g}/\text{m}^3$  and  $83\mu\text{g}/\text{m}^3$  respectively. All measured values are well below the Action and Limit Levels.
- 2.7.7.10 The measured 24-hr TSP values recorded at AMS2 and AMS3A on the same monitoring date were  $93\mu\text{g}/\text{m}^3$  and  $160\mu\text{g}/\text{m}^3$  respectively, which are below the Action and Limit Levels.
- 2.7.7.11 On the other hand, according to observation made at the monitoring station AMS7, there was no non-project potential cause/activity at the surrounding of monitoring station AMS7 which might potentially contribute to the dust action level exceedance.

**Photo shows the conditions of the surrounding near the monitoring station AMS7:**



2.7.7.12 The dust exceedance was therefore considered not to be due to the Project works.

- 2.7.8 For the 24Hr TSP limit Level exceedance recorded at AMS3A, a result of  $374\mu\text{g}/\text{m}^3$  was recorded on 24 Jan 14 (24-hr TSP).
- 2.7.8.1 According to information provided by the Contractor, land-based construction activities such as transloading band drain material, sand bags and tidy up and clearance of site area were being undertaken at Works Area WA2 during the monitoring period.
- 2.7.8.2 Functional checking on HVS at AMS3A was done. Air flow of the HVS was checked and the flow was steady during the 24-hr TSP sampling at AMS3A. The filter paper was re-weighted by the assigned HOKLAS laboratory and the result was reconfirmed.
- 2.7.8.3 Photo records shows vehicle parking activities were observed inside an area at construction sites of nearby private development project which are close to the monitoring station AMS3A but beyond the site boundary of Works Area WA2. (Please also see photo and layout map attached for reference of site conditions (View A.))



View A (parking lot observed at nearby construction site which do not belongs to this Contract)



- 2.7.8.4 As refer to the wind data collected at wind station at Works Area WA2 during the monitoring period on 23 and 24 Jan 14 (as attached) Southeast winds was prevailing during the monitoring period. Traffic activities at construction sites of nearby private development project which are close to the monitoring station AMS3A but beyond the site boundary of Works Area WA 2 may contribute to the measured dust levels at the monitoring station AMS3A.
- 2.7.8.5 The 1-hr TSP values recorded at AMS3A on 24 Jan 14, which are within the monitoring period of the 24-hr TSP, were  $84\mu\text{g}/\text{m}^3$ ,  $82\mu\text{g}/\text{m}^3$  and  $81\mu\text{g}/\text{m}^3$  respectively. All measured values are well below the Action and Limit Levels.
- 2.7.8.6 The measured 24-hr TSP values recorded at AMS2 and AMS7 (which are closer to the marine-based works areas) on the same monitoring date were  $66\mu\text{g}/\text{m}^3$  and  $109\mu\text{g}/\text{m}^3$ , which are below the Action and Limit Levels.
- 2.7.8.7 The measured 24-hr TSP values recorded at AMS3A on next monitoring date were  $183\mu\text{g}/\text{m}^3$ , which exceeded the Action Level (The dust exceedance were considered not to be due to the Project works after investigation).
- 2.7.8.8 The following dust mitigation measures have been implemented at Works Area WA2:
1. Works Area WA2's surface was hard-paved, compacted or hydro-seeded (Please refer to attached layout map and photo record (View B))
  2. Vehicle washing facility was provided at vehicle exit points,
  3. Measures for preventing fugitive dust emission are provided, e.g. canvas/tarpaulin covers.

View B (Hard paved surface observed at Works Area WA2)



- 2.7.8.9 The dust exceedance was therefore considered not to be due to the Project works.



- 2.7.9 For the 24Hr TSP Action Level exceedance recorded at AMS3A, a result of  $183\mu\text{g}/\text{m}^3$  was recorded on 28 Jan 14 (24-hr TSP). And the 24hr-TSP results received on 4 Feb 14.
- 2.7.9.1 According to information provided by the Contractor, land-based construction activity such removing batch/rolls of materials off site area was being undertaken at Works Area WA2 during the monitoring period.
- 2.7.9.2 Functional checking on HVS at AMS3A was done. Air flow of the HVS was checked and the flow was steady during the 24-hr TSP sampling at AMS3A. The filter paper was re-weighted by the assigned HOKLAS laboratory and the result was reconfirmed.
- 2.7.9.3 Photo records shows vehicle parking activities were observed inside an area at construction sites of nearby private development project which are close to the monitoring station AMS3A but beyond the site boundary of Works Area WA2. (Please also see photo and layout map attached for reference of site conditions (View A.))

View A (parking lot observed at nearby construction site which do not belongs to this Contract)



- 2.7.9.4 As refer to the wind data collected at wind station at Works Area WA2 during the monitoring period on 28 and 29 Jan 14 (as attached) South-southeast winds was prevailing during the monitoring period. Traffic activities at construction sites of nearby private development project which are close to the monitoring station AMS3A but beyond the site boundary of Works Area WA 2 may contribute to the measured dust levels at the monitoring station AMS3A.
- 2.7.9.5 The 1-hr TSP values recorded at AMS3A on 29 Jan 14, which are within the monitoring period of the 1-hr TSP, were  $83\mu\text{g}/\text{m}^3$ ,  $84\mu\text{g}/\text{m}^3$  and  $82\mu\text{g}/\text{m}^3$  respectively. All measured values are well below the Action and Limit Levels.
- 2.7.9.6 The measured 24-hr TSP values recorded at AMS2 and AMS7 (which are closer to the marine-based works areas) on the same monitoring date were  $106\mu\text{g}/\text{m}^3$  and  $129\mu\text{g}/\text{m}^3$ , which are below the Action and Limit Levels.
- 2.7.9.7 The measured 24-hr TSP values recorded at AMS3A on next monitoring date were  $79\mu\text{g}/\text{m}^3$ , which did not exceed the Action or Limit Level.
- 2.7.9.8 The following dust mitigation measures have been implemented at Works Area WA2:
1. Works Area WA2's surface was hard-paved, compacted or hydro-seeded (Please refer to attached layout map and photo record (View B))
  2. Vehicle washing facility was provided at vehicle exit points,
  3. Measures for preventing fugitive dust emission are provided, e.g. canvas/tarpaulin covers.

View B (Hard paved surface observed at Works Area WA2)



2.7.9.9 The dust exceedance was therefore considered not to be due to the Project works.

2.7.10 The event action plan is annexed in Appendix L.

2.7.11 Meteorological information collected from the wind station during the monitoring periods on the monitoring dates, as shown in Figure 2, including wind speed and wind direction, is annexed in Appendix H.

### 3 NOISE MONITORING

#### 3.1 Monitoring Requirements

3.1.1 In accordance with the Project Specific EM&A Manual, impact noise monitoring was conducted for at least once per week during the construction phase of the Project. The Action and Limit level of the noise monitoring is provided in Appendix D.

#### 3.2 Monitoring Equipment

3.2.1 Noise monitoring was performed using sound level meter at each designated monitoring station. The sound level meters deployed comply with the International Electrotechnical Commission Publications (IEC) 651:1979 (Type 1) and 804:1985 (Type 1) specifications. Acoustic calibrator was deployed to check the sound level meters at a known sound pressure level. Brand and model of the equipment is given in Table 3.1.

**Table 3.1 Noise Monitoring Equipment**

Equipment	Brand and Model
Integrated Sound Level Meter	Rion NL-31 & B&K2238
Acoustic Calibrator	Rion NC-73

#### 3.3 Monitoring Locations

3.3.1 Monitoring locations NMS2 was set up at the proposed locations in accordance with Project Specific EM&A Manual. However, for monitoring location NMS3 (Ho Yu College), as proposed in the Project Specific EM&A Manual, approval for carrying out impact monitoring could not be obtained from the principal of the school. Permission on setting up and carrying out impact monitoring works at nearby sensitive receivers, like Caribbean Coast and Coastal Skyline, was also sought. However, approvals for carrying out impact monitoring works within their premises were not obtained. Impact noise monitoring was conducted at site boundary of the site office area in Works Area WA2 (NMS3A) respectively. Same baseline noise level (as derived from the baseline monitoring data recorded at Ho Yu College) and Limit Level were adopted for this alternative noise monitoring location.

3.3.2 Figure 2 shows the locations of the monitoring stations. Table 3.2 describes the details of the monitoring stations.

**Table 3.2 Locations of Impact Noise Monitoring Stations**

Monitoring Station	Location	Description
NMS2	Seaview Crescent Tower 1	Free-field on the rooftop of the premise
NMS3A	Site Boundary of Site Office Area at Works Area WA2	Free-field on ground at the area boundary.

### 3.4 Monitoring Parameters, Frequency and Duration

3.4.1 Table 3.3 summarizes the monitoring parameters, frequency and duration of impact noise monitoring.

**Table 3.3 Noise Monitoring Parameters, Frequency and Duration**

Parameter	Frequency and Duration
30-mins measurement at each monitoring station between 0700 and 1900 on normal weekdays (Monday to Saturday). $L_{eq}$ , $L_{10}$ and $L_{90}$ would be recorded.	At least once per week

### 3.5 Monitoring Methodology

#### 3.5.1 Monitoring Procedure

- (a) The sound level meter was set on a tripod at a height of 1.2 m above the ground for free-field measurements at NMS2. A correction of +3 dB(A) shall be made to the free field measurements.
- (b) All measurement at NMS3A were free field measurements in the reporting month at NMS3A. A correction of +3 dB(A) shall be made to the free field measurements.
- (c) The battery condition was checked to ensure the correct functioning of the meter.
- (d) Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:-
  - (i) frequency weighting: A
  - (ii) time weighting: Fast
  - (iii) time measurement:  $L_{eq(30\text{-minutes})}$  during non-restricted hours i.e. 07:00 – 1900 on normal weekdays.
- (e) Prior to and after each noise measurement, the meter was calibrated using the acoustic calibrator for 94dB(A) at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1 dB(A), the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.
- (f) During the monitoring period, the  $L_{eq}$ ,  $L_{10}$  and  $L_{90}$  were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- (g) Noise measurement was paused during periods of high intrusive noise (e.g. dog barking, helicopter noise) if possible. Observations were recorded when intrusive noise was unavoidable.
- (h) Noise monitoring was cancelled in the presence of fog, rain, wind with a steady speed exceeding 5m/s, or wind with gusts exceeding 10m/s. The wind speed shall be checked with a portable wind speed meter capable of measuring the wind speed in m/s.

#### 3.5.2 Maintenance and Calibration

- (a) The microphone head of the sound level meter was cleaned with soft cloth at regular intervals.
- (b) The meter and calibrator were sent to the supplier or HOKLAS laboratory to check and calibrate at yearly intervals.
- (c) Calibration certificates of the sound level meters and acoustic calibrators are provided in Appendix E.

### 3.6 Monitoring Schedule for the Reporting Month

3.6.1 The schedule for construction noise monitoring in January 2014 is provided in Appendix F.

### 3.7 Monitoring Results

3.7.1 The monitoring results for construction noise are summarized in Table 3.4 and the monitoring data is provided in Appendix I.

**Table 3.4 Summary of Construction Noise Monitoring Results in the Reporting Period**

	Average, dB(A), $L_{eq}$ (30 mins)	Range, dB(A), $L_{eq}$ (30 mins)	Limit Level, dB(A), $L_{eq}$ (30 mins)
NMS2	67	65 – 67*	75
NMS3A	64	61 – 67*	70^

\*+3dB(A) Façade correction included

^ Daytime noise Limit Level of 70 dB(A) applies to education institutions, while 65dB(A) applies during school examination period.

3.7.2 No Action or Limit Level Exceedance of construction noise was recorded in the reporting month.

3.7.3 Major noise sources during the noise monitoring included construction activities of the Project, construction activities by other contracts and nearby traffic noise.

3.7.4 The event action plan is annexed in Appendix L.

## 4 WATER QUALITY MONITORING

### 4.1 Monitoring Requirements

4.1.1 Impact water quality monitoring was carried out to ensure that any deterioration of water quality was detected, and that timely action was taken to rectify the situation. For impact water quality monitoring, measurements were taken in accordance with the Project Specific EM&A Manual. Appendix D shows the established Action/Limit Levels for the environmental monitoring works.

### 4.2 Monitoring Equipment

4.2.1 Table 4.1 summarises the equipment used in the impact water quality monitoring programme.

**Table 4.1 Water Quality Monitoring Equipment**

Equipment	Brand and Model
Dissolved Oxygen (DO) and Temperature Meter, Salinity Meter and Turbidimeter	YSI Model 6820
pH Meter	YSI Model 6820 or Thermo Orion 230A+
Positioning Equipment	JRC DGPS 224 Model JLR-4341 with J-NAV 500 Model NWZ4551
Water Depth Detector	Eagle Cuda-168
Water Sampler	Kahlsio Water Sampler (Vertical) 2.2 L with messenger

### 4.3 Monitoring Parameters, Frequency and Duration

4.3.1 Table 4.2 summarises the monitoring parameters, frequency and monitoring depths of impact water quality monitoring as required in the Project Specific EM&A Manual.

**Table 4.2 Impact Water Quality Monitoring Parameters and Frequency**

Monitoring Stations	Parameter, unit	Frequency	No. of depth
<p><i>Impact Stations:</i> IS5, IS(Mf)6, IS7, IS8, IS(Mf)9, IS10, IS(Mf)11, IS(Mf)16, IS17</p> <p><i>Control/Far Field Stations:</i> CS(Mf)3, CS(Mf)5, CS4, CS6, CSA</p> <p><i>Sensitive Receiver Stations:</i> SR3-SR7, SR10A&amp;SR10B</p>	<ul style="list-style-type: none"> <li>• Depth, m</li> <li>• Temperature, °C</li> <li>• Salinity, ppt</li> <li>• Dissolved Oxygen (DO), mg/L</li> <li>• DO Saturation, %</li> <li>• Turbidity, NTU</li> <li>• pH</li> <li>• Suspended Solids (SS), mg/L</li> </ul>	<p>Three times per week during mid-ebb and mid-flood tides (within ± 1.75 hour of the predicted time)</p>	<p>3 (1 m below water surface, mid-depth and 1 m above sea bed, except where the water depth is less than 6 m, in which case the mid-depth station may be omitted. Should the water depth be less than 3 m, only the mid-depth station will be monitored).</p>

### 4.4 Monitoring Locations

4.4.1 In accordance with the Project Specific EM&A Manual, twenty-one stations (9 Impact Stations, 7 Sensitive Receiver Stations and 5 Control/Far Field Stations) were designated for impact water quality

monitoring. The nine Impact Stations (IS) were chosen on the basis of their proximity to the reclamation and thus the greatest potential for water quality impacts, the seven Sensitive Receiver Stations (SR) were chosen as they are close to the key sensitive receives and the five Control/ Far Field Stations (CS) were chosen to facilitate comparison of the water quality of the IS stations with less influence by the Project/ ambient water quality conditions.

- 4.4.2 Due to safety concern and topographical condition of the original locations of SR4 and SR10B, alternative impact water quality monitoring stations, naming as SR4 (N) and SR10B (N), were adopted, which are situated in vicinity of the original impact water quality monitoring stations (SR4 and SR10B) and could be reachable.
- 4.4.3 Same baseline and Action Level for water quality, as derived from the baseline monitoring data recorded, were adopted for these alternative impact water quality monitoring stations.
- 4.4.4 The locations of these monitoring stations are summarized in Table 4.3 and depicted in Figure 3.

**Table 4.3 Impact Water Quality Monitoring Stations**

Station	Description	East	North
IS5	Impact Station (Close to HKBCF construction site)	811579	817106
IS(Mf)6	Impact Station (Close to HKBCF construction site)	812101	817873
IS7	Impact Station (Close to HKBCF construction site)	812244	818777
IS8	Impact Station (Close to HKBCF construction site)	814251	818412
IS(Mf)9	Impact Station (Close to HKBCF construction site)	813273	818850
IS10	Impact Station (Close to HKBCF construction site)	812577	820670
IS(Mf)11	Impact Station (Close to HKBCF construction site)	813562	820716
IS(Mf)16	Impact Station (Close to HKBCF construction site)	814328	819497
IS17	Impact Station (Close to HKBCF construction site)	814539	820391
SR3	Sensitive receivers (San Tau SSSI)	810525	816456
SR4(N)	Sensitive receivers (Tai Ho)	814705	817859
SR5	Sensitive receivers (Artificial Reef in NE Airport)	811489	820455
SR6	Sensitive receivers (Sha Chau and Lung Kwu Chau Marine Park)	805837	821818
SR7	Sensitive receivers (Tai Mo Do)	814293	821431
SR10A	Sensitive receivers (Ma Wan FCZ)1	823741	823495
SR10B(N)	Sensitive receivers (Ma Wan FCZ)2	823683	823187
CS(Mf)3	Control Station	809989	821117
CS(Mf)5	Control Station	817990	821129
CS4	Control Station	810025	824004
CS6	Control Station	817028	823992
CSA	Control Station	818103	823064

## 4.5 Monitoring Methodology

### 4.5.1 Instrumentation

- (a) The in-situ water quality parameters, viz. dissolved oxygen, temperature, salinity, turbidity and pH, were measured by multi-parameter meters (i.e. Model YSI 6820 CE-C-M-Y) and pH meter (i.e. Thermo Orion 230A+) respectively.

4.5.2 Operating/Analytical Procedures

- (a) Digital Differential Global Positioning Systems (DGPS) were used to ensure that the correct location was selected prior to sample collection.
- (b) Portable, battery-operated echo sounders were used for the determination of water depth at each designated monitoring station.
- (c) All in-situ measurements were taken at 3 water depths, 1 m below water surface, mid-depth and 1 m above sea bed, except where the water depth was less than 6 m, in which case the mid-depth station was omitted. Should the water depth be less than 3 m, only the mid-depth station was monitored.
- (d) At each measurement/sampling depth, two consecutive in-situ monitoring (DO concentration and saturation, temperature, turbidity, pH, salinity) and water sample for SS. 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 DO or turbidity parameters was more than 25% of the value of the first reading, the reading was discarded and further readings were taken.
- (e) Duplicate samples from each independent sampling event were collected for SS measurement. Water samples were collected using the water samplers and the samples were stored in high-density polythene bottles. Water samples collected were well-mixed in the water sampler prior to pre-rinsing and transferring to sample bottles. Sample bottles were pre-rinsed with the same water samples. The sample bottles were then be packed in cool-boxes (cooled at 4°C without being frozen), and delivered to ALS Technichem (HK) Pty Ltd. for the analysis of suspended solids concentrations. The laboratory determination work would be started within 24 hours after collection of the water samples. ALS Technichem (HK) Pty Ltd. is a HOKLAS accredited laboratory and has comprehensive quality assurance and quality control programmes. For QA/QC procedures, one duplicate samples of every batch of 20 samples was analyzed.
- (f) The analysis method and reporting and detection limit for SS is shown in Table 4.4.

**Table 4.4 Laboratory Analysis for Suspended Solids**

Parameters	Instrumentation	Analytical Method	Reporting Limit	Detection Limit
Suspended Solid (SS)	Weighting	APHA 2540-D	0.5mg/L	0.5mg/L

- (g) Other relevant data were recorded, including monitoring location / position, time, water depth, tidal stages, weather conditions and any special phenomena or work underway at the construction site in the field log sheet for information.



#### 4.5.3 Maintenance and Calibration

- (a) All in situ monitoring instruments would be calibrated and calibrated by ALS Technichem (HK) Pty Ltd. before use and at 3-monthly intervals throughout all stages of the water quality monitoring programme. Calibration details are provided in Appendix E.
- (b) The dissolved oxygen probe of YSI 6820 was calibrated by wet bulb method. Before the calibration routine, the sensor for dissolved oxygen was thermally equilibrated in water-saturated air. Calibration cup is served as a calibration chamber and it was loosened from airtight condition before it is used for the calibration. Calibration at ALS Technichem (HK) Pty Ltd. was carried out once every three months in a water sample with a known concentration of dissolved oxygen. The sensor was immersed in the water and after thermal equilibration, the known mg/L value was keyed in and the calibration was carried out automatically.
- (c) The turbidity probe of YSI 6820 is calibrated two times a month. A zero check in distilled water was performed with the turbidity probe of YSI 6820 once per monitoring day. The probe will be calibrated with a solution of known NTU at ALS Technichem (HK) Pty Ltd. once every three months.

#### 4.6 Monitoring Schedule for the Reporting Month

- 4.6.1 The schedule for impact water quality monitoring in January 2014 is provided in Appendix F.
- 4.6.2 As informed by the Contractor, marine works was conducted at HKBCF on 1 Feb 14, the impact water quality monitoring work scheduled on 31 Jan 14 at mid Flood tide 08:04 and Mid-ebb 13:36 was rescheduled to 1 Feb 14 mid Flood tide 08:43 and Mid-ebb tide 14:19. The monitoring results recorded on 1 Feb 14 will be reported in the EM&A report for Feb 14.

#### 4.7 Results and Observations

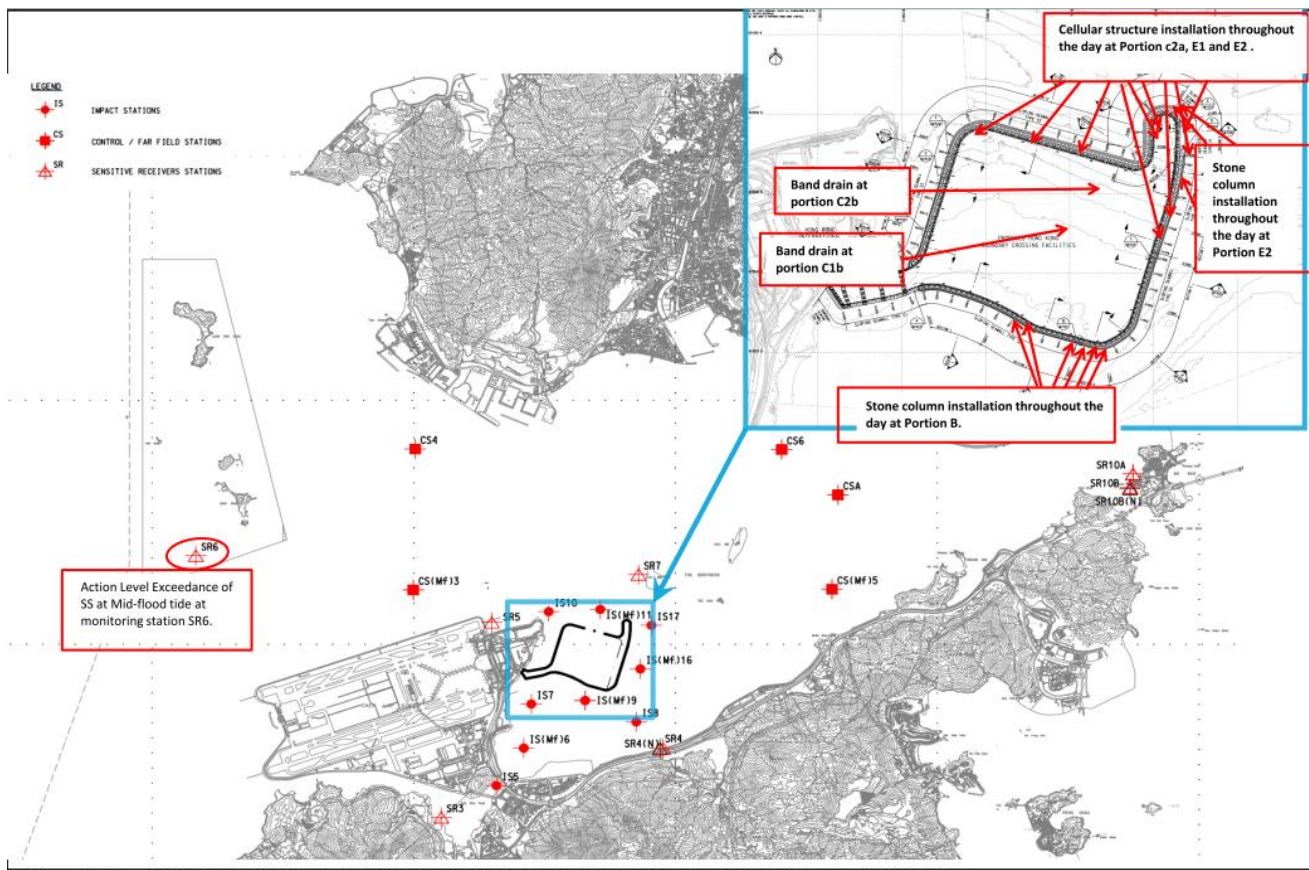
- 4.7.1 Impact water quality monitoring was conducted at all designated monitoring stations in the reporting month. Except Impact water quality monitoring at sampling location IS(Mf)9. Sampling location IS(Mf)9 was found enclosed by silt curtain during the reporting month. Samples were taken about 140 meters away from IS(Mf)9. The sampling location's coordination (East 813226, North 818708) was recorded. The Contractor was advised to take corrective actions to the temporary arrangement of the perimeter silt curtain as soon as possible.
- 4.7.2 Impact water quality monitoring results and graphical presentations are provided in Appendix J.
- 4.7.3 Six (6) Action Level exceedances and one (1) Limit Level Exceedances were recorded at measured suspended solids (SS) values (in mg/L) in the reporting month. The number of exceedances recorded in the reporting month at each impact station is summarized in Table 4.5.

**Table 4.5 Summary of Water Quality Exceedances**

Station	Exceedance Level	DO (S&M)		DO (Bottom)		Turbidity		SS		Total	
		Ebb	Flood	Ebb	Flood	Ebb	Flood	Ebb	Flood	Ebb	Flood
IS5	Action	0	0	0	0	0	0	0	(1) 10Jan14	0	1
	Limit	0	0	0	0	0	0	0	0	0	0
IS(Mf)6	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
IS7	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
IS8	Action	0	0	0	0	0	0	0	(1) 06Jan14	0	1
	Limit	0	0	0	0	0	0	0	0	0	0
IS(Mf)9	Action	0	0	0	0	0	0	0	(2) 03Jan14, 15 Jan 14	0	2
	Limit	0	0	0	0	0	0	0	(1) 17 Jan 14	0	1
IS10	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
IS(Mf)11	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
IS(Mf)16	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
IS17	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
SR3	Action	0	0	0	0	0	0	0	(1) 10Jan14	0	1
	Limit	0	0	0	0	0	0	0	0	0	0
SR4(N)	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
SR5	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
SR6	Action	0	0	0	0	0	0	0	(1) 03Jan14	0	1
	Limit	0	0	0	0	0	0	0	0	0	0
SR7	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
SR10A	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
SR10B (N)	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>Action</b>	0	0	0	0	0	0	0	6	6	
	<b>Limit</b>	0	0	0	0	0	0	0	1	1	

Note: S: Surface; and  
M: Mid-depth.

4.7.4 One (1) Action Level exceedance at measured Suspended Solids (mg/L) was recorded on 03 Jan 2014 at monitoring station SR6 at Mid-flood tide. For Action Level exceedances at measured Suspended Solids (mg/L), 23.9 mg/L was recorded at Monitoring Station SR6.



4.7.4.1 For locations and type of active works carried out on 03 Jan 14, please refer to the above layout map.

4.7.4.2 When impact water quality monitoring was carried out during mid flood tide at monitoring location IS10, SR5 and SR6 on 3 Jan 14, no silty plume were observed to flow from the inside of the northwestern part of the perimeter silt curtain.

4.7.4.3 IS10, SR5 (located outside northwest part of the perimeter silt curtain) and IS(Mf)11 (located outside north part of the perimeter silt curtain) which are closer to the active works than monitoring station SR6. Depth Averaged Suspended Solids (SS) values (in mg/L) recorded during the flood tide on the same day at IS10, SR5 and IS(Mf)11 were below the Action and Limit Level which shows that the water quality closer to active works was not adversely affected.

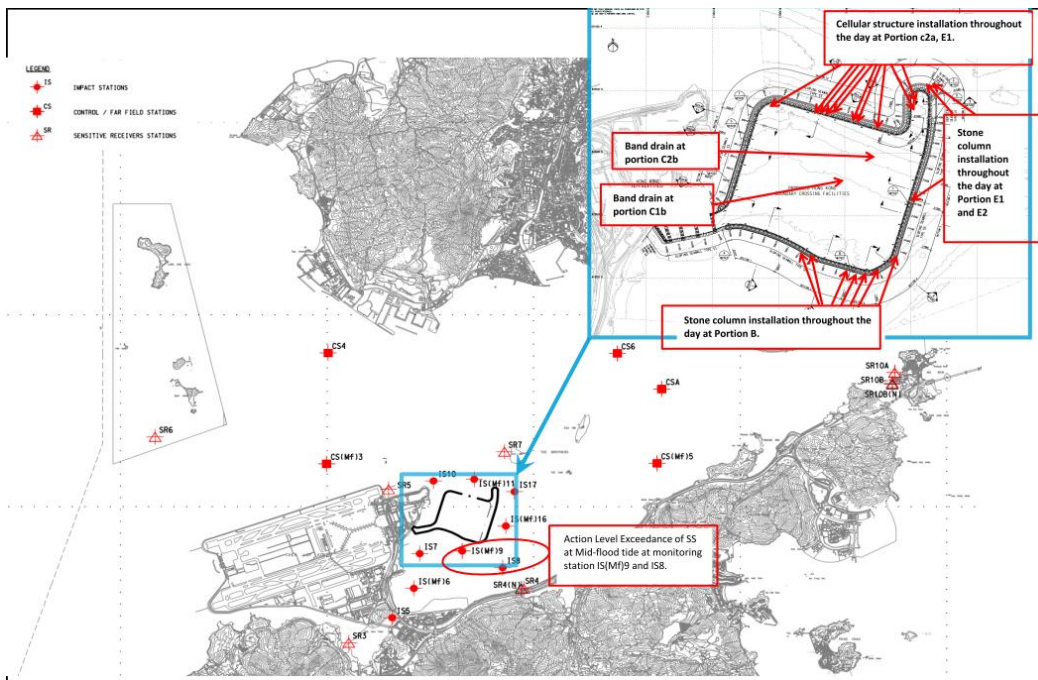


4.7.4.4 Turbidity level (NTU) results recorded on 03 Jan 14 at SR6, SR5, IS10 and IS(Mf)11 during flood tide are 20.8 NTU, 18.6 NTU, 17.8 NTU and 17.3 NTU which are below the Action and Limit Level, this indicates turbidity level of the area nearby was not adversely affected.

4.7.4.5 The exceedance was likely due to local effects in the vicinity of SR6.

4.7.5 Two (2) action level exceedances at measured Suspended Solids (mg/L) were recorded on 06 Jan 2014 at monitoring station IS(Mf)9 and at monitoring station IS8 at Mid-flood tide. For Action Level exceedance at measured Suspended Solids (mg/L), 24.4mg/L were recorded at Monitoring Station IS(Mf)9 and 25.4mg/L were recorded at Monitoring Station IS8.

4.7.5.1 For works activities carried out on 06 Jan 14, please refer to the attached layout map.



4.7.5.2 The Depth averaged turbidity (in NTU) and depth averaged SS (in mg/L) of nearby monitoring station, such as IS7 and IS(Mf)16 were below the action and limit level, indicating the water quality at area nearby IS(Mf)9 and IS8 was not adversely affected.

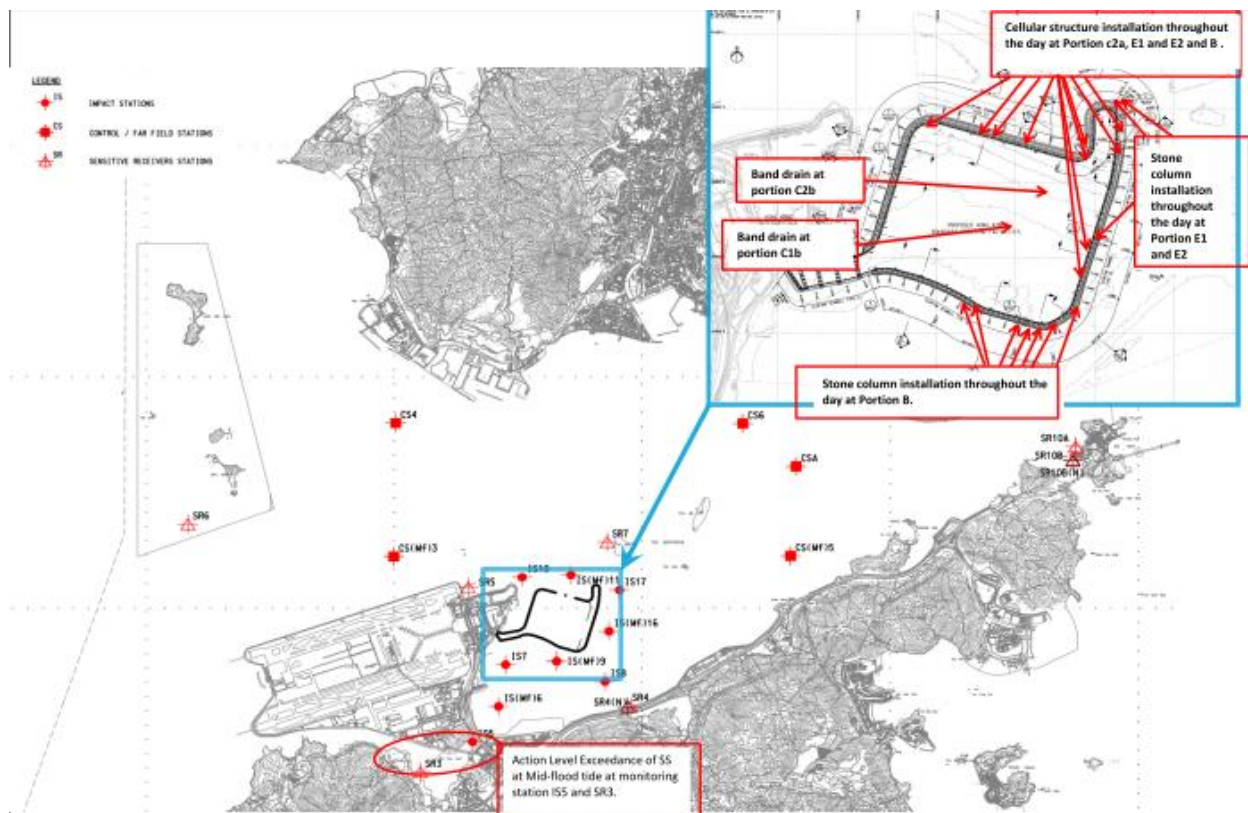
4.7.5.3 The turbidity level (in NTU) at IS(Mf)9, IS8, IS7 and IS(Mf)16 were below the action and limit level and no silt plume was observed when monitoring was conducted IS(Mf)9 and IS8, this indicates that the turbidity level (in NTU) at IS(Mf)9, IS8, IS7 and IS(Mf)16 were not adversely affected.



- 4.7.5.4 Also, with refer to the silt curtain condition on 06 Jan 14, no defects of the perimeter silt curtain was observed at south and southeast of the construction site.
- 4.7.5.5 The exceedances were likely due to local effects in the vicinity of IS(Mf)9 and IS8.
- 4.7.5.6 As such, the exceedances recorded at IS(Mf)9 and IS8 are considered non-project related.
- 4.7.5.7 The Contractor was reminded to ensure provision of ongoing maintenance to the silt curtains and to carry out maintenance work once defects were found.
- 4.7.5.8 Maintenance work of the silt curtain was carried out by the Contractor on a daily basis except Sunday and public holiday.

4.7.6 Two (2) action level exceedances at measured Suspended Solids (mg/L) were recorded on 10 Jan 2014 at monitoring station IS5 and at monitoring station SR3 at Mid-flood tide. For Action Level exceedances at measured Suspended Solids (mg/L), 25.1 mg/L was recorded at Monitoring Station IS5 and 24.8 mg/L was recorded at Monitoring Station SR3.

4.7.6.1 For site activities carried out on 10 Jan 14, please refer to the below layout map.



4.7.6.2 Suspended solids values recorded at Impact Station IS(Mf) 6, IS(Mf)9 and IS7 located downstream and closer to active work than SR3 and IS5 were below the Action and Limit Level during the same tide on the same day. As such, active works is unlikely to cause exceedance to IS5 and SR3.

4.7.6.3 Same type of works was carried out at the same locations on 8, 10 and 13 Jan 14 but Suspended Solids values recorded at SR3 and IS5 on 8 and 13 Jan 14 are all below the Action and Limit Level during the same tide on the these days. As such, active works conducted on 10 Jan 14 is unlikely to cause exceedance to IS5 and SR3.

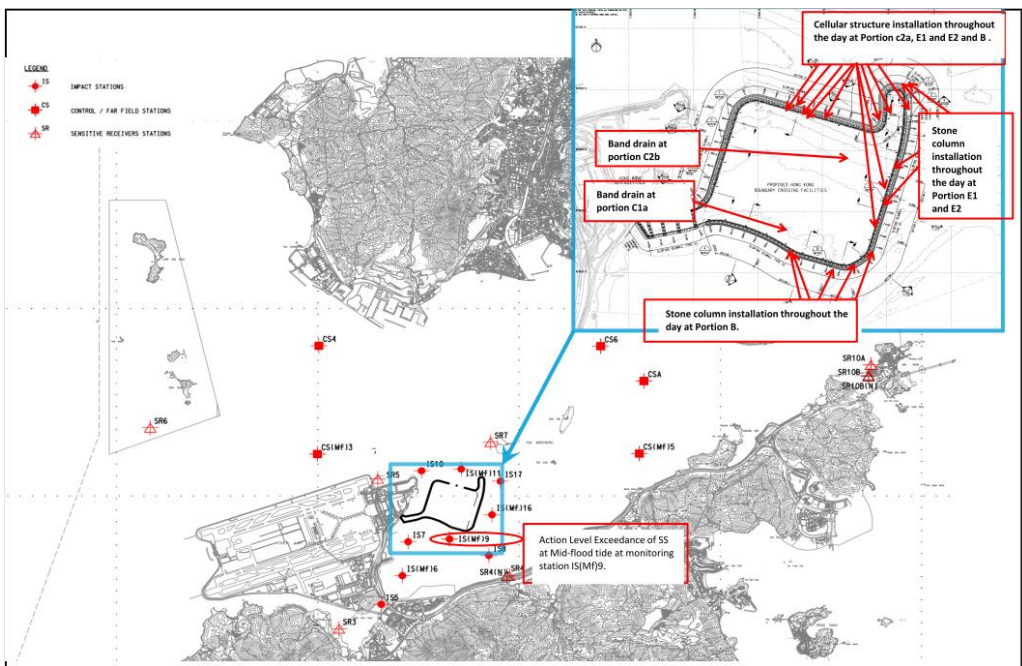
4.7.6.4 Turbidity level recorded at IS7, IS(Mf)6 and IS(Mf)9 were below the action and limit level. This indicated that area closer to active works was not adversely affected.

4.7.6.5 The exceedances were likely due to local effects in the vicinity of IS5 and SR3.

4.7.6.6 The Contractor was reminded to ensure provision of ongoing maintenance to the silt curtains and to carry out maintenance work once defects were found.

4.7.6.7 Maintenance work of the silt curtain was carried out by the Contractor on a daily basis except Sunday and public holiday.

4.7.7 One (1) Action Level exceedance at measured Suspended Solids (mg/L) was recorded on 15 Jan 2014 at monitoring station IS(Mf)9 at Mid-flood tide. For action exceedance at measured Suspended Solids (mg/L), 26.6 mg/L was recorded at Monitoring Station IS(Mf)9.



4.7.7.1 The Depth averaged turbidity (in NTU) and depth averaged SS (in mg/L) of nearby monitoring station, such as IS8, IS7 and IS(Mf)16 were below the action and limit level, indicating the water quality at area nearby IS(Mf)9 was not adversely affected.

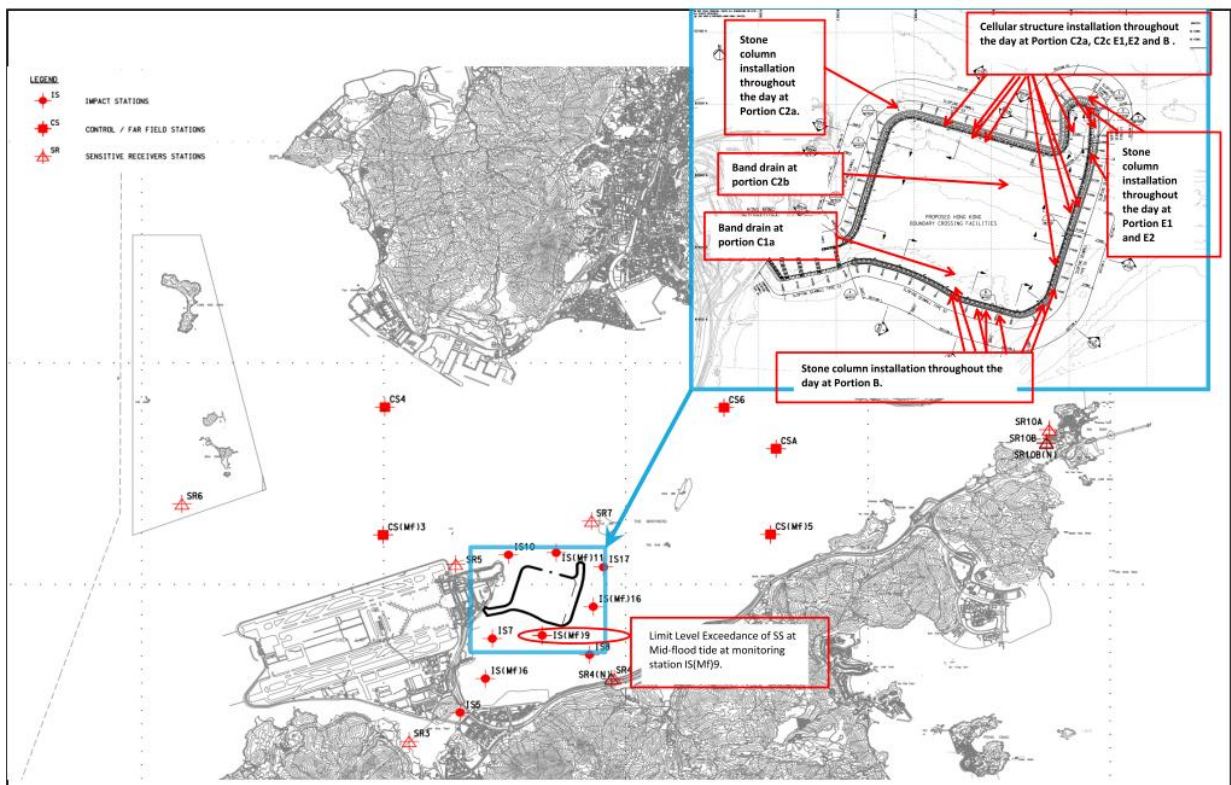
4.7.7.2 Since the turbidity level (in NTU) at IS(Mf)9, IS8, IS7 and IS(Mf)16 were below the action and limit level and no silt plume was observed when monitoring was conducted at IS(Mf)9, this indicates that the turbidity level (in NTU) at IS(Mf)9, IS8, IS7 and IS(Mf)16 were not adversely affected. Please refer to the photo record attached for sea condition recorded on 15 Jan 14 at southeast vessel entrance of the perimeter silt curtain (near monitoring station IS(Mf)9).





- 4.7.7.3 Also, with refer to the silt curtain condition on 15 Jan 14, no defects of the perimeter silt curtain was observed at south and southeast of the construction site.
- 4.7.7.4 The exceedance was likely due to local effects in the vicinity of IS(Mf)9.
- 4.7.7.5 As such, the action level exceedance recorded at IS(Mf)9 is considered non-project related.
- 4.7.7.6 The Contractor was reminded to ensure provision of ongoing maintenance to the silt curtains and to carry out maintenance work once defects were found.
- 4.7.7.7 The Contractor was reminded that, with reference to EM&A manual Clause 9.1.1, the vessel access opening of the perimeter silt curtain would be formed by two piece of silt-curtain with overlapping length of 150 minimum and a separation distance of about 50m.

4.7.8 One (1) Limit Level exceedance at measured Suspended Solids (mg/L) was recorded on 17 Jan 2014 at monitoring station IS(Mf)9 at Mid-flood tide. For action exceedance at measured Suspended Solids (mg/L), 36.8 mg/L was recorded at Monitoring Station IS(Mf)9.



4.7.8.1 The Depth averaged turbidity (in NTU) and depth averaged SS (in mg/L) of nearby monitoring station, such as IS8, IS7 and IS(Mf)16 were below the action and limit level, indicating the water quality at area nearby IS(Mf)9 was not adverse affected.

4.7.8.2 Since the turbidity level (in NTU) at IS(Mf)9, IS8, IS7 and IS(Mf)16 were below the action and limit level and no silt plume was observed when monitoring was conducted at IS(Mf)9. Please refer to the photo record below for sea condition near IS(Mf)9 on 17 Jan 14.



- 4.7.8.3 Also, with refer to the silt curtain condition on 17 Jan 14, no defects of the perimeter silt curtain was observed at south and southeast of the construction site.
- 4.7.8.4 The exceedance was likely due to local effects in the vicinity of IS(Mf)9.
- 4.7.8.5 As such, the limit level exceedance recorded at IS(Mf)9 is considered non-project related.
- 4.7.8.6 The Contractor was reminded to ensure provision of ongoing maintenance to the silt curtains and to carry out maintenance work once defects were found.
- 4.7.8.7 Maintenance work of the silt curtain was carried out by the Contractor on a daily basis except Sunday and public holiday.
- 4.7.9 The event action plan is annexed in Appendix L.

## 5 DOLPHIN MONITORING

### 5.1 Monitoring Requirements

- 5.1.1 Vessel based surveys for the Chinese White Dolphin (CWD), *Sousa chinensis*, are to be conducted by a dedicated team comprising a qualified marine mammal ecologist and experienced marine mammal observers (MMOs). The purpose of the surveys are to evaluate the impact of the HKCBF reclamation and, if deemed detrimental, to take appropriate action as per the EM&A manual.
- 5.1.2 This 'Impact Monitoring' follows several months of 'Baseline Monitoring' so similar survey methodologies have been adopted to facilitate comparisons between datasets. Further, the data collected are compatible with, and are available for, incorporation into the data set managed by the Agriculture, Fisheries and Conservation Department (AFCD) as part of Hong Kong's long term Marine Mammal Monitoring Programme.

### 5.2 Monitoring Equipment

- 5.2.1 Table 5.1 summarises the equipment used for the impact dolphin monitoring.

**Table 5.1 Dolphin Monitoring Equipment**

Equipment	Model
Commercially licensed motor vessel	15m in length with a 4.5m viewing platform
Global Positioning System (GPS) x2	Integrated into T7000 Garmin GPS Map 78C
Computers (T7000 Tablet, Intel Atom)	Windows 7/MSO 13 Logger
Camera	Nikon D90 300m 2.8D fixed focus Nikon D90 20-400m zoom lens
Laser Rangefinder	Infinitor LRF1000/ Kings 950
Marine Binocular x3	Nexus 7 x 50 marine binocular with compass and reticules Fujinon 7 x 50 marine binocular with compass and reticules

### 5.3 Monitoring Frequency and Conditions

- 5.3.1 Dolphin monitoring is conducted twice per month in each survey area.
- 5.3.2 Dolphin monitoring is conducted only when visibility is good (e.g., over 1km) and the sea condition is at a Beaufort Sea State of 4 or better.
- 5.3.3 When thunder storm, black rain or typhoon warnings are in force, all survey effort is stopped.

### 5.4 Monitoring Methodology and Location

- 5.4.1 The impact dolphin monitoring is vessel-based and combines line-transect and photo-ID methodology. The survey follows pre-set and fixed transect lines in the two areas defined by AFCD as:
- 5.4.2 Northeast Lantau survey area; and
- 5.4.3 Northwest Lantau survey area.
- 5.4.4 The co-ordinates for the transect lines and layout map have been provided by AFCD and are shown in Table 5.2 and Figure 4.

**Table 5.2 Impact Dolphin Monitoring Line Transect Co-ordinates (Provided by AFCD)**

ID	HK Grid System		Long Lat in WGS84	
	X	Y	Long	Lat
1	804671	814577	113.870308	22.269741
1	804671	831404	113.869975	22.421696
2	805475	815457	113.878087	22.277704
2	805477	826654	113.877896	22.378814
3	806464	819435	113.887615	22.313643
3	806464	822911	113.887550	22.345030
4	807518	819771	113.897833	22.316697
4	807518	829230	113.897663	22.402113
5	808504	820220	113.907397	22.320761
5	808504	828602	113.907252	22.396462
6	809490	820466	113.916965	22.323003
6	809490	825352	113.916884	22.367128
7	810499	820690	113.926752	22.325043
7	810499	824613	113.926688	22.360464
8	811508	820847	113.936539	22.326475
8	811508	824254	113.936486	22.357241
9	812516	820892	113.946329	22.326894
9	812516	824254	113.946279	22.357255
10*	813525	818270	113.956156	22.303225
10*	813525	824657	113.956065	22.360912
11	814556	818449	113.966160	22.304858
11	814556	820992	113.966125	22.327820
12	815542	818807	113.975726	22.308109
12	815542	824882	113.975647	22.362962
13	816506	819480	113.985072	22.314192
13	816506	824859	113.985005	22.362771
14	817537	820220	113.995070	22.320883
14	817537	824613	113.995018	22.360556
15	818568	820735	114.005071	22.325550
15	818568	824433	114.005030	22.358947
16	819532	821420	114.014420	22.331747
16	819532	824209	114.014390	22.356933
17	820451	822125	114.023333	22.338117
17	820451	823671	114.023317	22.352084
18	821504	822371	114.033556	22.340353
18	821504	823761	114.033544	22.352903
19	822513	823268	114.043340	22.348458
19	822513	824321	114.043331	22.357971
20	823477	823402	114.052695	22.349680
20	823477	824613	114.052686	22.360610
21	805476	827081	113.877878	22.382668
21	805476	830562	113.877811	22.414103
22	806464	824033	113.887520	22.355164
22	806464	829598	113.887416	22.405423
23	814559	821739	113.966142	22.334574
23	814559	824768	113.966101	22.361920

\*Remark: Due to the presence of deployed silt curtain systems at the site boundaries of the Project, some of the transect lines shown in Figure 5 could not be fully surveyed during the regular survey. Transect 10 is reduced from 6.4km to approximately 3.6km in length due to the HKBCF construction site. Therefore the total transect length for both NEL and NWL combined is reduced to approximately 111km.

## 5.5 Monitoring Procedures

- 5.5.1 The study area incorporates 23 transects which are to be surveyed twice per month. Each survey day lasts approximately 9 hours.
- 5.5.2 The survey vessel departs from Tung Chung Development Pier, Tsing Yi Public Pier or the nearest safe and convenient pier.
- 5.5.3 When the vessel reaches the start of a transect line, “on effort” survey begins. Areas between transect lines and traveling to and from the study area are defined as “off effort”.
- 5.5.4 The transect line is surveyed at a speed of 6-8 knots (11-14 km/hr). For the sake of safety, the speed was sometimes a bit slower to avoid collision with other vessels. During some periods, tide and current flow in the survey areas exceeds 7 knots which can affect survey speed. There are a minimum of four marine mammal observers (MMOs) present on each survey, rotating through four positions, observers (2), data recorder (1) and ‘rest’ (1). Rotations occur every 30 minutes or at the end of dolphin encounters. The data recorder records effort, weather and sightings data directly onto the programme Logger and is not part of the observer team. The observers search with naked eye and binoculars between 90° and 270° abeam (bow being 0°).
- 5.5.5 When a group of dolphins is sighted, position, bearing and distance data are recorded immediately onto the computer and, after a short observation, an estimate made of group size. These parameters are linked to the time-GPS-ships data which are automatically stored in the programme Logger throughout the survey period. In this manner, information on heading, position, speed, weather, effort and sightings are stored in a format suitable for use with DISTANCE software for subsequent line transect analyses.
- 5.5.6 Once the vessel leaves the transect line, it is deemed to be “off effort”. The dolphins are approached with the purpose of taking high resolution pictures for proper photo-identification of individual CWD. Attempts to photograph all dolphins in the group are made. Both the left and right hand sides of the dorsal fin area of each dolphin in the group are photographed, if possible. On finishing photographing, the vessel will return to the transect line at the point of departure and “on effort” survey is resumed.
- 5.5.7 Sightings which are made while on the transect line are referred to as “on effort sightings”, while not on the actual transect line are referred to as an “opportunistic sightings” (e.g. another group of dolphins is sighted while travelling back to the transect line). Only “on effort sightings” can be used in analyses which require effort or rate quantification, e.g., encounter rate per 100km searched. This is also how “on effort sightings” are treated in the baseline report. “Opportunistic sightings” provide additional information on individual habitat use and population distribution and they are noted accordingly.
- 5.5.8 As time and GPS data are automatically logged throughout the survey and are linked to sightings data input, start and end times of encounters and deviation from the transect lines are recorded and can be subsequently reviewed.

## 5.6 Monitoring Schedule for the Reporting Month

- 5.6.1 The schedule for dolphin monitoring in January 2014 is provided in Appendix F.

## 5.7 Results and Observations

- 5.7.1 Dolphin surveys were conducted on 6, 7, 9 and 10 January 2014. In summary, a total of 220.3km of survey was conducted. All 100% of “on effort” survey was conducted under favourable conditions (Beaufort Sea State 3 or better). The details are shown below:-

5.7.2 The effort summary and sightings data are shown in Tables 5.3 and 5.4, respectively. The survey efforts conducted in January 2014 are plotted in Figure 5a-c. For Table 5.3, only on-effort information is included. Transects conducted in all Beaufort Sea State are included. Compared to previous monthly reports, the whole number Beaufort Sea State scale is used so as to ease comparison with other dolphin monitoring reports.

**Table 5.3 Impact Dolphin Monitoring Survey Effort Summary, Effort by Area and Beaufort Sea State**

Survey	Date	Area	Beaufort	Effort (km)	Total Distance Travelled (km)
1	1/6/2014	NWL	2	27.6	51.5
	1/6/2014	NWL	3	23.9	
	1/7/2014	NWL	2	10.6	59.6
	1/7/2014	NWL	3	12.5	
	1/7/2014	NEL	1	1.7	
	1/7/2014	NEL	2	33.1	
	1/7/2014	NEL	3	1.7	
2	1/9/2014	NEL	1	20	59.2
	1/9/2014	NEL	2	15.5	50.0
	1/9/2014	NWL	2	23.7	
	1/10/2014	NWL	2	40.6	
	1/10/2014	NWL	3	9.4	
<b>TOTAL in January 2014</b>					<b>220.3</b>

\*Remark: Surveys conduct under Beaufort Sea State 3 or below are considered as under favourable condition.

**Table 5.4 Impact Dolphin Monitoring Survey Details in January 2014**

Date	Location	No. Sightings "on effort"	No. Sightings "opportunistic"
06/01/14	NW L	5	1
	NEL	0	0
07/01/14	NW L	0	0
	NEL	0	0
09/01/14	NW L	1	0
	NEL	1	0
10/01/14	NW L	2	0
	NEL	0	0
<b>TOTAL in January 2014</b>		<b>9</b>	<b>1</b>

**Table 5.5 The Encounter Rate of Number of Dolphin Sightings & Total Number of Dolphins per Area<sup>^</sup>**

<b>Encounter Rate of Number of Dolphin Sightings (STG)<sup>*</sup></b>						
<b>Date</b>	<b>NEL Track</b>	<b>NWL Track</b>	<b>NEL Sightings</b>	<b>NWL Sightings</b>	<b>NEL Encounter Rate</b>	<b>NWL Encounter Rate</b>
6 & 7/01/2014	34.8 km	74.6 km	0	5	0.0	6.7
9 & 10/01/2014	35.5km	73.7 km	1	3	2.8	4.1
<b>Encounter Rate of Total Number of Dolphins (ANI)<sup>**</sup></b>						
<b>Date</b>	<b>NEL Track</b>	<b>NWL Track</b>	<b>NEL Dolphins</b>	<b>NWL Dolphins</b>	<b>NEL Encounter Rate</b>	<b>NWL Encounter Rate</b>
6 & 7/01/2014	34.8 km	74.6 km	0	26	0.0	34.9
9 & 10/01/2014	35.5km	73.7 km	1	7	2.8	9.5

\* Encounter Rate of Number of Dolphin Sightings (STG) presents encounter rates in terms of groups per 100km.

\*\* Encounter Rate of Total Number of Dolphins (ANI) presents encounter rates in terms of individuals per 100km. And the encounter rate is not corrected for individuals, calculation may represent double counting.

<sup>^</sup>The table is made only for reference to the quarterly STG & ANI, which were adopted for the Event & Action Plan.

- 5.7.3 A total of ten dolphin sightings were recorded during the two surveys, six on 6 January 2014; two were made on 9 and 10 January 2014. No sightings were recorded on the 7 January 2014. Of the ten sightings, nine were “on effort” (which are all under favourable condition) and one was “opportunistic”. A total of thirty six individuals were sighted from the two impact dolphin surveys in the reporting period. Sighting details are summarised and plotted in Appendix K and Figure 5c, respectively.
- 5.7.4 Behaviour: Of the ten sightings made, three sightings were recorded as ‘multiple’ behavior (one of which was feeding and travelling and the other two sightings were feeding and “surface active”); three sightings were recorded as feeding; one in association with a small purse seiner/trawler; three was recorded as travelling and one sighting was recorded as “unknown”. Both of the “milling” groups contained calves and close approaches were not made. The locations of sighting with different behaviour are mapped in Figure 5d.
- 5.7.5 Photo ID analyses for December 2013 is presented in Appendix K.
- 5.7.6 Noteworthy Observation: Three mother and calf pairs were observed during three separate encounters. One mother was identified as HZMB 050 with a large calf (sighting 888 and sighting 900). HZMB 050 was first seen with a new born calf in September 2012. The large size of the calf photographed with her this month is consistent with an individual that is more than a year old. The second calf sighted was not closely approached and its mother was not able to be identified (sighting 900). The location of sightings and images available are provided in Figure 5e.
- 5.7.7 The southern parts of lines 1 and 2 are being affected by other projects and the end of those lines could not be completed on all surveys. Eleven dredging barges were active across the north of lines 1, 2, 20, 21 and 4 on one survey day and sections of those lines could not be completed. The northern section of line 11 was diverted slightly at the HKBCF Project. Thus there were 1.9km of trackline that could not be conducted in January; “transect traveled” + “transect missed” = “Total transect length” (220.3 km + 1.9 km = 222.2km).
- 5.7.7.1 Route travelled shifted slightly to the east at the northern end of transect line 11 due works at HKBCF in Jan 2014. Survey will be taken as close to transect 11 as possible.
- 5.7.7.2 According to the review provided by the dolphin specialist which are mentioned in the attached revised investigation, the shift in the transect line is insignificant and will not affect the overall dolphin survey,



analysis or dolphin behaviour. For investigation on shifted dolphin transect lines by temporary silt curtain, please refer to Appendix K.

5.7.8 The event action plan is annexed in Appendix L.

## 6 ENVIRONMENTAL SITE INSPECTION AND AUDIT

### 6.1 Site Inspection

6.1.1 Site Inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for the Project. In the reporting month, 5 site inspections were carried out on 2, 9, 16, 22 and 29 January 2014.

6.1.2 Particular observations during the site inspections are described below:

#### *Air Quality*

6.1.3 Dry sand surface was observed on works area of Portion A. The Contractor was reminded to provide sufficient dust control measures. The Contractor provided dust control measures. The Contractor was reminded to continued to provide dust control measures on works area of Portion A. (Reminder)

#### *Noise*

6.1.4 Insufficient acoustically decoupling measure was observed from a generator and two water pumps on barge FTB19, two generators on SHB 210 and 2 generators on FTB 21. The Contractor was advised to provide sufficient acoustic decoupling measure(s) such as acoustic mat to noisy equipments. The Contractor was reminded that insufficient/inadequate mitigation measures must be swiftly rectified. Contractor provided acoustic decoupling measures to generators on Barge FTB19 and FTB210. (Closed)

#### *Water Quality*

6.1.5 Turbid water was observed at the southwestern silt curtain entrance area. Refer to the photo taken and site observations, sources of impact likely due to the turbine activities and/or movement of vessel at shallow water (at near the entrance at southwestern of the Construction site and/or when vessel's propeller was turn on at shallow water). The dispersion of turbid water from the inside of the perimeter silt curtain to the outside of the perimeter silt curtain is potentially due to defects of perimeter silt curtain at certain sections and/or insufficient overlapping at entrance/exit of the perimeter silt curtain. The Contractor was advised to regularly evaluate the integrity of the perimeter silt curtain by reviewing the results obtained from daily checking or/and monthly diver inspections specified by the Silt Curtain Deployment Plan. The Contractor was advised to provide sufficient mitigation measures and swiftly carry out maintenance once defects of the perimeter silt curtain are found during the above mentioned daily checking and/or monthly diver inspection. (Reminder)

6.1.6 During site inspection audit, sandfilling seem to be conducted at one end of the temporary rock bund. The Contractor was reminded to conduct sandfilling behind at least 200m leading temporary rock bund/seawall. (Reminder)

6.1.7 Disconnected silt curtain was observed at the western side of the silt curtain. The Contractor was advised to provide sufficient mitigation measures and swiftly carry out maintenance once defects of the perimeter silt curtain are found during the daily checking and/or monthly diver inspection. With referred to the silt curtain checking record of 4 January 13, the disconnected silt curtain was rectified. (Closed)

6.1.8 Water and hole was observed accumulated inside the drip tray. The Contractor was reminded to regularly clear the water accumulated in inside the drip tray. The Contractor cleared the water accumulated inside the drip tray. (Closed)

6.1.9 Generators were observed not properly decoupled. The Contractor was reminded to provide mitigation measures such as to properly decouple generators. The Contractor properly decoupled the generators on barge SHB209. (Closed)

6.1.10 Localised silt curtain was not observed when stone column installation. The Contractor was reminded to provide mitigation measures such as localized silt curtain to active stone column installation points. (Pending to Contractor's rectification)

**Chemical and Waste Management**

- 6.1.11 Movable lighting machineries were observed to be placed on bare ground of Portion D without the provision of drip trays. Drip trays were observed to be provided to movable lighting machineries at temporary rock bund and at works area at portion A. The contractor was advised to continue to provide drip tray or equivalent measures to retain potential oil leakage to movable lighting machineries. An ineffective leakage preventive measure for movable lighting machineries at Portion D was pending for Contractor's rectification. The contractor provided drip tray to retain potential oil leakage to movable lighting machineries at Portion D, (Closed)
- 6.1.12 General refuse was scattered on sea water and along the shore near Portion D and on temporary rock bund and works area at Portion A. The Contractor was reminded to clear the refuse in timely manner and keep site clean and tidy. The Contractor cleared the refuse scattered on sea water and along the shore near Portion D and works area at Portion A. (Closed)
- 6.1.13 Rubbish bin was observed without being covered; the Contractor was reminded to properly store general waste and covers all rubbish bins. The Contractor covered the rubbish bin and the Contractor reminded to provide sufficient waste storage on site. (Reminder)
- 6.1.14 Defect was observed within a bunding and waste oil water mixture was observed on the barge surface. The Contractor was reminded to rectify the defects observed and cleared the oil waste using chemical absorbent material and dispose the chemical absorbent material as chemical waste. The Contractor rectified the defects observed and cleared the oil waste using chemical absorbent material and dispose the chemical absorbent material as chemical waste. (Closed)
- 6.1.15 Oil stain was observed on temporary rock bund, The Contractor was reminded to clear the oil stain on temporary rock bund. The oil stain was cleared by the Contractor (Closed)
- 6.1.16 Generator was observed not entirely contained enclosed by drip tray or bunding. The Contractor was reminded to provide effective mitigation measures such that generator should be totally enclosed by bunding or trip tray to effectively prevent potential oil leakage/runoff. The Contractor provided effective mitigation measures such that generator should be totally enclosed by bunding or trip tray to effectively prevent potential oil leakage/runoff. (Closed)
- 6.1.17 Litter and general refuse was observed on sea and land at works area of Portion D. The Contractor was reminded to regularly clear the litter and general refuse at this area. The Contractor cleared the general refuse observed on land at area near Portion D. The Contractor was advised to clear the rubbish observed on sea area at near works area of Portion D. (Closed)
- 6.1.18 Oil drum were observed without drip tray. The Contractor was reminded to provide drip tray to all oil drum to contain potential oil leakage. The Contractor provided drip tray to oil drums as a mitigation measures to contain potential oil leakage. (Closed)
- 6.1.19 Construction waste such as band drain was observed along the northern edge of works area at Portion A and on edge of temporary rock bund. The Contractor was advice to properly store and dispose construction waste such as band drain. The Contractor properly store and dispose construction waste such as band drain at works area at Portion A. (Closed) The Contractor was advised to properly stored and dispose Construction waste such as band drain observed at the edge of the temporary rock bund. (Pending to Contractor's rectification)

**Landscape and Visual Impact**

- 6.1.20 No relevant works was carried out in the reporting month.

**Others**

- 6.1.21 Rectifications of remaining identified items are undergoing by the Contractor. Follow-up inspections on the status on provision of mitigation measures will be conducted to ensure all identified items are mitigated properly.

## **6.2 Advice on the Solid and Liquid Waste Management Status**

- 6.2.1 The Contractor had registered as a chemical waste producer for this Project. Receptacles were available for general refuse collection and sorting.
- 6.2.2 As advised by the Contractor, 1,158,982.8 m<sup>3</sup> of fill were imported for the Project use in the reporting period. 0.168 tonnes of paper/cardboard packaging, 2 tonnes of chemical waste and 32.5 m<sup>3</sup> of general refuse were generated and disposed of in the reporting period. Monthly summary of waste flow table is detailed in Appendix M.
- 6.2.3 The Contractor is advised to properly maintain on site C&D materials and wastes storage, collection, sorting and recording system, dispose of C&D materials and wastes at designated ground and maximize reuse / recycle of C&D materials and wastes. The Contractor is reminded to properly maintain the site tidiness and dispose of the wastes accumulated on site regularly and properly.
- 6.2.4 The Contractor is reminded that chemical waste should be properly treated and stored temporarily in designated chemical waste storage area on site in accordance with the Code of Practice on the Packaging, Labeling and Storage of Chemical Wastes.

### 6.3 Environmental Licenses and Permits

6.3.1 The environmental licenses and permits for the Project and valid in the reporting month is summarized in Table 6.1.

**Table 6.1 Summary of Environmental Licensing and Permit Status**

Statutory Reference	License/ Permit	License or Permit No.	Valid Period		License/ Permit Holder	Remarks
			From	To		
EIAO	Environmental Permit	EP-353/2009/G	06/08/2012	N/A	HyD	Hong Kong – Zhuhai – Macao Bridge Hong Kong Boundary Crossing Facilities
		EP-354/2009/B	28/01/2014	N/A		Tuen Mun – Chek Lap Kok Link (TMCLKL Southern Landfall Reclamation only)
APCO	NA notification	--	30/12/2011	--	CHEC	Works Area WA2 and WA3
APCO	NA notification	--	17/01/2012	--	CHEC	Works Area WA4
WDO	Chemical Waste Producer Registration	5213-951-C1186-21	30/3/2012	N/A	CHEC	Chemical waste produced in Contract HY/2010/02
WDO	Chemical Waste Producer Registration	5213-974-C3750-01	31/10/2012	--	CHEC	Registration as Chemical Waste Producer at To Kau Wan(WA4)
WDO	Chemical Waste Producer Registration	5213-839-C3750-02	13/09/2012	--	CHEC	Registration as Chemical Waste Producer at TKO 137(FB)
WDO	Billing Account for Disposal of Construction Waste	7014181	05/12/2011	N/A	CHEC	Waste disposal in Contract HY/2010/02
NCO	Construction Noise Permit	GW-RW0888-13	27/12/2013	26/06/2014	CHEC	Works Area WA4 in Contract HY/2010/02
NCO	Construction Noise Permit	GW-RS0012-14	11/01/2014	10/04/2014	CHEC	Reclamation Works in Contract HY/2010/02
NCO	Construction Noise Permit	GW-RE1345-13	31/12/2013	30/06/2014	CHEC	Section of TKO Fill Bank under Contract HY/2010/02

### 6.4 Implementation Status of Environmental Mitigation Measures

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

6.4.2 A summary of the Implementation Schedule of Environmental Mitigation Measures (EMIS) is presented in Appendix C. Most of the necessary mitigation measures were implemented properly.

6.4.3 Training of marine travel route for marine vessels operator was given to relevant staff and relevant records were kept properly.

6.4.4 Regarding the implementation of dolphin monitoring and protection measures (i.e. implementation of Dolphin Watching Plan, Dolphin Exclusion Zone and Silt Curtain integrity Check), regular checking

were conducted by the experienced MMOs within the works area to ensure no dolphin was trapped by the enclosed silt curtain systems. Any dolphin spotted within the enclosed silt curtain systems was reported and recorded. Relevant procedures were followed and measures were well implemented. Silt curtain systems were also inspected timely in accordance to the submitted plan. All inspection records were kept properly.

- 6.4.5 Acoustic decoupling measures on noisy plants on construction vessels were checked regularly and the Contractor was reminded to ensure provision of ongoing maintenance to noisy plants and to carry out improvement work once insufficient acoustic decoupling measures were found.

## **6.5 Summary of Exceedances of the Environmental Quality Performance Limit**

- 6.5.1 All 1-Hour TSP results were below the Action and Limit Level in the reporting month. For 24-Hour TSP results, four (4) Action Level Exceedances and two (2) Limit level Exceedance were recorded in the reporting month. Investigation results showed that all 24-hour TSP Exceedance were not related to project.
- 6.5.2 For construction noise, no exceedance was recorded at all monitoring stations in the reporting period.
- 6.5.3 All 1-Hour TSP results were below the Action and Limit Level in the reporting month. Six (6) Action Level Exceedances and one (1) Limit Level Exceedances were recorded at measured 24-hour TSP results in the reporting month. Investigation results showed that the Six (6) Action Level Exceedances and one (1) Limit Level Exceedances were not related to project.
- 6.5.4 Cumulative statistics on exceedance is provided in Appendix N.

## **6.6 Summary of Complaints, Notification of Summons and Successful Prosecutions**

- 6.6.1 The Environmental Complaint Handling Procedure is annexed in Figure 6.
- 6.6.2 As informed by the Contractor on 6 Jan 14. A complaint involves barges loaded with sand material without properly covered was blown to the inside of the residential area of Tuen Mun Pierhead Garden which caused disturbance to residence. With refer to available information provided, it cannot indicate that the water quality impact and air quality impact were caused by the vessel of this Contract and therefore the complaint could not be concluded as related to this Contract.
- 6.6.2.1 Site visit was conducted on 9 Jan 14 and it was observed during the site investigation that watering equipment was provided on pelican barge loaded with sand for watering of sand filling material to keep the surface of sand material wet. This is consistent with HyD's reply to Oriental Daily Newspaper that the Contractor would water the sand material to keep the sand material wet to prevent generation of fugitive dust.
- 6.6.2.2 During the follow-up site visit conducted on 9 Jan 14, after interview with the skipper of the pelican barge, it was noted that pelican barge is designated with a regular marine travel route to the site, however the regular travel route plan of this project does not specify the travel route passing through the at area at sea near Tuen Mun Pierhead Garden.
- 6.6.2.3 Therefore it is considered the complaint is unlikely to be related to this project.
- 6.6.3 EPD referred a complaint from complainant who advised that blackish mud was found along the edge of the construction site of Hong Kong-Zhuhai-Macao Bridge Hong Kong Project near the airport in the morning of 18 January 2014
- 6.6.3.1 With refer to the site daily of 16, 17 and 18 Jan 14 provided by the Contractor (China Harbour Engineering Company Ltd), no excavation and dredging activities were conducted on site. This indicates that the blackish mud found along the edge of the construction site of this contract near the airport in the morning of 18 January 2014 was unlikely related to this project.

- 6.6.3.2 A follow up joint site inspection with the representatives of the Contractor, Residential Engineer and IEC/ENPO was conducted on 22 Jan 2014. Excavation and dredging activities were not observed within the site boundary of HKBCF during the joint site inspection audit.
- 6.6.3.3 Therefore in accordance with the abovementioned observations, the complaint is therefore considered as not related to contract HY/2010/02.
- 6.6.4 No notification of summons and successful prosecutions was received in the reporting period.
- 6.6.5 Statistics on complaints, notifications of summons and successful prosecutions are summarized in Appendix N.

## **7 FUTURE KEY ISSUES**

### **7.1 Construction Programme for the Coming Months**

7.1.1 As informed by the Contractor, the major works for the Project in Feb 2014 and Mar 2014 will be:-

#### ***Marine-based Works***

- Cellular structure installation
- Connecting arc cell installation
- Laying geo-textile
- Sand blanket laying
- Sand filling
- Maintenance of silt curtain & silt screen at sea water intake of HKIA
- Stone column installation
- Band drain installation
- Backfill cellular structure
- Geotechnical Instrumentation works
- Construction of temporary seawall
- Ground investigation
- Construction of conveyors for public fill
- Surcharge laying
- Precast Yard setup
- Construction of temporary pier at Portion A
- Sand Drain
- Construction of temporary access from Portion D to Portion A

#### ***Land-based Works***

- Maintenance works of Site Office at Works Area WA2
- Maintenance works of Public Works Regional Laboratory at Works Area WA3
- Geo-textile fabrication at Works Area WA2
- Installed sand bag at Works Area WA2
- Silt curtain fabrication at Works Area WA4
- Maintenance of Temporary Marine Access at Works Area WA2



## **7.2 Key Issues for the Coming Month**

### **7.2.1 Key issues to be considered in the coming months:-**

- Site runoff should be properly collected and treated prior to discharge;
- Minimize loss of sediment from filling works;
- Regular review and maintenance of silt curtain systems, drainage systems and desilting facilities;
- Exposed surfaces/soil stockpiles should be properly treated to avoid generation of silty surface runoff during rainstorm;
- Regular review and maintenance of wheel washing facilities provided at all site entrances/exits;
- Conduct regular inspection of various working machineries and vessels within works areas to avoid any dark smoke emission;
- Suppress dust generated from work processes with use of bagged cements, earth movements, excavation activities, exposed surfaces/soil stockpiles and haul road traffic;
- Quieter powered mechanical equipment should be used;
- Provision of proper and effective noise control measures for operating equipment and machinery on-site, such as erection of movable noise barriers or enclosure for noisy plants;
- Closely check and replace the sound insulation materials regularly;
- Better scheduling of construction works to minimize noise nuisance;
- Properly store and label oil drums and chemical containers placed on site;
- Proper chemicals, chemical wastes and wastes management;
- Maintenance works should be carried out within roofed, paved and confined areas;
- Collection and segregation of construction waste and general refuse on land and in the sea should be carried out properly and regularly; and
- Proper protection and regular inspection of existing trees, transplanted/retained trees.

## **7.3 Monitoring Schedule for the Coming Month**

### **7.3.1 The tentative schedule for environmental monitoring in February 2014 is provided in Appendix F.**

## 8 CONCLUSIONS AND RECOMMENDATIONS

### 8.1 Conclusions

- 8.1.1 The construction phase and EM&A programme of the Project commenced on 12 March 2012.
- 8.1.2 All 1-Hour TSP results were below the Action and Limit Level in the reporting month. Four (4) Action Level Exceedances and two (2) Limit Level Exceedances were recorded at measured 24-hour TSP results in the reporting month. Investigation results showed that all Exceedances were not related to project.
- 8.1.3 For construction noise, no exceedance was recorded at all monitoring stations in the reporting period.
- 8.1.4 Six (6) Action Level and one (1) Limit Level Exceedances recorded at measured suspended solids (SS) values (in mg/L) in the reporting month. Investigation results shows that all Action Level Exceedance recorded were not related to project.
- 8.1.5 A total of ten dolphin sightings were recorded during the two surveys, six on 6 January 2014; two were made on 9 and 10 January 2014. No sightings were recorded on the 7 January 2014. Of the ten sightings, nine were “on effort” (which are all under favourable condition) and one was “opportunistic”. A total of thirty six individuals were sighted from the two impact dolphin surveys in the reporting period. Sighting details are summarised and plotted in Appendix K and Figure 5c, respectively.
- 8.1.6 Behaviour: Of the ten sightings made, three sightings were recorded as ‘multiple’ behavior (one of which was feeding and travelling and the other two sightings were feeding and “surface active”); three sightings were recorded as feeding; one in association with a small purse seiner/trawler; three was recorded as travelling and one sighting was recorded as “unknown”. Both of the “milling” groups contained calves and close approaches were not made. The locations of sighting with different behaviour are mapped in Figure 5d.
- 8.1.7 Environmental site inspection was carried out 5 times in January 2014. Recommendations on remedial actions were given to the Contractors for the deficiencies identified during the site audits.
- 8.1.8 As informed by the Contractor on 6 Jan 14. A complaint involves barges loaded with sand material without properly covered was blown to the inside of the residential area of Tuen Mun Pierhead Garden which caused disturbance to residence. With refer to available information provided. It is considered the complaint is unlikely to be related to this project.
- 8.1.9 EPD referred a complaint from complainant who advised that blackish mud was found along the edge of the construction site of Hong Kong-Zhuhai-Macao Bridge Hong Kong Project near the airport in the morning of 18 January 2014. After receipt of the complaint, site daily was reviewed and follow-up investigation has been conducted and excavation and dredging activities were not observed within the site boundary of HKBCF during the joint site inspection audit. Therefore in accordance with the investigation results, the complaint is considered as not related to contract HY/2010/02.
- 8.1.10 No notification of summons and successful prosecution was received in the reporting period.

## 8.2 Recommendations

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

### ***Air Quality Impact***

- All working plants and vessels on site should be regularly inspected and properly maintained to avoid dark smoke emission.
- All vehicles should be washed to remove any dusty materials before leaving the site.
- Haul roads should be sufficiently dampened to minimize fugitive dust generation.
- Wheel washing facilities should be properly maintained and reviewed to ensure properly functioning.
- Temporary exposed slopes and open stockpiles should be properly covered.
- Enclosure should be erected for cement debagging, batching and mixing operations.
- Water spraying should be provided to suppress fugitive dust for any dusty construction activity.

### ***Construction Noise Impact***

- Quieter powered mechanical equipment should be used as far as possible.
- Noisy operations should be oriented to a direction away from sensitive receivers as far as possible.
- Proper and effective noise control measures for operating equipment and machinery on-site should be provided, such as erection of movable noise barriers, enclosure for noisy plants or enhancement works to provide sufficient acoustic decoupling measure(s). Closely check and replace the sound insulation materials regularly
- Vessels and equipment operating should be checked regularly and properly maintained.
- Noise Emission Label (NEL) shall be affixed to the air compressor and hand-held breaker operating within works area.
- Acoustic decoupling measures should be properly implemented for all existing and incoming construction vessels with continuous and regularly checking to ensure effective implementation of acoustic decoupling measures.

### ***Water Quality Impact***

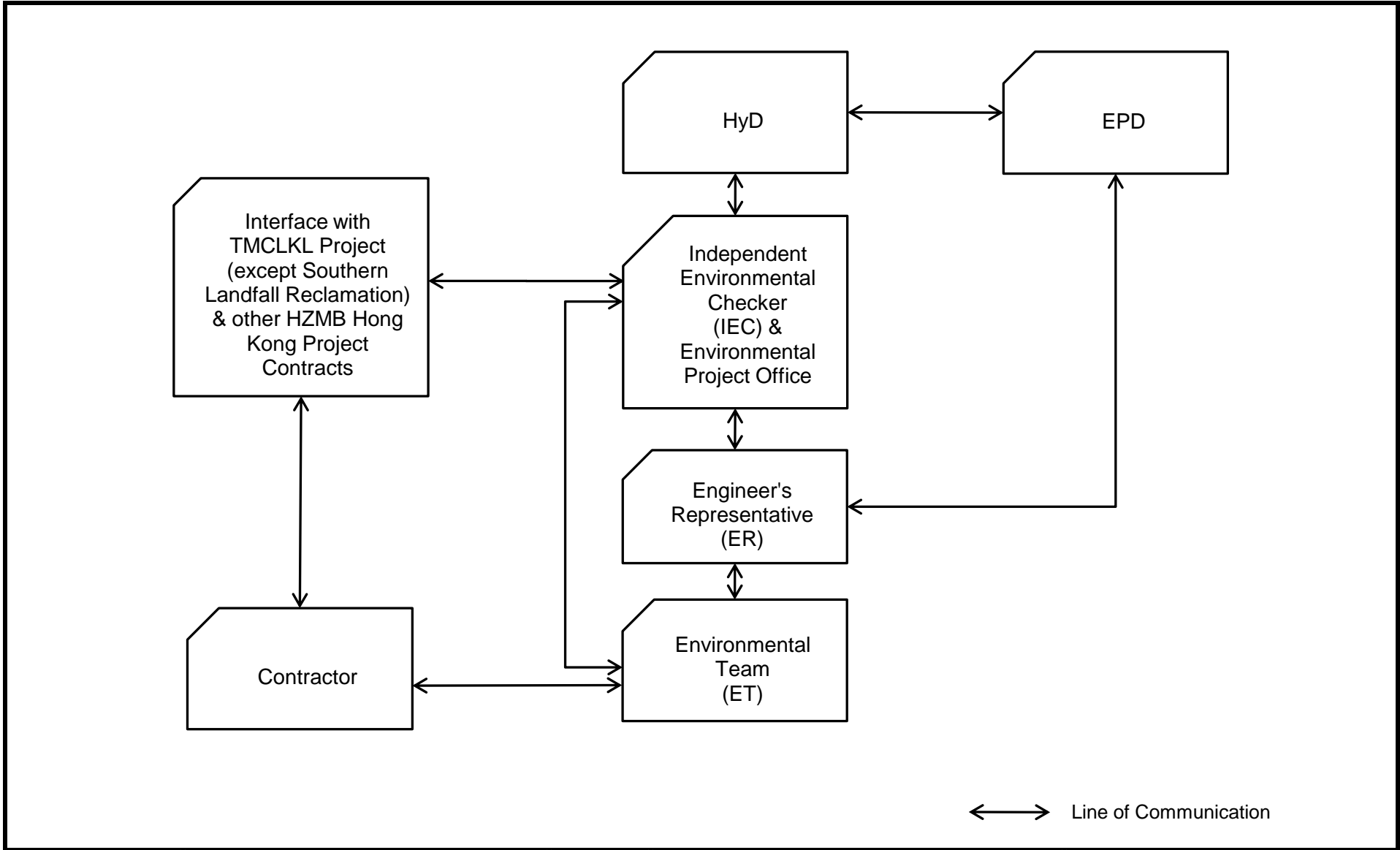
- Regular review and maintenance of silt curtain systems, drainage systems and desilting facilities in order to make sure they are functioning effectively.
- Construction of seawall should be completed as early as possible.
- Regular inspect and review the loading process from barges to avoid splashing of material.
- Silt, debris and leaves accumulated at public drains, wheel washing bays and perimeter u-channels and desilting facilities should be cleaned up regularly.
- Silty effluent should be treated/ desilted before discharged. Untreated effluent should be prevented from entering public drain channel.
- Proper drainage channels/bunds should be provided at the site boundaries to collect/intercept the surface run-off from works areas.
- Exposed slopes and stockpiles should be covered up properly during rainstorm.

***Chemical and Waste Management***

- All types of wastes, both on land and floating in the sea, should be collected and sorted properly and disposed of timely and properly. They should be properly stored in designated areas within works areas temporarily.
- All chemical containers, batteries and oil drums should be properly stored and labelled.
- All plants and vehicles on site should be properly maintained to prevent oil leakage. Proper measures, like drip trays and/or bundings, should be provided for retaining leaked oil/chemical from plants.
- All kinds of maintenance works should be carried out within roofed, paved and confined areas.
- All drain holes of the drip trays utilized within works areas should be properly plugged to avoid any oil and chemical waste leakage.
- Oil stains on soil surface, accumulated oil mixture and empty chemical containers should be cleared and disposed of as chemical waste.
- Regular review should be conducted for working barges and patrol boats to ensure sufficient measures and spill control kits were provided on working barges and patrol boats to avoid any spreading of leaked oil/chemicals.

***Landscape and Visual Impact***

- All existing, retained/transplanted trees at the works areas should be properly fenced off and regularly inspected.



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Activity ID	Activity Name	Original Duration	Remaining Duration	BL1 Start	BL1 Finish	Start	Finish	Total	2014				
									2013	Jan 27	Feb 28	Mar 29	Apr 30
<b>26th Monthly Progress Report Status as on 21Jan2014</b>		1101	318	30-Nov-11	01-Oct-14	30-Nov-11 A	04-Dec-14	320					
<b>Contract Key Dates</b>		0	0	20-Dec-13	20-Dec-13	21-Jan-14	21-Jan-14	-31					
<b>Work Zone, as defined in PS Clause 1.03(6)</b>		724	318	11-Dec-12	01-Oct-14	11-Dec-12 A	04-Dec-14	320					
<b>Events</b>		25	0	25-Nov-13	19-Dec-13	25-Nov-13 A	19-Dec-13 A						
<b>Interface with Others</b>		25	0	25-Nov-13	19-Dec-13	25-Nov-13 A	19-Dec-13 A						
<b>K039 - K047</b>		25	0	25-Nov-13	19-Dec-13	25-Nov-13 A	19-Dec-13 A						
CS10030	GI Works by other contract	25	0	25-Nov-13	19-Dec-13	25-Nov-13 A	19-Dec-13 A						
<b>Portion A</b>		213	120	20-Oct-13	30-Apr-14	20-Oct-13 A	20-May-14	-32					
<b>Optimizing Rubble Mound Seawalls</b>		102	16	20-Oct-13	09-Dec-13	20-Oct-13 A	10-Feb-14	-26					
<b>Seawall Portion A at C118 - C121, 170m</b>		8	8	01-Dec-13	09-Dec-13	21-Jan-14	28-Jan-14	-70					
RFA1-0090	PA at C121 - C118 Rockfill (Cat1) upto +6.0mPD & geotextile laying 6,460m3	3	3	01-Dec-13	03-Dec-13	21-Jan-14	23-Jan-14	-70					
RFA1-0100	PA at C121 - C118 UnderLayer (Cat0) 0mPD 10,200m3	5	5	04-Dec-13	09-Dec-13	24-Jan-14	28-Jan-14	-70					
<b>Seawall Portion A at C122 - C124, 130m</b>		10	10	28-Nov-13	07-Dec-13	27-Jan-14	10-Feb-14	15					
RFA2-0090	PA at C122 - C124 Rockfill (Cat1) upto +6.0mPD & geotextile laying 4,940m3	3	3	28-Nov-13	30-Nov-13	27-Jan-14	29-Jan-14	15					
RFA2-0100	PA at C122 - C124 UnderLayer 0mPD 7,800m3	4	4	04-Dec-13	07-Dec-13	07-Feb-14	10-Feb-14	15					
<b>Seawall Portion A at C125 - C128, 170m</b>		9	9	25-Nov-13	03-Dec-13	24-Jan-14	06-Feb-14	15					
RFA3-0090	PA at C125 - C128 Rockfill (Cat1) upto +6.0mPD & geotextile laying 6,460m3	3	3	25-Nov-13	27-Nov-13	24-Jan-14	26-Jan-14	15					
RFA3-0100	PA at C125 - C128 UnderLayer 0mPD 10,200m3	5	5	29-Nov-13	03-Dec-13	28-Jan-14	06-Feb-14	15					
<b>Seawall Portion A at C129 - C131, 130m</b>		7	7	21-Nov-13	28-Nov-13	21-Jan-14	27-Jan-14	15					
RFA4-0090	PA at C129 - C131 Rockfill (Cat1) upto +6.0mPD & geotextile laying 4,940m3	3	3	21-Nov-13	23-Nov-13	21-Jan-14	23-Jan-14	15					
RFA4-0100	PA at C129 - C131 UnderLayer 0mPD 7,800m3	4	4	25-Nov-13	28-Nov-13	24-Jan-14	27-Jan-14	15					
<b>Seawall Portion A at C132 - C134, 115m</b>		102	16	20-Oct-13	07-Dec-13	20-Oct-13 A	10-Feb-14	-26					
RFA5-0070	PA at C132 - C134 Rockfill (Cat1) , filter layer & geotextile +2.5mPD 12,765m3	31	0	20-Oct-13	21-Nov-13	20-Oct-13 A	12-Jan-14 A						
RFA5-0080	PA at C132 - C134 Rockfill (Cat1) for platform upto +2.5mPD 10,695m3	6	1	22-Nov-13	28-Nov-13	16-Jan-14 A	21-Jan-14	17					
RFA5-0090	PA at C132 - C134 Rockfill (Cat1) upto +6.0mPD & geotextile laying 4370m3	3	3	01-Dec-13	03-Dec-13	04-Feb-14	06-Feb-14	15					
RFA5-0100	PA at C132 - C134 UnderLayer 0mPD 7,800m3	4	4	04-Dec-13	07-Dec-13	07-Feb-14	10-Feb-14	-26					
<b>Portion A</b>		183	120	19-Nov-13	30-Apr-14	12-Nov-13 A	20-May-14	-32					
<b>Temporary Pier</b>		30	30	08-Dec-13	06-Jan-14	11-Feb-14	12-Mar-14	17					
TP0010	Construction of Temporary Piers	30	30	08-Dec-13	06-Jan-14	11-Feb-14	12-Mar-14	17					
<b>Reclamation</b>		127	40	19-Nov-13	20-Jan-14	12-Nov-13 A	01-Mar-14	10					
<b>Portion A Marine Fill upto +2.5mPD</b>		114	16	19-Nov-13	20-Jan-14	19-Nov-13 A	10-Feb-14	15					
<b>Land Portion A</b>		114	16	19-Nov-13	20-Jan-14	19-Nov-13 A	10-Feb-14	15					
MFA0-010	Marine Fill Type A Sand 100% at PA Edge Area at C118 - C121 210,010m3 10,000m3/day	14	3	06-Jan-14	20-Jan-14	17-Dec-13 A	23-Jan-14	14					
MFA0-060	Marine Fill Type A Sand 100% at PA Edge Area at C122 - C126 281,136m3 30,000m3/day	9	0	19-Nov-13	28-Nov-13	19-Nov-13 A	20-Jan-14 A						
MFA0-070	Marine Fill Type A Sand 100% at PA Edge Area at C127 - C134 265,005m3 30,000m3/day CLP S	9	10	29-Nov-13	07-Dec-13	20-Dec-13 A	04-Feb-14	18					
MFA0-080	Marine Fill Type A Sand 100% at PA 265,005m3 10,000m3/day other areas	26	16	09-Dec-13	04-Jan-14	12-Jan-14 A	10-Feb-14	16					
<b>Portion A Land Band Drain</b>		103	40	19-Nov-13	10-Jan-14	12-Nov-13 A	01-Mar-14	20					
<b>Land Portion A 233,590nrs</b>		103	40	19-Nov-13	10-Jan-14	12-Nov-13 A	01-Mar-14	20					
VBDA0-040	Vertical Band Drains 54,757nrs by Land plant at PA PCB East 3,000nrs/day	18	0	19-Nov-13	07-Dec-13	19-Nov-13 A	11-Dec-13 A						
VBDA0-050	Vertical Band Drains 32,115nrs by Land plant at PA PCB West 3,000nrs/day	10	9	07-Dec-13	17-Dec-13	12-Nov-13 A	29-Jan-14	18					
VBDA0-055	Cammon GI Works for CLP Substation	21	12			10-Jan-14 A	06-Feb-14	16					
VBDA0-060	Vertical Band Drains 66,700nrs by Land plant at PA Stg3 3,000nrs/day w CLP substation	22	22	18-Dec-13	10-Jan-14	07-Feb-14	01-Mar-14	18					
<b>Portion A Earthwork Fill upto +5.5mPD</b>		65	23	09-Dec-13	04-Jan-14	12-Dec-13 A	12-Feb-14	-83					
<b>Land Portion A</b>		65	23	09-Dec-13	04-Jan-14	12-Dec-13 A	12-Feb-14	-83					
EFA0-010	Earthwork Fill Type D Sand 100% at PA (PCB East) 283,185m3 30,000m3/day	15	0	09-Dec-13	18-Dec-13	12-Dec-13 A	27-Dec-13 A						
EFA0-020	Compaction at PA (PCB East)	12	0	12-Dec-13	23-Dec-13	25-Dec-13 A	05-Jan-14 A						
EFA0-030	Earthwork Fill Type D Sand 100% at PA (PCB West) 283,185m3 30,000m3/day	15	9	19-Dec-13	29-Dec-13	17-Dec-13 A	29-Jan-14	-66					
EFA0-040	Compaction at PA (PCB West)	12	12	24-Dec-13	04-Jan-14	01-Feb-14	12-Feb-14	-83					
<b>Portion A Instrumentation</b>		18	18	21-Nov-13	08-Jan-14	21-Jan-14	13-Feb-14	-30					
<b>Portion A Instrumentation - SD</b>		18	18	21-Nov-13	08-Jan-14	21-Jan-14	13-Feb-14	-30					
<b>SD-24 C123</b>		3	3	21-Nov-13	23-Nov-13	21-Jan-14	23-Jan-14	-21					
CTSD-240	Installation of SD-24 (C123) PA	3	3	21-Nov-13	23-Nov-13	21-Jan-14	23-Jan-14	-21					

█ Remaining Level of Effort   
 █ Primary Baseline   
 █ Remaining Work   
 █ Critical Remaining Work   
 ◆ Baseline Milestone   
 ◆ Milestone   
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Activity ID	Activity Name	Original Duration	Remaining Duration	BL1 Start	BL1 Finish	Start	Finish	Total	2014				
									2013	Jan 27	Feb 28	Mar 29	Apr 30
<b>SD-25 C128</b>		3	3	06-Jan-14	08-Jan-14	11-Feb-14	13-Feb-14	-30					
CTSD-250	Installation of SD-25 (C128) PA	3	3	06-Jan-14	08-Jan-14	11-Feb-14	13-Feb-14	-30					
<b>SD-26 C133</b>		3	3	06-Jan-14	08-Jan-14	11-Feb-14	13-Feb-14	-30					
CTSD-260	Installation of SD-26 (C133) PA	3	3	06-Jan-14	08-Jan-14	11-Feb-14	13-Feb-14	-30					
<b>Portion A Surcharge</b>		<b>106</b>	<b>120</b>	<b>30-Dec-13</b>	<b>30-Apr-14</b>	<b>16-Jan-14 A</b>	<b>20-May-14</b>	<b>-32</b>					
<b>Main Reclamation Areas</b>		<b>106</b>	<b>120</b>	<b>30-Dec-13</b>	<b>30-Apr-14</b>	<b>16-Jan-14 A</b>	<b>20-May-14</b>	<b>-32</b>					
<b>PCB East</b>		<b>106</b>	<b>120</b>	<b>30-Dec-13</b>	<b>22-Apr-14</b>	<b>16-Jan-14 A</b>	<b>20-May-14</b>	<b>-42</b>					
SURA0-110	Sand Surcharge Laying upto +11.5mPD & compaction upto +8.5mPD at PA PCB East 228,011m3	10	10	30-Dec-13	07-Jan-14	16-Jan-14 A	04-Feb-14	-35					
SURA0-120	Surcharge Period at PA PCB East 3.5mths (8-4.5=3.5mths)	105	105	08-Jan-14	22-Apr-14	05-Feb-14	20-May-14	-42					
<b>PCB West</b>		<b>106</b>	<b>120</b>	<b>08-Jan-14</b>	<b>30-Apr-14</b>	<b>16-Jan-14 A</b>	<b>20-May-14</b>	<b>-32</b>					
SURA0-210	Sand Surcharge Laying upto +11.5mPD & compaction upto +8.5mPD at PA PCB West 228,011m	10	10	08-Jan-14	15-Jan-14	16-Jan-14 A	04-Feb-14	15					
SURA0-220	Surcharge Period at PA PCB West 3.5mths (8-4.5=3.5mths)	105	105	16-Jan-14	30-Apr-14	05-Feb-14	20-May-14	-32					
<b>Portion B, C &amp; E</b>		<b>504</b>	<b>318</b>	<b>19-Jul-13</b>	<b>01-Oct-14</b>	<b>19-Jul-13 A</b>	<b>04-Dec-14</b>	<b>320</b>					
<b>Portion B, C &amp; E</b>		<b>504</b>	<b>318</b>	<b>19-Jul-13</b>	<b>01-Oct-14</b>	<b>19-Jul-13 A</b>	<b>04-Dec-14</b>	<b>320</b>					
<b>Seawall</b>		<b>193</b>	<b>101</b>	<b>22-Oct-13</b>	<b>31-May-14</b>	<b>22-Oct-13 A</b>	<b>01-May-14</b>	<b>67</b>					
<b>Ground Treatment</b>		<b>157</b>	<b>90</b>	<b>11-Nov-13</b>	<b>31-May-14</b>	<b>11-Nov-13 A</b>	<b>01-May-14</b>	<b>62</b>					
<b>Stone Columns Outside cellular Structures by Marine Plant</b>		<b>135</b>	<b>69</b>	<b>11-Nov-13</b>	<b>02-Apr-14</b>	<b>11-Nov-13 A</b>	<b>09-Apr-14</b>	<b>83</b>					
<b>Seawall Portion B at K028 - K052 25cells 4,910nrs</b>		<b>68</b>	<b>49</b>	<b>25-Nov-13</b>	<b>17-Feb-14</b>	<b>25-Nov-13 A</b>	<b>18-Mar-14</b>	<b>130</b>					
<b>K028 - K040</b>		<b>68</b>	<b>49</b>	<b>25-Nov-13</b>	<b>09-Feb-14</b>	<b>25-Nov-13 A</b>	<b>18-Mar-14</b>	<b>141</b>					
SCOB-A010	PB Stone Columns K028 - K031 Row 01-11 61nrs (8nrs/day) FTB16	4	0	29-Dec-13	01-Jan-14	29-Dec-13 A	17-Jan-14 A						
SCOB-A020	PB Stone Columns K028 - K031 Row 12-14 134nrs (8nrs/day) FTB16	19	0	09-Dec-13	28-Dec-13	09-Dec-13 A	17-Jan-14 A						
SCOB-A030	PB Stone Columns K032 - K037 Row 01-11 124 (14nrs/day) FTB20	9	0	25-Nov-13	03-Dec-13	25-Nov-13 A	17-Jan-14 A						
SCOB-A040	PB Stone Columns K032 - K036 Row 12-14 233nrs (6nrs/day) AP5	39	49	24-Dec-13	07-Feb-14	24-Dec-13 A	18-Mar-14	148					
SCOB-A050	PB Stone Columns K038 - K040 Row 01-11 110 (14nrs/day) FTB19	9	0	25-Nov-13	03-Dec-13	25-Nov-13 A	20-Jan-14 A						
SCOB-A060	PB Stone Columns K037 - K040 Row 12-14 202nrs (6nrs/day) AP6	34	39	31-Dec-13	09-Feb-14	31-Dec-13 A	07-Mar-14	130					
<b>K041 - K046</b>		<b>31</b>	<b>28</b>	<b>02-Jan-14</b>	<b>17-Feb-14</b>	<b>21-Dec-13 A</b>	<b>23-Feb-14</b>	<b>100</b>					
SCOB-B020	PB Stone Columns K041 - K043 Row 12-14 168nrs (8nrs/day) FTB16	21	10	02-Jan-14	24-Jan-14	21-Dec-13 A	04-Feb-14	100					
SCOB-B040	PB Stone Columns K044 - K046 Row 12-14 142nrs (8nrs/day) FTB16	18	18	25-Jan-14	17-Feb-14	05-Feb-14*	23-Feb-14	100					
<b>K047 - K052</b>		<b>29</b>	<b>5</b>	<b>25-Nov-13</b>	<b>30-Dec-13</b>	<b>03-Dec-13 A</b>	<b>25-Jan-14</b>	<b>-86</b>					
SCOB-C020	PB Stone Columns K047 - K052 Row 01-11 28nrs (6nrs/day) AP6	5	5	26-Dec-13	30-Dec-13	21-Jan-14*	25-Jan-14	-86					
SCOB-C030	PB Stone Columns K047 - K052 Row 12-14 174nrs (6nrs/day) AP6	29	0	25-Nov-13	25-Dec-13	03-Dec-13 A	21-Dec-13 A						
<b>Seawall Portion E2 at K053 - C067 2,252nrs</b>		<b>27</b>	<b>16</b>	<b>25-Nov-13</b>	<b>23-Dec-13</b>	<b>25-Nov-13 A</b>	<b>10-Feb-14</b>	<b>44</b>					
<b>K053 - C067</b>		<b>27</b>	<b>16</b>	<b>25-Nov-13</b>	<b>23-Dec-13</b>	<b>25-Nov-13 A</b>	<b>10-Feb-14</b>	<b>44</b>					
SCOPE2-A020	PE2 Stone Columns K053 - K056 Row 12-14 160nrs (6nrs/day) AP5	27	10	25-Nov-13	23-Dec-13	25-Nov-13 A	04-Feb-14	50					
SCOPE2-A030	PE2 Stone Columns K057 - K067 Row 01-11 232nrs (14nrs/day) FTB19	16	16	04-Dec-13	20-Dec-13	21-Jan-14	10-Feb-14	158					
<b>Seawall Portion E1 at C068 - C091 24cells 6,428nrs</b>		<b>69</b>	<b>69</b>	<b>25-Nov-13</b>	<b>02-Apr-14</b>	<b>21-Jan-14</b>	<b>09-Apr-14</b>	<b>83</b>					
<b>C068 - C079</b>		<b>69</b>	<b>69</b>	<b>04-Dec-13</b>	<b>02-Apr-14</b>	<b>21-Jan-14</b>	<b>09-Apr-14</b>	<b>83</b>					
SCOPE1-A010	PE1 Stone Columns C068 - C071 Row 01-11 273nrs (14nrs/day) FTB19	20	20	21-Dec-13	11-Jan-14	11-Feb-14	04-Mar-14	158					
SCOPE1-A020	PE1 Stone Columns C068 - C078 Row 12-14 325nrs (8nrs/day) FTB16	41	41	18-Feb-14	02-Apr-14	24-Feb-14	09-Apr-14	83					
SCOPE1-A030	PE1 Stone Columns C072 - C075 Row 01-11 769nrs (14nrs/day) FTB20	55	55	04-Dec-13	05-Feb-14	21-Jan-14	24-Mar-14	160					
<b>C080 - C091</b>		<b>47</b>	<b>47</b>	<b>25-Nov-13</b>	<b>27-Jan-14</b>	<b>21-Jan-14</b>	<b>15-Mar-14</b>	<b>56</b>					
SCOPE1-B030	PE1 Stone Columns C084 - C084 Row 01-11 94nrs (8nrs/day) FTB16	6	6	25-Nov-13	30-Nov-13	21-Jan-14*	26-Jan-14	97					
SCOPE1-B040	PE1 Stone Columns C085 - C090 Row 01-11 284nrs (18nrs/day) FTB18	16	16	10-Dec-13	26-Dec-13	12-Feb-14	28-Feb-14	-87					
SCOPE1-B060	PE1 Stone Columns C079 - C091 Row 12-14 279nrs (6nrs/day) AP7	47	47	09-Dec-13	27-Jan-14	21-Jan-14*	15-Mar-14	40					
<b>Seawall Portion C at C103 - C112 10cells @197nrs/cell 1970nrs</b>		<b>27</b>	<b>17</b>	<b>11-Nov-13</b>	<b>09-Dec-13</b>	<b>11-Nov-13 A</b>	<b>11-Feb-14</b>	<b>-87</b>					
<b>Beside of front cellular walls C103-C112 985nrs</b>		<b>27</b>	<b>17</b>	<b>11-Nov-13</b>	<b>09-Dec-13</b>	<b>11-Nov-13 A</b>	<b>11-Feb-14</b>	<b>-87</b>					
SCOC-A020	PC2a Stone Columns C105 - C106 Row 01-11 276nrs (18nrs/day) FTB18	27	17	11-Nov-13	09-Dec-13	11-Nov-13 A	11-Feb-14	-87					
<b>Stone Columns Inside cells by Land Plant 2,640nrs</b>		<b>91</b>	<b>90</b>	<b>25-Nov-13</b>	<b>31-May-14</b>	<b>25-Nov-13 A</b>	<b>01-May-14</b>	<b>-10</b>					
<b>Seawall Portion B at K028 - K051 24cells 1,920nrs</b>		<b>91</b>	<b>73</b>	<b>25-Nov-13</b>	<b>06-Mar-14</b>	<b>25-Nov-13 A</b>	<b>13-Apr-14</b>	<b>150</b>					
SCIB0-010	PB Stone Columns inside cells K028 - K030 191nrs (5nrs/day) AP2	38	4	25-Nov-13	03-Jan-14	25-Nov-13 A	24-Jan-14	140					

█ Remaining Level of Effort    
  Primary Baseline    
  Remaining Work    
 ◆ Baseline Milestone    
 ◆ Milestone    
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Actual Level of Effort    
  Actual Work    
  Critical Remaining Work

Activity ID	Activity Name	Original Duration	Remaining Duration	BL1 Start	BL1 Finish	Start	Finish	Total	2014				
									2013	Jan 27	Feb 28	Mar 29	Apr 30
SCIB0-020	PB Stone Columns inside cells K031 - K032 151nrs (5nrs/day) LB-AP1	30	20	25-Nov-13	26-Dec-13	25-Nov-13 A	14-Feb-14	15					
SCIB0-030	PB Stone Columns inside cells K033 - K036 274nrs (3nrs/day) LB-BV1	91	20	25-Nov-13	06-Mar-14	25-Nov-13 A	14-Feb-14	10					
SCIB0-040	PB Stone Columns inside cells K037 - K039 240nrs (3nrs/day) LB-BC1	80	20	01-Dec-13	28-Feb-14	01-Dec-13 A	14-Feb-14	10					
SCIB0-050	PB Stone Columns inside cells K040 - K040 80nrs (3nrs/day) LB-BV2	27	10	20-Dec-13	17-Jan-14	20-Dec-13 A	04-Feb-14	12					
SCIB0-060	PB Stone Columns inside cells K041 - K043 237nrs (5nrs/day) AP3	37	15	25-Nov-13	02-Jan-14	25-Nov-13 A	09-Feb-14	16					
SCIB0-070	PB Stone Columns inside cells K044 - K046 136nrs (5nrs/day) AP3	37	37	09-Jan-14	21-Feb-14	15-Feb-14	26-Mar-14	16					
SCIB0-080	PB Stone Columns inside cells K047 - K050 267nrs (5nrs/day) AP1	53	53	27-Dec-13	25-Feb-14	15-Feb-14	13-Apr-14	15					
SCIB0-090	PB Stone Columns inside cells K051 - K051 23nrs (5nrs/day) AP3	5	5	03-Jan-14	08-Jan-14	10-Feb-14	14-Feb-14	16					
<b>Seawall Portion E2 at K052 - C060 9cells 720nrs</b>		86	86	04-Jan-14	31-May-14	25-Jan-14	01-May-14	-10					
SCIE2-020	PE2 Stone Columns inside cells K052 - K055 320nrs (5nrs/day) AP2	64	64	04-Jan-14	18-Mar-14	25-Jan-14	08-Apr-14	14					
SCIE2-030	PE2 Stone Columns inside cells K056 - C057 160nrs (3nrs/day) LB-BC1	54	54	01-Mar-14	29-Mar-14	15-Feb-14	14-Apr-14	6					
SCIE2-040	PE2 Stone Columns inside cells K058 - C059 160nrs (3nrs/day) LB-BV1	54	54	07-Mar-14	31-May-14	15-Feb-14	14-Apr-14	6					
SCIE2-050	PE2 Stone Columns inside cells C061 - C062 240nrs (3nrs/day) LB-BV2	80	80	18-Jan-14	18-Apr-14	05-Feb-14	01-May-14	-10					
<b>Cellular Structures</b>		178	73	22-Oct-13	22-Apr-14	22-Oct-13 A	03-Apr-14	36					
<b>Cellular Main Cells 85cells</b>		44	0	16-Nov-13	18-Dec-13	16-Nov-13 A	10-Jan-14 A						
<b>Full Guide Frames Method 85cells</b>		44	0	16-Nov-13	18-Dec-13	16-Nov-13 A	10-Jan-14 A						
<b>Portion C &amp; E C112 to C063 50cells</b>		44	0	16-Nov-13	18-Dec-13	16-Nov-13 A	10-Jan-14 A						
CS066-000	PC Cellular Structure C066	17	0	29-Nov-13	18-Dec-13	04-Dec-13 A	23-Dec-13 A						
CS067-000	PC Cellular Structure C067	11	0	16-Nov-13	28-Nov-13	16-Nov-13 A	30-Dec-13 A						
CS069-000	PC Cellular Structure C069	17	0	29-Nov-13	18-Dec-13	26-Nov-13 A	09-Dec-13 A						
CS072-000	PC Cellular Structure C072	40	0	21-Nov-13	10-Dec-13	19-Nov-13 A	10-Jan-14 A						
CS075-000	PC Cellular Structure C075	21	0	21-Nov-13	14-Dec-13	20-Nov-13 A	01-Dec-13 A						
<b>Connecting Arcs</b>		147	60	22-Oct-13	22-Apr-14	22-Oct-13 A	03-Apr-14	27					
<b>Portion B between K028/K029 to K050/K051 23arcs</b>		90	22	30-Oct-13	10-Jan-14	30-Oct-13 A	18-Feb-14	10					
CA00B-018	PB Final Backfill Cellular Cells & Arcs K028/K029 - K039/K040 Type_C 40295.5m3	34	0	30-Oct-13	07-Dec-13	30-Oct-13 A	13-Dec-13 A						
CA00B-022	PB Connecting Arc K045/K046 Landside & Seaside upper arcs splicings 2nrs (HF)	21	0	28-Nov-13	11-Dec-13	28-Nov-13 A	21-Dec-13 A						
CA00B-025L	PB Connecting Arc K049/K050 & K050/K051 Landside upper arcs splicing 2nrs (201)	12	0	05-Dec-13	18-Dec-13	17-Nov-13 A	11-Dec-13 A						
CA00B-025S	PB Connecting Arc K049/K050 & K050/K051 Seaside upper arcs splicing 2nrs (201)	12	12	19-Dec-13	04-Jan-14	21-Jan-14*	06-Feb-14	10					
CA00B-028	PB Final Backfill Cellular Cells & Arcs K040/K041 - K050/K051 Type_C 48413m3	22	22	13-Dec-13	10-Jan-14	21-Jan-14	18-Feb-14	10					
<b>Portion E2 between K051/K052 to C066/C067 16arcs</b>		119	47	25-Oct-13	04-Feb-14	06-Dec-13 A	19-Mar-14	-42					
CAE2-012S	PE2 Connecting Arc K051/K052 - C061/C062 Seaside lower arcs 11nrs	11	7	26-Nov-13	07-Dec-13	06-Dec-13 A	28-Jan-14	-56					
CAE2-014L	PE2 Connecting Arc K051/K052 - K053/K054 Landside upper arcs splicing 3nrs (201)	35	24	25-Oct-13	04-Dec-13	28-Dec-13 A	20-Feb-14	12					
CAE2-014S	PE2 Connecting Arc K051/K052 - K053/K054 Seaside upper arcs splicing 3nrs (201)	18	18	06-Jan-14	25-Jan-14	07-Feb-14	27-Feb-14	-73					
CAE2-016L	PE2 Connecting Arc K056/C057 & C057/C058 Landside upper arcs splicing 2nrs (HF)	12	12	12-Dec-13	27-Dec-13	21-Feb-14*	06-Mar-14	12					
CAE2-018	PE2 Final backfill cellular cells & Arcs K051/K052 to C061/C062 Type_C 48,652m3	22	22	06-Jan-14	04-Feb-14	22-Feb-14	19-Mar-14	-42					
<b>Portion C2a between C103/104 to C111/C112 9arcs</b>		91	24	07-Nov-13	20-Feb-14	07-Nov-13 A	20-Feb-14	-47					
CAC2a-014L	PC2a Connecting Arc C107/C108 - C111/C112 Landside upper arcs splicing 5nrs (205)	18	0	07-Nov-13	27-Nov-13	07-Nov-13 A	08-Jan-14 A						
CAC2a-014S	PC2a Connecting Arc C107/C108 - C111/C112 Seaside upper arcs splicing 5nrs (205)	30	0	28-Nov-13	04-Jan-14	13-Nov-13 A	08-Jan-14 A						
CAC2a-018	PC2a Final backfill cellular cells & Arcs C107/108 - C111/112 5arcs Type_C 32,309m3	10	10	30-Dec-13	10-Jan-14	22-Jan-14	05-Feb-14	-43					
CAC2a-032S	PC2a Connecting Arc C103/C104 - C106/C107 Seaside lower arcs 4nrs	4	4	21-Nov-13	25-Nov-13	21-Jan-14	24-Jan-14	-43					
CAC2a-034L	PC2a Connecting Arc C105/C106 & C106/C107 Landside upper arcs splicing 2nrs (205)	12	12	06-Jan-14	18-Jan-14	21-Jan-14	06-Feb-14	-39					
CAC2a-034S	PC2a Connecting Arc C105/C106 & C106/C107 Seaside upper arcs splicing 2nrs (401)	12	12	30-Jan-14	15-Feb-14	30-Jan-14	15-Feb-14	-47					
CAC2a-038	PC2a Final backfill cellular cells & Arcs C103/104 - C106/C107 Type_C 27,326m3	4	4	17-Feb-14	20-Feb-14	17-Feb-14	20-Feb-14	-47					
<b>Portion C2c between C091/C092 to C102/C103 12arcs</b>		72	30	09-Dec-13	18-Mar-14	25-Dec-13 A	27-Feb-14	-25					
CAC2c-014L	PC2c Connecting Arc C100/C101 - C104/C105 Landside upper arcs splicing 5nrs (205)	12	13	20-Jan-14	26-Feb-14	31-Dec-13 A	07-Feb-14	-11					
CAC2c-014S	PC2c Connecting Arc C101/C102 - C104/C105 Seaside upper arcs splicing 4nrs (401)	24	18	17-Feb-14	15-Mar-14	13-Jan-14 A	13-Feb-14	-19					
CAC2c-018	PC2c Final backfill cellular cells & Arcs C100/C101 to C104/C105 Type_C 84,830m3	12	12	05-Mar-14	18-Mar-14	30-Jan-14	17-Feb-14	-15					
CAC2c-022S	PC2c Connecting Arc C091/C092 - C096/C097 Seaside lower arcs 6nrs	6	6	09-Dec-13	14-Dec-13	29-Jan-14	07-Feb-14	-56					
CAC2c-024L	PC2c Connecting Arc C094/C095 - C099/C100 Landside upper arcs splicing 6nrs (401)	36	8	16-Dec-13	29-Jan-14	25-Dec-13 A	29-Jan-14	-47					
CAC2c-034L	PC2c Connecting Arc C088/C089 - C093/C094 Landside upper arcs splicing 6nrs (WC1)	36	30	16-Dec-13	29-Jan-14	07-Jan-14 A	27-Feb-14	-70					
<b>Portion E1 between C073/C074 to C090/C091 18arcs</b>		135	60	22-Oct-13	22-Apr-14	22-Oct-13 A	03-Apr-14	27					
CAE1-012L	PE1 Connecting Arc C080/C081 - C090/C091 Landside lower arcs 11nrs	33	7	22-Oct-13	28-Nov-13	22-Oct-13 A	28-Jan-14	-38					
CAE1-012S	PE1 Connecting Arc C080/C081 - C090/C091 Seaside lower arcs 11nrs	11	11	29-Nov-13	11-Dec-13	29-Jan-14	13-Feb-14	27					

█ Remaining Level of Effort   
 █ Primary Baseline   
 █ Remaining Work   
 ◆ Baseline Milestone   
 █ Critical Remaining Work   
 █ Actual Level of Effort   
 █ Actual Work   
 █ Milestone



Activity ID	Activity Name	Original Duration	Remaining Duration	BL1 Start	BL1 Finish	Start	Finish	total float	2014				
									Jan 27	Feb 28	Mar 29	Apr 30	
CAE1-014S	PE1 Connecting Arc C080/C081 - C086/C087 Seaside upper arcs splicing 7nrs (205)	42	42	27-Feb-14	16-Apr-14	14-Feb-14	03-Apr-14	27					
CAE1-032L	PE1 Connecting Arc C067/C068 - C076/C077 Landside lower arcs 10nrs	10	10	18-Dec-13	02-Jan-14	21-Jan-14	04-Feb-14	-11					
CAE1-032S	PE1 Connecting Arc C067/C068 - C076/C077 Seaside lower arcs 10nrs	10	10	02-Jan-14	14-Jan-14	05-Feb-14	15-Feb-14	5					
CAE1-044L	PE1 Connecting Arc C067/C068 - C071/C072 Landside upper arcs splicing 5nrs (401)	30	30	17-Mar-14	22-Apr-14	14-Feb-14	20-Mar-14	-19					
<b>Capping Beams</b>		<b>50</b>	<b>50</b>	<b>21-Nov-13</b>	<b>08-Mar-14</b>	<b>06-Feb-14</b>	<b>31-Mar-14</b>	<b>-75</b>					
<b>Portion B between K028 to K040 Capping Beams</b>		<b>39</b>	<b>39</b>	<b>21-Nov-13</b>	<b>15-Jan-14</b>	<b>10-Feb-14</b>	<b>23-Mar-14</b>	<b>13</b>					
CB025-00010	PB Capping Beams structure K028 - K040 13cells	39	39	21-Nov-13	15-Jan-14	10-Feb-14*	23-Mar-14	13					
<b>Portion B between K041 to C051 Capping Beams</b>		<b>33</b>	<b>33</b>	<b>16-Jan-14</b>	<b>08-Mar-14</b>	<b>24-Feb-14</b>	<b>31-Mar-14</b>	<b>13</b>					
CB025-00020	PB Capping Beams structure K041 - K051 11cells	33	33	16-Jan-14	08-Mar-14	24-Feb-14*	31-Mar-14	13					
<b>Portion C2a between C112 to C103 Capping Beams</b>		<b>24</b>	<b>24</b>	<b>11-Jan-14</b>	<b>09-Feb-14</b>	<b>06-Feb-14</b>	<b>03-Mar-14</b>	<b>-49</b>					
CBC2a-020	PC2a Capping Beams structure C112 to C107 6cells	24	24	11-Jan-14	09-Feb-14	06-Feb-14	03-Mar-14	-49					
<b>Optimizing Rubble Mound Seawalls</b>		<b>34</b>	<b>34</b>	<b>21-Nov-13</b>	<b>18-Dec-13</b>	<b>17-Jan-14 A</b>	<b>01-Mar-14</b>	<b>17</b>					
<b>Seawall Portion B at K013 - K017</b>		<b>34</b>	<b>34</b>	<b>21-Nov-13</b>	<b>18-Dec-13</b>	<b>17-Jan-14 A</b>	<b>01-Mar-14</b>	<b>17</b>					
RFB1-0010	PB at K013 - K017 Geotextile Type 1 above stone blanket 17,800m2	2	0	21-Nov-13	22-Nov-13	17-Jan-14 A	18-Jan-14 A						
RFB1-0020	PB at K013 - K017 sound survey	1	0	23-Nov-13	23-Nov-13	19-Jan-14 A	19-Jan-14 A						
RFB1-0030	PB at K013 - K017 settlement markers install	1	0	25-Nov-13	25-Nov-13	20-Jan-14 A	20-Jan-14 A						
RFB1-0040	PB at K013 - K017 Filter Layer (Cat0 Fill 1m) under the Rubble Mound 8830m3	4	4	26-Nov-13	29-Nov-13	21-Jan-14	24-Jan-14	17					
RFB1-0050	PB at K013 - K017 Rockfill (Cat1) upto -3.0mPD 6,660m3	14	14	30-Nov-13	07-Dec-13	25-Jan-14	12-Feb-14	17					
RFB1-0060	PB at K013 - K017 Sand Blanket behind upto -4.0mPD	2	2	09-Dec-13	10-Dec-13	13-Feb-14	14-Feb-14	17					
RFB1-0070	PB at K013 - K017 Rockfill (Cat1) , filter layer & geotextile +2.5mPD 5,040m3	14	14	11-Dec-13	18-Dec-13	15-Feb-14	01-Mar-14	17					
<b>Seawall Portion B at K018 - K022</b>		<b>32</b>	<b>28</b>	<b>23-Nov-13</b>	<b>16-Dec-13</b>	<b>17-Jan-14 A</b>	<b>27-Feb-14</b>	<b>17</b>					
RFB2-0010	PB at K018 - K022 Geotextile Type 1 above stone blanket 17,800m2	2	0	23-Nov-13	25-Nov-13	17-Jan-14 A	18-Jan-14 A						
RFB2-0020	PB at K018 - K022 sound survey	1	0	26-Nov-13	26-Nov-13	19-Jan-14 A	19-Jan-14 A						
RFB2-0030	PB at K018 - K022 settlement markers install	1	0	27-Nov-13	27-Nov-13	20-Jan-14 A	20-Jan-14 A						
RFB2-0040	PB at K018 - K022 Filter Layer (Cat0 Fill 1m) under the Rubble Mound 8835m3	4	4	30-Nov-13	03-Dec-13	25-Jan-14	28-Jan-14	16					
RFB2-0050	PB at K018 - K022 Rockfill (Cat1) upto -3.0mPD 6660m3	14	14	09-Dec-13	16-Dec-13	13-Feb-14	27-Feb-14	17					
<b>Seawall Portion B at K023 - K027</b>		<b>12</b>	<b>12</b>	<b>26-Nov-13</b>	<b>07-Dec-13</b>	<b>20-Jan-14 A</b>	<b>06-Feb-14</b>	<b>15</b>					
RFB3-0010	PB at K023 - K027 Geotextile Type 1 above stone blanket 17,800m2	2	2	26-Nov-13	27-Nov-13	20-Jan-14 A	22-Jan-14	14					
RFB3-0020	PB at K023 - K027 sound survey	1	1	28-Nov-13	28-Nov-13	23-Jan-14	23-Jan-14	14					
RFB3-0030	PB at K023 - K027 settlement markers install	1	1	29-Nov-13	29-Nov-13	24-Jan-14	24-Jan-14	14					
RFB3-0040	PB at K023 - K027 Filter Layer (Cat0 Fill 1m) under the Rubble Mound 8835m3	4	4	04-Dec-13	07-Dec-13	29-Jan-14	06-Feb-14	15					
<b>Conforming Sloping Seawalls</b>		<b>26</b>	<b>26</b>	<b>10-Feb-14</b>	<b>09-Mar-14</b>	<b>25-Feb-14</b>	<b>24-Mar-14</b>	<b>14</b>					
<b>Geotextile</b>		<b>26</b>	<b>26</b>	<b>10-Feb-14</b>	<b>09-Mar-14</b>	<b>25-Feb-14</b>	<b>24-Mar-14</b>	<b>14</b>					
<b>Seawall Portion B at K028 - K040</b>		<b>26</b>	<b>26</b>	<b>10-Feb-14</b>	<b>09-Mar-14</b>	<b>25-Feb-14</b>	<b>24-Mar-14</b>	<b>14</b>					
SGB2-000	PB Geotextile at K028 - K040	26	26	10-Feb-14	09-Mar-14	25-Feb-14	24-Mar-14	14					
<b>Reclamation</b>		<b>281</b>	<b>95</b>	<b>19-Jul-13</b>	<b>27-Feb-14</b>	<b>19-Jul-13 A</b>	<b>25-Apr-14</b>	<b>15</b>					
<b>Ground Treatment</b>		<b>246</b>	<b>95</b>	<b>23-Aug-13</b>	<b>23-Feb-14</b>	<b>23-Aug-13 A</b>	<b>25-Apr-14</b>	<b>15</b>					
<b>Geotextile</b>		<b>88</b>	<b>12</b>	<b>21-Nov-13</b>	<b>16-Jan-14</b>	<b>21-Nov-13 A</b>	<b>27-Feb-14</b>	<b>13</b>					
<b>Existing Seabed Below -5mPD</b>		<b>8</b>	<b>0</b>	<b>21-Nov-13</b>	<b>29-Nov-13</b>	<b>19-Dec-13 A</b>	<b>27-Dec-13 A</b>						
<b>Land Portion E2 Northern Part</b>		<b>8</b>	<b>0</b>	<b>21-Nov-13</b>	<b>29-Nov-13</b>	<b>19-Dec-13 A</b>	<b>27-Dec-13 A</b>						
GERE2-010	PE2 Geotextile for sand blanket Northern (seabed below -5mPD)	8	0	21-Nov-13	29-Nov-13	19-Dec-13 A	27-Dec-13 A						
<b>Existing Seabed above -5mPD</b>		<b>88</b>	<b>12</b>	<b>21-Nov-13</b>	<b>16-Jan-14</b>	<b>21-Nov-13 A</b>	<b>27-Feb-14</b>	<b>13</b>					
<b>Land Portion B</b>		<b>12</b>	<b>12</b>	<b>04-Jan-14</b>	<b>16-Jan-14</b>	<b>15-Feb-14</b>	<b>27-Feb-14</b>	<b>13</b>					
GERB0-015	PB Geotextile for sand blanket at K028 - K040	12	12	04-Jan-14	16-Jan-14	15-Feb-14*	27-Feb-14	13					
<b>Land Portion C1b</b>		<b>15</b>	<b>0</b>	<b>21-Nov-13</b>	<b>06-Dec-13</b>	<b>21-Nov-13 A</b>	<b>06-Dec-13 A</b>						
GERC1b-010	PC1b Geotextile for sand blanket East	15	0	21-Nov-13	06-Dec-13	21-Nov-13 A	06-Dec-13 A						
<b>Sand Blankets</b>		<b>130</b>	<b>55</b>	<b>01-Nov-13</b>	<b>18-Jan-14</b>	<b>01-Nov-13 A</b>	<b>24-Mar-14</b>	<b>10</b>					
<b>Existing Seabed below -5mPD</b>		<b>48</b>	<b>20</b>	<b>01-Nov-13</b>	<b>21-Dec-13</b>	<b>01-Nov-13 A</b>	<b>14-Feb-14</b>	<b>-72</b>					
<b>Land Portion E2 Northern Part</b>		<b>48</b>	<b>20</b>	<b>01-Nov-13</b>	<b>21-Dec-13</b>	<b>01-Nov-13 A</b>	<b>14-Feb-14</b>	<b>-72</b>					
SABRE2-010	Sand Blankets at PE2 142,000m3 5,000m3/day North	48	20	01-Nov-13	21-Dec-13	01-Nov-13 A	14-Feb-14	-72					
<b>Existing Seabed Above -5mPD</b>		<b>130</b>	<b>55</b>	<b>01-Nov-13</b>	<b>18-Jan-14</b>	<b>01-Nov-13 A</b>	<b>24-Mar-14</b>	<b>15</b>					
<b>Land Portion B</b>		<b>130</b>	<b>55</b>	<b>01-Nov-13</b>	<b>18-Jan-14</b>	<b>01-Nov-13 A</b>	<b>24-Mar-14</b>	<b>15</b>					
SABRB0-010	Sand Blankets at PB Edge K013 - K027 171,900m3 5,000m3/day	35	35	13-Dec-13	18-Jan-14	15-Feb-14*	24-Mar-14	15					



Activity ID	Activity Name	Original Duration	Remaining Duration	BL1 Start	BL1 Finish	Start	Finish	Total	2014			
									2013	Jan	Feb	Mar
								load	27	28	29	30
SABRB0-020	Sand Blankets at PB Main K028 - K051 200,550m3 5,000m3/day	39	20	01-Nov-13	12-Dec-13	01-Nov-13 A	14-Feb-14	156				
<b>Vertical Band Drains by Marine Plant</b>		223	84	23-Aug-13	23-Feb-14	23-Aug-13 A	25-Apr-14	136				
<b>Land Portion C2c 62,400nrs</b>		30	30	06-Dec-13	07-Jan-14	09-Feb-14	12-Mar-14	156				
VBDC2c-020	Vertical Band Drains 22,208nrs by marine plant at PC2c (750nrs/day)	30	30	06-Dec-13	07-Jan-14	09-Feb-14	12-Mar-14	156				
<b>Land Portion C2b 62,400nrs</b>		223	84	23-Aug-13	23-Feb-14	23-Aug-13 A	25-Apr-14	136				
VBDC2b-010	Vertical Band Drains 12,896nrs by marine plant at PC2b upto 10Dec2013	101	18	23-Aug-13	10-Dec-13	23-Aug-13 A	12-Feb-14	136				
VBDC2b-020	Vertical Band Drains 49,504nrs by marine plant at PC2b (750nrs/day)	66	66	11-Dec-13	23-Feb-14	13-Feb-14	25-Apr-14	136				
<b>Land Portion E2 Northern Part 84,746nrs</b>		61	14	02-Oct-13	05-Dec-13	02-Oct-13 A	08-Feb-14	156				
VBDE2-010	Vertical Band Drains 23,032nrs by marine plant at PE2 upto 5Dec2013	61	14	02-Oct-13	05-Dec-13	02-Oct-13 A	08-Feb-14	156				
<b>Marine Fill</b>		32	32	21-Jan-14	27-Feb-14	24-Jan-14	03-Mar-14	-95				
<b>Land Portion C1b</b>		32	32	21-Jan-14	27-Feb-14	24-Jan-14	03-Mar-14	-95				
MFC1b-010	Marine Fill Type A Sand 100% at PC1b west 477,472m3 15,000m3/day	32	32	21-Jan-14	27-Feb-14	24-Jan-14	03-Mar-14	-95				
<b>Vertical Band Drains by Land Plant</b>		130	0	19-Jul-13	05-Dec-13	19-Jul-13 A	05-Dec-13 A					
<b>Land Portion B 258,966nrs</b>		130	0	19-Jul-13	05-Dec-13	19-Jul-13 A	05-Dec-13 A					
VBDB0-020	Vertical Band Drains by Marine plant at PB Main K028 - K051 47,530nrs from 19Jul13 to 5Dec2013	130	0	19-Jul-13	05-Dec-13	19-Jul-13 A	05-Dec-13 A					
<b>Geotechnical Instrumentation Works</b>		318	318	21-Nov-13	01-Oct-14	21-Jan-14	04-Dec-14	320				
<b>Geotechnical Instrumentation Works for Seawalls</b>		318	318	21-Nov-13	01-Oct-14	21-Jan-14	04-Dec-14	320				
<b>Cluster Type SA 2nrs Piezometer, Extensometer and Settlement Marker Cluster inside Cells</b>		318	318	21-Nov-13	01-Oct-14	21-Jan-14	04-Dec-14	54				
<b>SA-1 K048 Portion B</b>		318	318	21-Nov-13	01-Oct-14	21-Jan-14	04-Dec-14	-34				
CTSA1-010	Installation of SA-1 C048 (within 10days after filling C048) PB	10	10	21-Nov-13	02-Dec-13	21-Jan-14	04-Feb-14	-26				
CTSA1-020	Monitoring of SA-1 C048 PB by weekly for subsequent 10mths	303	303	03-Dec-13	01-Oct-14	05-Feb-14	04-Dec-14	-34				
<b>SA-2 C113 Portion C2a</b>		318	318	21-Nov-13	01-Oct-14	21-Jan-14	04-Dec-14	54				
CTSA2-010	Installation of SA-2 C113 (within 10days after filling C113) PC2a	10	10	21-Nov-13	02-Dec-13	21-Jan-14	04-Feb-14	46				
CTSA2-020	Monitoring of SA-2 C113 PC2a by weekly for subsequent 10mths	303	303	03-Dec-13	01-Oct-14	05-Feb-14	04-Dec-14	54				
<b>Cluster Type SB 2nrs Inclinator Cluster inside cells</b>		7	7	21-Nov-13	28-Nov-13	21-Jan-14	28-Jan-14	-38				
<b>SB-1 K049 Portion B</b>		7	7	21-Nov-13	28-Nov-13	21-Jan-14	28-Jan-14	136				
CTSB1-010	Installation of SB-1 K049 PB	6	6	21-Nov-13	27-Nov-13	21-Jan-14	27-Jan-14	116				
CTSB1-020	Commencement of Monitoring of SB-1 K049 PB	0	0	28-Nov-13		28-Jan-14		136				
<b>SB-2 C112 Portion C2a</b>		7	7	21-Nov-13	28-Nov-13	21-Jan-14	28-Jan-14	-38				
CTSB2-010	Installation of SB-2 C112 PC2a	6	6	21-Nov-13	27-Nov-13	21-Jan-14	27-Jan-14	-29				
CTSB2-020	Commencement of Monitoring of SB-2 C112 PC2a	0	0	28-Nov-13		28-Jan-14		-38				
<b>Cluster Type SC 3nrs Strain Guage and Inclinator Cluster inside cells</b>		1	1	21-Nov-13	22-Nov-13	21-Jan-14	22-Jan-14	136				
<b>SC-1 K044 Portion B</b>		1	1	21-Nov-13	22-Nov-13	21-Jan-14	22-Jan-14	136				
CTSC1-010	Installation of SC-1 K044 PB	1	1	21-Nov-13	21-Nov-13	21-Jan-14	21-Jan-14	106				
CTSC1-020	Commencement of Monitoring of SC-1 K044 PB	0	0	22-Nov-13		22-Jan-14		136				
<b>SC-2 C074 Portion E1</b>		1	1	21-Nov-13	22-Nov-13	21-Jan-14	22-Jan-14	136				
CTSC2-010	Installation of SC-2 C074 PE1	1	1	21-Nov-13	21-Nov-13	21-Jan-14	21-Jan-14	936				
CTSC2-020	Commencement of Monitoring of SC-2 C074 PE1	0	0	22-Nov-13		22-Jan-14		136				
<b>SC-3 C108 Portion C2a</b>		1	1	21-Nov-13	22-Nov-13	21-Jan-14	22-Jan-14	-54				
CTSC3-010	Installation of SC-3 C108 PC2a	1	1	21-Nov-13	21-Nov-13	21-Jan-14	21-Jan-14	-43				
CTSC3-020	Commencement of Monitoring of SC-3 C108 PC2a	0	0	22-Nov-13		22-Jan-14		-54				
<b>Cluster Type DV 4nrs Surface movement marker and inclinometer cluster at V2 seawall</b>		2	2	21-Nov-13	22-Nov-13	21-Jan-14	22-Jan-14	-88				
CTDV-010	Installation of combined inclinometer and extensometer at seawall V2 PD	2	2	21-Nov-13	22-Nov-13	21-Jan-14	22-Jan-14	-88				
CTDV-020	Installation of surface movement markers at seawall V2 PD	2	2	21-Nov-13	22-Nov-13	21-Jan-14	22-Jan-14	-88				
<b>Cluster Type DS 4nrs Surface movement marker and inclinometer cluster at S1 seawall</b>		2	2	21-Nov-13	22-Nov-13	21-Jan-14	22-Jan-14	-88				
CTDS-010	Installation of DS-1 to DS2 PD	2	2	21-Nov-13	22-Nov-13	21-Jan-14	22-Jan-14	-88				
CTDS-020	Installation of DS-3 to DS4 PD	2	2	21-Nov-13	22-Nov-13	21-Jan-14	22-Jan-14	-88				
<b>Geotechnical Instrumentation Works for Reclamation RA &amp; RB</b>		7	7	21-Nov-13	28-Nov-13	21-Jan-14	28-Jan-14	927				
<b>RA</b>		7	7	21-Nov-13	28-Nov-13	21-Jan-14	28-Jan-14	927				
CTRA-010	Installation of RA 5sets at PA	7	7	21-Nov-13	28-Nov-13	21-Jan-14*	28-Jan-14*	136				
CTRA-020	Installation of RA 2sets at PD (CH0 - 225)	7	7	21-Nov-13	28-Nov-13	21-Jan-14	28-Jan-14	927				
CTRA-030	Installation of RA 2sets at PD (CH225 - 450)	7	7	21-Nov-13	28-Nov-13	21-Jan-14	28-Jan-14	927				
<b>RB</b>		7	7	21-Nov-13	28-Nov-13	21-Jan-14	28-Jan-14	927				

█ Remaining Level of Effort   
      Primary Baseline   
 █ Remaining Work   
 ◆ Baseline Milestone   
 ◆ Milestone   
 ▬ Critical Remaining Work   
 ▬ Actual Work   
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Activity ID	Activity Name	Original Duration	Remaining Duration	BL1 Start	BL1 Finish	Start	Finish	total load	2013	2014			
									Jan 27	Feb 28	Mar 29	Apr 30	
SMT1-020	Installation of RB at PD (CH0 - 225)	7	7	21-Nov-13	28-Nov-13	21-Jan-14	28-Jan-14	927					
SMT1-030	Installation of RB at PD (CH225 - 450)	7	7	21-Nov-13	28-Nov-13	21-Jan-14	28-Jan-14	927					
<b>Settlement Marker Type 2</b>		7	7	21-Nov-13	28-Nov-13	21-Jan-14	28-Jan-14	927					
SMT2-020	M2 - Installation of Settlement Marker Type2 at PD (CH0 - 225)	7	7	21-Nov-13	28-Nov-13	21-Jan-14	28-Jan-14	927					
SMT2-030	M2 - Installation of Settlement Marker Type2 at PD (CH225 - 450)	7	7	21-Nov-13	28-Nov-13	21-Jan-14	28-Jan-14	927					
<b>Portion D</b>		466	60	11-Dec-12	01-Mar-14	11-Dec-12 A	21-Mar-14	07					
<b>Submission</b>		420	14	11-Dec-12	04-Dec-13	11-Dec-12 A	03-Feb-14	12					
<b>Design Submission</b>		0	0	21-Nov-13	21-Nov-13	21-Jan-14	21-Jan-14	13					
<b>Settlement Assessment for Reclamation with land-based Drain</b>		0	0	21-Nov-13	21-Nov-13	21-Jan-14	21-Jan-14	-65					
PD-DGN-01010	Settlement Assessment for Reclamation with Land based band drain	0	0		21-Nov-13		21-Jan-14*	-65					
<b>Stability Analysis and Settlement Assessment for Vertical Seawall w No Dredging</b>		0	0	21-Nov-13	21-Nov-13	21-Jan-14	21-Jan-14	13					
PD-DGN-02010	Stability Analysis and settlement assessment for vertical seawall with no dredging	0	0		21-Nov-13		21-Jan-14*	13					
<b>Stability Analysis and Settlement Assessment for Sloping Seawall w No Dredging</b>		0	0	21-Nov-13	21-Nov-13	21-Jan-14	21-Jan-14	13					
PD-DGN-03010	Stability Analysis and Settlement Assessment for Sloping seawall with no dredging	0	0		21-Nov-13		21-Jan-14*	13					
<b>Settlement Assessment for Culverts C1 - C4 w No Dredging</b>		0	0	21-Nov-13	21-Nov-13	21-Jan-14	21-Jan-14	15					
PD-DGN-04010	Settlement assessment for box culverts C1 - C4 with no dredging	0	0		21-Nov-13		21-Jan-14*	15					
<b>Structural Analysis for Culverts C1 - C4 w Precast Method</b>		0	0	21-Nov-13	21-Nov-13	21-Jan-14	21-Jan-14	15					
PD-DGN-05010	Structural analysis for Box Culverts C1 - C4 with Precast Method	0	0		21-Nov-13		21-Jan-14*	15					
<b>Drainage Impact Assessment &amp; Temporary Diversion (stg2 - for construction of box culvert EC1)</b>		0	0	21-Nov-13	21-Nov-13	21-Jan-14	21-Jan-14	15					
PD-DGN-07010	Drainage Impact Assessment and Temporary Diversion (stage 2 - for construction of box culvert E	0	0		21-Nov-13		21-Jan-14*	15					
<b>Settlement Assessment for Box Culvert EC1</b>		0	0	21-Nov-13	21-Nov-13	21-Jan-14	21-Jan-14	15					
PD-DGN-08010	Settlement Assessment for Box culvert EC1 Submission 1st	0	0		21-Nov-13		21-Jan-14*	15					
<b>Structural Analysis for Box Culvert EC1 w Precast &amp; Cast in-situ Method</b>		0	0	21-Nov-13	21-Nov-13	21-Jan-14	21-Jan-14	15					
PD-DGN-09010	Structural Analysis for Box culvert EC1 with Precast and Cast in-situ Method	0	0		21-Nov-13		21-Jan-14*	15					
<b>Detailed General Arrangement &amp; RC drawings for C1 to C4 w Precast Method</b>		0	0	21-Nov-13	21-Nov-13	21-Jan-14	21-Jan-14	15					
PD-DGN-10010	Detailed General Arrangement and RC drawings for Box culverts C1 to C4 with Precast Method	0	0		21-Nov-13		21-Jan-14*	15					
<b>Detailed General Arrangement &amp; RC drawings for EC1 w Precast &amp; Cast insitu Methods</b>		0	0	21-Nov-13	21-Nov-13	21-Jan-14	21-Jan-14	15					
PD-DGN-11010	Detailed General Arrangement and RC drawings for Box Culverts EC1 with Precast and Cast in-s	0	0		21-Nov-13		21-Jan-14*	15					
<b>Method Statement Submission</b>		420	14	11-Dec-12	04-Dec-13	11-Dec-12 A	03-Feb-14	12					
<b>Seawall</b>		349	4	11-Dec-12	24-Nov-13	11-Dec-12 A	24-Jan-14	13					
PD-MTD-01040	MTD for Temporary Seawall Construction - Approval	349	4	11-Dec-12	24-Nov-13	11-Dec-12 A	24-Jan-14	13					
<b>Extension Culvert EC1</b>		14	14	21-Nov-13	04-Dec-13	21-Jan-14	03-Feb-14	20					
PD-MTD-06010	MTD for culvert EC1 - Preparation & Submission	0	0	21-Nov-13		21-Jan-14		20					
PD-MTD-06020	MTD for culvert EC1- Approval	14	14	21-Nov-13	04-Dec-13	21-Jan-14	03-Feb-14	20					
<b>Float &amp; Sink installation of Culvert C1 - C4</b>		349	4	11-Dec-12	24-Nov-13	11-Dec-12 A	24-Jan-14	16					
PD-MTD-07020	MTD for Float & Sink of culvert C1 - C4 - Approval	349	4	11-Dec-12	24-Nov-13	11-Dec-12 A	24-Jan-14	16					
<b>Precast Yard for Seawall Blocks &amp; Culverts</b>		337	60	19-Apr-13	01-Mar-14	19-Apr-13 A	21-Mar-14	-31					
<b>Concrete Blocks</b>		246	30	19-Apr-13	20-Dec-13	19-Apr-13 A	19-Feb-14	-87					
PD-PY1-0100	Seawall Blocks for Temporary construction 1,190nrs	246	30	19-Apr-13	20-Dec-13	19-Apr-13 A	19-Feb-14	-87					
<b>Culverts</b>		60	60	01-Jan-14	01-Mar-14	21-Jan-14	21-Mar-14	-31					
PD-PY-0100	Precast Yard Setup	60	60	01-Jan-14	01-Mar-14	21-Jan-14*	21-Mar-14	-31					
<b>Site Construction</b>		178	53	25-Sep-13	09-Jan-14	25-Sep-13 A	14-Mar-14	08					
<b>Seawall Construction</b>		155	46	25-Sep-13	09-Jan-14	25-Sep-13 A	14-Mar-14	-96					
<b>Temporary Seawall</b>		155	46	25-Sep-13	09-Jan-14	25-Sep-13 A	14-Mar-14	-96					
<b>70m Zone of Airport Existing Seawall</b>		10	10	21-Dec-13	31-Dec-13	24-Feb-14	06-Mar-14	11					
PDAS-00030	Airport Existing Seawall 70m Seawall blocks installation 200nrs	10	10	21-Dec-13	31-Dec-13	24-Feb-14	06-Mar-14	11					
<b>Temporary Seawall CH6+136 - CH6+000 (136m)</b>		149	40	25-Sep-13	02-Jan-14	25-Sep-13 A	08-Mar-14	12					
PDTS-10040	S1 West1 Temporary Seawall Stone Aggregate 43,526m3 2,500m3/day	58	5	25-Sep-13	26-Nov-13	25-Sep-13 A	25-Jan-14	13					
PDTS-10060	V2 West1 Temporary Seawall Seawall blocks installation 350nrs	12	12	21-Dec-13	02-Jan-14	24-Feb-14	08-Mar-14	12					
<b>Temporary Seawall CH6+000 - CH5+900 (100m)</b>		88	23	12-Nov-13	15-Dec-13	12-Nov-13 A	18-Feb-14	13					
PDTS-20040	S1 West2 Temporary Seawall Stone Aggregate 43,526m3 2,500m3/day	18	18	27-Nov-13	15-Dec-13	26-Jan-14	18-Feb-14	13					
PDTS-20050	V2 West2 Temporary Seawall Stone Aggregate 45,198m3 2,500m3/day	19	10	12-Nov-13	01-Dec-13	12-Nov-13 A	04-Feb-14	12					
<b>Temporary Seawall CH5+900 - CH5+800 (100m)</b>		31	31	02-Dec-13	03-Jan-14	05-Feb-14	09-Mar-14	13					

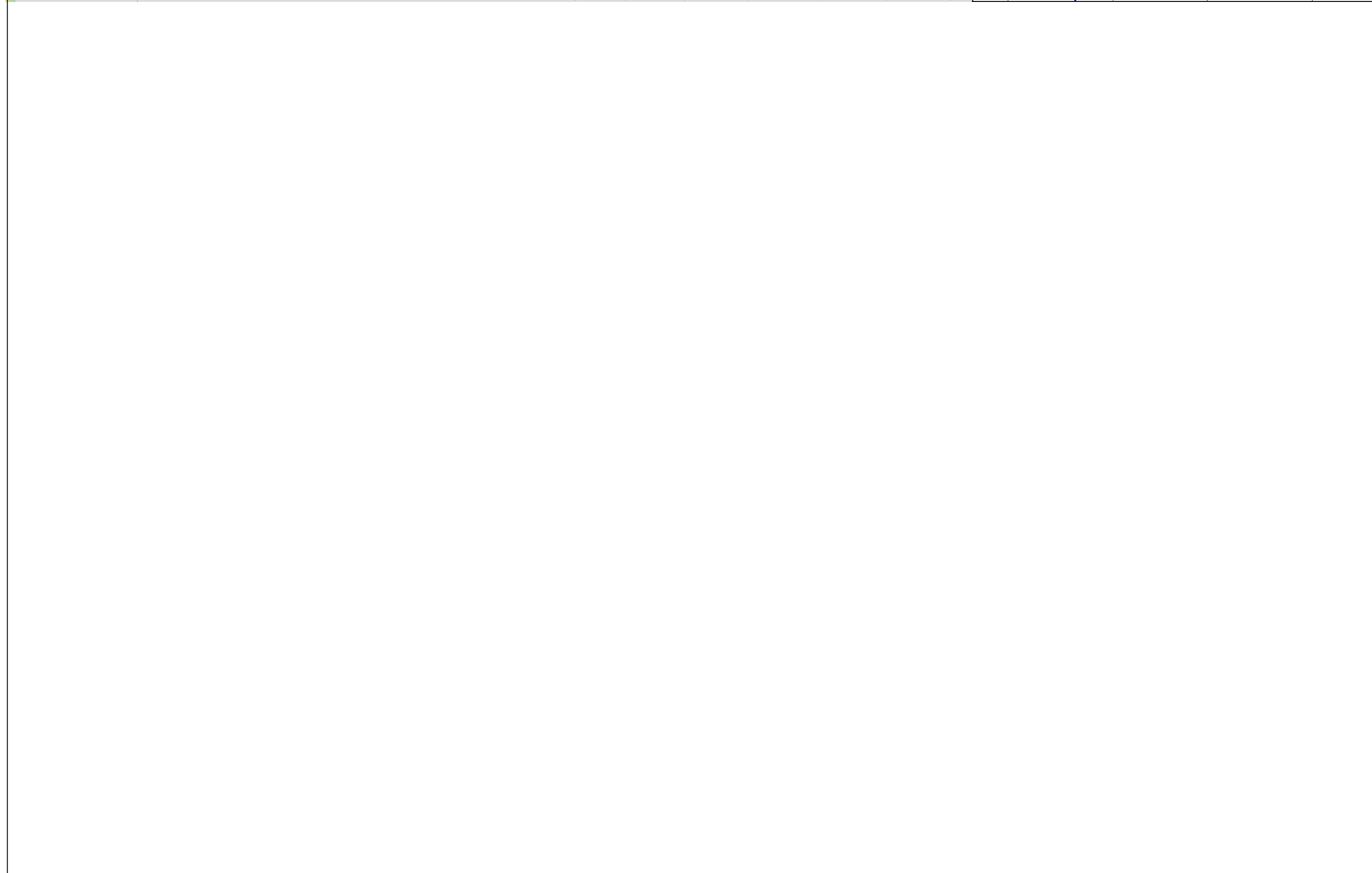
█ Remaining Level of Effort   
  Primary Baseline   
 █ Remaining Work   
 ◆ Baseline Milestone   
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█ Actual Level of Effort   
 █ Actual Work   
 █ Critical Remaining Work

Activity ID	Activity Name	Original Duration	Remaining Duration	BL1 Start	BL1 Finish	Start	Finish	Total	2013	2014				
										2013	Jan 27	Feb 28	Mar 29	Apr 30
PDTS-30040	S1 East1 Temporary Seawall Stone Aggregate 43,526m3 2,500m3/day	18	18	16-Dec-13	03-Jan-14	19-Feb-14	09-Mar-14	130	10					
PDTS-30050	V2 East1 Temporary Seawall Stone Aggregate 45,198m3 2,500m3/day	18	18	02-Dec-13	20-Dec-13	05-Feb-14	23-Feb-14	120						
<b>Temporary Seawall CH5+800 - CH5+650 (150m)</b>		46	46	21-Nov-13	09-Jan-14	21-Jan-14	14-Mar-14	-96						
PDTS-40030	S1 East2 Temporary Seawall Rockfill type1 14,600m3	5	5	21-Nov-13	26-Nov-13	21-Jan-14	25-Jan-14	-98						
PDTS-40050	V2 East2 Temporary Seawall Stone Aggregate 45,198m3 2,500m3/day	18	18	21-Dec-13	09-Jan-14	24-Feb-14	14-Mar-14	-96						
<b>Reclamation below +2.5mPD</b>		27	27	27-Nov-13	25-Dec-13	26-Jan-14	27-Feb-14	120						
<b>West1 (South CH 0 - 100 &amp; North CH 6136 - 6000)</b>		23	23	27-Nov-13	20-Dec-13	26-Jan-14	23-Feb-14	120						
A1630b	PD - Marine Fill Type A Sand 100% upto +0mPD at West1 43,754m3 5,000m3/day	9	9	27-Nov-13	05-Dec-13	26-Jan-14	08-Feb-14	120						
A1630c	PD - Marine Fill Type A Sand 100% upto +2.5mPD at West1 43,754m3 10,000m3/day	5	5	16-Dec-13	20-Dec-13	19-Feb-14	23-Feb-14	120						
<b>West2 (South CH 100 - 225 &amp; North CH 6000 - 5900)</b>		9	9	06-Dec-13	15-Dec-13	09-Feb-14	18-Feb-14	120						
A1630b10	PD - Marine Fill Type A Sand 100% upto +0mPD at West2 43,754m3 5,000m3/day	9	9	06-Dec-13	15-Dec-13	09-Feb-14	18-Feb-14	120						
<b>East1 (South CH 225 - 325 &amp; North CH 5900 - 5800)</b>		4	4	21-Dec-13	25-Dec-13	24-Feb-14	27-Feb-14	120						
A1635a	PD - Aggregate bedding at C3	4	4	21-Dec-13	25-Dec-13	24-Feb-14	27-Feb-14	120						
<b>Sand Drain</b>		35	35			21-Jan-14	05-Mar-14	397						
A1636a010	Mobilization of Rig 1, Rig 2, Rig3	5	5			21-Jan-14	25-Jan-14	397						
A1636a020	Trial Installation of sand drains	2	2			27-Jan-14	28-Jan-14	397						
A1636a030	Mobilization of Rig 4	3	3			29-Jan-14	04-Feb-14	397						
A1636a040	Installation of Sand Drains for Rig 1	28	28			29-Jan-14	05-Mar-14	397						
A1636a050	Installation of Sand Drains for Rig 2	28	28			29-Jan-14	05-Mar-14	397						
A1636a060	Installation of Sand Drains for Rig 3	28	28			29-Jan-14	05-Mar-14	397						
A1636a070	Installation of Sand Drains for Rig 4	25	25			05-Feb-14	05-Mar-14	397						
<b>Vertical Band Drain by Land Base</b>		52	5	26-Nov-13	02-Jan-14	26-Nov-13 A	25-Jan-14	-85						
<b>West1 (South CH 0 -100 &amp; North CH6136 - 6000)</b>		52	5	26-Nov-13	02-Jan-14	26-Nov-13 A	25-Jan-14	-85						
A1631	PD - Install vertical band drain at existing seawall 70m by Land Plant 1,418nrs upto 12Dec2013	16	0	26-Nov-13	12-Dec-13	26-Nov-13 A	13-Dec-13 A							
A1632	PD - Install vertical band drain 6,170nrs at West1 by Land Plant 520nrs/day	24	5	21-Dec-13	02-Jan-14	21-Dec-13 A	25-Jan-14	-85						
<b>Instrumentation &amp; Monitoring Requirements</b>		48	48	21-Nov-13	03-Jan-14	21-Jan-14	09-Mar-14	100						
<b>West Portion</b>		48	48	21-Nov-13	03-Jan-14	21-Jan-14	09-Mar-14	100						
<b>Vertical Seawalls - Cluster Type DV-1 &amp; DV-2</b>		4	4	21-Nov-13	24-Nov-13	21-Jan-14	24-Jan-14	100						
DV-1010	PD - Surface Movements Marker (Type 3B) 4nrs west	4	4	21-Nov-13	24-Nov-13	21-Jan-14	24-Jan-14	100						
<b>Sloping Seawalls - Cluster Type DS-1 &amp; DS-2</b>		4	4	21-Nov-13	24-Nov-13	21-Jan-14	24-Jan-14	-58						
DS-1010	PD - Surface Movement Marker (Type 3B) 4nrs east	4	4	21-Nov-13	24-Nov-13	21-Jan-14	24-Jan-14	-58						
<b>Reclamation - Cluster Type RA 3sets</b>		48	48	21-Nov-13	03-Jan-14	21-Jan-14	09-Mar-14	120						
RA-1010	PD - Extensometer 3nrs	14	14	21-Dec-13	03-Jan-14	24-Feb-14	09-Mar-14	120						
RA-1020	PD - Standpipe / Casagrande Piezometer 3nrs	14	14	21-Dec-13	03-Jan-14	24-Feb-14	09-Mar-14	120						
RA-1030	PD - Double Tip Vibrating Wire Piezometer 9nrs	14	14	21-Dec-13	03-Jan-14	24-Feb-14	09-Mar-14	120						
RA-1040	PD - Sub-surface Settlement Marker 3nrs	3	3	21-Nov-13	23-Nov-13	21-Jan-14	23-Jan-14	100						
RA-1050	PD - Settlement Marker (Type 2) 6nrs	3	3	21-Dec-13	23-Dec-13	24-Feb-14	26-Feb-14	120						
<b>Reclamation - Cluster Type RB 4sets</b>		38	38	21-Nov-13	24-Dec-13	21-Jan-14	27-Feb-14	120						
RB-1010	PD - Sub-Surface Settlement Marker 4nrs west	4	4	21-Nov-13	24-Nov-13	21-Jan-14	24-Jan-14	100						
RB-1020	PD - Settlement Marker (Type 2) 4nrs west	4	4	21-Dec-13	24-Dec-13	24-Feb-14	27-Feb-14	120						
<b>East Portion</b>		4	4	21-Nov-13	24-Nov-13	21-Jan-14	24-Jan-14	-58						
<b>Vertical Seawalls - Cluster Type DV-3 &amp; DV-4</b>		4	4	21-Nov-13	24-Nov-13	21-Jan-14	24-Jan-14	-58						
DV-1050	PD - Surface Movements Marker (Type 3B) 4nrs east	4	4	21-Nov-13	24-Nov-13	21-Jan-14	24-Jan-14	-58						
<b>Sloping Seawalls - Cluster Type DS-3 &amp; DS-4</b>		4	4	21-Nov-13	24-Nov-13	21-Jan-14	24-Jan-14	-58						
DS-1050	PD - Surface Movement Marker (Type 3B) 4nrs east	4	4	21-Nov-13	24-Nov-13	21-Jan-14	24-Jan-14	-58						
<b>Reclamation - Cluster Type RA 1set</b>		1	1	21-Nov-13	21-Nov-13	21-Jan-14	21-Jan-14	-55						
RA-1090	PD - Sub-surface Settlement Marker 1nr	1	1	21-Nov-13	21-Nov-13	21-Jan-14	21-Jan-14	-55						
<b>Reclamation - Cluster Type RB 4sets</b>		4	4	21-Nov-13	24-Nov-13	21-Jan-14	24-Jan-14	-58						
RB-1030	PD - Sub-Surface Settlement Marker 4nrs east	4	4	21-Nov-13	24-Nov-13	21-Jan-14	24-Jan-14	-58						
<b>Works Area WA2 (Tung Chung)</b>		615	0	30-Nov-11	20-Dec-13	30-Nov-11 A	20-Dec-13 A							
<b>Zone B</b>		615	0	30-Nov-11	20-Dec-13	30-Nov-11 A	20-Dec-13 A							
A3090	Maintenance of Site	615	0	30-Nov-11	20-Dec-13	30-Nov-11 A	20-Dec-13 A							
<b>Works Area WA4 (To Kau Wan)</b>		548	0	23-Feb-12	20-Dec-13	23-Feb-12 A	20-Dec-13 A							

 Remaining Level of Effort	 Primary Baseline	 Remaining Work	 Baseline Milestone	 S..
 Actual Level of Effort	 Actual Work	 Critical Remaining Work	 Milestone	

Activity ID	Activity Name	Original Duration	Remaining Duration	BL1 Start	BL1 Finish	Start	Finish	total load	2014				
									2013	Jan	Feb	Mar	Apr
A1910	Maintenance of Site Zone A	548	0	23-Feb-12	20-Dec-13	23-Feb-12 A	20-Dec-13 A			27	28	29	30



**Appendix C - Implementation Schedule of Environmental Mitigation Measures**

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
<b>Air Quality</b>				
S5.5.6.1 of HKBCFEIA	A1	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	All construction sites	V
S5.5.6.2 of HKBCFEIA and S4.8.1 of TKCLKLEIA	A2	Proper watering of exposed spoil should be undertaken throughout the construction phase: <ul style="list-style-type: none"> <li>• 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;</li> <li>• Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;</li> <li>• A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones.</li> <li>• 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;</li> <li>• When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary</li> </ul>	All construction sites	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		<p>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;</p> <ul style="list-style-type: none"> <li>• 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;</li> <li>• 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;</li> <li>• 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;</li> <li>• 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;</li> <li>• Any skip hoist for material transport should be totally enclosed by impervious sheeting;</li> <li>• 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;</li> <li>• Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an</li> </ul>		

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		<p>audible high level alarm which is interlocked with the material filling line and no overfilling is allowed;</p> <ul style="list-style-type: none"> <li>• All unpaved roads/exposed area shall be watered which results in dust suppression by forming moist cohesive films among the discrete grains of road surface material.</li> <li>• No burning of debris or other materials on the works areas is allowed;</li> <li>• Water spray shall be used during the handling of fill material at the site and at active cuts, excavation and fill sites where dust is likely to be created;</li> <li>• Open dropping heights for excavated materials shall be controlled to a maximum height of 2m to minimise the fugitive dust arising from unloading;</li> <li>• During transportation by truck, materials shall not be loaded to a level higher than the side and tail boards, and shall be dampened or covered before transport. Materials having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin. The tarpaulin shall be properly secured and shall extend at least 300mm over the edges of the side and tail boards;</li> <li>• 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</li> <li>• Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable</li> </ul>		



EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		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.		
S5.5.6.3 of HKBCFEIA and S4.8.1 of TKCLKLEIA	A3	The Contractor should undertake proper watering on all exposed spoil and associated work areas (with at least 8 times per day) throughout the construction phase.	All construction sites	V
S5.5.6.4 of HKBCFEIA and S4.11 of TKCLKLEIA	A4	Implement regular dust monitoring under EM&A programme during the construction stage.	Selected representative dust monitoring station	V
S5.5.7.1 of HKBCFEIA	A5	The following mitigation measures should be adopted to prevent fugitive dust emissions for concrete batching plant: <ul style="list-style-type: none"> <li>• Loading, unloading, handling, transfer or storage of any dusty materials should be carried out in totally enclosed system;</li> <li>• 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;</li> <li>• Vents for all silos and cement/ pulverised fuel ash (PFA) weighing scale should be fitted with fabric filtering system;</li> <li>• The materials which may generate airborne dusty emissions should be wetted by water spray system;</li> </ul>	All construction sites	N/A

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		<ul style="list-style-type: none"> <li>• All receiving hoppers should be enclosed on three sides up to 3m above unloading point;</li> <li>• All conveyor transfer points should be totally enclosed;</li> <li>• All access and route roads within the premises should be paved and wetted; and</li> <li>• 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.</li> </ul>		
S5.5.2.7 of HKBCFEIA	A6	The following mitigation measures should be adopted to prevent fugitive dust emissions at barging point: <ul style="list-style-type: none"> <li>• All road surface within the barging facilities will be paved;</li> <li>• Dust enclosures will be provided for the loading ramp;</li> <li>• Vehicles will be required to pass through designated wheels wash facilities; and</li> <li>• Continuous water spray at the loading points.</li> </ul>	All construction sites	N/A (Construction in process)
<b>Construction Noise (Air borne)</b>				
S6.4.10 of HKBCFEIA	N1	Use of good site practices to limit noise emissions by considering the following: <ul style="list-style-type: none"> <li>• only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme;</li> <li>• 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;</li> <li>• plant known to emit noise strongly in one direction, where possible, be orientated</li> </ul>	All construction sites	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		so that the noise is directed away from nearby NSRs; <ul style="list-style-type: none"> <li>• silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works;</li> <li>• mobile plant should be sited as far away from NSRs as possible and practicable;</li> <li>• material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.</li> </ul>		
S6.4.11 of HKBCFEIA	N2	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.	All construction sites	V
S6.4.12 of HKBCFEIA	N3	Install movable noise barriers (typically density @14kg/m <sup>2</sup> ), acoustic mat or full enclosure close to noisy plants including air compressor, generators, saw.	For plant items listed in Appendix 6D of the EIA report at all construction sites	N/A
S6.4.13 of HKBCFEIA	N4	Select “Quiet plants” which comply with the BS 5228 Part 1 or TM standards.	For plant items listed in Appendix 6D of the EIA report at all construction sites	V
S6.4.14 of HKBCFEIA	N5	Sequencing operation of construction plants where practicable.	All construction sites where practicable	V
S5.1 of	N6	Implement a noise monitoring under EM&A programme.	Selected	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
TMCLKLEIA			representative noise monitoring station	
<b>Waste Management (Construction Waste)</b>				
S12.6 of TMCLKLEIA	WM1	The Contractor shall identify a coordinator for the management of waste.	All construction sites	V
S12.6 of TMCLKLEIA	WM2	The Contractor shall apply for and obtain the appropriate licenses for the disposal of public fill, chemical waste and effluent discharges.	All construction sites	V
S12.6 of TMCLKLEIA	WM3	EM&A of waste handling, storage, transportation, disposal procedures and documentation through the site audit programme shall be undertaken.	All construction sites	V
S8.3.8 of HKBCFEIA and S12.6 of TMCLKLEIA	WM4	<p><u>Construction and Demolition Material</u></p> <p>The following mitigation measures should be implemented in handling the waste:</p> <ul style="list-style-type: none"> <li>• Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement;</li> <li>• Carry out on-site sorting;</li> <li>• Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate;</li> <li>• Adopt ‘Selective Demolition’ technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible;</li> </ul>	All construction sites	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		<ul style="list-style-type: none"> <li>• Implement a trip-ticket system for each works contract to ensure that the disposal of C&amp;D materials are properly documented and verified;</li> <li>• 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&amp;D materials and to minimize their generation during the course of construction;</li> <li>• In addition, disposal of the C&amp;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; and</li> <li>• The surplus surcharge should be transferred to a fill bank.</li> </ul>		
S8.3.9- S8.3.11 of HKBCFEIA and S12.6 of TMCLKLEIA	WM5	<p><u>C&amp;D Waste</u></p> <ul style="list-style-type: none"> <li>• Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&amp;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 and falsework 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.</li> <li>• The Contractor should recycle as much of the C&amp;D materials as possible on-site. Public fill and C&amp;D waste should be segregated and stored in different containers</li> </ul>	All construction sites	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		<p>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 areas of the sites should be considered for such segregation and storage.</p>		
<p>S8.2.12- S8.3.15 of HKBCFEIA and S12.6 of TMCLKLEIA</p>	<p>WM6</p>	<p><u>Chemical Waste</u></p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> <li>• 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</li> </ul>	<p>All construction sites</p>	<p>V</p>

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		which also offers a chemical 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 of HKBCFEIA and S12.6 of TMCLKLEIA	WM7	<u>Sewage</u> <ul style="list-style-type: none"> <li>• 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.</li> </ul>	All construction sites	V
S8.3.17 of HKBCFEIA and S12.6 of TMCLKLEIA	WM8	<u>General Refuse</u> <ul style="list-style-type: none"> <li>• The site and surroundings shall be kept tidy and litter free. General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes.</li> <li>• 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.</li> <li>• 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.</li> <li>• 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</li> </ul>	All construction sites	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		<p>considered by the Contractor. In addition, waste separation facilities for paper, aluminum cans, plastic bottles etc., should be provided.</p> <ul style="list-style-type: none"> <li>• Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedure, including reduction, reuse and recycling of wastes.</li> <li>• Sufficient dustbins shall be provided for storage of waste as required under the Public Cleansing and Prevention of Nuisances By-laws. In addition, general refuse shall be cleared daily and shall be disposed of to the nearest licensed landfill or refuse transfer station.</li> <li>• All waste containers shall be in a secure area on hardstanding.</li> </ul>		
<b>Water Quality (Construction Phase)</b>				
	W1	<p>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 backfilling, as well as protection measures. Details of the measures are provided below:</p>	During filling	V



EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		<ul style="list-style-type: none"> <li>• Reclamation filling for the Project shall not proceed until at least 200m of leading seawall at the reclamation area formed above +2.2mPD, unless otherwise agreement was obtained from EPD, except for the 300m gaps for marine access. All underwater filling works shall be carried out behind seawalls to avoid dispersion of suspended solids outside the Project limit;</li> <li>• Except for the filling of the cellular structures, not more than 15% public fill shall be used for reclamation filling below +2.5mPD during construction of the seawall;</li> <li>• After the seawall is completed except for the 300m marine access as indicated in the EPs, not more than 30% public fill shall be used for reclamation filling below +2.5mPD, unless otherwise agreement from EPD was obtained;</li> <li>• Upon completion of 200m leading seawall, no more than a total of 60 filling barge trips per day shall be made with a cumulative maximum daily filling rate of 60,000 m<sup>3</sup> for HKBCF and TMCLKL southern landfall reclamation during the filling operation; and</li> <li>• Upon completion of the whole section of seawall except for the 300m marine access as indicated in the EPs, no more than a total of 190 filling barge trips per day shall be made with a cumulative maximum daily filling rate of 190,000 m<sup>3</sup> for the remaining filling operations for HKBCF and TMCLKL southern landfall reclamation.</li> <li>• Floating type perimeter silt curtains shall be around the HKBCF site before the commencement of marine works. Staggered layers of silt curtain shall be provided</li> </ul>		

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		<p>to prevent sediment loss at navigation accesses. The length of each staggered layers shall be at least 200m;</p> <ul style="list-style-type: none"> <li>• Single layer silt curtain to be applied around the North-east airport water intake;</li> <li>• The silt-curtains should be maintained in good condition to ensure the sediment plume generated from filling be confined effectively within the site boundary;</li> <li>• The filling works shall be scheduled to spread the works evenly over a working day;</li> <li>• Cellular structure shall be used for seawall construction;</li> <li>• A layer of geotextile shall be placed on top of the seabed before any filling activities take place inside the cellular structures to form the seawall;</li> <li>• The conveyor belts shall be fitted with windboards and conveyor release points shall be covered with curtain to prevent any spillage of filling materials onto the surrounding waters; and</li> <li>• An additional layer of silt curtain shall be installed near the active stone column installation points. A layer of geotextile with stone blanket on top shall be placed on the seabed prior to stone column installation works.</li> </ul>		
<p>S9.11.1.3 of HKBCFEIA and S6.10 of</p>	<p>W2</p>	<p><u>Land Works</u>                      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:</p>	<p>All land-based construction sites</p>	<p>V</p>

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
TMCLKLEIA		<ul style="list-style-type: none"> <li>• wastewater from temporary site facilities should be controlled to prevent direct discharge to surface or marine waters;</li> <li>• 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;</li> <li>• 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;</li> <li>• silt removal facilities, channels and manholes shall be maintained and any deposited silt and grit shall be removed regularly, including specifically at the onset of and after each rainstorm;</li> <li>• temporary access roads should be surfaced with crushed stone or gravel;</li> <li>• rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities;</li> <li>• measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system;</li> <li>• open stockpiles of construction materials (e.g. aggregates and sand) on site</li> </ul>		

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		<p>should be covered with tarpaulin or similar fabric during rainstorms;</p> <ul style="list-style-type: none"> <li>• 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;</li> <li>• discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system;</li> <li>• 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;</li> <li>• wheel wash overflow shall be directed to silt removal facilities before being discharged to the storm drain;</li> <li>• the section of construction road between the wheel washing bay and the public road should be surfaced with crushed stone or coarse gravel;</li> <li>• wastewater generated from concreting, plastering, internal decoration, cleaning work and other similar activities, shall be screened to remove large objects;</li> <li>• vehicle and plant servicing areas, vehicle wash bays and lubrication facilities shall be located under roofed areas. The drainage in these covered areas shall be connected to foul sewers via a petrol interceptor in accordance with the requirements of the WPCO or collected for offsite disposal;</li> </ul>		

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		<ul style="list-style-type: none"> <li>• the contractors shall prepare an oil / chemical cleanup plan and ensure that leakages or spillages are contained and cleaned up immediately;</li> <li>• waste oil should be collected and stored for recycling or disposal, in accordance with the Waste Disposal Ordinance;</li> <li>• 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</li> <li>• surface run-off from bunded areas should pass through oil/grease traps prior to discharge to the storm water system..</li> </ul>		
S9.14 of HKBCFEIA and S6.10 of TMCLKLEIA	W3	Implement a water quality monitoring programme	At identified monitoring location	V
S6.10 of TMCLKLEIA	W4	All construction works shall be subject to routine audit to ensure implementation of all EIA recommendations and good working practice.	All construction site areas	V
<b>Ecology (Construction Phase)</b>				
S10.7 of HKBCFEIA and S8.14 of TMCLKLEIA	E1	<ul style="list-style-type: none"> <li>• Install silt curtain during the construction</li> <li>• Limit works fronts</li> <li>• Construct seawall prior to reclamation filling where practicable</li> </ul>	Seawall, reclamation area	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		<ul style="list-style-type: none"> <li>• Good site practices</li> <li>• Strict enforcement of no marine dumping</li> <li>• Site runoff control</li> <li>• Spill response plan</li> </ul>		
S10.7 of HKBCFEIA	E2	<ul style="list-style-type: none"> <li>• 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.</li> </ul>	Land-based works areas	V
S10.7 of HKBCFEIA and S8.14 of TMCLKLEIA	E3	<ul style="list-style-type: none"> <li>• Good site practices, including strictly following the permitted works hours, using quieter machines where practicable, and avoiding excessive lightings during night time.</li> </ul>	Land-based works areas	V
S10.7 of HKBCFEIA and S8.14 of TMCLKLEIA	E4	<ul style="list-style-type: none"> <li>• Dolphin Exclusion Zone</li> <li>• Dolphin watching plan</li> </ul>	Marine works	V
S10.7 of HKBCFEIA and S8.14 of TMCLKLEIA	E5	<ul style="list-style-type: none"> <li>• Decouple compressors and other equipment on working vessels</li> <li>• Proposal on design and implementation of acoustic decoupling measures applied during reclamation works</li> <li>• Avoidance of percussive piling</li> </ul>	Marine works	V
S10.7 of	E6	<ul style="list-style-type: none"> <li>• Control vessel speed</li> </ul>	Marine traffic	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
HKBCFEIA and S8.14 of TMCLKLEIA		<ul style="list-style-type: none"> <li>• Skipper training</li> <li>• Predefined and regular routes for working vessels; avoid Brothers Islands</li> </ul>		
S10.10 of HKBCFEIA and S8.14 of TMCLKLEIA	E7	<ul style="list-style-type: none"> <li>• Vessel based dolphin monitoring</li> </ul>	Northeast and Northwest Lantau	V
<b>Fisheries</b>				
S11.7 of HKBCFEIA	F1	<ul style="list-style-type: none"> <li>• Reduce re-suspension of sediments</li> <li>• Limit works fronts</li> <li>• Good site practices</li> <li>• Strict enforcement of no marine dumping</li> <li>• Spill response plan</li> </ul>	Seawall, reclamation area	V
S11.7 of HKBCFEIA	F2	<ul style="list-style-type: none"> <li>• Install silt-grease trap in the drainage system collecting surface runoff</li> </ul>	Reclamation area	V
<b>Landscape &amp; Visual (Construction Phase)</b>				
S14.3.3. 3 of HKBCFEIA and S10.9 of TMCLKLEIA	LV1	<p><u>Mitigate Landscape Impacts</u></p> <p>G1/CM4 Grass-hydroseed or sheeting bare soil surface and stock pile areas.</p> <p>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</p>	All construction site areas	N/A

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		rock materials and planting strip area accommodating screen buffer to enhance “natural-look” of new coastline.		
S10.9 of TMCLKLEIA	LV2	<u>Mitigate Landscape Impacts</u> CM7 Ensure no run-off into water body adjacent to the Project Area.	All construction site areas	V
S14.3.3. 3 of HKBCFEIA	LV4	<u>Mitigate Visual Impacts</u> V1 Minimize time for construction activities during construction period.	All construction site areas	V
S10.9 of TMCLKLEIA	LV5	<u>Mitigate Visual Impacts</u> CM6 Control night-time lighting and glare by hooding all lights.	All construction site areas	V
<b>EM&amp;A</b>				
S15.2.2 of HKBCFEIA	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual.	All construction site areas	V
S15.5 - S15.6 of HKBCFEIA	EM2	<ul style="list-style-type: none"> <li>An Environmental Team needs to be employed as per the EM&amp;A Manual.</li> <li>Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures.</li> <li>An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&amp;A Manual are fully complied with.</li> </ul>	All construction site areas	V

Legend: V = implemented;

x = not implemented;

N/A = not applicable



## Appendix D - Summary of Action and Limit Levels

Table 1 – Action and Limit Levels for 1-hour TSP

Location	Action Level	Limit Level
AMS2	374 $\mu\text{g}/\text{m}^3$	500 $\mu\text{g}/\text{m}^3$
AMS3A*	368 $\mu\text{g}/\text{m}^3$	500 $\mu\text{g}/\text{m}^3$
AMS6	360 $\mu\text{g}/\text{m}^3$	500 $\mu\text{g}/\text{m}^3$
AMS7	370 $\mu\text{g}/\text{m}^3$	500 $\mu\text{g}/\text{m}^3$

Remarks: \* Action Level set out at AMS3 Ho Yu College is adopted.

Table 2 – Action and Limit Levels for 24-hour TSP

Location	Action Level	Limit Level
AMS2	176 $\mu\text{g}/\text{m}^3$	260 $\mu\text{g}/\text{m}^3$
AMS3A*	167 $\mu\text{g}/\text{m}^3$	260 $\mu\text{g}/\text{m}^3$
AMS6	173 $\mu\text{g}/\text{m}^3$	260 $\mu\text{g}/\text{m}^3$
AMS7	183 $\mu\text{g}/\text{m}^3$	260 $\mu\text{g}/\text{m}^3$

Remarks: \* Action Level set out at AMS3 Ho Yu College is adopted.

Table 3 – Action and Limit Levels for Construction Noise (0700-1900 hrs of normal weekdays)

Location	Action Level	Limit Level
NMS2	When one documented complaint, related to 0700 – 1900 hours on normal weekdays, is received from any one of the sensitive receivers	75 dB(A)
NMS3A		*65 / 70 dB(A)

\*Daytime noise Limit Level of 70 dB(A) applies to education institutions, while 65dB(A) applies during school examination period.

Table 4 – Action and Limit Levels for Water Quality

<b>Parameters</b>	<b>Action</b>	<b>Limit</b>
DO in mg L <sup>-1</sup> (Surface, Middle & Bottom)	<u>Surface and Middle</u> 5.0 <u>Bottom</u> 4.7	<u>Surface and Middle</u> 4.2 (except 5 mg/L for FCZ) <u>Bottom</u> 3.6
SS in mg L <sup>-1</sup> (depth-averaged)	23.5 and 120% of upstream control station's SS at the same tide of the same day	34.4 and 130% of upstream control station's SS at the same tide of the same day and 10mg/L for WSD Seawater intakes
Turbidity in NTU (depth-averaged)	27.5 and 120% of upstream control station's turbidity at the same tide of the same day	47.0 and 130% of upstream control station's turbidity at the same tide of the same day

Notes:

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 limits occurs when monitoring result is lower than the limits.
3. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

Table 5(a) Action and Limit Levels for Chinese White Dolphin Monitoring - Approach to Define Action Level (AL) and Limit Level (LL):

	<b>North Lantau Social Cluster</b>	
	<b>NEL</b>	<b>NWL</b>
Action Level	(STG < 70% of baseline) & (ANI < 70% of baseline)	(STG < 70% of baseline) & (ANI < 70% of baseline)
Limit Level	[(STG < 40% of baseline) & (ANI < 40% of baseline)] AND [ (STG < 40% of baseline) & (ANI < 40% of baseline)]	

For North Lantau Social Cluster, action level will be trigger if either NEL **or** NWL fall below the criteria; limit level will be triggered if both NEL **and** NWL fall below the criteria.

Table 5(b) Derived Value of Action Level (AL) and Limit Level (LL) for Chinese White Dolphin Monitoring

	<b>North Lantau Social Cluster</b>	
	<b>NEL</b>	<b>NWL</b>
Action Level	(STG < 4.2) & (ANI < 15.5 )	(STG < 6.9) & (ANI < 31.3)
Limit Level	[(STG < 2.4) & (ANI <8.9)] AND [ (STG < 3.9)& (ANI < 17.9)]	

# AECOM Asia Company Limited

## TSP High Volume Sampler

### Field Calibration Report

Station: Tung Chung Development Pier (AMS2) Operator: Leung Yiu Ting  
 Cal. Date: 22-Dec-13 Next Due Date: 22-Feb-14  
 Equipment No.: A-001-78T Serial No.: 3383

Ambient Condition			
Temperature, Ta (K)	288	Pressure, Pa (mmHg)	760.0

Orifice Transfer Standard Information					
Serial No:	988	Slope, mc	1.94727	Intercept, bc	0.02332
Last Calibration Date:	20-May-13	$mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	20-May-14	$Qstd = \{ [DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc \} / mc$			

Calibration of TSP Sampler					
Resistance Plate No.	Orifice			HVS Flow Recorder	
	DH (orifice), in. of water	[DH x (Pa/760) x (298/Ta)] <sup>1/2</sup>	Qstd (m <sup>3</sup> /min) X-axis	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) Y-axis
18	8.8	3.02	1.54	45.0	45.77
13	7.5	2.79	1.42	42.0	42.72
10	6.1	2.51	1.28	37.0	37.64
7	4.5	2.16	1.10	30.0	30.52
5	2.8	1.70	0.86	22.0	22.38

By Linear Regression of Y on X

Slope, mw = 35.4112 Intercept, bw = -8.0527

Correlation Coefficient\* = 0.9974

\*If Correlation Coefficient < 0.990, check and recalibrate.

#### Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m<sup>3</sup>/min

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

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

Therefore, Set Point; IC = (mw x Qstd + bw) x [(760 / Pa) x (Ta / 298)]<sup>1/2</sup> = 37.34

Remarks: \_\_\_\_\_

QC Reviewer: Yi Leung

Signature: 

Date: 23-12-13

# AECOM Asia Company Limited

## TSP High Volume Sampler

### Field Calibration Report

Station: Site Boundary of Site Office (WA2) (AMS3A) Operator: Leung Yiu Ting  
 Cal. Date: 22-Dec-13 Next Due Date: 22-Feb-14  
 Equipment No.: A-001-79T Serial No.: 3384

Ambient Condition			
Temperature, Ta (K)	288	Pressure, Pa (mmHg)	760.0

Orifice Transfer Standard Information					
Serial No:	988	Slope, mc	1.94727	Intercept, bc	0.02332
Last Calibration Date:	20-May-13	$mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	20-May-14	$Qstd = \{[DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Resistance Plate No.	Orifice			HVS Flow Recorder	
	DH (orifice), in. of water	[DH x (Pa/760) x (298/Ta)] <sup>1/2</sup>	Qstd (m <sup>3</sup> /min) X-axis	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) Y-axis
18	8.0	2.88	1.47	46.0	46.79
13	6.6	2.61	1.33	40.0	40.69
10	5.0	2.27	1.16	32.0	32.55
7	3.9	2.01	1.02	28.0	28.48
5	2.4	1.58	0.80	18.0	18.31

By Linear Regression of Y on X

Slope, mw = 42.0602 Intercept, bw = -15.1612

Correlation Coefficient\* = 0.9969

\*If Correlation Coefficient < 0.990, check and recalibrate.

#### Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m<sup>3</sup>/min

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

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

Therefore, Set Point; IC = (mw x Qstd + bw) x [(760 / Pa) x (Ta / 298)]<sup>1/2</sup> = 38.85

Remarks: \_\_\_\_\_

QC Reviewer: YT Leung

Signature: [Signature]

Date: 23-12-13

# AECOM Asia Company Limited

## TSP High Volume Sampler

### Field Calibration Report

Station: Hong Kong SkyCity Marriott Hotel (AMS7) Operator: Leung Yiu Ting  
 Cal. Date: 22-Dec-13 Next Due Date: 22-Feb-14  
 Equipment No.: A-001-80T Serial No.: 3385

Ambient Condition			
Temperature, Ta (K)	288	Pressure, Pa (mmHg)	760.0

Orifice Transfer Standard Information					
Serial No:	988	Slope, mc	1.94727	Intercept, bc	0.02332
Last Calibration Date:	20-May-13	$mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	20-May-14	$Qstd = \{[DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Resistance Plate No.	Orifice			HVS Flow Recorder	
	DH (orifice), in. of water	[DH x (Pa/760) x (298/Ta)] <sup>1/2</sup>	Qstd (m <sup>3</sup> /min) X-axis	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) Y-axis
18	8.0	2.88	1.47	46.0	46.79
13	6.5	2.59	1.32	41.0	41.71
10	5.1	2.30	1.17	32.0	32.55
7	4.0	2.03	1.03	25.0	25.43
5	3.0	1.76	0.89	19.0	19.33

By Linear Regression of Y on X

Slope, mw = 49.7114 Intercept, bw = -25.2864

Correlation Coefficient\* = 0.9941

\*If Correlation Coefficient < 0.990, check and recalibrate.

#### Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m<sup>3</sup>/min

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

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

Therefore, Set Point; IC = (mw x Qstd + bw) x [(760 / Pa) x (Ta / 298)]<sup>1/2</sup> = 38.67

Remarks: \_\_\_\_\_

QC Reviewer: YT Leung

Signature: 

Date: 23-12-13



TISCH ENVIRONMENTAL, INC.  
 145 SOUTH MIAMI AVE.  
 VILLAGE OF CLEVELAND, OH 45002  
 513.467.9000  
 877.263.7610 TOLL FREE  
 513.467.9009 FAX  
 WWW.TISCH-ENV.COM

AIR POLLUTION MONITORING EQUIPMENT

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - May 20, 2013 Rootsmeter S/N 0438320 Ta (K) - 297  
 Operator Tisch Orifice I.D. - 0988 Pa (mm) - 751.84

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.3900	3.2	2.00
2	NA	NA	1.00	0.9720	6.4	4.00
3	NA	NA	1.00	0.8670	7.9	5.00
4	NA	NA	1.00	0.8270	8.7	5.50
5	NA	NA	1.00	0.6800	12.6	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
0.9884	0.7110	1.4090	0.9957	0.7163	0.8889
0.9842	1.0125	1.9926	0.9915	1.0201	1.2570
0.9821	1.1327	2.2278	0.9894	1.1412	1.4054
0.9811	1.1863	2.3365	0.9884	1.1952	1.4740
0.9759	1.4352	2.8179	0.9832	1.4459	1.7777
Qstd slope (m) = 1.94727			Qa slope (m) = 1.21935		
intercept (b) = 0.02332			intercept (b) = 0.01471		
coefficient (r) = 0.99998			coefficient (r) = 0.99998		
y axis = SQRT[H2O(Pa/760)(298/Ta)]			y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

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

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

For subsequent flow rate calculations:

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

## EQUIPMENT CALIBRATION RECORD

Type: Laser Dust Monitor  
 Manufacturer/Brand: SIBATA  
 Model No.: LD-3  
 Equipment No.: A.005.07a  
 Sensitivity Adjustment Scale Setting: 557 CPM

Operator: Mike Shek (MSKM)

### Standard Equipment

Equipment: Rupprecht & Patashnick TEOM®  
 Venue: Cyberport (Pui Ying Secondary School)  
 Model No.: Series 1400AB  
 Serial No: Control: 140AB219899803  
 Sensor: 1200C143659803 K<sub>0</sub>: 12500  
 Last Calibration Date\*: 18 May 2013

\*Remarks: Recommended interval for hardware calibration is 1 year

### Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): 557 CPM  
 Sensitivity Adjustment Scale Setting (After Calibration): 557 CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration <sup>1</sup> (mg/m <sup>3</sup> ) Y-axis	Total Count <sup>2</sup>	Count/ Minute <sup>3</sup> X-axis
			Temp (°C)	R.H. (%)			
1	18-05-13	12:30 - 13:30	28.1	78	0.04714	1887	31.45
2	18-05-13	13:30 - 14:30	28.1	78	0.04932	1970	32.83
3	18-05-13	14:30 - 15:30	28.2	77	0.05156	2056	34.27
4	18-05-13	15:30 - 16:30	28.1	78	0.05083	2026	33.77

Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®  
 2. Total Count was logged by Laser Dust Monitor  
 3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X

Slope (K-factor): 0.0015  
 Correlation coefficient: 0.9978

Validity of Calibration Record: 17 May 2014

Remarks:

QC Reviewer: YW Fung Signature:  Date: 20 May 2013



## EQUIPMENT CALIBRATION RECORD

Type: Laser Dust Monitor  
 Manufacturer/Brand: SIBATA  
 Model No.: LD-3  
 Equipment No.: A.005.08a  
 Sensitivity Adjustment Scale Setting: 702 CPM  
 Operator: Mike Shek (MSKM)

### Standard Equipment

Equipment: Rupprecht & Patashnick TEOM®  
 Venue: Cyberport (Pui Ying Secondary School)  
 Model No.: Series 1400AB  
 Serial No: Control: 140AB219899803  
 Sensor: 1200C143659803 K<sub>0</sub>: 12500  
 Last Calibration Date\*: 18 May 2013

\*Remarks: Recommended interval for hardware calibration is 1 year

### Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): 702 CPM  
 Sensitivity Adjustment Scale Setting (After Calibration): 702 CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration <sup>1</sup> (mg/m <sup>3</sup> ) Y-axis	Total Count <sup>2</sup>	Count/ Minute <sup>3</sup> X-axis
			Temp (°C)	R.H. (%)			
1	18-05-13	12:30 - 13:30	28.1	78	0.04714	1764	29.40
2	18-05-13	13:30 - 14:30	28.1	78	0.04932	1846	30.77
3	18-05-13	14:30 - 15:30	28.2	77	0.05156	1935	32.25
4	18-05-13	15:30 - 16:30	28.1	78	0.05083	1899	31.65

- Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®  
 2. Total Count was logged by Laser Dust Monitor  
 3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X

Slope (K-factor): 0.0016  
 Correlation coefficient: 0.9976

Validity of Calibration Record: 17 May 2014

Remarks:

QC Reviewer: YW Fung Signature:  Date: 20 May 2013

## EQUIPMENT CALIBRATION RECORD

Type: Laser Dust Monitor  
 Manufacturer/Brand: SIBATA  
 Model No.: LD-3  
 Equipment No.: A.005.09a  
 Sensitivity Adjustment Scale Setting: 797 CPM

Operator: Mike Shek (MSKM)

### Standard Equipment

Equipment: Rupprecht & Patashnick TEOM®  
 Venue: Cyberport (Pui Ying Secondary School)  
 Model No.: Series 1400AB  
 Serial No: Control: 140AB219899803  
 Sensor: 1200C143659803 K<sub>0</sub>: 12500  
 Last Calibration Date\*: 18 May 2013

\*Remarks: Recommended interval for hardware calibration is 1 year

### Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): 797 CPM  
 Sensitivity Adjustment Scale Setting (After Calibration): 797 CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration <sup>1</sup> (mg/m <sup>3</sup> ) Y-axis	Total Count <sup>2</sup>	Count/ Minute <sup>3</sup> X-axis
			Temp (°C)	R.H. (%)			
1	18-05-13	12:30 - 13:30	28.1	78	0.04714	1885	31.42
2	18-05-13	13:30 - 14:30	28.1	78	0.04932	1965	32.75
3	18-05-13	14:30 - 15:30	28.2	77	0.05156	2059	34.32
4	18-05-13	15:30 - 16:30	28.1	78	0.05083	2024	33.73

Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®  
 2. Total Count was logged by Laser Dust Monitor  
 3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X

Slope (K-factor): 0.0015  
 Correlation coefficient: 0.9973

Validity of Calibration Record: 17 May 2014

Remarks:

QC Reviewer: YW Fung Signature:  Date: 20 May 2013

## EQUIPMENT CALIBRATION RECORD

Type: Laser Dust Monitor  
 Manufacturer/Brand: SIBATA  
 Model No.: LD-3  
 Equipment No.: A.005.10a  
 Sensitivity Adjustment Scale Setting: 753 CPM

Operator: Mike Shek (MSKM)

### Standard Equipment

Equipment: Rupprecht & Patashnick TEOM®  
 Venue: Cyberport (Pui Ying Secondary School)  
 Model No.: Series 1400AB  
 Serial No: Control: 140AB219899803  
 Sensor: 1200C143659803 K<sub>0</sub>: 12500  
 Last Calibration Date\*: 18 May 2013

\*Remarks: Recommended interval for hardware calibration is 1 year

### Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): 753 CPM  
 Sensitivity Adjustment Scale Setting (After Calibration): 753 CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration <sup>1</sup> (mg/m <sup>3</sup> ) Y-axis	Total Count <sup>2</sup>	Count/ Minute <sup>3</sup> X-axis
			Temp (°C)	R.H. (%)			
1	18-05-13	12:30 - 13:30	28.1	78	0.04714	1886	31.43
2	18-05-13	13:30 - 14:30	28.1	78	0.04932	1968	32.80
3	18-05-13	14:30 - 15:30	28.2	77	0.05156	2061	34.35
4	18-05-13	15:30 - 16:30	28.1	78	0.05083	2026	33.77

- Note:
1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
  2. Total Count was logged by Laser Dust Monitor
  3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X

Slope (K-factor): 0.0015  
 Correlation coefficient: 0.9983

Validity of Calibration Record: 17 May 2014

Remarks:

QC Reviewer: YW Fung

Signature: 

Date: 20 May 2013

## EQUIPMENT CALIBRATION RECORD

Type: Laser Dust Monitor  
 Manufacturer/Brand: SIBATA  
 Model No.: LD-3  
 Equipment No.: A.005.11a  
 Sensitivity Adjustment Scale Setting: 799 CPM

Operator: Mike Shek (MSKM)

### Standard Equipment

Equipment: Rupprecht & Patashnick TEOM®  
 Venue: Cyberport (Pui Ying Secondary School)  
 Model No.: Series 1400AB  
 Serial No: Control: 140AB219899803  
 Sensor: 1200C143659803 K<sub>0</sub>: 12500  
 Last Calibration Date\*: 18 May 2013

\*Remarks: Recommended interval for hardware calibration is 1 year

### Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): 799 CPM  
 Sensitivity Adjustment Scale Setting (After Calibration): 799 CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration <sup>1</sup> (mg/m <sup>3</sup> ) Y-axis	Total Count <sup>2</sup>	Count/ Minute <sup>3</sup> X-axis
			Temp (°C)	R.H. (%)			
1	18-05-13	12:15 - 13:15	28.1	78	0.04685	1871	31.18
2	18-05-13	13:15 - 14:15	28.1	78	0.04941	1979	32.98
3	18-05-13	14:15 - 15:15	28.2	77	0.05127	2055	34.25
4	18-05-13	15:15 - 16:15	28.1	78	0.05060	2021	33.68

- Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®  
 2. Total Count was logged by Laser Dust Monitor  
 3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X

Slope (K-factor): 0.0015  
 Correlation coefficient: 0.9976

Validity of Calibration Record: 17 May 2014

Remarks:

QC Reviewer: YW Fung Signature:  Date: 20 May 2013

## EQUIPMENT CALIBRATION RECORD

Type: Laser Dust Monitor  
 Manufacturer/Brand: SIBATA  
 Model No.: LD-3B  
 Equipment No.: A.005.13a  
 Sensitivity Adjustment Scale Setting: 643 CPM

Operator: Mike Shek (MSKM)

### Standard Equipment

Equipment: Rupprecht & Patashnick TEOM®  
 Venue: Cyberport (Pui Ying Secondary School)  
 Model No.: Series 1400AB  
 Serial No: Control: 140AB219899803  
 Sensor: 1200C143659803 K<sub>0</sub>: 12500  
 Last Calibration Date\*: 18 May 2013

\*Remarks: Recommended interval for hardware calibration is 1 year

### Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): 643 CPM  
 Sensitivity Adjustment Scale Setting (After Calibration): 643 CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration <sup>1</sup> (mg/m <sup>3</sup> ) Y-axis	Total Count <sup>2</sup>	Count/ Minute <sup>3</sup> X-axis
			Temp (°C)	R.H. (%)			
1	18-05-13	12:15 - 13:15	28.1	78	0.04685	1867	31.12
2	18-05-13	13:15 - 14:15	28.1	78	0.04941	1975	32.92
3	18-05-13	14:15 - 15:15	28.2	77	0.05127	2048	34.13
4	18-05-13	15:15 - 16:15	28.1	78	0.05060	2017	33.62

Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®  
 2. Total Count was logged by Laser Dust Monitor  
 3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X

Slope (K-factor): 0.0015  
 Correlation coefficient: 0.9986

Validity of Calibration Record: 17 May 2014

Remarks:

QC Reviewer: YW Fung Signature:  Date: 20 May 2013

## EQUIPMENT CALIBRATION RECORD

Type: Laser Dust Monitor  
 Manufacturer/Brand: SIBATA  
 Model No.: LD-3B  
 Equipment No.: A.005.14a  
 Sensitivity Adjustment Scale Setting: 786 CPM

Operator: Mike Shek (MSKM)

### Standard Equipment

Equipment: Rupprecht & Patashnick TEOM®  
 Venue: Cyberport (Pui Ying Secondary School)  
 Model No.: Series 1400AB  
 Serial No: Control: 140AB219899803  
 Sensor: 1200C143659803 K<sub>0</sub>: 12500  
 Last Calibration Date\*: 18 May 2013

\*Remarks: Recommended interval for hardware calibration is 1 year

### Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): 786 CPM  
 Sensitivity Adjustment Scale Setting (After Calibration): 786 CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration <sup>1</sup> (mg/m <sup>3</sup> ) Y-axis	Total Count <sup>2</sup>	Count/ Minute <sup>3</sup> X-axis
			Temp (°C)	R.H. (%)			
1	18-05-13	12:15 - 13:15	28.1	78	0.04685	2005	33.42
2	18-05-13	13:15 - 14:15	28.1	78	0.04941	2121	35.35
3	18-05-13	14:15 - 15:15	28.2	77	0.05127	2194	36.57
4	18-05-13	15:15 - 16:15	28.1	78	0.05060	2167	36.12

- Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®  
 2. Total Count was logged by Laser Dust Monitor  
 3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X

Slope (K-factor): 0.0014  
 Correlation coefficient: 0.9987

Validity of Calibration Record: 17 May 2014

Remarks:

QC Reviewer: YW Fung Signature:  Date: 20 May 2013



## CERTIFICATE OF CALIBRATION

Certificate No.: 13CA0325 01-01 Page 1 of 2

### Item tested

Description:	Sound Level Meter (Type 1)	Microphone
Manufacturer:	B & K	B & K
Type/Model No.:	2238	4188
Serial/Equipment No.:	2285692 11009.04	2250420
Adaptors used:	-	-

### Item submitted by

Customer Name: AECOM ASIA CO., LTD.  
Address of Customer: -  
Request No.: -  
Date of receipt: 25-Mar-2013

Date of test: 26-Mar-2013

### Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	22-Jun-2013	CIGISMEC
Signal generator	DS 360	33873	29-May-2013	CEPREI
Signal generator	DS 360	61227	29-May-2013	CEPREI

### Ambient conditions

Temperature:  $22 \pm 1$  °C  
Relative humidity:  $60 \pm 10$  %  
Air pressure:  $1000 \pm 10$  hPa

### Test specifications

- 1, The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.
- 2, The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of  $\pm 20\%$ .
- 3, The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure responsess of the Sound Level Meter.

### Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheets.

Approved Signatory:

Huang Jian Min/Feng Jun Qi

Date: 26-Mar-2013

Company Chop:



Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.



## CERTIFICATE OF CALIBRATION

Certificate No.: 13CA0325 01-03

Page: 1 of 2

### Item tested

Description: Acoustical Calibrator (Class 1)  
Manufacturer: Rion Co., Ltd.  
Type/Model No.: NC-73  
Serial/Equipment No.: 10186482 / N.004.09  
Adaptors used: -

### Item submitted by

Customer: AECOM ASIA CO., LTD.  
Address of Customer: -  
Request No.: -  
Date of receipt: 25-Mar-2013

Date of test: 26-Mar-2013

### Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2412857	29-May-2013	SCL
Preamplifier	B&K 2673	2239857	17-Dec-2013	CEPREI
Measuring amplifier	B&K 2610	2346941	17-Dec-2013	CEPREI
Signal generator	DS 360	61227	29-May-2013	CEPREI
Digital multi-meter	34401A	US36087050	10-Dec-2013	CEPREI
Audio analyzer	8903B	GB41300350	29-May-2013	CEPREI
Universal counter	53132A	MY40003662	29-May-2013	CEPREI

### Ambient conditions

Temperature: 22 ± 1 °C  
Relative humidity: 60 ± 10 %  
Air pressure: 1000 ± 10 hPa

### Test specifications

- The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B and the lab calibration procedure SMTP004-CA-156.
- The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.
- The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes.

### Test results

This is to certify that the sound calibrator conforms to the requirements of annex B of IEC 60942: 1997 for the conditions under which the test was performed. This does not imply that the sound calibrator meets IEC 60942 under any other conditions.

Details of the performed measurements are presented on page 2 of this certificate.

Approved Signatory:

Huang Jian Min/Feng Jun Qi

Date: 26-Mar-2013

Company Chop:



Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.



# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION



**Work Order:** HK1327504  
**Date of Issue:** 22/10/2013  
**Client:** AECOM ASIA COMPANY LIMITED

**Equipment Type:** Multimeter  
**Brand Name:** YSI  
**Model No.:** 6820 V2  
**Serial No.:** 12D100972  
**Equipment No.:** W.026.36  
**Date of Calibration:** 08 October, 2013      **Date of next Calibration:** 08 January, 2014

**Parameters:**

**Conductivity**

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

Expected Reading (uS/cm)	Displayed Reading (uS/cm )	Tolerance (%)
146.9	141.0	-4.0
6667	6232	-6.5
12890	12570	-2.5
58670	55110	-6.1
Tolerance Limit (±%)		10.0

**Dissolved Oxygen**

**Method Ref: APHA (21st edition), 4500O: G**

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
3.55	3.44	-0.11
5.70	5.76	0.06
7.20	7.29	0.09
Tolerance Limit (±mg/L)		0.20

**pH Value**

**Method Ref: APHA 21st Ed. 4500H:B**

Expected Reading (pH Unit)	Displayed Reading (pH Unit)	Tolerance (pH unit)
4.0	4.10	0.10
7.0	7.06	0.06
10.0	10.03	0.03
Tolerance Limit (±pH unit)		0.20

**Salinity**

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

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.07	--
10	9.99	-0.1
20	20.05	0.3
30	30.64	2.1
Tolerance Limit (±%)		10.0

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

  
 \_\_\_\_\_  
 Mr. Fung Lim Chee, Richard  
 General Manager -  
 Greater China & Hong Kong

# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION



**Work Order:** HK1327504  
**Date of Issue:** 22/10/2013  
**Client:** AECOM ASIA COMPANY LIMITED

**Description:** Multimeter  
**Brand Name:** YSI  
**Model No.:** 6820 V2  
**Serial No.:** 12D100972  
**Equipment No.:** W.026.36  
**Date of Calibration:** 08 October, 2013      **Date of next Calibration:** 08 January, 2014

**Parameters:**

**Temperature**

**Method Ref: Section 6 of International Accreditation New Zealand Technical Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.**

Expected Reading (°C)	Displayed Reading (°C)	Tolerance (°C)
14.0	14.11	0.1
25.0	25.14	0.1
36.5	36.69	0.2
Tolerance Limit (±°C)		2.0

**Turbidity**

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

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.0	--
4	4.2	5.0
10	10.5	5.0
20	19.6	-2.0
50	48.2	-3.6
100	99.8	-0.2
Tolerance Limit (±%)		10.0

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

  
 \_\_\_\_\_  
 Mr. Fung Lim Chee, Richard  
 General Manager -  
 Greater China & Hong Kong

# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION



**Work Order:** HK1400792  
**Date of Issue:** 10/01/2014  
**Client:** AECOM ASIA COMPANY LIMITED

**Equipment Type:** YSI Sonde  
**Brand Name:** YSI  
**Model No.:** 6820 V2  
**Serial No.:** 12D100972  
**Equipment No.:** W.026.36  
**Date of Calibration:** 09 January, 2014      **Date of next Calibration:** 09 April, 2014

**Parameters:**

**Conductivity**

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

Expected Reading (uS/cm)	Displayed Reading (uS/cm )	Tolerance (%)
146.9	150.5	2.5
6667	6580	-1.3
12890	12650	-1.9
58670	58580	-0.2
Tolerance Limit (±%)		10.0

**Dissolved Oxygen**

**Method Ref: APHA (21st edition), 4500O: G**

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
3.80	3.78	-0.02
5.85	5.80	-0.05
7.65	7.61	-0.04
Tolerance Limit (±mg/L)		0.20

**pH Value**

**Method Ref: APHA 21st Ed. 4500H:B**

Expected Reading (pH Unit)	Displayed Reading (pH Unit)	Tolerance (pH unit)
4.0	4.08	0.08
7.0	7.05	0.05
10.0	9.97	-0.03
Tolerance Limit (±pH unit)		0.20

**Salinity**

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

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0	--
10	9.89	-1.1
20	19.77	-1.2
30	29.50	-1.7
Tolerance Limit (±%)		10.0

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

  
 Mr. Fung Lim Chee, Richard  
 General Manager -  
 Greater China & Hong Kong

# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION



**Work Order:** HK1400792  
**Date of Issue:** 10/01/2014  
**Client:** AECOM ASIA COMPANY LIMITED

**Equipment Type:** YSI Sonde  
**Brand Name:** YSI  
**Model No.:** 6820 V2  
**Serial No.:** 12D100972  
**Equipment No.:** W.026.36  
**Date of Calibration:** 09 January, 2014

**Date of next Calibration:** 09 April, 2014

**Parameters:**

**Temperature**

**Method Ref:** Section 6 of International Accreditation New Zealand Technical  
**Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.**

Expected Reading (°C)	Displayed Reading (°C)	Tolerance (°C)
12.5	12.48	0.0
25.0	24.86	-0.1
36.0	35.85	-0.1
Tolerance Limit (±°C)		2.0

**Turbidity**

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

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0	--
4	4.1	2.5
10	10.4	4.0
20	20.3	1.5
50	49.3	-1.4
100	100.5	0.5
Tolerance Limit (±%)		10.0

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

  
 Mr. Fung Lim Chee, Richard  
 General Manager -  
 Greater China & Hong Kong

# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION



**Work Order:** HK1331508  
**Date of Issue:** 18/11/2013  
**Client:** AECOM ASIA COMPANY LIMITED

**Equipment Type:** YSI Sonde  
**Brand Name:** YSI  
**Model No.:** 6820 V2  
**Serial No.:** 12A101545  
**Equipment No.:** W.026.35  
**Date of Calibration:** 14 November, 2013      **Date of next Calibration:** 14 February, 2014

**Parameters:**

**Conductivity**

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

Expected Reading (uS/cm)	Displayed Reading (uS/cm )	Tolerance (%)
146.9	150.5	2.5
6667	6460	-3.1
12890	12710	-1.4
58670	58120	-0.9
Tolerance Limit (±%)		10.0

**Dissolved Oxygen**

**Method Ref: APHA (21st edition), 4500O: G**

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
3.49	3.51	0.02
5.05	5.11	0.06
7.59	7.54	-0.05
Tolerance Limit (±mg/L)		0.20

**pH Value**

**Method Ref: APHA 21st Ed. 4500H:B**

Expected Reading (pH Unit)	Displayed Reading (pH Unit)	Tolerance (pH unit)
4.0	3.94	-0.06
7.0	6.98	-0.02
10.0	9.99	-0.01
Tolerance Limit (±pH unit)		0.20

**Salinity**

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

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.01	--
10	9.77	-2.3
20	19.40	-3.0
30	29.73	-0.9
Tolerance Limit (±%)		10.0

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

  
 Mr. Fung Lim Chee, Richard  
 General Manager  
 Greater China & Hong Kong

# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

**Work Order:** HK1331508  
**Date of Issue:** 18/11/2013  
**Client:** AECOM ASIA COMPANY LIMITED



**Equipment Type:** YSI Sonde  
**Brand Name:** YSI  
**Model No.:** 6820 V2  
**Serial No.:** 12A101545  
**Equipment No.:** W.026.35  
**Date of Calibration:** 14 November, 2013      **Date of next Calibration:** 14 February, 2014

## Parameters:

### Temperature

**Method Ref: Section 6 of International Accreditation New Zealand Technical Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.**

Expected Reading (°C)	Displayed Reading (°C)	Tolerance (°C)
16.5	16.42	-0.1
26.0	26.51	0.5
38.0	38.22	0.2
Tolerance Limit (±°C)		2.0

### Turbidity

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

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0	--
4	3.8	-5.0
10	9.9	-1.0
20	19.2	-4.0
50	48.0	-4.0
100	99.1	-0.9
Tolerance Limit (±%)		10.0

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

**Hong Kong Boundary Crossing Facilities – Reclamation Works  
Impact Monitoring Schedule for Jan 2014**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1-Jan	2-Jan	3-Jan	4-Jan
			Mid-Flood 7:39 Mid-Ebb 13:04	24-hour TSP 1-hour TSP Noise	Mid-Flood 9:09 Mid-Ebb 14:38	
5-Jan	6-Jan	7-Jan	8-Jan	9-Jan	10-Jan	11-Jan
	Mid-Flood 11:20 Mid-Ebb 17:12  Dolphin Monitoring	24-hour TSP 1-hour TSP Noise  Dolphin Monitoring	Mid-Flood 12:54 Mid-Ebb 19:29	Dolphin Monitoring	Mid-Ebb 8:11 Mid-Flood 14:29	
12-Jan	13-Jan	14-Jan	15-Jan	16-Jan	17-Jan	18-Jan
	Mid-Ebb 11:36 Mid-Flood 16:43  24-hour TSP 1-hour TSP Noise  Dolphin Monitoring		Mid-Flood 7:36 Mid-Ebb 12:44		Mid-Flood 8:30 Mid-Ebb 13:44	24-hour TSP 1-hour TSP
19-Jan	20-Jan	21-Jan	22-Jan	23-Jan	24-Jan	25-Jan
	Mid-Flood 9:46 Mid-Ebb 15:21		Mid-Flood 10:51 Mid-Ebb 16:48		Mid-Ebb 5:22 Mid-Ebb 12:14  24-hour TSP 1-hour TSP Noise	
26-Jan	27-Jan	28-Jan	29-Jan	30-Jan	31-Jan	1-Feb
	Mid-Ebb 10:09 Mid-Flood 15:13		Mid-Ebb 12:04 Mid-Flood 17:12  24-hour TSP 1-hour TSP Noise			*Mid-Flood 8:43 *Mid-Ebb 14:19

The schedule is subject to change due to unforeseeable circumstances (e.g. adverse weather, etc)

\*As informed by the Contractor, marine works was conducted at HKBCF on 1 Feb 14, the impact water quality monitoring work scheduled on 31 Jan 14 at mid Flood tide 08:04 and Mid-ebb 13:36 was rescheduled to 1 Feb 14 mid Flood tide 08:43 and Mid-ebb tide 14:19.

**Hong Kong Boundary Crossing Facilities – Reclamation Works  
Tentative Impact Monitoring Schedule for Feb 2014**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1-Feb Mid-Flood 8:43 Mid-Ebb 14:19
2-Feb	3-Feb	4-Feb	5-Feb	6-Feb	7-Feb	8-Feb
	Mid-Flood 9:56 Mid-Ebb 15:48	24-hour TSP 1-hour TSP Noise	Mid-Flood 11:02 Mid-Ebb 17:29		Mid-Flood 12:23 Mid-Ebb 19:45	
9-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb	15-Feb
	Mid-Flood 10:41 Mid-Ebb 23:03  24-hour TSP 1-hour TSP Noise  Dolphin Monitoring	Dolphin Monitoring	Mid-Ebb 11:56 Mid-Flood 17:11		Mid-Flood 7:29 Mid-Ebb 12:52	24-hour TSP 1-hour TSP
16-Feb	17-Feb	18-Feb	19-Feb	20-Feb	21-Feb	22-Feb
Dolphin Monitoring	Mid-Flood 8:37 Mid-Ebb 14:21  Dolphin Monitoring	Dolphin Monitoring	Mid-Flood 9:29 Mid-Ebb 15:31		Mid-Flood 10:32 Mid-Ebb 17:03  24-hour TSP 1-hour TSP Noise	
23-Feb	24-Feb	25-Feb	26-Feb	27-Feb	28-Feb	
	Mid-Flood 13:25 Mid-Ebb 20:57		Mid-Ebb 11:04 Mid-Flood 16:08	24-hour TSP 1-hour TSP Noise	Mid-Ebb 12:35 Mid-Flood 18:02	

The schedule is subject to change due to unforeseeable circumstances (e.g. adverse weather, etc)



## Appendix G Impact Air Quality Monitoring Results

### 1-hour TSP Monitoring Results at Station AMS2 - Tung Chung Development Pier

Date	Session	Weather Condition	averaged Wind Speed (m/s)*	Time (hh:mm)	Conc. ( $\mu\text{g}/\text{m}^3$ )	Actino Level ( $\mu\text{g}/\text{m}^3$ )	Limit Level ( $\mu\text{g}/\text{m}^3$ )
2-Jan-14	1st Hour	Sunny	0.0	10:15	84	374	500
2-Jan-14	2nd Hour	Sunny	0.0	11:15	85	374	500
2-Jan-14	3rd Hour	Sunny	0.1	12:15	86	374	500
7-Jan-14	1st Hour	Fine	7.2	9:55	84	374	500
7-Jan-14	2nd Hour	Fine	4.9	10:55	83	374	500
7-Jan-14	3rd Hour	Fine	4.7	11:55	85	374	500
13-Jan-14	1st Hour	Fine	0.5	10:24	85	374	500
13-Jan-14	2nd Hour	Fine	0.2	11:24	84	374	500
13-Jan-14	3rd Hour	Fine	2.3	12:24	85	374	500
18-Jan-14	1st Hour	Sunny	0.6	11:28	83	374	500
18-Jan-14	2nd Hour	Sunny	-0.1	12:28	83	374	500
18-Jan-14	3rd Hour	Sunny	-0.1	13:28	82	374	500
24-Jan-14	1st Hour	Sunny	3.2	10:10	81	374	500
24-Jan-14	2nd Hour	Sunny	5.5	11:10	83	374	500
24-Jan-14	3rd Hour	Sunny	4.6	12:10	81	374	500
29-Jan-14	1st Hour	Sunny	2.9	10:14	79	374	500
29-Jan-14	2nd Hour	Sunny	5.4	11:14	82	374	500
29-Jan-14	3rd Hour	Sunny	2.4	12:14	79	374	500
					Average	83	
					Min	79	
					Max	86	

### 1-hour TSP Monitoring Results at Station AMS3A - Site Boundary of Site Office (WA2)

Date	Session	Weather Condition	averaged Wind Speed (m/s)*	Time (hh:mm)	Conc. ( $\mu\text{g}/\text{m}^3$ )	Actino Level ( $\mu\text{g}/\text{m}^3$ ) ^	Limit Level ( $\mu\text{g}/\text{m}^3$ )
2-Jan-14	1st Hour	Sunny	0.0	10:30	85	368	500
2-Jan-14	2nd Hour	Sunny	0.0	11:30	87	368	500
2-Jan-14	3rd Hour	Sunny	0.1	12:30	88	368	500
7-Jan-14	1st Hour	Fine	7.2	10:04	84	368	500
7-Jan-14	2nd Hour	Fine	4.9	11:04	83	368	500
7-Jan-14	3rd Hour	Fine	4.7	12:04	83	368	500
13-Jan-14	1st Hour	Fine	0.5	11:20	86	368	500
13-Jan-14	2nd Hour	Fine	0.2	12:20	85	368	500
13-Jan-14	3rd Hour	Fine	2.3	13:20	85	368	500
18-Jan-14	1st Hour	Sunny	0.6	11:38	84	368	500
18-Jan-14	2nd Hour	Sunny	-0.1	12:38	83	368	500
18-Jan-14	3rd Hour	Sunny	-0.1	13:38	85	368	500
24-Jan-14	1st Hour	Sunny	4.6	11:40	84	368	500
24-Jan-14	2nd Hour	Sunny	3.7	12:40	82	368	500
24-Jan-14	3rd Hour	Sunny	1.2	13:40	81	368	500
29-Jan-14	1st Hour	Sunny	2.9	10:25	83	368	500
29-Jan-14	2nd Hour	Sunny	5.4	11:25	84	368	500
29-Jan-14	3rd Hour	Sunny	2.4	13:25	82	368	500
					Average	84	
					Min	81	
					Max	88	

Remarks:

^ Action Level set out at AMS3 Ho Yu College is adopted.

### 1-hour TSP Monitoring Results at Station AMS7 - Hong Kong SkyCity Marriott Hotel

Date	Session	Weather Condition	averaged Wind Speed (m/s)*	Time (hh:mm)	Conc. ( $\mu\text{g}/\text{m}^3$ )	Actino Level ( $\mu\text{g}/\text{m}^3$ )	Limit Level ( $\mu\text{g}/\text{m}^3$ )
2-Jan-14	1st Hour	Sunny	0.0	10:00	82	370	500
2-Jan-14	2nd Hour	Sunny	0.0	11:00	84	370	500
2-Jan-14	3rd Hour	Sunny	0.1	12:00	84	370	500
7-Jan-14	1st Hour	Fine	7.2	9:43	83	370	500
7-Jan-14	2nd Hour	Fine	4.9	10:43	83	370	500
7-Jan-14	3rd Hour	Fine	4.7	11:43	82	370	500
13-Jan-14	1st Hour	Fine	0.5	10:10	85	370	500
13-Jan-14	2nd Hour	Fine	0.2	11:10	85	370	500
13-Jan-14	3rd Hour	Fine	2.3	12:10	84	370	500
18-Jan-14	1st Hour	Sunny	0.6	11:15	84	370	500
18-Jan-14	2nd Hour	Sunny	-0.1	12:15	83	370	500
18-Jan-14	3rd Hour	Sunny	-0.1	13:15	83	370	500
24-Jan-14	1st Hour	Sunny	5.5	10:42	81	370	500
24-Jan-14	2nd Hour	Sunny	4.6	11:42	82	370	500
24-Jan-14	3rd Hour	Sunny	3.7	12:42	81	370	500
29-Jan-14	1st Hour	Sunny	2.9	10:03	81	370	500
29-Jan-14	2nd Hour	Sunny	5.4	11:03	84	370	500
29-Jan-14	3rd Hour	Sunny	2.4	12:03	82	370	500
					Average	83	
					Min	81	
					Max	85	

## Appendix G Impact Air Quality Monitoring Results

### 24-hour TSP Monitoring Results at Station AMS2 - Tung Chung Development Pier

Start Date	Start Time	End Date	End Time	Weather Condition	Air Temp. (°C)	Atmospheric Pressure(hPa)	Flow Rate (m <sup>3</sup> /min.)		Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	Filter Weight (g)		Particulate weight(g)	Elapse Time		Sampling Time(hrs.)	Conc. (µg/m <sup>3</sup> )	Actino Level (µg/m <sup>3</sup> )	Limit Level (µg/m <sup>3</sup> )
							Initial	Final			Initial	Final		Initial	Final				
2-Jan-14	9:00	3-Jan-14	9:00	Sunny	16.8	1016.8	1.33	1.33	1.33	1912.3	2.7354	2.9155	0.1801	2789.84	2813.84	24.00	94	176	260
7-Jan-14	16:00	8-Jan-14	16:00	Fine	18.8	1017.9	1.33	1.33	1.33	1912.3	2.7033	3.0579	0.3546	2837.84	2861.84	24.00	<b>185</b>	176	260
13-Jan-14	9:00	14-Jan-14	9:00	Sunny	13.9	1023.6	1.33	1.33	1.33	1912.3	2.7307	2.8911	0.1604	2861.84	2885.84	24.00	84	176	260
17-Jan-14	16:00	18-Jan-14	16:00	Sunny	19.7	1026.1	1.33	1.33	1.33	1912.3	2.6728	2.9101	0.2373	2885.84	2909.84	24.00	124	176	260
23-Jan-14	16:00	24-Jan-14	16:00	Sunny	13.3	1023.2	1.33	1.33	1.33	1912.3	2.6988	2.8254	0.1266	2909.84	2933.84	24.00	66	176	260
28-Jan-14	16:00	29-Jan-14	16:00	Fine	17.8	1019.9	1.33	1.33	1.33	1912.3	2.6247	2.8272	0.2025	2933.84	2957.84	24.00	106	176	260
																Average	110		
																Min	66		
																Max	185		

\* Due to malfunction of the HVS, monitoring on 6-Jan-14 was rescheduled to 7-Jan-14.

### 24-hour TSP Monitoring Results at Station AMS3A - Site Boundary of Site Office (WA2)

Start Date	Start Time	End Date	End Time	Weather Condition	Air Temp. (°C)	Atmospheric Pressure(hPa)	Flow Rate (m <sup>3</sup> /min.)		Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	Filter Weight (g)		Particulate weight(g)	Elapse Time		Sampling Time(hrs.)	Conc. (µg/m <sup>3</sup> )	Actino Level (µg/m <sup>3</sup> )	Limit Level (µg/m <sup>3</sup> )
							Initial	Final			Initial	Final		Initial	Final				
2-Jan-14	9:00	3-Jan-14	9:00	Sunny	16.8	1016.8	1.32	1.32	1.32	1905.1	2.7412	3.0538	0.3126	2750.30	2774.30	24.00	164	167	260
6-Jan-14	16:00	7-Jan-14	16:00	Sunny	17.8	1016.8	1.33	1.33	1.33	1912.3	2.7122	3.6714	0.9592	2774.30	2798.30	24.00	<b>502</b>	167	260
13-Jan-14	9:00	14-Jan-14	9:00	Sunny	13.9	1023.6	1.33	1.33	1.33	1912.3	2.6934	2.9875	0.2941	2798.30	2822.30	24.00	154	167	260
17-Jan-14	16:00	18-Jan-14	16:00	Sunny	19.7	1026.1	1.32	1.32	1.32	1905.1	2.6838	3.0167	0.3329	2822.30	2846.30	24.00	175	167	260
23-Jan-14	16:00	24-Jan-14	16:00	Sunny	13.3	1023.2	1.33	1.33	1.33	1912.3	2.5824	3.2981	0.7157	2846.30	2870.30	24.00	<b>374</b>	167	260
28-Jan-14	16:00	29-Jan-14	16:00	Fine	17.8	1019.9	1.32	1.32	1.32	1865.4	2.6536	2.9951	0.3415	2870.30	2893.80	23.50	<b>183</b>	167	260
																Average	259		
																Min	154		
																Max	502		

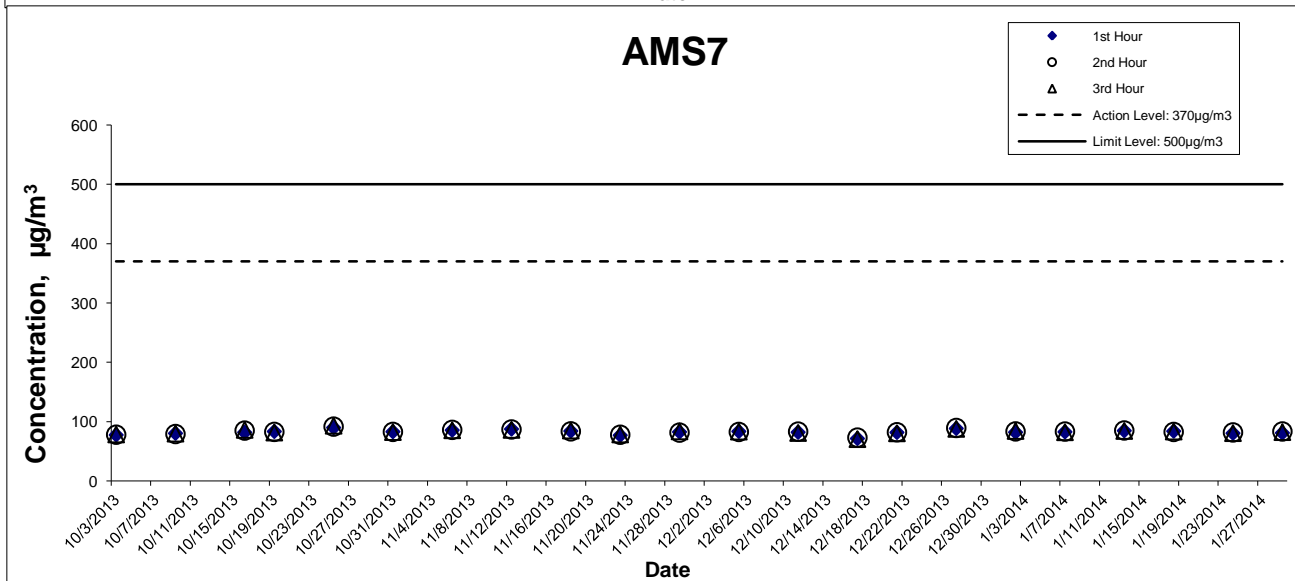
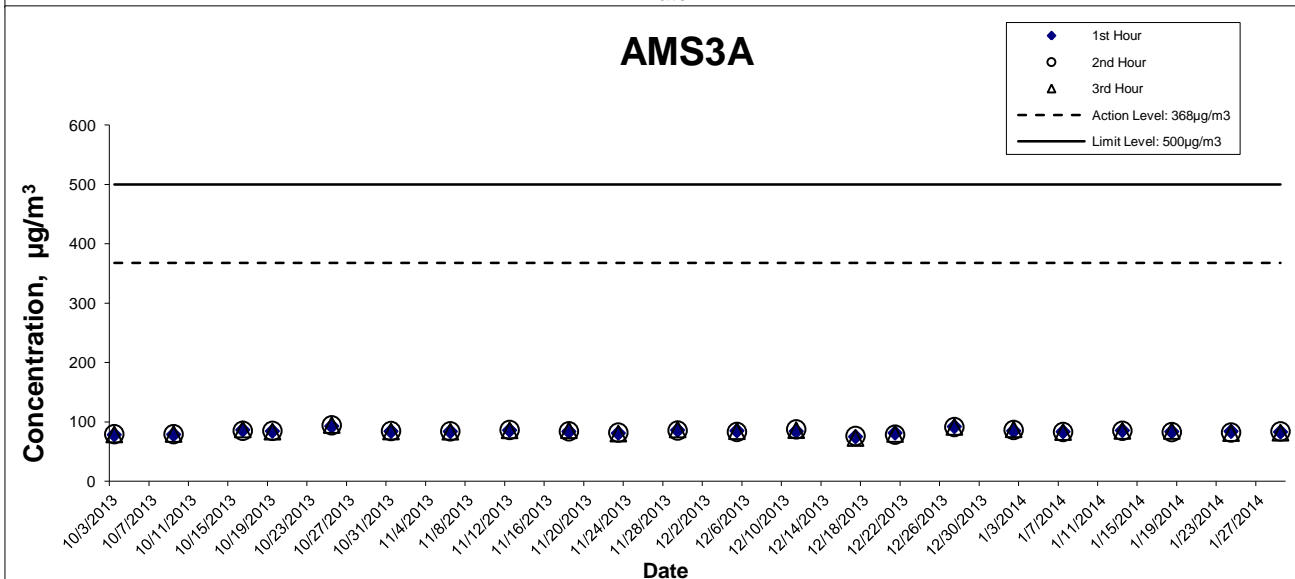
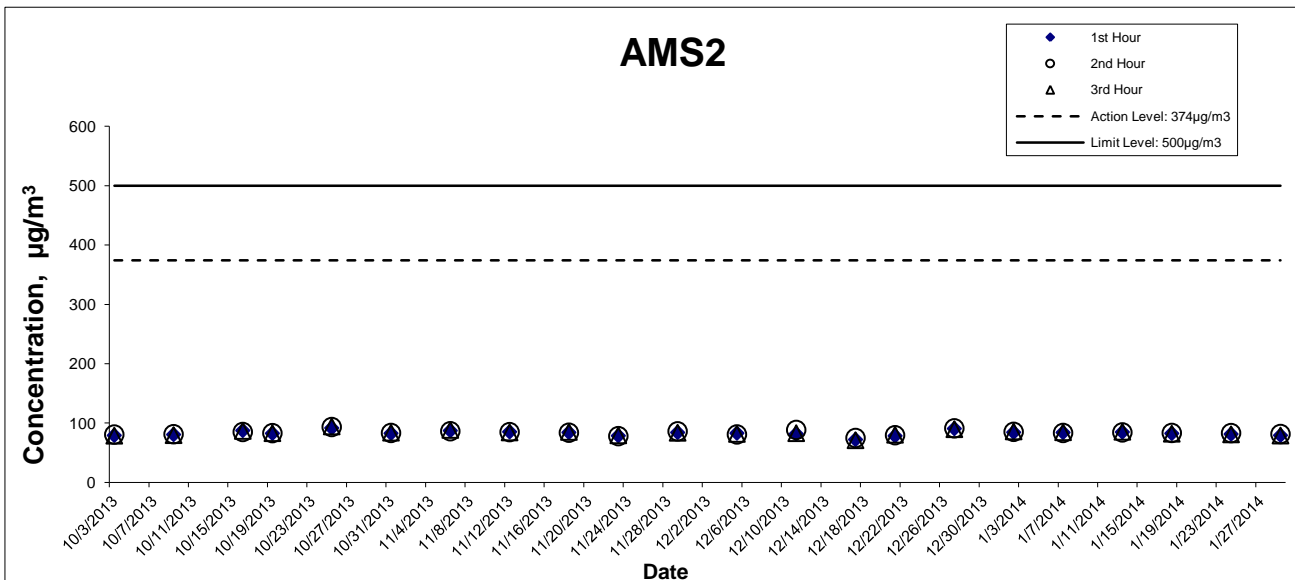
Remarks:

^ Action Level set out at AMS3 Ho Yu College is adopted.

### 24-hour TSP Monitoring Results at Station AMS7 - Hong Kong SkyCity Marriott Hotel

Start Date	Start Time	End Date	End Time	Weather Condition	Air Temp. (°C)	Atmospheric Pressure(hPa)	Flow Rate (m <sup>3</sup> /min.)		Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	Filter Weight (g)		Particulate weight(g)	Elapse Time		Sampling Time(hrs.)	Conc. (µg/m <sup>3</sup> )	Actino Level (µg/m <sup>3</sup> )	Limit Level (µg/m <sup>3</sup> )
							Initial	Final			Initial	Final		Initial	Final				
2-Jan-14	9:00	3-Jan-14	9:00	Sunny	16.8	1016.8	1.33	1.33	1.33	1916.6	2.7386	2.9560	0.2174	2771.98	2795.98	24.00	113	183	260
6-Jan-14	16:00	7-Jan-14	16:00	Sunny	17.8	1016.8	1.33	1.33	1.33	1912.3	2.6314	2.8861	0.2547	2795.98	2819.98	24.00	133	183	260
13-Jan-14	9:00	14-Jan-14	9:00	Sunny	13.9	1023.6	1.33	1.33	1.33	1912.3	2.6927	2.8489	0.1562	2819.98	2843.98	24.00	82	183	260
17-Jan-14	16:00	18-Jan-14	16:00	Sunny	19.7	1026.1	1.33	1.33	1.33	1916.6	2.6160	3.0133	0.3973	2843.98	2867.98	24.00	<b>207</b>	183	260
23-Jan-14	16:00	24-Jan-14	16:00	Sunny	13.3	1023.2	1.33	1.33	1.33	1912.3	2.6643	2.8723	0.2080	2867.98	2891.98	24.00	109	183	260
28-Jan-14	16:00	29-Jan-14	16:00	Fine	17.8	1019.9	1.33	1.33	1.33	1916.6	2.6138	2.8601	0.2463	2891.98	2915.98	24.00	129	183	260
																Average	132		
																Min	82		
																Max	207		

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

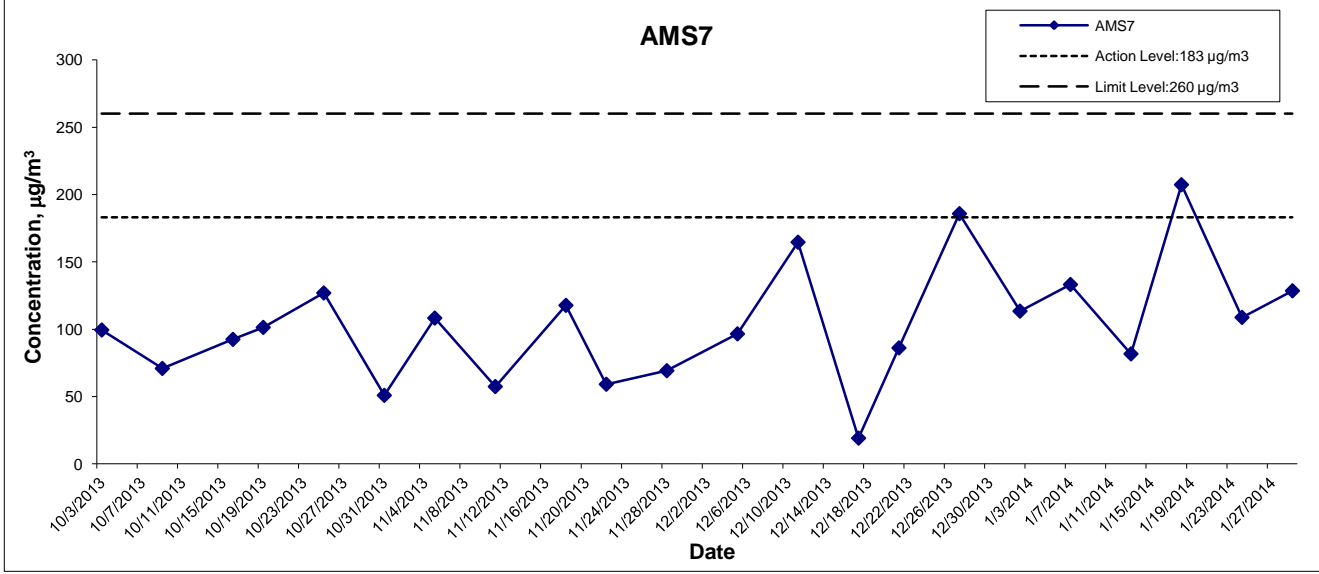
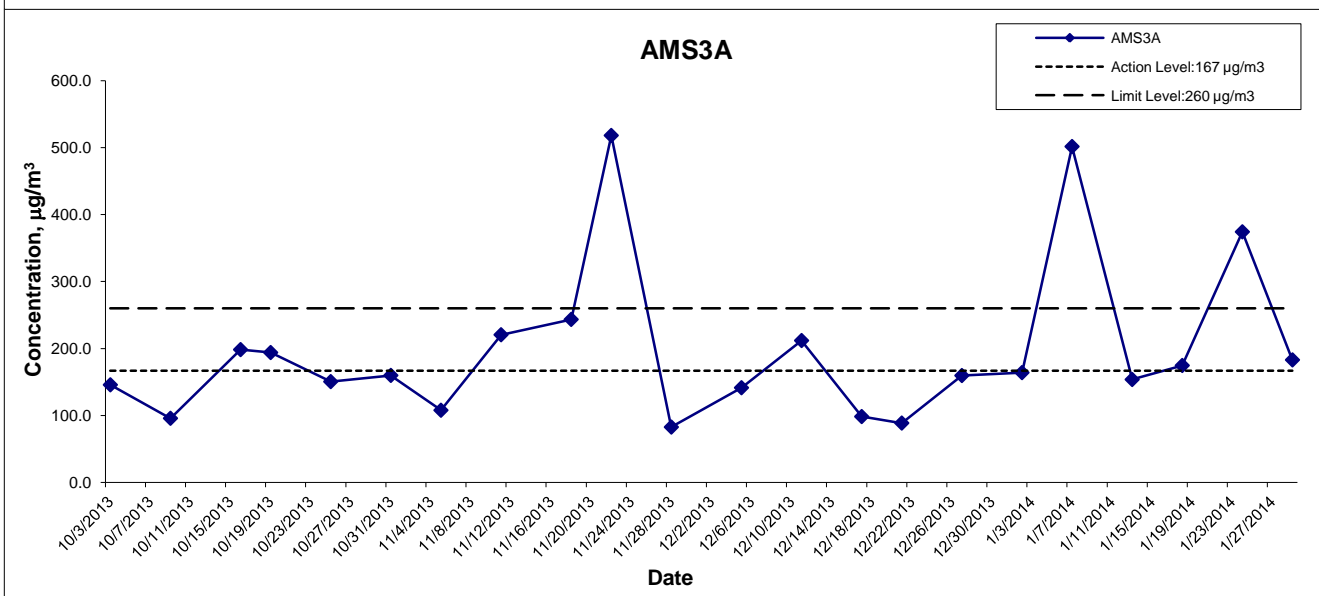
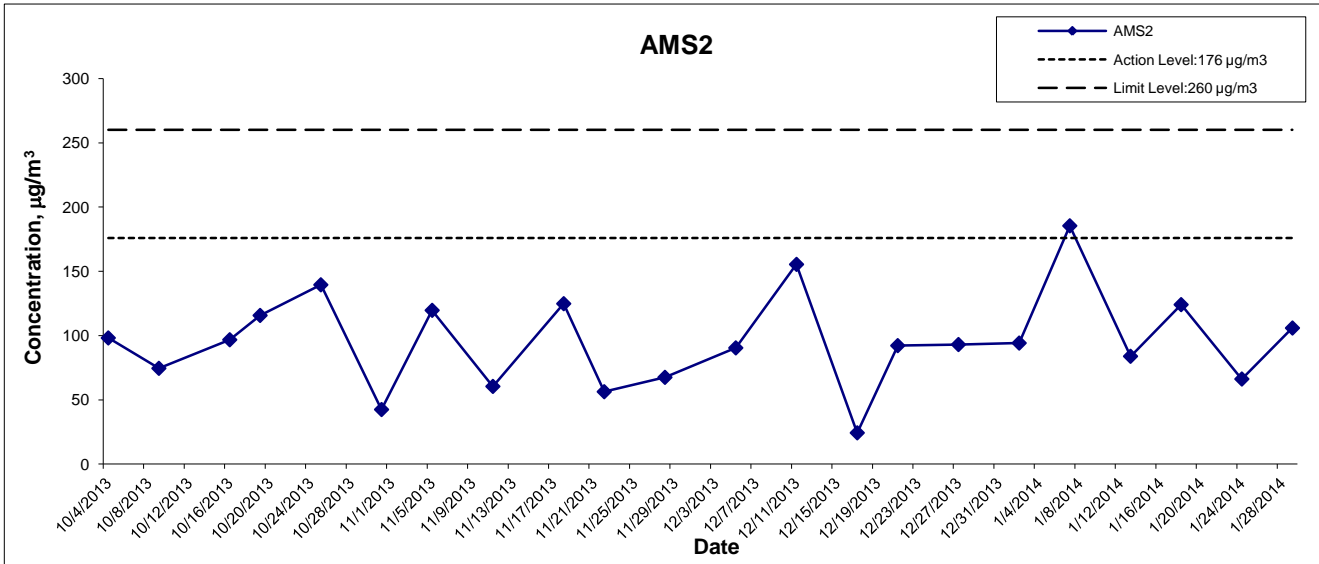


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HONG KONG - ZHUHAI - MACAO BRIDGE  
 HONG KONG BOUNDARY CROSSING FACILITIES  
 - RECLAMATION WORKS

**Graphical Presentation of Impact 1-hour TSP  
 Monitoring Results**





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HONG KONG - ZHUHAI - MACAO BRIDGE  
 HONG KONG BOUNDARY CROSSING FACILITIES  
 - RECLAMATION WORKS

## Graphical Presentation of Impact 24-hour TSP Monitoring Results



r Monitoring Periods on Monitoring Dates in January 2014

WIND DATA			
Date	Time	Averaged Wind Speed (m/s)	Averaged Wind Direction (degrees)
01/02/14	08:43:42	0.00	220.78
01/02/14	09:43:42	-0.04	297.39
01/02/14	10:43:42	-0.03	310.03
01/02/14	11:43:42	0.10	313.39
01/02/14	12:43:42	0.00	308.02
01/02/14	13:43:42	0.35	307.24
01/02/14	14:43:42	-0.08	353.99
01/02/14	15:43:42	-0.08	34.00
01/02/14	16:43:42	0.80	100.21
01/02/14	17:43:42	-0.01	111.06
01/02/14	18:43:42	0.88	76.73
01/02/14	19:43:42	0.00	251.65
01/02/14	20:43:42	2.48	172.24
01/02/14	21:43:42	0.06	139.81
01/02/14	22:43:42	0.45	81.76
01/02/14	23:43:42	0.06	118.67
01/03/14	00:43:42	0.00	230.85
01/03/14	01:43:42	0.00	171.01
01/03/14	02:43:42	0.00	143.61
01/03/14	03:43:42	0.03	224.36
01/03/14	04:43:42	0.00	296.72
01/03/14	05:43:42	0.00	255.57
01/03/14	06:43:42	0.00	223.58
01/03/14	07:43:42	0.00	257.35
01/03/14	08:43:42	0.01	253.33
01/03/14	09:43:42	-0.13	200.76
01/06/14	15:43:42	5.72	126.05
01/06/14	16:43:42	1.82	130.75
01/06/14	17:43:42	2.55	121.80
01/06/14	18:43:42	4.28	149.31
01/06/14	19:43:42	4.48	146.52
01/06/14	20:43:42	3.01	110.28
01/06/14	21:43:42	2.03	84.89
01/06/14	22:43:42	2.53	116.54
01/06/14	23:43:42	3.37	100.32
01/07/14	00:43:42	4.90	127.17
01/07/14	01:43:42	2.83	141.71
01/07/14	02:43:42	5.19	138.13
01/07/14	03:43:42	4.01	142.71
01/07/14	04:43:42	4.83	162.29
01/07/14	05:43:42	6.21	167.32
01/07/14	06:43:42	3.99	142.27
01/07/14	07:43:42	5.40	141.82
01/07/14	08:43:42	5.76	131.53
01/07/14	09:43:42	7.27	112.40
01/07/14	10:43:42	4.88	126.05
01/07/14	12:43:42	4.70	101.78
01/07/14	13:43:42	4.32	95.63
01/07/14	14:43:42	3.62	99.21
01/07/14	15:43:42	3.73	100.32
01/07/14	16:43:42	3.93	110.06
01/13/14	09:43:42	0.48	354.55
01/13/14	10:43:42	0.53	319.54
01/13/14	11:43:42	0.17	277.71
01/13/14	11:59:21	2.27	349.29
01/13/14	12:59:21	2.53	326.03
01/13/14	13:59:21	4.32	341.24
01/13/14	14:59:21	0.85	352.65
01/13/14	15:59:21	0.78	323.34
01/13/14	16:59:21	1.83	9.39
01/13/14	17:59:21	0.67	318.20
01/13/14	18:59:21	0.97	357.23
01/13/14	19:59:21	0.24	356.78
01/13/14	20:59:21	1.54	74.82
01/13/14	21:59:21	0.28	286.21
01/13/14	22:59:21	2.20	74.38
01/13/14	23:59:21	0.15	23.93
01/14/14	00:59:21	0.90	34.11
01/14/14	01:59:21	0.13	52.12
01/14/14	02:59:21	0.01	83.21
01/14/14	03:59:21	1.02	354.44
01/14/14	04:59:21	0.41	36.24
01/14/14	05:59:21	1.27	45.30
01/14/14	06:59:21	0.03	9.62
01/14/14	07:59:21	0.90	30.31
01/14/14	08:59:21	0.18	34.67
01/17/14	15:59:21	1.02	303.88
01/17/14	16:59:21	-0.11	236.66
01/17/14	17:59:21	-0.07	90.26
01/17/14	18:59:21	-0.06	161.17
01/17/14	19:59:21	-0.04	165.53
01/17/14	20:59:21	-0.04	223.69
01/17/14	21:59:21	-0.04	141.04
01/17/14	22:59:21	-0.03	94.29
01/17/14	23:59:21	0.57	119.23
01/18/14	00:59:21	1.45	134.21
01/18/14	01:59:21	3.18	73.93
01/18/14	02:59:21	1.62	85.56

r Monitoring Periods on Monitoring Dates in January 2014

WIND DATA			
Date	Time	Averaged Wind Speed (m/s)	Averaged Wind Direction (degrees)
01/18/14	04:59:21	0.62	112.52
01/18/14	05:59:21	-0.01	184.99
01/18/14	06:59:21	0.43	161.73
01/18/14	07:59:21	0.01	253.33
01/18/14	08:59:21	0.00	167.88
01/18/14	09:59:21	-0.13	310.70
01/18/14	10:59:21	-0.15	320.77
01/18/14	11:59:21	0.59	53.35
01/18/14	12:59:21	-0.10	27.85
01/18/14	13:59:21	-0.08	345.38
01/18/14	14:59:21	-0.18	311.60
01/18/14	15:59:21	-0.18	25.05
01/23/14	15:59:21	0.42	71.36
01/23/14	16:59:21	1.48	142.94
01/23/14	17:59:21	0.64	167.54
01/23/14	18:59:21	0.21	215.08
01/23/14	19:59:21	1.06	132.20
01/23/14	20:59:21	1.37	134.10
01/23/14	21:59:21	3.57	144.62
01/23/14	22:59:21	2.14	162.17
01/23/14	23:59:21	1.69	173.69
01/24/14	00:59:21	1.78	156.25
01/24/14	01:59:21	1.27	167.32
01/24/14	02:59:21	0.98	164.86
01/24/14	03:59:21	1.54	148.64
01/24/14	04:59:21	1.94	178.17
01/24/14	05:59:21	3.68	137.01
01/24/14	06:59:21	1.94	128.17
01/24/14	07:59:21	3.15	140.48
01/24/14	08:59:21	3.44	133.32
01/24/14	09:59:21	3.15	111.51
01/24/14	10:59:21	5.46	116.09
01/24/14	11:31:06	4.56	93.84
01/24/14	12:31:06	3.68	143.05
01/24/14	13:31:06	1.17	127.06
01/24/14	14:31:06	3.02	147.97
01/24/14	15:31:06	6.64	176.16
01/24/14	16:31:06	3.79	152.22
01/28/14	15:31:06	0.97	285.99
01/28/14	16:31:06	-0.18	301.87
01/28/14	17:31:06	0.03	73.37
01/28/14	18:31:06	-0.04	289.01
01/28/14	19:31:06	-0.04	243.82
01/28/14	20:31:06	-0.03	169.00
01/28/14	21:31:06	1.09	170.56
01/28/14	22:31:06	-0.04	136.11
01/28/14	23:31:06	-0.04	172.35
01/29/14	00:31:06	-0.04	122.69
01/29/14	01:31:06	-0.04	-49.32
01/29/14	02:31:06	-0.04	178.84
01/29/14	03:31:06	-0.03	192.48
01/29/14	04:31:06	-0.03	257.58
01/29/14	05:31:06	-0.03	170.34
01/29/14	06:31:06	0.10	207.02
01/29/14	07:31:06	-0.03	185.10
01/29/14	08:31:06	1.30	163.52
01/29/14	09:31:06	2.42	148.31
01/29/14	10:31:06	2.87	125.94
01/29/14	11:31:06	5.44	115.65
01/29/14	12:31:06	2.43	126.38
01/29/14	14:31:06	2.00	66.32
01/29/14	15:31:06	1.71	327.26
01/29/14	16:31:06	0.84	15.21

## Appendix I Impact Daytime Construction Noise Monitoring Results

Daytime Noise Monitoring Results at Station NMS2 - Seaview Crescent Tower 1

Date	Weather Condition	Noise Level for 30-min, dB(A) <sup>#</sup>				Averaged Wind Speed (m/s)	Baseline Noise Level, dB(A)	Limit Level, dB(A)	Exceedance (Y/N)
		Time	L90	L10	Leq				
2-Jan-14	Sunny	10:40	63	70	67	<5m/s	62.9	75	N
7-Jan-14	Fine	10:50	62	68	65	<5m/s	62.9	75	N
13-Jan-14	Fine	10:40	63	69	66	<5m/s	62.9	75	N
24-Jan-14	Sunny	10:40	61	69	66	<5m/s	62.9	75	N
29-Jan-14	Fine	10:11	62	71	67	<5m/s	62.9	75	N
		Min	61	68	65				
		Max	63	71	67				
		Average	--	--	67				

Daytime Noise Monitoring Results at Station NMS3A - Site Boundary of Site Office (WA2)

Date	Weather Condition	Noise Level for 30-min, dB(A) <sup>#</sup>				Averaged Wind Speed (m/s)	Baseline Noise Level, dB(A) ^	Limit Level, dB(A)**	Exceedance (Y/N)
		Time	L90	L10	Leq				
2-Jan-14	Sunny	10:25	62	68	67	<5m/s	66.3	70	N
7-Jan-14	Fine	11:35	55	64	61	<5m/s	66.3	70	N
13-Jan-14	Fine	11:45	53	65	62	<5m/s	66.3	70	N
24-Jan-14	Sunny	11:36	59	66	62	<5m/s	66.3	70	N
29-Jan-14	Fine	11:07	64	69	66	<5m/s	66.3	70	N
		Min	53	64	61				
		Max	64	69	67				
		Average	--	--	64				

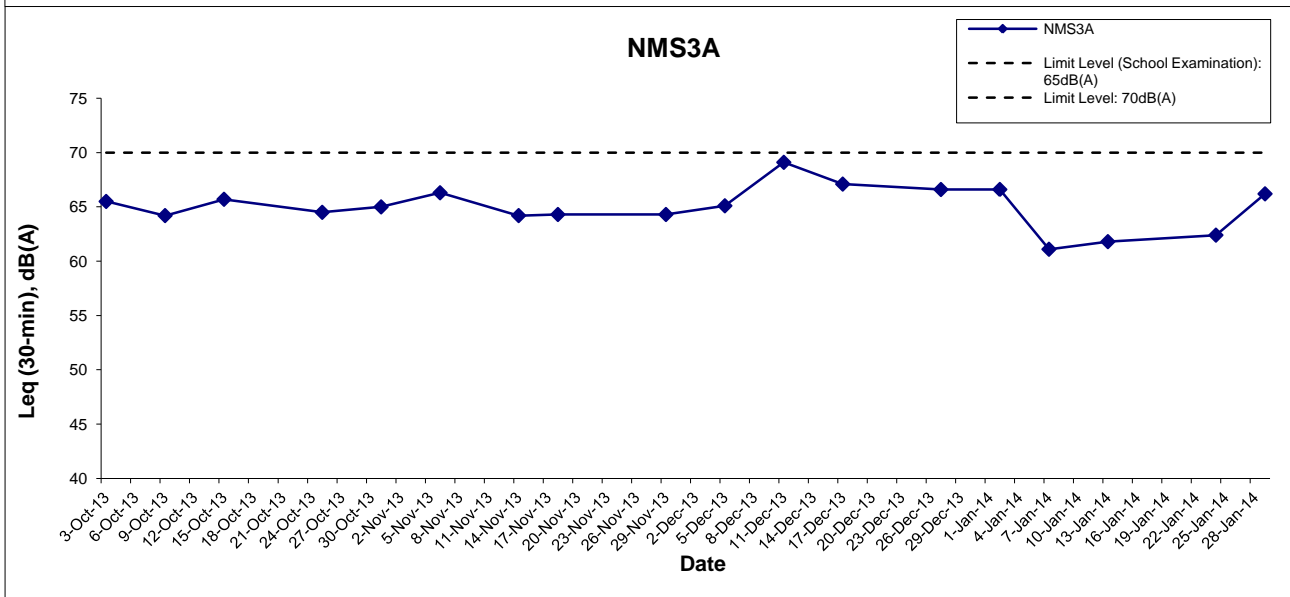
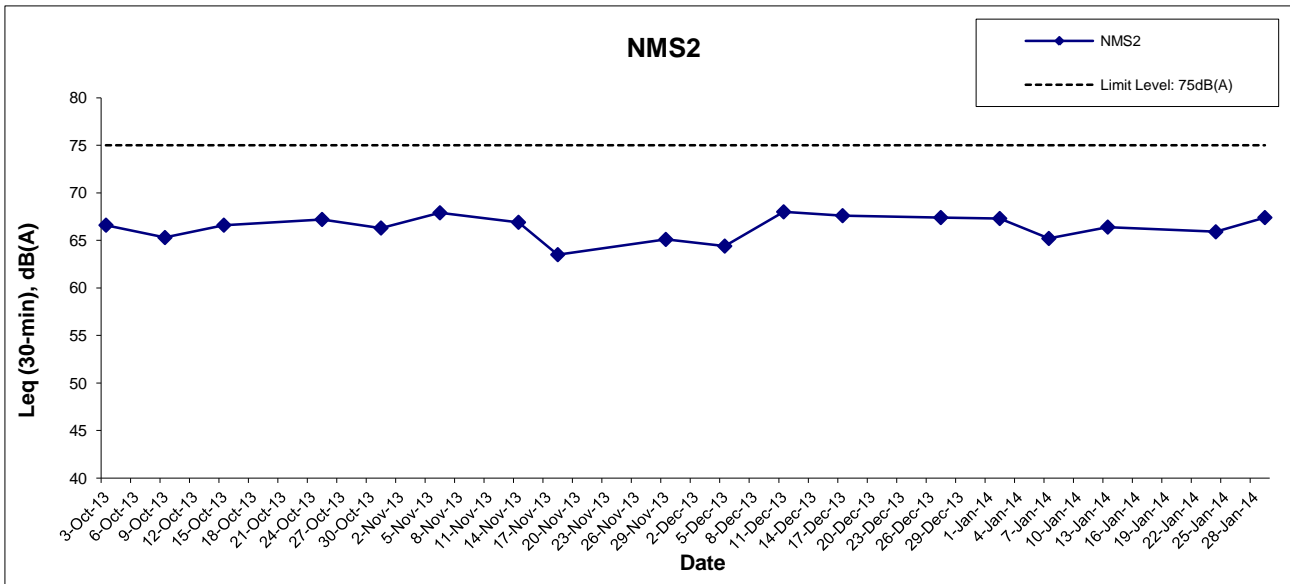
Remark:

<sup>#</sup> A correction of +3dB(A) was made to the free field measurement.

\* Façade measurement.

^ Averaged baseline noise level recorded at NMS3 Ho Yu College is adopted.

\*\* Limit Level of 70dB(A) applies to education institutes while 65dB(A) applies during school examination period.



Remarks: Effective from July 2012, the Limit Level at NMS3A was revised to 70dB(A). Daytime noise Limit Level of 70 dB(A) applies to education institutions, while 65dB(A) applies during school examination period.

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**Appendix J - Marine Water Quality Monitoring Results**

**Water Quality Monitoring Results at CS(Mf)3 - Mid-EbbTide**

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*	
1-Jan-14	Sunny	Moderate	12:30	7.2	Surface	1.0	16.9 17.0	16.9	8.2 8.2	8.2	33.4 33.4	33.4	97.9 98.0	98.0	7.7 7.8	7.7	7.7	3.5 3.3	3.4	4.5	7.7 8.8	8.3	8.8
					Middle	3.6	16.9 16.8	16.9	8.2 8.2	8.2	33.4 33.4	33.4	97.5 97.2	97.4	7.7 7.7	7.7		4.3 4.5	4.4		8.7 7.7	8.2	
					Bottom	6.2	16.7 16.8	16.7	8.2 8.2	8.2	33.4 33.4	33.4	96.9 97.2	97.1	7.7 7.7	7.7		5.9 5.3	5.6		9.2 10.8	10.0	
3-Jan-14	Sunny	Moderate	14:05	7.1	Surface	1.0	17.4 17.4	17.4	8.2 8.2	8.2	31.7 31.7	31.7	93.9 94.4	94.2	7.4 7.5	7.5	7.5	5.7 5.7	5.7	5.6	8.8 8.9	8.9	11.2
					Middle	3.6	17.2 17.1	17.2	8.2 8.2	8.2	32.0 31.8	31.9	94.6 93.7	94.2	7.5 7.5	7.5		5.7 5.9	5.8		11.4 11.9	11.7	
					Bottom	6.1	17.2 17.2	17.2	8.2 8.2	8.2	32.4 32.5	32.4	94.0 94.4	94.2	7.5 7.5	7.5		5.3 5.0	5.2		12.8 13.4	13.1	
6-Jan-14	Sunny	Moderate	16:37	6.9	Surface	1.0	17.2 17.2	17.2	8.2 8.2	8.2	31.7 31.7	31.7	94.7 94.6	94.7	7.5 7.5	7.5	7.5	4.3 4.5	4.4	4.8	8.6 8.1	8.4	9.0
					Middle	3.5	17.2 17.2	17.2	8.2 8.2	8.2	31.8 31.8	31.8	94.5 95.2	94.9	7.5 7.6	7.5		4.2 5.0	4.6		8.8 7.6	8.2	
					Bottom	5.9	17.2 17.2	17.2	8.2 8.2	8.2	31.9 31.9	31.9	94.2 95.7	95.0	7.5 7.6	7.5		5.1 5.5	5.3		9.9 10.7	10.3	
8-Jan-14	Fine	Moderate	19:09	6.4	Surface	1.0	17.5 17.5	17.5	8.2 8.2	8.2	29.8 29.9	29.9	92.3 92.4	92.4	7.4 7.4	7.4	7.4	4.4 4.5	4.5	4.5	7.7 9.0	8.4	8.9
					Middle	3.2	17.5 17.5	17.5	8.2 8.2	8.2	29.9 29.9	29.9	92.2 92.1	92.2	7.4 7.4	7.4		4.6 4.4	4.5		8.8 9.1	9.0	
					Bottom	5.4	17.5 17.5	17.5	8.2 8.2	8.2	29.9 29.9	29.9	92.2 92.1	92.2	7.4 7.4	7.4		4.5 4.5	4.5		8.3 10.1	9.2	
10-Jan-14	Fine	Moderate	08:47	6.6	Surface	1.0	17.0 17.0	17.0	8.2 8.2	8.2	31.9 31.9	31.9	93.5 92.4	93.0	7.5 7.4	7.4	7.4	6.6 6.5	6.6	7.0	8.2 7.6	7.9	8.8
					Middle	3.3	17.1 17.1	17.1	8.2 8.2	8.2	31.9 31.9	31.9	94.3 92.3	93.3	7.5 7.4	7.4		6.9 6.7	6.8		8.0 9.1	8.6	
					Bottom	5.6	17.2 17.1	17.1	8.2 8.2	8.2	32.2 32.1	32.1	96.0 92.8	94.4	7.6 7.4	7.5		7.7 7.3	7.5		10.5 9.5	10.0	
13-Jan-14	Sunny	Moderate	11:43	6.4	Surface	1.0	17.3 17.3	17.3	8.2 8.2	8.2	32.2 32.2	32.2	96.0 95.6	95.8	7.6 7.6	7.6	7.6	4.5 4.5	4.5	4.8	6.3 7.8	7.1	7.3
					Middle	3.2	17.3 17.2	17.3	8.2 8.2	8.2	32.2 32.3	32.3	95.4 96.0	95.7	7.6 7.6	7.6		4.8 5.0	4.9		6.6 7.5	7.1	
					Bottom	5.4	17.2 17.2	17.2	8.2 8.2	8.2	32.3 32.3	32.3	95.5 96.7	96.1	7.6 7.7	7.6		4.9 5.2	5.1		8.4 7.2	7.8	
15-Jan-14	Sunny	Moderate	11:56	7.2	Surface	1.0	16.7 16.7	16.7	8.3 8.3	8.3	33.1 33.1	33.1	94.4 94.3	94.4	7.5 7.5	7.5	7.5	6.3 6.3	6.3	6.5	8.1 7.9	8.0	8.3
					Middle	3.6	16.7 16.7	16.7	8.3 8.3	8.3	33.2 33.2	33.2	94.2 94.2	94.2	7.5 7.5	7.5		6.6 6.5	6.6		9.0 7.8	8.4	
					Bottom	6.2	16.7 16.7	16.7	8.3 8.3	8.3	33.2 33.2	33.2	94.2 94.1	94.2	7.5 7.5	7.5		6.6 6.8	6.7		9.3 7.8	8.6	
17-Jan-14	Sunny	Moderate	13:20	6.5	Surface	1.0	16.6 16.7	16.6	8.3 8.3	8.3	32.8 32.8	32.8	98.5 98.8	98.7	7.9 7.9	7.9	7.9	6.5 6.3	6.4	6.4	7.0 7.6	7.3	7.1
					Middle	3.3	16.5 16.5	16.5	8.3 8.3	8.3	32.8 32.8	32.8	98.1 98.1	98.1	7.9 7.9	7.9		6.3 6.7	6.5		5.9 7.2	6.6	
					Bottom	5.5	16.5 16.5	16.5	8.3 8.3	8.3	32.8 32.8	32.8	98.3 98.1	98.2	7.9 7.9	7.9		6.3 6.2	6.3		7.2 7.4	7.3	
20-Jan-14	Sunny	Moderate	14:50	7.0	Surface	1.0	16.9 16.9	16.9	8.3 8.3	8.3	31.7 31.7	31.7	98.1 98.0	98.1	7.9 7.8	7.8	7.9	3.5 3.3	3.4	3.4	7.9 7.9	7.9	7.3
					Middle	3.5	16.8 16.9	16.8	8.3 8.3	8.3	32.0 31.7	31.9	98.2 98.1	98.2	7.9 7.9	7.9		3.5 3.5	3.5		6.1 5.8	6.0	
					Bottom	6.0	16.6 16.7	16.7	8.3 8.3	8.3	32.4 32.2	32.3	97.5 97.9	97.7	7.8 7.8	7.8		3.4 3.2	3.3		8.3 7.7	8.0	

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at CS(Mf)3 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	16:22	6.7	Surface	1.0	16.2 16.2	16.2	8.3 8.3	8.3	32.3 32.3	32.3	98.8 98.9	98.9	8.0 8.0	8.0	8.0	4.1 4.2	4.2	5.1	4.9 4.5	4.7	5.3
					Middle	3.4	16.3 16.2	16.3	8.3 8.3	8.3	32.4 32.4	32.4	98.7 98.4	98.6	8.0 7.9	8.0		4.9 4.7	4.8		4.7 4.1	4.4	
					Bottom	5.7	16.2 16.2	16.2	8.3 8.3	8.3	32.4 32.4	32.4	98.6 98.8	98.7	8.0 8.0	8.0		6.5 6.3	6.4		7.0 6.4	6.7	
24-Jan-14	Fine	Moderate	11:41	6.4	Surface	1.0	16.0 16.0	16.0	8.3 8.3	8.3	31.9 31.9	31.9	96.9 97.1	97.0	7.9 7.9	7.9	7.9	4.3 4.2	4.3	4.8	4.6 5.1	4.9	5.8
					Middle	3.2	16.0 16.0	16.0	8.3 8.3	8.3	32.0 32.0	32.0	96.9 96.5	96.7	7.9 7.8	7.9		4.7 4.6	4.7		6.4 6.6	6.5	
					Bottom	5.4	16.0 16.0	16.0	8.3 8.3	8.3	32.0 32.0	32.0	96.9 95.9	96.4	7.9 7.8	7.8		5.5 5.2	5.4		6.6 5.3	6.0	
27-Jan-14	Sunny	Moderate	10:21	6.9	Surface	1.0	16.7 16.7	16.7	8.3 8.3	8.3	31.7 31.7	31.7	102.2 102.6	102.4	8.2 8.2	8.2	8.2	4.2 4.5	4.4	5.1	4.9 4.9	4.9	7.3
					Middle	3.5	16.6 16.6	16.6	8.3 8.3	8.3	31.9 31.9	31.9	101.5 101.9	101.7	8.2 8.2	8.2		5.4 5.3	5.4		7.9 8.1	8.0	
					Bottom	5.9	16.6 16.6	16.6	8.3 8.3	8.3	32.0 31.9	32.0	100.6 102.2	101.4	8.1 8.2	8.1		5.5 5.3	5.4		9.3 8.9	9.1	
1/29/2014	Sunny	Moderate	12:22	6.5	Surface	1.0	17.4 17.4	17.4	8.01 8.01	8.01	29.4 29.4	29.4	106.6 107.6	107.1	8.6 8.7	8.6	8.6	2.0 2.1	2.1	2.1	4.3 3.3	3.8	3.7
					Middle	3.3	17.1 17.1	17.1	8.01 8.01	8.01	29.7 29.8	29.8	106.4 104.6	105.5	8.6 8.4	8.5		2.0 2.1	2.1		3.7 3.8	3.8	
					Bottom	5.5	17.0 17.0	17.0	8.01 8.00	8.01	30.9 31.0	31.0	105.7 103.2	104.5	8.5 8.3	8.4		2.2 2.1	2.2		2.9 4.3	3.6	

#### Remarks:

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

#### Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at CS(Mf)3 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*	
1-Jan-14	Sunny	Moderate	07:53	7.0	Surface	1.0	16.9 16.9	16.9	8.2 8.2	8.2	33.5 33.5	33.5	98.1 96.7	97.4	7.8 7.7	7.7	7.7	13.6 13.0	13.3	13.5	19.7 19.1	19.4	20.1
					Middle	3.5	16.9 16.9	16.9	8.2 8.2	8.2	33.6 33.6	33.6	96.8 99.1	98.0	7.7 7.8	7.7		12.5 12.7	12.6		21.4 20.5	21.0	
					Bottom	6.0	16.9 16.9	16.9	8.2 8.2	8.2	33.6 33.6	33.6	101.1 96.9	99.0	8.0 7.7	7.8		15.0 13.9	14.5		19.8 19.8	19.8	
3-Jan-14	Sunny	Moderate	09:42	7.1	Surface	1.0	17.0 17.0	17.0	8.2 8.2	8.2	32.6 32.6	32.6	95.5 95.7	95.6	7.6 7.6	7.6	7.6	16.1 15.3	15.7	17.4	26.0 27.3	26.7	27.2
					Middle	3.6	17.0 17.0	17.0	8.2 8.2	8.2	32.7 32.7	32.7	95.3 95.3	95.3	7.6 7.6	7.6		17.2 17.7	17.5		26.6 27.1	26.9	
					Bottom	6.1	17.0 17.0	17.0	8.2 8.2	8.2	32.7 32.7	32.7	95.3 95.1	95.2	7.6 7.6	7.6		19.4 18.3	18.9		28.7 27.3	28.0	
6-Jan-14	Sunny	Moderate	11:48	7.1	Surface	1.0	17.0 17.0	17.0	8.2 8.2	8.2	32.1 32.1	32.1	97.0 95.4	96.2	7.7 7.6	7.7	7.7	15.3 14.6	15.0	15.5	19.6 20.9	20.3	21.4
					Middle	3.6	17.0 17.0	17.0	8.2 8.2	8.2	32.1 32.1	32.1	95.5 97.5	96.5	7.6 7.8	7.7		15.6 15.4	15.5		20.6 20.4	20.5	
					Bottom	6.1	17.0 17.0	17.0	8.2 8.2	8.2	32.1 32.1	32.1	95.8 99.4	97.6	7.6 7.9	7.8		15.4 16.4	15.9		23.8 22.8	23.3	
8-Jan-14	Fine	Moderate	13:15	6.6	Surface	1.0	17.6 17.6	17.6	8.1 8.1	8.1	30.4 30.4	30.4	94.2 94.7	94.5	7.5 7.5	7.5	7.5	3.9 3.9	3.9	4.4	6.4 6.8	6.6	6.6
					Middle	3.3	17.5 17.5	17.5	8.2 8.2	8.2	30.7 30.7	30.7	95.0 94.1	94.6	7.6 7.5	7.5		4.4 4.5	4.5		6.4 6.7	6.6	
					Bottom	5.6	17.5 17.5	17.5	8.2 8.1	8.2	31.2 31.0	31.1	95.6 94.0	94.8	7.6 7.5	7.5		4.8 4.7	4.8		6.6 6.3	6.5	
10-Jan-14	Fine	Moderate	13:34	6.9	Surface	1.0	17.2 17.2	17.2	8.2 8.2	8.2	31.7 31.7	31.7	90.6 90.5	90.6	7.2 7.2	7.2	7.2	7.0 7.4	7.2	6.3	8.3 9.8	9.1	8.5
					Middle	3.5	17.2 17.2	17.2	8.2 8.2	8.2	32.0 31.9	31.9	90.2 90.1	90.2	7.2 7.2	7.2		6.3 6.1	6.2		8.1 7.1	7.6	
					Bottom	5.9	17.2 17.3	17.3	8.2 8.2	8.2	32.2 32.2	32.2	90.6 90.6	90.6	7.2 7.2	7.2		5.5 5.7	5.6		8.8 8.8	8.8	
13-Jan-14	Sunny	Moderate	16:19	6.6	Surface	1.0	17.3 17.3	17.3	8.3 8.3	8.3	32.1 32.1	32.1	95.7 95.8	95.8	7.6 7.6	7.6	7.6	4.2 4.3	4.3	4.3	5.1 6.2	5.7	6.5
					Middle	3.3	17.3 17.3	17.3	8.3 8.3	8.3	32.2 32.2	32.2	95.3 95.5	95.4	7.5 7.6	7.6		4.2 4.4	4.3		6.8 6.5	6.7	
					Bottom	5.6	17.3 17.3	17.3	8.3 8.3	8.3	32.2 32.2	32.2	95.2 95.6	95.4	7.5 7.6	7.5		4.3 4.3	4.3		7.8 6.6	7.2	
15-Jan-14	Fine	Moderate	07:36	7.2	Surface	1.0	16.5 16.5	16.5	8.2 8.2	8.2	33.1 33.1	33.1	104.3 100.1	102.2	8.3 8.0	8.2	8.2	15.3 15.2	15.3	15.6	18.4 17.5	18.0	19.8
					Middle	3.6	16.5 16.5	16.5	8.2 8.2	8.2	33.1 33.1	33.1	102.7 99.4	101.1	8.2 7.9	8.1		15.7 15.8	15.8		21.0 20.6	20.8	
					Bottom	6.2	16.5 16.5	16.5	8.2 8.2	8.2	33.1 33.1	33.1	101.7 98.7	100.2	8.1 7.9	8.0		15.7 15.8	15.8		20.4 20.9	20.7	
17-Jan-14	Sunny	Moderate	08:52	6.5	Surface	1.0	16.4 16.4	16.4	8.3 8.3	8.3	32.7 32.7	32.7	98.2 98.7	98.5	7.9 7.9	7.9	7.9	14.4 14.8	14.6	14.5	19.7 18.1	18.9	20.6
					Middle	3.3	16.4 16.4	16.4	8.3 8.3	8.3	32.8 32.8	32.8	98.8 98.2	98.5	7.9 7.9	7.9		14.5 14.5	14.5		22.0 20.7	21.4	
					Bottom	5.5	16.4 16.4	16.4	8.3 8.3	8.3	32.8 32.8	32.8	98.2 99.3	98.8	7.9 8.0	7.9		14.3 14.6	14.5		22.6 20.1	21.4	
20-Jan-14	Sunny	Moderate	10:16	7.2	Surface	1.0	16.4 16.4	16.4	8.3 8.3	8.3	32.3 32.3	32.3	97.2 97.3	97.3	7.8 7.8	7.8	7.8	8.7 8.3	8.5	9.3	13.1 12.9	13.0	13.5
					Middle	3.6	16.4 16.4	16.4	8.3 8.3	8.3	32.4 32.3	32.4	97.1 97.0	97.1	7.8 7.8	7.8		9.4 9.7	9.6		13.0 12.4	12.7	
					Bottom	6.2	16.4 16.4	16.4	8.3 8.3	8.3	32.4 32.4	32.4	97.0 96.8	96.9	7.8 7.8	7.8		9.9 9.4	9.7		14.3 15.0	14.7	

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at CS(Mf)3 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	11:22	6.7	Surface	1.0	16.1 16.1	16.1	8.3 8.3	8.3	32.4 32.4	32.4	97.6 97.0	97.3	7.9 7.9	7.9	7.9	5.0 5.3	5.2	5.2	8.5 7.0	7.8	7.8
					Middle	3.4	16.1 16.1	16.1	8.3 8.3	8.3	32.5 32.5	32.5	96.9 97.8	97.4	7.8 7.9	7.9		5.2 5.0	5.1		8.2 6.8	7.5	
					Bottom	5.7	16.1 16.1	16.1	8.3 8.3	8.3	32.5 32.5	32.5	97.1 98.7	97.9	7.9 8.0	7.9		5.2 5.2	5.2		8.0 8.3	8.2	
24-Jan-14	Fine	Moderate	05:46	6.4	Surface	1.0	15.9 15.9	15.9	8.2 8.2	8.2	31.4 31.4	31.4	97.1 96.3	96.7	7.9 7.9	7.9	7.9	2.6 2.6	2.6	2.7	4.2 5.2	4.7	3.8
					Middle	3.2	15.9 15.9	15.9	8.2 8.2	8.2	31.8 31.6	31.7	97.5 96.3	96.9	7.9 7.9	7.9		2.7 2.6	2.7		3.2 3.5	3.4	
					Bottom	5.4	15.9 15.9	15.9	8.2 8.3	8.2	32.0 32.1	32.0	96.4 99.0	97.7	7.9 8.1	8.0		2.7 2.7	2.7		4.0 2.7	3.4	
27-Jan-14	Sunny	Moderate	14:39	6.7	Surface	1.0	16.9 16.9	16.9	8.3 8.3	8.3	31.9 31.9	31.9	107.1 107.0	107.1	8.6 8.5	8.5	8.5	3.0 3.0	3.0	3.3	4.5 4.4	4.5	4.2
					Middle	3.4	16.9 16.9	16.9	8.3 8.3	8.3	32.0 32.0	32.0	107.0 107.0	107.0	8.5 8.6	8.5		3.3 3.4	3.4		3.1 4.0	3.6	
					Bottom	5.7	16.9 16.9	16.9	8.3 8.3	8.3	32.1 32.1	32.1	106.6 106.7	106.7	8.5 8.5	8.5		3.7 3.5	3.6		4.9 4.1	4.5	
CS(Mf)3	Sunny	Moderate	16:48	6.3	Surface	1.0	17.4 17.3	17.4	7.98 7.98	7.98	28.7 28.9	28.8	108.3 108.1	108.2	8.7 8.7	8.7	8.7	1.8 1.8	1.8	1.8	4.9 2.1	3.5	2.9
					Middle	3.2	17.1 17.1	17.1	7.99 7.99	7.99	29.6 29.6	29.6	107.5 107.4	107.5	8.7 8.7	8.7		1.8 1.8	1.8		2.2 3.0	2.6	
					Bottom	5.3	17.1 17.1	17.1	7.99 8.00	8.00	30.0 29.8	29.9	107.6 107.4	107.5	8.7 8.7	8.7		1.8 2.0	1.9		3.2 2.2	2.7	

**Remarks:**

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at CS4 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*	
1-Jan-14	Sunny	Moderate	12:10	18.1	Surface	1.0	16.9 17.0	16.9	8.2 8.2	8.2	33.4 33.4	33.4	97.7 97.9	97.8	7.7 7.7	7.7	7.7	4.9 4.6	4.8	6.7	12.0 10.6	11.3	11.1
					Middle	9.1	16.8 16.7	16.8	8.2 8.2	8.2	33.4 33.4	33.4	97.0 96.8	96.9	7.7 7.7	7.7		7.8 8.1	8.0		10.7 11.1	10.9	
					Bottom	17.1	16.7 16.7	16.7	8.2 8.2	8.2	33.4 33.4	33.4	96.9 96.9	96.9	7.7 7.7	7.7		7.6 7.2	7.4		10.4 12.0	11.2	
3-Jan-14	Sunny	Moderate	13:46	18.1	Surface	1.0	17.3 17.2	17.2	8.2 8.2	8.2	31.8 31.8	31.8	94.6 94.6	94.6	7.5 7.5	7.5	7.5	6.2 5.8	6.0	6.4	11.4 10.1	10.8	11.0
					Middle	9.1	17.1 17.1	17.1	8.2 8.2	8.2	32.5 32.6	32.6	94.6 94.3	94.5	7.5 7.5	7.5		6.5 5.5	6.0		11.4 10.3	10.9	
					Bottom	17.1	17.1 17.1	17.1	8.2 8.2	8.2	32.5 32.6	32.6	94.0 94.2	94.1	7.5 7.5	7.5		7.2 7.1	7.2		11.2 11.1	11.2	
6-Jan-14	Sunny	Moderate	16:18	17.9	Surface	1.0	17.2 17.3	17.3	8.2 8.2	8.2	31.7 31.7	31.7	94.7 95.0	94.9	7.5 7.5	7.5	7.5	4.5 4.3	4.4	5.0	9.1 9.2	9.2	10.1
					Middle	9.0	17.2 17.2	17.2	8.2 8.3	8.3	31.9 31.9	31.9	94.5 94.6	94.6	7.5 7.5	7.5		5.3 5.3	5.3		8.9 9.6	9.3	
					Bottom	16.9	17.2 17.2	17.2	8.3 8.2	8.3	31.9 31.9	31.9	94.5 94.4	94.5	7.5 7.5	7.5		5.3 5.2	5.3		11.5 12.3	11.9	
8-Jan-14	Fine	Moderate	18:41	16.8	Surface	1.0	17.5 17.5	17.5	8.2 8.2	8.2	29.9 29.9	29.9	92.7 92.8	92.8	7.4 7.4	7.4	7.4	4.6 4.3	4.5	4.9	8.1 8.4	8.3	7.8
					Middle	8.4	17.5 17.5	17.5	8.2 8.2	8.2	30.1 30.2	30.1	92.7 92.5	92.6	7.4 7.4	7.4		4.5 4.5	4.5		6.8 7.4	7.1	
					Bottom	15.8	17.5 17.5	17.5	8.2 8.2	8.2	30.4 31.0	30.7	92.7 92.5	92.6	7.4 7.3	7.4		5.7 5.6	5.7		7.6 8.6	8.1	
10-Jan-14	Fine	Moderate	09:05	18.2	Surface	1.0	17.1 17.1	17.1	8.2 8.2	8.2	31.9 31.9	31.9	91.5 90.9	91.2	7.3 7.2	7.3	7.3	6.8 6.7	6.8	8.0	7.6 7.7	7.7	7.6
					Middle	9.1	17.2 17.2	17.2	8.2 8.2	8.2	32.2 32.2	32.2	90.2 90.8	90.5	7.2 7.2	7.2		8.3 8.6	8.5		7.6 8.2	7.9	
					Bottom	17.2	17.2 17.2	17.2	8.2 8.2	8.2	32.3 32.3	32.3	91.0 90.7	90.9	7.2 7.2	7.2		9.1 8.4	8.8		7.4 6.8	7.1	
13-Jan-14	Sunny	Moderate	12:19	17.2	Surface	1.0	17.3 17.3	17.3	8.2 8.2	8.2	32.2 32.2	32.2	94.5 94.5	94.5	7.5 7.5	7.5	7.5	4.6 4.5	4.6	4.5	7.4 7.8	7.6	7.3
					Middle	8.6	17.2 17.2	17.2	8.2 8.2	8.2	32.3 32.3	32.3	94.0 93.7	93.9	7.4 7.4	7.4		4.4 4.4	4.4		7.0 6.4	6.7	
					Bottom	16.2	17.2 17.2	17.2	8.2 8.2	8.2	32.3 32.4	32.4	94.0 94.8	94.4	7.4 7.5	7.5		4.4 4.4	4.4		7.7 7.3	7.5	
15-Jan-14	Sunny	Moderate	11:40	18.0	Surface	1.0	16.7 16.7	16.7	8.3 8.3	8.3	33.2 33.2	33.2	94.4 94.3	94.4	7.5 7.5	7.5	7.5	6.1 6.2	6.2	6.3	7.4 7.3	7.4	9.0
					Middle	9.0	16.7 16.7	16.7	8.3 8.3	8.3	33.2 33.2	33.2	94.2 94.3	94.3	7.5 7.5	7.5		6.3 6.3	6.3		8.2 9.6	8.9	
					Bottom	17.0	16.7 16.7	16.7	8.3 8.3	8.3	33.2 33.2	33.2	94.1 94.2	94.2	7.5 7.5	7.5		6.3 6.4	6.4		10.2 11.3	10.8	
17-Jan-14	Sunny	Moderate	12:52	16.7	Surface	1.0	16.6 16.6	16.6	8.3 8.3	8.3	32.8 32.8	32.8	98.4 98.5	98.5	7.9 7.9	7.9	7.9	5.9 5.8	5.9	6.0	9.6 9.9	9.8	10.0
					Middle	8.4	16.5 16.5	16.5	8.3 8.3	8.3	32.8 32.8	32.8	97.7 97.8	97.8	7.8 7.8	7.8		5.7 5.7	5.7		10.1 9.8	10.0	
					Bottom	15.7	16.5 16.5	16.5	8.3 8.3	8.3	32.8 32.8	32.8	97.9 98.4	98.2	7.8 7.9	7.9		6.5 6.1	6.3		10.4 10.1	10.3	
20-Jan-14	Sunny	Moderate	14:31	18.5	Surface	1.0	16.9 16.9	16.9	8.3 8.3	8.3	31.7 31.7	31.7	98.2 98.0	98.1	7.9 7.8	7.9	7.9	3.5 3.5	3.5	3.8	5.5 5.3	5.4	6.5
					Middle	9.3	16.6 16.6	16.6	8.3 8.3	8.3	32.4 32.4	32.4	97.5 97.7	97.6	7.8 7.8	7.8		3.8 3.5	3.7		7.5 6.2	6.9	
					Bottom	17.5	16.5 16.5	16.5	8.3 8.3	8.3	32.4 32.5	32.4	97.1 97.1	97.1	7.8 7.8	7.8		4.5 4.0	4.3		8.2 6.4	7.3	

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at CS4 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	15:56	16.0	Surface	1.0	16.2 16.2	16.2	8.3 8.3	8.3	32.3 32.3	32.3	97.8 98.7	98.3	7.9 8.0	7.9	7.9	3.7 3.9	3.8	3.7	7.6 7.5	7.6	7.3
					Middle	8.0	16.2 16.2	16.2	8.3 8.3	8.3	32.4 32.4	32.4	97.5 98.5	98.0	7.9 8.0	7.9		3.6 3.6	3.6		6.2 5.6	5.9	
					Bottom	15.0	16.2 16.2	16.2	8.3 8.3	8.3	32.4 32.4	32.4	98.5 98.8	98.7	8.0 8.0	8.0		3.7 3.8	3.8		8.5 8.2	8.4	
24-Jan-14	Fine	Moderate	11:21	16.9	Surface	1.0	16.0 16.0	16.0	8.3 8.3	8.3	32.0 32.0	32.0	97.4 97.2	97.3	7.9 7.9	7.9	7.9	1.9 2.0	2.0	2.4	5.0 4.7	4.9	5.4
					Middle	8.5	16.0 16.0	16.0	8.3 8.3	8.3	32.0 32.0	32.0	97.1 96.9	97.0	7.9 7.9	7.9		2.6 2.5	2.6		6.1 5.6	5.9	
					Bottom	15.9	16.0 16.0	16.0	8.3 8.3	8.3	32.0 32.0	32.0	97.0 97.1	97.1	7.9 7.9	7.9		2.7 2.7	2.7		5.9 5.1	5.5	
27-Jan-14	Sunny	Moderate	10:38	18.4	Surface	1.0	16.7 16.7	16.7	8.3 8.3	8.3	31.7 31.7	31.7	102.4 102.5	102.5	8.2 8.2	8.2	8.2	3.8 3.5	3.7	4.7	4.9 4.3	4.6	5.0
					Middle	9.2	16.6 16.6	16.6	8.3 8.3	8.3	31.9 31.9	31.9	101.7 101.8	101.8	8.2 8.2	8.2		5.5 5.2	5.4		4.0 4.2	4.1	
					Bottom	17.4	16.6 16.6	16.6	8.3 8.3	8.3	32.0 32.0	32.0	101.3 101.4	101.4	8.1 8.2	8.1		5.1 4.6	4.9		5.7 6.6	6.2	
1/29/2014	Sunny	Moderate	12:47	17.1	Surface	1.0	17.4 17.3	17.4	8.03 8.03	8.03	29.4 29.4	29.4	107.7 107.4	107.6	8.7 8.6	8.6	8.6	2.2 2.3	2.3	2.4	3.8 3.3	3.6	3.8
					Middle	8.6	17.0 17.0	17.0	8.03 8.03	8.03	30.9 31.2	31.0	106.3 106.6	106.5	8.5 8.5	8.5		2.4 2.4	2.4		4.1 3.4	3.8	
					Bottom	16.1	17.0 17.1	17.0	8.03 8.03	8.03	31.2 31.2	31.2	106.1 106.6	106.4	8.5 8.5	8.5		2.4 2.4	2.4		4.4 3.6	4.0	

#### Remarks:

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

#### Remarks:

\* DA: Depth-Averaged

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

**Appendix J - Marine Water Quality Monitoring Results**

**Water Quality Monitoring Results at CS4 - Mid-FloodTide**

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*	
1-Jan-14	Sunny	Moderate	08:13	18.2	Surface	1.0	16.9 16.9	16.9	8.2 8.2	8.2	33.5 33.6	33.6	96.3 96.3	96.3	7.6 7.6	7.6	7.6	13.4 13.0	13.2	12.4	21.0 21.1	21.1	21.0
					Middle	9.1	16.8 16.8	16.8	8.2 8.2	8.2	33.6 33.6	33.6	96.1 96.2	96.2	7.6 7.6	7.6		11.5 11.7	11.6		22.0 21.2	21.6	
					Bottom	17.2	16.9 16.8	16.9	8.2 8.2	8.2	33.6 33.6	33.6	95.9 96.1	96.0	7.6 7.6	7.6		12.6 12.2	12.4		20.0 20.6	20.3	
3-Jan-14	Sunny	Moderate	10:03	18.3	Surface	1.0	17.0 17.0	17.0	8.2 8.2	8.2	32.6 32.6	32.6	95.5 95.5	95.5	7.6 7.6	7.6	7.6	18.3 18.8	18.6	18.5	19.6 20.9	20.3	21.8
					Middle	9.2	17.0 17.0	17.0	8.2 8.2	8.2	32.7 32.7	32.7	94.8 95.0	94.9	7.5 7.5	7.5		18.2 17.6	17.9		21.4 20.7	21.1	
					Bottom	17.3	17.0 17.0	17.0	8.2 8.2	8.2	32.7 32.7	32.7	95.1 94.9	95.0	7.5 7.5	7.5		18.9 19.3	19.1		24.3 23.9	24.1	
6-Jan-14	Sunny	Moderate	12:14	18.2	Surface	1.0	17.0 17.0	17.0	8.2 8.2	8.2	32.1 32.1	32.1	94.5 94.6	94.6	7.5 7.5	7.5	7.5	13.9 14.8	14.4	15.3	22.8 23.0	22.9	23.6
					Middle	9.1	17.0 17.0	17.0	8.2 8.2	8.2	32.1 32.1	32.1	94.0 94.2	94.1	7.5 7.5	7.5		15.6 16.0	15.8		22.1 22.9	22.5	
					Bottom	17.2	17.0 17.0	17.0	8.2 8.2	8.2	32.1 32.1	32.1	94.0 94.3	94.2	7.5 7.5	7.5		15.5 15.8	15.7		25.9 24.7	25.3	
8-Jan-14	Fine	Moderate	13:40	17.5	Surface	1.0	17.7 17.6	17.6	8.1 8.1	8.1	30.4 30.5	30.5	94.1 94.0	94.1	7.5 7.5	7.5	7.5	5.2 5.2	5.2	9.0	6.5 6.0	6.3	6.3
					Middle	8.8	17.4 17.4	17.4	8.2 8.2	8.2	31.2 31.2	31.2	93.4 93.4	93.4	7.4 7.4	7.4		10.2 10.5	10.4		6.1 5.3	5.7	
					Bottom	16.5	17.5 17.4	17.4	8.2 8.2	8.2	31.2 31.4	31.3	93.4 93.3	93.4	7.4 7.4	7.4		11.5 11.5	11.5		7.2 6.7	7.0	
10-Jan-14	Fine	Moderate	13:18	18.4	Surface	1.0	17.2 17.2	17.2	8.2 8.2	8.2	31.7 31.8	31.8	91.1 90.6	90.9	7.3 7.2	7.2	7.2	6.1 5.7	5.9	5.9	7.3 8.6	8.0	8.8
					Middle	9.2	17.3 17.3	17.3	8.2 8.2	8.2	32.2 32.2	32.2	89.8 89.7	89.8	7.1 7.1	7.1		5.8 6.0	5.9		7.7 7.9	7.8	
					Bottom	17.4	17.3 17.3	17.3	8.2 8.2	8.2	32.3 32.3	32.3	90.4 90.4	90.4	7.2 7.2	7.2		5.8 6.2	6.0		9.9 11.5	10.7	
13-Jan-14	Sunny	Moderate	15:51	16.9	Surface	1.0	17.3 17.3	17.3	8.3 8.3	8.3	32.2 32.2	32.2	95.9 96.1	96.0	7.6 7.6	7.6	7.6	4.1 4.0	4.1	4.0	5.7 5.8	5.8	6.3
					Middle	8.5	17.3 17.3	17.3	8.3 8.3	8.3	32.2 32.2	32.2	95.6 95.3	95.5	7.6 7.5	7.6		4.1 3.9	4.0		5.8 7.1	6.5	
					Bottom	15.9	17.3 17.3	17.3	8.3 8.3	8.3	32.2 32.2	32.2	95.8 96.0	95.9	7.6 7.6	7.6		3.9 3.7	3.8		6.8 6.4	6.6	
15-Jan-14	Fine	Moderate	07:58	18.0	Surface	1.0	16.5 16.5	16.5	8.2 8.2	8.2	33.1 33.1	33.1	95.8 96.1	96.0	7.7 7.7	7.7	7.7	15.0 14.8	14.9	15.0	21.0 20.4	20.7	20.7
					Middle	9.0	16.5 16.5	16.5	8.2 8.2	8.2	33.1 33.1	33.1	95.8 96.0	95.9	7.7 7.7	7.7		15.1 14.8	15.0		20.6 19.7	20.2	
					Bottom	17.0	16.5 16.5	16.5	8.2 8.2	8.2	33.1 33.1	33.1	95.7 95.9	95.8	7.7 7.7	7.7		15.1 15.0	15.1		21.0 21.3	21.2	
17-Jan-14	Sunny	Moderate	09:15	16.6	Surface	1.0	16.4 16.4	16.4	8.3 8.3	8.3	32.7 32.7	32.7	97.8 98.0	97.9	7.8 7.9	7.8	7.8	16.1 16.1	16.1	16.1	15.7 15.5	15.6	15.8
					Middle	8.3	16.4 16.4	16.4	8.3 8.3	8.3	32.8 32.8	32.8	97.5 97.5	97.5	7.8 7.8	7.8		16.2 15.9	16.1		14.5 14.4	14.5	
					Bottom	15.6	16.4 16.4	16.4	8.3 8.3	8.3	32.8 32.8	32.8	97.5 97.8	97.7	7.8 7.8	7.8		16.3 16.0	16.2		17.4 16.9	17.2	
20-Jan-14	Sunny	Moderate	10:36	18.3	Surface	1.0	16.4 16.4	16.4	8.3 8.3	8.3	32.3 32.3	32.3	97.3 97.4	97.4	7.8 7.8	7.8	7.8	8.9 8.9	8.9	10.3	13.0 12.4	12.7	14.6
					Middle	9.2	16.4 16.4	16.4	8.3 8.3	8.3	32.4 32.4	32.4	97.1 97.1	97.1	7.8 7.8	7.8		10.0 10.5	10.3		15.1 15.1	15.1	
					Bottom	17.3	16.4 16.4	16.4	8.3 8.3	8.3	32.4 32.4	32.4	97.0 97.0	97.0	7.8 7.8	7.8		11.7 11.6	11.7		16.2 15.8	16.0	

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at CS4 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	11:48	17.1	Surface	1.0	16.1 <u>16.1</u>	16.1	8.3 <u>8.3</u>	8.3	32.4 <u>32.5</u>	32.4	96.4 <u>96.3</u>	96.4	7.8 <u>7.8</u>	7.8	7.8	5.5 <u>5.7</u>	5.6	5.7	7.6 <u>7.5</u>	7.6	7.1
					Middle	8.6	16.0 <u>16.0</u>	16.0	8.3 <u>8.3</u>	8.3	32.5 <u>32.5</u>	32.5	95.8 <u>95.8</u>	95.8	7.8 <u>7.8</u>	7.8		5.7 <u>5.8</u>	5.8		6.1 <u>7.2</u>	6.7	
					Bottom	16.1	16.0 <u>16.0</u>	16.0	8.3 <u>8.3</u>	8.3	32.5 <u>32.5</u>	32.5	95.8 <u>96.2</u>	96.0	7.8 <u>7.8</u>	7.8		5.7 <u>5.9</u>	5.8		7.2 <u>6.7</u>	7.0	
24-Jan-14	Fine	Moderate	06:21	16.0	Surface	1.0	15.9 <u>15.9</u>	15.9	8.2 <u>8.2</u>	8.2	31.4 <u>31.4</u>	31.4	96.0 <u>96.0</u>	96.0	7.9 <u>7.8</u>	7.8	7.8	2.5 <u>2.5</u>	2.5	2.5	3.9 <u>5.4</u>	4.7	4.3
					Middle	8.0	15.9 <u>15.9</u>	15.9	8.2 <u>8.2</u>	8.2	31.4 <u>32.2</u>	31.8	95.9 <u>95.8</u>	95.9	7.8 <u>7.8</u>	7.8		2.5 <u>2.5</u>	2.5		4.9 <u>4.5</u>	4.7	
					Bottom	15.0	15.9 <u>15.9</u>	15.9	8.2 <u>8.2</u>	8.2	32.1 <u>32.4</u>	32.2	95.8 <u>95.8</u>	95.8	7.8 <u>7.8</u>	7.8		2.6 <u>2.6</u>	2.6		3.7 <u>3.1</u>	3.4	
27-Jan-14	Sunny	Moderate	14:21	18.4	Surface	1.0	17.0 <u>17.0</u>	17.0	8.3 <u>8.3</u>	8.3	32.0 <u>32.0</u>	32.0	106.9 <u>107.2</u>	107.1	8.5 <u>8.6</u>	8.5	8.5	5.0 <u>5.1</u>	5.1	5.2	4.5 <u>3.8</u>	4.2	3.9
					Middle	9.2	16.9 <u>16.9</u>	16.9	8.3 <u>8.3</u>	8.3	32.1 <u>32.1</u>	32.1	106.9 <u>107.0</u>	107.0	8.5 <u>8.5</u>	8.5		4.8 <u>4.4</u>	4.6		2.7 <u>4.3</u>	3.5	
					Bottom	17.4	16.9 <u>16.9</u>	16.9	8.3 <u>8.3</u>	8.3	32.1 <u>32.1</u>	32.1	106.5 <u>106.6</u>	106.6	8.5 <u>8.5</u>	8.5		6.0 <u>5.7</u>	5.9		4.9 <u>2.8</u>	3.9	
CS4	Sunny	Moderate	16:21	17.2	Surface	1.0	17.7 <u>17.3</u>	17.5	7.99 <u>8.00</u>	8.00	28.6 <u>28.9</u>	28.7	109.1 <u>107.9</u>	108.5	8.8 <u>8.7</u>	8.7	8.7	2.5 <u>2.5</u>	2.5	2.4	3.8 <u>2.9</u>	3.4	3.6
					Middle	8.6	17.1 <u>17.1</u>	17.1	8.01 <u>8.01</u>	8.01	30.0 <u>30.2</u>	30.1	107.4 <u>107.2</u>	107.3	8.6 <u>8.6</u>	8.6		2.3 <u>2.4</u>	2.4		4.2 <u>2.9</u>	3.6	
					Bottom	16.2	17.1 <u>17.1</u>	17.1	8.01 <u>8.00</u>	8.01	30.3 <u>30.2</u>	30.3	107.8 <u>107.5</u>	107.7	8.7 <u>8.6</u>	8.7		2.4 <u>2.4</u>	2.4		3.8 <u>3.6</u>	3.7	

**Remarks:**

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:

\* DA: Depth-Averaged

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



**Appendix J - Marine Water Quality Monitoring Results**

**Water Quality Monitoring Results at CS(Mf)5 - Mid-EbbTide**

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*	
1-Jan-14	Sunny	Moderate	13:29	13.0	Surface	1.0	17.3	17.3	8.0	8.0	33.4	33.4	95.6	95.3	7.5	7.5	7.5	3.5	3.5	4.2	6.9	6.7	6.7
					Middle	6.5	17.3	17.3	8.0	8.0	33.5	33.5	94.6	94.4	7.4	7.4		4.2	4.4		6.0	6.2	
					Bottom	12.0	17.4	17.4	8.0	8.0	33.6	33.6	94.3	94.7	7.4	7.4	4.7	4.8	7.4		4.9	4.8	
3-Jan-14	Sunny	Moderate	15:02	12.0	Surface	1.0	17.5	17.5	8.0	8.0	32.6	32.6	96.2	96.0	7.6	7.5	7.5	5.4	5.6	6.2	5.5	5.2	6.4
					Middle	6.0	17.2	17.2	8.0	8.0	32.7	32.7	93.2	93.6	7.4	7.4		6.4	6.4		6.0	6.2	
					Bottom	11.0	17.2	17.2	8.0	8.0	33.1	33.1	93.3	92.9	7.4	7.3	7.3	6.6	6.7		6.7	6.6	
6-Jan-14	Sunny	Moderate	17:17	12.3	Surface	1.0	17.3	17.3	8.0	8.0	32.0	32.1	91.9	92.1	7.3	7.3	7.3	6.5	6.6	6.7	7.7	7.7	8.5
					Middle	6.2	17.3	17.3	8.0	8.0	32.5	32.5	91.4	91.8	7.2	7.2		6.9	6.8		7.5	8.3	
					Bottom	11.3	17.3	17.3	8.0	8.0	32.7	32.7	93.3	92.6	7.3	7.3	7.3	6.6	6.7		6.7	6.5	
8-Jan-14	Fine	Moderate	19:47	13.1	Surface	1.0	17.4	17.4	8.0	8.0	31.6	31.5	92.9	93.3	7.4	7.4	7.4	7.0	6.9	6.9	7.5	7.5	9.9
					Middle	6.6	17.4	17.4	8.0	8.0	31.8	31.9	92.7	93.3	7.3	7.4		7.1	7.0		8.3	8.5	
					Bottom	12.1	17.4	17.4	8.0	8.0	32.1	32.0	94.8	93.9	7.5	7.4	7.4	6.6	6.9		6.9	6.6	
10-Jan-14	Fine	Moderate	07:52	12.6	Surface	1.0	17.1	17.1	7.9	7.9	32.4	32.4	91.0	90.7	7.2	7.2	7.2	2.4	2.5	2.7	6.3	6.2	6.4
					Middle	6.3	17.3	17.3	7.9	7.9	33.0	33.0	91.4	90.9	7.2	7.2		2.4	2.5		6.3	6.3	
					Bottom	11.6	17.3	17.3	7.9	7.9	33.0	33.0	92.6	90.4	7.3	7.2	7.2	3.1	3.2		6.7	6.5	
13-Jan-14	Sunny	Moderate	10:43	12.3	Surface	1.0	17.2	17.2	8.0	8.0	33.2	33.2	92.8	94.4	7.3	7.4	7.4	1.5	1.6	1.8	2.6	3.5	3.5
					Middle	6.2	17.2	17.2	8.0	8.0	33.2	33.2	94.4	93.5	7.5	7.4		1.8	1.8		3.3	3.1	
					Bottom	11.3	17.2	17.2	8.0	8.0	33.2	33.2	94.0	93.3	7.4	7.4	7.4	1.9	1.9		6.7	4.6	
15-Jan-14	Sunny	Moderate	13:03	12.5	Surface	1.0	16.8	16.8	8.0	8.1	33.3	33.3	97.1	97.0	7.7	7.7	7.7	2.3	2.3	2.4	5.0	5.7	5.7
					Middle	6.3	16.8	16.8	8.1	8.1	33.3	33.3	96.5	96.6	7.7	7.7		2.4	2.5		5.6	5.8	
					Bottom	11.5	16.8	16.8	8.1	8.1	33.3	33.3	96.4	96.9	7.7	7.7	7.7	2.5	2.5		6.1	4.9	
17-Jan-14	Sunny	Moderate	13:29	13.3	Surface	1.0	16.9	16.9	8.1	8.1	33.1	33.1	99.7	99.8	7.9	7.9	7.9	5.5	5.4	5.5	5.9	5.8	5.7
					Middle	6.7	16.8	16.7	8.1	8.1	33.2	33.2	98.8	99.3	7.9	7.9		5.3	5.5		5.0	5.3	
					Bottom	12.3	16.7	16.7	8.1	8.1	33.2	33.2	98.8	98.9	7.9	7.9	7.9	5.6	5.7		6.6	5.1	
20-Jan-14	Sunny	Moderate	15:29	12.7	Surface	1.0	17.0	17.0	8.0	8.0	32.5	32.5	98.8	99.0	7.9	7.9	7.9	2.6	2.6	2.6	5.8	5.7	5.9
					Middle	6.4	16.8	16.8	8.0	8.0	32.7	32.8	97.9	97.6	7.8	7.8		2.5	2.5		5.4	5.9	
					Bottom	11.7	16.7	16.7	8.0	8.0	32.9	32.8	97.3	97.8	7.8	7.8	7.8	2.7	2.7		6.0	6.0	

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at CS(Mf)5 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	16:41	13.4	Surface	1.0	16.5 16.5	16.5	8.1 8.1	8.1	32.8 32.8	32.8	99.5 100.2	99.9	8.0 8.0	8.0	8.0	2.5 2.6	2.6	2.8	4.5 3.1	3.8	4.4
					Middle	6.7	16.5 16.5	16.5	8.1 8.1	8.1	32.9 32.9	32.9	101.5 98.9	100.2	8.1 7.9	8.0		3.1 3.0	3.1		4.2 5.1	4.7	
					Bottom	12.4	16.5 16.5	16.5	8.1 8.1	8.1	32.9 32.9	32.9	99.0 103.4	101.2	7.9 8.3	8.1		2.5 2.7	2.6		4.6 4.7	4.7	
24-Jan-14	Fine	Moderate	12:08	13.2	Surface	1.0	16.2 16.2	16.2	8.1 8.1	8.1	32.7 32.7	32.7	98.7 98.0	98.4	8.0 7.9	7.9	7.9	3.5 3.5	3.5	4.1	10.2 8.7	9.5	9.5
					Middle	6.6	16.2 16.2	16.2	8.1 8.1	8.1	32.8 32.8	32.8	97.7 98.0	97.9	7.9 7.9	7.9		5.0 4.6	4.8		9.8 8.4	9.1	
					Bottom	12.2	16.2 16.2	16.2	8.1 8.1	8.1	32.8 32.8	32.8	98.1 98.2	98.2	7.9 7.9	7.9		4.0 4.1	4.1		10.7 9.3	10.0	
27-Jan-14	Sunny	Moderate	09:41	12.9	Surface	1.0	16.6 16.6	16.6	8.0 8.0	8.0	32.6 32.7	32.7	101.4 101.8	101.6	8.1 8.1	8.1	8.1	2.1 2.1	2.1	2.2	3.5 2.8	3.2	3.1
					Middle	6.5	16.6 16.6	16.6	8.0 8.0	8.0	32.7 32.7	32.7	101.3 100.8	101.1	8.1 8.1	8.1		2.3 2.2	2.3		4.2 2.8	3.5	
					Bottom	11.9	16.6 16.6	16.6	8.0 8.0	8.0	32.8 32.8	32.8	101.0 101.7	101.4	8.1 8.1	8.1		2.2 2.3	2.3		2.5 2.5	2.5	
1/29/2014	Sunny	Moderate	11:17	12.1	Surface	1.0	17.1 17.2	17.2	8.13 8.13	8.13	31.5 31.4	31.5	110.5 110.5	110.5	8.8 8.8	8.8	8.8	1.3 1.3	1.3	1.3	2.6 2.8	2.7	3.0
					Middle	6.1	16.9 16.9	16.9	8.12 8.12	8.12	32.3 32.2	32.3	107.4 110.4	108.9	8.6 8.8	8.7		1.3 1.3	1.3		3.7 3.5	3.6	
					Bottom	11.1	17.0 16.9	16.9	8.12 8.12	8.12	32.1 32.3	32.2	108.8 106.9	107.9	8.7 8.5	8.6		1.4 1.4	1.4		2.9 2.6	2.8	

#### Remarks:

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

#### Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at CS(Mf)5 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*	
1-Jan-14	Sunny	Moderate	06:44	13.2	Surface	1.0	16.9	16.9	8.0	8.0	33.2	33.2	96.3	96.2	7.6	7.6	7.6	10.6	10.4	11.9	18.4	18.2	18.0
					Middle	6.6	16.9	17.0	8.0	8.0	33.2	33.3	95.2	95.5	7.5	7.6		11.2	11.3		18.3	17.4	
					Bottom	12.2	17.0	17.0	8.0	8.0	33.3	33.3	95.6	95.6	7.6	7.6		13.7	14.0		18.3	18.3	
3-Jan-14	Sunny	Moderate	08:33	13.2	Surface	1.0	17.1	17.1	8.0	8.0	32.4	32.4	93.9	94.0	7.5	7.5	7.5	9.9	9.9	10.7	8.9	9.2	10.0
					Middle	6.6	17.1	17.1	8.0	8.0	32.5	32.5	93.6	93.6	7.4	7.4		10.8	10.7		10.0	10.0	
					Bottom	12.2	17.1	17.1	8.0	8.0	32.5	32.5	93.3	93.3	7.4	7.4		11.6	11.4		10.7	10.8	
6-Jan-14	Sunny	Moderate	10:55	13.8	Surface	1.0	17.1	17.1	8.0	8.0	31.9	31.9	92.3	92.6	7.3	7.4	7.4	7.4	7.4	8.3	10.3	10.1	9.8
					Middle	6.9	17.1	17.1	7.9	7.9	32.0	32.0	92.2	91.9	7.3	7.3		8.6	8.7		8.8	9.0	
					Bottom	12.8	17.1	17.1	7.9	7.9	32.1	32.1	92.0	92.6	7.3	7.4		8.8	8.9		10.3	10.3	
8-Jan-14	Fine	Moderate	12:29	13.4	Surface	1.0	17.5	17.5	7.9	7.9	31.3	31.3	92.6	93.2	7.3	7.4	7.4	8.1	8.0	12.2	5.6	5.4	6.0
					Middle	6.7	17.3	17.3	7.9	7.9	32.2	32.2	91.7	92.6	7.3	7.3		15.5	15.2		6.0	6.4	
					Bottom	12.4	17.3	17.3	7.9	7.9	32.2	32.2	92.5	93.8	7.3	7.4		13.8	13.5		6.1	6.2	
10-Jan-14	Fine	Moderate	14:32	13.5	Surface	1.0	17.3	17.3	8.0	8.0	33.0	33.0	91.5	92.1	7.2	7.3	7.3	2.2	2.2	2.5	3.5	3.6	4.1
					Middle	6.8	17.3	17.3	8.0	8.0	33.1	33.1	92.7	92.0	7.3	7.2		2.1	2.3		4.0	4.0	
					Bottom	12.5	17.3	17.3	8.0	8.0	33.2	33.2	93.0	93.0	7.2	7.3		2.9	2.9		4.9	4.8	
13-Jan-14	Sunny	Moderate	16:34	12.9	Surface	1.0	17.3	17.3	8.0	8.0	32.9	32.9	96.5	98.5	7.6	7.8	7.8	1.8	1.9	2.0	4.0	4.1	4.8
					Middle	6.5	17.2	17.2	8.0	8.0	33.1	33.2	99.1	97.1	7.8	7.7		2.0	2.0		4.8	4.9	
					Bottom	11.9	17.2	17.2	8.0	8.0	33.2	33.2	95.0	95.7	7.5	7.5		2.2	2.2		5.9	5.4	
15-Jan-14	Fine	Moderate	07:01	12.3	Surface	1.0	16.7	16.7	8.0	8.0	33.2	33.2	95.1	95.0	7.6	7.6	7.6	8.3	8.5	8.5	10.4	10.5	10.7
					Middle	6.2	16.8	16.8	8.0	8.0	33.2	33.2	94.6	94.8	7.5	7.5		8.3	8.4		10.6	10.6	
					Bottom	11.3	16.8	16.8	8.0	8.0	33.2	33.2	94.6	94.9	7.5	7.5		8.6	8.6		10.4	11.1	
17-Jan-14	Sunny	Moderate	07:23	12.9	Surface	1.0	16.7	16.7	8.1	8.1	33.1	33.1	99.8	101.5	8.0	8.1	8.1	11.4	11.7	12.2	9.6	9.4	10.1
					Middle	6.5	16.7	16.7	8.1	8.1	33.1	33.1	103.2	100.7	8.2	8.0		12.0	12.1		9.0	9.6	
					Bottom	11.9	16.6	16.7	8.0	8.0	33.1	33.1	99.5	99.4	8.1	8.0		12.1	12.7		10.2	11.2	
20-Jan-14	Sunny	Moderate	09:13	13.1	Surface	1.0	16.5	16.5	8.0	8.0	32.4	32.4	98.4	98.6	7.9	7.9	7.9	5.3	5.4	7.8	3.3	3.5	4.5
					Middle	6.6	16.5	16.5	8.0	8.0	32.5	32.5	98.8	98.8	7.9	7.9		5.5	8.7		4.9	4.7	
					Bottom	12.1	16.5	16.5	8.0	8.0	32.5	32.5	98.8	99.8	7.9	7.9		8.8	9.2		4.2	5.2	

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at CS(Mf)5 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	10:26	14.9	Surface	1.0	16.3 16.3	16.3	8.0 8.0	8.0	32.9 32.9	32.9	96.8 96.0	96.4	7.8 7.7	7.7	7.7	2.7 2.5	2.6	3.5	4.5 4.1	4.3	4.3
					Middle	7.5	16.3 16.3	16.3	8.0 8.0	8.0	32.9 32.9	32.9	95.5 96.9	96.2	7.7 7.8	7.7		3.6 3.8	3.7		5.0 4.1	4.6	
					Bottom	13.9	16.3 16.3	16.3	8.0 8.0	8.0	32.9 32.9	32.9	95.5 95.6	95.6	7.7 7.7	7.7		4.1 4.1	4.1		3.5 4.5	4.0	
24-Jan-14	Fine	Moderate	04:55	13.4	Surface	1.0	16.0 15.9	16.0	8.0 8.0	8.0	32.5 32.5	32.5	99.2 99.8	99.5	8.0 8.1	8.1	8.1	7.3 7.1	7.2	6.9	4.2 4.8	4.5	4.9
					Middle	6.7	16.0 16.0	16.0	8.0 8.0	8.0	32.6 32.6	32.6	99.0 99.8	99.4	8.0 8.1	8.1		6.9 7.0	7.0		4.2 5.2	4.7	
					Bottom	12.4	16.0 16.0	16.0	8.0 8.0	8.0	32.6 32.6	32.6	99.2 101.1	100.2	8.0 8.2	8.1		8.1	6.6 6.1		6.4	5.6 5.6	
27-Jan-14	Sunny	Moderate	15:21	13.4	Surface	1.0	16.9 16.9	16.9	8.1 8.1	8.1	32.8 32.8	32.8	104.5 104.8	104.7	8.3 8.3	8.3	8.2	1.8 1.9	1.9	1.9	2.7 3.0	2.9	3.9
					Middle	6.7	16.7 16.7	16.7	8.1 8.1	8.1	32.9 32.9	32.9	101.1 101.9	101.5	8.1 8.1	8.1		1.9 1.9	1.9		3.9 3.8	3.9	
					Bottom	12.4	16.7 16.7	16.7	8.1 8.1	8.1	32.9 32.9	32.9	102.9 101.7	102.3	8.2 8.1	8.2		8.2	1.9 1.9		1.9	4.5 5.0	
CS(Mf)5	Sunny	Moderate	17:14	13.0	Surface	1.0	17.3 17.2	17.3	8.13 8.13	8.13	31.7 31.8	31.8	116.0 112.9	114.5	9.2 9.0	9.1	8.9	2.2 2.3	2.3	2.4	3.0 3.6	3.3	3.5
					Middle	6.5	17.1 17.0	17.0	8.12 8.12	8.12	32.2 32.2	32.2	110.5 107.1	108.8	8.8 8.5	8.7		2.4 2.4	2.4		3.3 2.5	2.9	
					Bottom	12.0	17.0 17.0	17.0	8.12 8.12	8.12	32.3 32.3	32.3	109.6 106.5	108.1	8.7 8.5	8.6		8.6	2.4 2.5		2.5	3.8 4.5	

**Remarks:**

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at CS6 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*	
1-Jan-14	Sunny	Moderate	13:51	10.1	Surface	1.0	17.5 17.5	17.5	8.2 8.2	8.2	33.9 33.9	33.9	93.9 93.0	93.5	7.3 7.3	7.3	7.3	2.5 2.5	2.5	2.7	9.0 9.6	9.3	10.1
					Middle	5.1	17.4 17.4	17.4	8.2 8.2	8.2	33.9 33.9	33.9	94.0 92.8	93.4	7.3 7.3	7.3		2.6 2.7	2.7		10.5 10.2	10.4	
					Bottom	9.1	17.4 17.4	17.4	8.2 8.2	8.2	33.9 33.9	33.9	96.2 93.0	94.6	7.5 7.3	7.4		2.9 3.0	3.0		10.8 10.4	10.6	
3-Jan-14	Sunny	Moderate	15:24	10.0	Surface	1.0	17.4 17.4	17.4	8.2 8.2	8.2	33.0 33.1	33.0	94.4 93.9	94.2	7.4 7.4	7.4	7.4	4.7 4.4	4.6	4.4	9.3 9.9	9.6	9.5
					Middle	5.0	17.4 17.4	17.4	8.2 8.2	8.2	33.2 33.2	33.2	93.0 93.7	93.4	7.3 7.4	7.3		4.2 4.4	4.3		9.6 9.7	9.7	
					Bottom	9.0	17.4 17.4	17.4	8.2 8.2	8.2	33.3 33.3	33.3	93.6 92.7	93.2	7.4 7.3	7.3		4.2 4.5	4.4		9.2 9.4	9.3	
6-Jan-14	Sunny	Moderate	17:58	9.9	Surface	1.0	17.3 17.3	17.3	8.2 8.2	8.2	32.6 32.6	32.6	94.4 93.0	93.7	7.5 7.3	7.4	7.4	2.9 2.9	2.9	2.9	7.9 7.3	7.6	7.3
					Middle	5.0	17.3 17.3	17.3	8.2 8.2	8.2	32.7 32.8	32.7	92.7 95.4	94.1	7.3 7.5	7.4		2.9 2.9	2.9		7.6 7.2	7.4	
					Bottom	8.9	17.3 17.3	17.3	8.2 8.2	8.2	32.8 32.8	32.8	93.2 97.7	95.5	7.3 7.7	7.5		2.8 2.7	2.8		6.4 7.5	7.0	
8-Jan-14	Fine	Moderate	20:31	10.0	Surface	1.0	17.5 17.5	17.5	8.2 8.2	8.2	32.1 32.2	32.1	93.3 93.3	93.3	7.4 7.4	7.4	7.4	1.5 1.5	1.5	1.7	3.8 5.1	4.5	4.9
					Middle	5.0	17.5 17.5	17.5	8.2 8.2	8.2	32.5 32.5	32.5	92.8 92.8	92.8	7.3 7.3	7.3		1.7 1.7	1.7		4.0 4.6	4.3	
					Bottom	9.0	17.5 17.5	17.5	8.2 8.2	8.2	32.7 32.5	32.6	93.0 93.2	93.1	7.3 7.3	7.3		1.8 1.7	1.8		6.2 5.7	6.0	
10-Jan-14	Fine	Moderate	07:24	9.6	Surface	1.0	17.3 17.3	17.3	8.1 8.1	8.1	33.5 33.5	33.5	88.3 88.5	88.4	6.9 6.9	6.9	6.9	1.9 1.8	1.9	1.9	2.4 4.4	3.4	3.7
					Middle	4.8	17.3 17.3	17.3	8.1 8.1	8.1	33.5 33.5	33.5	88.2 88.0	88.1	6.9 6.9	6.9		1.9 2.0	2.0		3.2 3.8	3.5	
					Bottom	8.6	17.3 17.3	17.3	8.1 8.1	8.1	33.5 33.5	33.5	88.0 88.1	88.1	6.9 6.9	6.9		1.9 1.6	1.8		3.8 4.4	4.1	
13-Jan-14	Sunny	Moderate	10:39	10.1	Surface	1.0	17.2 17.2	17.2	8.2 8.2	8.2	33.5 33.4	33.5	89.2 89.2	89.2	7.0 7.0	7.0	7.0	1.5 1.5	1.5	1.6	6.6 5.4	6.0	5.9
					Middle	5.1	17.2 17.2	17.2	8.2 8.2	8.2	33.4 33.5	33.5	88.9 89.0	89.0	7.0 7.0	7.0		1.7 1.6	1.7		6.2 6.1	6.2	
					Bottom	9.1	17.2 17.2	17.2	8.2 8.2	8.2	33.5 33.5	33.5	88.9 89.0	89.0	7.0 7.0	7.0		1.6 1.6	1.6		5.6 5.1	5.4	
15-Jan-14	Sunny	Moderate	13:03	10.1	Surface	1.0	16.8 16.8	16.8	8.3 8.3	8.3	33.4 33.4	33.4	98.8 95.6	97.2	7.8 7.6	7.7	7.7	1.1 1.0	1.1	1.2	3.5 3.8	3.7	4.3
					Middle	5.1	16.8 16.8	16.8	8.3 8.2	8.3	33.4 33.4	33.4	95.4 98.0	96.7	7.6 7.8	7.7		1.1 1.2	1.2		3.8 4.7	4.3	
					Bottom	9.1	16.8 16.8	16.8	8.2 8.3	8.3	33.4 33.4	33.4	97.6 95.3	96.5	7.7 7.6	7.7		1.2 1.1	1.2		4.8 4.7	4.8	
17-Jan-14	Sunny	Moderate	14:39	10.3	Surface	1.0	16.9 16.8	16.8	8.3 8.3	8.3	32.9 32.9	32.9	95.6 96.7	96.2	7.6 7.7	7.6	7.6	2.5 2.4	2.5	2.5	3.8 3.7	3.8	5.3
					Middle	5.2	16.8 16.8	16.8	8.3 8.3	8.3	32.9 32.9	32.9	96.9 95.2	96.1	7.7 7.6	7.6		2.5 2.5	2.5		5.3 7.1	6.2	
					Bottom	9.3	16.8 16.8	16.8	8.3 8.3	8.3	33.0 32.9	32.9	97.9 95.6	96.8	7.8 7.6	7.7		2.4 2.5	2.5		6.6 5.2	5.9	
20-Jan-14	Sunny	Moderate	16:08	10.0	Surface	1.0	17.0 16.9	17.0	8.3 8.3	8.3	32.8 32.8	32.8	96.8 96.3	96.6	7.7 7.6	7.7	7.7	2.0 1.8	1.9	1.8	4.7 4.5	4.6	3.9
					Middle	5.0	16.7 16.8	16.8	8.3 8.3	8.3	32.9 32.9	32.9	95.4 95.6	95.5	7.6 7.6	7.6		1.7 1.7	1.7		3.9 4.2	4.1	
					Bottom	9.0	16.7 16.7	16.7	8.3 8.3	8.3	32.9 32.9	32.9	95.4 95.2	95.3	7.6 7.6	7.6		1.8 1.7	1.8		3.4 2.5	3.0	

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at CS6 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	17:40	10.1	Surface	1.0	16.4 16.4	16.4	8.3 8.3	8.3	32.9 32.9	32.9	95.1 96.3	95.7	7.6 7.7	7.7	7.7	2.2 2.2	2.2	2.3	4.3 4.4	4.4	3.8
					Middle	5.1	16.4 16.4	16.4	8.3 8.3	8.3	32.9 32.9	32.9	94.9 97.0	96.0	7.6 7.8	7.7		2.2 2.3	2.3		3.4 3.9	3.7	
					Bottom	9.1	16.4 16.4	16.4	8.3 8.3	8.3	33.0 33.0	33.0	95.3 98.8	97.1	7.6 7.9	7.8		2.4 2.4	2.4		3.6 2.9	3.3	
24-Jan-14	Fine	Moderate	13:12	10.1	Surface	1.0	16.4 16.4	16.4	8.3 8.3	8.3	32.8 32.8	32.8	96.2 96.6	96.4	7.7 7.8	7.7	7.7	2.3 2.3	2.3	2.3	2.8 3.7	3.3	3.7
					Middle	5.1	16.3 16.3	16.3	8.3 8.3	8.3	32.8 32.9	32.9	95.2 96.1	95.7	7.7 7.7	7.7		2.3 2.3	2.3		3.6 3.9	3.8	
					Bottom	9.1	16.3 16.3	16.3	8.3 8.3	8.3	32.9 32.9	32.9	94.9 96.6	95.8	7.6 7.8	7.7		2.4 2.2	2.3		3.8 4.1	4.0	
27-Jan-14	Sunny	Moderate	08:58	10.0	Surface	1.0	16.7 16.7	16.7	8.2 8.2	8.2	32.7 32.7	32.7	97.2 97.0	97.1	7.8 7.8	7.8	7.8	2.2 2.2	2.2	2.1	4.7 6.5	5.6	5.0
					Middle	5.0	16.6 16.6	16.6	8.2 8.2	8.2	32.7 32.7	32.7	96.7 96.8	96.8	7.7 7.7	7.7		2.1 2.3	2.2		5.0 5.3	5.2	
					Bottom	9.0	16.6 16.6	16.6	8.2 8.2	8.2	32.7 32.7	32.7	96.5 96.7	96.6	7.7 7.7	7.7		2.0 1.8	1.9		4.1 4.5	4.3	
1/29/2014	Sunny	Moderate	11:14	10.4	Surface	1.0	17.2 17.2	17.2	8.01 8.01	8.01	32.0 32.1	32.0	104.4 104.4	104.4	8.3 8.3	8.3	8.3	1.6 1.5	1.6	1.6	2.0 2.7	2.4	2.9
					Middle	5.2	16.9 16.9	16.9	8.00 8.01	8.01	32.5 32.5	32.5	102.8 102.7	102.8	8.2 8.2	8.2		1.5 1.5	1.5		2.4 3.6	3.0	
					Bottom	9.4	16.9 16.9	16.9	8.00 8.00	8.00	32.5 32.5	32.5	104.3 103.9	104.1	8.3 8.3	8.3		1.6 1.5	1.6		3.0 3.6	3.3	

#### Remarks:

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

#### Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at CS6 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*	
1-Jan-14	Sunny	Moderate	06:33	9.8	Surface	1.0	17.0 17.0	17.0	8.2 8.2	8.2	33.8 33.8	33.8	96.8 96.5	96.7	7.6 7.6	7.6	7.6	2.1 2.1	2.1	2.4	7.6 6.6	7.1	8.0
					Middle	4.9	17.1 17.1	17.1	8.2 8.2	8.2	33.9 33.9	33.9	96.3 96.4	96.4	7.6 7.6	7.6		2.4 2.2	2.3		8.2 8.4	8.3	
					Bottom	8.8	17.0 17.1	17.1	8.2 8.2	8.2	33.8 33.9	33.9	96.1 96.1	96.1	7.6 7.6	7.6		3.0 2.8	2.9		8.4 8.5	8.5	
3-Jan-14	Sunny	Moderate	08:17	10.2	Surface	1.0	17.2 17.2	17.2	8.2 8.2	8.2	32.8 32.8	32.8	94.2 94.1	94.2	7.5 7.4	7.4	7.4	3.8 3.5	3.7	4.2	7.6 8.9	8.3	9.5
					Middle	5.1	17.2 17.2	17.2	8.2 8.2	8.2	32.8 32.8	32.8	93.8 94.0	93.9	7.4 7.4	7.4		3.5 3.9	3.7		9.8 9.5	9.7	
					Bottom	9.2	17.1 17.1	17.1	8.2 8.2	8.2	32.8 32.8	32.8	94.1 93.6	93.9	7.5 7.4	7.4		5.0 5.1	5.1		10.7 10.3	10.5	
6-Jan-14	Sunny	Moderate	10:28	10.0	Surface	1.0	17.2 17.2	17.2	8.2 8.2	8.2	32.1 32.1	32.1	93.6 93.5	93.6	7.4 7.4	7.4	7.4	3.5 3.8	3.7	4.3	9.0 7.3	8.2	8.6
					Middle	5.0	17.2 17.2	17.2	8.2 8.2	8.2	32.2 32.2	32.2	92.7 92.6	92.7	7.4 7.3	7.3		4.0 3.9	4.0		7.8 8.0	7.9	
					Bottom	9.0	17.2 17.2	17.2	8.2 8.2	8.2	32.5 32.5	32.5	91.7 92.2	92.0	7.3 7.3	7.3		5.0 5.1	5.1		8.9 10.5	9.7	
8-Jan-14	Fine	Moderate	11:59	9.6	Surface	1.0	17.5 17.5	17.5	8.2 8.2	8.2	31.9 31.9	31.9	93.7 93.6	93.7	7.4 7.4	7.4	7.4	1.9 1.9	1.9	1.9	5.4 5.6	5.5	5.2
					Middle	4.8	17.4 17.4	17.4	8.2 8.2	8.2	32.2 32.2	32.2	93.2 93.2	93.2	7.4 7.4	7.4		2.0 1.9	2.0		5.5 5.2	5.4	
					Bottom	8.6	17.4 17.4	17.4	8.2 8.2	8.2	32.3 32.3	32.3	93.1 93.1	93.1	7.4 7.4	7.4		1.9 1.9	1.9		4.6 4.6	4.6	
10-Jan-14	Fine	Moderate	14:58	10.3	Surface	1.0	17.3 17.3	17.3	8.2 8.2	8.2	33.2 33.2	33.2	88.8 89.7	89.3	7.0 7.1	7.0	7.0	1.7 1.7	1.7	1.8	3.2 2.8	3.0	3.6
					Middle	5.2	17.3 17.3	17.3	8.2 8.2	8.2	33.2 33.2	33.2	88.6 89.4	89.0	7.0 7.0	7.0		1.6 1.7	1.7		4.4 4.0	4.2	
					Bottom	9.3	17.3 17.3	17.3	8.2 8.2	8.2	33.3 33.3	33.3	90.6 88.7	89.7	7.1 7.0	7.0		2.1 2.0	2.1		3.9 3.3	3.6	
13-Jan-14	Sunny	Moderate	17:39	10.3	Surface	1.0	17.2 17.2	17.2	8.2 8.2	8.2	33.3 33.3	33.3	89.1 90.9	90.0	7.0 7.2	7.1	7.2	1.6 1.6	1.6	1.6	5.2 6.2	5.7	5.3
					Middle	5.2	17.2 17.2	17.2	8.2 8.2	8.2	33.3 33.3	33.3	88.7 93.0	90.9	7.0 7.3	7.2		1.6 1.6	1.6		4.7 6.2	5.5	
					Bottom	9.3	17.2 17.2	17.2	8.2 8.2	8.2	33.3 33.3	33.3	88.7 95.5	92.1	7.0 7.5	7.3		1.5 1.6	1.6		4.8 4.3	4.6	
15-Jan-14	Fine	Moderate	06:46	10.1	Surface	1.0	16.8 16.8	16.8	8.1 8.1	8.1	33.4 33.4	33.4	94.4 93.7	94.1	7.5 7.4	7.5	7.5	2.1 2.3	2.2	2.4	5.8 4.7	5.3	7.6
					Middle	5.1	16.8 16.8	16.8	8.1 8.1	8.1	33.4 33.4	33.4	94.3 93.7	94.0	7.5 7.4	7.5		2.3 2.5	2.4		6.9 6.0	6.5	
					Bottom	9.1	16.8 16.8	16.8	8.1 8.1	8.1	33.4 33.4	33.4	93.6 94.1	93.9	7.4 7.5	7.4		2.6 2.3	2.5		11.3 10.4	10.9	
17-Jan-14	Sunny	Moderate	07:40	9.7	Surface	1.0	16.6 16.6	16.6	8.3 8.3	8.3	32.7 32.7	32.7	97.0 96.8	96.9	7.8 7.7	7.8	7.8	5.1 5.3	5.2	6.2	7.9 7.2	7.6	7.3
					Middle	4.9	16.6 16.6	16.6	8.3 8.3	8.3	32.7 32.8	32.8	96.6 96.7	96.7	7.7 7.7	7.7		6.6 6.9	6.8		7.5 6.6	7.1	
					Bottom	8.7	16.6 16.6	16.6	8.3 8.3	8.3	32.8 32.8	32.8	96.5 96.7	96.6	7.7 7.7	7.7		6.7 6.5	6.6		6.3 8.1	7.2	
20-Jan-14	Sunny	Moderate	08:51	10.4	Surface	1.0	16.6 16.6	16.6	8.3 8.3	8.3	32.3 32.3	32.3	95.8 95.7	95.8	7.7 7.7	7.7	7.7	2.3 2.1	2.2	2.3	5.4 5.2	5.3	5.7
					Middle	5.2	16.6 16.6	16.6	8.3 8.3	8.3	32.3 32.3	32.3	95.3 95.3	95.3	7.6 7.6	7.6		2.3 2.3	2.3		4.9 6.4	5.7	
					Bottom	9.4	16.6 16.6	16.6	8.3 8.3	8.3	32.3 32.4	32.4	95.1 95.2	95.2	7.6 7.6	7.6		2.5 2.2	2.4		6.3 5.8	6.1	

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at CS6 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	09:59	10.5	Surface	1.0	16.4 16.3	16.3	8.2 8.2	8.2	32.9 32.8	32.8	93.5 94.1	93.8	7.5 7.6	7.5	7.5	2.8 2.7	2.8	2.7	4.8 3.1	4.0	4.5
					Middle	5.3	16.4 16.4	16.4	8.2 8.2	8.2	32.9 32.9	32.9	93.6 93.3	93.5	7.5 7.5	7.5		2.6 2.7	2.7		4.1 4.0	4.1	
					Bottom	9.5	16.4 16.4	16.4	8.2 8.2	8.2	32.9 32.9	32.9	92.9 93.5	93.2	7.5 7.5	7.5		2.7 2.7	2.7		6.2 4.5	5.4	
24-Jan-14	Fine	Moderate	04:30	10.7	Surface	1.0	16.2 16.1	16.2	8.2 8.2	8.2	32.8 32.8	32.8	95.4 95.2	95.3	7.7 7.7	7.7	7.7	2.1 2.1	2.1	2.2	3.4 2.6	3.0	3.2
					Middle	5.4	16.2 16.2	16.2	8.2 8.2	8.2	32.8 32.8	32.8	94.9 94.9	94.9	7.6 7.7	7.6		2.3 2.1	2.2		3.7 2.9	3.3	
					Bottom	9.7	16.2 16.3	16.2	8.2 8.2	8.2	32.9 32.9	32.9	95.2 95.1	95.2	7.7 7.6	7.7		2.2 2.3	2.3		2.7 4.0	3.4	
27-Jan-14	Sunny	Moderate	16:05	10.2	Surface	1.0	16.8 16.8	16.8	8.3 8.3	8.3	32.8 32.8	32.8	99.9 100.3	100.1	8.0 8.0	8.0	7.9	1.4 1.4	1.4	1.5	4.9 4.6	4.8	4.4
					Middle	5.1	16.7 16.7	16.7	8.3 8.3	8.3	32.8 32.8	32.8	97.8 98.5	98.2	7.8 7.9	7.8		1.4 1.5	1.5		3.8 3.4	3.6	
					Bottom	9.2	16.7 16.7	16.7	8.3 8.3	8.3	32.8 32.8	32.8	98.9 97.4	98.2	7.9 7.8	7.8		1.5 1.4	1.5		3.7 6.0	4.9	
CS6	Sunny	Moderate	18:07	10.1	Surface	1.0	17.3 17.2	17.2	8.03 8.03	8.03	30.9 30.8	30.9	107.2 108.6	107.9	8.6 8.7	8.6	8.5	2.5 2.5	2.5	2.4	4.0 3.4	3.7	3.8
					Middle	5.1	17.1 17.1	17.1	8.03 8.03	8.03	31.6 31.6	31.6	104.8 104.0	104.4	8.4 8.3	8.3		2.4 2.3	2.4		4.4 4.5	4.5	
					Bottom	9.1	17.0 16.9	16.9	8.03 8.03	8.03	32.2 32.3	32.3	102.1 104.0	103.1	8.1 8.3	8.2		2.3 2.4	2.4		2.9 3.6	3.3	

**Remarks:**

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:

\* DA: Depth-Averaged

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



## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at CSA - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*	
1-Jan-14	Sunny	Moderate	14:07	36.0	Surface	1.0	17.5 17.4	17.5	8.2 8.2	8.2	33.9 33.9	33.9	92.4 92.2	92.3	7.2 7.2	7.2	7.2	3.3 3.5	3.4	3.8	9.3 9.3	9.3	10.0
					Middle	18.0	17.4 17.4	17.4	8.2 8.2	8.2	33.9 33.9	33.9	91.7 91.6	91.7	7.2 7.2	7.2		4.0 4.1	4.1		8.2 7.9	8.1	
					Bottom	35.0	17.4 17.4	17.4	8.2 8.2	8.2	33.9 33.9	33.9	91.7 91.6	91.7	7.2 7.2	7.2		3.8 3.7	3.8		13.1 12.1	12.6	
3-Jan-14	Sunny	Moderate	15:39	36.0	Surface	1.0	17.4 17.4	17.4	8.2 8.2	8.2	33.1 33.1	33.1	93.8 93.8	93.8	7.4 7.4	7.4	7.3	4.2 4.1	4.2	4.5	10.2 9.0	9.6	10.6
					Middle	18.0	17.4 17.4	17.4	8.2 8.2	8.2	33.3 33.3	33.3	92.1 91.7	91.9	7.2 7.2	7.2		4.1 4.3	4.2		10.9 10.8	10.9	
					Bottom	35.0	17.3 17.3	17.3	8.2 8.2	8.2	33.4 33.3	33.4	91.4 91.9	91.7	7.2 7.2	7.2		4.9 5.0	5.0		11.4 11.3	11.4	
6-Jan-14	Sunny	Moderate	18:13	36.8	Surface	1.0	17.3 17.3	17.3	8.2 8.2	8.2	32.6 32.7	32.6	92.4 92.1	92.3	7.3 7.3	7.3	7.3	2.6 2.7	2.7	2.5	7.8 7.7	7.8	7.4
					Middle	18.4	17.3 17.3	17.3	8.2 8.2	8.2	32.9 32.9	32.9	91.5 91.0	91.3	7.2 7.2	7.2		2.5 2.4	2.5		6.7 7.7	7.2	
					Bottom	35.8	17.3 17.3	17.3	8.2 8.2	8.2	32.9 32.9	32.9	91.8 91.4	91.6	7.2 7.2	7.2		2.1 2.3	2.2		7.2 7.1	7.2	
8-Jan-14	Fine	Moderate	20:40	35.6	Surface	1.0	17.5 17.5	17.5	8.2 8.2	8.2	32.2 32.2	32.2	92.9 92.6	92.8	7.3 7.3	7.3	7.3	1.5 1.5	1.5	1.6	5.0 4.8	4.9	5.8
					Middle	17.8	17.5 17.5	17.5	8.2 8.2	8.2	32.7 32.7	32.7	91.5 91.7	91.6	7.2 7.2	7.2		1.7 1.7	1.7		5.2 6.1	5.7	
					Bottom	34.6	17.5 17.5	17.5	8.2 8.2	8.2	32.7 32.8	32.7	92.2 92.0	92.1	7.3 7.2	7.2		1.7 1.7	1.7		6.7 6.6	6.7	
10-Jan-14	Fine	Moderate	07:09	36.1	Surface	1.0	17.3 17.3	17.3	8.1 8.0	8.0	33.5 33.5	33.5	88.7 89.9	89.3	7.0 7.1	7.0	7.0	2.0 2.0	2.0	2.1	4.0 3.2	3.6	4.5
					Middle	18.1	17.3 17.4	17.4	8.0 8.0	8.0	33.5 33.5	33.5	88.3 90.1	89.2	6.9 7.1	7.0		2.0 2.1	2.1		5.0 3.6	4.3	
					Bottom	35.1	17.4 17.3	17.4	8.0 8.0	8.0	33.5 33.5	33.5	91.6 88.5	90.1	7.2 6.9	7.1		2.2 2.1	2.2		6.4 4.9	5.7	
13-Jan-14	Sunny	Moderate	10:32	34.0	Surface	1.0	17.2 17.2	17.2	8.1 8.1	8.1	33.4 33.4	33.4	90.4 89.4	89.9	7.1 7.0	7.1	7.1	1.5 1.5	1.5	1.5	4.2 4.3	4.3	3.6
					Middle	17.0	17.2 17.2	17.2	8.1 8.1	8.1	33.4 33.4	33.4	90.4 88.8	89.6	7.1 7.0	7.1		1.5 1.5	1.5		3.5 3.7	3.6	
					Bottom	33.0	17.2 17.2	17.2	8.1 8.1	8.1	33.3 33.4	33.4	92.4 88.8	90.6	7.3 7.0	7.1		1.5 1.5	1.5		2.8 3.0	2.9	
15-Jan-14	Sunny	Moderate	13:28	36.1	Surface	1.0	16.9 16.9	16.9	8.3 8.3	8.3	33.4 33.4	33.4	95.4 95.4	95.4	7.6 7.6	7.6	7.6	0.9 1.0	1.0	1.0	2.7 2.8	2.8	3.3
					Middle	18.1	16.8 16.8	16.8	8.3 8.3	8.3	33.4 33.4	33.4	95.2 95.0	95.1	7.6 7.5	7.5		0.9 1.0	1.0		2.6 4.2	3.4	
					Bottom	35.1	16.8 16.8	16.8	8.3 8.3	8.3	33.4 33.4	33.4	95.0 95.0	95.0	7.5 7.5	7.5		1.0 1.0	1.0		3.0 4.5	3.8	
17-Jan-14	Sunny	Moderate	14:48	35.0	Surface	1.0	16.9 16.8	16.8	8.3 8.3	8.3	32.9 32.9	32.9	94.4 94.3	94.4	7.5 7.5	7.5	7.5	2.2 2.3	2.3	2.3	2.9 2.0	2.5	3.6
					Middle	17.5	16.7 16.7	16.7	8.3 8.3	8.3	32.9 32.9	32.9	93.2 93.4	93.3	7.4 7.5	7.4		2.3 2.3	2.3		4.0 3.5	3.8	
					Bottom	34.0	16.7 16.7	16.7	8.3 8.3	8.3	32.9 32.9	32.9	93.7 93.4	93.6	7.5 7.5	7.5		2.3 2.3	2.3		5.2 3.7	4.5	
20-Jan-14	Sunny	Moderate	16:22	36.8	Surface	1.0	17.0 16.9	17.0	8.3 8.3	8.3	32.8 32.8	32.8	96.7 96.2	96.5	7.7 7.6	7.6	7.6	1.9 1.7	1.8	1.9	3.1 2.3	2.7	3.0
					Middle	18.4	16.7 16.7	16.7	8.3 8.3	8.3	32.9 32.9	32.9	94.5 94.0	94.3	7.5 7.5	7.5		1.8 1.8	1.8		2.3 3.0	2.7	
					Bottom	35.8	16.7 16.7	16.7	8.3 8.3	8.3	32.9 32.9	32.9	94.3 94.7	94.5	7.5 7.6	7.5		2.0 2.0	2.0		4.1 4.1	3.7	

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at CSA - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	17:50	34.4	Surface	1.0	16.4 16.4	16.4	8.3 8.3	8.3	32.9 32.9	32.9	94.3 94.2	94.3	7.6 7.6	7.6	7.6	2.2 2.2	2.2	2.3	4.4 4.3	4.4	4.1
					Middle	17.2	16.4 16.4	16.4	8.3 8.3	8.3	33.0 33.0	33.0	93.5 93.5	93.5	7.5 7.5	7.5		2.2 2.3	2.3		3.0 5.3	4.2	
					Bottom	33.4	16.4 16.4	16.4	8.3 8.3	8.3	33.0 33.0	33.0	93.7 93.7	93.7	7.5 7.5	7.5		2.2 2.3	2.3		3.6 3.6	3.6	
24-Jan-14	Fine	Moderate	13:23	35.6	Surface	1.0	16.3 16.3	16.3	8.3 8.3	8.3	32.8 32.8	32.8	95.9 95.2	95.6	7.7 7.7	7.7	7.7	2.4 2.4	2.4	2.4	4.5 3.3	3.9	4.9
					Middle	17.8	16.3 16.3	16.3	8.3 8.3	8.3	32.9 32.9	32.9	94.3 94.5	94.4	7.6 7.6	7.6		2.4 2.3	2.4		3.7 4.1	3.9	
					Bottom	34.6	16.3 16.3	16.3	8.3 8.3	8.3	32.9 32.9	32.9	94.6 95.2	94.9	7.6 7.7	7.6		2.3 2.3	2.3		6.1 7.5	6.8	
27-Jan-14	Sunny	Moderate	08:42	36.0	Surface	1.0	16.7 16.7	16.7	8.2 8.2	8.2	32.7 32.7	32.7	98.8 97.6	98.2	7.9 7.8	7.8	7.8	2.2 2.4	2.3	2.1	4.3 6.1	5.2	6.5
					Middle	18.0	16.6 16.6	16.6	8.2 8.2	8.2	32.7 32.7	32.7	99.1 97.1	98.1	7.9 7.8	7.8		1.9 2.0	2.0		6.0 7.6	6.8	
					Bottom	35.0	16.6 16.6	16.6	8.2 8.2	8.2	32.7 32.7	32.7	97.2 101.2	99.2	7.8 8.1	7.9		2.0 1.8	1.9		6.6 8.2	7.4	
1/29/2014	Sunny	Moderate	11:08	34.5	Surface	1.0	17.2 17.1	17.2	7.99 8.00	8.00	32.0 32.1	32.0	101.5 98.4	100.0	8.1 7.8	7.9	7.8	1.4 1.5	1.5	1.6	2.5 2.7	2.6	3.2
					Middle	17.3	16.9 16.9	16.9	7.99 8.00	8.00	32.5 32.5	32.5	98.8 95.5	97.2	7.9 7.6	7.7		1.5 1.6	1.6		2.9 2.3	2.6	
					Bottom	33.5	16.9 16.9	16.9	7.99 7.98	7.99	32.5 32.4	32.5	99.1 93.3	96.2	7.9 7.4	7.7		1.6 1.6	1.6		4.1 4.7	4.4	

#### Remarks:

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

#### Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at CSA - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*	
1-Jan-14	Sunny	Moderate	06:17	36.6	Surface	1.0	17.0 17.0	17.0	8.1 8.2	8.2	33.8 33.8	33.8	97.2 96.8	97.0	7.7 7.6	7.6	7.6	2.1 2.2	2.2	2.4	6.1 5.4	5.8	7.1
					Middle	18.3	17.1 17.1	17.1	8.1 8.2	8.1	33.8 33.9	33.9	96.8 96.0	96.4	7.6 7.6	7.6		2.4 2.6	2.5		6.9 6.7	6.8	
					Bottom	35.6	17.1 17.1	17.1	8.1 8.2	8.1	33.8 33.9	33.9	97.9 96.0	97.0	7.7 7.6	7.6		2.5 2.3	2.4		9.2 8.3	8.8	
3-Jan-14	Sunny	Moderate	08:05	36.6	Surface	1.0	17.2 17.2	17.2	8.2 8.1	8.2	32.8 32.8	32.8	94.4 94.5	94.5	7.5 7.5	7.5	7.5	3.3 3.5	3.4	4.3	7.0 6.7	6.9	6.9
					Middle	18.3	17.1 17.1	17.1	8.2 8.1	8.2	32.8 32.8	32.8	94.1 94.2	94.2	7.5 7.5	7.5		4.7 4.6	4.7		6.9 6.8	6.9	
					Bottom	35.6	17.1 17.1	17.1	8.2 8.1	8.1	32.9 32.8	32.8	93.7 94.5	94.1	7.4 7.5	7.4		5.0 4.6	4.8		6.8 7.2	7.0	
6-Jan-14	Sunny	Moderate	10:17	37.1	Surface	1.0	17.2 17.2	17.2	8.2 8.2	8.2	32.1 32.1	32.1	93.6 93.7	93.7	7.4 7.4	7.4	7.3	3.8 3.6	3.7	5.5	8.7 9.1	8.9	9.0
					Middle	18.6	17.2 17.2	17.2	8.2 8.2	8.2	32.5 32.5	32.5	91.4 91.4	91.4	7.2 7.2	7.2		6.0 5.7	5.9		9.3 8.9	9.1	
					Bottom	36.1	17.2 17.2	17.2	8.2 8.2	8.2	32.5 32.5	32.5	91.6 91.5	91.6	7.3 7.2	7.2		6.8 7.0	6.9		8.5 9.2	8.9	
8-Jan-14	Fine	Moderate	11:53	35.0	Surface	1.0	17.5 17.5	17.5	8.2 8.1	8.1	31.9 31.8	31.9	93.2 93.3	93.3	7.4 7.4	7.4	7.3	2.0 1.9	2.0	2.1	7.0 5.9	6.5	5.9
					Middle	17.5	17.4 17.4	17.4	8.2 8.1	8.1	32.6 32.5	32.6	91.8 91.8	91.8	7.2 7.2	7.2		2.1 2.1	2.1		5.6 4.4	5.0	
					Bottom	34.0	17.4 17.4	17.4	8.1 8.2	8.1	32.6 32.6	32.6	91.9 92.0	92.0	7.2 7.3	7.2		2.4 2.2	2.3		5.9 6.6	6.3	
10-Jan-14	Fine	Moderate	15:11	35.8	Surface	1.0	17.3 17.3	17.3	8.2 8.2	8.2	33.2 33.2	33.2	88.8 88.8	88.8	7.0 7.0	7.0	7.0	1.8 1.7	1.8	2.3	3.5 4.8	4.2	6.2
					Middle	17.9	17.3 17.3	17.3	8.2 8.2	8.2	33.3 33.3	33.3	87.6 87.6	87.6	6.9 6.9	6.9		2.2 2.1	2.2		6.9 6.3	6.6	
					Bottom	34.8	17.3 17.3	17.3	8.2 8.2	8.2	33.3 33.3	33.3	87.7 87.7	87.7	6.9 6.9	6.9		2.8 3.0	2.9		7.2 8.4	7.8	
13-Jan-14	Sunny	Moderate	17:49	36.1	Surface	1.0	17.2 17.2	17.2	8.2 8.2	8.2	33.3 33.3	33.3	88.7 88.6	88.7	7.0 7.0	7.0	7.0	1.5 1.5	1.5	1.5	4.8 2.0	3.4	3.5
					Middle	18.1	17.2 17.2	17.2	8.2 8.2	8.2	33.3 33.3	33.3	88.4 88.3	88.4	7.0 7.0	7.0		1.5 1.4	1.5		3.9 4.0	4.0	
					Bottom	35.1	17.2 17.2	17.2	8.2 8.2	8.2	33.3 33.3	33.3	88.3 88.4	88.4	7.0 7.0	7.0		1.5 1.5	1.5		2.9 3.4	3.2	
15-Jan-14	Fine	Moderate	06:29	36.1	Surface	1.0	16.8 16.8	16.8	8.1 8.1	8.1	33.4 33.4	33.4	106.4 98.0	102.2	8.5 7.8	8.1	8.0	2.6 2.7	2.7	2.9	6.5 5.9	6.2	6.8
					Middle	18.1	16.9 16.8	16.8	8.1 8.1	8.1	33.4 33.3	33.4	97.1 101.0	99.1	7.7 8.0	7.9		2.8 2.9	2.9		5.9 7.1	6.5	
					Bottom	35.1	16.8 16.8	16.8	8.1 8.1	8.1	33.1 33.4	33.2	99.0 96.0	97.5	7.9 7.6	7.7		3.0 2.9	3.0		7.4 7.7	7.6	
17-Jan-14	Sunny	Moderate	07:32	35.4	Surface	1.0	16.6 16.6	16.6	8.3 8.3	8.3	32.8 32.8	32.8	96.8 97.1	97.0	7.8 7.8	7.8	7.8	6.7 6.9	6.8	7.2	5.8 6.6	6.2	6.8
					Middle	17.7	16.6 16.6	16.6	8.3 8.3	8.3	32.8 32.9	32.8	96.2 96.4	96.3	7.7 7.7	7.7		7.3 7.1	7.2		6.5 6.6	6.6	
					Bottom	34.4	16.6 16.6	16.6	8.3 8.3	8.3	32.9 32.8	32.9	96.7 96.0	96.4	7.7 7.7	7.7		7.7 7.7	7.7		7.3 7.9	7.6	
20-Jan-14	Sunny	Moderate	08:36	37.2	Surface	1.0	16.6 16.6	16.6	8.3 8.3	8.3	32.3 32.3	32.3	96.0 95.8	95.9	7.7 7.7	7.7	7.7	2.5 2.5	2.5	2.4	5.8 6.6	6.2	5.8
					Middle	18.6	16.6 16.6	16.6	8.3 8.3	8.3	32.3 32.3	32.3	94.7 95.6	95.2	7.6 7.7	7.6		2.2 2.4	2.3		4.8 4.9	4.9	
					Bottom	36.2	16.6 16.6	16.6	8.3 8.3	8.3	32.3 32.2	32.3	94.7 96.8	95.8	7.6 7.8	7.7		2.4 2.5	2.5		5.8 6.5	6.2	

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at CSA - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	09:51	35.0	Surface	1.0	16.4 16.4	16.4	8.2 8.2	8.2	32.8 32.9	32.8	93.6 93.0	93.3	7.5 7.5	7.5	7.5	2.5 2.7	2.6	3.1	3.2 3.6	3.4	4.0
					Middle	17.5	16.4 16.4	16.4	8.2 8.2	8.2	32.8 32.9	32.8	93.3 92.5	92.9	7.5 7.4	7.5		3.1 3.2	3.2		3.4 3.8	3.6	
					Bottom	34.0	16.4 16.4	16.4	8.2 8.2	8.2	32.7 32.9	32.8	94.7 92.8	93.8	7.6 7.4	7.5		3.3 3.6	3.5		5.5 4.6	5.1	
24-Jan-14	Fine	Moderate	04:22	34.3	Surface	1.0	16.1 16.1	16.1	8.2 8.2	8.2	32.8 32.7	32.7	95.2 96.7	96.0	7.7 7.8	7.7	7.7	2.3 2.2	2.3	2.3	3.8 3.4	3.6	3.4
					Middle	17.2	16.3 16.3	16.3	8.2 8.2	8.2	32.9 32.8	32.8	94.8 95.7	95.3	7.6 7.7	7.7		2.3 2.3	2.3		2.5 3.2	2.9	
					Bottom	33.3	16.3 16.3	16.3	8.2 8.2	8.2	32.7 32.9	32.8	95.7 95.1	95.4	7.7 7.7	7.7		2.3 2.4	2.4		3.6 3.8	3.7	
27-Jan-14	Sunny	Moderate	16:23	36.3	Surface	1.0	16.8 16.8	16.8	8.3 8.3	8.3	32.8 32.8	32.8	100.7 100.7	100.7	8.0 8.0	8.0	7.9	1.3 1.4	1.4	1.5	3.5 3.2	3.4	3.3
					Middle	18.2	16.7 16.7	16.7	8.3 8.3	8.3	32.8 32.8	32.8	97.4 97.6	97.5	7.8 7.8	7.8		1.5 1.3	1.4		3.9 3.0	3.5	
					Bottom	35.3	16.7 16.7	16.7	8.3 8.3	8.3	32.8 32.8	32.8	97.7 98.2	98.0	7.8 7.8	7.8		1.6 1.5	1.6		3.0 2.7	2.9	
CSA	Sunny	Moderate	18:17	35.0	Surface	1.0	17.3 17.2	17.3	8.03 8.03	8.03	30.6 30.8	30.7	110.2 107.0	108.6	8.8 8.5	8.7	8.5	1.9 1.7	1.8	2.0	4.1 3.1	3.6	3.1
					Middle	17.5	16.9 16.9	16.9	8.03 8.03	8.03	32.3 32.3	32.3	103.7 103.1	103.4	8.3 8.2	8.2		2.1 2.1	2.1		3.4 2.1	2.8	
					Bottom	34.0	16.9 16.9	16.9	8.03 8.03	8.03	32.3 32.3	32.3	106.6 107.8	107.2	8.5 8.6	8.5		2.2 2.1	2.2		3.8 2.1	3.0	

#### Remarks:

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

#### Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at IS(Mf)6 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*				
1-Jan-14	Sunny	Moderate	12:11	3.1	Surface	1.0	16.3 16.3	16.3	8.0 8.0	8.0	33.2 33.2	33.2	101.3 101.3	101.3	8.1 8.1	8.1	8.1	9.1 8.8	9.0	9.2	7.0 5.8	6.4	9.3			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.1	16.3 16.3	16.3	8.0 8.0	8.0	33.2 33.2	33.2	101.2 101.1	101.2	8.1 8.1	8.1		9.2 9.3	9.3		12.3 11.9	12.1				
3-Jan-14	Sunny	Moderate	13:53	3.2	Surface	1.0	17.4 17.4	17.4	8.0 8.0	8.0	32.9 32.9	32.9	100.3 100.4	100.4	7.9 7.9	7.9	7.9	11.2 10.6	10.9	11.2	12.5 12.6	12.6	12.5			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.2	17.2 17.1	17.1	8.0 8.0	8.0	32.9 32.9	32.9	99.7 99.2	99.5	7.9 7.9	7.9		11.5 11.4	11.5		12.4 12.3	12.4				
6-Jan-14	Sunny	Moderate	16:08	2.9	Surface	1.0	17.3 17.3	17.3	8.0 8.0	8.0	31.8 31.8	31.8	98.0 98.5	98.3	7.8 7.8	7.8	7.8	12.3 12.3	12.3	12.5	11.6 10.5	11.1	13.1			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	1.9	17.3 17.3	17.3	8.0 8.0	8.0	31.8 31.8	31.8	99.1 98.2	98.7	7.9 7.8	7.8		12.6 12.5	12.6		14.5 15.4	15.0				
8-Jan-14	Fine	Moderate	18:33	3.2	Surface	1.0	17.5 17.5	17.5	8.0 8.0	8.0	31.9 31.9	31.9	96.2 97.6	96.9	7.6 7.7	7.7	7.7	14.9 14.1	14.5	15.2	12.0 12.9	12.5	12.1			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-		
					Bottom	2.2	17.5 17.5	17.5	8.0 8.0	8.0	31.9 31.9	31.9	96.5 99.3	97.9	7.6 7.8	7.7		16.2 15.4	15.8		11.1 12.1	11.6				
10-Jan-14	Fine	Moderate	08:56	3.1	Surface	1.0	16.7 16.7	16.7	7.9 7.9	7.9	31.2 31.2	31.2	96.3 95.6	96.0	7.8 7.7	7.7	7.7	11.4 11.5	11.5	11.6	10.4 10.9	10.7	11.0			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-				
					Bottom	2.1	16.7 16.7	16.7	7.9 7.9	7.9	31.2 31.2	31.2	95.8 97.3	96.6	7.7 7.8	7.8		11.9 11.4	11.7		11.9 10.5	11.2				
13-Jan-14	Sunny	Moderate	12:23	3.3	Surface	1.0	17.0 17.0	17.0	8.0 8.0	8.0	32.4 32.4	32.4	101.1 103.6	102.4	8.0 8.2	8.1	8.1	7.3 7.3	7.3	7.6	9.0 8.5	8.8	9.1			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-				
					Bottom	2.3	17.0 17.0	17.0	8.0 8.0	8.0	32.4 32.4	32.4	100.6 102.0	101.3	8.0 8.1	8.1		7.8 7.7	7.8		9.9 8.8	9.4				
15-Jan-14	Sunny	Moderate	11:48	3.2	Surface	1.0	16.6 16.6	16.6	8.0 8.0	8.0	32.3 32.3	32.3	101.8 102.1	102.0	8.2 8.2	8.2	8.2	6.2 6.0	6.1	6.2	7.0 6.7	6.9	7.4			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-				
					Bottom	2.2	16.5 16.4	16.5	8.0 8.0	8.0	32.3 32.3	32.3	101.6 102.4	102.0	8.2 8.2	8.2		6.1 6.3	6.2		8.9 6.9	7.9				
17-Jan-14	Sunny	Moderate	12:32	3.3	Surface	1.0	16.5 16.6	16.6	8.0 8.0	8.0	32.8 32.7	32.8	102.1 102.9	102.5	8.2 8.2	8.2	8.2	10.8 11.1	11.0	11.1	8.9 8.6	8.8	8.8			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-				
					Bottom	2.3	16.6 16.2	16.4	8.0 8.0	8.0	32.8 33.1	32.9	102.4 101.4	101.9	8.2 8.2	8.2		11.1 11.1	11.1		8.9 8.6	8.8				
20-Jan-14	Sunny	Moderate	14:23	3.2	Surface	1.0	16.7 16.7	16.7	8.0 8.0	8.0	32.5 32.5	32.5	106.2 106.8	106.5	8.5 8.5	8.5	8.5	8.6 8.7	8.7	8.8	6.0 6.8	6.4	6.3			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-					
					Bottom	2.2	16.7 16.7	16.7	8.0 8.0	8.0	32.5 32.5	32.5	106.5 104.6	105.6	8.5 8.4	8.4		8.7 8.8	8.8		7.2 5.1	6.2				

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at IS(Mf)6 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	15:33	3.2	Surface	1.0	15.8 15.8	15.8	8.1 8.1	8.1	32.4 32.4	32.4	106.9 106.3	106.6	8.7 8.7	8.7	8.7	9.8 10.5	10.2	12.5	7.8 8.0	7.9	7.7			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.2	15.8 15.8	15.8	8.1 8.1	8.1	32.4 32.4	32.4	106.5 105.5	106.0	8.7 8.6	8.6		14.8 14.7	14.8		7.9 6.8	7.4				
24-Jan-14	Fine	Moderate	11:05	3.3	Surface	1.0	15.6 15.6	15.6	8.1 8.1	8.1	32.5 32.5	32.5	106.7 108.4	107.6	8.7 8.9	8.8	8.8	8.9 9.3	9.1	9.5	16.6 17.9	17.3	18.2			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.3	15.6 15.6	15.6	8.1 8.1	8.1	32.6 32.5	32.6	107.4 105.9	106.7	8.8 8.7	8.7		10.2 9.5	9.9		19.8 18.3	19.1				
27-Jan-14	Sunny	Moderate	10:46	3.2	Surface	1.0	16.7 16.8	16.7	8.1 8.1	8.1	32.2 32.2	32.2	108.8 110.1	109.5	8.7 8.8	8.8	8.8	5.7 5.8	5.8	6.0	8.4 6.3	7.4	8.4			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.2	16.8 16.7	16.8	8.1 8.1	8.1	32.3 32.3	32.3	109.7 106.9	108.3	8.8 8.6	8.7		6.2 6.1	6.2		10.1 8.7	9.4				
1/29/2014	Sunny	Moderate	12:31	3.3	Surface	1.0	17.5 17.6	17.5	8.13 8.13	8.13	32.0 32.0	32.0	118.6 111.4	115.0	9.4 8.8	9.1	9.1	6.0 6.2	6.1	7.7	6.2 5.5	5.9	6.4			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-		
					Bottom	2.3	17.5 17.7	17.6	8.13 8.12	8.13	32.0 31.8	31.9	115.1 102.7	108.9	9.1 8.1	8.6		9.2 9.3	9.3		6.6 6.9	6.8				

**Remarks:**

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:

\* DA: Depth-Averaged

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

**Appendix J - Marine Water Quality Monitoring Results**

**Water Quality Monitoring Results at IS(Mf)6 - Mid-FloodTide**

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*				
1-Jan-14	Sunny	Moderate	08:01	3.3	Surface	1.0	16.1 16.1	16.1	8.0 8.0	8.0	33.2 33.2	33.2	99.1 99.1	99.1	8.0 8.0	8.0	8.0	8.6 8.6	8.6	9.3	9.1 9.3	9.2	8.9			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		9.3	-		-	-	-
					Bottom	2.3	16.1 16.1	16.1	8.0 8.0	8.0	33.3 33.3	33.3	99.8 99.5	99.7	8.0 8.0	8.0		8.0	10.2 9.8		10.0	8.0		10.2 9.8	10.0	8.0
3-Jan-14	Sunny	Moderate	09:51	3.0	Surface	1.0	16.9 17.0	17.0	8.0 8.0	8.0	32.7 32.7	32.7	97.9 98.3	98.1	7.8 7.8	7.8	7.8	15.2 15.0	15.1	15.1	12.9 12.7	12.8	12.6			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.0	16.9 16.9	16.9	8.0 8.0	8.0	32.7 32.7	32.7	98.2 97.7	98.0	7.8 7.8	7.8		7.8	15.2 14.9		15.1	7.8		15.2 14.9	15.1	7.8
6-Jan-14	Sunny	Moderate	11:53	3.2	Surface	1.0	17.0 17.0	17.0	8.0 8.0	8.0	31.8 31.8	31.8	96.4 97.1	96.8	7.7 7.8	7.7	7.7	16.3 16.3	16.3	16.5	18.7 19.8	19.3	19.2			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.2	16.9 17.0	17.0	8.0 8.0	8.0	31.8 31.8	31.8	98.5 96.6	97.6	7.9 7.7	7.8		7.8	16.5 16.6		16.6	7.8		16.5 16.6	16.6	7.8
8-Jan-14	Fine	Moderate	13:29	3.2	Surface	1.0	17.6 17.5	17.6	8.0 8.0	8.0	31.8 31.7	31.8	96.5 96.9	96.7	7.6 7.7	7.6	7.6	13.7 13.8	13.8	14.7	10.1 12.0	11.1	14.2			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.2	17.6 17.5	17.5	8.0 8.0	8.0	31.8 31.8	31.8	96.7 97.4	97.1	7.6 7.7	7.7		7.7	15.2 15.7		15.5	7.7		15.2 15.7	15.5	7.7
10-Jan-14	Fine	Moderate	13:31	3.0	Surface	1.0	16.8 16.8	16.8	8.0 8.0	8.0	31.3 31.3	31.3	96.7 97.6	97.2	7.8 7.8	7.8	7.8	16.0 16.2	16.1	16.3	17.1 18.3	17.7	18.1			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.0	16.8 16.9	16.8	8.0 8.0	8.0	31.3 31.3	31.3	97.0 98.5	97.8	7.8 7.9	7.8		7.8	16.7 16.0		16.4	7.8		16.7 16.0	16.4	7.8
13-Jan-14	Sunny	Moderate	15:46	3.3	Surface	1.0	17.1 17.1	17.1	8.0 8.0	8.0	32.3 32.3	32.3	103.2 102.1	102.7	8.2 8.1	8.2	8.2	9.0 9.2	9.1	9.2	8.2 7.1	7.7	8.5			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.3	17.1 17.1	17.1	8.0 8.0	8.0	32.3 32.3	32.3	102.2 101.8	102.0	8.1 8.1	8.1		8.1	9.0 9.3		9.2	8.1		9.0 9.3	9.2	8.1
15-Jan-14	Fine	Moderate	08:00	3.1	Surface	1.0	16.3 16.3	16.3	8.0 8.0	8.0	32.4 32.4	32.4	100.3 99.0	99.7	8.1 8.0	8.0	8.0	13.7 13.1	13.4	13.8	14.2 14.3	14.3	14.3			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.1	16.3 16.3	16.3	8.0 8.0	8.0	32.4 32.4	32.4	101.9 99.6	100.8	8.2 8.0	8.1		8.1	14.1 14.2		14.2	8.1		14.1 14.2	14.2	8.1
17-Jan-14	Sunny	Moderate	08:23	3.3	Surface	1.0	16.4 16.3	16.3	8.1 8.1	8.1	33.0 33.0	33.0	102.8 103.1	103.0	8.3 8.3	8.3	8.3	14.4 14.4	14.4	14.5	9.8 10.1	10.0	10.2			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.3	16.3 16.1	16.2	8.1 8.0	8.1	33.0 33.2	33.1	101.9 102.0	102.0	8.2 8.2	8.2		8.2	14.5 14.5		14.5	8.2		14.5 14.5	14.5	8.2
20-Jan-14	Sunny	Moderate	10:19	3.2	Surface	1.0	16.5 16.4	16.5	8.0 8.0	8.0	32.7 32.7	32.7	105.0 104.9	105.0	8.4 8.4	8.4	8.4	5.4 5.4	5.4	5.5	8.9 9.3	9.1	9.1			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.2	16.4 16.4	16.4	8.0 8.0	8.0	32.7 32.7	32.7	104.9 104.7	104.8	8.4 8.4	8.4		8.4	5.5 5.5		5.5	8.4		5.5 5.5	5.5	8.4

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at IS(Mf)6 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	11:32	3.2	Surface	1.0	15.8 15.7	15.8	8.1 8.1	8.1	32.6 32.6	32.6	107.5 106.9	107.2	8.7 8.7	8.7	8.7	8.8 8.4	8.6	8.2	6.8 6.5	6.7	6.4			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.2	15.6 15.9	15.7	8.1 8.1	8.1	32.6 32.5	32.5	106.1 107.1	106.6	8.7 8.7	8.7		8.7	7.9 7.6		7.8	6.0 6.2		6.1		
24-Jan-14	Fine	Moderate	05:59	3.2	Surface	1.0	15.4 15.4	15.4	8.1 8.1	8.1	32.5 32.5	32.5	105.2 104.9	105.1	8.6 8.6	8.6	8.6	15.7 16.4	16.1	16.3	9.7 8.8	9.3	10.2			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.2	15.4 15.4	15.4	8.1 8.1	8.1	32.5 32.5	32.5	104.1 104.9	104.5	8.5 8.6	8.6		8.6	16.1 16.6		16.4	11.9 10.0		11.0		
27-Jan-14	Sunny	Moderate	14:15	3.2	Surface	1.0	16.9 16.9	16.9	8.2 8.2	8.2	32.4 32.4	32.4	112.5 114.8	113.7	9.0 9.2	9.1	9.1	4.3 4.2	4.3	4.3	6.2 7.5	6.9	7.8			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.2	16.9 16.9	16.9	8.2 8.2	8.2	32.4 32.4	32.4	113.9 108.3	111.1	9.1 8.6	8.9		8.9	4.2 4.3		4.3	7.5 9.8		8.7		
IS(Mf)6	Sunny	Moderate	15:52	3.4	Surface	1.0	17.8 17.9	17.9	8.13 8.13	8.13	31.7 31.6	31.6	139.1 131.2	135.2	10.9 10.3	10.6	10.6	19.5 19.5	19.5	19.6	3.4 3.5	3.5	3.0			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.4	17.8 17.8	17.8	8.13 8.13	8.13	31.7 31.8	31.8	136.2 131.1	133.7	10.7 10.2	10.5		10.5	19.6 19.6		19.6	2.4 2.4		2.4		

**Remarks:**

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:

\* DA: Depth-Averaged

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



## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at IS(Mf)9 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*				
1-Jan-14	Sunny	Moderate	12:28	3.3	Surface	1.0	16.4 16.4	16.4	8.0 8.0	8.0	33.3 33.3	33.3	105.3 105.1	105.2	8.4 8.4	8.4	8.4	6.8 6.8	6.8	7.3	6.0 5.7	5.9	6.1			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.3	16.2 16.3	16.2	8.0 8.0	8.0	33.3 33.3	33.3	104.7 104.6	104.7	8.4 8.4	8.4		8.4	8.4		8.4	7.8 7.8		7.8	5.6 6.9	6.3
3-Jan-14	Sunny	Moderate	14:08	3.6	Surface	1.0	18.0 18.1	18.1	8.1 8.1	8.1	32.9 32.9	32.9	105.2 105.3	105.3	8.2 8.2	8.2	8.2	10.2 10.2	10.2	10.5	9.0 8.0	8.5	9.6			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.6	17.0 17.1	17.1	8.0 8.0	8.0	32.9 32.9	32.9	101.2 103.1	102.2	8.0 8.2	8.1		8.1	8.1		10.8 10.5	10.7		10.0 11.3	10.7	
6-Jan-14	Sunny	Moderate	16:21	3.7	Surface	1.0	17.2 17.2	17.2	8.0 8.0	8.0	31.8 31.8	31.8	97.7 97.9	97.8	7.8 7.8	7.8	7.8	7.8 8.2	8.0	8.1	14.2 15.2	14.7	14.8			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.7	17.2 17.2	17.2	8.0 8.0	8.0	31.8 31.8	31.8	98.2 97.6	97.9	7.8 7.8	7.8		7.8	7.8		8.1 8.1	8.1		14.5 15.3	14.9	
8-Jan-14	Fine	Moderate	18:46	3.4	Surface	1.0	17.5 17.5	17.5	8.0 8.0	8.0	31.7 31.7	31.7	98.7 97.6	98.2	7.8 7.7	7.8	7.8	11.2 10.9	11.1	11.4	12.5 11.9	12.2	13.3			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.4	17.5 17.5	17.5	8.0 8.0	8.0	31.7 31.7	31.7	98.1 99.8	99.0	7.8 7.9	7.8		7.8	7.8		11.1 12.0	11.6		14.6 14.1	14.4	
10-Jan-14	Fine	Moderate	08:43	3.6	Surface	1.0	16.7 16.7	16.7	7.9 7.9	7.9	31.2 31.2	31.2	95.3 94.8	95.1	7.7 7.6	7.7	7.7	13.6 13.4	13.5	13.8	15.4 14.1	14.8	14.9			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.6	16.7 16.7	16.7	7.9 7.9	7.9	31.2 31.2	31.2	95.7 95.0	95.4	7.7 7.7	7.7		7.7	7.7		14.0 13.9	14.0		15.0 14.7	14.9	
13-Jan-14	Sunny	Moderate	12:11	3.4	Surface	1.0	17.0 17.0	17.0	8.0 8.0	8.0	32.2 32.2	32.2	104.2 101.2	102.7	8.3 8.1	8.2	8.2	8.4 8.6	8.5	8.6	8.4 8.1	8.3	9.6			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.4	17.0 17.0	17.0	8.0 8.0	8.0	32.2 32.2	32.2	101.3 101.1	101.2	8.1 8.0	8.1		8.1	8.1		8.8 8.6	8.7		11.0 10.7	10.9	
15-Jan-14	Sunny	Moderate	12:02	3.7	Surface	1.0	16.6 16.6	16.6	8.0 8.0	8.0	32.5 32.4	32.5	99.1 99.5	99.3	7.9 8.0	8.0	8.0	8.3 8.4	8.4	8.6	8.6 8.6	8.6	9.2			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.7	16.6 16.6	16.6	8.0 8.0	8.0	32.5 32.5	32.5	100.5 99.2	99.9	8.1 7.9	8.0		8.0	8.0		8.7 8.6	8.7		10.1 9.5	9.8	
17-Jan-14	Sunny	Moderate	12:44	3.3	Surface	1.0	16.9 16.7	16.8	8.1 8.1	8.1	32.7 32.7	32.7	103.3 103.7	103.5	8.2 8.3	8.2	8.2	14.4 14.2	14.3	14.4	10.6 11.2	10.9	11.8			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.3	16.8 16.7	16.7	8.1 8.0	8.0	32.6 32.8	32.7	103.5 101.5	102.5	8.3 8.1	8.2		8.2	8.2		14.6 14.4	14.5		13.1 12.0	12.6	
20-Jan-14	Sunny	Moderate	14:35	3.6	Surface	1.0	17.1 17.0	17.0	8.0 8.0	8.0	32.5 32.7	32.6	110.1 108.2	109.2	8.7 8.6	8.7	8.7	3.4 3.5	3.5	3.6	5.2 4.9	5.1	5.6			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.6	16.8 16.8	16.8	8.0 8.0	8.0	32.5 32.5	32.5	106.9 108.4	107.7	8.5 8.6	8.6		8.6	8.6		3.7 3.7	3.7		6.0 5.9	6.0	

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at IS(Mf)9 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	15:48	3.6	Surface	1.0	16.2 16.1	16.2	8.1 8.1	8.1	32.3 32.3	32.3	106.4 107.2	106.8	8.6 8.7	8.6	8.6	4.1 3.8	4.0	4.5	5.9 4.2	5.1	4.8			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.6	16.0 15.9	16.0	8.1 8.1	8.1	32.2 32.3	32.3	106.1 104.1	105.1	8.6 8.5	8.5		8.5	5.0 4.7		4.9	4.9 4.1		4.5		
24-Jan-14	Fine	Moderate	11:17	3.5	Surface	1.0	15.6 15.6	15.6	8.2 8.2	8.2	32.5 32.5	32.5	105.6 107.4	106.5	8.6 8.8	8.7	8.7	9.1 8.8	9.0	9.8	5.2 5.8	5.5	8.5			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.5	15.7 15.6	15.6	8.2 8.2	8.2	32.5 32.5	32.5	106.5 104.2	105.4	8.7 8.5	8.6		8.6	10.7 10.3		10.5	12.0 10.7		11.4		
27-Jan-14	Sunny	Moderate	10:33	3.7	Surface	1.0	16.4 16.4	16.4	8.0 8.0	8.0	32.3 32.3	32.3	104.5 104.4	104.5	8.4 8.4	8.4	8.4	3.5 3.5	3.5	3.6	6.7 6.6	6.7	6.0			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.7	16.4 16.4	16.4	8.0 8.0	8.0	32.3 32.3	32.3	104.4 103.9	104.2	8.4 8.4	8.4		8.4	3.5 3.7		3.6	5.4 5.0		5.2		
1/29/2014	Sunny	Moderate	12:14	3.4	Surface	1.0	17.3 17.3	17.3	8.14 8.14	8.14	31.3 31.3	31.3	124.7 125.1	124.9	9.9 10.0	9.9	9.9	2.5 2.6	2.6	2.6	2.0 3.3	2.7	3.1			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.4	17.3 17.3	17.3	8.14 8.14	8.14	31.3 31.3	31.3	124.6 123.8	124.2	9.9 9.9	9.9		9.9	2.6 2.6		2.6	3.1 3.6		3.4		

**Remarks:**

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at IS(Mf)9 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*				
1-Jan-14	Sunny	Moderate	07:44	3.4	Surface	1.0	16.2 16.1	16.2	8.0 8.0	8.0	33.3 33.3	33.3	101.2 101.2	101.2	8.1 8.1	8.1	8.1	12.5 12.1	12.3	13.0	11.8 12.6	12.2	12.1			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.4	16.1 16.1	16.1	8.0 8.0	8.0	33.3 33.3	33.3	101.1 101.3	101.2	8.1 8.1	8.1		8.1	13.4 13.7		13.6	12.5 11.3		11.9		
3-Jan-14	Sunny	Moderate	09:35	3.4	Surface	1.0	16.9 16.9	16.9	8.0 8.0	8.0	32.6 32.6	32.6	97.7 97.8	97.8	7.8 7.8	7.8	7.8	15.6 16.0	15.8	15.6	14.7 14.7	14.7	14.5			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.4	16.9 16.9	16.9	8.0 8.0	8.0	32.6 32.6	32.6	97.9 97.5	97.7	7.8 7.8	7.8		7.8	15.6 15.2		15.4	14.2 14.4		14.3		
6-Jan-14	Sunny	Moderate	11:41	3.7	Surface	1.0	17.0 16.9	16.9	8.0 8.0	8.0	31.8 31.8	31.8	95.0 94.4	94.7	7.6 7.5	7.6	7.6	23.4 23.4	23.4	23.5	24.2 24.0	24.1	24.4			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.7	17.0 16.9	16.9	8.0 8.0	8.0	31.8 31.8	31.8	94.7 96.5	95.6	7.6 7.7	7.6		7.6	23.4 23.5		23.5	24.3 24.8		24.6		
8-Jan-14	Fine	Moderate	13:15	3.3	Surface	1.0	17.5 17.4	17.5	8.0 8.0	8.0	31.3 31.3	31.3	95.6 96.2	95.9	7.6 7.6	7.6	7.6	14.5 14.1	14.3	14.2	15.1 15.3	15.2	16.1			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-		
					Bottom	2.3	17.4 17.5	17.4	8.0 8.0	8.0	31.6 31.5	31.5	96.5 95.8	96.2	7.6 7.6	7.6		7.6	13.6 14.5		14.1	17.3 16.5		16.9		
10-Jan-14	Fine	Moderate	13:44	3.7	Surface	1.0	17.0 17.0	17.0	7.9 7.9	7.9	31.4 31.4	31.4	95.0 96.2	95.6	7.6 7.7	7.7	7.7	16.9 17.1	17.0	17.1	15.0 15.9	15.5	16.3			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-		
					Bottom	2.7	17.0 17.0	17.0	7.9 8.0	8.0	31.4 31.4	31.4	95.6 97.9	96.8	7.7 7.8	7.7		7.7	17.5 16.9		17.2	16.6 17.5		17.1		
13-Jan-14	Sunny	Moderate	15:58	3.3	Surface	1.0	17.1 17.1	17.1	8.1 8.1	8.1	32.3 32.3	32.3	103.8 103.9	103.9	8.2 8.3	8.3	8.3	7.6 7.6	7.6	7.8	6.3 6.2	6.3	7.8			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-		
					Bottom	2.3	17.1 17.0	17.0	8.1 8.0	8.0	32.3 32.3	32.3	103.6 103.5	103.6	8.2 8.2	8.2		8.2	8.0 7.7		7.9	8.7 9.7		9.2		
15-Jan-14	Fine	Moderate	07:47	3.8	Surface	1.0	16.5 16.5	16.5	8.0 8.0	8.0	32.5 32.5	32.5	97.8 98.1	98.0	7.8 7.9	7.9	7.9	20.6 20.1	20.4	20.6	23.8 22.7	23.3	26.6			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-		
					Bottom	2.8	16.5 16.5	16.5	8.0 8.0	8.0	32.5 32.5	32.5	99.2 97.9	98.6	8.0 7.9	7.9		7.9	20.6 20.8		20.7	30.6 29.0		29.8		
17-Jan-14	Sunny	Moderate	08:12	3.4	Surface	1.0	16.4 16.4	16.4	8.1 8.1	8.1	32.8 32.8	32.8	101.0 102.0	101.5	8.1 8.2	8.1	8.1	24.5 23.0	23.8	23.9	36.6 34.0	35.3	36.8			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-		
					Bottom	2.4	16.4 16.4	16.4	8.1 8.1	8.1	32.9 32.9	32.9	101.2 100.9	101.1	8.1 8.1	8.1		8.1	23.1 24.7		23.9	39.6 36.9		38.3		
20-Jan-14	Sunny	Moderate	10:05	3.7	Surface	1.0	16.5 16.5	16.5	8.0 8.0	8.0	32.8 32.7	32.8	105.8 106.0	105.9	8.5 8.5	8.5	8.5	13.6 13.2	13.4	13.4	14.4 14.7	14.6	14.5			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-		
					Bottom	2.7	16.5 16.5	16.5	8.0 8.0	8.0	32.8 32.7	32.7	105.8 106.3	106.1	8.5 8.5	8.5		8.5	13.1 13.4		13.3	14.7 14.0		14.4		

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at IS(Mf)9 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	11:17	3.4	Surface	1.0	15.9 15.9	15.9	8.0 8.0	8.0	32.5 32.4	32.4	102.0 103.0	102.5	8.3 8.4	8.3	8.3	13.5 13.3	13.4	13.5	11.6 10.7	11.2	11.4			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.4	15.8 15.8	15.8	8.0 8.0	8.0	32.4 32.4	32.4	104.1 102.0	103.1	8.5 8.3	8.4		8.4	13.5 13.5		13.5	8.4		13.5	13.5	12.2 11.0
24-Jan-14	Fine	Moderate	05:44	3.3	Surface	1.0	15.4 15.4	15.4	8.1 8.1	8.1	32.5 32.5	32.5	103.9 104.9	104.4	8.5 8.6	8.6	8.6	9.2 9.6	9.4	9.8	14.4 15.3	14.9	19.2			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.3	15.4 15.4	15.4	8.1 8.1	8.1	32.5 32.6	32.6	104.5 102.5	103.5	8.6 8.4	8.5		8.5	10.4 10.0		10.2	8.5		10.4 10.0	10.2	23.8 22.9
27-Jan-14	Sunny	Moderate	14:29	3.8	Surface	1.0	17.0 17.1	17.0	8.2 8.2	8.2	32.5 32.5	32.5	117.1 115.6	116.4	9.3 9.2	9.2	9.2	2.8 2.9	2.9	3.0	6.5 6.8	6.7	6.3			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.8	17.0 17.0	17.0	8.2 8.2	8.2	32.5 32.5	32.5	116.4 113.4	114.9	9.2 9.0	9.1		9.1	2.9 3.1		3.0	9.1		2.9 3.1	3.0	5.8 5.9
IS(Mf)9	Sunny	Moderate	16:10	3.4	Surface	1.0	17.6 17.6	17.6	8.11 8.11	8.11	31.8 31.7	31.7	131.8 123.0	127.4	10.4 9.7	10.1	10.1	15.1 15.3	15.2	15.3	3.5 2.6	3.1	3.3			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.4	17.6 17.4	17.5	8.11 8.11	8.11	31.7 31.9	31.8	128.5 122.4	125.5	10.1 9.6	9.9		9.9	15.2 15.3		15.3	9.9		15.2 15.3	15.3	3.3 3.5

#### Remarks:

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

#### Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at IS10 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*	
1-Jan-14	Sunny	Moderate	12:56	10.3	Surface	1.0	16.8 16.8	16.8	8.2 8.2	8.2	33.5 33.5	33.5	98.5 98.7	98.6	7.8 7.8	7.8	7.8	6.1 5.9	6.0	6.7	12.2 11.3	11.8	11.4
					Middle	5.2	16.6 16.6	16.6	8.2 8.2	8.2	33.5 33.5	33.5	97.5 97.6	97.6	7.8 7.8	7.8		7.7 7.0	7.4		10.5 10.3	10.4	
					Bottom	9.3	16.6 16.6	16.6	8.2 8.2	8.2	33.5 33.5	33.5	97.8 97.8	97.8	7.8 7.8	7.8		6.8 6.6	6.7		11.8 11.9	11.9	
3-Jan-14	Sunny	Moderate	14:30	10.0	Surface	1.0	17.3 17.3	17.3	8.2 8.2	8.2	31.4 31.3	31.3	93.9 93.9	93.9	7.5 7.5	7.5	7.5	4.9 4.9	4.9	4.8	10.1 10.1	10.1	10.3
					Middle	5.0	17.2 17.3	17.2	8.2 8.2	8.2	32.3 32.2	32.2	94.0 94.1	94.1	7.4 7.5	7.4		4.6 4.5	4.6		9.1 9.3	9.2	
					Bottom	9.0	17.2 17.1	17.2	8.2 8.2	8.2	32.3 32.3	32.3	93.5 93.5	93.5	7.4 7.4	7.4		4.8 4.9	4.9		12.2 11.0	11.6	
6-Jan-14	Sunny	Moderate	17:03	10.4	Surface	1.0	17.3 17.2	17.3	8.2 8.2	8.2	31.6 31.7	31.7	95.1 94.9	95.0	7.6 7.5	7.5	7.5	5.1 5.4	5.3	5.7	9.6 8.9	9.3	9.4
					Middle	5.2	17.1 17.1	17.1	8.2 8.2	8.2	31.9 31.9	31.9	94.4 94.4	94.4	7.5 7.5	7.5		5.8 6.0	5.9		9.1 9.9	9.5	
					Bottom	9.4	17.1 17.1	17.1	8.2 8.2	8.2	31.9 31.9	31.9	94.5 94.4	94.5	7.5 7.5	7.5		5.9 5.9	5.9		9.7 9.1	9.4	
8-Jan-14	Fine	Moderate	19:31	10.7	Surface	1.0	17.6 17.6	17.6	8.1 8.1	8.1	29.3 29.4	29.4	92.8 93.0	92.9	7.4 7.4	7.4	7.4	3.2 3.1	3.2	3.6	5.0 5.2	5.1	6.4
					Middle	5.4	17.6 17.6	17.6	8.2 8.2	8.2	29.8 30.0	29.9	92.8 93.0	92.9	7.4 7.4	7.4		3.7 3.7	3.7		6.6 7.1	6.9	
					Bottom	9.7	17.6 17.6	17.6	8.2 8.2	8.2	30.3 30.1	30.2	92.7 92.6	92.7	7.4 7.4	7.4		3.8 3.8	3.8		6.7 7.9	7.3	
10-Jan-14	Fine	Moderate	08:20	9.7	Surface	1.0	17.0 17.0	17.0	8.2 8.2	8.2	31.8 31.8	31.8	91.6 92.6	92.1	7.3 7.4	7.4	7.4	8.2 8.2	8.2	7.9	9.4 8.9	9.2	9.0
					Middle	4.9	17.0 17.0	17.0	8.2 8.2	8.2	31.9 31.9	31.9	92.9 91.4	92.2	7.4 7.3	7.3		8.0 7.8	7.9		8.8 8.1	8.5	
					Bottom	8.7	17.1 17.0	17.1	8.2 8.2	8.2	32.0 32.0	32.0	91.8 94.9	93.4	7.3 7.6	7.4		7.5 7.7	7.6		9.0 9.3	9.2	
13-Jan-14	Sunny	Moderate	11:22	10.7	Surface	1.0	17.2 17.2	17.2	8.2 8.2	8.2	32.2 32.2	32.2	95.2 96.0	95.6	7.5 7.6	7.6	7.6	4.8 4.9	4.9	4.9	5.7 6.6	6.2	6.4
					Middle	5.4	17.2 17.2	17.2	8.2 8.2	8.2	32.2 32.3	32.3	94.8 96.0	95.4	7.5 7.6	7.6		5.0 4.9	5.0		7.3 5.5	6.4	
					Bottom	9.7	17.3 17.3	17.3	8.2 8.2	8.2	32.3 32.3	32.3	95.3 97.7	96.5	7.5 7.7	7.6		4.7 4.7	4.7		7.3 5.8	6.6	
15-Jan-14	Sunny	Moderate	12:19	11.2	Surface	1.0	16.7 16.7	16.7	8.2 8.2	8.2	32.9 32.9	32.9	95.1 95.0	95.1	7.6 7.6	7.6	7.6	10.2 10.3	10.3	10.4	12.4 12.6	12.5	13.4
					Middle	5.6	16.6 16.6	16.6	8.2 8.2	8.2	33.0 33.0	33.0	94.9 94.9	94.9	7.6 7.6	7.6		10.4 10.4	10.4		13.3 12.7	13.0	
					Bottom	10.2	16.6 16.6	16.6	8.2 8.2	8.2	33.0 33.0	33.0	94.6 94.6	94.6	7.6 7.6	7.6		10.4 10.5	10.5		15.0 14.1	14.6	
17-Jan-14	Sunny	Moderate	13:42	10.7	Surface	1.0	16.8 16.8	16.8	8.3 8.3	8.3	32.5 32.5	32.5	98.4 98.4	98.4	7.9 7.9	7.9	7.9	4.4 4.6	4.5	4.7	7.6 7.2	7.4	7.8
					Middle	5.4	16.8 16.8	16.8	8.3 8.3	8.3	32.6 32.6	32.6	98.2 98.2	98.2	7.8 7.8	7.8		4.5 4.8	4.7		8.8 8.4	8.6	
					Bottom	9.7	16.8 16.7	16.7	8.3 8.3	8.3	32.7 32.7	32.7	97.9 97.9	97.9	7.8 7.8	7.8		4.9 5.0	5.0		6.7 8.0	7.4	
20-Jan-14	Sunny	Moderate	15:15	9.6	Surface	1.0	16.9 16.9	16.9	8.3 8.3	8.3	31.4 31.5	31.4	97.9 97.9	97.9	7.8 7.8	7.8	7.8	3.5 3.3	3.4	3.8	6.4 5.5	6.0	5.7
					Middle	4.8	16.7 16.5	16.6	8.3 8.3	8.3	32.0 32.3	32.2	97.6 97.0	97.3	7.8 7.8	7.8		4.0 4.1	4.1		6.1 4.8	5.5	
					Bottom	8.6	16.6 16.5	16.5	8.3 8.3	8.3	32.2 32.3	32.3	97.1 96.7	96.9	7.8 7.8	7.8		3.7 3.9	3.8		6.6 4.6	5.6	

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at IS10 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	16:45	10.3	Surface	1.0	16.2	16.2	8.3	8.3	32.2	32.2	97.8	97.9	7.9	7.9	7.9	4.7	4.7	4.7	7.6	7.0	6.9
					Middle	5.2	16.2	16.2	8.3	8.3	32.3	32.3	97.5	97.4	7.9	7.9		4.6	4.7		7.0	6.9	
					Bottom	9.3	16.2	16.2	8.3	8.3	32.4	32.4	97.8	97.5	7.9	7.9		4.8	4.7		7.3	6.8	
24-Jan-14	Fine	Moderate	12:03	10.3	Surface	1.0	16.0	16.0	8.3	8.3	32.3	32.3	98.0	98.0	8.0	8.0	8.0	6.7	6.6	6.7	5.4	5.5	4.7
					Middle	5.2	15.9	15.9	8.3	8.3	32.4	32.4	97.6	97.6	7.9	7.9		6.6	6.6		4.8	4.3	
					Bottom	9.3	15.9	15.9	8.3	8.3	32.4	32.4	97.4	97.5	7.9	7.9		6.7	6.8		3.8	4.2	
27-Jan-14	Sunny	Moderate	09:53	10.6	Surface	1.0	16.7	16.7	8.3	8.3	31.9	31.9	101.9	101.5	8.2	8.1	8.1	3.8	3.9	4.3	6.2	7.1	8.9
					Middle	5.3	16.6	16.6	8.3	8.3	32.0	32.0	99.7	100.0	8.0	8.0		4.3	4.2		9.6	9.0	
					Bottom	9.6	16.6	16.6	8.3	8.3	32.1	32.1	99.4	100.2	8.0	8.0		4.8	4.7		9.9	10.5	
1/29/2014	Sunny	Moderate	12:01	10.6	Surface	1.0	17.4	17.4	8.01	8.01	29.0	29.0	108.3	107.8	8.7	8.7	8.7	2.0	2.1	2.2	4.0	4.2	4.2
					Middle	5.3	17.1	17.1	8.01	8.01	31.1	31.1	107.0	107.5	8.6	8.6		2.2	2.1		3.7	3.7	
					Bottom	9.6	17.0	17.0	8.01	8.01	31.4	31.4	106.7	106.4	8.5	8.5		2.5	2.5		4.6	4.8	

**Remarks:**

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at IS10 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*	
1-Jan-14	Sunny	Moderate	07:30	10.7	Surface	1.0	16.6 16.6	16.6	8.2 8.2	8.2	33.6 33.6	33.6	99.3 100.5	99.9	7.9 8.0	7.9	8.0	6.0 6.2	6.1	6.4	15.9 16.0	16.0	16.5
					Middle	5.4	16.6 16.6	16.6	8.2 8.2	8.2	33.6 33.6	33.6	101.7 99.2	100.5	8.1 7.9	8.0		6.8 6.6	6.7		16.0 17.9	17.0	
					Bottom	9.7	16.6 16.6	16.6	8.2 8.2	8.2	33.6 33.6	33.6	103.3 99.4	101.4	8.2 7.9	8.1		6.2 6.7	6.5		17.3 15.8	16.6	
3-Jan-14	Sunny	Moderate	09:16	10.4	Surface	1.0	17.0 17.0	17.0	8.2 8.2	8.2	32.6 32.6	32.6	95.7 95.6	95.7	7.6 7.6	7.6	7.6	17.2 17.7	17.5	17.8	16.1 17.5	16.8	20.9
					Middle	5.2	17.0 17.0	17.0	8.2 8.2	8.2	32.7 32.7	32.7	95.1 95.2	95.2	7.6 7.6	7.6		16.9 17.3	17.1		21.4 20.2	20.8	
					Bottom	9.4	17.0 17.0	17.0	8.2 8.2	8.2	32.7 32.7	32.7	95.1 95.2	95.2	7.6 7.6	7.6		18.5 19.0	18.8		25.3 24.6	25.0	
6-Jan-14	Sunny	Moderate	11:21	10.7	Surface	1.0	17.0 17.0	17.0	8.2 8.2	8.2	31.9 31.9	31.9	95.6 94.8	95.2	7.6 7.6	7.6	7.6	14.3 13.6	14.0	14.8	19.9 19.8	19.9	20.7
					Middle	5.4	17.0 17.0	17.0	8.2 8.2	8.2	31.9 32.0	32.0	94.4 95.7	95.1	7.5 7.6	7.6		14.6 14.7	14.7		19.2 20.0	19.6	
					Bottom	9.7	17.0 17.0	17.0	8.2 8.2	8.2	32.0 32.0	32.0	94.5 96.7	95.6	7.5 7.7	7.6		15.1 16.0	15.6		23.4 21.6	22.5	
8-Jan-14	Fine	Moderate	12:49	10.8	Surface	1.0	17.4 17.4	17.4	8.2 8.2	8.2	31.1 31.1	31.1	94.6 94.0	94.3	7.5 7.5	7.5	7.5	13.0 12.9	13.0	13.3	15.2 15.2	15.2	16.7
					Middle	5.4	17.4 17.4	17.4	8.2 8.2	8.2	31.2 31.2	31.2	93.9 94.7	94.3	7.5 7.5	7.5		13.7 13.5	13.6		14.1 14.1	14.1	
					Bottom	9.8	17.4 17.4	17.4	8.2 8.2	8.2	31.6 31.4	31.5	95.1 93.8	94.5	7.5 7.5	7.5		13.2 13.5	13.4		20.1 21.3	20.7	
10-Jan-14	Fine	Moderate	14:01	9.7	Surface	1.0	17.2 17.2	17.2	8.2 8.2	8.2	31.8 31.8	31.8	90.6 90.7	90.7	7.2 7.2	7.2	7.2	5.6 5.5	5.6	5.6	5.1 5.4	5.3	6.3
					Middle	4.9	17.2 17.2	17.2	8.2 8.2	8.2	32.0 31.9	32.0	90.0 90.1	90.1	7.1 7.2	7.1		5.5 5.6	5.6		6.1 6.4	6.3	
					Bottom	8.7	17.2 17.2	17.2	8.2 8.2	8.2	32.0 32.1	32.1	90.5 90.5	90.5	7.2 7.2	7.2		5.5 5.5	5.5		8.4 6.3	7.4	
13-Jan-14	Sunny	Moderate	16:41	10.7	Surface	1.0	17.2 17.2	17.2	8.2 8.2	8.2	32.0 32.0	32.0	95.0 94.3	94.7	7.5 7.5	7.5	7.5	7.5 7.5	7.5	7.7	6.6 5.5	6.1	6.5
					Middle	5.4	17.2 17.2	17.2	8.2 8.2	8.2	32.1 32.2	32.2	93.8 93.9	93.9	7.4 7.4	7.4		7.6 7.8	7.7		6.7 5.0	5.9	
					Bottom	9.7	17.2 17.2	17.2	8.2 8.2	8.2	32.5 32.5	32.5	95.0 94.4	94.7	7.5 7.5	7.5		7.8 7.8	7.8		7.9 7.1	7.5	
15-Jan-14	Fine	Moderate	07:21	11.0	Surface	1.0	16.6 16.6	16.6	8.2 8.2	8.2	33.1 33.1	33.1	101.1 97.1	99.1	8.1 7.7	7.9	7.9	13.3 13.1	13.2	13.5	16.6 17.0	16.8	16.9
					Middle	5.5	16.6 16.6	16.6	8.2 8.2	8.2	33.1 33.1	33.1	96.9 98.8	97.9	7.7 7.9	7.8		13.6 13.5	13.6		16.5 16.6	16.6	
					Bottom	10.0	16.6 16.6	16.6	8.2 8.2	8.2	33.1 33.1	33.1	98.2 96.5	97.4	7.8 7.7	7.8		13.5 13.6	13.6		17.0 17.3	17.2	
17-Jan-14	Sunny	Moderate	08:29	10.7	Surface	1.0	16.5 16.5	16.5	8.3 8.3	8.3	32.7 32.7	32.7	97.7 98.2	98.0	7.8 7.9	7.8	7.8	10.7 10.3	10.5	10.7	11.9 12.4	12.2	13.1
					Middle	5.4	16.5 16.5	16.5	8.3 8.3	8.3	32.8 32.8	32.8	97.4 98.2	97.8	7.8 7.9	7.8		10.5 10.5	10.5		12.6 12.0	12.3	
					Bottom	9.7	16.5 16.5	16.5	8.3 8.3	8.3	32.8 32.8	32.8	98.5 97.4	98.0	7.9 7.8	7.8		11.2 11.0	11.1		14.4 15.4	14.9	
20-Jan-14	Sunny	Moderate	09:49	9.9	Surface	1.0	16.4 16.4	16.4	8.3 8.3	8.3	32.3 32.3	32.3	98.1 97.6	97.9	7.9 7.9	7.9	7.9	8.3 8.4	8.4	9.7	11.7 12.2	12.0	13.1
					Middle	5.0	16.4 16.4	16.4	8.3 8.3	8.3	32.4 32.4	32.4	98.3 97.5	97.9	7.9 7.8	7.9		9.9 10.0	10.0		13.3 13.5	13.4	
					Bottom	8.9	16.4 16.4	16.4	8.3 8.3	8.3	32.4 32.4	32.4	99.6 97.4	98.5	8.0 7.8	7.9		10.5 10.8	10.7		14.6 13.3	14.0	

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at IS10 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	10:51	10.5	Surface	1.0	15.9 16.0	15.9	8.2 8.2	8.2	32.3 32.3	32.3	98.3 97.5	97.9	8.0 7.9	8.0	8.0	11.2 11.1	11.2	11.5	18.8 17.8	18.3	18.9
					Middle	5.3	16.0 16.0	16.0	8.2 8.3	8.3	32.4 32.4	32.4	97.5 98.7	98.1	7.9 8.0	8.0		11.8 11.5	11.7		19.7 19.5	19.6	
					Bottom	9.5	16.0 16.0	16.0	8.2 8.3	8.3	32.4 32.4	32.4	97.8 99.7	98.8	7.9 8.1	8.0		11.6 11.5	11.6		18.6 18.7	18.7	
24-Jan-14	Fine	Moderate	05:23	11.0	Surface	1.0	15.8 15.8	15.8	8.3 8.3	8.3	32.2 32.3	32.3	97.1 96.6	96.9	7.9 7.9	7.9	7.9	2.6 2.6	2.6	2.7	4.0 3.7	3.9	3.8
					Middle	5.5	15.8 15.8	15.8	8.3 8.3	8.3	32.3 32.3	32.3	96.3 97.1	96.7	7.8 7.9	7.9		2.6 2.7	2.7		4.9 3.2	4.1	
					Bottom	10.0	15.8 15.8	15.8	8.3 8.3	8.3	32.3 32.3	32.3	97.4 96.3	96.9	7.9 7.8	7.9		2.8 2.6	2.7		4.2 2.8	3.5	
27-Jan-14	Sunny	Moderate	15:08	10.8	Surface	1.0	16.8 16.8	16.8	8.3 8.3	8.3	32.1 32.1	32.1	103.9 103.5	103.7	8.3 8.3	8.3	8.3	3.1 3.2	3.2	3.1	5.0 5.5	5.3	5.8
					Middle	5.4	16.7 16.7	16.7	8.3 8.3	8.3	32.1 32.1	32.1	102.8 103.3	103.1	8.2 8.3	8.3		3.2 3.0	3.1		6.3 4.4	5.4	
					Bottom	9.8	16.7 16.7	16.7	8.3 8.3	8.3	32.1 32.1	32.1	103.5 103.9	103.7	8.3 8.3	8.3		3.1 3.1	3.1		6.2 6.9	6.6	
IS10	Sunny	Moderate	17:08	10.7	Surface	1.0	17.3 17.6	17.5	7.99 7.99	7.99	29.0 28.6	28.8	108.9 109.9	109.4	8.8 8.8	8.8	8.8	2.5 2.5	2.5	3.2	2.2 3.4	2.8	2.7
					Middle	5.4	17.1 17.1	17.1	8.00 8.00	8.00	30.3 30.6	30.4	108.1 107.9	108.0	8.7 8.7	8.7		3.3 3.4	3.4		3.3 2.5	2.9	
					Bottom	9.7	17.0 17.0	17.0	8.00 8.00	8.00	31.0 31.0	31.0	108.1 108.8	108.5	8.7 8.7	8.7		3.6 3.5	3.6		2.5 2.0	2.3	

#### Remarks:

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

#### Remarks:

\* DA: Depth-Averaged

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



## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at IS(Mf)11 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*	
1-Jan-14	Sunny	Moderate	13:06	10.2	Surface	1.0	16.8 16.8	16.8	8.2 8.2	8.2	33.5 33.5	33.5	98.8 98.8	98.8	7.8 7.8	7.8	7.8	4.0 3.8	3.9	3.9	8.9 9.5	9.2	9.4
					Middle	5.1	16.8 16.7	16.7	8.2 8.2	8.2	33.5 33.5	33.5	98.2 98.1	98.2	7.8 7.8	7.8		3.5 3.7	3.6		9.4 8.1	8.8	
					Bottom	9.2	16.7 16.7	16.7	8.2 8.2	8.2	33.5 33.5	33.5	98.1 98.5	98.3	7.8 7.8	7.8		4.2 4.4	4.3		10.5 10.1	10.3	
3-Jan-14	Sunny	Moderate	14:39	9.9	Surface	1.0	17.5 17.5	17.5	8.2 8.2	8.2	32.5 32.5	32.5	97.8 97.1	97.5	7.7 7.6	7.7	7.7	5.3 5.5	5.4	7.5	7.7 7.0	7.4	9.1
					Middle	5.0	17.0 17.0	17.0	8.2 8.2	8.2	32.6 32.6	32.6	95.0 95.0	95.0	7.6 7.6	7.6		8.0 7.8	7.9		8.5 9.6	9.1	
					Bottom	8.9	17.0 17.0	17.0	8.2 8.2	8.2	32.6 32.6	32.6	95.6 95.3	95.5	7.6 7.6	7.6		9.3 8.9	9.1		10.8 10.5	10.7	
6-Jan-14	Sunny	Moderate	17:13	10.1	Surface	1.0	17.2 17.2	17.2	8.2 8.2	8.2	31.9 31.9	31.9	95.0 93.9	94.5	7.6 7.5	7.5	7.5	9.6 9.6	9.6	11.6	12.8 12.5	12.7	14.3
					Middle	5.1	17.2 17.2	17.2	8.2 8.2	8.2	32.0 32.0	32.0	93.1 94.8	94.0	7.4 7.5	7.5		12.3 12.2	12.3		15.4 16.0	15.7	
					Bottom	9.1	17.2 17.2	17.2	8.2 8.2	8.2	32.2 32.0	32.1	93.7 95.7	94.7	7.4 7.6	7.5		12.3 13.3	12.8		14.4 14.7	14.6	
8-Jan-14	Fine	Moderate	19:41	10.1	Surface	1.0	17.5 17.5	17.5	8.2 8.2	8.2	32.2 32.2	32.2	93.7 93.6	93.7	7.4 7.4	7.4	7.4	2.3 2.4	2.4	2.4	5.0 5.7	5.4	5.7
					Middle	5.1	17.5 17.5	17.5	8.2 8.2	8.2	32.6 32.6	32.6	93.0 93.5	93.3	7.3 7.4	7.3		2.3 2.3	2.3		6.3 5.0	5.7	
					Bottom	9.1	17.5 17.5	17.5	8.2 8.2	8.2	32.6 32.7	32.7	93.2 94.2	93.7	7.3 7.4	7.4		2.5 2.5	2.5		6.1 5.6	5.9	
10-Jan-14	Fine	Moderate	08:10	9.5	Surface	1.0	17.0 17.0	17.0	8.2 8.2	8.2	31.9 31.9	31.9	89.3 89.8	89.6	7.1 7.2	7.1	7.1	11.3 11.9	11.6	8.7	14.7 13.9	14.3	14.2
					Middle	4.8	17.3 17.3	17.3	8.2 8.2	8.2	32.6 32.6	32.6	88.9 89.7	89.3	7.0 7.1	7.1		7.6 7.2	7.4		13.9 14.3	14.1	
					Bottom	8.5	17.3 17.3	17.3	8.2 8.2	8.2	32.8 32.8	32.8	90.1 89.1	89.6	7.1 7.0	7.1		7.0 7.2	7.1		15.2 13.1	14.2	
13-Jan-14	Sunny	Moderate	11:11	10.6	Surface	1.0	17.2 17.1	17.2	8.2 8.2	8.2	32.2 32.2	32.2	93.7 93.5	93.6	7.4 7.4	7.4	7.4	7.5 7.6	7.6	7.4	9.2 9.2	9.2	10.6
					Middle	5.3	17.2 17.2	17.2	8.2 8.2	8.2	32.4 32.4	32.4	93.1 93.4	93.3	7.4 7.4	7.4		7.4 7.3	7.4		10.5 11.5	11.0	
					Bottom	9.6	17.2 17.3	17.2	8.2 8.2	8.2	32.7 32.9	32.8	93.7 94.3	94.0	7.4 7.4	7.4		7.2 7.3	7.3		11.4 11.7	11.6	
15-Jan-14	Sunny	Moderate	12:29	11.1	Surface	1.0	16.6 16.6	16.6	8.2 8.2	8.2	32.9 33.0	33.0	94.8 96.9	95.9	7.6 7.8	7.7	7.7	11.3 11.2	11.3	11.4	13.7 13.3	13.5	14.4
					Middle	5.6	16.5 16.6	16.6	8.2 8.2	8.2	33.0 33.0	33.0	95.3 94.6	95.0	7.6 7.6	7.6		11.5 11.4	11.5		13.6 14.5	14.1	
					Bottom	10.1	16.6 16.5	16.6	8.2 8.2	8.2	33.0 33.0	33.0	94.5 95.2	94.9	7.6 7.6	7.6		11.4 11.6	11.5		14.9 16.2	15.6	
17-Jan-14	Sunny	Moderate	13:52	10.2	Surface	1.0	16.6 16.6	16.6	8.3 8.3	8.3	32.8 32.8	32.8	98.4 98.2	98.3	7.9 7.9	7.9	7.9	7.7 7.7	7.7	8.1	9.3 10.6	10.0	10.3
					Middle	5.1	16.5 16.5	16.5	8.3 8.3	8.3	32.8 32.8	32.8	98.2 97.7	98.0	7.9 7.8	7.9		7.9 7.8	7.9		9.7 10.2	10.0	
					Bottom	9.2	16.5 16.5	16.5	8.3 8.3	8.3	32.8 32.8	32.8	98.6 98.0	98.3	7.9 7.8	7.9		8.7 8.9	8.8		11.1 10.5	10.8	
20-Jan-14	Sunny	Moderate	15:22	10.1	Surface	1.0	16.7 16.7	16.7	8.3 8.3	8.3	32.4 32.4	32.4	98.5 98.4	98.5	7.9 7.9	7.9	7.9	4.9 5.0	5.0	6.5	6.4 6.9	6.7	8.2
					Middle	5.1	16.6 16.6	16.6	8.3 8.3	8.3	32.4 32.4	32.4	97.9 97.7	97.8	7.9 7.8	7.8		7.7 7.0	7.4		8.7 9.2	9.0	
					Bottom	9.1	16.6 16.6	16.6	8.3 8.3	8.3	32.4 32.4	32.4	98.1 97.7	97.9	7.9 7.8	7.9		7.2 6.8	7.0		8.7 9.1	8.9	

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at IS(Mf)11 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	16:55	10.7	Surface	1.0	16.2 16.1	16.2	8.3 8.3	8.3	32.3 32.4	32.4	98.6 97.8	98.2	8.0 7.9	7.9	7.9	7.1 7.0	7.1	8.2	10.6 11.6	11.1	12.5
					Middle	5.4	16.1 16.1	16.1	8.3 8.3	8.3	32.4 32.4	32.4	97.3 98.0	97.7	7.9 7.9	7.9		8.7 8.9	8.8		13.6 13.6	13.6	
					Bottom	9.7	16.1 16.1	16.1	8.3 8.3	8.3	32.4 32.4	32.4	98.8 98.1	98.5	8.0 7.9	8.0		8.8 8.6	8.7		12.3 13.2	12.8	
24-Jan-14	Fine	Moderate	12:23	10.4	Surface	1.0	15.9 15.9	15.9	8.3 8.3	8.3	32.4 32.4	32.4	97.9 97.8	97.9	8.0 7.9	7.9	7.9	5.2 5.1	5.2	5.4	5.2 5.5	5.4	4.9
					Middle	5.2	15.9 15.9	15.9	8.3 8.3	8.3	32.4 32.4	32.4	97.4 97.5	97.5	7.9 7.9	7.9		5.4 5.4	5.4		3.8 5.4	4.6	
					Bottom	9.4	15.9 15.9	15.9	8.3 8.3	8.3	32.5 32.4	32.5	98.0 97.5	97.8	8.0 7.9	7.9		5.5 5.5	5.5		4.9 4.6	4.8	
27-Jan-14	Sunny	Moderate	09:43	10.4	Surface	1.0	16.7 16.7	16.7	8.3 8.3	8.3	32.1 32.1	32.1	102.5 102.7	102.6	8.2 8.2	8.2	8.2	7.1 7.0	7.1	6.5	9.1 8.8	9.0	9.6
					Middle	5.2	16.7 16.7	16.7	8.3 8.3	8.3	32.1 32.1	32.1	102.1 101.9	102.0	8.2 8.2	8.2		6.3 6.5	6.4		8.6 7.3	8.0	
					Bottom	9.4	16.7 16.7	16.7	8.3 8.3	8.3	32.1 32.1	32.1	101.9 102.4	102.2	8.2 8.2	8.2		6.2 6.0	6.1		11.6 12.2	11.9	
1/29/2014	Sunny	Moderate	11:49	10.5	Surface	1.0	17.3 17.3	17.3	8.01 8.02	8.02	30.4 30.5	30.5	108.6 108.5	108.6	8.7 8.7	8.7	8.7	2.6 2.7	2.7	2.8	5.3 4.7	5.0	4.9
					Middle	5.3	17.0 17.0	17.0	8.01 8.01	8.01	31.8 31.7	31.8	106.9 107.5	107.2	8.5 8.6	8.6		2.7 2.8	2.8		4.7 4.7	4.7	
					Bottom	9.5	17.0 17.0	17.0	8.01 8.01	8.01	31.7 31.6	31.7	107.8 108.5	108.2	8.6 8.7	8.6		2.8 2.8	2.8		5.7 4.1	4.9	

#### Remarks:

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

#### Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at IS(Mf)11 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*			
1-Jan-14	Sunny	Moderate	07:19	10.4	Surface	1.0	16.7 16.7	16.7	8.2 8.2	8.2	33.6 33.6	33.6	98.8 98.4	98.6	7.8 7.8	7.8	7.8	11.0 11.3	11.2	12.6	19.3 20.7	20.0	22.3		
					Middle	5.2	16.7 16.7	16.7	8.2 8.2	8.2	33.6 33.6	33.6	98.2 98.5	98.4	7.8 7.8	7.8		13.1 12.8			13.0			21.8 21.8	
					Bottom	9.4	16.7 16.7	16.7	8.2 8.2	8.2	33.6 33.6	33.6	98.6 98.1	98.4	7.8 7.8	7.8		13.3 13.9			13.6			25.6 24.8	25.2
3-Jan-14	Sunny	Moderate	09:07	10.6	Surface	1.0	17.0 17.0	17.0	8.2 8.2	8.2	32.7 32.7	32.7	95.4 95.4	95.4	7.6 7.6	7.6	7.6	15.1 14.7	14.9	17.3	15.7 15.5	15.6	20.5		
					Middle	5.3	17.0 17.0	17.0	8.2 8.2	8.2	32.7 32.7	32.7	94.9 95.0	95.0	7.5 7.5	7.5		17.9 17.4			17.7			19.5 19.5	
					Bottom	9.6	17.0 17.0	17.0	8.2 8.2	8.2	32.7 32.7	32.7	94.8 95.0	94.9	7.5 7.5	7.5		18.8 19.5			19.2			26.4 26.2	26.3
6-Jan-14	Sunny	Moderate	11:13	10.2	Surface	1.0	17.0 17.0	17.0	8.2 8.2	8.2	32.1 32.1	32.1	94.7 94.7	94.7	7.6 7.6	7.6	7.6	10.0 10.7	10.4	11.2	12.6 12.0	12.3	14.8		
					Middle	5.1	17.0 16.9	17.0	8.2 8.2	8.2	32.1 32.1	32.1	94.4 94.5	94.5	7.5 7.5	7.5		11.2 11.8			11.5			11.9 12.6	12.3
					Bottom	9.2	16.9 16.9	16.9	8.2 8.2	8.2	32.1 32.1	32.1	94.4 94.5	94.5	7.5 7.5	7.5		11.5 11.7			11.6			20.0 19.6	19.8
8-Jan-14	Fine	Moderate	12:39	10.8	Surface	1.0	17.4 17.4	17.4	8.2 8.2	8.2	31.4 31.3	31.4	93.4 93.5	93.5	7.4 7.4	7.4	7.4	10.3 10.1	10.2	12.4	14.4 13.5	14.0	14.0		
					Middle	5.4	17.3 17.3	17.3	8.2 8.2	8.2	31.6 31.6	31.6	93.1 93.1	93.1	7.4 7.4	7.4		13.7 13.7			13.7			14.5 13.5	14.0
					Bottom	9.8	17.3 17.3	17.3	8.2 8.2	8.2	31.6 31.6	31.6	93.0 93.2	93.1	7.4 7.4	7.4		13.1 13.3			13.2			13.9 14.2	14.1
10-Jan-14	Fine	Moderate	14:12	9.9	Surface	1.0	17.2 17.2	17.2	8.2 8.2	8.2	32.0 32.0	32.0	91.2 91.9	91.6	7.2 7.3	7.3	7.3	8.1 8.7	8.4	9.6	9.8 9.4	9.6	9.8		
					Middle	5.0	17.2 17.2	17.2	8.2 8.2	8.2	32.2 32.2	32.2	91.1 92.3	91.7	7.2 7.3	7.3		9.5 9.2			9.4			10.1 9.9	10.0
					Bottom	8.9	17.2 17.2	17.2	8.2 8.2	8.2	32.2 32.2	32.2	91.4 93.0	92.2	7.2 7.4	7.3		10.8 11.3			11.1			10.4 9.3	9.9
13-Jan-14	Sunny	Moderate	16:52	10.0	Surface	1.0	17.3 17.3	17.3	8.2 8.2	8.2	32.8 32.7	32.8	92.3 94.5	93.4	7.3 7.5	7.4	7.4	5.2 5.3	5.3	5.6	3.9 4.5	4.2	4.5		
					Middle	5.0	17.2 17.2	17.2	8.2 8.2	8.2	33.0 33.0	33.0	92.0 94.8	93.4	7.3 7.5	7.4		5.6 5.7			5.7			4.4 4.9	4.7
					Bottom	9.0	17.2 17.2	17.2	8.2 8.2	8.2	33.0 33.0	33.0	98.5 93.5	96.0	7.8 7.4	7.6		5.8 5.6			5.7			4.2 4.9	4.6
15-Jan-14	Fine	Moderate	07:14	11.1	Surface	1.0	16.6 16.6	16.6	8.2 8.2	8.2	33.2 33.2	33.2	96.1 97.0	96.6	7.7 7.7	7.7	7.7	7.6 7.5	7.6	7.7	10.3 10.9	10.6	10.8		
					Middle	5.6	16.6 16.6	16.6	8.2 8.2	8.2	33.2 33.2	33.2	95.9 96.8	96.4	7.7 7.7	7.7		7.7 7.7			7.7			10.4 11.2	10.8
					Bottom	10.1	16.6 16.5	16.6	8.2 8.2	8.2	33.2 33.2	33.2	95.9 96.8	96.4	7.7 7.7	7.7		7.7 7.7			7.7			10.3 11.4	10.9
17-Jan-14	Sunny	Moderate	08:20	10.4	Surface	1.0	16.4 16.4	16.4	8.3 8.3	8.3	32.8 32.8	32.8	97.8 97.8	97.8	7.8 7.8	7.8	7.8	10.4 10.6	10.5	10.5	12.5 12.8	12.7	12.2		
					Middle	5.2	16.4 16.4	16.4	8.3 8.3	8.3	32.8 32.8	32.8	97.5 97.4	97.5	7.8 7.8	7.8		10.6 10.1			10.4			11.3 11.6	11.5
					Bottom	9.4	16.4 16.4	16.4	8.3 8.3	8.3	32.8 32.8	32.8	97.4 97.3	97.4	7.8 7.8	7.8		10.8 10.2			10.5			12.4 12.5	12.5
20-Jan-14	Sunny	Moderate	09:39	9.8	Surface	1.0	16.4 16.4	16.4	8.3 8.3	8.3	32.3 32.3	32.3	97.4 97.1	97.3	7.9 7.8	7.8	7.8	5.4 5.2	5.3	6.2	9.3 8.4	8.9	9.0		
					Middle	4.9	16.4 16.4	16.4	8.3 8.3	8.3	32.3 32.3	32.3	97.0 97.0	97.0	7.8 7.8	7.8		6.6 6.6			6.8			8.5 9.8	9.2
					Bottom	8.8	16.4 16.4	16.4	8.3 8.3	8.3	32.3 32.3	32.3	97.0 97.0	96.9	7.8 7.8	7.8		6.7 6.4			6.6			8.9 8.8	8.9

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at IS(Mf)11 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	10:40	10.3	Surface	1.0	16.0 16.0	16.0	8.3 8.3	8.3	32.3 32.3	32.3	97.3 97.6	97.5	7.9 7.9	7.9	7.9	6.1 6.2	6.2	6.5	9.0 7.2	8.1	10.1
					Middle	5.2	16.0 16.0	16.0	8.3 8.3	8.3	32.4 32.4	32.4	97.1 97.4	97.3	7.9 7.9	7.9		6.5 6.4	6.5		11.6 10.4	11.0	
					Bottom	9.3	16.0 16.0	16.0	8.3 8.3	8.3	32.4 32.4	32.4	97.2 97.6	97.4	7.9 7.9	7.9		6.7 6.6	6.7		10.9 11.7	11.3	
24-Jan-14	Fine	Moderate	05:15	10.0	Surface	1.0	15.9 15.9	15.9	8.3 8.3	8.3	32.3 32.3	32.3	97.2 97.2	97.2	7.9 7.9	7.9	7.9	4.1 4.1	4.1	4.2	6.7 7.5	7.1	7.2
					Middle	5.0	15.9 15.8	15.9	8.3 8.3	8.3	32.5 32.5	32.5	96.9 96.9	96.9	7.9 7.9	7.9		4.2 4.3	4.3		6.2 6.4	6.3	
					Bottom	9.0	15.9 15.9	15.9	8.3 8.3	8.3	32.5 32.5	32.5	96.8 96.8	96.8	7.9 7.9	7.9		4.3 4.2	4.3		9.0 7.3	8.2	
27-Jan-14	Sunny	Moderate	15:16	10.4	Surface	1.0	16.8 16.8	16.8	8.3 8.3	8.3	32.2 32.2	32.2	101.6 102.2	101.9	8.1 8.2	8.1	8.1	4.3 4.0	4.2	4.4	5.8 6.4	6.1	6.4
					Middle	5.2	16.7 16.7	16.7	8.3 8.3	8.3	32.3 32.2	32.3	101.3 100.6	101.0	8.1 8.0	8.1		4.6 4.7	4.7		6.7 6.3	6.5	
					Bottom	9.4	16.7 16.7	16.7	8.3 8.3	8.3	32.3 32.3	32.3	101.4 100.0	100.7	8.1 8.0	8.1		4.3 4.1	4.2		7.0 6.0	6.5	
IS(Mf)11	Sunny	Moderate	17:20	10.4	Surface	1.0	17.9 18.0	17.9	7.99 7.99	7.99	29.1 29.0	29.0	110.4 113.7	112.1	8.8 9.1	8.9	8.8	2.8 2.7	2.8	2.8	2.3 3.1	2.7	3.2
					Middle	5.2	17.2 17.2	17.2	8.03 8.02	8.03	30.0 30.0	30.0	106.2 110.1	108.2	8.5 8.9	8.7		2.8 2.8	2.8		3.9 2.9	3.4	
					Bottom	9.4	17.3 17.1	17.2	8.03 8.02	8.03	30.1 30.6	30.3	111.7 104.0	107.9	8.9 8.3	8.6		2.9 2.8	2.9		3.4 3.3	3.4	

**Remarks:**

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at IS(Mf)16 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*	
1-Jan-14	Sunny	Moderate	13:03	6.6	Surface	1.0	16.9 16.9	16.9	8.0 8.0	8.0	33.2 33.2	33.2	98.6 98.6	98.6	7.8 7.8	7.8	7.8	9.6 9.4	9.5	11.2	8.3 8.8	8.6	11.0
					Middle	3.3	16.7 16.7	16.7	8.0 8.0	8.0	33.2 33.2	33.2	98.3 98.2	98.3	7.8 7.8	7.8		11.0 10.9	11.0		11.9 11.6	11.8	
					Bottom	5.6	16.6 16.6	16.6	8.0 8.0	8.0	33.2 33.2	33.2	98.3 98.1	98.2	7.8 7.8	7.8		13.5 12.9	13.2		12.6 12.7	12.7	
3-Jan-14	Sunny	Moderate	14:36	6.5	Surface	1.0	17.4 17.5	17.5	8.0 8.0	8.0	32.6 32.6	32.6	100.4 100.4	100.4	7.9 7.9	7.9	7.9	8.8 8.4	8.6	8.7	9.4 8.0	8.7	9.2
					Middle	3.3	17.3 17.4	17.4	8.0 8.0	8.0	32.7 32.6	32.6	100.0 100.1	100.1	7.9 7.9	7.9		8.8 8.5	8.7		8.3 10.0	9.2	
					Bottom	5.5	17.0 17.1	17.1	8.0 8.0	8.0	32.8 32.8	32.8	99.3 99.4	99.4	7.9 7.9	7.9		8.7 8.6	8.7		9.8 9.4	9.6	
6-Jan-14	Sunny	Moderate	16:44	6.4	Surface	1.0	17.3 17.3	17.3	8.0 8.0	8.0	31.8 31.8	31.8	96.4 95.0	95.7	7.7 7.5	7.6	7.6	23.7 23.3	23.5	23.5	18.4 19.1	18.8	18.3
					Middle	3.2	17.3 17.2	17.2	8.0 8.0	8.0	31.8 31.9	31.9	97.1 95.1	96.1	7.7 7.6	7.6		23.5 23.5	23.5		18.8 18.0	18.4	
					Bottom	5.4	17.2 17.2	17.2	8.0 8.0	8.0	31.9 31.9	31.9	95.5 99.4	97.5	7.6 7.9	7.7		23.6 23.6	23.6		19.4 16.1	17.8	
8-Jan-14	Fine	Moderate	19:18	6.3	Surface	1.0	17.4 17.4	17.4	8.0 8.0	8.0	31.0 31.0	31.0	94.1 95.5	94.8	7.5 7.6	7.5	7.6	13.2 13.9	13.6	16.0	13.9 13.2	13.6	13.4
					Middle	3.2	17.4 17.4	17.4	8.0 8.0	8.0	31.1 31.1	31.1	94.2 96.5	95.4	7.5 7.7	7.6		16.8 17.8	17.3		13.4 13.5	13.5	
					Bottom	5.3	17.4 17.4	17.4	8.0 8.0	8.0	31.2 31.3	31.2	94.4 98.7	96.6	7.5 7.8	7.7		17.2 17.0	17.1		13.0 13.4	13.2	
10-Jan-14	Fine	Moderate	08:19	6.2	Surface	1.0	16.9 16.9	16.9	7.9 7.9	7.9	31.5 31.5	31.5	93.6 93.1	93.4	7.5 7.5	7.5	7.5	8.6 8.7	8.7	8.9	9.6 10.0	9.8	10.2
					Middle	3.1	16.9 16.9	16.9	7.9 7.9	7.9	31.5 31.5	31.5	93.1 94.2	93.7	7.5 7.5	7.5		9.1 8.9	9.0		10.6 9.4	10.0	
					Bottom	5.2	17.0 17.0	17.0	7.9 7.9	7.9	31.5 31.6	31.6	95.3 93.3	94.3	7.6 7.5	7.5		8.9 9.2	9.1		9.9 11.4	10.7	
13-Jan-14	Sunny	Moderate	11:47	7.2	Surface	1.0	17.2 17.2	17.2	8.0 8.0	8.0	32.0 31.9	32.0	99.0 104.5	101.8	7.9 8.3	8.1	7.9	13.3 13.1	13.2	13.6	15.7 15.7	15.7	15.9
					Middle	3.6	17.3 17.2	17.2	8.0 8.0	8.0	32.1 32.1	32.1	101.3 93.3	97.3	8.0 7.4	7.7		13.4 13.9	13.7		14.9 15.9	15.4	
					Bottom	6.2	17.3 17.2	17.2	7.9 8.0	8.0	32.3 32.1	32.2	99.3 91.8	95.6	7.9 7.3	7.6		13.8 14.0	13.9		16.1 17.2	16.7	
15-Jan-14	Sunny	Moderate	12:26	6.3	Surface	1.0	16.8 16.8	16.8	8.0 8.0	8.0	32.9 32.9	32.9	96.6 97.3	97.0	7.7 7.7	7.7	7.7	5.9 5.8	5.9	6.5	5.9 5.8	5.9	6.4
					Middle	3.2	16.7 16.7	16.7	8.0 8.0	8.0	32.9 32.9	32.9	96.4 97.2	96.8	7.7 7.8	7.7		6.5 6.6	6.6		5.1 5.7	5.4	
					Bottom	5.3	16.7 16.7	16.7	8.0 8.0	8.0	32.9 32.9	32.9	98.5 96.8	97.7	7.9 7.7	7.8		6.8 6.9	6.9		8.1 7.5	7.8	
17-Jan-14	Sunny	Moderate	13:07	6.7	Surface	1.0	16.8 16.8	16.8	8.1 8.1	8.1	33.0 33.0	33.0	103.2 103.5	103.4	8.2 8.2	8.2	8.2	8.3 8.0	8.2	8.3	6.7 7.4	7.1	7.0
					Middle	3.4	16.7 16.7	16.7	8.1 8.1	8.1	33.0 33.0	33.0	102.9 102.8	102.9	8.2 8.2	8.2		8.1 8.3	8.2		6.3 6.8	6.6	
					Bottom	5.7	16.7 16.7	16.7	8.1 8.1	8.1	33.0 33.0	33.0	102.6 102.7	102.7	8.2 8.2	8.2		8.5 8.3	8.4		7.0 7.4	7.2	
20-Jan-14	Sunny	Moderate	14:58	6.4	Surface	1.0	16.7 16.7	16.7	8.0 8.0	8.0	32.4 32.4	32.4	101.4 100.9	101.2	8.1 8.1	8.1	8.1	5.4 5.5	5.5	5.4	9.4 8.8	9.1	8.9
					Middle	3.2	16.7 16.6	16.7	8.0 8.0	8.0	32.4 32.4	32.4	101.1 100.6	100.9	8.1 8.1	8.1		5.1 5.2	5.2		8.9 9.2	9.1	
					Bottom	5.4	16.6 16.6	16.6	8.0 8.0	8.0	32.4 32.4	32.4	100.7 101.3	101.0	8.1 8.1	8.1		5.3 5.5	5.4		8.7 8.5	8.6	

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at IS(Mf)16 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	16:15	6.6	Surface	1.0	16.2 <u>16.2</u>	16.2	8.1 <u>8.0</u>	8.1	32.2 <u>32.2</u>	32.2	101.3 <u>101.7</u>	101.5	8.2 <u>8.2</u>	8.2	8.2	10.2 <u>10.2</u>	10.2	10.9	14.6 <u>15.9</u>	15.3	15.8
					Middle	3.3	16.2 <u>16.1</u>	16.2	8.0 <u>8.1</u>	8.1	32.3 <u>32.3</u>	32.3	101.7 <u>101.0</u>	101.4	8.2 <u>8.2</u>	8.2		11.0 <u>11.2</u>	11.1		15.6 <u>14.1</u>	14.9	
					Bottom	5.6	16.1 <u>16.1</u>	16.1	8.1 <u>8.0</u>	8.1	32.3 <u>32.3</u>	32.3	100.9 <u>102.7</u>	101.8	8.2 <u>8.3</u>	8.2		10.8 <u>11.8</u>	11.3		16.9 <u>17.2</u>	17.1	
24-Jan-14	Fine	Moderate	11:41	6.5	Surface	1.0	16.0 <u>16.0</u>	16.0	8.1 <u>8.1</u>	8.1	32.5 <u>32.5</u>	32.5	99.9 <u>99.7</u>	99.8	8.1 <u>8.1</u>	8.1	8.1	8.7 <u>8.4</u>	8.6	8.1	5.3 <u>6.1</u>	5.7	7.2
					Middle	3.3	16.0 <u>16.0</u>	16.0	8.1 <u>8.1</u>	8.1	32.5 <u>32.5</u>	32.5	99.9 <u>99.5</u>	99.7	8.1 <u>8.1</u>	8.1		6.9 <u>7.1</u>	7.0		8.9 <u>7.5</u>	8.2	
					Bottom	5.5	15.9 <u>16.0</u>	16.0	8.1 <u>8.1</u>	8.1	32.5 <u>32.5</u>	32.5	100.2 <u>99.5</u>	99.9	8.1 <u>8.1</u>	8.1		8.8 <u>8.4</u>	8.6		7.0 <u>8.5</u>	7.8	
27-Jan-14	Sunny	Moderate	10:07	6.3	Surface	1.0	16.6 <u>16.6</u>	16.6	8.0 <u>8.0</u>	8.0	32.2 <u>32.2</u>	32.2	102.7 <u>102.6</u>	102.7	8.3 <u>8.2</u>	8.2	8.2	5.1 <u>4.8</u>	5.0	5.4	7.3 <u>7.2</u>	7.3	7.4
					Middle	3.2	16.5 <u>16.5</u>	16.5	8.0 <u>8.0</u>	8.0	32.2 <u>32.2</u>	32.2	102.5 <u>102.3</u>	102.4	8.2 <u>8.2</u>	8.2		5.5 <u>5.5</u>	5.5		7.5 <u>8.1</u>	7.8	
					Bottom	5.3	16.5 <u>16.5</u>	16.5	8.0 <u>8.0</u>	8.0	32.2 <u>32.2</u>	32.2	102.4 <u>102.7</u>	102.6	8.2 <u>8.3</u>	8.2		5.4 <u>5.7</u>	5.6		6.5 <u>7.8</u>	7.2	
1/29/2014	Sunny	Moderate	11:43	7.1	Surface	1.0	17.1 <u>17.2</u>	17.2	8.13 <u>8.13</u>	8.13	31.2 <u>31.2</u>	31.2	108.8 <u>113.7</u>	111.3	8.7 <u>9.1</u>	8.9	8.8	6.7 <u>6.7</u>	6.7	6.9	5.6 <u>5.1</u>	5.4	6.5
					Middle	3.6	17.1 <u>17.1</u>	17.1	8.13 <u>8.13</u>	8.13	31.3 <u>31.4</u>	31.3	111.6 <u>105.5</u>	108.6	8.9 <u>8.4</u>	8.7		6.8 <u>6.9</u>	6.9		6.7 <u>7.1</u>	6.9	
					Bottom	6.1	17.0 <u>17.2</u>	17.1	8.13 <u>8.13</u>	8.13	31.5 <u>31.3</u>	31.4	103.8 <u>110.4</u>	107.1	8.3 <u>8.8</u>	8.6		7.1 <u>7.0</u>	7.1		7.7 <u>6.7</u>	7.2	

**Remarks:**

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at IS(Mf)16 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*	
1-Jan-14	Sunny	Moderate	07:13	6.4	Surface	1.0	16.7 16.7	16.7	8.0 8.0	8.0	33.2 33.2	33.2	96.7 96.9	96.8	7.7 7.7	7.7	7.7	10.2 10.1	10.2	11.5	9.3 7.6	8.5	8.7
					Middle	3.2	16.7 16.7	16.7	8.0 8.0	8.0	33.2 33.2	33.2	96.5 96.8	96.7	7.7 7.7	7.7		11.0 11.5	11.3		7.6 8.4	8.0	
					Bottom	5.4	16.7 16.7	16.7	8.0 8.0	8.0	33.2 33.2	33.2	96.6 96.8	96.7	7.7 7.7	7.7		12.9 13.1	13.0		9.6 9.8	9.7	
3-Jan-14	Sunny	Moderate	09:02	6.1	Surface	1.0	17.0 17.0	17.0	8.0 8.0	8.0	32.4 32.4	32.4	96.1 96.4	96.3	7.6 7.7	7.7	7.7	10.3 10.8	10.6	12.6	8.3 8.6	8.5	9.3
					Middle	3.1	17.0 17.0	17.0	8.0 8.0	8.0	32.5 32.5	32.5	95.8 96.7	96.3	7.6 7.7	7.7		13.2 13.5	13.4		8.8 9.0	8.9	
					Bottom	5.1	16.9 17.0	17.0	8.0 8.0	8.0	32.5 32.5	32.5	96.9 95.1	96.0	7.7 7.6	7.6		13.8 13.7	13.8		10.5 10.5	10.5	
6-Jan-14	Sunny	Moderate	11:17	6.6	Surface	1.0	17.0 17.0	17.0	8.0 8.0	8.0	31.9 31.9	31.9	94.5 93.4	94.0	7.5 7.4	7.5	7.5	13.4 13.3	13.4	13.8	14.6 14.3	14.5	14.7
					Middle	3.3	17.0 17.0	17.0	8.0 8.0	8.0	31.9 31.9	31.9	95.1 93.2	94.2	7.6 7.4	7.5		13.8 13.5	13.7		14.7 14.5	14.6	
					Bottom	5.6	17.0 17.0	17.0	8.0 8.0	8.0	31.9 31.9	31.9	96.7 93.5	95.1	7.7 7.5	7.6		14.6 14.0	14.3		14.7 15.4	15.1	
8-Jan-14	Fine	Moderate	12:51	6.4	Surface	1.0	17.5 17.5	17.5	7.9 7.9	7.9	30.8 30.8	30.8	93.8 95.0	94.4	7.5 7.6	7.5	7.5	11.2 11.4	11.3	15.7	7.7 7.5	7.6	7.7
					Middle	3.2	17.4 17.4	17.4	7.9 7.9	7.9	31.1 31.1	31.1	95.5 93.6	94.6	7.6 7.5	7.5		18.2 18.5	18.4		7.5 8.5	8.0	
					Bottom	5.4	17.4 17.4	17.4	7.9 7.9	7.9	31.2 31.2	31.2	96.3 93.8	95.1	7.7 7.5	7.6		17.8 17.0	17.4		7.0 8.2	7.6	
10-Jan-14	Fine	Moderate	14:06	6.3	Surface	1.0	17.1 17.1	17.1	8.0 8.0	8.0	32.0 32.0	32.0	94.4 97.1	95.8	7.5 7.7	7.6	7.7	9.7 9.6	9.7	9.7	13.1 13.1	13.1	13.9
					Middle	3.2	17.1 17.1	17.1	8.0 8.0	8.0	32.0 32.0	32.0	97.0 94.8	96.9	7.9 7.5	7.7		9.6 9.6	9.6		14.6 14.4	14.5	
					Bottom	5.3	17.1 17.1	17.1	8.0 8.0	8.0	32.0 32.0	32.0	95.9 93.6	94.8	7.6 7.4	7.5		9.6 9.9	9.8		13.5 14.5	14.0	
13-Jan-14	Sunny	Moderate	16:08	7.0	Surface	1.0	17.3 17.3	17.3	8.0 8.0	8.0	32.2 32.1	32.1	103.5 98.7	101.1	8.2 7.8	8.0	7.9	11.8 11.6	11.7	12.0	6.9 6.9	6.9	7.6
					Middle	3.5	17.3 17.3	17.3	8.0 8.0	8.0	32.4 32.3	32.3	97.9 100.5	99.2	7.7 8.0	7.8		12.1 12.0	12.1		7.4 7.3	7.4	
					Bottom	6.0	17.3 17.2	17.3	8.0 8.0	8.0	32.4 32.5	32.4	96.7 99.6	98.2	7.7 7.9	7.8		12.1 12.3	12.2		9.5 7.3	8.4	
15-Jan-14	Fine	Moderate	07:24	6.5	Surface	1.0	16.5 16.5	16.5	8.0 8.0	8.0	33.0 33.0	33.0	96.3 97.2	96.8	7.7 7.8	7.7	7.8	9.4 9.5	9.5	9.6	13.7 14.0	13.9	16.0
					Middle	3.3	16.5 16.6	16.6	8.0 8.0	8.0	33.0 33.0	33.0	98.0 96.4	97.2	7.8 7.7	7.8		9.6 9.5	9.6		15.2 15.4	15.3	
					Bottom	5.5	16.5 16.5	16.5	8.0 8.0	8.0	33.0 33.0	33.0	96.5 99.0	97.8	7.7 7.9	7.8		9.8 9.7	9.8		19.5 18.3	18.9	
17-Jan-14	Sunny	Moderate	07:47	7.0	Surface	1.0	16.4 16.4	16.4	8.1 8.1	8.1	33.1 33.1	33.1	102.8 100.8	101.8	8.2 8.1	8.2	8.2	10.6 10.4	10.5	10.7	11.7 12.0	11.9	12.4
					Middle	3.5	16.4 16.4	16.4	8.1 8.1	8.1	33.1 33.1	33.1	100.6 101.3	101.0	8.1 8.1	8.1		10.5 10.6	10.6		11.9 12.7	12.3	
					Bottom	6.0	16.3 16.4	16.4	8.0 8.1	8.1	33.2 33.1	33.2	101.2 100.5	100.9	8.1 8.1	8.1		11.0 10.9	11.0		12.7 13.5	13.1	
20-Jan-14	Sunny	Moderate	09:39	6.4	Surface	1.0	16.4 16.4	16.4	8.0 8.0	8.0	32.6 32.6	32.6	99.9 99.5	99.7	8.0 8.0	8.0	8.0	6.8 6.7	6.8	6.8	7.6 6.6	7.1	8.0
					Middle	3.2	16.4 16.4	16.4	8.0 8.0	8.0	32.6 32.6	32.6	99.4 100.3	99.9	8.0 8.1	8.0		6.7 6.8	6.8		8.9 7.5	8.2	
					Bottom	5.4	16.5 16.4	16.4	8.0 8.0	8.0	32.6 32.6	32.6	101.4 99.5	100.5	8.1 8.0	8.1		6.8 6.8	6.8		8.9 8.2	8.6	

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at IS(Mf)16 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	10:52	6.3	Surface	1.0	16.0 16.0	16.0	8.0 8.0	8.0	32.4 32.4	32.4	99.7 101.0	100.4	8.1 8.2	8.1	8.2	10.7 11.0	10.9	12.3	10.2 8.2	9.2	10.1
					Middle	3.2	16.0 16.0	16.0	8.0 8.0	8.0	32.4 32.4	32.4	102.1 99.5	100.8	8.3 8.1	8.2		11.6 12.8	12.2		10.8 9.6	10.2	
					Bottom	5.3	16.0 16.0	16.0	8.0 8.0	8.0	32.4 32.4	32.4	104.2 99.9	102.1	8.4 8.1	8.3		13.5 13.9	13.7		11.2 10.3	10.8	
24-Jan-14	Fine	Moderate	05:21	6.3	Surface	1.0	15.6 15.6	15.6	8.1 8.1	8.1	32.5 32.5	32.5	106.8 106.2	106.5	8.7 8.7	8.7	8.7	6.7 7.0	6.9	7.2	5.8 6.2	6.0	7.3
					Middle	3.2	15.6 15.6	15.6	8.1 8.1	8.1	32.5 32.5	32.5	105.6 106.3	106.0	8.6 8.7	8.7		7.0 7.2	7.1		6.6 7.5	7.1	
					Bottom	5.3	15.6 15.5	15.6	8.1 8.1	8.1	32.5 32.5	32.5	106.1 104.0	105.1	8.7 8.5	8.6		7.7 7.3	7.5		8.1 9.4	8.8	
27-Jan-14	Sunny	Moderate	14:56	6.3	Surface	1.0	17.0 17.0	17.0	8.1 8.1	8.1	32.3 32.3	32.3	109.8 109.3	109.6	8.7 8.7	8.7	8.7	5.2 5.2	5.2	6.9	6.4 7.1	6.8	6.4
					Middle	3.2	16.9 17.0	16.9	8.1 8.1	8.1	32.3 32.3	32.3	108.4 107.7	108.1	8.7 8.6	8.6		6.6 6.6	6.6		5.1 5.8	5.5	
					Bottom	5.3	16.7 16.8	16.8	8.1 8.1	8.1	32.3 32.3	32.3	105.5 108.4	107.0	8.4 8.7	8.5		8.7 8.8	8.8		6.6 6.9	6.8	
IS(Mf)16	Sunny	Moderate	16:38	7.1	Surface	1.0	17.5 17.5	17.5	8.11 8.11	8.11	31.0 31.0	31.0	117.0 121.7	119.4	9.3 9.7	9.5	9.4	3.2 3.3	3.3	3.5	2.6 3.6	3.1	3.0
					Middle	3.6	17.3 17.4	17.4	8.11 8.11	8.11	31.3 31.2	31.3	112.0 120.5	116.3	8.9 9.6	9.2		3.4 3.4	3.4		2.2 3.5	2.9	
					Bottom	6.1	17.4 17.4	17.4	8.11 8.12	8.12	31.2 31.3	31.3	119.2 109.7	114.5	9.5 8.7	9.1		3.7 3.6	3.7		2.8 3.0	2.9	

#### Remarks:

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

#### Remarks:

\* DA: Depth-Averaged

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





## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at IS5 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	15:26	8.5	Surface	1.0	15.9 16.1	16.0	8.1 8.1	8.1	32.3 32.3	32.3	108.9 112.3	110.6	8.8 9.1	9.0	9.0	5.1 5.5	5.3	5.5	6.5 6.9	6.7	7.6
					Middle	4.3	16.1 15.9	16.0	8.1 8.1	8.1	32.4 32.4	32.4	112.0 108.1	110.1	9.1 8.8	8.9		5.6 5.3	5.5		7.9 8.3	8.1	
					Bottom	7.5	16.1 16.0	16.0	8.1 8.1	8.1	32.4 32.4	32.4	111.8 111.4	111.6	9.1 9.0	9.0		5.7 5.5	5.6		7.3 8.7	8.0	
24-Jan-14	Fine	Moderate	10:54	8.4	Surface	1.0	15.6 15.6	15.6	8.1 8.1	8.1	32.6 32.6	32.6	106.3 106.1	106.2	8.7 8.7	8.7	8.7	6.3 6.5	6.4	6.3	5.8 6.7	6.3	6.0
					Middle	4.2	15.6 15.6	15.6	8.1 8.1	8.1	32.6 32.6	32.6	105.9 105.5	105.7	8.6 8.6	8.6		6.3 6.4	6.4		5.4 6.6	6.0	
					Bottom	7.4	15.7 15.6	15.6	8.1 8.1	8.1	32.7 32.6	32.6	105.3 106.0	105.7	8.6 8.6	8.6		5.8 6.5	6.2		6.0 5.3	5.7	
27-Jan-14	Sunny	Moderate	10:53	8.8	Surface	1.0	17.2 17.2	17.2	8.1 8.1	8.1	32.4 32.4	32.4	111.3 110.6	111.0	8.8 8.8	8.8	8.8	4.6 4.5	4.6	4.7	8.6 9.2	8.9	10.1
					Middle	4.4	17.2 17.2	17.2	8.1 8.1	8.1	32.5 32.5	32.5	111.1 109.4	110.3	8.8 8.7	8.7		4.8 4.8	4.8		10.8 9.6	10.2	
					Bottom	7.8	17.2 17.2	17.2	8.1 8.1	8.1	32.5 32.5	32.5	110.6 108.0	109.3	8.8 8.6	8.7		4.8 4.8	4.8		10.9 11.5	11.2	
1/29/2014	Sunny	Moderate	12:42	9.1	Surface	1.0	17.3 17.4	17.3	8.13 8.13	8.13	31.5 31.5	31.5	121.9 120.6	121.3	9.7 9.6	9.6	9.6	4.2 4.2	4.2	4.4	5.1 5.3	5.2	4.5
					Middle	4.6	17.3 17.3	17.3	8.13 8.13	8.13	31.6 31.6	31.6	121.1 117.2	119.2	9.6 9.3	9.5		4.3 4.5	4.4		4.4 3.1	3.8	
					Bottom	8.1	17.2 17.2	17.2	8.13 8.13	8.13	31.6 31.6	31.6	121.0 112.7	116.9	9.6 9.0	9.3		4.4 4.5	4.5		4.5 4.2	4.4	

**Remarks:**

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at IS5 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*	
1-Jan-14	Sunny	Moderate	08:14	8.4	Surface	1.0	16.2 16.2	16.2	8.0 8.0	8.0	33.2 33.2	33.2	100.2 100.2	100.2	8.1 8.0	8.0	8.0	6.3 6.8	6.6	7.8	7.7 8.5	8.1	8.4
					Middle	4.2	16.2 16.1	16.2	8.0 8.0	8.0	33.3 33.3	33.3	100.0 99.6	99.8	8.0 8.0	8.0		7.9 7.7	7.8		8.8 8.9	8.9	
					Bottom	7.4	16.1 16.1	16.1	8.0 8.0	8.0	33.3 33.3	33.3	99.6 99.2	99.4	8.0 8.0	8.0		9.3 8.5	8.9		7.4 8.9	8.2	
3-Jan-14	Sunny	Moderate	10:01	8.4	Surface	1.0	16.9 16.9	16.9	8.0 8.0	8.0	32.6 32.6	32.6	97.1 97.4	97.3	7.7 7.7	7.7	7.7	10.3 10.7	10.5	10.6	10.8 9.7	10.3	10.3
					Middle	4.2	16.9 16.9	16.9	8.0 8.0	8.0	32.6 32.6	32.6	96.9 97.0	97.0	7.7 7.7	7.7		10.3 10.9	10.6		10.6 9.9	10.3	
					Bottom	7.4	16.9 16.9	16.9	8.0 8.0	8.0	32.6 32.6	32.6	96.7 96.9	96.8	7.7 7.7	7.7		11.0 10.5	10.8		10.6 9.8	10.2	
6-Jan-14	Sunny	Moderate	12:01	8.7	Surface	1.0	16.8 16.8	16.8	8.0 8.0	8.0	31.8 31.8	31.8	95.6 95.1	95.4	7.7 7.6	7.6	7.6	13.0 13.4	13.2	13.3	12.1 12.2	12.2	13.3
					Middle	4.4	16.8 16.8	16.8	8.0 8.0	8.0	31.8 31.9	31.9	95.6 94.9	95.3	7.7 7.6	7.6		13.0 13.5	13.3		13.0 13.2	13.1	
					Bottom	7.7	16.8 16.8	16.8	8.0 8.0	8.0	31.8 31.8	31.8	94.9 96.0	95.5	7.6 7.7	7.6		13.6 13.2	13.4		14.9 14.1	14.5	
8-Jan-14	Fine	Moderate	13:42	8.8	Surface	1.0	17.5 17.5	17.5	8.0 8.0	8.0	31.8 31.8	31.8	96.3 96.1	96.2	7.6 7.6	7.6	7.6	10.2 10.1	10.2	10.7	12.7 12.6	12.7	12.5
					Middle	4.4	17.5 17.5	17.5	8.0 8.0	8.0	31.8 31.8	31.8	95.7 95.8	95.8	7.6 7.6	7.6		10.9 10.3	10.6		12.7 11.2	12.0	
					Bottom	7.8	17.5 17.5	17.5	8.0 8.0	8.0	31.8 31.8	31.8	95.7 95.7	95.7	7.6 7.6	7.6		11.2 11.1	11.2		13.1 12.3	12.7	
10-Jan-14	Fine	Moderate	13:24	8.4	Surface	1.0	16.8 16.8	16.8	8.0 8.0	8.0	31.3 31.3	31.3	95.1 94.9	95.0	7.6 7.6	7.6	7.6	22.7 22.7	22.7	22.6	25.0 24.3	24.7	25.1
					Middle	4.2	16.8 16.8	16.8	8.0 8.0	8.0	31.3 31.3	31.3	95.0 94.6	94.8	7.6 7.6	7.6		22.4 22.9	22.7		24.1 23.1	23.6	
					Bottom	7.4	16.8 16.8	16.8	8.0 8.0	8.0	31.3 31.3	31.3	94.7 95.2	95.0	7.6 7.7	7.6		22.1 22.5	22.3		26.3 27.5	26.9	
13-Jan-14	Sunny	Moderate	15:37	9.2	Surface	1.0	17.1 17.1	17.1	8.0 8.0	8.0	32.4 32.4	32.4	99.4 98.6	99.0	7.9 7.8	7.9	7.9	6.2 6.4	6.3	6.4	8.3 8.0	8.2	8.1
					Middle	4.6	17.0 17.1	17.1	8.0 8.0	8.0	32.4 32.4	32.4	98.5 99.2	98.9	7.8 7.9	7.9		6.3 6.2	6.3		9.2 7.1	8.2	
					Bottom	8.2	17.0 17.1	17.1	8.0 8.0	8.0	32.4 32.4	32.4	98.3 99.0	98.7	7.8 7.9	7.8		6.5 6.6	6.6		8.3 7.3	7.8	
15-Jan-14	Fine	Moderate	08:08	8.8	Surface	1.0	16.4 16.4	16.4	8.0 8.0	8.0	32.4 32.4	32.4	98.8 98.2	98.5	8.0 7.9	7.9	7.9	7.8 7.4	7.6	7.8	9.1 8.7	8.9	9.4
					Middle	4.4	16.4 16.4	16.4	8.0 8.0	8.0	32.4 32.4	32.4	98.2 99.0	98.6	7.9 8.0	7.9		7.6 8.1	7.9		10.1 9.9	10.0	
					Bottom	7.8	16.4 16.4	16.4	8.0 8.0	8.0	32.4 32.4	32.4	98.3 99.8	99.1	7.9 8.0	8.0		7.8 7.9	7.9		8.7 9.6	9.2	
17-Jan-14	Sunny	Moderate	08:31	9.1	Surface	1.0	16.3 16.3	16.3	8.1 8.1	8.1	32.9 32.9	32.9	101.1 101.2	101.2	8.1 8.1	8.1	8.1	11.2 10.3	10.8	11.1	10.8 12.1	11.5	12.2
					Middle	4.6	16.3 16.3	16.3	8.1 8.1	8.1	32.9 32.9	32.9	100.9 101.1	101.0	8.1 8.1	8.1		11.5 10.9	11.2		11.5 13.1	12.3	
					Bottom	8.1	16.3 16.3	16.3	8.1 8.1	8.1	33.0 33.0	33.0	100.7 101.0	100.9	8.1 8.1	8.1		11.6 10.9	11.3		12.0 13.3	12.7	
20-Jan-14	Sunny	Moderate	10:27	8.5	Surface	1.0	16.3 16.3	16.3	8.0 8.0	8.0	32.7 32.7	32.7	102.7 102.4	102.6	8.3 8.2	8.2	8.2	4.8 4.7	4.8	4.7	6.6 7.5	7.1	7.6
					Middle	4.3	16.3 16.3	16.3	8.0 8.0	8.0	32.7 32.7	32.7	102.2 102.5	102.4	8.2 8.2	8.2		4.6 4.8	4.7		7.0 8.1	7.6	
					Bottom	7.5	16.3 16.3	16.3	8.0 8.0	8.0	32.7 32.7	32.7	102.4 102.1	102.3	8.2 8.2	8.2		4.6 4.7	4.7		7.5 8.6	8.1	

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at IS5 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	11:42	8.7	Surface	1.0	15.7 15.7	15.7	8.1 8.1	8.1	32.6 32.6	32.6	104.5 104.7	104.6	8.5 8.5	8.5	8.5	4.4 4.4	4.4	4.6	6.6 6.4	6.5	6.6
					Middle	4.4	15.7 15.7	15.7	8.1 8.1	8.1	32.6 32.6	32.6	104.5 104.2	104.4	8.5 8.5	8.5		4.7 4.5	4.6		6.6 5.7	6.2	
					Bottom	7.7	15.7 15.7	15.7	8.1 8.1	8.1	32.6 32.6	32.6	104.6 104.2	104.4	8.5 8.5	8.5		4.9 4.5	4.7		7.9 6.2	7.1	
24-Jan-14	Fine	Moderate	06:09	8.4	Surface	1.0	15.6 15.6	15.6	8.2 8.1	8.2	32.7 32.7	32.7	102.1 102.4	102.3	8.3 8.4	8.3	8.3	4.7 4.6	4.7	4.8	8.4 7.3	7.9	8.6
					Middle	4.2	15.6 15.6	15.6	8.2 8.1	8.2	32.8 32.8	32.8	101.9 102.3	102.1	8.3 8.3	8.3		4.8 4.8	4.8		9.2 9.5	9.4	
					Bottom	7.4	15.6 15.6	15.6	8.2 8.1	8.2	32.8 32.8	32.8	102.1 102.6	102.4	8.3 8.4	8.3		5.0 4.9	5.0		8.4 8.5	8.5	
27-Jan-14	Sunny	Moderate	14:07	8.6	Surface	1.0	17.4 17.4	17.4	8.2 8.2	8.2	32.6 32.6	32.6	115.5 115.8	115.7	9.1 9.1	9.1	9.1	3.6 3.7	3.7	3.7	7.9 6.6	7.3	7.2
					Middle	4.3	17.3 17.3	17.3	8.2 8.2	8.2	32.6 32.6	32.6	115.1 114.7	114.9	9.1 9.1	9.1		3.7 3.6	3.7		7.5 6.7	7.1	
					Bottom	7.6	17.3 17.3	17.3	8.2 8.2	8.2	32.6 32.6	32.6	114.6 115.3	115.0	9.1 9.1	9.1		3.8 3.7	3.8		7.2 7.1	7.2	
IS5	Sunny	Moderate	15:40	9.1	Surface	1.0	17.5 17.4	17.5	8.12 8.12	8.12	31.4 31.4	31.4	124.9 125.2	125.1	9.9 9.9	9.9	9.9	3.5 3.6	3.6	3.6	3.1 2.8	3.0	3.4
					Middle	4.6	17.4 17.4	17.4	8.12 8.12	8.12	31.4 31.4	31.4	124.6 125.2	124.9	9.9 9.9	9.9		3.5 3.7	3.6		4.5 3.8	4.2	
					Bottom	8.1	17.4 17.4	17.4	8.12 8.12	8.12	31.4 31.4	31.4	124.2 124.8	124.5	9.9 9.9	9.9		3.5 3.7	3.6		3.1 2.7	2.9	

**Remarks:**

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at IS7 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*				
1-Jan-14	Sunny	Moderate	12:20	3.2	Surface	1.0	16.7 16.7	16.7	8.0 8.0	8.0	33.3 33.3	33.3	102.2 102.4	102.3	8.1 8.2	8.1	8.1	7.1 7.0	7.1	7.6	5.8 6.9	6.4	6.7			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.2	16.4 16.5	16.4	8.0 8.0	8.0	33.3 33.3	33.3	101.5 101.9	101.7	8.1 8.1	8.1		8.1	8.0 8.0		8.0	8.1		8.0 8.0	8.0	6.7 7.1
3-Jan-14	Sunny	Moderate	14:01	3.1	Surface	1.0	17.1 17.1	17.1	8.0 8.0	8.0	32.9 32.9	32.9	99.7 99.2	99.5	7.9 7.9	7.9	7.9	14.8 14.6	14.7	15.0	13.3 14.7	14.0	15.2			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.1	17.1 17.1	17.1	8.0 8.0	8.0	32.9 32.9	32.9	99.2 99.1	99.2	7.9 7.8	7.8		7.8	15.2 15.3		15.3	7.8		15.2 15.3	15.3	16.6 16.2
6-Jan-14	Sunny	Moderate	16:15	3.2	Surface	1.0	17.3 17.3	17.3	8.0 8.0	8.0	31.8 31.8	31.8	99.1 98.4	98.8	7.9 7.8	7.8	7.8	11.4 11.7	11.6	11.4	13.7 13.8	13.8	13.7			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.2	17.3 17.3	17.3	8.0 8.0	8.0	31.8 31.8	31.8	98.6 99.9	99.3	7.8 7.9	7.9		7.9	11.0 11.2		11.1	7.9		11.0 11.2	11.1	14.0 13.2
8-Jan-14	Fine	Moderate	18:40	3.4	Surface	1.0	17.5 17.5	17.5	8.0 8.0	8.0	31.8 31.8	31.8	96.5 97.8	97.2	7.6 7.7	7.7	7.7	12.1 10.9	11.5	12.1	13.5 13.8	13.7	13.4			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.4	17.5 17.5	17.5	8.0 8.0	8.0	31.8 31.8	31.8	96.9 99.3	98.1	7.7 7.9	7.8		7.8	12.5 12.7		12.6	7.8		12.5 12.7	12.6	13.1 13.1
10-Jan-14	Fine	Moderate	08:49	3.1	Surface	1.0	16.7 16.7	16.7	7.9 7.9	7.9	31.2 31.2	31.2	96.8 95.3	96.1	7.8 7.7	7.7	7.7	12.2 12.0	12.1	12.0	13.3 12.0	12.7	14.1			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.1	16.7 16.7	16.7	7.9 7.9	7.9	31.2 31.2	31.2	96.0 98.8	97.4	7.7 8.0	7.8		7.8	11.9 11.8		11.9	7.8		11.9 11.8	11.9	15.7 15.3
13-Jan-14	Sunny	Moderate	12:16	3.3	Surface	1.0	17.0 16.9	16.9	8.0 8.0	8.0	32.3 32.3	32.3	105.8 101.9	103.9	8.4 8.1	8.3	8.3	8.1 8.3	8.2	8.5	9.0 8.7	8.9	9.0			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.3	16.8 16.9	16.9	8.0 8.0	8.0	32.3 32.3	32.3	103.5 101.4	102.5	8.2 8.1	8.2		8.2	8.6 8.8		8.7	8.2		8.6 8.8	8.7	8.2 9.8
15-Jan-14	Sunny	Moderate	11:55	3.2	Surface	1.0	16.7 16.7	16.7	8.0 8.0	8.0	32.3 32.3	32.3	102.1 102.1	102.1	8.2 8.2	8.2	8.2	7.1 7.2	7.2	7.4	8.5 7.6	8.1	9.2			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.2	16.6 16.5	16.6	8.0 8.0	8.0	32.3 32.3	32.3	101.9 101.6	101.8	8.2 8.2	8.2		8.2	7.4 7.5		7.5	8.2		7.4 7.5	7.5	10.5 10.0
17-Jan-14	Sunny	Moderate	12:38	3.5	Surface	1.0	16.7 16.7	16.7	8.1 8.0	8.1	32.7 32.7	32.7	104.3 103.4	103.9	8.3 8.3	8.3	8.3	14.1 14.2	14.2	14.5	10.4 12.0	11.2	11.2			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.5	16.7 16.6	16.7	8.1 8.0	8.0	32.7 32.8	32.7	103.9 102.7	103.3	8.3 8.2	8.2		8.2	14.8 14.6		14.7	8.2		14.8 14.6	14.7	11.7 10.5
20-Jan-14	Sunny	Moderate	14:29	3.1	Surface	1.0	16.7 16.8	16.8	8.0 8.0	8.0	32.5 32.5	32.5	106.2 105.4	105.8	8.5 8.4	8.4	8.4	17.3 17.4	17.4	18.0	13.0 13.7	13.4	14.3			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.1	16.7 16.7	16.7	8.0 8.0	8.0	32.5 32.5	32.5	103.6 105.8	104.7	8.3 8.5	8.4		8.4	18.4 18.5		18.5	8.4		18.4 18.5	18.5	14.8 15.4

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at IS7 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	15:41	3.3	Surface	1.0	16.2 16.1	16.1	8.1 8.1	8.1	32.3 32.4	32.3	108.9 110.3	109.6	8.8 8.9	8.9	8.9	4.2 4.4	4.3	5.6	5.5 5.9	5.7	5.6		
					Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-
					Bottom	2.3	15.9 16.0	15.9	8.1 8.1	8.1	32.3 32.3	32.3	106.6 109.4	108.0	8.7 8.9	8.8	8.8	6.8 7.0	6.9		8.8	6.8 5.2		6.9	5.8 5.5
24-Jan-14	Fine	Moderate	11:11	3.3	Surface	1.0	15.7 15.7	15.7	8.2 8.2	8.2	32.5 32.5	32.5	108.5 105.6	107.1	8.8 8.6	8.7	8.7	8.9 8.2	8.6	9.3	9.2 9.7	9.5	9.3		
					Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-
					Bottom	2.3	15.7 15.6	15.7	8.2 8.1	8.1	32.5 32.5	32.5	107.4 102.5	105.0	8.8 8.4	8.6	8.6	10.2 9.5	9.9		8.6	10.2 9.8		9.9	8.2 9.8
27-Jan-14	Sunny	Moderate	10:39	3.1	Surface	1.0	16.8 16.8	16.8	8.1 8.1	8.1	32.2 32.2	32.2	109.1 110.1	109.6	8.7 8.8	8.8	8.8	4.6 4.4	4.5	4.6	7.5 8.8	8.2	9.7		
					Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-
					Bottom	2.1	16.8 16.8	16.8	8.1 8.1	8.1	32.2 32.2	32.2	107.2 109.4	108.3	8.6 8.7	8.7	8.7	4.6 4.5	4.6		8.7	4.6 4.5		4.6	10.3 11.8
1/29/2014	Sunny	Moderate	12:22	3.3	Surface	1.0	17.5 17.5	17.5	8.14 8.14	8.14	31.6 31.6	31.6	123.3 125.7	124.5	9.8 10.0	9.9	9.9	3.3 3.4	3.4	3.5	2.8 2.7	2.8	3.0		
					Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-
					Bottom	2.3	17.4 17.5	17.4	8.14 8.13	8.14	31.7 31.6	31.6	117.9 124.2	121.1	9.3 9.8	9.6	9.6	3.4 3.5	3.5		9.6	3.4 3.6		3.5	2.6 3.6

**Remarks:**

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at IS7 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*	
1-Jan-14	Sunny	Moderate	07:53	3.3	Surface	1.0	16.3 16.3	16.3	8.0 8.0	8.0	33.3 33.3	33.3	98.4 98.5	98.5	7.9 7.9	7.9	7.9	13.1 13.4	13.3	13.5	14.8 14.3	14.6	14.9
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-		
					Bottom	2.3	16.3 16.4	16.4	8.0 8.0	8.0	33.4 33.4	33.4	99.1 98.6	98.9	7.9 7.9	7.9		13.8 13.6	13.7		15.6 14.7	15.2	
3-Jan-14	Sunny	Moderate	09:43	3.0	Surface	1.0	16.9 17.0	16.9	8.0 8.0	8.0	32.6 32.6	32.6	98.3 98.5	98.4	7.8 7.8	7.8	7.8	14.3 14.5	14.4	14.5	13.0 13.0	13.0	12.7
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-				
					Bottom	2.0	16.9 16.9	16.9	8.0 8.0	8.0	32.6 32.6	32.6	99.0 98.3	98.7	7.9 7.8	7.8		14.6 14.6	14.6		12.5 12.3	12.4	
6-Jan-14	Sunny	Moderate	11:47	3.0	Surface	1.0	17.0 17.0	17.0	8.0 8.0	8.0	31.8 31.8	31.8	97.1 96.5	96.8	7.8 7.7	7.7	7.7	15.3 14.7	15.0	15.2	16.3 15.8	16.1	16.0
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-				
					Bottom	2.0	17.0 17.0	17.0	8.0 8.0	8.0	31.8 31.8	31.8	96.7 98.0	97.4	7.7 7.8	7.8		15.0 15.5	15.3		15.7 16.0	15.9	
8-Jan-14	Fine	Moderate	13:22	3.4	Surface	1.0	17.5 17.5	17.5	8.0 8.0	8.0	31.7 31.7	31.7	95.6 96.0	95.8	7.6 7.6	7.6	7.6	17.9 19.3	18.6	19.3	14.3 14.1	14.2	14.6
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-				
					Bottom	2.4	17.5 17.4	17.5	8.0 8.0	8.0	31.7 31.7	31.7	95.7 96.8	96.3	7.6 7.7	7.6		19.8 20.2	20.0		14.1 15.9	15.0	
10-Jan-14	Fine	Moderate	13:38	3.1	Surface	1.0	16.9 16.9	16.9	7.9 7.9	7.9	31.3 31.3	31.3	97.3 96.6	97.0	7.8 7.8	7.8	7.8	13.4 13.2	13.3	13.5	13.8 14.2	14.0	15.0
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-				
					Bottom	2.1	16.9 16.9	16.9	7.9 8.0	8.0	31.3 31.3	31.3	96.9 99.2	98.1	7.8 8.0	7.9		13.4 13.7	13.6		15.2 16.6	15.9	
13-Jan-14	Sunny	Moderate	15:52	3.2	Surface	1.0	17.1 17.1	17.1	8.0 8.0	8.0	32.3 32.3	32.3	103.4 105.0	104.2	8.2 8.3	8.3	8.3	10.6 10.5	10.6	10.6	9.5 8.3	8.9	9.2
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-				
					Bottom	2.2	17.1 17.1	17.1	8.0 8.0	8.0	32.3 32.3	32.3	104.3 102.4	103.4	8.3 8.1	8.2		10.6 10.6	10.6		9.7 9.1	9.4	
15-Jan-14	Fine	Moderate	07:54	3.2	Surface	1.0	16.2 16.2	16.2	8.0 8.0	8.0	32.4 32.4	32.4	99.4 98.6	99.0	8.0 8.0	8.0	8.0	13.3 12.3	12.8	13.0	16.7 18.3	17.5	18.2
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-				
					Bottom	2.2	16.2 16.2	16.2	8.0 8.0	8.0	32.4 32.4	32.4	101.2 98.9	100.1	8.2 8.0	8.1		13.4 12.7	13.1		19.4 18.4	18.9	
17-Jan-14	Sunny	Moderate	08:17	3.3	Surface	1.0	16.4 16.4	16.4	8.1 8.1	8.1	32.9 32.9	32.9	103.1 102.0	102.6	8.3 8.2	8.2	8.2	12.3 12.4	12.4	12.5	12.7 12.6	12.7	12.3
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-				
					Bottom	2.3	16.4 16.4	16.4	8.1 8.1	8.1	33.0 32.9	33.0	102.4 101.8	102.1	8.2 8.2	8.2		12.5 12.5	12.5		12.2 11.5	11.9	
20-Jan-14	Sunny	Moderate	10:13	3.2	Surface	1.0	16.6 16.6	16.6	8.0 8.0	8.0	32.7 32.7	32.7	104.2 104.5	104.4	8.3 8.4	8.4	8.4	8.5 8.6	8.6	8.6	7.0 7.1	7.1	7.7
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-				
					Bottom	2.2	16.5 16.5	16.5	8.0 8.0	8.0	32.7 32.7	32.7	104.2 104.7	104.5	8.4 8.4	8.4		8.4 8.6	8.5		8.0 8.5	8.3	

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at IS7 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	11:23	3.4	Surface	1.0	15.7 15.6	15.7	8.1 8.1	8.1	32.6 32.6	32.6	105.2 105.6	105.4	8.6 8.6	8.6	8.6	13.6 13.2	13.4	14.1	6.0 5.8	5.9	6.0			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.4	15.6 15.7	15.6	8.1 8.1	8.1	32.5 32.5	32.5	105.6 105.2	105.4	8.6 8.6	8.6		14.7 14.9	14.8		5.9 6.2	6.1				
24-Jan-14	Fine	Moderate	05:51	3.3	Surface	1.0	15.5 15.5	15.5	8.2 8.2	8.2	32.5 32.5	32.5	105.6 104.7	105.2	8.6 8.6	8.6	8.6	8.7 8.8	8.8	9.3	5.8 7.7	6.8	6.9			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.3	15.5 15.4	15.4	8.2 8.1	8.1	32.5 32.6	32.6	105.2 102.6	103.9	8.6 8.4	8.5		9.8 9.5	9.7		7.1 6.9	7.0				
27-Jan-14	Sunny	Moderate	14:22	3.2	Surface	1.0	17.1 17.1	17.1	8.2 8.2	8.2	32.3 32.3	32.3	114.5 116.4	115.5	9.1 9.3	9.2	9.2	4.3 4.4	4.4	4.4	8.1 8.4	8.3	7.8			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.2	17.1 17.1	17.1	8.2 8.2	8.2	32.3 32.3	32.3	111.3 115.5	113.4	8.8 9.2	9.0		4.4 4.2	4.3		7.5 6.8	7.2				
IS7	Sunny	Moderate	16:00	3.5	Surface	1.0	18.1 17.8	18.0	8.14 8.14	8.14	31.5 31.6	31.6	132.5 119.0	125.8	10.4 9.4	9.9	9.9	6.1 6.2	6.2	6.3	2.2 3.4	2.8	3.8			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.5	17.7 17.8	17.7	8.14 8.14	8.14	31.7 31.5	31.6	106.9 126.1	116.5	8.4 9.9	9.2		6.4 6.3	6.4		3.8 5.6	4.7				

**Remarks:**

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:

\* DA: Depth-Averaged

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



**Appendix J - Marine Water Quality Monitoring Results**

**Water Quality Monitoring Results at IS8 - Mid-EbbTide**

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*					
1-Jan-14	Sunny	Moderate	12:54	3.6	Surface	1.0	16.7 16.7	16.7	8.0 8.0	8.0	33.3 33.3	33.3	100.7 100.6	100.7	8.0 8.0	8.0	8.0	5.4 5.6	5.5	5.6	6.9 5.3	6.1	6.9				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	2.6	16.7 16.7	16.7	8.0 8.0	8.0	33.4 33.4	33.4	100.7 100.7	100.7	8.0 8.0	8.0		8.0	5.7 5.7		5.7	8.0		5.7 5.7	5.7	8.3 7.0	7.7
3-Jan-14	Sunny	Moderate	14:28	3.8	Surface	1.0	17.7 17.7	17.7	8.1 8.1	8.1	32.8 32.8	32.8	105.5 104.8	105.2	8.3 8.2	8.2	8.2	4.9 5.1	5.0	5.2	5.7 6.7	6.2	7.0				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	2.8	17.4 17.2	17.3	8.1 8.1	8.1	32.8 32.9	32.8	104.6 103.1	103.9	8.2 8.1	8.2		8.2	5.2 5.3		5.3	8.2		5.2 5.3	5.3	8.1 7.5	7.8
6-Jan-14	Sunny	Moderate	16:37	3.7	Surface	1.0	17.3 17.3	17.3	8.0 8.0	8.0	31.8 31.8	31.8	93.5 93.5	93.5	7.4 7.4	7.4	7.4	13.2 13.5	13.4	13.5	15.4 14.3	14.9	15.2				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	2.7	17.3 17.3	17.3	8.0 8.0	8.0	31.8 31.8	31.8	93.3 93.4	93.4	7.4 7.4	7.4		7.4	13.6 13.4		13.5	7.4		13.6 13.4	13.5	15.6 15.4	15.5
8-Jan-14	Fine	Moderate	19:07	3.7	Surface	1.0	17.5 17.5	17.5	8.0 8.0	8.0	31.2 31.2	31.2	97.6 96.1	96.9	7.8 7.6	7.7	7.7	6.3 6.0	6.2	6.4	7.2 7.8	7.5	7.6				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	2.7	17.5 17.5	17.5	8.0 8.0	8.0	31.3 31.4	31.3	96.7 99.5	98.1	7.7 7.9	7.8		7.8	6.4 6.8		6.6	7.8		6.4 6.8	6.6	7.1 8.3	7.7
10-Jan-14	Fine	Moderate	08:26	3.6	Surface	1.0	16.9 16.9	16.9	7.9 7.9	7.9	31.2 31.2	31.2	94.1 94.5	94.3	7.6 7.6	7.6	7.6	8.5 8.5	8.5	8.7	10.9 11.2	11.1	10.9				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	2.6	16.9 17.1	17.0	7.9 7.9	7.9	31.2 31.3	31.2	94.4 96.3	95.4	7.6 7.7	7.6		7.6	8.8 8.7		8.8	7.6		8.8 8.7	8.8	10.8 10.3	10.6
13-Jan-14	Sunny	Moderate	11:53	3.4	Surface	1.0	17.1 17.1	17.1	8.0 8.0	8.0	31.9 31.9	31.9	101.6 103.4	102.5	8.1 8.2	8.2	8.2	9.0 9.2	9.1	9.2	8.7 9.1	8.9	8.8				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	2.4	17.1 17.1	17.1	8.0 8.0	8.0	31.9 31.9	31.9	102.4 101.0	101.7	8.2 8.0	8.1		8.1	9.4 9.2		9.3	8.1		9.4 9.2	9.3	8.2 9.0	8.6
15-Jan-14	Sunny	Moderate	12:18	3.9	Surface	1.0	16.8 16.8	16.8	8.0 8.0	8.0	32.9 32.9	32.9	98.0 98.4	98.2	7.8 7.8	7.8	7.8	4.6 4.8	4.7	4.9	6.0 5.9	6.0	6.6				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	2.9	16.8 16.7	16.8	8.0 8.0	8.0	32.9 32.9	32.9	98.0 99.1	98.6	7.8 7.9	7.8		7.8	5.1 4.9		5.0	7.8		5.1 4.9	5.0	6.5 7.8	7.2
17-Jan-14	Sunny	Moderate	13:00	3.4	Surface	1.0	16.7 16.7	16.7	8.1 8.1	8.1	32.7 32.7	32.7	104.4 104.8	104.6	8.3 8.4	8.3	8.3	6.5 6.6	6.6	6.7	6.8 5.6	6.2	6.3				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	2.4	16.7 16.7	16.7	8.1 8.1	8.1	32.8 32.7	32.7	104.6 103.2	103.9	8.4 8.2	8.3		8.3	6.8 6.7		6.8	8.3		6.8 6.7	6.8	5.7 6.8	6.3
20-Jan-14	Sunny	Moderate	14:51	3.8	Surface	1.0	17.2 17.0	17.1	8.0 8.0	8.0	32.4 32.4	32.4	106.3 106.3	106.3	8.4 8.5	8.4	8.4	4.3 4.1	4.2	4.5	7.0 7.4	7.2	6.3				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	2.8	17.1 16.9	17.0	8.0 8.0	8.0	32.4 32.4	32.4	106.3 104.6	105.5	8.4 8.3	8.4		8.4	4.7 4.7		4.7	8.4		4.7 4.7	4.7	4.7 5.9	5.3

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at IS8 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	16:06	3.8	Surface	1.0	16.3 16.3	16.3	8.1 8.1	8.1	32.1 32.1	32.1	103.6 103.4	103.5	8.4 8.4	8.4	8.4	3.7 3.6	3.7	3.9	4.8 3.8	4.3	5.2			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.8	16.3 16.2	16.2	8.1 8.1	8.1	32.1 32.2	32.1	103.2 103.0	103.1	8.3 8.3	8.3		8.3	3.8 4.1		4.0	3.8		4.0	5.2 6.9	6.1
24-Jan-14	Fine	Moderate	11:34	3.7	Surface	1.0	16.0 16.0	16.0	8.1 8.1	8.1	32.5 32.5	32.5	101.7 101.4	101.6	8.3 8.2	8.2	8.2	4.6 4.7	4.7	4.7	6.7 4.8	5.8	5.9			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.7	16.0 15.9	16.0	8.1 8.1	8.1	32.5 32.5	32.5	101.5 101.1	101.3	8.2 8.2	8.2		8.2	4.8 4.5		4.7	4.8		4.7	6.8 5.2	6.0
27-Jan-14	Sunny	Moderate	10:15	4.0	Surface	1.0	16.5 16.5	16.5	8.0 8.0	8.0	32.2 32.2	32.2	103.6 103.6	103.6	8.3 8.3	8.3	8.3	2.7 2.8	2.8	2.8	4.9 5.8	5.4	6.3			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	3.0	16.5 16.5	16.5	8.0 8.0	8.0	32.2 32.2	32.2	103.7 103.5	103.6	8.3 8.3	8.3		8.3	2.8 2.7		2.8	2.8		2.8	7.1 7.2	7.2
1/29/2014	Sunny	Moderate	11:52	3.4	Surface	1.0	17.3 17.3	17.3	8.13 8.13	8.13	31.0 31.1	31.1	112.8 114.8	113.8	9.0 9.2	9.1	9.1	3.5 3.4	3.5	3.7	2.7 3.3	3.0	2.9			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.4	17.3 17.3	17.3	8.12 8.12	8.12	31.4 31.0	31.2	102.7 113.7	108.2	8.2 9.1	8.6		8.6	3.8 3.8		3.8	3.8		3.8	2.7 2.9	2.8

**Remarks:**

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at IS8 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*				
1-Jan-14	Sunny	Moderate	07:19	3.7	Surface	1.0	16.5 16.5	16.5	8.0 8.0	8.0	33.2 33.2	33.2	98.7 98.5	98.6	7.9 7.9	7.9	7.9	6.7 6.5	6.6	7.0	10.6 10.6	10.6	13.8			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.7	16.5 16.5	16.5	8.0 8.0	8.0	33.2 33.2	33.2	98.6 99.4	99.0	7.9 7.9	7.9		7.9	7.3 7.3		7.3	17.3 16.7		17.0		
3-Jan-14	Sunny	Moderate	09:10	4.0	Surface	1.0	16.9 17.0	16.9	8.0 8.0	8.0	32.6 32.6	32.6	98.0 97.8	97.9	7.8 7.8	7.8	7.8	10.5 10.6	10.6	10.6	8.8 9.3	9.1	8.9			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	3.0	16.9 16.9	16.9	8.0 8.0	8.0	32.7 32.7	32.7	97.4 98.3	97.9	7.8 7.8	7.8		7.8	10.5 10.6		10.6	9.1 8.1		8.6		
6-Jan-14	Sunny	Moderate	11:24	4.0	Surface	1.0	16.9 16.9	16.9	8.0 8.0	8.0	31.8 31.8	31.8	94.9 93.4	94.2	7.6 7.5	7.5	7.5	23.5 23.5	23.5	23.9	23.6 24.3	24.0	25.4			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	3.0	16.9 16.9	16.9	8.0 8.0	8.0	31.8 31.8	31.8	97.0 94.1	95.6	7.8 7.5	7.6		7.6	24.6 23.9		24.3	26.1 27.4		26.8		
8-Jan-14	Fine	Moderate	12:59	3.9	Surface	1.0	17.5 17.5	17.5	7.9 7.9	7.9	31.1 31.0	31.1	94.6 96.5	95.6	7.5 7.7	7.6	7.6	7.3 7.7	7.5	7.8	5.1 6.2	5.7	6.3			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.9	17.6 17.4	17.5	7.9 7.9	7.9	31.2 31.3	31.3	98.2 94.9	96.6	7.8 7.5	7.7		7.7	8.0 7.9		8.0	6.4 7.2		6.8		
10-Jan-14	Fine	Moderate	13:59	3.8	Surface	1.0	17.1 17.1	17.1	8.0 8.0	8.0	31.7 31.7	31.7	93.9 93.3	93.6	7.5 7.4	7.5	7.5	7.8 7.3	7.6	7.7	9.2 8.8	9.0	9.5			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-		
					Bottom	2.8	17.1 17.1	17.1	8.0 8.0	8.0	31.8 31.8	31.8	93.5 94.5	94.0	7.5 7.5	7.5		7.5	7.7 7.6		7.7	10.0 10.0		10.0		
13-Jan-14	Sunny	Moderate	15:16	3.3	Surface	1.0	17.3 17.3	17.3	8.0 8.0	8.0	31.9 31.9	31.9	104.2 102.1	103.2	8.3 8.1	8.2	8.2	12.0 12.0	12.0	12.2	10.5 10.7	10.6	11.1			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.3	17.3 17.2	17.2	8.0 8.0	8.0	31.9 32.0	32.0	101.3 102.8	102.1	8.0 8.2	8.1		8.1	12.2 12.3		12.3	11.5 11.4		11.5		
15-Jan-14	Fine	Moderate	07:30	4.0	Surface	1.0	16.6 16.6	16.6	8.0 8.0	8.0	32.6 32.6	32.6	96.9 97.2	97.1	7.8 7.8	7.8	7.8	9.3 9.2	9.3	9.4	9.0 9.0	9.0	9.4			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-		
					Bottom	3.0	16.6 16.6	16.6	8.0 8.0	8.0	32.6 32.6	32.6	97.1 97.8	97.5	7.8 7.8	7.8		7.8	9.4 9.3		9.4	9.9 9.4		9.7		
17-Jan-14	Sunny	Moderate	07:54	3.4	Surface	1.0	16.4 16.4	16.4	8.1 8.1	8.1	32.9 32.9	32.9	102.4 101.3	101.9	8.2 8.1	8.2	8.2	8.8 8.9	8.9	9.0	6.7 7.9	7.3	8.1			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-		
					Bottom	2.4	16.4 16.4	16.4	8.1 8.1	8.1	32.9 32.9	32.9	101.5 101.1	101.3	8.1 8.1	8.1		8.1	9.0 9.0		9.0	8.9 8.7		8.8		
20-Jan-14	Sunny	Moderate	09:47	4.1	Surface	1.0	16.5 16.5	16.5	8.0 8.0	8.0	32.6 32.6	32.6	102.4 102.7	102.6	8.2 8.2	8.2	8.2	5.4 5.5	5.5	5.5	4.5 4.7	4.6	5.3			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-		
					Bottom	3.1	16.5 16.5	16.5	8.0 8.0	8.0	32.6 32.6	32.6	102.4 103.2	102.8	8.2 8.3	8.2		8.2	5.5 5.5		5.5	6.1 5.8		6.0		

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at IS8 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	10:58	3.8	Surface	1.0	16.0 15.9	15.9	8.0 8.0	8.0	32.4 32.4	32.4	101.1 103.7	102.4	8.2 8.4	8.3	8.3	9.6 9.4	9.5	9.7	5.2 5.6	5.4	5.1				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	2.8	15.9 15.9	15.9	8.0 8.0	8.0	32.4 32.4	32.4	102.3 104.2	103.3	8.3 8.5	8.4		8.4	10.0 9.5		9.8	8.4		10.0 9.5	9.8	8.4	4.8 4.6
24-Jan-14	Fine	Moderate	05:27	3.6	Surface	1.0	15.5 15.4	15.4	8.1 8.1	8.1	32.5 32.5	32.5	105.1 105.6	105.4	8.6 8.7	8.6	8.6	6.6 6.2	6.4	6.9	6.0 6.8	6.4	6.7				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	2.6	15.4 15.4	15.4	8.1 8.1	8.1	32.5 32.5	32.5	104.1 105.2	104.7	8.5 8.6	8.6		8.6	7.1 7.5		7.3	8.6		7.1 7.5	7.3	8.6	6.4 7.3
27-Jan-14	Sunny	Moderate	14:47	4.3	Surface	1.0	16.8 16.8	16.8	8.1 8.1	8.1	32.3 32.3	32.3	107.8 107.3	107.6	8.6 8.6	8.6	8.6	2.3 2.4	2.4	2.4	5.4 4.6	5.0	4.3				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	3.3	16.7 16.7	16.7	8.1 8.1	8.1	32.3 32.3	32.3	106.3 107.3	106.8	8.5 8.6	8.5		8.5	2.4 2.4		2.4	8.5		2.4 2.4	2.4	8.5	2.9 4.0
IS8	Sunny	Moderate	16:27	3.5	Surface	1.0	17.5 17.7	17.6	8.14 8.14	8.14	31.4 31.2	31.3	132.0 132.6	132.3	10.5 10.5	10.5	10.5	2.7 2.9	2.8	3.0	3.3 2.9	3.1	3.9				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	2.5	17.6 17.6	17.6	8.14 8.13	8.14	31.3 31.3	31.3	130.9 132.4	131.7	10.4 10.5	10.4		10.4	3.1 3.0		3.1	10.4		3.1 3.0	3.1	10.4	5.3 4.0

#### Remarks:

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

#### Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at IS17 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*	
1-Jan-14	Sunny	Moderate	13:13	11.0	Surface	1.0	16.9	16.9	8.0	8.0	33.3	33.3	97.8	98.1	7.8	7.8	7.8	5.8	6.0	6.8	7.8	7.7	8.4
					Middle	5.5	16.8	16.8	8.0	8.0	33.3	33.3	97.3	97.4	7.7	7.7		6.1	6.8		7.5	8.6	
					Bottom	10.0	16.7	16.7	8.0	8.0	33.3	33.3	97.3	97.2	7.7	7.7		6.7	7.6		8.0	9.0	
3-Jan-14	Sunny	Moderate	14:43	11.3	Surface	1.0	17.2	17.2	8.0	8.0	32.4	32.4	96.4	96.3	7.6	7.6	7.6	11.4	11.4	11.6	16.1	16.3	17.2
					Middle	5.7	17.2	17.2	8.0	8.0	32.4	32.4	95.9	96.1	7.6	7.6		11.3	11.7		16.4	16.3	
					Bottom	10.3	17.2	17.2	8.0	8.0	32.5	32.5	96.0	95.6	7.6	7.6		11.9	11.7		16.4	19.1	
6-Jan-14	Sunny	Moderate	16:51	9.7	Surface	1.0	17.0	17.0	8.0	8.0	31.7	31.7	94.7	94.4	7.6	7.5	7.5	26.7	26.7	26.6	21.5	21.1	23.4
					Middle	4.9	17.0	17.0	8.0	8.0	31.8	31.8	95.1	93.8	7.6	7.5		26.6	26.5		23.3	23.5	
					Bottom	8.7	17.0	17.0	8.0	8.0	31.8	31.8	93.9	95.9	7.5	7.6		26.4	26.6		23.6	25.6	
8-Jan-14	Fine	Moderate	19:31	11.1	Surface	1.0	17.4	17.4	8.0	8.0	31.0	31.0	93.1	93.0	7.4	7.4	7.4	13.5	13.8	17.6	11.5	11.2	12.6
					Middle	5.6	17.4	17.4	8.0	8.0	31.4	31.4	92.6	92.4	7.4	7.3		14.1	20.1		12.2	12.6	
					Bottom	10.1	17.4	17.4	8.0	8.0	31.5	31.5	92.9	92.5	7.4	7.4		19.7	18.8		13.0	14.1	
10-Jan-14	Fine	Moderate	08:12	10.3	Surface	1.0	17.1	17.1	7.9	7.9	31.8	31.8	91.1	91.4	7.3	7.3	7.3	8.3	8.4	7.1	11.0	10.7	11.4
					Middle	5.2	17.3	17.2	7.9	7.9	32.2	32.2	91.0	91.9	7.2	7.2		6.1	6.1		10.5	11.2	
					Bottom	9.3	17.3	17.3	7.9	7.9	32.6	32.6	91.4	93.6	7.2	7.3		6.0	6.7		11.9	12.2	
13-Jan-14	Sunny	Moderate	11:39	11.7	Surface	1.0	17.1	17.1	8.0	8.0	32.2	32.2	95.2	96.1	7.5	7.6	7.6	3.7	3.7	4.5	7.3	6.8	6.3
					Middle	5.9	17.1	17.2	8.0	8.0	32.7	32.7	94.0	95.6	7.5	7.5		3.6	4.7		6.0	5.7	
					Bottom	10.7	17.3	17.2	8.0	8.0	33.0	32.9	95.0	91.2	7.5	7.4		4.6	5.1		5.4	6.4	
15-Jan-14	Sunny	Moderate	12:33	9.5	Surface	1.0	16.9	16.9	8.0	8.0	33.2	33.2	96.4	96.5	7.6	7.7	7.7	4.1	4.1	4.2	5.5	5.6	5.4
					Middle	4.8	16.9	16.9	8.0	8.0	33.2	33.2	96.4	96.1	7.6	7.6		4.1	4.1		4.2	4.6	
					Bottom	8.5	16.9	16.9	8.0	8.0	33.2	33.3	96.2	96.3	7.6	7.6		4.1	4.3		4.9	6.1	
17-Jan-14	Sunny	Moderate	13:15	11.3	Surface	1.0	16.6	16.6	8.1	8.1	32.9	33.0	100.9	100.8	8.1	8.0	8.0	15.7	15.6	15.7	20.8	20.2	20.2
					Middle	5.7	16.6	16.6	8.1	8.1	33.0	33.0	100.6	100.1	8.0	8.0		15.4	15.6		19.6	20.1	
					Bottom	10.3	16.6	16.6	8.1	8.1	33.0	32.9	100.1	100.1	8.0	8.0		15.7	15.9		19.7	20.3	
20-Jan-14	Sunny	Moderate	15:06	10.0	Surface	1.0	16.7	16.6	8.0	8.0	32.3	32.3	100.6	100.6	8.1	8.1	8.1	12.5	12.7	12.9	13.7	13.5	15.3
					Middle	5.0	16.6	16.6	8.0	8.0	32.4	32.4	100.5	100.2	8.0	8.0		12.8	13.0		13.2	15.6	
					Bottom	9.0	16.6	16.6	8.0	8.0	32.4	32.4	100.2	100.2	8.0	8.0		12.8	12.9		16.2	16.9	

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at IS17 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	16:23	11.0	Surface	1.0	16.1 16.1	16.1	8.1 8.1	8.1	32.3 32.2	32.3	98.8 100.3	99.6	8.0 8.1	8.1	8.1	10.6 11.5	11.1	10.6	15.8 15.8	15.8	16.1
					Middle	5.5	16.1 16.1	16.1	8.1 8.1	8.1	32.3 32.4	32.4	100.9 98.8	99.9	8.2 8.0	8.1		10.5 9.3	9.9		16.2 16.7	16.5	
					Bottom	10.0	16.1 16.1	16.1	8.1 8.1	8.1	32.4 32.4	32.4	102.3 99.4	100.9	8.3 8.0	8.2		10.9 10.7	10.8		15.4 16.7	16.1	
24-Jan-14	Fine	Moderate	11:49	11.2	Surface	1.0	16.1 16.1	16.1	8.1 8.1	8.1	32.4 32.4	32.4	101.0 101.1	101.1	8.2 8.2	8.2	8.2	4.0 3.8	3.9	4.4	4.8 6.0	5.4	6.1
					Middle	5.6	15.9 15.9	15.9	8.1 8.1	8.1	32.4 32.5	32.4	100.1 100.2	100.2	8.1 8.1	8.1		4.3 4.8	4.6		6.4 6.1	6.3	
					Bottom	10.2	15.9 15.9	15.9	8.1 8.1	8.1	32.5 32.5	32.5	100.0 100.6	100.3	8.1 8.2	8.1		4.7 4.8	4.8		6.6 6.6	6.6	
27-Jan-14	Sunny	Moderate	10:00	10.2	Surface	1.0	16.7 16.7	16.7	8.0 8.0	8.0	32.2 32.2	32.2	103.6 103.0	103.3	8.3 8.3	8.3	8.3	3.1 3.3	3.2	3.4	10.2 9.4	9.8	10.7
					Middle	5.1	16.6 16.6	16.6	8.0 8.0	8.0	32.4 32.3	32.4	101.7 102.1	101.9	8.1 8.2	8.2		3.4 3.4	3.4		11.2 9.8	10.5	
					Bottom	9.2	16.6 16.6	16.6	8.0 8.0	8.0	32.4 32.4	32.4	102.5 101.6	102.1	8.2 8.1	8.2		3.5 3.7	3.6		11.4 12.3	11.9	
1/29/2014	Sunny	Moderate	11:36	11.1	Surface	1.0	17.1 17.1	17.1	8.12 8.11	8.12	31.0 31.0	31.0	111.1 112.3	111.7	8.9 9.0	8.9	8.9	10.6 10.6	10.6	10.7	8.9 8.8	8.9	9.4
					Middle	5.6	17.0 17.0	17.0	8.12 8.12	8.12	31.2 31.2	31.2	110.8 108.7	109.8	8.9 8.7	8.8		10.7 10.6	10.7		9.2 9.7	9.5	
					Bottom	10.1	17.0 17.0	17.0	8.13 8.12	8.13	31.5 31.3	31.4	108.1 110.2	109.2	8.7 8.8	8.7		10.8 11.0	10.9		9.8 9.5	9.7	

#### Remarks:

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

#### Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at IS17 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*	
1-Jan-14	Sunny	Moderate	07:01	11.0	Surface	1.0	16.7 16.7	16.7	8.0 8.0	8.0	33.2 33.3	33.3	97.8 97.4	97.6	7.8 7.7	7.8	7.8	10.0 10.3	10.2	11.7	13.2 13.3	13.3	13.8
					Middle	5.5	16.7 16.7	16.7	8.0 8.0	8.0	33.3 33.3	33.3	97.1 97.7	97.4	7.7 7.8	7.7		11.1 11.7	11.4		14.5 13.1	13.8	
					Bottom	10.0	16.7 16.7	16.7	8.0 8.0	8.0	33.3 33.3	33.3	97.4 96.9	97.2	7.7 7.7	7.7		13.6 13.1	13.4		15.0 14.2	14.2	
3-Jan-14	Sunny	Moderate	08:52	11.3	Surface	1.0	16.9 16.9	16.9	8.0 8.0	8.0	32.4 32.4	32.4	95.7 95.8	95.8	7.6 7.6	7.6	7.6	13.5 13.3	13.4	14.2	13.1 13.9	13.5	13.4
					Middle	5.7	16.9 16.9	16.9	8.0 8.0	8.0	32.4 32.5	32.4	95.8 95.4	95.6	7.6 7.6	7.6		13.5 13.3	13.4		13.5 13.7	13.6	
					Bottom	10.3	16.9 16.9	16.9	8.0 8.0	8.0	32.5 32.5	32.5	96.3 95.1	95.7	7.7 7.6	7.6		15.5 15.8	15.7		13.4 12.8	13.1	
6-Jan-14	Sunny	Moderate	11:10	10.5	Surface	1.0	16.9 16.9	16.9	8.0 8.0	8.0	31.9 31.9	31.9	94.5 93.9	94.2	7.6 7.5	7.5	7.5	16.2 16.2	16.2	17.0	17.3 18.1	17.7	17.5
					Middle	5.3	16.9 16.9	16.9	8.0 8.0	8.0	31.9 31.9	31.9	94.8 93.8	94.3	7.6 7.5	7.5		17.2 16.8	17.0		17.2 17.4	17.3	
					Bottom	9.5	16.9 16.9	16.9	8.0 8.0	8.0	31.9 31.9	31.9	93.8 96.0	94.9	7.5 7.7	7.6		17.3 18.1	17.7		17.2 18.0	17.6	
8-Jan-14	Fine	Moderate	12:45	11.2	Surface	1.0	17.5 17.5	17.5	7.9 7.9	7.9	30.9 30.9	30.9	93.4 94.0	93.7	7.4 7.5	7.5	7.5	6.3 6.4	6.4	7.1	7.3 7.3	7.3	7.2
					Middle	5.6	17.4 17.4	17.4	7.9 7.9	7.9	30.9 31.0	30.9	94.2 93.0	93.6	7.5 7.4	7.4		7.0 7.1	7.1		6.8 6.2	6.5	
					Bottom	10.2	17.4 17.4	17.4	7.9 7.9	7.9	31.1 31.1	31.1	95.7 93.2	94.5	7.6 7.4	7.5		7.8 7.7	7.8		7.7 7.7	7.7	
10-Jan-14	Fine	Moderate	14:14	11.0	Surface	1.0	17.2 17.2	17.2	8.0 8.0	8.0	32.2 32.3	32.2	92.2 90.6	91.4	7.3 7.2	7.2	7.2	5.3 5.0	5.2	5.5	7.9 7.2	7.6	8.3
					Middle	5.5	17.3 17.3	17.3	8.0 8.0	8.0	32.6 32.7	32.6	92.1 90.4	91.3	7.3 7.1	7.2		5.5 5.4	5.5		8.7 9.0	8.9	
					Bottom	10.0	17.3 17.3	17.3	8.0 8.0	8.0	32.9 32.9	32.9	91.3 94.8	93.1	7.2 7.5	7.3		6.1 5.7	5.9		8.5 8.3	8.4	
13-Jan-14	Sunny	Moderate	16:15	11.1	Surface	1.0	17.3 17.3	17.3	8.0 8.0	8.0	32.6 32.6	32.6	96.9 97.1	97.0	7.7 7.7	7.7	7.7	4.2 4.5	4.4	4.8	4.9 4.8	4.9	4.9
					Middle	5.6	17.3 17.2	17.3	8.0 8.0	8.0	32.9 32.9	32.9	95.9 96.2	96.1	7.6 7.6	7.6		5.0 4.8	4.9		3.8 5.2	4.5	
					Bottom	10.1	17.3 17.2	17.3	8.0 8.0	8.0	32.9 33.0	33.0	94.8 94.6	94.7	7.5 7.5	7.5		5.2 5.0	5.1		4.8 6.0	5.4	
15-Jan-14	Fine	Moderate	07:16	9.8	Surface	1.0	16.6 16.6	16.6	8.0 8.0	8.0	33.1 33.1	33.1	97.3 96.4	96.9	7.8 7.7	7.7	7.8	9.5 9.5	9.5	9.7	13.9 14.2	14.1	14.5
					Middle	4.9	16.6 16.6	16.6	8.0 8.0	8.0	33.1 33.1	33.1	96.4 98.0	97.2	7.7 7.8	7.8		9.9 9.7	9.8		14.0 14.2	14.1	
					Bottom	8.8	16.6 16.6	16.6	8.0 8.0	8.0	33.1 33.1	33.1	96.4 98.8	97.6	7.7 7.9	7.8		9.7 9.7	9.7		15.2 15.4	15.3	
17-Jan-14	Sunny	Moderate	07:40	11.1	Surface	1.0	16.4 16.4	16.4	8.1 8.1	8.1	33.2 33.2	33.2	102.0 101.1	101.6	8.2 8.1	8.1	8.1	11.3 11.2	11.3	11.6	10.5 11.0	10.8	10.8
					Middle	5.6	16.4 16.4	16.4	8.1 8.1	8.1	33.2 33.2	33.2	100.9 101.7	101.3	8.1 8.1	8.1		11.8 11.4	11.6		11.2 9.3	10.3	
					Bottom	10.1	16.4 16.4	16.4	8.1 8.1	8.1	33.2 33.2	33.2	101.5 100.8	101.2	8.1 8.1	8.1		11.8 11.8	11.8		11.5 11.3	11.4	
20-Jan-14	Sunny	Moderate	09:33	10.6	Surface	1.0	16.3 16.3	16.3	8.0 8.0	8.0	32.5 32.5	32.5	99.5 100.3	99.9	8.0 8.1	8.0	8.1	9.6 9.5	9.6	9.6	9.6 9.2	9.4	10.7
					Middle	5.3	16.3 16.3	16.3	8.0 8.0	8.0	32.5 32.5	32.5	100.6 99.3	100.0	8.1 8.0	8.1		9.5 9.5	9.5		11.4 12.0	11.7	
					Bottom	9.6	16.3 16.3	16.3	8.0 8.0	8.0	32.5 32.5	32.5	99.4 101.6	100.5	8.0 8.2	8.1		9.6 9.6	9.6		11.3 10.7	11.0	

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at IS17 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	10:44	11.3	Surface	1.0	16.1 <u>16.1</u>	16.1	8.0 <u>8.0</u>	8.0	32.4 <u>32.4</u>	32.4	99.1 <u>100.0</u>	99.6	8.0 <u>8.1</u>	8.1	8.1	11.5 <u>11.3</u>	11.4	13.8	7.6 <u>8.4</u>	8.0	8.9
					Middle	5.7	16.0 <u>16.0</u>	16.0	7.9 <u>8.0</u>	8.0	32.4 <u>32.5</u>	32.4	101.5 <u>98.8</u>	100.2	8.2 <u>8.0</u>	8.1		14.9 <u>15.9</u>	15.4		8.9 <u>8.0</u>	8.5	
					Bottom	10.3	16.0 <u>16.0</u>	16.0	8.0 <u>7.9</u>	8.0	32.5 <u>32.4</u>	32.4	99.1 <u>104.0</u>	101.6	8.0 <u>8.4</u>	8.2		8.2	14.5 <u>14.4</u>		14.5	11.4 <u>9.0</u>	
24-Jan-14	Fine	Moderate	05:14	11.2	Surface	1.0	15.8 <u>15.8</u>	15.8	8.1 <u>8.1</u>	8.1	32.5 <u>32.5</u>	32.5	99.7 <u>100.4</u>	100.1	8.1 <u>8.2</u>	8.1	8.1	5.7 <u>5.8</u>	5.8	5.9	4.8 <u>5.3</u>	5.1	4.5
					Middle	5.6	15.8 <u>15.8</u>	15.8	8.1 <u>8.1</u>	8.1	32.5 <u>32.5</u>	32.5	100.9 <u>99.6</u>	100.3	8.2 <u>8.1</u>	8.1		6.0 <u>5.6</u>	5.8		4.5 <u>4.9</u>	4.7	
					Bottom	10.2	15.8 <u>15.8</u>	15.8	8.1 <u>8.1</u>	8.1	32.5 <u>32.5</u>	32.5	99.8 <u>101.6</u>	100.7	8.1 <u>8.3</u>	8.2		8.2	6.0 <u>6.3</u>		6.2	4.0 <u>3.3</u>	
27-Jan-14	Sunny	Moderate	15:02	11.2	Surface	1.0	16.9 <u>16.8</u>	16.9	8.1 <u>8.1</u>	8.1	32.4 <u>32.4</u>	32.4	105.1 <u>105.2</u>	105.2	8.4 <u>8.4</u>	8.4	8.4	2.6 <u>2.6</u>	2.6	2.5	4.7 <u>5.4</u>	5.1	5.1
					Middle	5.6	16.7 <u>16.7</u>	16.7	8.1 <u>8.1</u>	8.1	32.4 <u>32.4</u>	32.4	103.2 <u>103.6</u>	103.4	8.3 <u>8.2</u>	8.3		2.5 <u>2.5</u>	2.5		5.0 <u>5.0</u>	5.0	
					Bottom	10.2	16.7 <u>16.7</u>	16.7	8.1 <u>8.1</u>	8.1	32.5 <u>32.5</u>	32.5	102.6 <u>103.9</u>	103.3	8.2 <u>8.3</u>	8.3		8.3	2.5 <u>2.5</u>		2.5	5.0 <u>5.5</u>	
IS17	Sunny	Moderate	16:50	11.0	Surface	1.0	17.1 <u>17.2</u>	17.2	8.11 <u>8.11</u>	8.11	30.8 <u>30.7</u>	30.8	112.2 <u>111.2</u>	111.7	9.0 <u>8.9</u>	8.9	8.9	2.9 <u>3.1</u>	3.0	3.3	2.4 <u>2.8</u>	2.6	3.5
					Middle	5.5	17.0 <u>17.0</u>	17.0	8.11 <u>8.12</u>	8.12	31.3 <u>31.4</u>	31.4	109.4 <u>111.7</u>	110.6	8.8 <u>8.9</u>	8.8		3.4 <u>3.2</u>	3.3		4.5 <u>5.1</u>	4.8	
					Bottom	10.0	17.0 <u>17.0</u>	17.0	8.12 <u>8.12</u>	8.12	31.5 <u>31.4</u>	31.5	108.9 <u>111.2</u>	110.1	8.7 <u>8.9</u>	8.8		8.8	3.4 <u>3.5</u>		3.5	3.0 <u>3.0</u>	

#### Remarks:

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

#### Remarks:

\* DA: Depth-Averaged

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



## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at SR3 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*		
1-Jan-14	Sunny	Moderate	11:45	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
					Middle	0.7	16.2	16.2	8.0	8.0	33.2	33.2	101.9	102.0	8.2	8.2	8.2	5.6	5.6	5.6	8.9	8.7	8.8	8.8
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-Jan-14	Sunny	Moderate	13:40	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
					Middle	0.7	17.6	17.6	8.0	8.0	33.0	33.0	100.6	102.2	7.9	7.9	7.9	9.1	9.1	9.1	15.7	17.3	16.5	16.5
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6-Jan-14	Sunny	Moderate	15:51	1.2	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
					Middle	0.6	17.1	17.1	7.9	7.9	31.8	31.8	97.1	98.4	7.7	7.8	7.8	23.3	22.8	22.8	17.3	16.5	16.9	16.9
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8-Jan-14	Fine	Moderate	18:05	1.8	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
					Middle	0.9	17.6	17.6	8.0	8.0	32.1	32.1	97.5	99.6	7.7	7.8	7.8	15.2	15.1	15.2	16.7	15.5	16.1	16.1
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10-Jan-14	Fine	Moderate	09:11	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
					Middle	0.8	16.9	16.9	8.0	8.0	31.3	31.3	93.9	93.8	7.5	7.5	7.5	6.2	6.4	6.3	7.9	6.9	7.4	7.4
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-Jan-14	Sunny	Moderate	12:38	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
					Middle	0.7	16.8	16.8	8.0	8.0	32.3	32.3	98.2	98.0	7.9	7.8	7.8	5.5	5.2	5.4	9.3	7.8	8.6	8.6
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Jan-14	Sunny	Moderate	11:31	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
					Middle	0.7	16.6	16.6	8.0	8.0	32.4	32.4	100.0	100.7	8.0	8.0	8.0	5.6	5.3	5.5	6.4	6.1	6.3	6.3
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17-Jan-14	Sunny	Moderate	12:20	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
					Middle	0.8	16.5	16.5	8.0	8.0	32.9	32.8	102.8	102.9	8.2	8.2	8.2	8.4	8.4	8.4	6.0	7.2	6.6	6.6
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-Jan-14	Sunny	Moderate	14:07	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
					Middle	0.7	16.7	16.7	8.0	8.0	32.7	32.7	105.6	103.9	8.4	8.4	8.4	4.6	4.7	4.7	6.2	5.8	6.0	6.0
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at SR3 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	15:09	1.8	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
					Middle	0.9	16.1 16.1	16.1	8.1 8.1	8.1	32.3 32.3	32.3	109.7 110.9	110.3	8.9 9.0	8.9	8.9	5.5 6.0	5.8	5.8	10.1 8.9	9.5	9.5	9.5
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24-Jan-14	Fine	Moderate	10:38	1.8	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
					Middle	0.9	15.7 15.7	15.7	8.1 8.1	8.1	32.7 32.6	32.7	98.3 101.1	99.7	8.0 8.2	8.1	8.1	6.4 6.9	6.7	6.7	4.5 3.8	4.2	4.2	4.2
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27-Jan-14	Sunny	Moderate	11:01	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
					Middle	0.7	17.2 17.2	17.2	8.1 8.1	8.1	32.4 32.4	32.4	111.9 111.9	111.9	8.9 8.9	8.9	8.9	4.3 4.3	4.3	4.3	7.0 8.3	7.7	7.7	7.7
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1/29/2014	Sunny	Moderate	12:48	1.2	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
					Middle	0.6	17.4 17.4	17.4	8.13 8.13	8.13	31.5 31.5	31.5	124.1 124.1	124.1	9.8 9.9	9.8	9.8	3.8 3.5	3.7	3.7	3.9 3.9	3.9	3.9	3.9
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**Remarks:**

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at SR3 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*		
1-Jan-14	Sunny	Moderate	08:25	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
					Middle	0.8	16.2 16.2	16.2	8.1 8.1	8.1	33.2 33.2	33.2	100.5 100.6	100.6	8.1 8.1	8.1	8.1	8.1	6.6 6.4	6.5	6.5	7.5 7.8	7.7	7.7
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-Jan-14	Sunny	Moderate	10:12	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
					Middle	0.6	17.0 17.1	17.0	8.0 8.0	8.0	32.6 32.6	32.6	98.6 98.4	98.5	7.8 7.8	7.8	7.8	7.8	21.3 21.0	21.2	21.2	17.1 15.2	16.2	16.2
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6-Jan-14	Sunny	Moderate	12:10	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
					Middle	0.7	16.8 16.8	16.8	8.0 8.0	8.0	31.8 31.8	31.8	95.1 95.1	95.1	7.6 7.6	7.6	7.6	7.6	11.7 12.5	12.1	12.1	16.6 16.3	16.5	16.5
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8-Jan-14	Fine	Moderate	13:58	1.8	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
					Middle	0.9	17.5 17.5	17.5	8.0 8.0	8.0	31.8 31.8	31.8	96.3 96.3	96.3	7.6 7.6	7.6	7.6	10.6 9.8	10.2	10.2	14.3 12.6	13.5	13.5	
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10-Jan-14	Fine	Moderate	13:15	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
					Middle	0.8	16.8 16.8	16.8	8.0 8.0	8.0	31.3 31.3	31.3	99.2 98.0	98.6	8.0 7.9	7.9	7.9	21.2 21.5	21.4	21.4	24.2 25.4	24.8	24.8	
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-Jan-14	Sunny	Moderate	15:32	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
					Middle	0.8	17.0 17.1	17.0	8.1 8.0	8.1	32.3 32.3	32.3	106.0 103.2	104.6	8.4 8.2	8.3	8.3	6.8 6.3	6.6	6.6	8.6 8.2	8.4	8.4	
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Jan-14	Fine	Moderate	08:18	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
					Middle	0.7	16.4 16.4	16.4	8.0 8.0	8.0	32.4 32.4	32.4	98.2 98.2	98.2	7.9 7.9	7.9	7.9	7.7 7.5	7.6	7.6	11.6 11.2	11.4	11.4	
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17-Jan-14	Sunny	Moderate	08:39	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
					Middle	0.7	16.3 16.3	16.3	8.1 8.1	8.1	32.9 32.9	32.9	101.1 101.0	101.1	8.1 8.1	8.1	8.1	11.7 12.4	12.1	12.1	10.8 10.2	10.5	10.5	
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-Jan-14	Sunny	Moderate	10:34	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
					Middle	0.7	16.3 16.3	16.3	8.1 8.1	8.1	32.7 32.7	32.7	103.0 103.0	103.0	8.3 8.3	8.3	8.3	4.6 4.6	4.6	4.6	8.8 8.3	8.6	8.6	
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at SR3 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	11:52	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
					Middle	0.8	<u>15.7</u> 15.7	15.7	<u>8.1</u> 8.1	8.1	32.6 32.6	32.6	104.2 104.3	104.3	8.5 8.5	8.5	8.5	8.5	8.5	4.2 4.6	4.4	4.4	8.2 7.2	7.7	7.7
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24-Jan-14	Fine	Moderate	06:20	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
					Middle	0.8	<u>15.6</u> 15.6	15.6	<u>8.1</u> 8.1	8.1	32.7 32.7	32.7	102.3 102.2	102.3	8.3 8.3	8.3	8.3	8.3	3.6 4.0	3.8	3.8	11.5 9.8	10.7	10.7	
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27-Jan-14	Sunny	Moderate	13:58	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
					Middle	0.7	<u>17.4</u> 17.4	17.4	<u>8.2</u> 8.2	8.2	32.7 32.7	32.7	110.0 112.4	111.2	8.7 8.9	8.8	8.8	8.8	6.5 6.5	6.5	6.5	7.3 8.2	7.8	7.8	
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SR3	Sunny	Moderate	15:34	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
					Middle	0.7	<u>17.6</u> 17.5	17.6	<u>8.15</u> 8.14	8.15	31.4 31.4	31.4	115.4 108.2	111.8	9.1 8.6	8.9	8.9	8.9	3.3 3.4	3.4	3.4	3.0 3.7	3.4	3.4	
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**Remarks:**

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at SR4(N) - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*				
1-Jan-14	Sunny	Moderate	12:41	3.4	Surface	1.0	16.7 16.7	16.7	8.0 8.0	8.0	33.3 33.3	33.3	101.0 100.5	100.8	8.0 8.0	8.0	8.0	5.5 5.5	5.5	5.8	5.4 5.1	5.3	5.5			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.4	16.7 16.7	16.7	8.0 8.0	8.0	33.4 33.4	33.4	101.0 100.8	100.9	8.0 8.0	8.0		8.0	6.0 5.9		6.0	6.0		5.3 6.0	5.7	
3-Jan-14	Sunny	Moderate	14:21	3.8	Surface	1.0	17.5 17.5	17.5	8.0 8.0	8.0	32.7 32.7	32.7	99.7 99.8	99.8	7.8 7.8	7.8	7.8	8.6 9.1	8.9	8.8	10.4 10.7	10.6	10.6			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.8	17.5 17.4	17.4	8.0 8.0	8.0	32.7 32.7	32.7	99.6 99.4	99.5	7.8 7.8	7.8		7.8	8.5 8.9		8.7	8.7		10.6 10.3	10.5	
6-Jan-14	Sunny	Moderate	16:31	3.7	Surface	1.0	17.4 17.4	17.4	8.0 8.0	8.0	31.9 31.9	31.9	95.0 95.1	95.1	7.5 7.5	7.5	7.5	9.2 9.1	9.2	9.1	8.3 8.7	8.5	9.4			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.7	17.3 17.4	17.4	7.9 8.0	8.0	32.0 32.0	32.0	95.7 95.0	95.4	7.6 7.5	7.5		7.5	9.0 9.0		9.0	9.0		9.7 10.7	10.2	
8-Jan-14	Fine	Moderate	18:57	3.6	Surface	1.0	17.6 17.6	17.6	7.9 7.9	7.9	31.2 31.1	31.2	93.7 96.4	95.1	7.4 7.6	7.5	7.5	7.2 7.7	7.5	7.9	8.5 7.6	8.1	8.4			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.6	17.6 17.6	17.6	7.9 7.9	7.9	31.3 31.2	31.3	98.2 95.6	96.9	7.8 7.6	7.7		7.7	8.5 7.8		8.2	8.2		8.3 9.1	8.7	
10-Jan-14	Fine	Moderate	08:32	3.6	Surface	1.0	16.5 16.5	16.5	7.9 7.9	7.9	30.5 30.5	30.5	92.6 91.5	92.1	7.5 7.4	7.5	7.5	3.8 3.8	3.8	3.9	6.9 6.7	6.8	7.3			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.6	16.6 16.5	16.5	7.9 7.9	7.9	30.6 30.5	30.5	92.1 94.2	93.2	7.5 7.7	7.6		7.6	4.0 3.9		4.0	4.0		8.3 7.3	7.8	
13-Jan-14	Sunny	Moderate	12:00	3.4	Surface	1.0	17.0 17.1	17.0	8.0 8.0	8.0	31.9 31.9	31.9	102.2 101.2	101.7	8.2 8.1	8.1	8.1	6.8 6.9	6.9	6.9	8.7 8.2	8.5	7.9			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.4	17.1 16.8	16.9	8.0 8.0	8.0	31.9 32.1	32.0	100.5 102.1	101.3	8.0 8.1	8.1		8.1	6.9 6.9		6.9	6.9		7.1 7.2	7.2	
15-Jan-14	Sunny	Moderate	12:12	3.7	Surface	1.0	16.6 16.6	16.6	8.0 8.0	8.0	32.7 32.7	32.7	97.6 98.6	98.1	7.8 7.9	7.8	7.8	6.2 6.2	6.2	6.3	8.3 7.2	7.8	8.9			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.7	16.6 16.6	16.6	8.0 8.0	8.0	32.7 32.7	32.7	100.0 98.6	99.0	8.0 7.8	7.9		7.9	6.3 6.3		6.3	6.3		9.4 10.5	10.0	
17-Jan-14	Sunny	Moderate	12:55	3.3	Surface	1.0	16.6 16.6	16.6	8.1 8.1	8.1	32.7 32.7	32.7	102.2 101.1	101.7	8.2 8.1	8.1	8.1	7.6 7.6	7.6	7.7	7.4 5.9	6.7	7.3			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.3	16.6 16.7	16.7	8.1 8.0	8.1	32.7 32.7	32.7	101.7 100.4	101.1	8.1 8.0	8.1		8.1	7.7 7.8		7.8	7.8		8.0 7.8	7.9	
20-Jan-14	Sunny	Moderate	14:45	3.8	Surface	1.0	17.0 17.0	17.0	8.0 8.0	8.0	32.3 32.4	32.4	104.0 104.7	104.4	8.3 8.3	8.3	8.3	3.5 3.5	3.5	3.6	5.1 5.0	5.1	5.5			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.8	17.0 17.0	17.0	8.0 8.0	8.0	32.4 32.4	32.4	104.3 102.9	103.6	8.3 8.2	8.2		8.2	3.6 3.6		3.6	3.6		5.3 6.5	5.9	

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at SR4(N) - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	15:59	3.5	Surface	1.0	16.2 <u>16.2</u>	16.2	8.0 <u>8.0</u>	8.0	32.2 <u>32.2</u>	32.2	105.7 <u>106.0</u>	105.9	8.5 <u>8.6</u>	8.6	8.6	3.6 <u>3.7</u>	3.7	3.7	5.3 <u>5.9</u>	5.6	5.6				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	2.5	16.2 <u>16.2</u>	16.2	8.0 <u>8.0</u>	8.0	32.2 <u>32.3</u>	32.2	105.9 <u>105.6</u>	105.8	8.6 <u>8.5</u>	8.5		8.5	3.6 <u>3.5</u>		3.6	3.6		5.0 <u>6.2</u>	5.6	5.6	
24-Jan-14	Fine	Moderate	11:28	3.5	Surface	1.0	16.0 <u>16.1</u>	16.0	8.1 <u>8.1</u>	8.1	32.5 <u>32.5</u>	32.5	100.8 <u>101.1</u>	101.0	8.2 <u>8.2</u>	8.2	8.2	6.8 <u>6.5</u>	6.7	7.2	5.2 <u>5.1</u>	5.2	5.9				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	
					Bottom	2.5	15.9 <u>16.0</u>	16.0	8.1 <u>8.1</u>	8.1	32.5 <u>32.5</u>	32.5	100.5 <u>101.0</u>	100.8	8.2 <u>8.2</u>	8.2		8.2	7.8 <u>7.5</u>		7.7	7.7		5.9 <u>7.1</u>	6.5	6.5	
27-Jan-14	Sunny	Moderate	10:22	3.8	Surface	1.0	16.7 <u>16.7</u>	16.7	8.1 <u>8.1</u>	8.1	32.3 <u>32.3</u>	32.3	107.9 <u>107.6</u>	107.8	8.6 <u>8.6</u>	8.6	8.6	2.0 <u>1.9</u>	2.0	2.0	8.3 <u>7.8</u>	8.1	8.3				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	
					Bottom	2.8	16.7 <u>16.6</u>	16.6	8.1 <u>8.1</u>	8.1	32.3 <u>32.3</u>	32.3	107.7 <u>107.1</u>	107.4	8.6 <u>8.6</u>	8.6		8.6	2.0 <u>1.9</u>		2.0	2.0		9.3 <u>7.6</u>	8.5	8.5	
1/29/2014	Sunny	Moderate	12:00	3.6	Surface	1.0	17.3 <u>17.4</u>	17.3	8.12 <u>8.12</u>	8.12	31.5 <u>31.2</u>	31.3	111.6 <u>109.7</u>	110.7	8.9 <u>8.7</u>	8.8	8.8	3.0 <u>3.1</u>	3.1	3.1	2.1 <u>2.8</u>	2.5	2.6				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	
					Bottom	2.6	17.1 <u>17.4</u>	17.3	8.11 <u>8.11</u>	8.11	31.9 <u>31.2</u>	31.6	102.6 <u>110.7</u>	106.7	8.2 <u>8.8</u>	8.5		8.5	3.1 <u>3.1</u>		3.1	3.1		2.5 <u>2.9</u>	2.7	2.7	

**Remarks:**

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at SR4(N) - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*				
1-Jan-14	Sunny	Moderate	07:31	3.4	Surface	1.0	16.5 16.5	16.5	8.0 8.0	8.0	33.3 33.3	33.3	98.6 98.7	98.7	7.9 7.9	7.9	7.9	7.4 7.4	7.4	7.7	8.2 8.0	8.1	8.2			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.4	16.5 16.5	16.5	8.0 8.0	8.0	33.3 33.3	33.3	98.9 98.8	98.9	7.9 7.9	7.9		7.9 7.8	7.9		7.9	7.9		7.8	7.9	7.7 8.8
3-Jan-14	Sunny	Moderate	09:22	3.7	Surface	1.0	17.0 17.0	17.0	8.0 8.0	8.0	32.6 32.6	32.6	97.2 97.3	97.3	7.7 7.7	7.7	7.7	9.5 9.7	9.6	9.6	9.2 9.2	9.2	10.6			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.7	17.0 17.0	17.0	8.0 8.0	8.0	32.6 32.6	32.6	97.7 97.7	97.7	7.8 7.8	7.8		9.5 9.6	9.6		7.8	9.5 9.6		9.6	12.4 11.6	12.0
6-Jan-14	Sunny	Moderate	11:30	3.7	Surface	1.0	17.0 17.0	17.0	7.9 8.0	8.0	31.8 31.8	31.8	93.6 92.4	93.0	7.5 7.4	7.4	7.4	9.3 9.6	9.5	9.5	13.3 14.0	13.7	15.8			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.7	17.0 17.0	17.0	7.9 8.0	8.0	31.8 31.8	31.8	93.0 94.5	93.8	7.4 7.5	7.5		9.5 9.5	9.5		7.5	9.5 9.5		9.5	17.8 17.8	17.8
8-Jan-14	Fine	Moderate	13:07	3.6	Surface	1.0	17.5 17.4	17.5	8.0 8.0	8.0	31.2 31.2	31.2	93.4 93.6	93.5	7.4 7.4	7.4	7.4	7.0 7.2	7.1	7.2	5.8 6.8	6.3	6.5			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.6	17.4 17.5	17.4	8.0 8.0	8.0	31.4 31.2	31.3	93.3 93.4	93.4	7.4 7.4	7.4		7.1 7.4	7.3		7.4	7.1 7.4		7.3	6.9 6.2	6.6
10-Jan-14	Fine	Moderate	13:53	3.7	Surface	1.0	17.1 17.1	17.1	7.9 7.9	7.9	31.6 31.6	31.6	92.3 94.7	93.5	7.4 7.6	7.5	7.5	12.8 12.5	12.7	12.7	12.5 13.1	12.8	12.7			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.7	17.1 17.1	17.1	7.9 7.9	7.9	31.6 31.6	31.6	93.4 97.6	95.5	7.5 7.8	7.6		12.6 12.5	12.6		7.6	12.6 12.5		12.6	12.6 12.5	12.6
13-Jan-14	Sunny	Moderate	15:11	3.5	Surface	1.0	17.3 17.2	17.2	8.0 8.0	8.0	31.8 31.8	31.8	101.8 104.0	102.9	8.1 8.3	8.2	8.2	5.9 6.0	6.0	6.1	7.3 8.6	8.0	8.3			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.5	17.2 17.2	17.2	8.1 8.0	8.1	31.9 31.8	31.9	102.4 101.4	101.9	8.1 8.1	8.1		6.1 6.0	6.1		8.1	6.1 6.0		6.1	8.8 8.4	8.6
15-Jan-14	Fine	Moderate	07:37	3.9	Surface	1.0	16.6 16.6	16.6	8.0 8.0	8.0	32.5 32.5	32.5	96.1 97.0	96.6	7.7 7.8	7.7	7.7	6.1 6.4	6.3	6.2	10.3 10.7	10.5	11.1			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.9	16.6 16.6	16.6	8.0 8.0	8.0	32.5 32.5	32.5	96.4 98.1	97.3	7.7 7.9	7.8		6.1 6.1	6.1		7.8	6.1 6.1		6.1	11.0 12.2	11.6
17-Jan-14	Sunny	Moderate	08:00	3.6	Surface	1.0	16.4 16.3	16.4	8.1 8.0	8.1	32.8 32.8	32.8	101.2 102.4	101.8	8.1 8.2	8.2	8.2	11.8 11.7	11.8	11.9	7.0 8.3	7.7	8.0			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.6	16.2 16.4	16.3	8.0 8.1	8.0	32.9 32.8	32.9	102.3 100.4	101.4	8.2 8.1	8.1		11.9 11.8	11.9		8.1	11.9 11.8		11.9	8.6 8.0	8.3
20-Jan-14	Sunny	Moderate	09:55	3.6	Surface	1.0	16.5 16.1	16.3	8.0 8.0	8.0	32.6 32.9	32.7	101.7 101.1	101.4	8.2 8.2	8.2	8.2	4.2 4.2	4.2	4.2	8.9 8.2	8.6	8.3			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.6	16.5 16.5	16.5	8.0 8.0	8.0	32.6 32.6	32.6	102.0 101.0	101.5	8.2 8.1	8.1		4.0 4.2	4.1		8.1	4.0 4.2		4.1	7.1 8.7	7.9

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at SR4(N) - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	11:07	3.6	Surface	1.0	15.9 15.9	15.9	8.0 8.0	8.0	32.4 32.4	32.4	102.4 104.6	103.5	8.3 8.5	8.4	8.4	6.1 6.1	6.1	6.5	5.2 5.3	5.3	5.6			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	2.6	15.7 15.9	15.8	7.9 8.0	8.0	32.4 32.3	32.4	104.6 103.4	104.0	8.5 8.4	8.5		8.5	8.5		6.9 6.6	6.8		6.3 5.2	5.8	
24-Jan-14	Fine	Moderate	05:35	3.3	Surface	1.0	15.4 15.4	15.4	8.1 8.1	8.1	32.5 32.5	32.5	105.7 105.7	105.7	8.7 8.7	8.7	8.7	4.2 4.7	4.5	4.7	8.4 6.8	7.6	8.0			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.3	15.4 15.4	15.4	8.1 8.1	8.1	32.5 32.5	32.5	105.7 105.5	105.6	8.7 8.7	8.7		8.7	8.7		4.9 4.7	4.8		7.4 9.1	8.3	
27-Jan-14	Sunny	Moderate	14:40	3.7	Surface	1.0	16.8 16.7	16.8	8.2 8.2	8.2	32.4 32.4	32.4	114.8 116.5	115.7	9.2 9.3	9.2	9.2	3.5 3.5	3.5	3.6	7.7 7.5	7.6	8.0			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.7	16.8 16.8	16.8	8.2 8.2	8.2	32.4 32.4	32.4	112.8 115.8	114.3	9.0 9.3	9.1		9.1	9.1		3.7 3.5	3.6		7.6 9.1	8.4	
SR4(N)	Sunny	Moderate	16:20	3.4	Surface	1.0	17.7 17.7	17.7	8.13 8.13	8.13	31.2 31.2	31.2	127.4 127.9	127.7	10.1 10.1	10.1	10.1	2.4 2.5	2.5	2.6	4.3 3.5	3.9	3.8			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	2.4	17.7 17.7	17.7	8.12 8.12	8.12	31.2 31.2	31.2	120.2 127.6	123.9	9.5 10.1	9.8		9.8	9.8		2.5 2.6	2.6		3.5 3.7	3.6	

**Remarks:**

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:

\* DA: Depth-Averaged

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



## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at SR5 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*				
1-Jan-14	Sunny	Moderate	12:45	5.4	Surface	1.0	16.7 16.8	16.8	8.2 8.2	8.2	33.5 33.5	33.5	99.8 99.1	99.5	7.9 7.9	7.9	7.9	5.9 5.8	5.9	6.2	10.6 10.3	10.5	12.5			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	4.4	16.6 16.6	16.6	8.2 8.2	8.2	33.5 33.5	33.5	98.8 100.1	99.5	7.9 8.0	7.9		7.9	6.4 6.3		6.4	14.6 14.2		14.4		
3-Jan-14	Sunny	Moderate	14:19	5.6	Surface	1.0	17.3 17.2	17.3	8.2 8.2	8.2	31.4 31.4	31.4	94.5 94.1	94.3	7.5 7.5	7.5	7.5	4.9 4.9	4.9	4.6	9.9 9.5	9.7	10.8			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	4.6	17.3 17.3	17.3	8.2 8.2	8.2	32.2 32.1	32.2	95.6 94.1	94.9	7.6 7.5	7.5		7.5	4.1 4.5		4.3	12.1 11.4		11.8		
6-Jan-14	Sunny	Moderate	16:51	5.5	Surface	1.0	17.2 17.2	17.2	8.2 8.2	8.2	31.7 31.7	31.7	98.0 96.6	97.3	7.8 7.7	7.7	7.7	5.3 5.3	5.3	5.5	9.7 9.4	9.6	9.3			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	4.5	17.2 17.2	17.2	8.2 8.2	8.2	31.9 31.8	31.9	96.9 99.2	98.1	7.7 7.9	7.8		7.8	5.6 5.8		5.7	9.1 8.9		9.0		
8-Jan-14	Fine	Moderate	19:21	4.3	Surface	1.0	17.6 17.6	17.6	8.1 8.1	8.1	29.6 29.6	29.6	93.3 94.1	93.7	7.5 7.5	7.5	7.5	3.5 3.6	3.6	3.6	5.0 4.1	4.6	5.1			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	3.3	17.6 17.6	17.6	8.2 8.1	8.2	29.8 29.6	29.7	94.9 93.5	94.2	7.6 7.5	7.5		7.5	3.7 3.5		3.6	6.2 4.9		5.6		
10-Jan-14	Fine	Moderate	08:31	5.5	Surface	1.0	17.0 17.0	17.0	8.2 8.2	8.2	31.9 31.9	31.9	90.9 90.8	90.9	7.3 7.2	7.2	7.2	8.1 8.2	8.2	8.1	7.1 7.3	7.2	7.9			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	4.5	17.1 17.1	17.1	8.2 8.2	8.2	32.0 32.0	32.0	90.8 90.8	90.8	7.2 7.2	7.2		7.2	7.8 7.9		7.9	8.2 8.8		8.5		
13-Jan-14	Sunny	Moderate	11:32	4.8	Surface	1.0	17.3 17.3	17.3	8.2 8.2	8.2	32.2 32.2	32.2	95.4 95.4	95.4	7.6 7.6	7.6	7.6	4.3 4.4	4.4	4.5	6.1 6.9	6.5	7.0			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	3.8	17.2 17.2	17.2	8.2 8.2	8.2	32.2 32.2	32.2	95.1 95.2	95.2	7.5 7.5	7.5		7.5	4.5 4.4		4.5	7.7 7.1		7.4		
15-Jan-14	Sunny	Moderate	12:04	5.1	Surface	1.0	16.6 16.6	16.6	8.2 8.2	8.2	33.0 32.9	32.9	95.8 97.2	96.5	7.6 7.8	7.7	7.7	10.6 10.3	10.5	10.6	10.0 9.1	9.6	10.5			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	4.1	16.6 16.6	16.6	8.2 8.2	8.2	33.0 33.0	33.0	96.3 95.6	96.0	7.7 7.6	7.7		7.7	10.5 10.7		10.6	11.0 11.5		11.3		
17-Jan-14	Sunny	Moderate	13:32	4.7	Surface	1.0	16.8 16.8	16.8	8.3 8.3	8.3	32.5 32.5	32.5	98.2 98.4	98.3	7.8 7.9	7.8	7.8	4.7 4.8	4.8	4.9	5.1 6.5	5.8	6.7			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	3.7	16.8 16.7	16.8	8.3 8.3	8.3	32.5 32.5	32.5	98.3 98.1	98.2	7.9 7.8	7.8		7.8	5.0 4.8		4.9	8.2 7.0		7.6		
20-Jan-14	Sunny	Moderate	15:03	5.5	Surface	1.0	16.9 16.9	16.9	8.3 8.3	8.3	31.4 31.4	31.4	98.1 97.9	98.0	7.9 7.8	7.9	7.9	3.5 3.2	3.4	4.0	6.3 7.1	6.7	6.8			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	4.5	16.5 16.5	16.5	8.3 8.3	8.3	32.3 32.3	32.3	97.1 97.7	97.4	7.8 7.9	7.8		7.8	4.7 4.4		4.6	6.2 7.4		6.8		

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at SR5 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	16:33	4.7	Surface	1.0	16.1 16.2	16.2	8.3 8.3	8.3	32.2 32.2	32.2	98.9 98.9	98.9	8.0 8.0	8.0	8.0	4.5 4.4	4.5	4.5	6.5 6.1	6.3	6.2		
					Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-
					Bottom	3.7	16.1 16.1	16.1	8.3 8.3	8.3	32.2 32.2	32.2	98.8 99.0	98.9	8.0 8.0	8.0	4.5 4.3	4.4	8.0		4.5 4.3	4.4		6.9 5.3	6.1
24-Jan-14	Fine	Moderate	11:52	4.6	Surface	1.0	16.0 16.0	16.0	8.3 8.3	8.3	32.4 32.3	32.4	99.0 98.5	98.8	8.0 8.0	8.0	8.0	2.3 2.3	2.3	2.4	4.9 3.4	4.2	4.2		
					Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		-	
					Bottom	3.6	16.0 15.9	16.0	8.3 8.3	8.3	32.4 32.4	32.4	99.2 98.5	98.9	8.1 8.0	8.0	2.4 2.4	2.4	8.0		2.4 2.4	2.4		3.3 4.9	4.1
27-Jan-14	Sunny	Moderate	10:07	5.0	Surface	1.0	16.7 16.7	16.7	8.3 8.3	8.3	32.0 32.0	32.0	102.5 102.4	102.5	8.2 8.2	8.2	8.2	4.9 4.7	4.8	4.9	9.1 9.3	9.2	8.6		
					Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		-	
					Bottom	4.0	16.7 16.7	16.7	8.3 8.3	8.3	32.0 32.0	32.0	102.2 102.2	102.2	8.2 8.2	8.2	5.2 4.8	5.0	8.2		5.2 4.8	5.0		7.8 8.1	8.0
1/29/2014	Sunny	Moderate	12:11	4.8	Surface	1.0	17.3 17.3	17.3	8.01 8.01	8.01	29.0 29.0	29.0	108.1 108.9	108.5	8.7 8.8	8.8	8.8	3.4 3.3	3.4	3.5	3.4 3.3	3.4	3.9		
					Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		-	
					Bottom	3.8	17.1 17.0	17.1	8.01 8.01	8.01	30.0 30.4	30.2	107.4 107.5	107.5	8.6 8.6	8.6	3.4 3.5	3.5	8.6		3.4 3.5	3.5		4.2 4.6	4.4

**Remarks:**

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at SR5 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*					
1-Jan-14	Sunny	Moderate	07:39	5.6	Surface	1.0	16.6 16.6	16.6	8.2 8.2	8.2	33.6 33.6	33.6	98.6 98.6	98.6	7.8 7.8	7.8	7.8	6.1 5.9	6.0	6.1	13.1 12.4	12.8	13.5				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	4.6	16.6 16.6	16.6	8.2 8.2	8.2	33.6 33.6	33.6	98.4 98.3	98.4	7.8 7.8	7.8		7.8	6.0 6.3		6.2	7.8		6.0 6.3	6.2	7.8	13.7 14.4
3-Jan-14	Sunny	Moderate	09:27	5.6	Surface	1.0	17.0 17.0	17.0	8.2 8.2	8.2	32.6 32.6	32.6	95.4 95.4	95.4	7.6 7.6	7.6	7.6	17.2 18.3	17.8	18.6	17.0 15.6	16.3	17.6				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	4.6	17.0 17.0	17.0	8.2 8.2	8.2	32.7 32.7	32.7	95.3 95.3	95.3	7.6 7.6	7.6		7.6	19.1 19.4		19.3	7.6		19.1 19.4	19.3	7.6	18.8 18.9
6-Jan-14	Sunny	Moderate	11:34	5.6	Surface	1.0	17.0 17.0	17.0	8.2 8.2	8.2	31.9 31.9	31.9	94.5 94.5	94.5	7.5 7.5	7.5	7.5	13.3 13.1	13.2	13.9	17.2 17.3	17.3	17.7				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	4.6	17.0 16.9	17.0	8.2 8.2	8.2	32.0 32.0	32.0	94.0 94.1	94.1	7.5 7.5	7.5		7.5	14.8 14.3		14.6	7.5		14.8 14.3	14.6	7.5	17.6 18.4
8-Jan-14	Fine	Moderate	13:01	4.7	Surface	1.0	17.5 17.6	17.5	8.2 8.1	8.2	30.8 30.8	30.8	93.6 93.7	93.7	7.4 7.5	7.4	7.4	13.1 12.9	13.0	13.1	14.7 14.7	14.7	16.6				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	3.7	17.5 17.4	17.4	8.2 8.2	8.2	31.0 31.1	31.1	93.3 93.4	93.4	7.4 7.4	7.4		7.4	13.3 13.1		13.2	7.4		13.3 13.1	13.2	7.4	19.1 17.8
10-Jan-14	Fine	Moderate	13:50	5.4	Surface	1.0	17.2 17.2	17.2	8.2 8.2	8.2	31.7 31.8	31.8	91.1 91.0	91.1	7.3 7.2	7.2	7.2	5.8 5.7	5.8	6.1	6.0 5.7	5.9	6.6				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	4.4	17.2 17.2	17.2	8.2 8.2	8.2	31.9 32.0	32.0	90.9 90.9	90.9	7.2 7.2	7.2		7.2	6.5 6.0		6.3	7.2		6.5 6.0	6.3	7.2	8.1 6.2
13-Jan-14	Sunny	Moderate	16:30	4.6	Surface	1.0	17.2 17.2	17.2	8.2 8.2	8.2	32.0 32.0	32.0	97.9 97.0	97.5	7.8 7.7	7.7	7.7	5.1 5.4	5.3	5.3	7.7 7.9	7.8	7.8				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	3.6	17.2 17.2	17.2	8.2 8.2	8.2	32.0 32.0	32.0	99.0 97.5	98.3	7.9 7.7	7.8		7.8	5.4 5.0		5.2	7.8		5.4 5.0	5.2	7.8	8.0 7.5
15-Jan-14	Fine	Moderate	07:28	5.2	Surface	1.0	16.6 16.6	16.6	8.2 8.2	8.2	33.1 33.1	33.1	94.6 94.6	94.6	7.5 7.5	7.5	7.5	14.1 14.3	14.2	14.5	13.7 14.1	13.9	14.9				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	4.2	16.6 16.6	16.6	8.2 8.2	8.2	33.1 33.1	33.1	94.4 94.5	94.5	7.5 7.5	7.5		7.5	14.6 14.8		14.7	7.5		14.6 14.8	14.7	7.5	16.6 15.1
17-Jan-14	Sunny	Moderate	08:38	4.8	Surface	1.0	16.5 16.5	16.5	8.3 8.3	8.3	32.7 32.7	32.7	97.4 97.5	97.5	7.8 7.8	7.8	7.8	8.0 8.3	8.2	8.2	15.0 13.3	14.2	15.0				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	3.8	16.5 16.5	16.5	8.3 8.3	8.3	32.8 32.8	32.8	97.3 97.3	97.3	7.8 7.8	7.8		7.8	8.0 8.1		8.1	7.8		8.0 8.1	8.1	7.8	16.3 15.0
20-Jan-14	Sunny	Moderate	10:00	5.7	Surface	1.0	16.4 16.4	16.4	8.3 8.3	8.3	32.3 32.3	32.3	97.3 97.3	97.3	7.8 7.8	7.8	7.8	8.9 8.8	8.9	8.9	11.2 10.7	11.0	11.8				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	4.7	16.4 16.4	16.4	8.3 8.3	8.3	32.3 32.3	32.3	97.0 97.1	97.1	7.8 7.8	7.8		7.8	8.7 9.0		8.9	7.8		8.7 9.0	8.9	7.8	12.6 12.6

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at SR5 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	11:01	5.7	Surface	1.0	15.9 15.9	15.9	8.3 8.3	8.3	32.0 32.0	32.0	97.9 99.0	98.5	8.0 8.1	8.0	8.0	9.9 9.9	9.9	10.0	10.4 10.7	10.6	15.5			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	4.7	15.8 15.9	15.9	8.3 8.3	8.3	32.1 32.2	32.2	98.0 100.3	99.2	8.0 8.2	8.1		10.2 9.8	10.0		10.2 9.8	10.0		20.0 20.6	20.3	
24-Jan-14	Fine	Moderate	05:35	4.7	Surface	1.0	15.8 15.8	15.8	8.3 8.3	8.3	32.3 32.3	32.3	96.4 96.4	96.4	7.9 7.9	7.9	7.9	2.6 2.5	2.6	2.6	3.3 4.9	4.1	4.5			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	3.7	15.8 15.8	15.8	8.3 8.3	8.3	32.3 32.3	32.3	96.3 96.4	96.4	7.8 7.9	7.8		2.6 2.6	2.6		2.6 2.6	2.6		4.6 5.1	4.9	
27-Jan-14	Sunny	Moderate	14:56	5.3	Surface	1.0	16.9 16.9	16.9	8.3 8.3	8.3	32.1 32.1	32.1	102.9 104.4	103.7	8.2 8.3	8.3	8.3	3.2 3.3	3.3	3.7	5.7 4.0	4.9	5.5			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	4.3	16.8 16.8	16.8	8.3 8.3	8.3	32.1 32.2	32.2	103.7 100.4	102.1	8.3 8.0	8.2		4.2 3.8	4.0		4.2 3.8	4.0		6.9 5.3	6.1	
SR5	Sunny	Moderate	16:58	4.9	Surface	1.0	17.3 17.3	17.3	8.00 7.99	8.00	29.7 29.7	29.7	104.2 106.3	105.3	8.4 8.6	8.5	8.5	1.7 1.7	1.7	1.7	2.9 4.2	3.6	3.9			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	3.9	17.0 17.1	17.1	8.00 8.00	8.00	30.6 30.4	30.5	100.2 104.9	102.6	8.0 8.4	8.2		1.7 1.7	1.7		1.7 1.7	1.7		4.9 3.5	4.2	

**Remarks:**

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at SR6 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*				
1-Jan-14	Sunny	Moderate	11:48	5.6	Surface	1.0	16.9 16.9	16.9	8.2 8.2	8.2	33.4 33.4	33.4	98.2 98.1	98.2	7.8 7.8	7.8	7.8	4.5 4.3	4.4	4.9	8.5 8.5	8.5	8.4			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	4.6	16.7 16.8	16.8	8.2 8.2	8.2	33.4 33.4	33.4	97.7 97.9	97.8	7.8 7.8	7.8		7.8	5.3 5.5		5.4	7.8		5.3 5.5	5.4	8.4 7.9
3-Jan-14	Sunny	Moderate	13:22	5.6	Surface	1.0	17.3 17.3	17.3	8.2 8.2	8.2	31.8 31.9	31.9	94.8 94.9	94.9	7.5 7.5	7.5	7.5	5.4 5.1	5.3	5.1	9.2 9.8	9.5	9.7			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	4.6	17.2 17.3	17.3	8.2 8.2	8.2	32.3 32.3	32.3	94.6 94.5	94.6	7.5 7.5	7.5		7.5	4.7 5.1		4.9	7.5		4.7 5.1	4.9	9.5 10.1
6-Jan-14	Sunny	Moderate	15:55	5.7	Surface	1.0	17.3 17.3	17.3	8.3 8.3	8.3	31.8 31.7	31.8	95.2 95.0	95.1	7.6 7.5	7.6	7.6	4.4 4.5	4.5	4.7	9.5 9.7	9.6	9.2			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	4.7	17.3 17.3	17.3	8.3 8.3	8.3	31.9 31.9	31.9	95.0 94.9	95.0	7.5 7.5	7.5		7.5	4.9 4.6		4.8	7.5		4.9 4.6	4.8	9.1 8.4
8-Jan-14	Fine	Moderate	18:19	4.3	Surface	1.0	17.5 17.5	17.5	8.2 8.2	8.2	29.9 29.9	29.9	92.4 92.4	92.4	7.4 7.4	7.4	7.4	4.3 4.4	4.4	4.4	7.3 7.2	7.3	8.2			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	3.3	17.5 17.5	17.5	8.2 8.2	8.2	29.9 29.9	29.9	92.4 92.3	92.4	7.4 7.4	7.4		7.4	4.4 4.4		4.4	7.4		4.4 4.4	4.4	8.6 9.5
10-Jan-14	Fine	Moderate	09:27	5.4	Surface	1.0	17.1 17.1	17.1	8.2 8.2	8.2	31.9 31.9	31.9	91.6 91.5	91.6	7.3 7.3	7.3	7.3	6.6 6.5	6.6	6.6	9.0 9.3	9.2	9.1			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	4.4	17.1 17.1	17.1	8.2 8.2	8.2	31.9 32.0	32.0	91.4 91.2	91.3	7.3 7.3	7.3		7.3	6.5 6.4		6.5	7.3		6.5 6.4	6.5	9.1 8.9
13-Jan-14	Sunny	Moderate	12:41	4.1	Surface	1.0	17.3 17.3	17.3	8.2 8.2	8.2	32.2 32.2	32.2	94.9 94.9	94.9	7.5 7.5	7.5	7.5	4.3 4.1	4.2	4.3	7.2 7.3	7.3	7.4			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	3.1	17.3 17.3	17.3	8.2 8.2	8.2	32.2 32.2	32.2	94.8 94.7	94.8	7.5 7.5	7.5		7.5	4.4 4.1		4.3	7.5		4.4 4.1	4.3	6.6 8.3
15-Jan-14	Sunny	Moderate	11:23	5.3	Surface	1.0	16.8 16.7	16.7	8.3 8.3	8.3	33.2 33.2	33.2	94.6 94.9	94.8	7.5 7.6	7.5	7.5	6.1 6.1	6.1	6.2	7.1 7.5	7.3	7.3			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	4.3	16.7 16.7	16.7	8.3 8.3	8.3	33.2 33.2	33.2	94.8 94.3	94.6	7.5 7.5	7.5		7.5	6.2 6.3		6.3	7.5		6.2 6.3	6.3	7.2 7.1
17-Jan-14	Sunny	Moderate	12:30	4.2	Surface	1.0	16.6 16.6	16.6	8.3 8.3	8.3	32.9 32.9	32.9	99.6 99.2	99.4	8.0 7.9	7.9	7.9	5.9 6.0	6.0	5.8	9.7 8.9	9.3	9.4			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	3.2	16.5 16.7	16.6	8.3 8.3	8.3	32.9 32.9	32.9	98.8 99.4	99.1	7.9 7.9	7.9		7.9	5.5 5.7		5.6	7.9		5.5 5.7	5.6	8.8 9.9
20-Jan-14	Sunny	Moderate	14:08	5.5	Surface	1.0	16.9 16.9	16.9	8.3 8.3	8.3	31.8 31.8	31.8	98.1 98.2	98.2	7.8 7.9	7.8	7.8	3.4 3.5	3.5	3.7	8.1 6.2	7.2	7.4			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	4.5	16.7 16.7	16.7	8.3 8.3	8.3	32.2 32.3	32.3	97.7 97.7	97.7	7.8 7.8	7.8		7.8	3.8 4.0		3.9	7.8		3.8 4.0	3.9	7.2 7.7

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at SR6 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	15:33	4.5	Surface	1.0	16.2 16.2	16.2	8.3 8.3	8.3	32.3 32.4	32.4	99.3 98.5	98.9	8.0 8.0	8.0	8.0	3.8 3.9	3.9	3.8	4.7 5.4	5.1	5.2			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	3.5	16.2 16.2	16.2	8.3 8.3	8.3	32.5 32.4	32.5	97.8 98.9	98.4	7.9 8.0	7.9		7.9	3.5 3.7		3.6	7.9		3.5 3.7	3.6	7.9
24-Jan-14	Fine	Moderate	11:02	4.2	Surface	1.0	16.0 16.0	16.0	8.3 8.3	8.3	32.0 32.0	32.0	97.4 97.4	97.4	7.9 7.9	7.9	7.9	2.1 2.1	2.1	2.1	3.8 4.9	4.4	4.3			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	3.2	16.0 16.0	16.0	8.3 8.3	8.3	32.0 32.0	32.0	97.3 97.2	97.3	7.9 7.9	7.9		7.9	2.0 2.1		2.1	7.9		2.0 2.1	2.1	7.9
27-Jan-14	Sunny	Moderate	11:00	5.3	Surface	1.0	16.7 16.7	16.7	8.3 8.3	8.3	31.7 31.7	31.7	102.8 102.6	102.7	8.3 8.3	8.3	8.3	3.2 2.9	3.1	3.7	4.3 6.3	5.3	6.6			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	4.3	16.6 16.6	16.6	8.3 8.3	8.3	31.9 32.0	31.9	102.5 102.2	102.4	8.2 8.2	8.2		8.2	4.1 4.5		4.3	8.2		4.1 4.5	4.3	8.2
1/29/2014	Sunny	Moderate	13:05	4.2	Surface	1.0	17.3 17.3	17.3	8.02 8.02	8.02	29.4 29.4	29.4	109.1 109.5	109.3	8.8 8.8	8.8	8.8	2.2 2.1	2.2	2.2	4.5 2.8	3.7	4.2			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	3.2	17.3 17.3	17.3	8.02 8.02	8.02	29.5 29.5	29.5	107.8 108.6	108.2	8.7 8.7	8.7		8.7	2.2 2.2		2.2	8.7		2.2 2.2	2.2	8.7

**Remarks:**

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at SR6 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*	
1-Jan-14	Sunny	Moderate	08:33	5.5	Surface	1.0	16.9 16.9	16.9	8.2 8.2	8.2	33.5 33.5	33.5	96.0 96.0	96.0	7.6 7.6	7.6	7.6	9.9 10.3	10.1	11.0	13.3 13.7	13.5	14.1
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-				
					Bottom	4.5	16.9 16.9	16.9	8.2 8.2	8.2	33.6 33.6	33.6	95.8 95.9	95.9	7.6 7.6	7.6		12.0 11.8	11.9		14.4 14.9	14.7	
3-Jan-14	Sunny	Moderate	10:26	5.4	Surface	1.0	17.0 17.0	17.0	8.2 8.2	8.2	32.6 32.6	32.6	95.3 95.4	95.4	7.6 7.6	7.6	7.6	19.4 20.2	19.8	20.8	24.2 23.2	23.7	23.9
					Middle	-	-	-	-	-	-	-	-	-	-	-		-					
					Bottom	4.4	17.0 17.0	17.0	8.2 8.2	8.2	32.7 32.7	32.7	95.2 95.0	95.1	7.6 7.5	7.6		22.2 21.4	21.8		23.5 24.5	24.0	
6-Jan-14	Sunny	Moderate	12:34	5.6	Surface	1.0	17.0 17.0	17.0	8.2 8.2	8.2	32.1 32.1	32.1	94.4 94.4	94.4	7.5 7.5	7.5	7.5	14.6 14.6	14.6	14.6	18.9 19.0	19.0	19.4
					Middle	-	-	-	-	-	-	-	-	-	-	-		-					
					Bottom	4.6	17.0 17.0	17.0	8.2 8.2	8.2	32.1 32.1	32.1	94.1 94.2	94.2	7.5 7.5	7.5		14.4 14.5	14.5		18.9 20.7	19.8	
8-Jan-14	Fine	Moderate	14:00	4.3	Surface	1.0	17.6 17.6	17.6	8.2 8.2	8.2	30.7 30.6	30.7	93.8 93.9	93.9	7.5 7.5	7.5	7.5	4.6 5.0	4.8	5.0	7.8 7.6	7.7	7.4
					Middle	-	-	-	-	-	-	-	-	-	-	-							
					Bottom	3.3	17.5 17.5	17.5	8.2 8.2	8.2	31.1 30.8	30.9	93.7 93.7	93.7	7.4 7.4	7.4		5.2 5.1	5.2		6.8 7.3	7.1	
10-Jan-14	Fine	Moderate	12:55	5.3	Surface	1.0	17.2 17.2	17.2	8.2 8.2	8.2	31.8 31.8	31.8	91.4 91.3	91.4	7.3 7.3	7.3	7.3	5.8 5.8	5.8	6.0	8.0 8.1	8.1	8.8
					Middle	-	-	-	-	-	-	-	-	-	-	-							
					Bottom	4.3	17.2 17.2	17.2	8.2 8.2	8.2	31.9 32.0	31.9	91.2 91.4	91.3	7.2 7.3	7.3		6.0 6.2	6.1		9.5 9.3	9.4	
13-Jan-14	Sunny	Moderate	15:27	4.2	Surface	1.0	17.3 17.3	17.3	8.3 8.3	8.3	32.2 32.2	32.2	96.6 96.6	96.6	7.6 7.6	7.6	7.6	3.8 3.9	3.9	3.9	6.1 6.3	6.2	6.5
					Middle	-	-	-	-	-	-	-	-	-	-	-							
					Bottom	3.2	17.3 17.3	17.3	8.3 8.3	8.3	32.2 32.2	32.2	96.5 96.5	96.5	7.6 7.6	7.6		3.9 3.7	3.8		7.5 6.0	6.8	
15-Jan-14	Fine	Moderate	08:16	5.4	Surface	1.0	16.5 16.5	16.5	8.2 8.2	8.2	33.1 33.1	33.1	95.3 95.2	95.3	7.6 7.6	7.6	7.6	15.2 15.1	15.2	15.2	22.7 22.0	22.4	22.6
					Middle	-	-	-	-	-	-	-	-	-	-	-							
					Bottom	4.4	16.5 16.5	16.5	8.2 8.2	8.2	33.1 33.1	33.1	95.1 95.2	95.2	7.6 7.6	7.6		15.1 15.3	15.2		22.9 22.5	22.7	
17-Jan-14	Sunny	Moderate	09:36	4.1	Surface	1.0	16.4 16.4	16.4	8.3 8.3	8.3	32.7 32.7	32.7	97.9 97.8	97.9	7.9 7.8	7.8	7.8	14.7 14.9	14.8	17.0	14.2 14.6	14.4	15.6
					Middle	-	-	-	-	-	-	-	-	-	-	-							
					Bottom	3.1	16.4 16.4	16.4	8.3 8.3	8.3	32.8 32.8	32.8	97.7 97.5	97.6	7.8 7.8	7.8		19.4 18.8	19.1		16.7 16.6	16.7	
20-Jan-14	Sunny	Moderate	10:55	5.8	Surface	1.0	16.4 16.4	16.4	8.3 8.3	8.3	32.3 32.3	32.3	97.3 97.4	97.4	7.8 7.8	7.8	7.8	8.6 8.2	8.4	8.8	10.7 11.8	11.3	12.0
					Middle	-	-	-	-	-	-	-	-	-	-	-							
					Bottom	4.8	16.4 16.4	16.4	8.3 8.3	8.3	32.4 32.4	32.4	97.1 97.1	97.1	7.8 7.8	7.8		9.0 9.4	9.2		12.2 13.0	12.6	

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at SR6 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	12:09	4.3	Surface	1.0	16.1 16.1	16.1	8.3 8.3	8.3	32.4 32.4	32.4	96.9 96.6	96.8	7.8 7.8	7.8	7.8	5.9 5.3	5.6	5.6	8.5 8.9	8.7	8.0				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	3.3	16.1 16.1	16.1	8.3 8.3	8.3	32.4 32.5	32.5	96.8 96.5	96.7	7.8 7.8	7.8		7.8	5.6 5.5		5.6	7.9 6.7		7.3			
24-Jan-14	Fine	Moderate	06:39	4.5	Surface	1.0	15.9 15.9	15.9	8.2 8.2	8.2	31.4 31.4	31.4	95.9 96.0	96.0	7.8 7.8	7.8	7.8	2.0 2.1	2.1	2.1	3.1 4.0	3.6	3.7				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	
					Bottom	3.5	15.9 15.9	15.9	8.2 8.2	8.2	31.8 31.5	31.7	95.9 95.9	95.9	7.8 7.8	7.8		7.8	2.1 2.1		2.1	3.9 3.4		3.7			
27-Jan-14	Sunny	Moderate	13:58	5.4	Surface	1.0	17.0 16.9	17.0	8.3 8.3	8.3	32.0 32.0	32.0	106.1 106.0	106.1	8.5 8.5	8.5	8.5	2.6 2.5	2.6	2.9	2.7 3.6	3.2	3.9				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	
					Bottom	4.4	16.9 16.9	16.9	8.4 8.3	8.4	32.2 32.2	32.2	105.3 105.8	105.6	8.4 8.4	8.4		8.4	3.2 3.0		3.1	4.2 5.0		4.6			
SR6	Sunny	Moderate	16:01	4.4	Surface	1.0	17.6 17.8	17.7	7.98 7.98	7.98	28.6 28.5	28.6	109.2 109.5	109.4	8.8 8.8	8.8	8.8	1.8 1.8	1.8	1.8	2.6 2.3	2.5	2.5				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	
					Bottom	3.4	17.3 17.1	17.2	7.98 7.98	7.98	29.3 29.5	29.4	108.3 108.4	108.4	8.7 8.8	8.7		8.7	1.7 1.8		1.8	2.7 2.1		2.4			

**Remarks:**

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:

\* DA: Depth-Averaged

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



## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at SR7 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*					
1-Jan-14	Sunny	Moderate	13:14	5.4	Surface	1.0	16.8 16.8	16.8	8.2 8.2	8.2	33.5 33.5	33.5	98.7 98.5	98.6	7.8 7.8	7.8	7.8	3.5 3.8	3.7	3.7	8.9 7.4	8.2	8.5				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	4.4	16.7 16.7	16.7	8.2 8.2	8.2	33.5 33.5	33.5	98.3 98.3	98.3	7.8 7.8	7.8		7.8	3.7 3.7		3.7	7.8		3.7 3.7	3.7	8.9 8.6	8.8
3-Jan-14	Sunny	Moderate	14:46	5.4	Surface	1.0	17.5 17.4	17.5	8.2 8.2	8.2	32.5 32.5	32.5	97.7 97.3	97.5	7.7 7.7	7.7	7.7	5.0 5.7	5.4	6.6	10.1 9.4	9.8	10.6				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	4.4	17.0 17.0	17.0	8.2 8.2	8.2	32.6 32.6	32.6	96.4 96.4	96.4	7.7 7.7	7.7		7.7	8.0 7.5		7.8	7.7		8.0 7.5	7.8	11.8 10.9	11.4
6-Jan-14	Sunny	Moderate	17:21	5.5	Surface	1.0	17.2 17.2	17.2	8.2 8.2	8.2	31.9 31.9	31.9	94.2 93.7	94.0	7.5 7.5	7.5	7.5	8.4 9.2	8.8	9.3	12.1 12.6	12.4	12.6				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	4.5	17.2 17.2	17.2	8.2 8.2	8.2	32.0 32.0	32.0	93.3 93.6	93.5	7.4 7.4	7.4		7.4	9.9 9.7		9.8	7.4		9.9 9.7	9.8	12.5 13.1	12.8
8-Jan-14	Fine	Moderate	19:49	4.4	Surface	1.0	17.5 17.5	17.5	8.2 8.2	8.2	32.2 32.2	32.2	93.9 94.0	94.0	7.4 7.4	7.4	7.4	2.2 2.2	2.2	2.3	5.3 4.5	4.9	5.0				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	3.4	17.5 17.5	17.5	8.2 8.2	8.2	32.2 32.3	32.2	94.0 94.0	94.0	7.4 7.4	7.4		7.4	2.3 2.2		2.3	7.4		2.3 2.2	2.3	5.3 4.6	5.0
10-Jan-14	Fine	Moderate	08:00	5.4	Surface	1.0	17.0 17.0	17.0	8.1 8.1	8.1	31.9 31.9	31.9	91.9 93.1	92.5	7.3 7.4	7.4	7.4	9.6 10.2	9.9	9.7	14.5 13.8	14.2	14.2				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	4.4	17.1 17.3	17.2	8.1 8.1	8.1	32.4 32.6	32.5	92.8 95.2	94.0	7.4 7.5	7.4		7.4	9.0 9.8		9.4	7.4		9.0 9.8	9.4	14.8 13.4	14.1
13-Jan-14	Sunny	Moderate	11:02	4.0	Surface	1.0	17.1 17.1	17.1	8.2 8.2	8.2	32.2 32.2	32.2	97.5 96.0	96.8	7.7 7.6	7.7	7.7	8.0 7.9	8.0	8.0	10.0 8.1	9.1	9.3				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	3.0	17.2 17.2	17.2	8.2 8.2	8.2	32.3 32.3	32.3	96.7 99.1	97.9	7.7 7.9	7.8		7.8	8.1 7.9		8.0	7.8		8.1 7.9	8.0	9.7 9.1	9.4
15-Jan-14	Sunny	Moderate	12:41	5.0	Surface	1.0	16.6 16.6	16.6	8.2 8.2	8.2	32.9 32.9	32.9	94.7 94.5	94.6	7.6 7.6	7.6	7.6	11.7 11.2	11.5	11.6	11.2 11.6	11.4	11.6				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	4.0	16.6 16.6	16.6	8.2 8.2	8.2	33.0 33.0	33.0	94.4 94.5	94.5	7.5 7.6	7.5		7.5	11.4 11.8		11.6	7.5		11.4 11.8	11.6	11.7 11.6	11.7
17-Jan-14	Sunny	Moderate	14:00	4.2	Surface	1.0	16.6 16.6	16.6	8.3 8.3	8.3	32.8 32.8	32.8	98.7 98.8	98.8	7.9 7.9	7.9	7.9	7.7 7.8	7.8	8.0	10.7 10.6	10.7	10.7				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	3.2	16.6 16.6	16.6	8.3 8.3	8.3	32.7 32.8	32.8	98.7 98.4	98.6	7.9 7.9	7.9		7.9	8.0 8.3		8.2	7.9		8.0 8.3	8.2	10.5 10.6	10.6
20-Jan-14	Sunny	Moderate	15:31	5.4	Surface	1.0	16.7 16.7	16.7	8.3 8.3	8.3	32.4 32.4	32.4	98.6 98.6	98.6	7.9 7.9	7.9	7.9	4.3 4.7	4.5	4.9	7.4 5.9	6.7	6.9				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	4.4	16.6 16.6	16.6	8.3 8.3	8.3	32.4 32.4	32.4	98.0 98.3	98.2	7.9 7.9	7.9		7.9	5.3 5.2		5.3	7.9		5.3 5.2	5.3	6.2 7.8	7.0

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at SR7 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	17:03	4.0	Surface	1.0	16.2 16.2	16.2	8.3 8.3	8.3	32.3 32.3	32.3	99.8 99.4	99.6	8.1 8.0	8.0	8.0	5.7 5.8	5.8	8.0	9.0 8.2	8.6	8.8		
					Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-
					Bottom	3.0	16.2 16.2	16.2	8.3 8.3	8.3	32.3 32.4	32.4	99.4 99.0	99.2	8.0 8.0	8.0	8.0	5.7 5.7	5.7	8.0	5.7 5.7	5.7		8.0	9.1 8.9
24-Jan-14	Fine	Moderate	12:31	4.5	Surface	1.0	15.9 15.9	15.9	8.3 8.3	8.3	32.4 32.4	32.4	98.0 98.0	98.0	8.0 8.0	8.0	8.0	4.6 4.5	4.6	8.0	5.6 3.9	4.8	5.2		
					Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-
					Bottom	3.5	15.9 15.9	15.9	8.3 8.3	8.3	32.4 32.4	32.4	97.9 97.8	97.9	8.0 7.9	7.9	7.9	4.8 4.6	4.7	7.9	4.8 4.6	4.7		7.9	6.3 4.9
27-Jan-14	Sunny	Moderate	09:35	5.4	Surface	1.0	16.7 16.7	16.7	8.3 8.3	8.3	32.1 32.1	32.1	102.8 102.0	102.4	8.2 8.2	8.2	8.2	5.4 5.5	5.5	8.2	6.2 6.8	6.5	6.8		
					Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-
					Bottom	4.4	16.7 16.7	16.7	8.3 8.3	8.3	32.1 32.1	32.1	102.1 100.8	101.5	8.2 8.1	8.1	8.1	5.7 5.6	5.7	8.1	5.7 5.6	5.7		8.1	7.1 6.9
1/29/2014	Sunny	Moderate	11:41	4.4	Surface	1.0	17.4 17.3	17.3	8.02 8.02	8.02	30.4 30.6	30.5	107.7 108.9	108.3	8.6 8.7	8.7	8.7	2.4 2.5	2.5	8.7	4.4 4.8	4.6	4.7		
					Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-
					Bottom	3.4	17.0 17.0	17.0	8.01 8.01	8.01	31.4 31.4	31.4	104.3 107.9	106.1	8.3 8.6	8.5	8.5	2.4 2.4	2.4	8.5	2.4 2.4	2.4		8.5	4.2 5.2

**Remarks:**

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at SR7 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*				
1-Jan-14	Sunny	Moderate	07:11	5.8	Surface	1.0	16.7 16.7	16.7	8.2 8.2	8.2	33.6 33.6	33.6	100.3 101.7	101.0	8.0 8.1	8.0	8.0	11.9 12.3	12.1	12.8	18.3 19.4	18.9	20.4			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	4.8	16.7 16.7	16.7	8.2 8.2	8.2	33.6 33.6	33.6	102.8 100.6	101.7	8.2 8.0	8.1		8.1	13.7 13.1		13.4	21.9 21.8		21.9		
3-Jan-14	Sunny	Moderate	08:57	5.6	Surface	1.0	17.0 17.0	17.0	8.2 8.2	8.2	32.7 32.7	32.7	96.6 95.8	96.2	7.7 7.6	7.6	7.6	11.5 11.9	11.7	12.3	9.1 8.0	8.6	9.1			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	4.6	17.0 17.0	17.0	8.2 8.2	8.2	32.7 32.7	32.7	97.2 95.9	96.6	7.7 7.6	7.7		7.7	12.8 12.8		12.8	9.4 9.8		9.6		
6-Jan-14	Sunny	Moderate	11:03	5.7	Surface	1.0	17.0 17.0	17.0	8.2 8.2	8.2	32.1 32.1	32.1	96.7 95.5	96.1	7.7 7.6	7.7	7.7	9.3 9.8	9.6	10.0	11.2 11.8	11.5	12.1			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	4.7	16.9 16.9	16.9	8.2 8.2	8.2	32.1 32.1	32.1	95.5 97.4	96.5	7.6 7.8	7.7		7.7	10.8 10.0		10.4	12.9 12.3		12.6		
8-Jan-14	Fine	Moderate	12:31	4.2	Surface	1.0	17.4 17.4	17.4	8.2 8.2	8.2	31.4 31.4	31.4	94.3 94.0	94.2	7.5 7.5	7.5	7.5	7.7 7.8	7.8	7.8	12.6 12.5	12.6	12.6			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	3.2	17.4 17.4	17.4	8.2 8.2	8.2	31.5 31.5	31.5	94.1 94.8	94.5	7.5 7.5	7.5		7.5	7.8 7.7		7.8	12.4 12.8		12.6		
10-Jan-14	Fine	Moderate	14:20	5.7	Surface	1.0	17.2 17.2	17.2	8.2 8.2	8.2	32.1 32.1	32.1	90.9 90.9	90.9	7.2 7.2	7.2	7.2	8.8 8.2	8.5	8.8	8.2 8.2	8.2	8.6			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	4.7	17.2 17.2	17.2	8.2 8.2	8.2	32.1 32.1	32.1	90.7 90.7	90.7	7.2 7.2	7.2		7.2	9.3 8.9		9.1	9.3 8.7		9.0		
13-Jan-14	Sunny	Moderate	16:59	4.3	Surface	1.0	17.3 17.3	17.3	8.2 8.2	8.2	32.7 32.7	32.7	93.3 92.9	93.1	7.4 7.3	7.3	7.3	2.3 2.4	2.4	2.5	4.8 3.6	4.2	5.3			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	3.3	17.3 17.3	17.3	8.2 8.2	8.2	32.8 32.8	32.8	92.2 93.0	92.6	7.3 7.3	7.3		7.3	2.5 2.5		2.5	6.9 5.7		6.3		
15-Jan-14	Fine	Moderate	07:05	5.4	Surface	1.0	16.5 16.5	16.5	8.2 8.2	8.2	33.2 33.2	33.2	101.1 106.2	103.7	8.1 8.5	8.3	8.3	7.4 7.4	7.4	7.6	8.3 9.4	8.9	9.6			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	4.4	16.6 16.5	16.5	8.2 8.2	8.2	33.2 33.2	33.2	99.6 103.2	101.4	8.0 8.2	8.1		8.1	7.6 7.7		7.7	9.8 10.7		10.3		
17-Jan-14	Sunny	Moderate	08:09	4.3	Surface	1.0	16.5 16.4	16.5	8.3 8.3	8.3	32.8 32.8	32.8	98.2 98.1	98.2	7.9 7.9	7.9	7.9	9.4 9.8	9.6	9.7	12.1 13.0	12.6	13.4			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	3.3	16.4 16.4	16.4	8.3 8.3	8.3	32.8 32.8	32.8	98.7 98.0	98.4	7.9 7.9	7.9		7.9	9.7 9.9		9.8	13.4 15.0		14.2		
20-Jan-14	Sunny	Moderate	09:31	5.6	Surface	1.0	16.4 16.4	16.4	8.3 8.3	8.3	32.3 32.3	32.3	98.1 99.1	98.6	7.9 8.0	7.9	7.9	5.1 5.2	5.2	5.4	7.2 7.3	7.3	7.4			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	4.6	16.4 16.4	16.4	8.3 8.3	8.3	32.3 32.3	32.3	98.3 99.9	99.1	7.9 8.1	8.0		8.0	5.3 5.7		5.5	6.4 8.5		7.5		

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at SR7 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	10:30	4.2	Surface	1.0	16.0 16.0	16.0	8.3 8.3	8.3	32.4 32.4	32.4	102.0 99.9	101.0	8.3 8.1	8.2	8.2	5.1 5.2	5.2	5.2	9.7 8.1	8.9	9.2				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	3.2	16.0 16.0	16.0	8.3 8.3	8.3	32.4 32.4	32.4	104.5 100.5	102.5	8.5 8.1	8.3		8.3	5.3 5.0		5.2	5.3		5.0	5.2	9.1 9.9	9.5
24-Jan-14	Fine	Moderate	05:05	4.2	Surface	1.0	15.9 15.8	15.9	8.3 8.3	8.3	32.3 32.3	32.3	97.5 98.4	98.0	7.9 8.0	8.0	8.0	2.3 2.3	2.3	2.4	6.7 6.7	6.7	6.7				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	3.2	15.8 15.8	15.8	8.3 8.3	8.3	32.4 32.4	32.4	98.9 97.7	98.3	8.1 7.9	8.0		8.0	2.4 2.4		2.4	2.4		2.4	2.4	7.5 5.8	6.7
27-Jan-14	Sunny	Moderate	15:27	5.6	Surface	1.0	16.8 16.8	16.8	8.3 8.3	8.3	32.2 32.2	32.2	102.3 101.9	102.1	8.2 8.2	8.2	8.2	3.9 4.0	4.0	4.0	7.1 6.1	6.6	6.5				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	4.6	16.8 16.7	16.7	8.3 8.3	8.3	32.3 32.3	32.3	102.0 101.7	101.9	8.2 8.1	8.1		8.1	4.0 3.7		3.9	4.0		3.7	3.9	6.0 6.5	6.3
SR7	Sunny	Moderate	17:27	4.3	Surface	1.0	18.0 18.0	18.0	8.00 7.99	8.00	29.0 28.9	28.9	117.1 118.2	117.7	9.3 9.4	9.4	9.4	3.4 3.5	3.5	3.5	2.3 2.5	2.4	2.7				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	3.3	17.3 17.2	17.2	8.01 8.01	8.01	29.8 29.8	29.8	115.9 117.0	116.5	9.3 9.4	9.4		9.4	3.4 3.4		3.4	3.4		3.4	3.4	3.1 2.6	2.9

**Remarks:**

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:

\* DA: Depth-Averaged

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

**Appendix J - Marine Water Quality Monitoring Results**

**Water Quality Monitoring Results at SR10A - Mid-EbbTide**

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*	
1-Jan-14	Sunny	Moderate	13:58	6.6	Surface	1.0	17.4 17.4	17.4	8.0 8.0	8.0	33.6 33.6	33.6	93.0 92.9	93.0	7.3 7.3	7.3	7.3	3.6 3.5	3.6	3.5	8.4 8.2	8.3	7.6
					Middle	3.3	17.4 17.4	17.4	8.0 8.0	8.0	33.6 33.6	33.6	92.8 93.0	92.9	7.3 7.3	7.3		3.5 3.4	3.5		7.1		
					Bottom	5.6	17.4 17.4	17.4	8.0 8.0	8.0	33.6 33.6	33.6	92.4 93.1	92.8	7.2 7.3	7.3		3.2 3.5	3.4		7.1 7.6	7.4	
3-Jan-14	Sunny	Moderate	15:27	6.7	Surface	1.0	17.6 17.6	17.6	8.0 8.0	8.0	33.0 33.0	33.0	96.5 96.6	96.6	7.6 7.6	7.6	7.6	3.6 3.5	3.6	3.7	6.3 6.2	6.3	6.7
					Middle	3.4	17.5 17.5	17.5	8.0 8.0	8.0	33.0 33.0	33.0	95.7 96.1	95.9	7.5 7.5	7.5		3.9 3.5	3.7		7.1 6.0	6.6	
					Bottom	5.7	17.4 17.5	17.5	8.0 8.0	8.0	33.1 33.0	33.0	95.8 95.8	95.8	7.5 7.5	7.5		4.0 3.7	3.9		7.7 6.9	7.3	
6-Jan-14	Sunny	Moderate	17:43	6.5	Surface	1.0	17.3 17.3	17.3	8.0 8.0	8.0	32.4 32.4	32.4	92.6 94.2	93.4	7.3 7.4	7.4	7.4	3.8 3.9	3.9	3.9	8.4 8.5	8.5	8.1
					Middle	3.3	17.3 17.3	17.3	8.0 8.0	8.0	32.5 32.5	32.5	92.9 95.3	94.1	7.3 7.5	7.4		3.8 3.9	3.9		7.4 9.4	8.4	
					Bottom	5.5	17.3 17.3	17.3	8.0 8.0	8.0	32.5 32.6	32.6	93.3 98.0	95.7	7.4 7.7	7.5		3.9 3.8	3.9		7.4 7.3	7.4	
8-Jan-14	Fine	Moderate	20:13	6.5	Surface	1.0	17.5 17.5	17.5	8.0 8.0	8.0	32.4 32.4	32.4	94.9 92.8	93.9	7.5 7.3	7.4	7.5	3.4 3.2	3.3	3.3	5.2 5.3	5.3	5.3
					Middle	3.3	17.5 17.5	17.5	8.0 8.0	8.0	32.4 32.4	32.4	93.1 96.7	94.9	7.3 7.6	7.5		3.3 3.3	3.3		5.2 4.9	5.1	
					Bottom	5.5	17.5 17.5	17.5	8.0 8.0	8.0	32.4 32.4	32.4	99.0 93.5	96.3	7.8 7.4	7.6		3.2 3.2	3.2		5.5 5.4	5.5	
10-Jan-14	Fine	Moderate	07:18	6.5	Surface	1.0	17.3 17.3	17.3	7.9 8.0	7.9	33.1 33.2	33.1	91.8 90.9	91.4	7.2 7.2	7.2	7.2	1.5 1.5	1.5	1.5	4.0 4.2	4.1	3.9
					Middle	3.3	17.3 17.3	17.3	8.0 7.9	8.0	33.2 33.1	33.2	91.0 92.7	91.9	7.2 7.3	7.2		1.5 1.5	1.5		3.4 3.3	3.4	
					Bottom	5.5	17.3 17.3	17.3	7.9 7.9	7.9	33.2 33.2	33.2	94.4 90.9	92.7	7.4 7.2	7.3		1.4 1.5	1.5		3.6 4.9	4.3	
13-Jan-14	Sunny	Moderate	10:12	6.7	Surface	1.0	17.1 17.1	17.1	8.0 8.0	8.0	33.1 33.1	33.1	91.7 91.9	91.8	7.2 7.3	7.2	7.2	2.0 1.8	1.9	2.1	5.1 5.2	5.2	5.9
					Middle	3.4	17.1 17.2	17.2	8.0 8.0	8.0	33.1 33.1	33.1	91.6 91.8	91.7	7.2 7.2	7.2		2.1 2.1	2.1		5.6 5.8	5.7	
					Bottom	5.7	17.2 17.1	17.2	8.0 8.0	8.0	33.1 33.1	33.1	91.7 91.5	91.6	7.2 7.2	7.2		2.2 2.2	2.2		6.1 7.7	6.9	
15-Jan-14	Sunny	Moderate	13:32	6.4	Surface	1.0	16.8 16.8	16.8	8.1 8.0	8.1	33.3 33.3	33.3	97.9 98.2	98.1	7.8 7.8	7.8	7.8	1.5 1.5	1.5	1.5	3.5 3.1	3.3	5.1
					Middle	3.2	16.8 16.8	16.8	8.0 8.1	8.1	33.3 33.3	33.3	98.3 97.7	98.0	7.8 7.8	7.8		1.4 1.4	1.5		6.7 6.3	6.5	
					Bottom	5.4	16.8 16.8	16.8	8.1 8.0	8.1	33.3 33.3	33.3	97.8 98.9	98.4	7.8 7.9	7.8		1.5 1.5	1.5		5.8 5.1	5.5	
17-Jan-14	Sunny	Moderate	13:57	6.6	Surface	1.0	16.7 16.7	16.7	8.1 8.1	8.1	33.1 33.1	33.1	101.1 98.7	99.9	8.1 7.9	8.0	8.0	2.4 2.4	2.4	2.5	3.7 4.2	4.0	4.7
					Middle	3.3	16.7 16.7	16.7	8.1 8.1	8.1	33.1 33.1	33.1	100.2 98.6	99.4	8.0 7.9	7.9		2.5 2.4	2.5		4.8 4.0	4.4	
					Bottom	5.6	16.7 16.7	16.7	8.1 8.1	8.1	33.1 33.1	33.1	98.5 99.6	99.1	7.8 7.9	7.9		2.5 2.6	2.6		5.0 6.2	5.6	
20-Jan-14	Sunny	Moderate	16:01	6.6	Surface	1.0	16.7 16.7	16.7	8.0 8.0	8.0	32.8 32.8	32.8	98.0 96.8	97.4	7.8 7.7	7.8	7.8	2.2 2.2	2.2	2.3	4.2 6.2	5.2	4.8
					Middle	3.3	16.7 16.7	16.7	8.0 8.0	8.0	32.8 32.8	32.8	96.7 98.5	97.6	7.7 7.9	7.8		2.2 2.1	2.2		5.8 3.9	4.9	
					Bottom	5.6	16.7 16.7	16.7	8.0 8.0	8.0	32.8 32.9	32.9	99.4 96.9	98.2	7.9 7.7	7.8		2.5 2.6	2.6		4.9 3.7	4.3	

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at SR10A - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	17:06	6.7	Surface	1.0	16.4 16.4	16.4	8.1 8.1	8.1	32.9 32.9	32.9	99.0 97.7	98.4	7.9 7.8	7.9	7.9	1.5 1.4	1.5	1.7	3.5 3.9	3.7	3.7
					Middle	3.4	16.4 16.4	16.4	8.1 8.1	8.1	32.9 32.9	32.9	99.5 97.7	98.6	8.0 7.8	7.9		1.5 1.7	1.6		4.1 3.6	3.9	
					Bottom	5.7	16.4 16.4	16.4	8.1 8.1	8.1	32.9 32.9	32.9	97.8 100.6	99.2	7.8 8.1	8.0		2.0 1.8	1.9		3.5 3.6	3.6	
24-Jan-14	Fine	Moderate	12:42	6.8	Surface	1.0	16.4 16.4	16.4	8.1 8.1	8.1	33.0 33.0	33.0	97.2 97.7	97.5	7.8 7.8	7.8	7.8	2.1 2.1	2.1	2.2	3.2 2.4	2.8	3.4
					Middle	3.4	16.3 16.3	16.3	8.1 8.1	8.1	33.0 33.0	33.0	97.1 97.5	97.3	7.8 7.8	7.8		2.3 2.1	2.2		4.6 3.3	4.0	
					Bottom	5.8	16.3 16.3	16.3	8.1 8.1	8.1	33.0 33.0	33.0	97.0 97.7	97.4	7.8 7.8	7.8		2.3 2.2	2.3		3.6 2.9	3.3	
27-Jan-14	Sunny	Moderate	09:08	6.5	Surface	1.0	16.6 16.6	16.6	8.0 8.0	8.0	32.6 32.7	32.6	99.7 99.4	99.6	8.0 7.9	8.0	8.0	1.8 1.8	1.8	1.9	3.8 4.3	4.1	3.6
					Middle	3.3	16.6 16.6	16.6	8.0 8.0	8.0	32.6 32.7	32.6	99.4 99.3	99.4	8.0 7.9	7.9		1.9 1.9	1.9		2.1 2.4	2.3	
					Bottom	5.5	16.6 16.6	16.6	8.0 8.0	8.0	32.6 32.7	32.6	99.7 99.4	99.6	8.0 8.0	8.0		1.9 1.9	1.9		4.8 4.2	4.5	
1/29/2014	Sunny	Moderate	10:46	6.4	Surface	1.0	17.2 17.2	17.2	8.10 8.10	8.10	31.3 31.4	31.3	115.1 112.5	113.8	9.2 9.0	9.1	9.0	1.4 1.4	1.4	1.4	2.7 2.9	2.8	2.9
					Middle	3.2	16.9 16.9	16.9	8.10 8.10	8.10	31.9 31.9	31.9	112.3 111.8	112.1	9.0 8.9	8.9		1.4 1.4	1.4		3.0 2.7	2.9	
					Bottom	5.4	16.9 16.9	16.9	8.10 8.10	8.10	32.0 32.0	32.0	111.5 111.1	111.3	8.9 8.9	8.9		1.4 1.4	1.4		4.1 2.1	3.1	

#### Remarks:

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

#### Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at SR10A - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*	
1-Jan-14	Sunny	Moderate	06:14	6.4	Surface	1.0	17.2	17.2	8.0	8.0	33.4	33.4	94.7	94.8	7.4	7.5	7.5	7.4	7.4	7.9	12.8	12.7	12.9
					Middle	3.2	17.2	17.2	8.0	8.0	33.5	33.5	95.1	94.9	7.5	7.5		7.4	7.9		13.4	13.3	
					Bottom	5.4	17.2	17.2	8.0	8.0	33.5	33.5	95.0	95.2	7.5	7.5		8.6	8.4		12.2	12.6	
3-Jan-14	Sunny	Moderate	08:02	6.5	Surface	1.0	17.1	17.1	8.0	8.0	32.8	32.8	94.2	94.3	7.5	7.5	7.5	15.2	15.7	16.0	16.9	16.7	19.1
					Middle	3.3	17.1	17.1	8.0	8.0	32.8	32.8	94.4	94.2	7.5	7.5		16.3	16.0		20.0	19.9	
					Bottom	5.5	17.1	17.1	8.0	8.0	32.8	32.8	94.7	93.9	7.5	7.5		16.5	15.8		21.0	20.6	
6-Jan-14	Sunny	Moderate	10:26	6.6	Surface	1.0	17.2	17.2	7.9	7.9	32.5	32.5	91.2	91.6	7.2	7.2	7.3	8.5	8.8	9.0	11.4	11.5	13.9
					Middle	3.3	17.2	17.2	7.9	7.9	32.5	32.5	92.2	91.7	7.3	7.3		9.0	9.0		15.0	15.2	
					Bottom	5.6	17.2	17.2	7.9	7.9	32.5	32.5	91.3	92.7	7.2	7.3		9.5	9.0		15.7	15.1	
8-Jan-14	Fine	Moderate	11:56	6.8	Surface	1.0	17.4	17.4	7.9	7.9	32.4	32.4	91.8	91.5	7.2	7.2	7.2	4.6	4.5	4.4	6.8	6.7	6.9
					Middle	3.4	17.4	17.4	7.9	7.9	32.4	32.4	91.1	91.6	7.2	7.2		4.3	4.3		6.2	6.5	
					Bottom	5.8	17.4	17.4	7.9	7.9	32.5	32.5	91.1	92.1	7.2	7.3		4.5	4.4		7.9	7.6	
10-Jan-14	Fine	Moderate	15:04	6.5	Surface	1.0	17.3	17.3	8.0	8.0	33.4	33.4	93.8	92.9	7.4	7.3	7.4	2.4	2.4	2.3	4.6	4.8	4.9
					Middle	3.3	17.3	17.3	8.0	8.0	33.4	33.4	92.1	93.7	7.2	7.4		2.2	2.2		4.0	3.6	
					Bottom	5.5	17.3	17.3	8.0	8.0	33.4	33.4	92.7	97.8	7.3	7.5		2.2	2.2		7.1	6.2	
13-Jan-14	Sunny	Moderate	17:07	6.4	Surface	1.0	17.2	17.2	8.0	8.0	33.3	33.3	95.1	99.1	7.5	7.8	7.8	1.7	1.8	1.9	3.7	4.5	4.3
					Middle	3.2	17.2	17.2	8.0	8.0	33.3	33.3	94.7	97.4	7.5	7.7		1.8	1.9		4.4	4.2	
					Bottom	5.4	17.1	17.1	8.0	8.0	33.3	33.3	100.1	95.7	7.9	7.6		1.9	1.9		4.0	4.2	
15-Jan-14	Fine	Moderate	06:33	7.0	Surface	1.0	16.8	16.8	8.0	8.0	33.4	33.4	97.5	97.1	7.7	7.7	7.7	2.2	2.2	2.3	6.9	6.4	7.1
					Middle	3.5	16.8	16.8	8.0	8.0	33.4	33.4	96.6	97.2	7.7	7.7		2.4	2.4		7.6	7.3	
					Bottom	6.0	16.8	16.8	8.0	8.0	33.4	33.4	99.0	96.8	7.9	7.8		2.4	2.4		7.4	7.5	
17-Jan-14	Sunny	Moderate	06:56	6.3	Surface	1.0	16.7	16.7	8.0	8.0	33.1	33.1	99.7	101.4	8.0	8.1	8.1	5.3	5.3	5.5	9.7	10.0	11.1
					Middle	3.2	16.6	16.6	8.0	8.0	33.1	33.1	103.0	102.0	8.2	8.0		5.3	5.5		9.7	9.9	
					Bottom	5.3	16.6	16.6	8.0	8.0	33.1	33.1	99.1	100.6	7.9	8.0		5.5	5.5		10.1	13.5	
20-Jan-14	Sunny	Moderate	08:44	6.6	Surface	1.0	16.6	16.6	8.0	8.0	32.7	32.7	97.0	97.2	7.8	7.8	7.8	3.5	3.5	3.5	7.3	7.0	7.1
					Middle	3.3	16.6	16.6	8.0	8.0	32.7	32.7	97.4	97.1	7.8	7.8		3.4	3.5		6.1	6.4	
					Bottom	5.6	16.6	16.6	8.0	8.0	32.7	32.7	96.9	97.1	7.8	7.8		3.6	3.5		6.7	7.8	

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at SR10A - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	10:00	6.4	Surface	1.0	16.4 16.4	16.4	8.0 8.0	8.0	32.9 32.9	32.9	95.8 95.8	95.8	7.7 7.7	7.7	7.7	1.7 1.7	1.7	1.9	3.8 4.5	4.2	5.1
					Middle	3.2	16.4 16.4	16.4	8.0 8.0	8.0	32.9 32.9	32.9	95.7 95.7	95.7	7.7 7.7	7.7		1.7 1.8	1.8		5.2 5.4	5.3	
					Bottom	5.4	16.4 16.4	16.4	8.0 8.0	8.0	32.9 32.9	32.9	95.5 95.6	95.6	7.7 7.7	7.7		2.1 2.0	2.1		5.1 6.2	5.7	
24-Jan-14	Fine	Moderate	04:21	6.6	Surface	1.0	16.3 16.3	16.3	8.0 8.0	8.0	32.9 32.9	32.9	97.4 98.1	97.8	7.8 7.9	7.9	7.9	1.8 1.7	1.8	1.8	3.6 5.2	4.4	3.7
					Middle	3.3	16.3 16.3	16.3	8.0 8.0	8.0	32.9 32.9	32.9	97.4 98.9	98.2	7.8 8.0	7.9		1.8 1.8	1.8		3.2 3.8	3.5	
					Bottom	5.6	16.3 16.3	16.3	8.0 8.0	8.0	32.9 32.9	32.9	99.6 97.5	98.6	8.0 7.8	7.9		1.8 1.7	1.8		2.9 3.2	3.1	
27-Jan-14	Sunny	Moderate	15:48	6.7	Surface	1.0	16.7 16.7	16.7	8.1 8.1	8.1	32.9 33.0	33.0	101.5 101.2	101.4	8.1 8.1	8.1	8.1	1.8 1.9	1.9	1.9	4.7 5.1	4.9	4.7
					Middle	3.4	16.7 16.7	16.7	8.1 8.1	8.1	33.0 33.0	33.0	101.3 100.8	101.1	8.1 8.0	8.1		1.9 1.8	1.9		5.6 4.2	4.9	
					Bottom	5.7	16.7 16.7	16.7	8.1 8.1	8.1	33.0 33.0	33.0	101.0 101.0	101.0	8.1 8.0	8.0		1.9 1.9	1.9		4.9 3.5	4.2	
SR10A	Sunny	Moderate	17:51	6.2	Surface	1.0	17.0 17.0	17.0	8.14 8.13	8.14	32.5 32.5	32.5	104.5 105.4	105.0	8.3 8.4	8.3	8.3	1.6 1.5	1.6	1.7	3.6 3.1	3.4	3.2
					Middle	3.1	17.0 17.0	17.0	8.13 8.14	8.14	32.5 32.5	32.5	105.1 103.7	104.4	8.4 8.2	8.3		1.7 1.7	1.7		3.4 3.1	3.3	
					Bottom	5.2	16.9 17.0	17.0	8.15 8.14	8.15	32.5 32.5	32.5	102.9 104.9	103.9	8.2 8.3	8.3		1.7 1.7	1.7		3.2 2.8	3.0	

**Remarks:**

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:

\* DA: Depth-Averaged

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



## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at SR10B(N) - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*					
1-Jan-14	Sunny	Moderate	14:11	5.6	Surface	1.0	17.4 17.4	17.4	8.0 8.0	8.0	33.6 33.6	33.6	93.9 94.2	94.1	7.4 7.4	7.4	7.4	3.8 3.7	3.8	3.9	7.6 7.6	7.6	7.6				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	4.6	17.4 17.4	17.4	8.0 8.0	8.0	33.5 33.5	33.5	93.9 94.6	94.3	7.4 7.4	7.4		7.4	3.9 4.1		4.0	7.0 8.0		7.5			
3-Jan-14	Sunny	Moderate	15:32	5.0	Surface	1.0	17.4 17.4	17.4	8.0 8.0	8.0	33.0 33.0	33.0	96.2 95.2	95.7	7.6 7.5	7.5	7.5	4.8 4.7	4.8	4.8	8.0 7.3	7.7	7.8				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	
					Bottom	4.0	17.4 17.4	17.4	8.0 8.0	8.0	33.1 33.0	33.1	95.3 96.9	96.1	7.5 7.6	7.6		7.6	4.8 4.8		4.8	8.4 7.1		7.8			
6-Jan-14	Sunny	Moderate	17:51	4.6	Surface	1.0	17.3 17.3	17.3	8.0 8.0	8.0	32.4 32.4	32.4	91.9 92.0	92.0	7.3 7.3	7.3	7.3	3.9 3.8	3.9	3.9	6.0 6.6	6.3	6.1				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	
					Bottom	3.6	17.3 17.3	17.3	8.0 8.0	8.0	32.4 32.5	32.5	91.8 91.9	91.9	7.3 7.3	7.3		7.3	3.8 3.8		3.8	5.3 6.3		5.8			
8-Jan-14	Fine	Moderate	20:28	5.4	Surface	1.0	17.5 17.5	17.5	8.0 8.0	8.0	32.4 32.4	32.4	92.0 92.0	92.0	7.3 7.3	7.3	7.3	3.1 3.1	3.1	3.5	5.3 4.8	5.1	5.0				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-		
					Bottom	4.4	17.5 17.5	17.5	8.0 8.0	8.0	32.4 32.4	32.4	91.8 91.9	91.9	7.2 7.2	7.2		7.2	3.6 4.0		3.8	4.5 5.2		4.9			
10-Jan-14	Fine	Moderate	07:12	5.0	Surface	1.0	17.3 17.3	17.3	7.9 7.9	7.9	33.0 33.0	33.0	93.3 91.7	92.5	7.4 7.2	7.3	7.3	1.5 1.5	1.5	1.6	5.8 5.4	5.6	5.6				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-		
					Bottom	4.0	17.3 17.3	17.3	7.9 7.9	7.9	33.0 32.9	33.0	92.1 95.3	93.7	7.3 7.5	7.4		7.4	1.6 1.5		1.6	4.5 6.4		5.5			
13-Jan-14	Sunny	Moderate	10:06	5.0	Surface	1.0	17.1 17.1	17.1	8.0 8.0	8.0	32.9 32.9	32.9	99.3 103.5	101.4	7.9 8.2	8.0	8.0	1.8 1.7	1.8	2.0	5.0 6.6	5.8	5.9				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-		
					Bottom	4.0	17.1 17.1	17.1	8.0 8.0	8.0	32.8 32.9	32.9	100.8 96.7	98.8	8.0 7.6	7.8		7.8	2.0 2.1		2.1	6.7 5.0		5.9			
15-Jan-14	Sunny	Moderate	13:42	5.2	Surface	1.0	16.8 16.8	16.8	8.1 8.1	8.1	33.3 33.3	33.3	97.3 97.5	97.4	7.7 7.7	7.7	7.7	1.2 1.2	1.2	1.2	3.7 5.3	4.5	4.0				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-		
					Bottom	4.2	16.8 16.8	16.8	8.1 8.1	8.1	33.3 33.3	33.3	97.3 97.3	97.3	7.7 7.7	7.7		7.7	1.2 3.9		1.2	3.0 3.9		3.5			
17-Jan-14	Sunny	Moderate	14:05	4.7	Surface	1.0	16.9 16.8	16.9	8.1 8.1	8.1	33.1 33.1	33.1	98.9 98.9	98.9	7.9 7.9	7.9	7.9	1.6 1.7	1.7	1.8	2.9 4.2	3.6	3.2				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-		
					Bottom	3.7	16.9 16.8	16.8	8.1 8.1	8.1	33.1 33.1	33.1	98.9 98.4	98.7	7.9 7.8	7.8		7.8	1.7 1.8		1.8	3.4 2.2		2.8			
20-Jan-14	Sunny	Moderate	16:12	4.7	Surface	1.0	16.7 16.7	16.7	8.0 8.0	8.0	32.8 32.8	32.8	96.4 96.3	96.4	7.7 7.7	7.7	7.7	2.0 2.1	2.1	2.1	5.1 3.4	4.3	4.8				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-		
					Bottom	3.7	16.7 16.7	16.7	8.0 8.0	8.0	32.8 32.8	32.8	96.3 96.3	96.3	7.7 7.7	7.7		7.7	2.0 2.1		2.1	6.4 4.2		5.3			

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at SR10B(N) - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	17:18	5.5	Surface	1.0	16.4 16.4	16.4	8.1 8.1	8.1	32.9 32.9	32.9	96.9 97.0	97.0	7.8 7.8	7.8	7.8	1.5 1.4	1.5	1.8	3.8 4.0	3.9	4.5			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	4.5	16.4 16.4	16.4	8.1 8.1	8.1	32.9 32.9	32.9	96.8 96.8	96.8	7.8 7.8	7.8		7.8	1.9 2.2		2.1	7.8		4.8 5.1	5.0	
24-Jan-14	Fine	Moderate	12:56	5.8	Surface	1.0	16.4 16.3	16.3	8.1 8.1	8.1	32.9 32.9	32.9	97.1 97.1	97.1	7.8 7.8	7.8	7.8	2.3 2.4	2.4	2.3	4.2 3.1	3.7	4.3			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	4.8	16.3 16.3	16.3	8.1 8.1	8.1	33.0 33.0	33.0	96.9 96.8	96.9	7.8 7.8	7.8		7.8	2.1 2.2		2.2	7.8		4.2 5.4	4.8	
27-Jan-14	Sunny	Moderate	09:02	5.2	Surface	1.0	16.6 16.6	16.6	8.0 8.0	8.0	32.6 32.5	32.6	101.0 101.4	101.2	8.1 8.1	8.1	8.1	2.0 1.9	2.0	2.1	6.2 5.5	5.9	5.4			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	4.2	16.6 16.6	16.6	8.0 8.0	8.0	32.6 32.5	32.5	101.0 101.6	101.3	8.1 8.1	8.1		8.1	2.2 2.1		2.2	8.1		4.4 5.1	4.8	
1/29/2014	Sunny	Moderate	10:40	4.6	Surface	1.0	17.2 17.2	17.2	8.09 8.09	8.09	31.2 31.3	31.2	109.8 111.6	110.7	8.8 8.9	8.8	8.8	1.5 1.4	1.5	1.5	2.9 4.3	3.6	3.4			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
					Bottom	3.6	17.0 16.9	17.0	8.09 8.09	8.09	31.6 31.8	31.7	110.7 105.9	108.3	8.8 8.5	8.7		8.7	1.4 1.5		1.5	8.7		3.2 2.9	3.1	

**Remarks:**

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at SR10B(N) - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*				
1-Jan-14	Sunny	Moderate	06:01	5.4	Surface	1.0	17.2 17.2	17.2	8.0 8.0	8.0	33.4 33.4	33.4	94.9 95.0	95.0	7.5 7.5	7.5	7.5	9.1 9.5	9.3	9.0	13.8 13.7	13.8	13.7			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	4.4	17.2 17.2	17.2	8.0 8.0	8.0	33.4 33.4	33.4	95.0 95.0	95.0	7.5 7.5	7.5		7.5	8.5 8.9		8.7	7.5		8.5 8.9	8.7	13.5 13.7
3-Jan-14	Sunny	Moderate	07:55	4.7	Surface	1.0	17.2 17.2	17.2	8.0 8.0	8.0	33.1 33.1	33.1	93.9 94.2	94.1	7.4 7.4	7.4	7.4	10.7 10.6	10.7	10.7	11.6 12.0	11.8	12.2			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	3.7	17.2 17.2	17.2	8.0 8.0	8.0	33.1 33.1	33.1	95.2 93.7	94.5	7.5 7.4	7.5		7.5	11.0 10.3		10.7	7.5		11.0 10.3	10.7	12.4 12.6
6-Jan-14	Sunny	Moderate	10:21	4.8	Surface	1.0	17.2 17.2	17.2	7.9 7.9	7.9	32.6 32.6	32.6	96.8 92.5	94.7	7.7 7.3	7.5	7.5	9.0 8.6	8.8	8.8	14.7 15.2	15.0	14.7			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	3.8	17.2 17.2	17.2	7.9 7.9	7.9	32.5 32.6	32.6	93.9 92.8	93.4	7.4 7.3	7.4		7.4	8.6 8.7		8.7	7.4		8.6 8.7	8.7	14.7 14.1
8-Jan-14	Fine	Moderate	11:40	5.6	Surface	1.0	17.4 17.4	17.4	7.9 7.9	7.9	32.3 32.4	32.3	92.4 91.5	92.0	7.3 7.2	7.3	7.3	4.4 4.4	4.4	4.5	8.2 8.3	8.3	8.5			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	4.6	17.4 17.4	17.4	7.9 7.9	7.9	32.2 32.4	32.3	94.0 91.8	92.9	7.4 7.2	7.3		7.3	4.3 4.6		4.5	7.3		4.3 4.6	4.5	8.8 8.5
10-Jan-14	Fine	Moderate	15:12	5.4	Surface	1.0	17.3 17.3	17.3	8.0 8.0	8.0	33.3 33.3	33.3	90.8 90.9	90.9	7.1 7.1	7.1	7.1	1.5 1.5	1.5	1.5	4.6 5.1	4.9	5.1			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	4.4	17.3 17.3	17.3	8.0 8.0	8.0	33.3 33.3	33.3	90.7 90.7	90.7	7.1 7.1	7.1		7.1	1.5 1.4		1.5	7.1		1.5 1.4	1.5	5.7 4.8
13-Jan-14	Sunny	Moderate	17:09	4.8	Surface	1.0	17.2 17.1	17.2	8.0 8.0	8.0	33.3 33.3	33.3	95.5 98.6	97.1	7.5 7.8	7.7	7.7	2.0 1.9	2.0	2.1	2.7 3.7	3.2	3.7			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	3.8	17.1 17.2	17.1	8.0 8.0	8.0	33.3 33.3	33.3	96.5 94.8	95.7	7.6 7.5	7.5		7.5	2.0 2.1		2.1	7.5		2.0 2.1	2.1	4.5 3.7
15-Jan-14	Fine	Moderate	06:27	5.0	Surface	1.0	16.8 16.8	16.8	8.0 8.0	8.0	33.4 33.4	33.4	99.2 97.7	98.5	7.9 7.8	7.8	7.8	5.2 5.3	5.3	5.4	8.0 6.9	7.5	8.0			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	4.0	16.7 16.8	16.8	8.0 8.0	8.0	33.4 33.4	33.4	103.5 98.1	100.8	8.2 7.8	8.0		8.0	5.4 5.5		5.5	8.0		5.4 5.5	5.5	8.2 8.7
17-Jan-14	Sunny	Moderate	06:51	4.8	Surface	1.0	16.6 16.6	16.6	8.0 8.0	8.0	33.0 32.9	32.9	100.3 105.0	102.7	8.0 8.4	8.2	8.2	5.6 5.7	5.7	5.8	13.0 12.8	12.9	12.6			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	3.8	16.6 16.6	16.6	8.0 8.0	8.0	32.9 32.7	32.8	99.7 101.1	100.4	8.0 8.1	8.0		8.0	5.8 5.7		5.8	8.0		5.8 5.7	5.8	11.8 12.5
20-Jan-14	Sunny	Moderate	08:38	5.4	Surface	1.0	16.6 16.6	16.6	8.0 7.9	8.0	32.6 32.6	32.6	97.9 99.2	98.6	7.8 7.9	7.9	7.9	3.6 3.6	3.6	3.6	5.6 6.4	6.0	6.9			
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
					Bottom	4.4	16.6 16.6	16.6	8.0 7.9	8.0	32.6 32.5	32.5	98.4 100.8	99.6	7.9 8.1	8.0		8.0	3.5 3.5		3.5	8.0		3.5 3.5	3.5	8.2 7.1

Remarks:

\* DA: Depth-Averaged

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

## Appendix J - Marine Water Quality Monitoring Results

### Water Quality Monitoring Results at SR10B(N) - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Jan-14	Sunny	Moderate	09:43	5.6	Surface	1.0	16.4 16.4	16.4	8.0 8.0	8.0	32.7 32.7	32.7	96.7 97.8	97.3	7.8 7.9	7.8	7.8	2.0 2.0	2.0	2.1	4.2 4.9	4.6	4.2				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	-
					Bottom	4.6	16.4 16.4	16.4	8.0 8.0	8.0	32.7 32.6	32.7	96.9 98.6	97.8	7.8 7.9	7.9		7.9	2.2 2.1		2.2	4.1 3.3		3.7			
24-Jan-14	Fine	Moderate	04:08	5.5	Surface	1.0	16.3 16.3	16.3	8.0 8.0	8.0	32.9 32.9	32.9	97.5 98.6	98.1	7.8 7.9	7.9	7.9	2.0 2.2	2.1	2.2	3.8 4.8	4.3	4.3				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	
					Bottom	4.5	16.3 16.3	16.3	8.0 8.0	8.0	32.9 32.9	32.9	99.3 97.9	98.6	8.0 7.9	7.9		7.9	2.3 2.1		2.2	4.0 4.4		4.2			
27-Jan-14	Sunny	Moderate	15:57	4.9	Surface	1.0	16.7 16.7	16.7	8.1 8.1	8.1	32.9 32.9	32.9	101.7 101.6	101.7	8.1 8.1	8.1	8.1	1.7 1.8	1.8	1.8	3.4 3.4	3.4	3.2				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	
					Bottom	3.9	16.7 16.7	16.7	8.1 8.1	8.1	32.9 32.9	32.9	101.6 101.4	101.5	8.1 8.1	8.1		8.1	1.8 1.8		1.8	2.0 4.0		3.0			
SR10B(N)	Sunny	Moderate	17:56	5.1	Surface	1.0	17.1 17.2	17.1	8.13 8.13	8.13	32.2 32.2	32.2	109.8 110.2	110.0	8.7 8.8	8.7	8.7	1.1 1.1	1.1	1.1	3.4 3.0	3.2	3.3				
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-	
					Bottom	4.1	17.2 17.1	17.2	8.13 8.13	8.13	32.2 32.2	32.2	110.0 109.7	109.9	8.7 8.7	8.7		8.7	1.1 1.1		1.1	2.6 3.9		3.3			

**Remarks:**

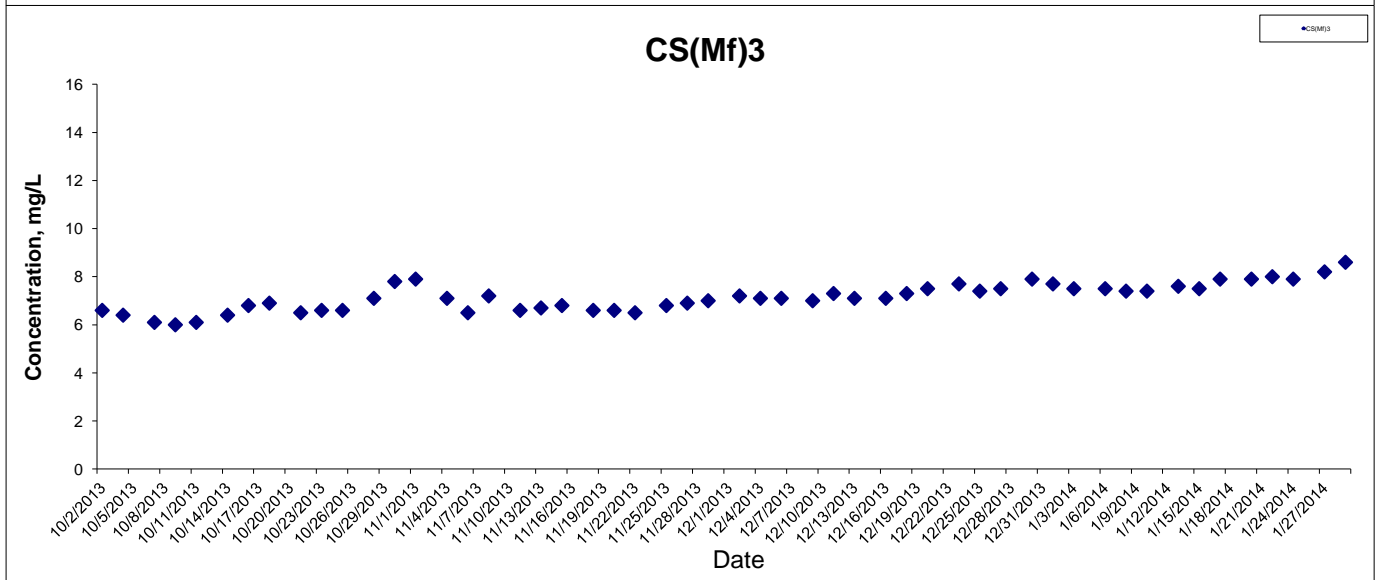
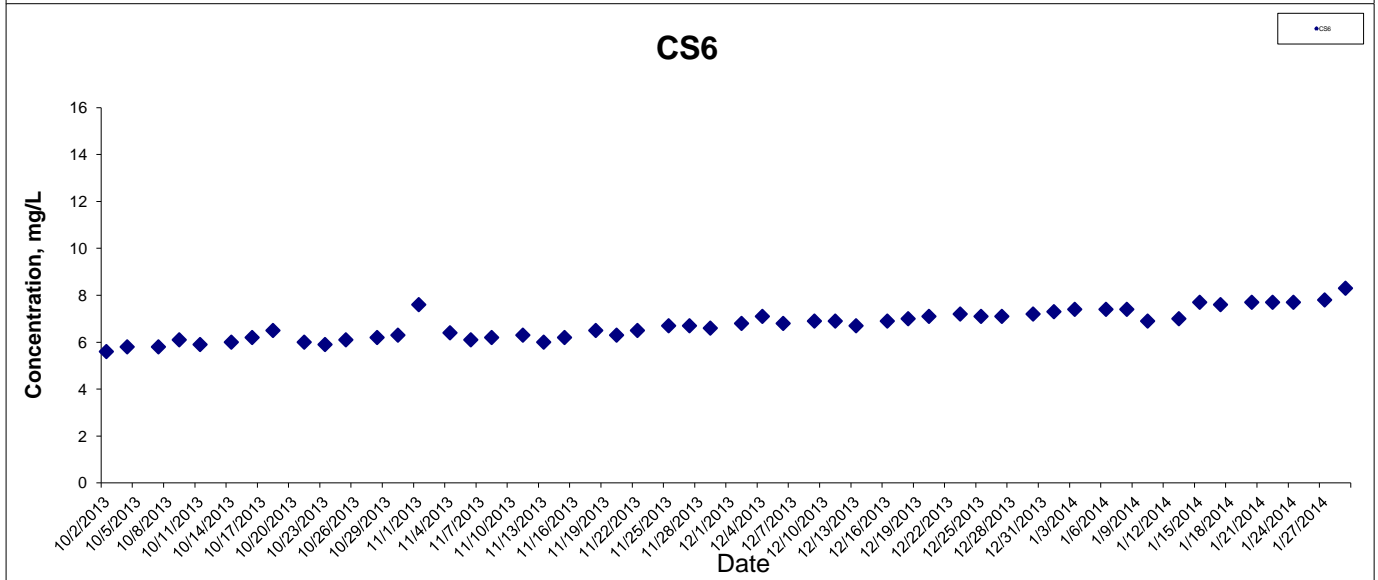
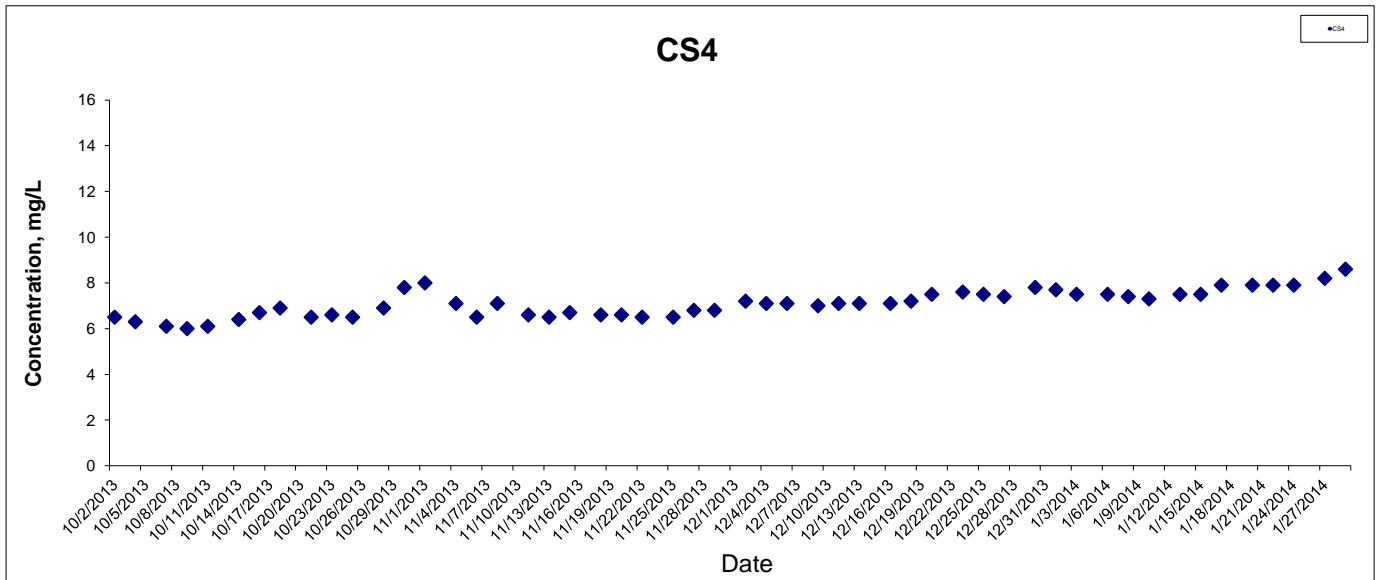
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:

\* DA: Depth-Averaged

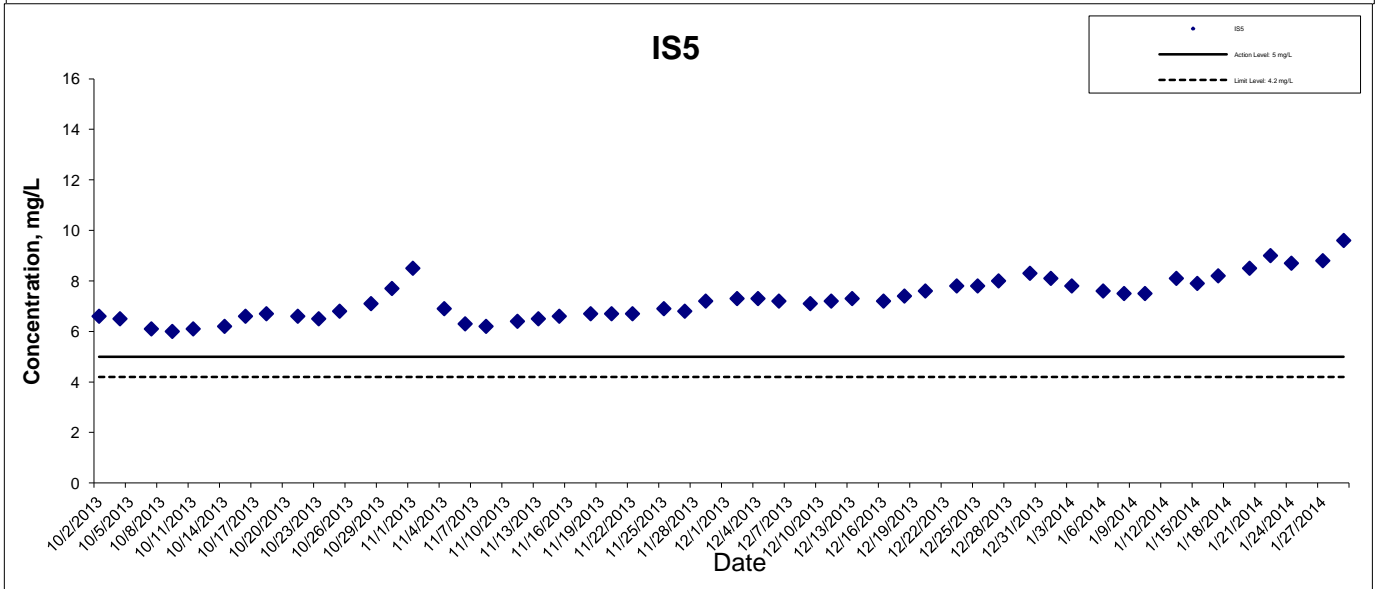
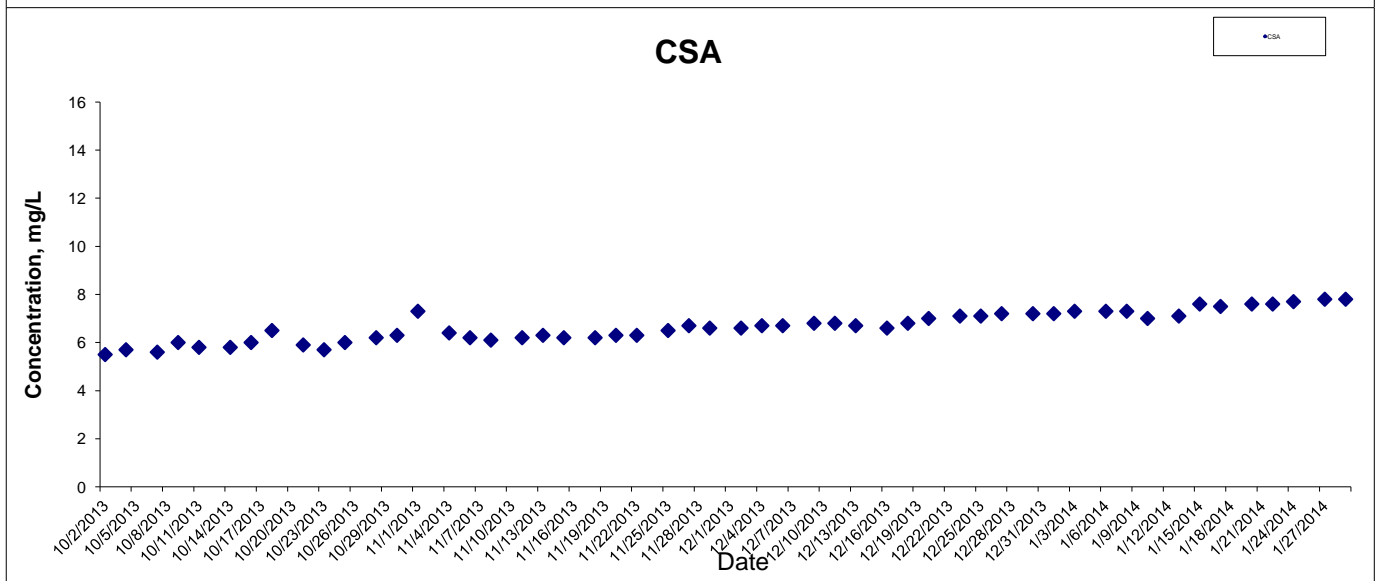
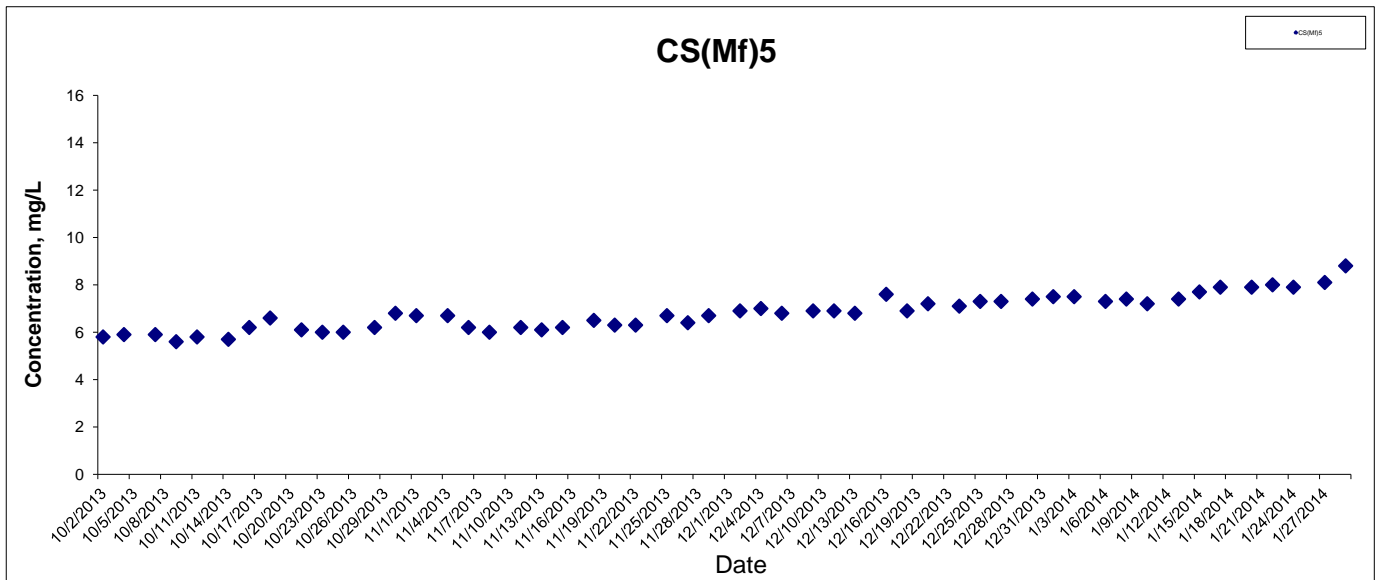
\*\* Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher

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



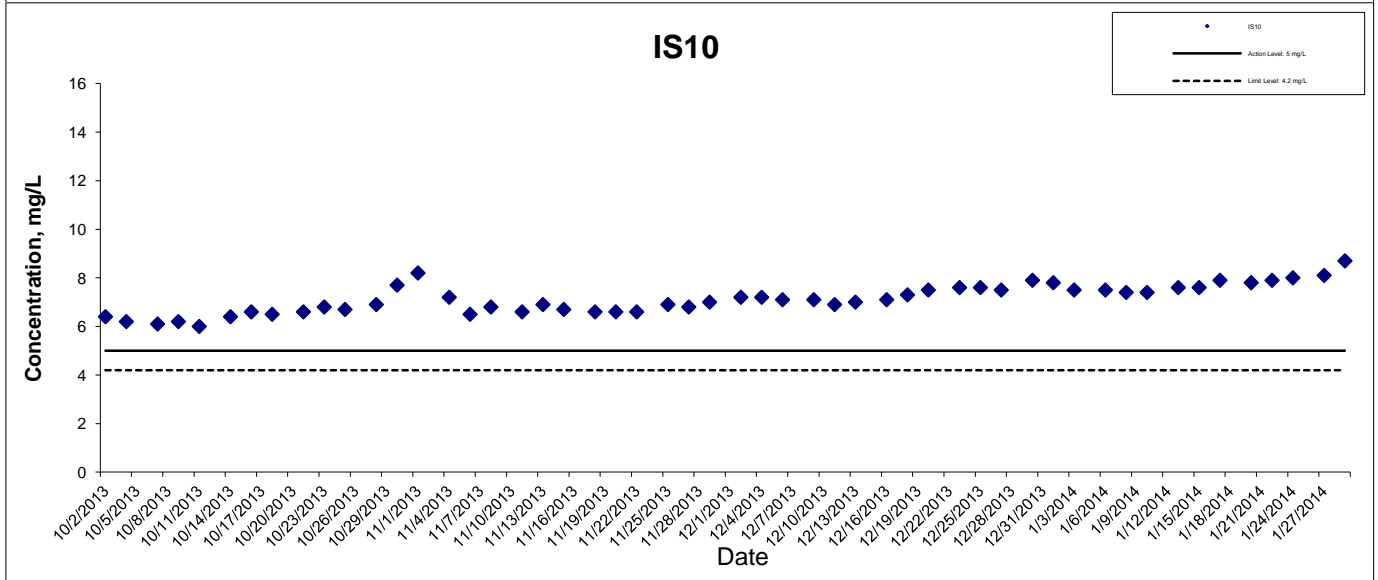
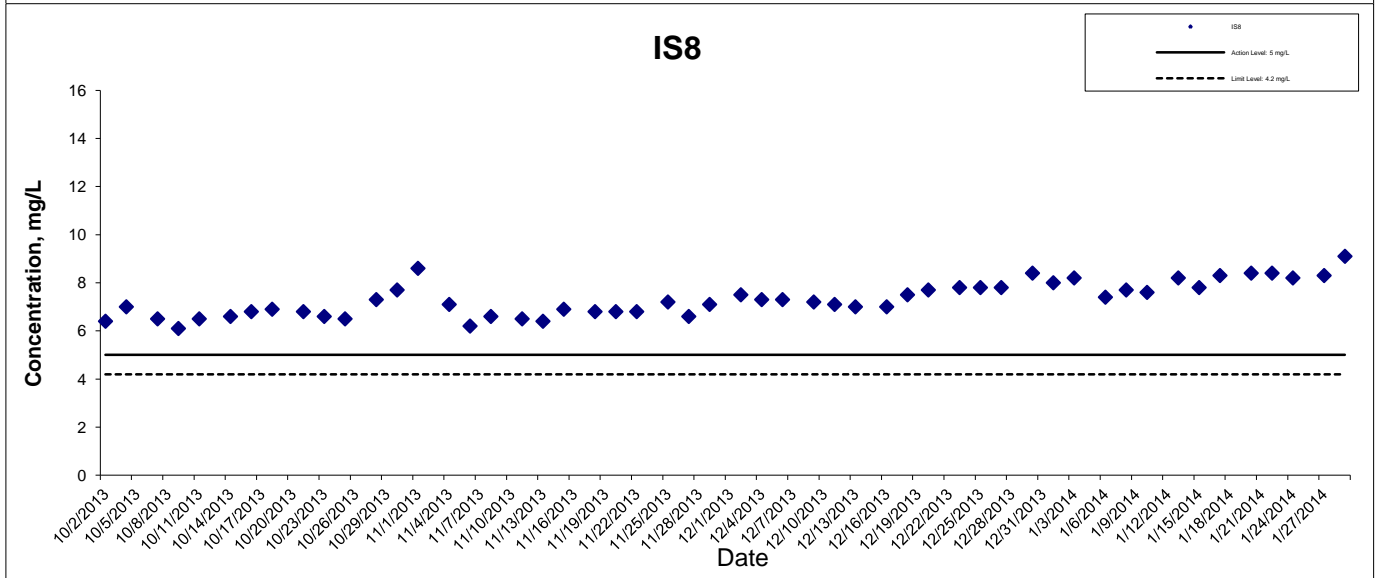
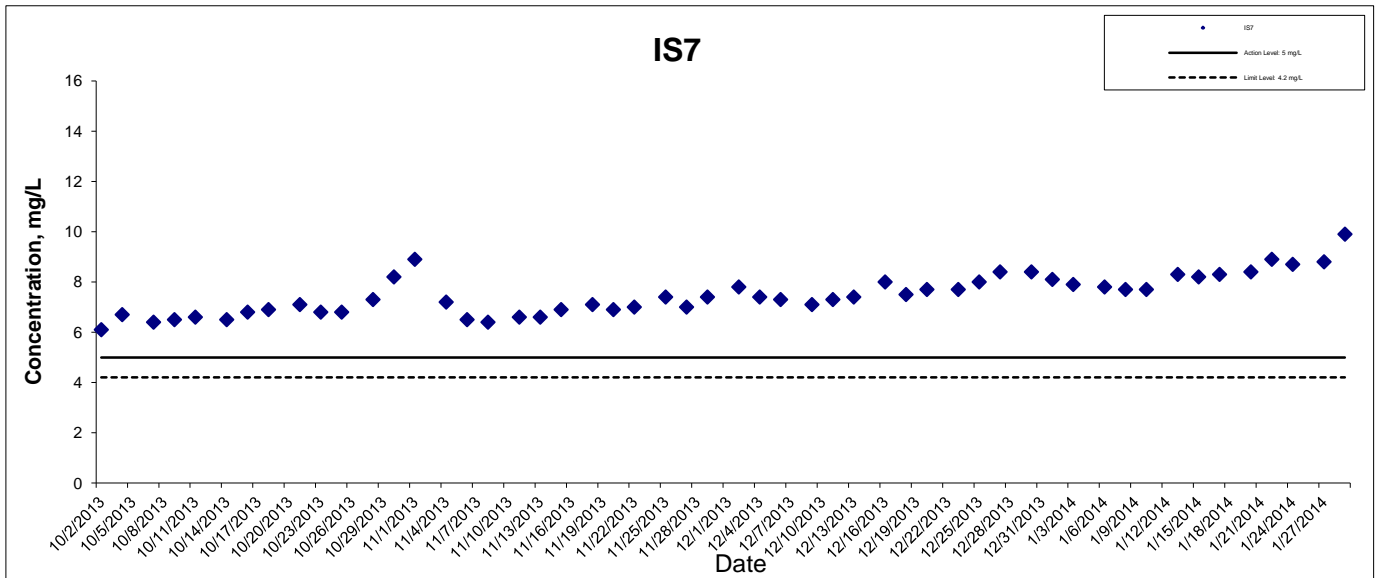
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## Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



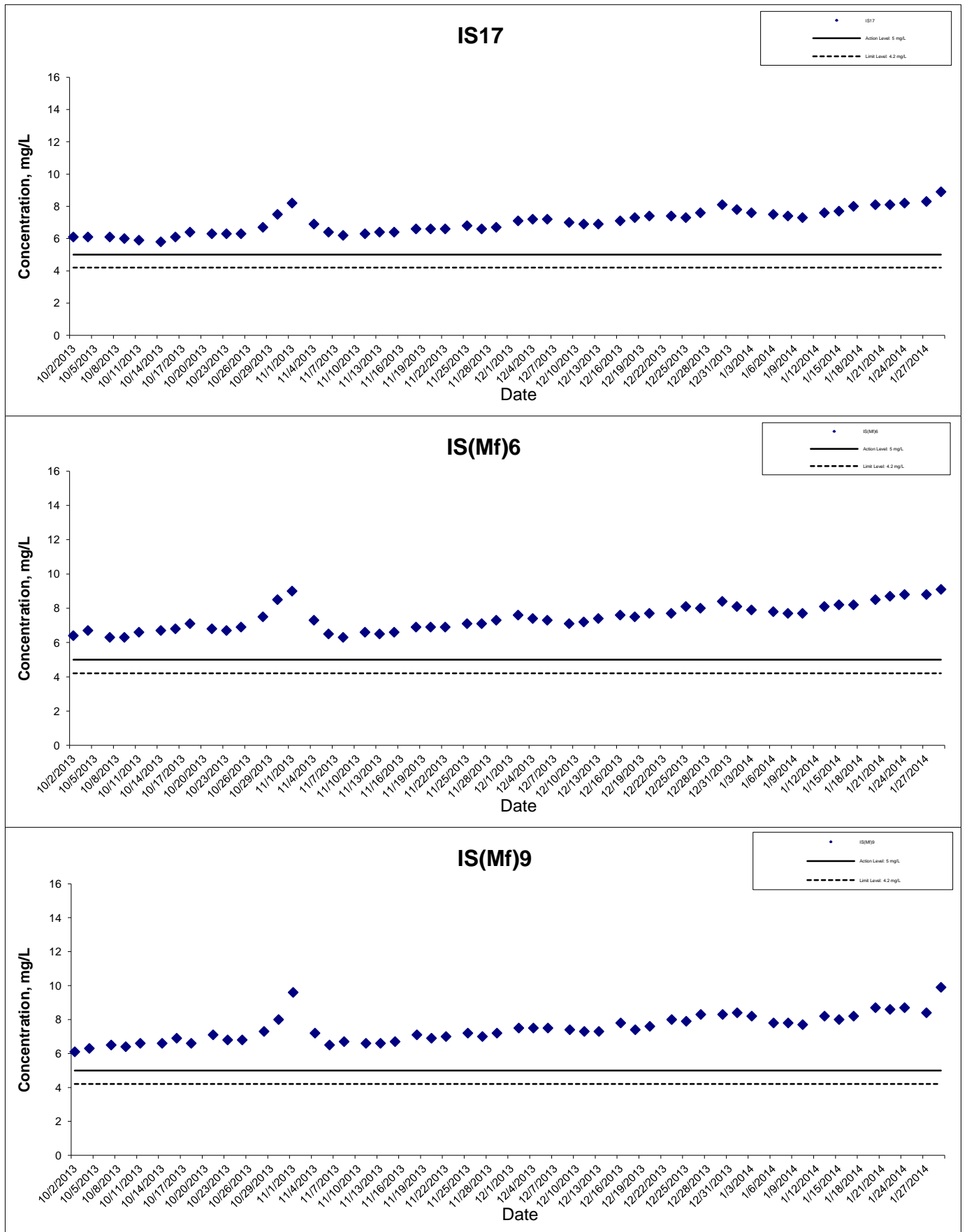
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## Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



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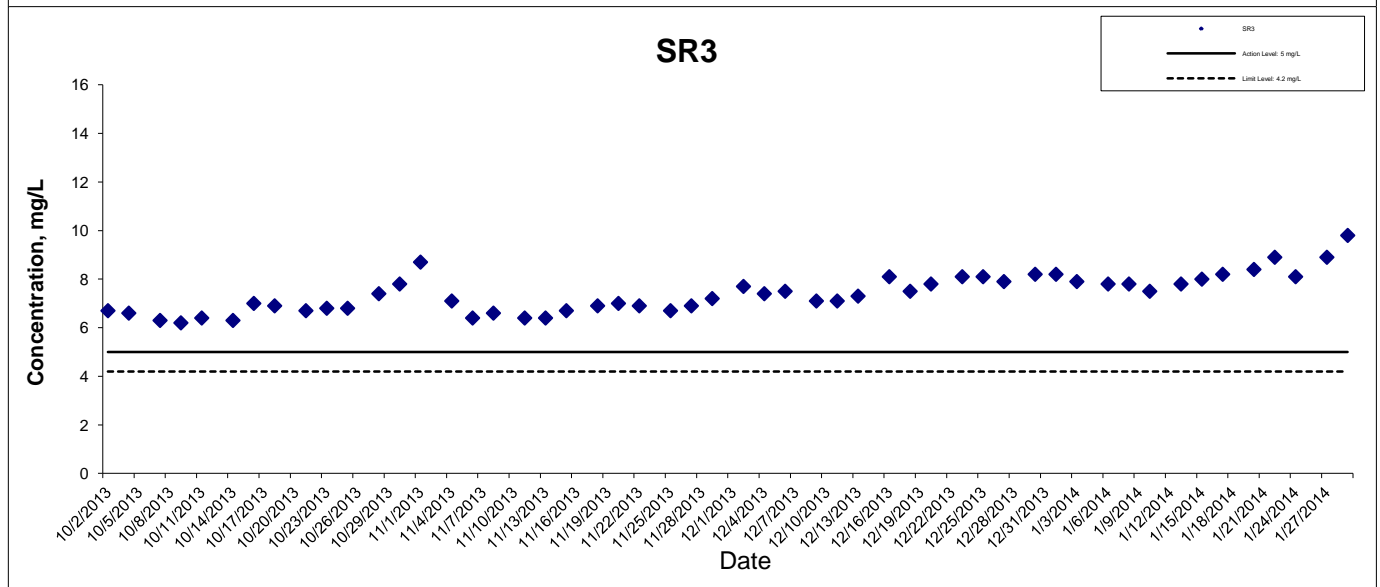
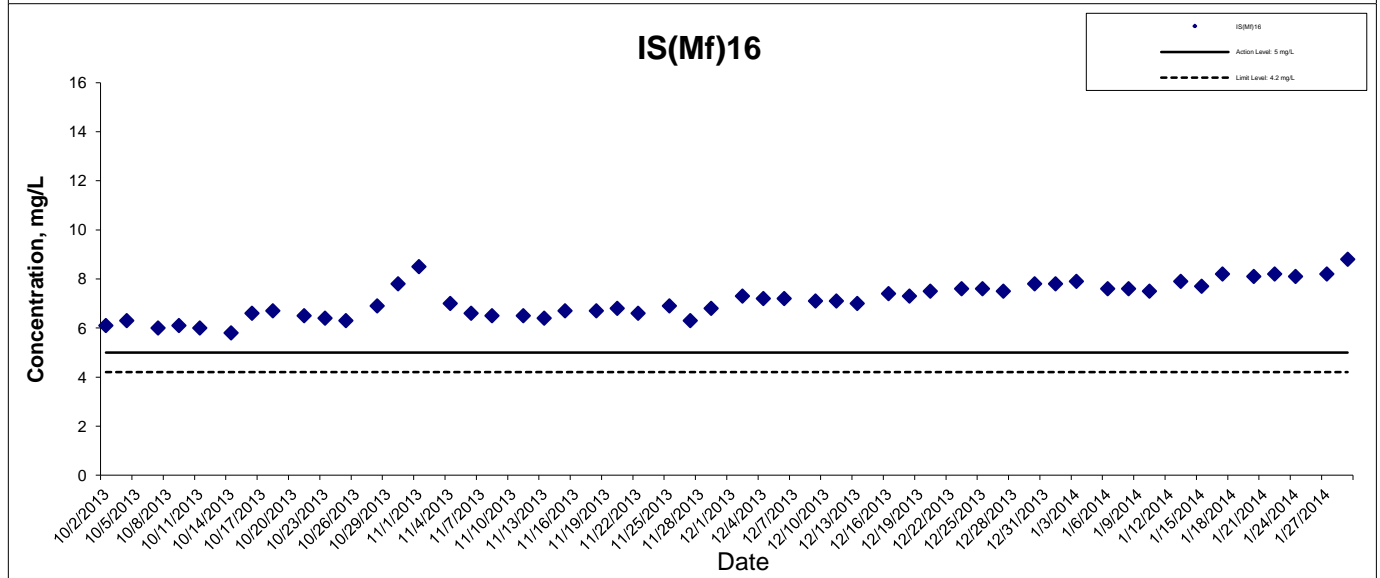
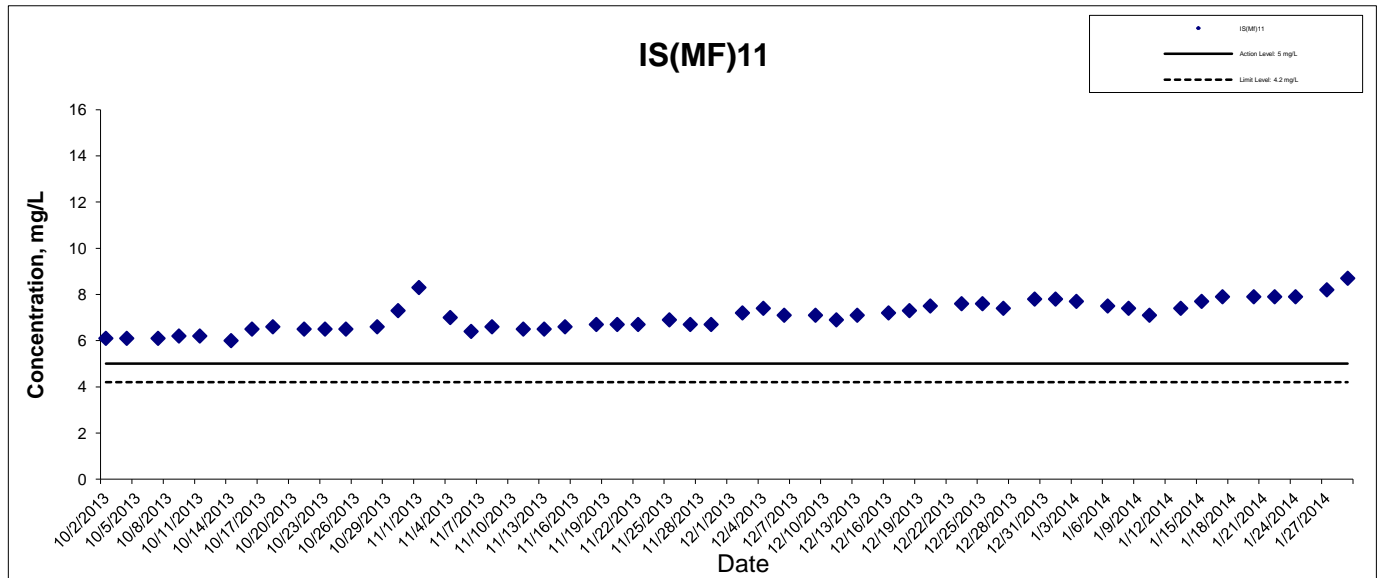
## Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



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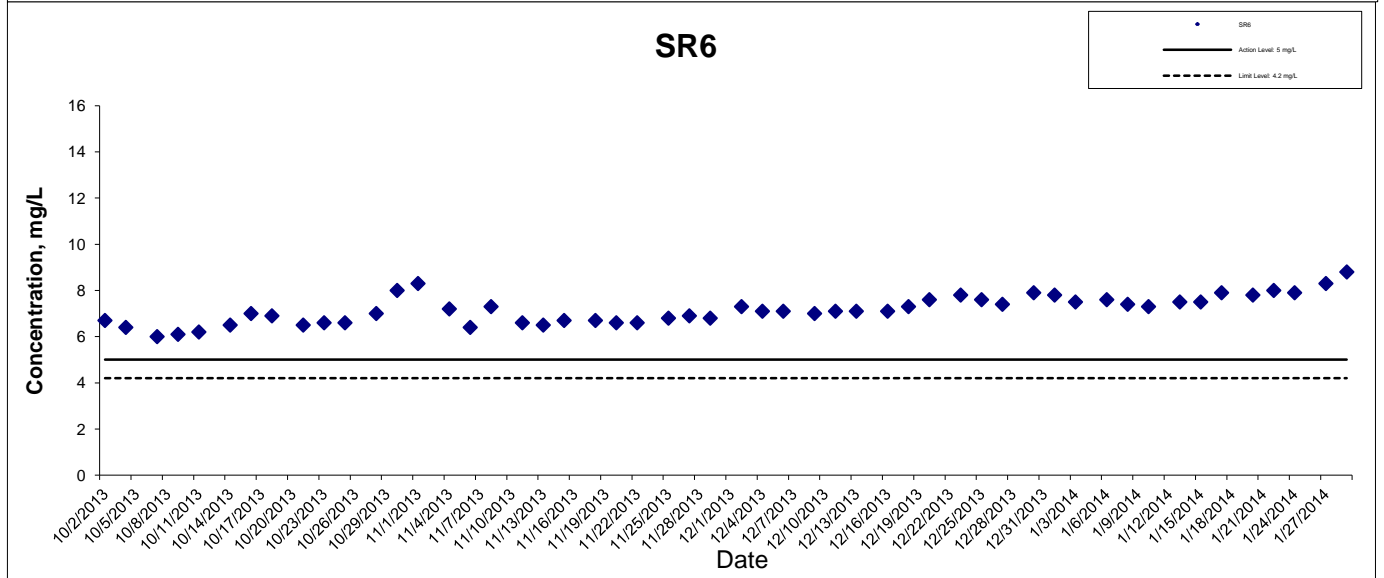
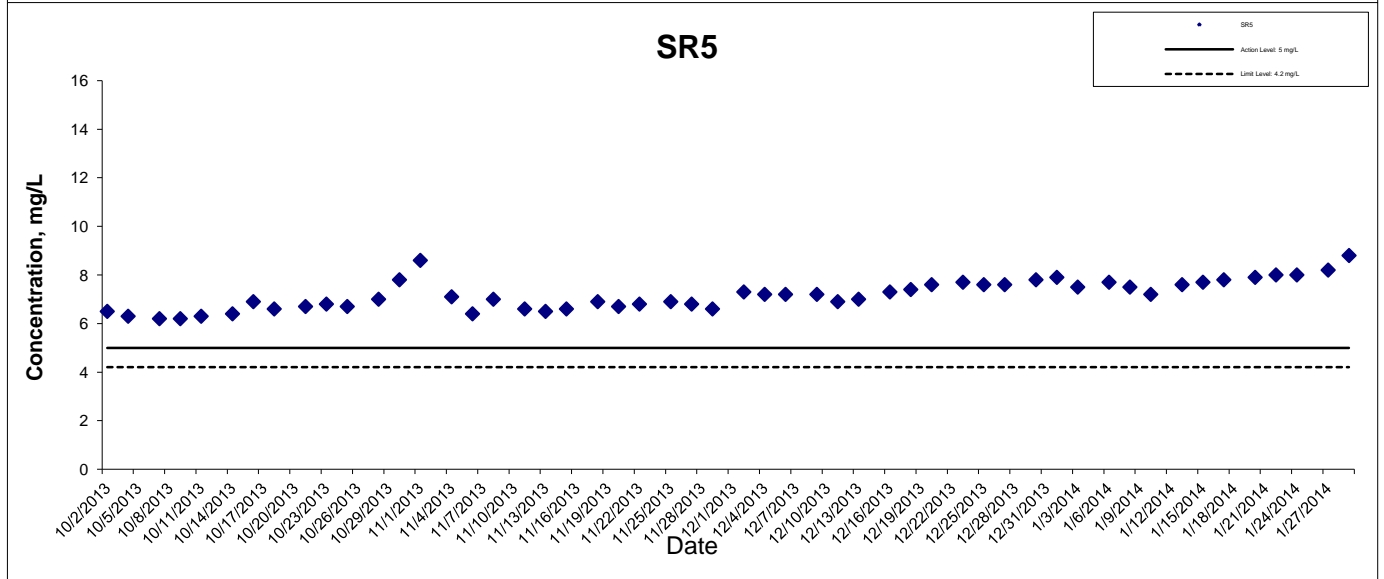
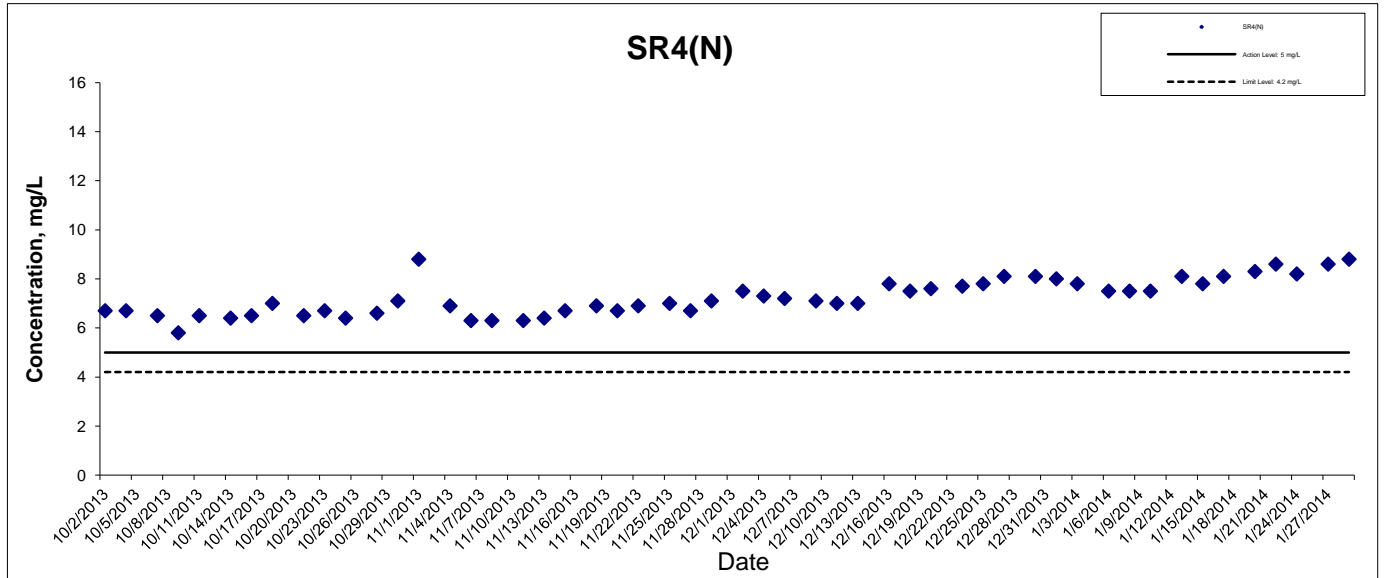


## Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



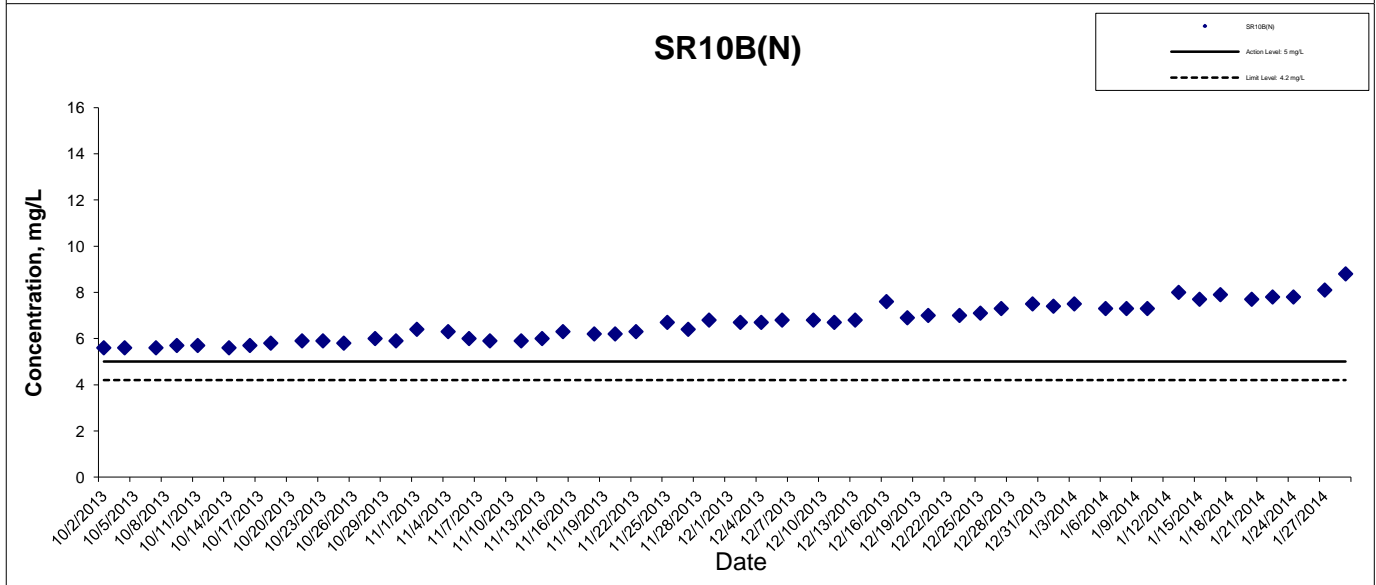
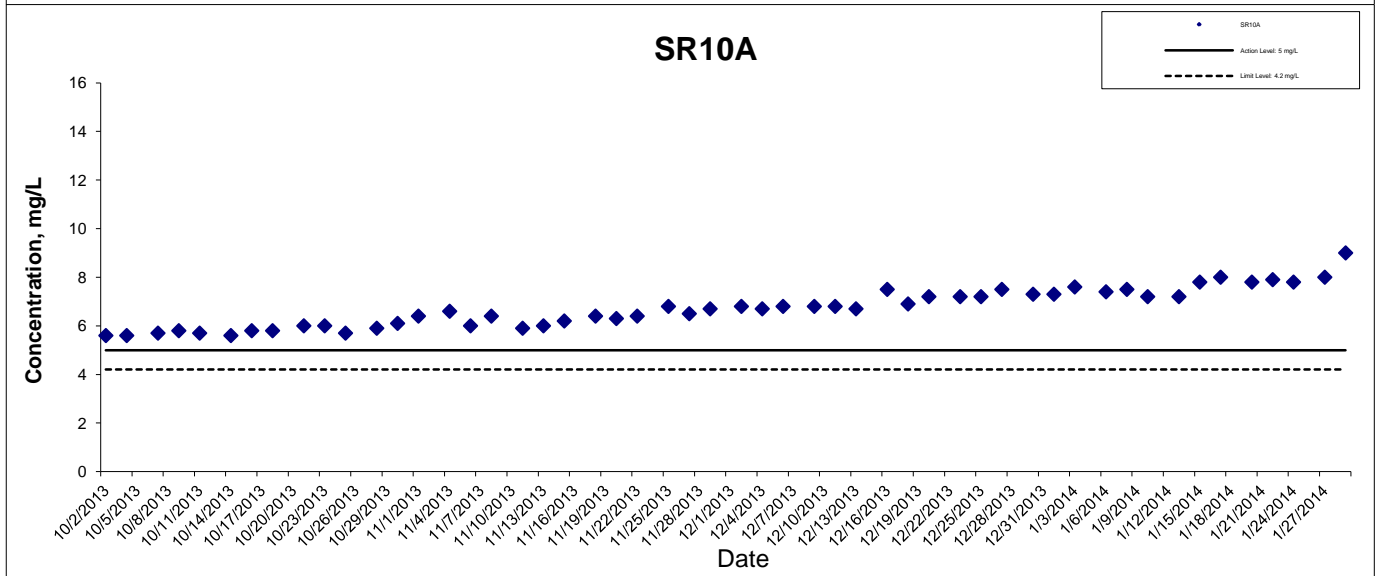
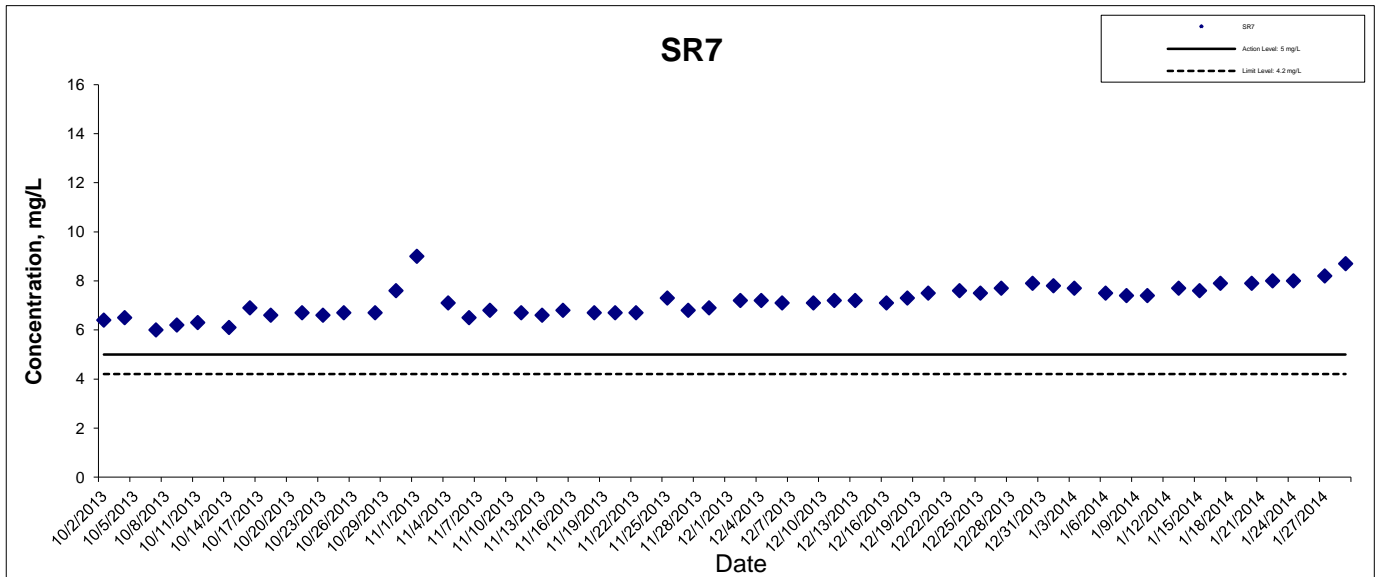
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## Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



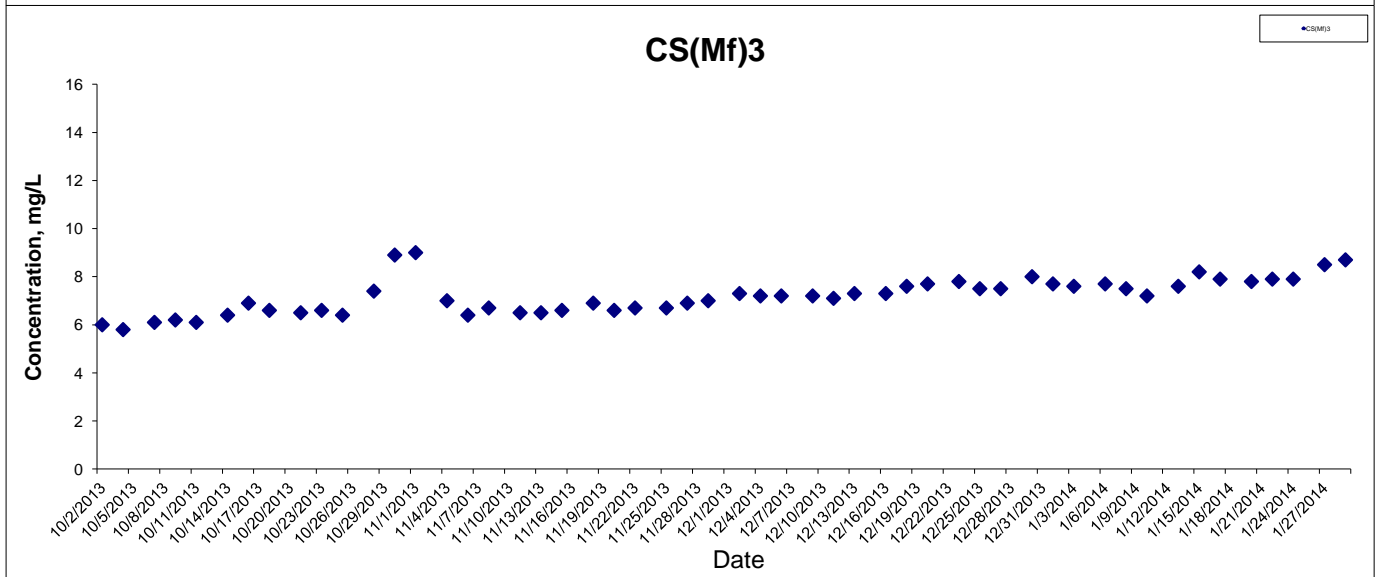
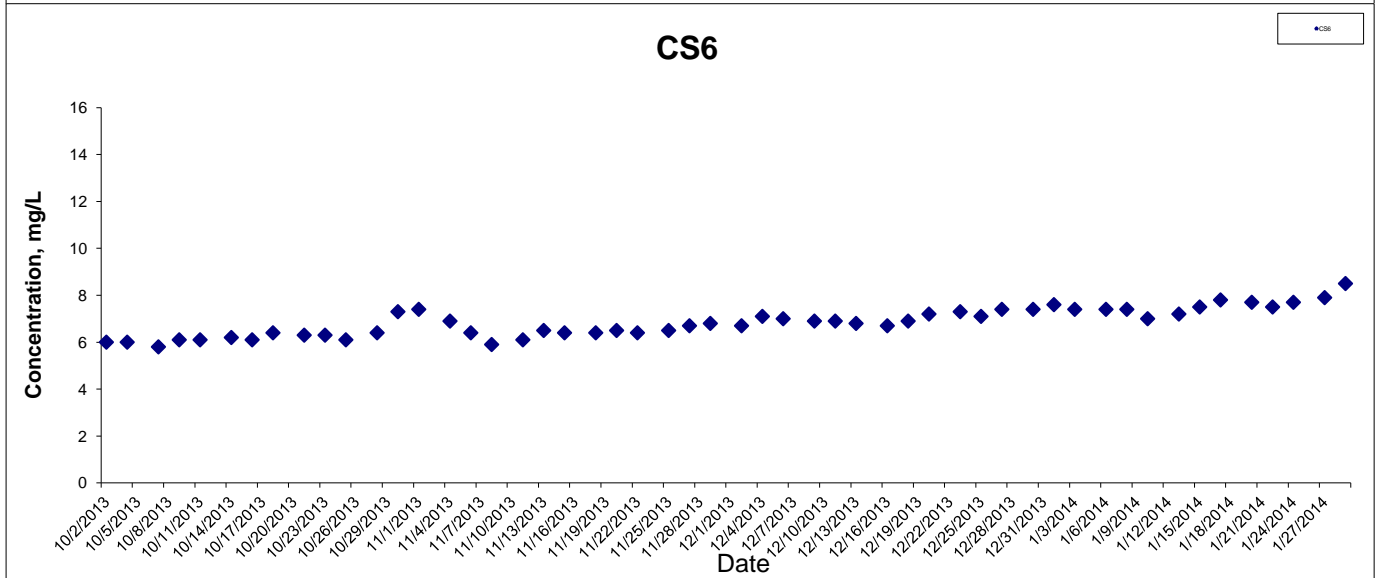
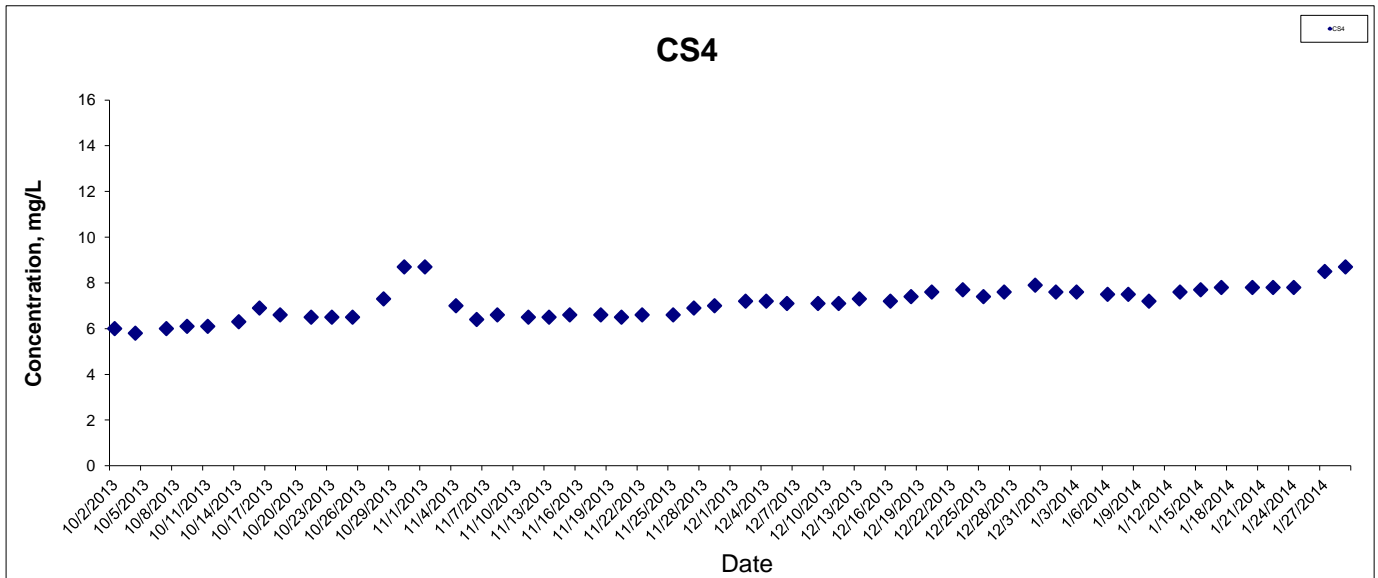
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## Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



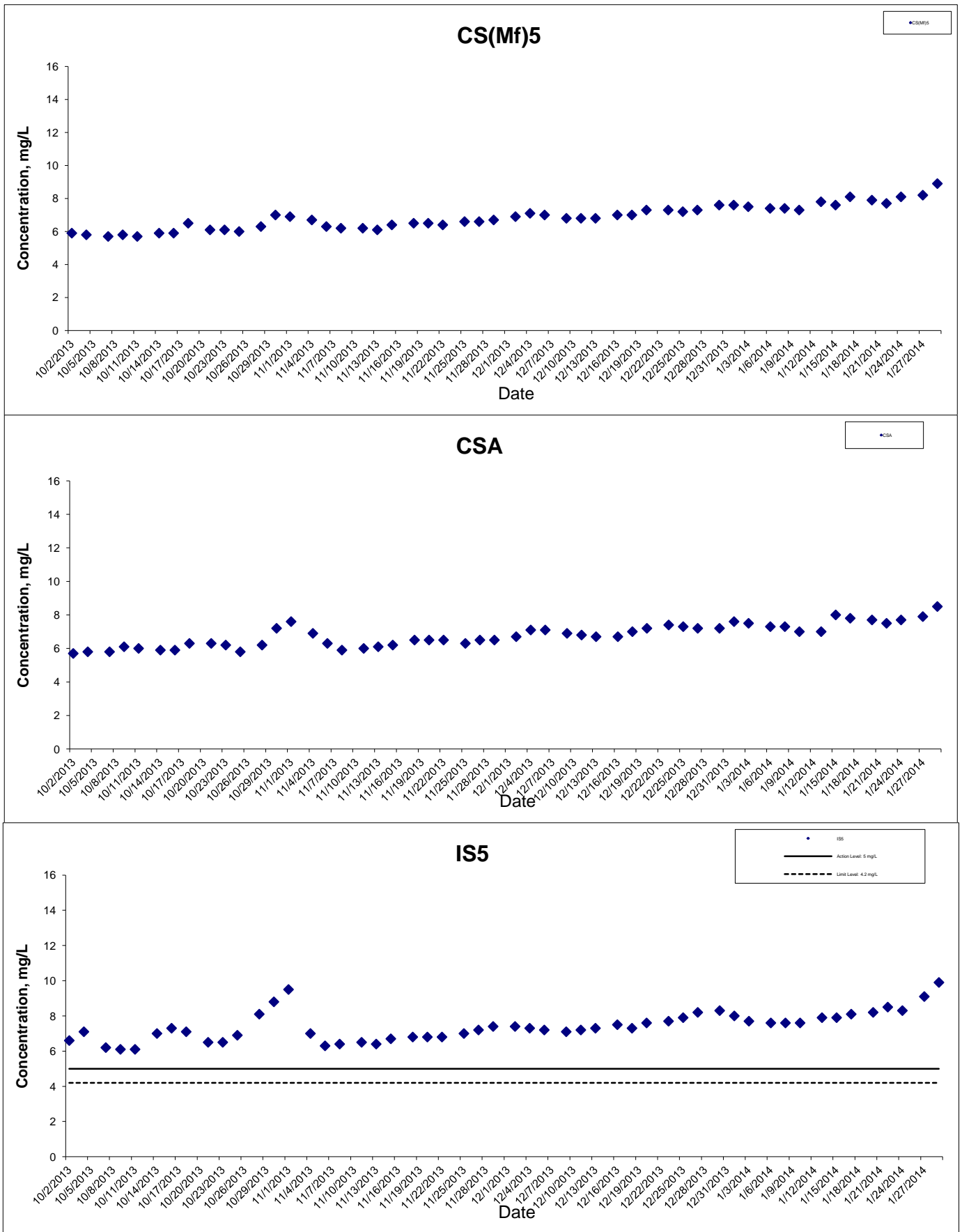
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## Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



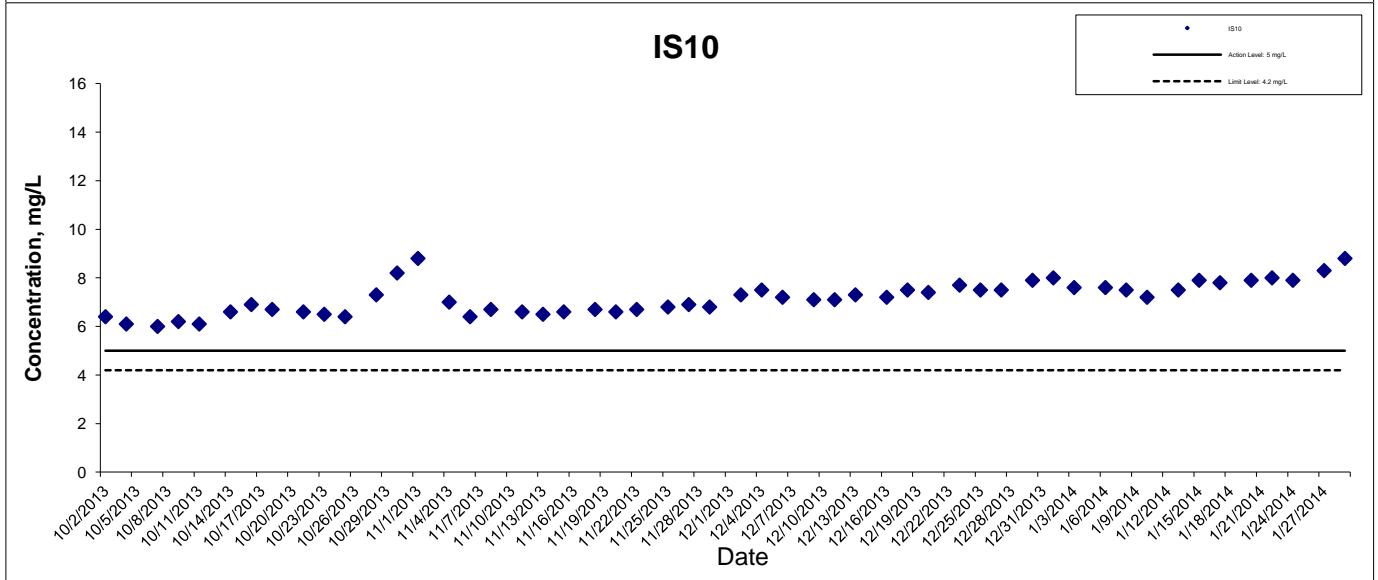
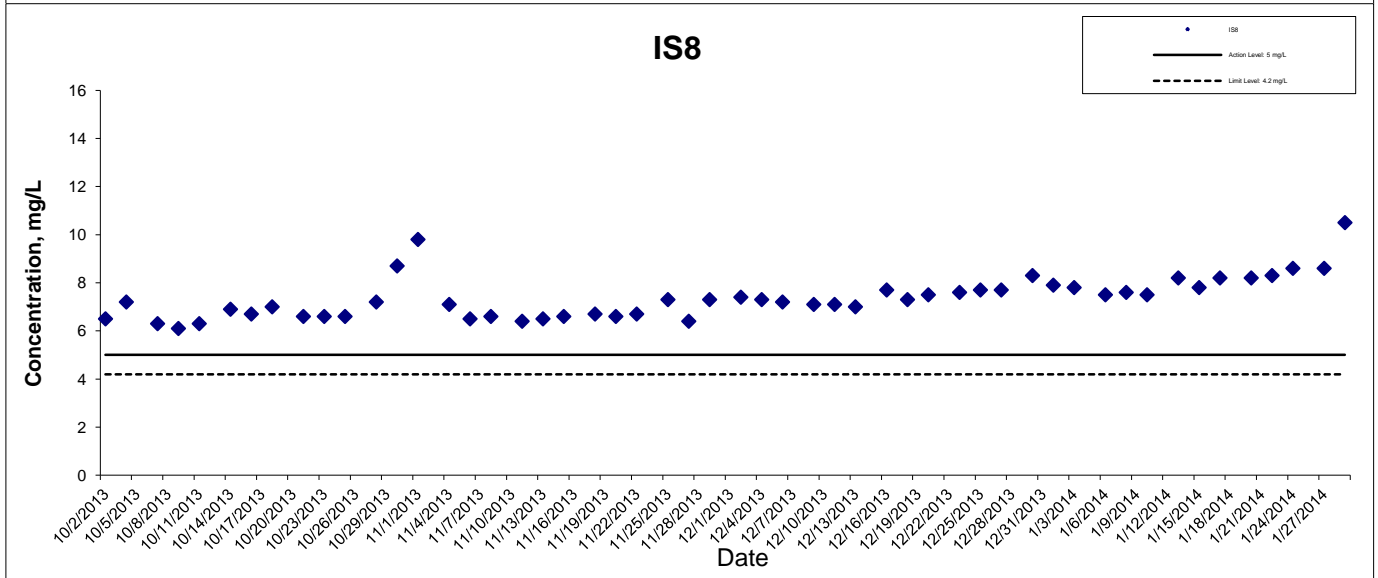
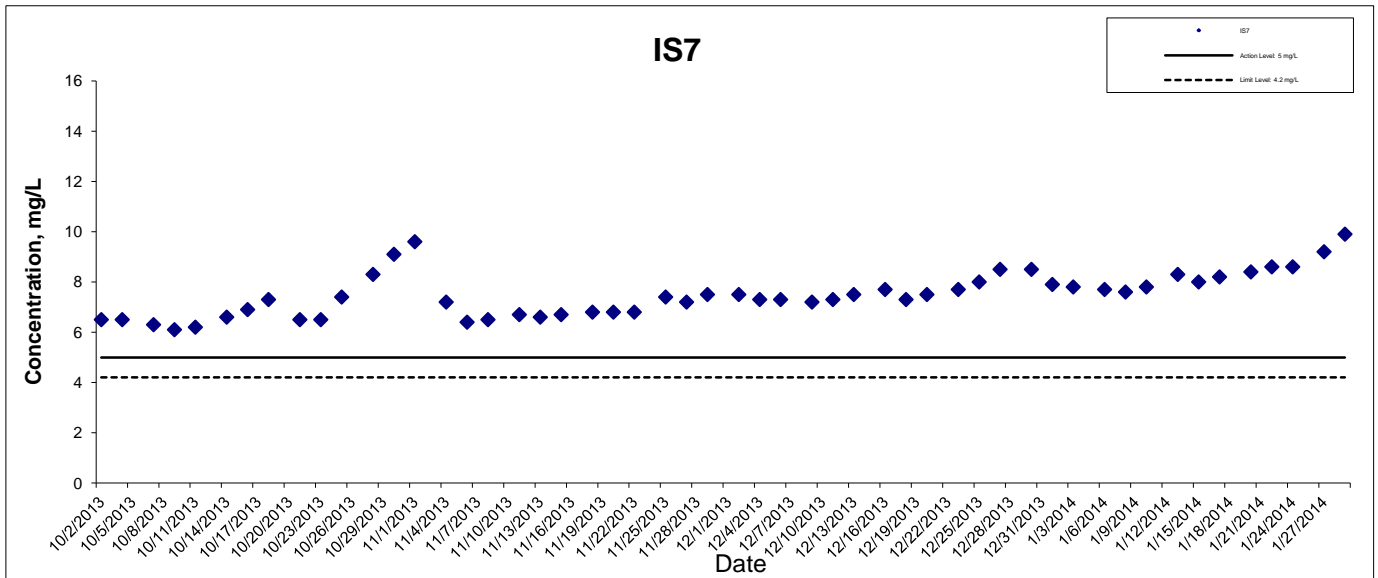
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## Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



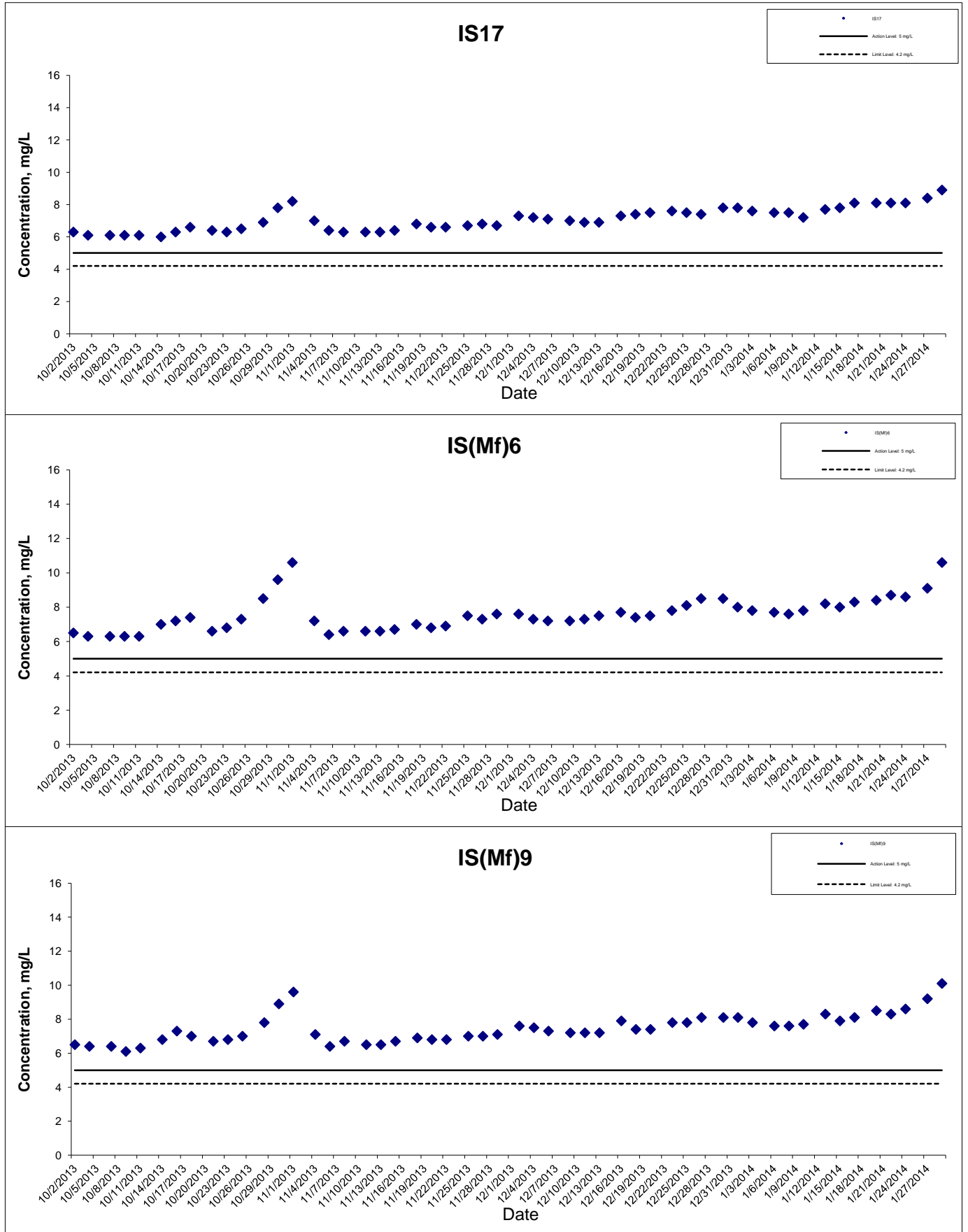
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## Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



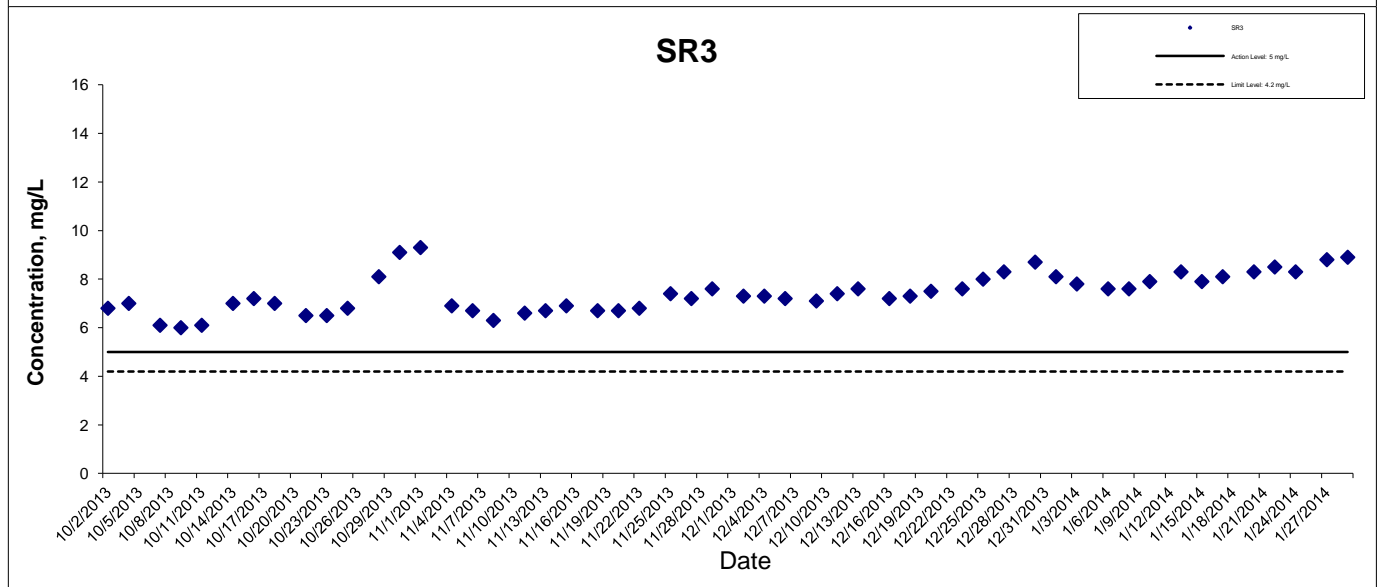
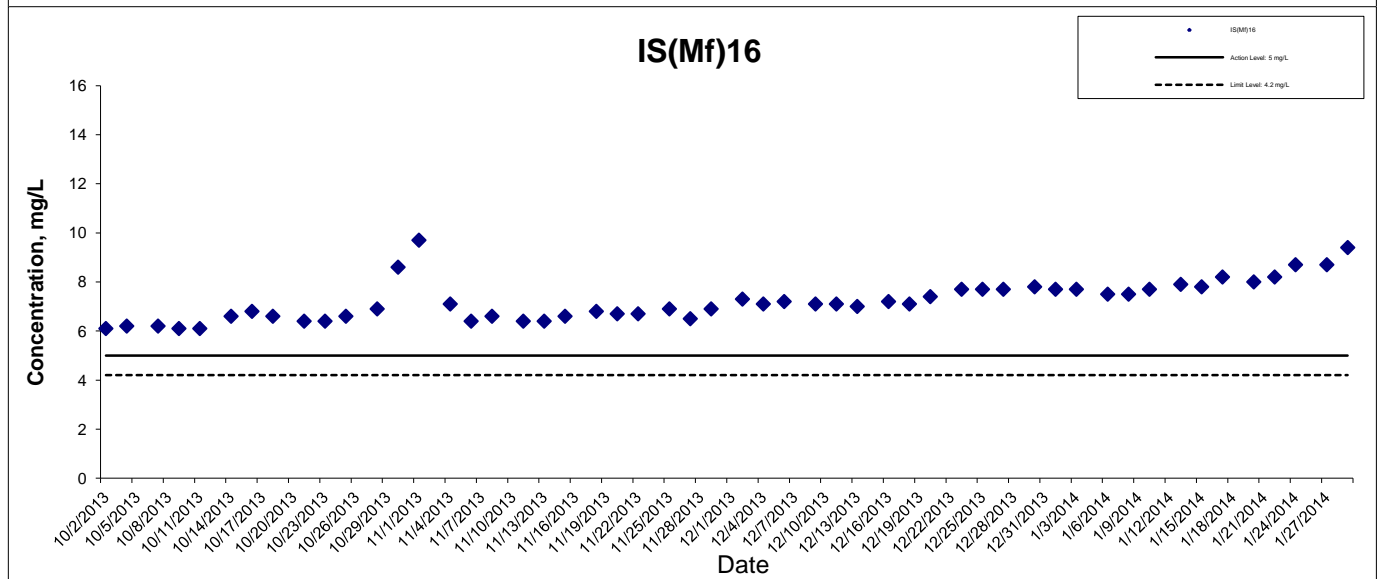
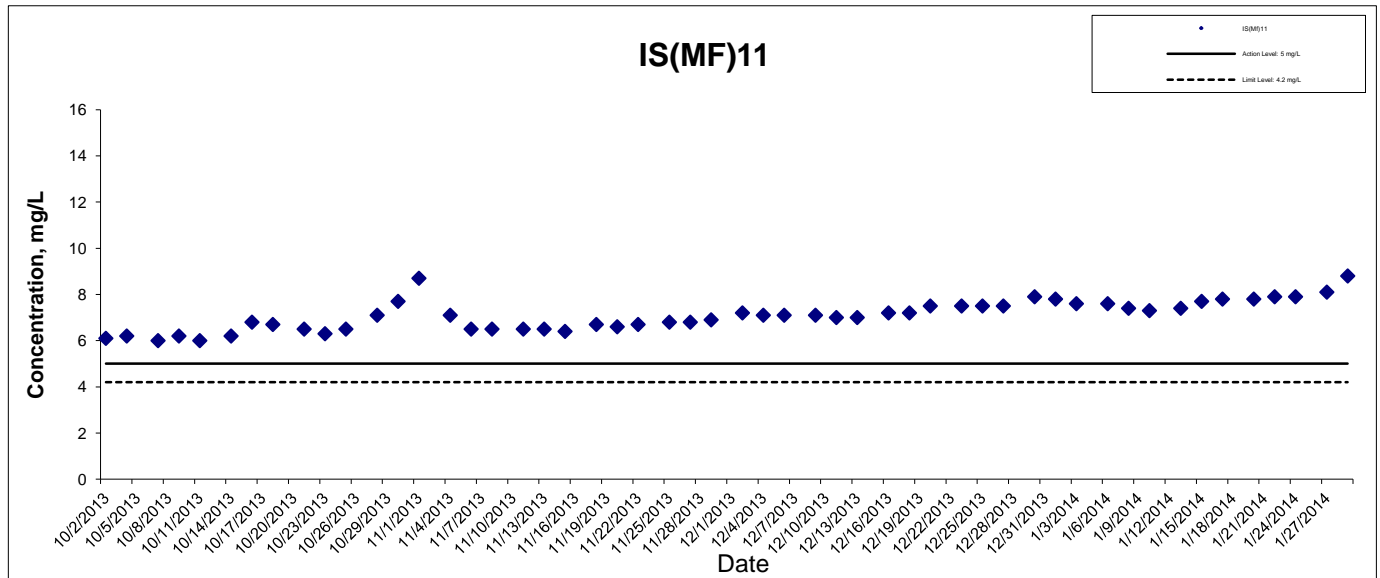
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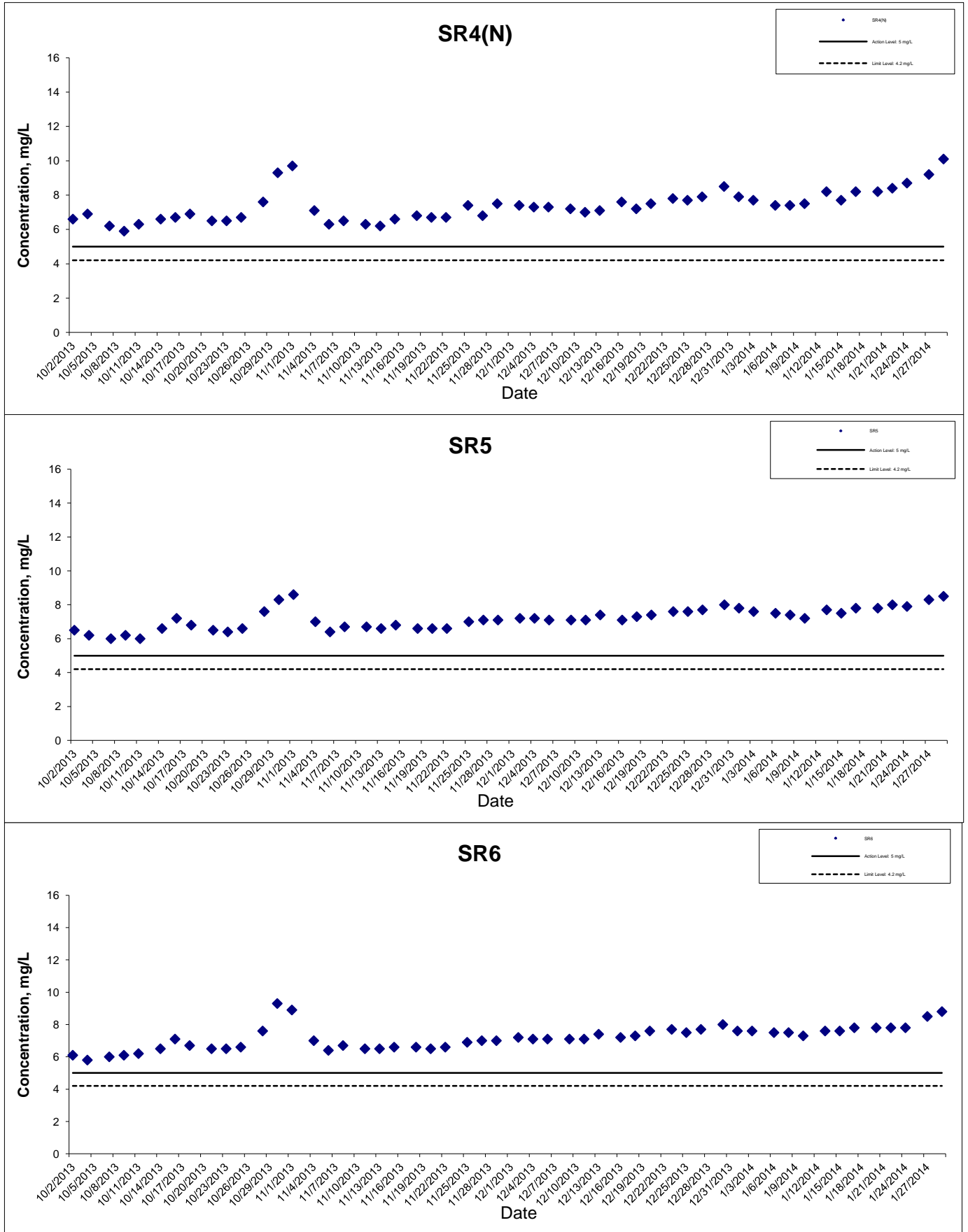
## Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



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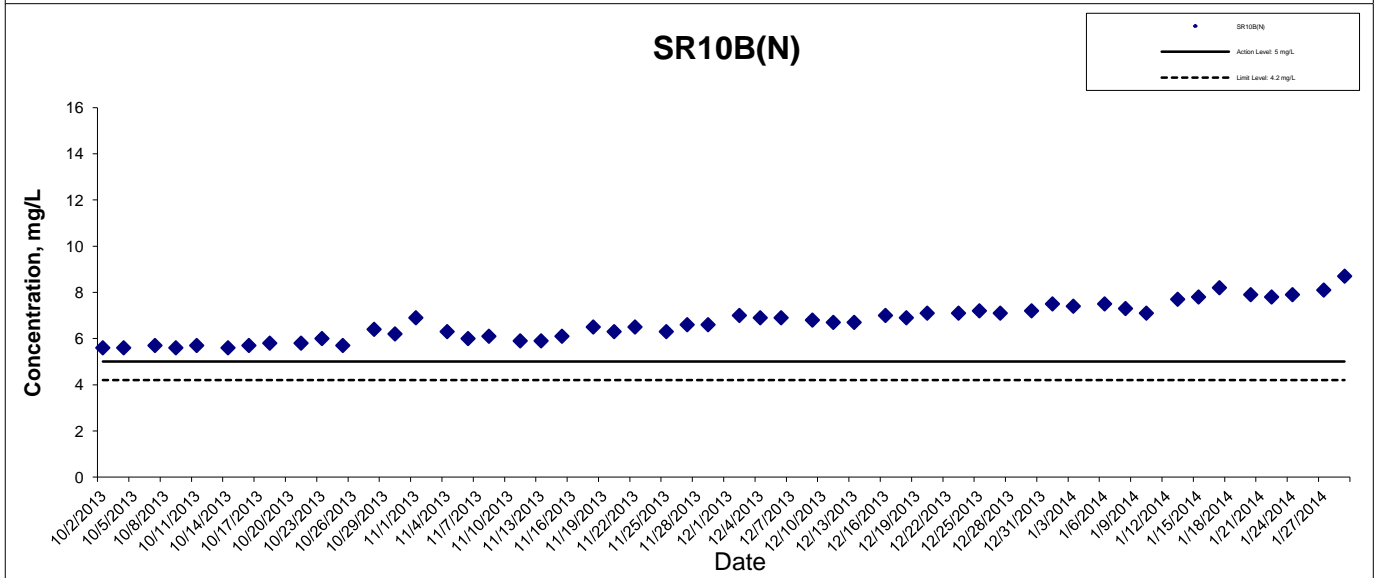
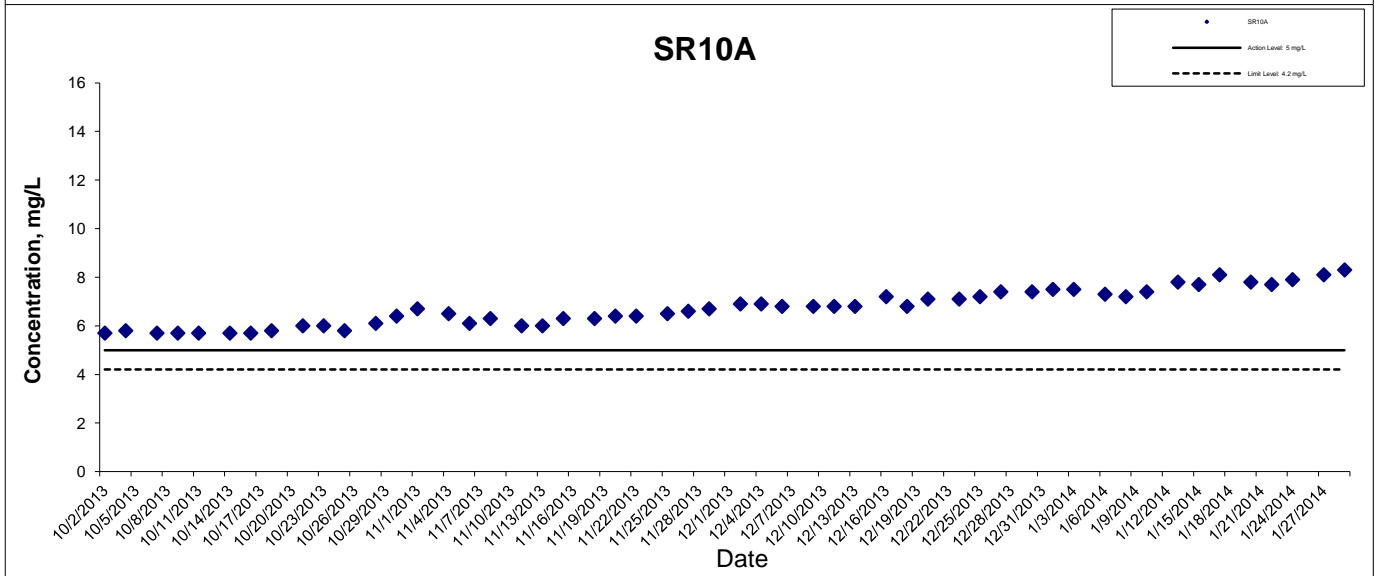
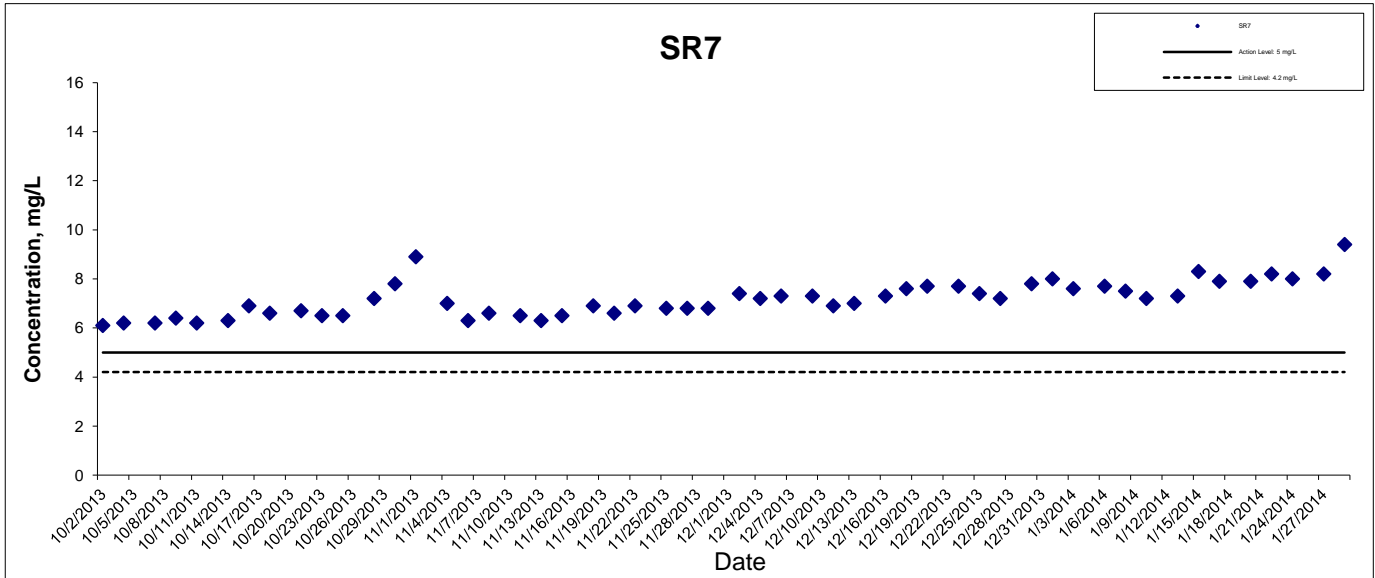


## Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



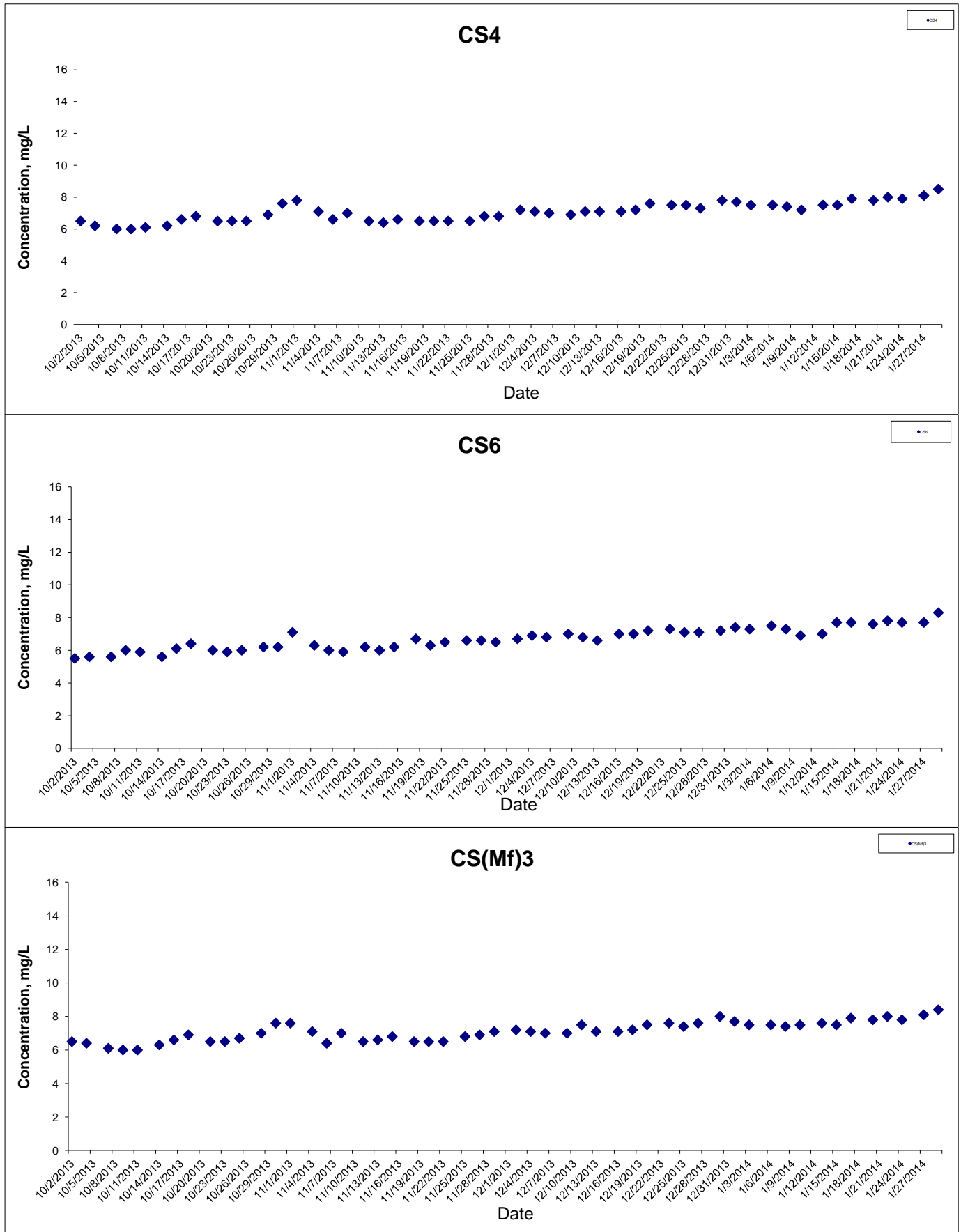
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## Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



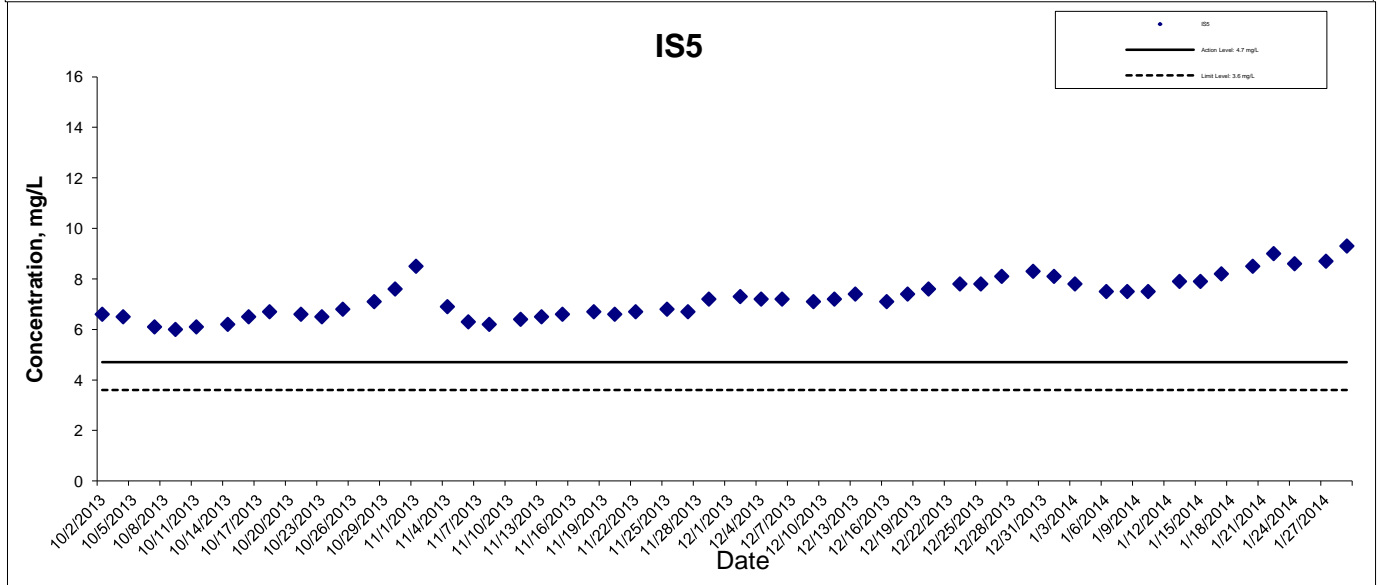
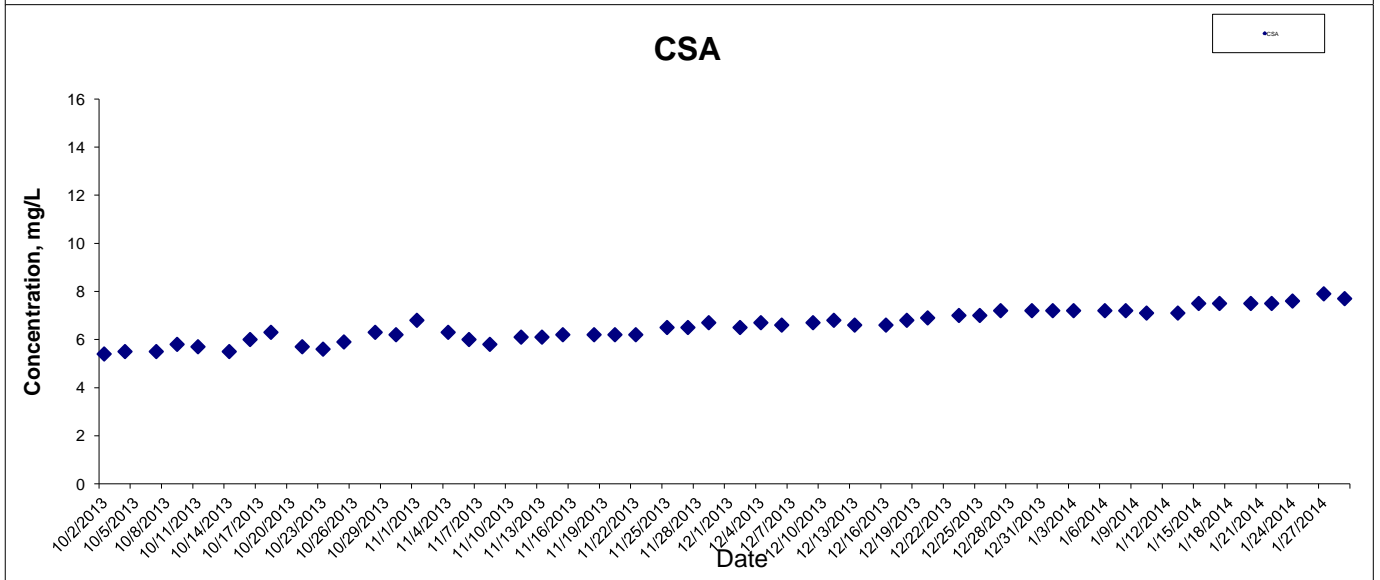
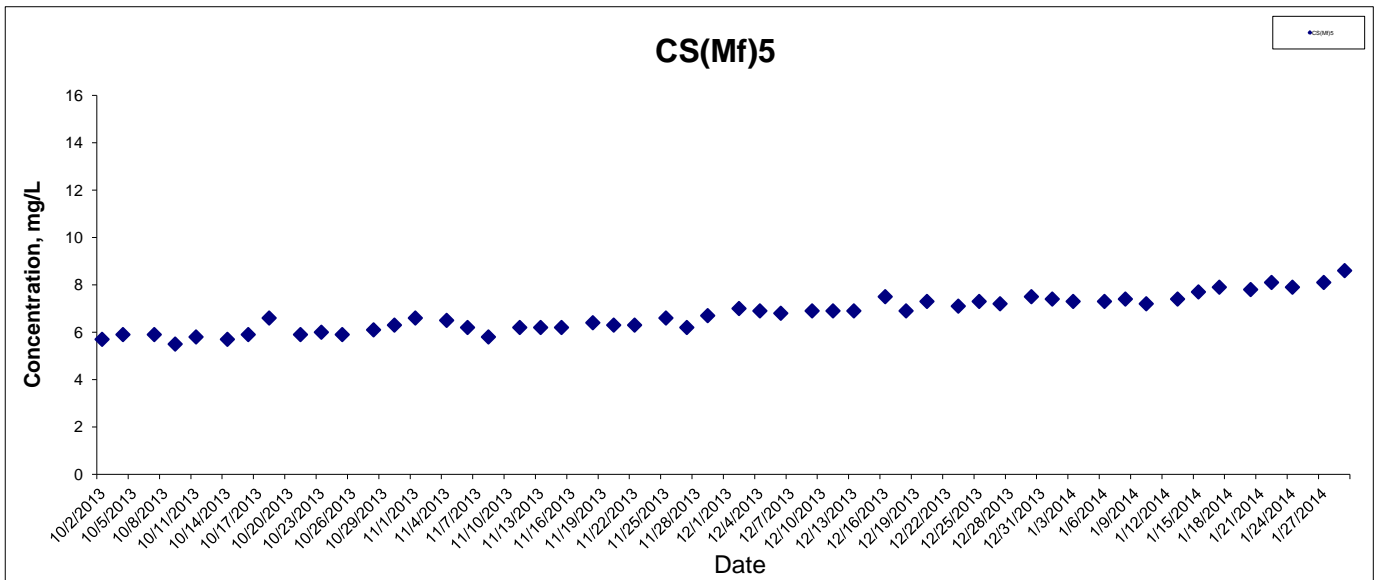
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## Dissolved Oxygen (Bottom) at Mid-Ebb Tide



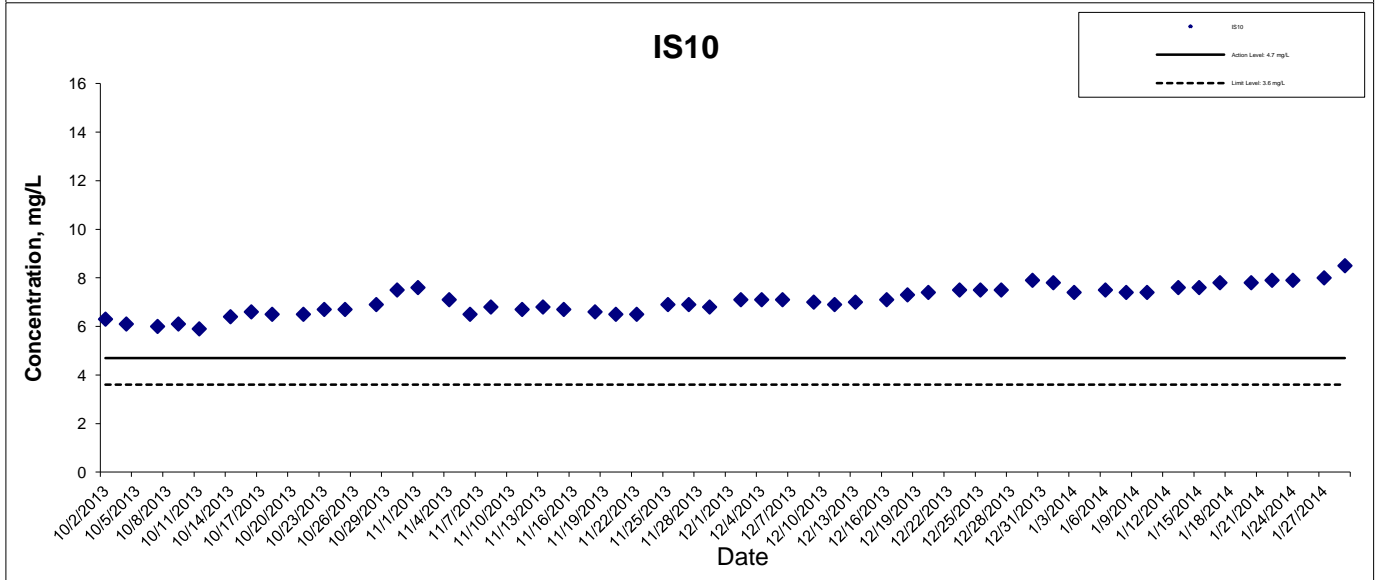
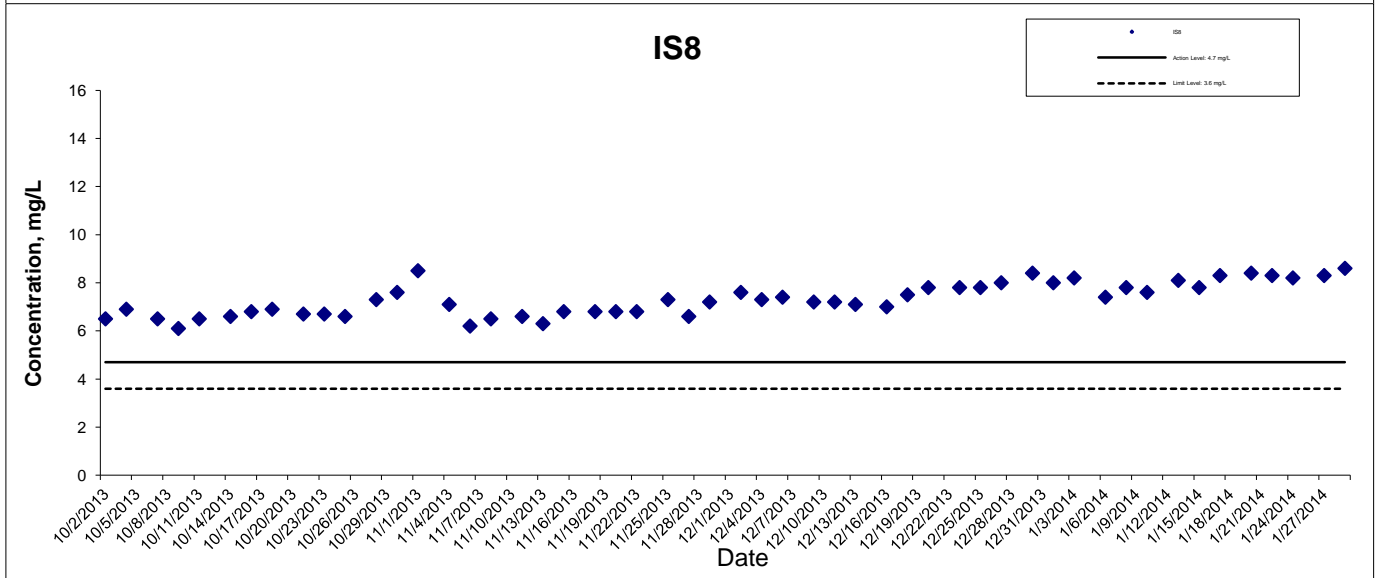
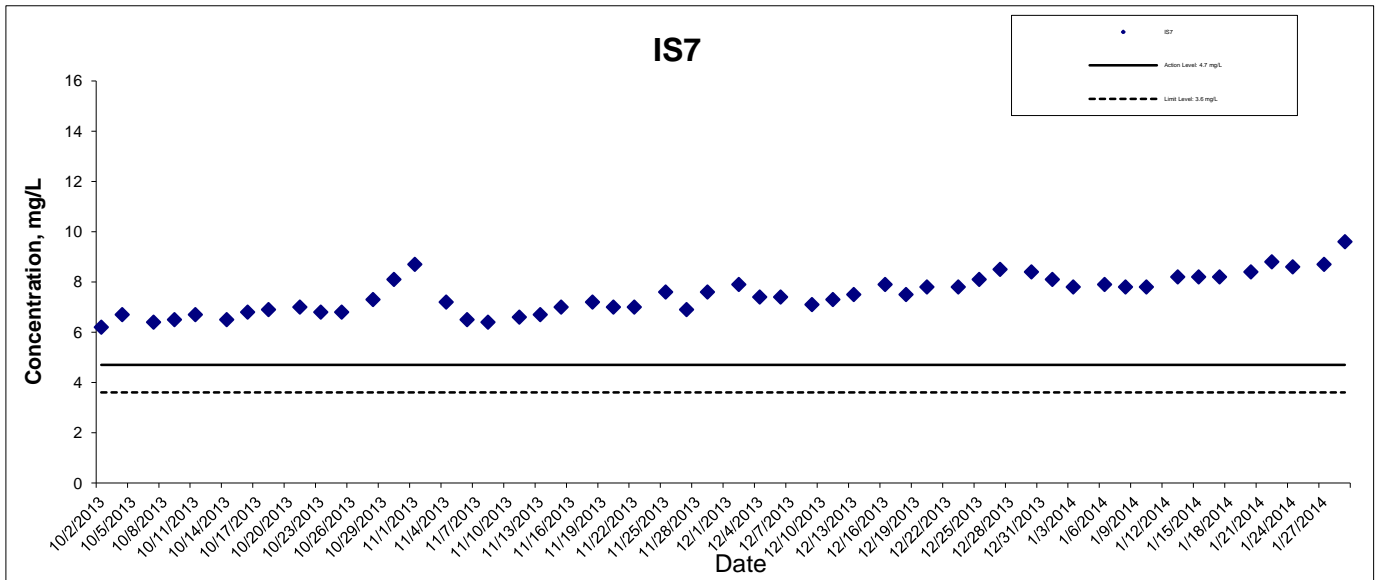
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## Dissolved Oxygen (Bottom) at Mid-Ebb Tide



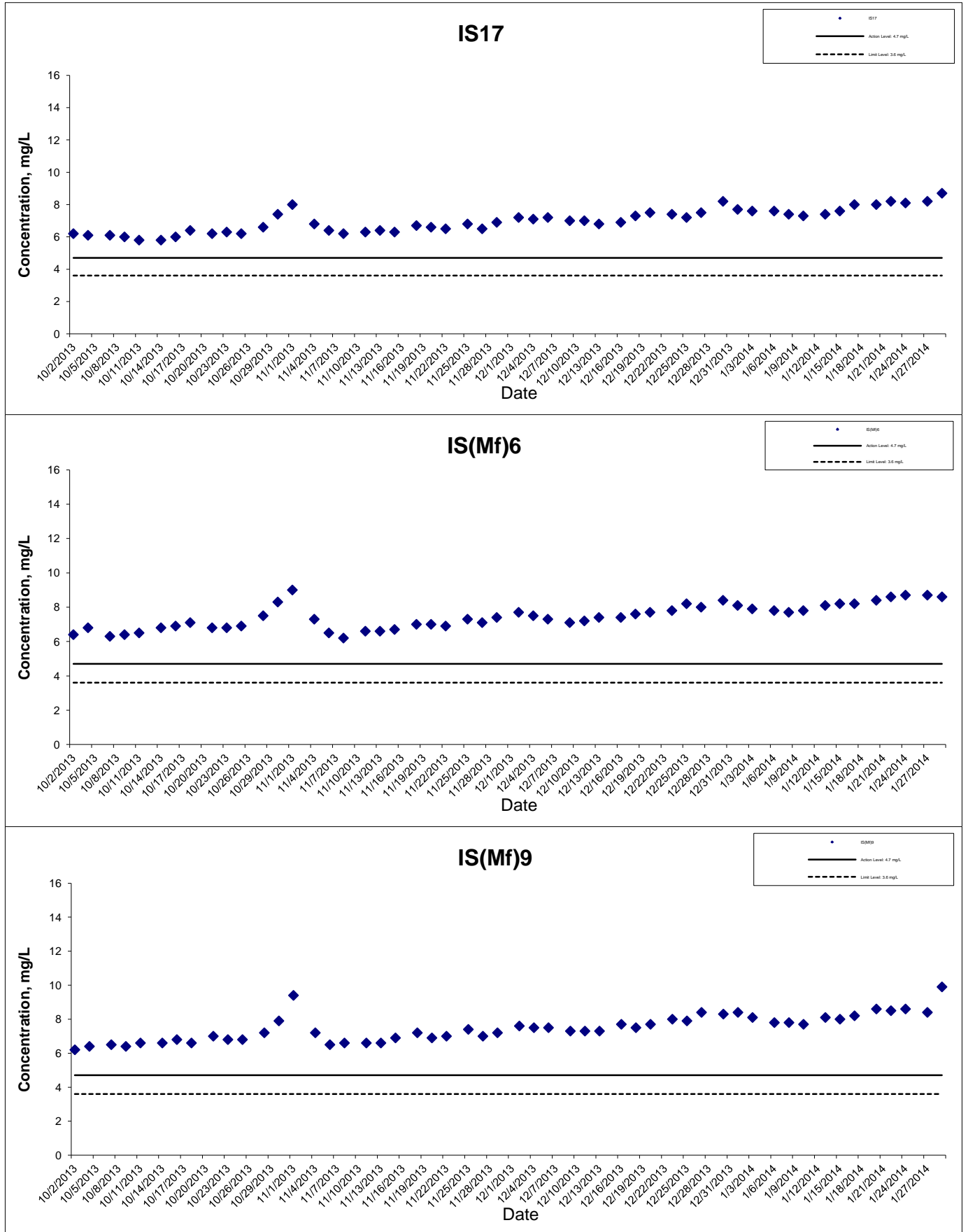
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## Dissolved Oxygen (Bottom) at Mid-Ebb Tide



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## Dissolved Oxygen (Bottom) at Mid-Ebb Tide



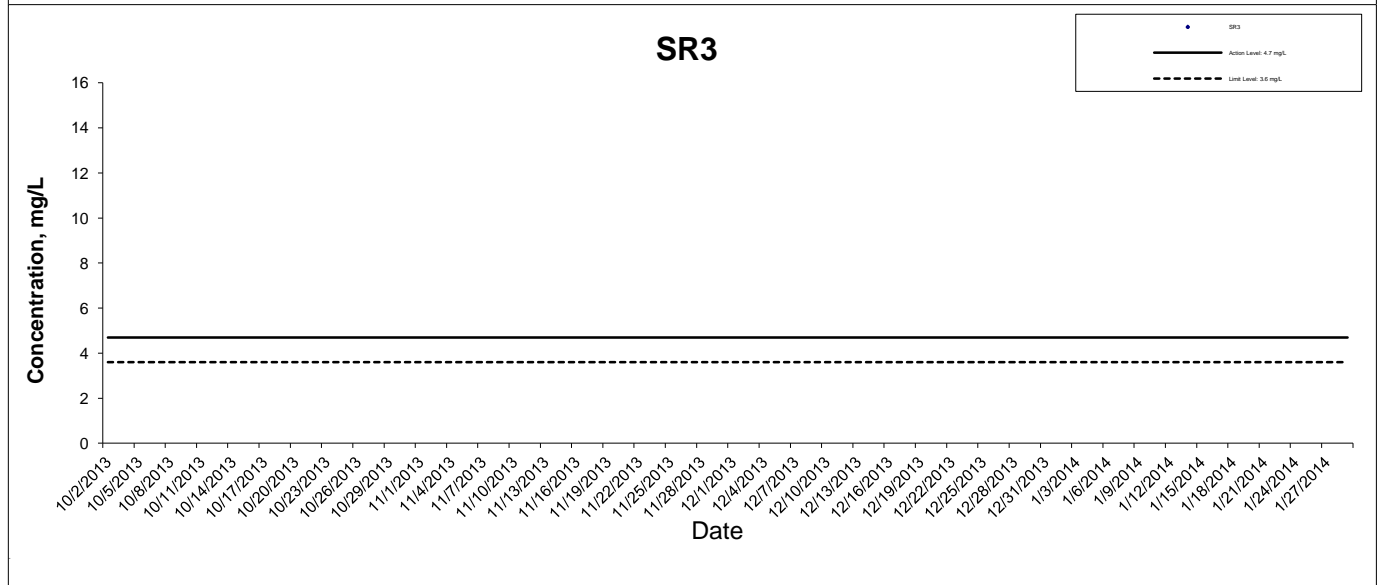
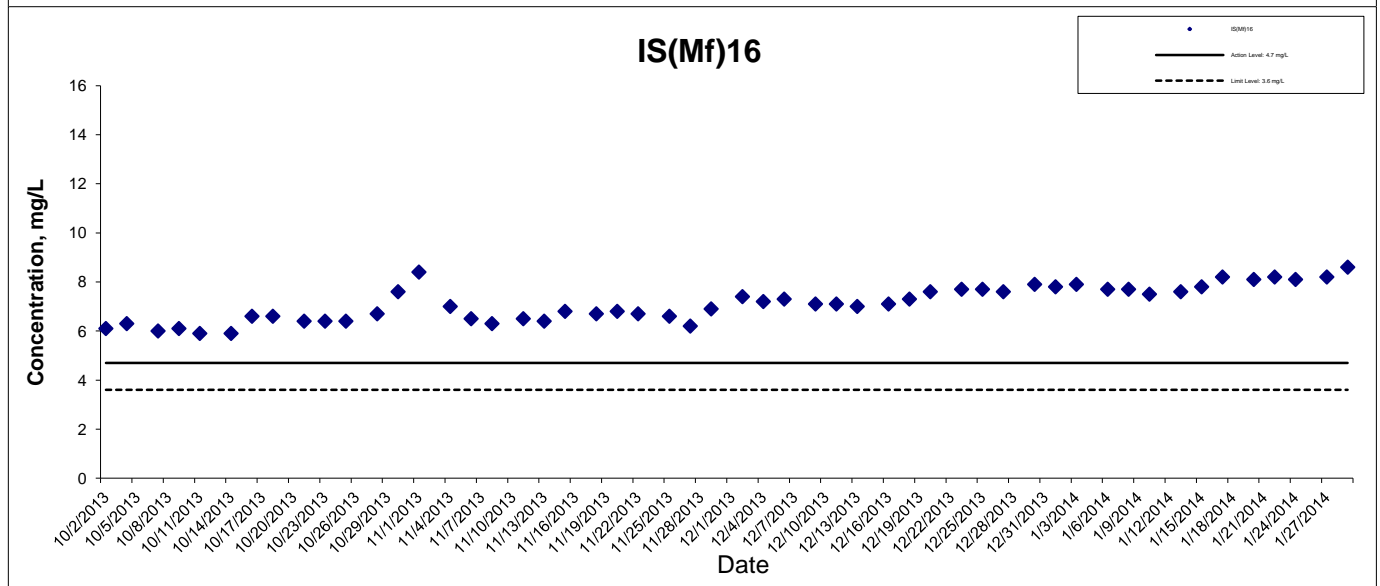
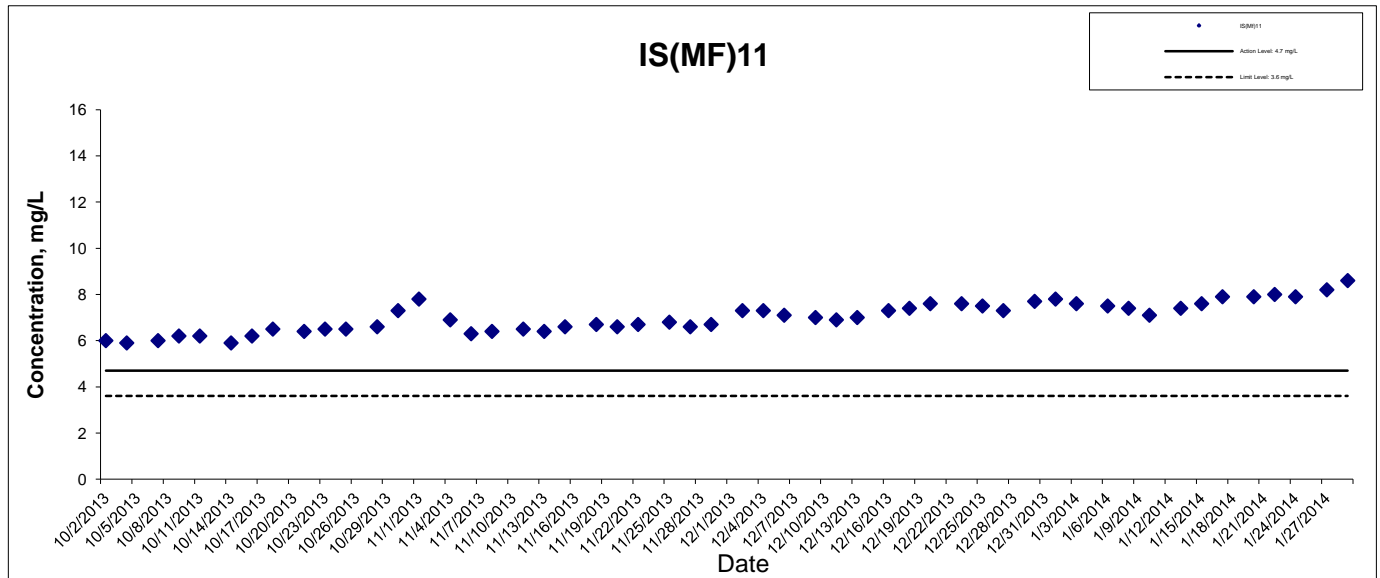
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HONG KONG - ZHUHAI - MACAO BRIDGE  
 HONG KONG BOUNDARY CROSSING FACILITIES  
 - RECLAMATION WORKS

Graphical Presentation of Impact Water Quality  
 Monitoring Results

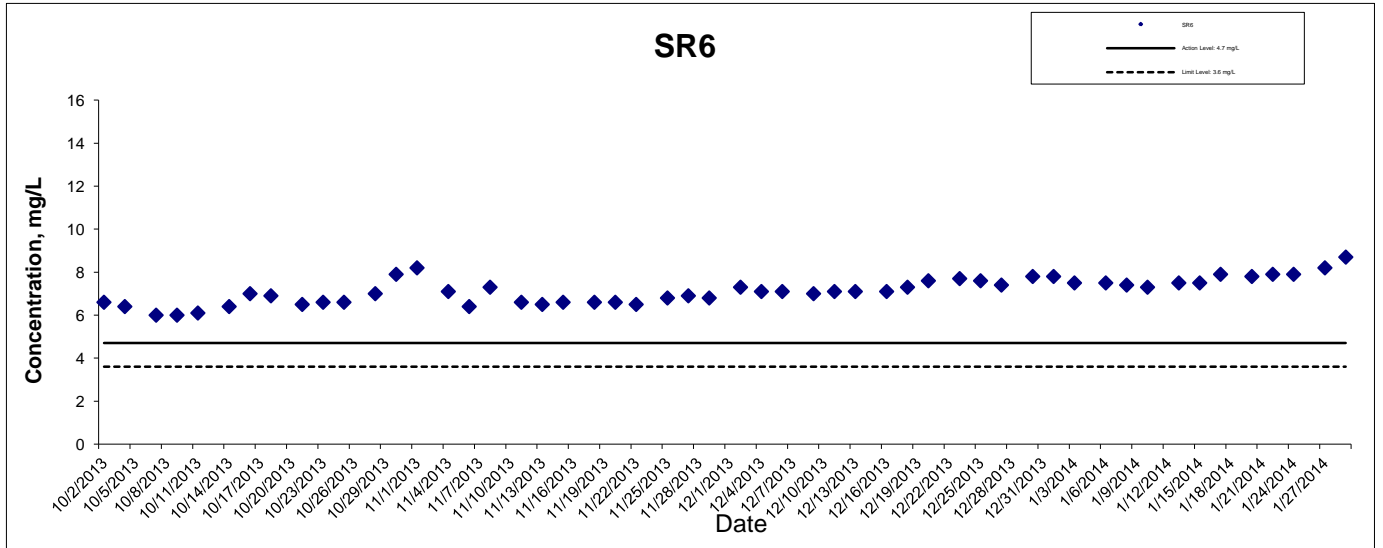
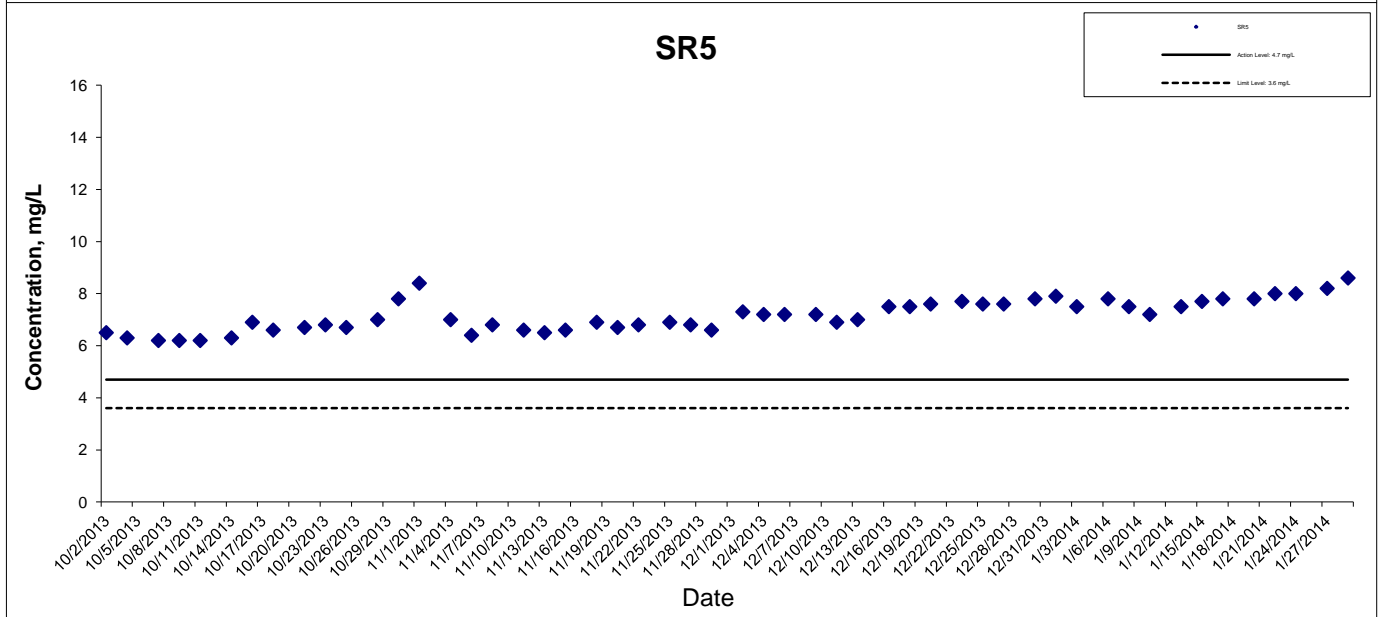
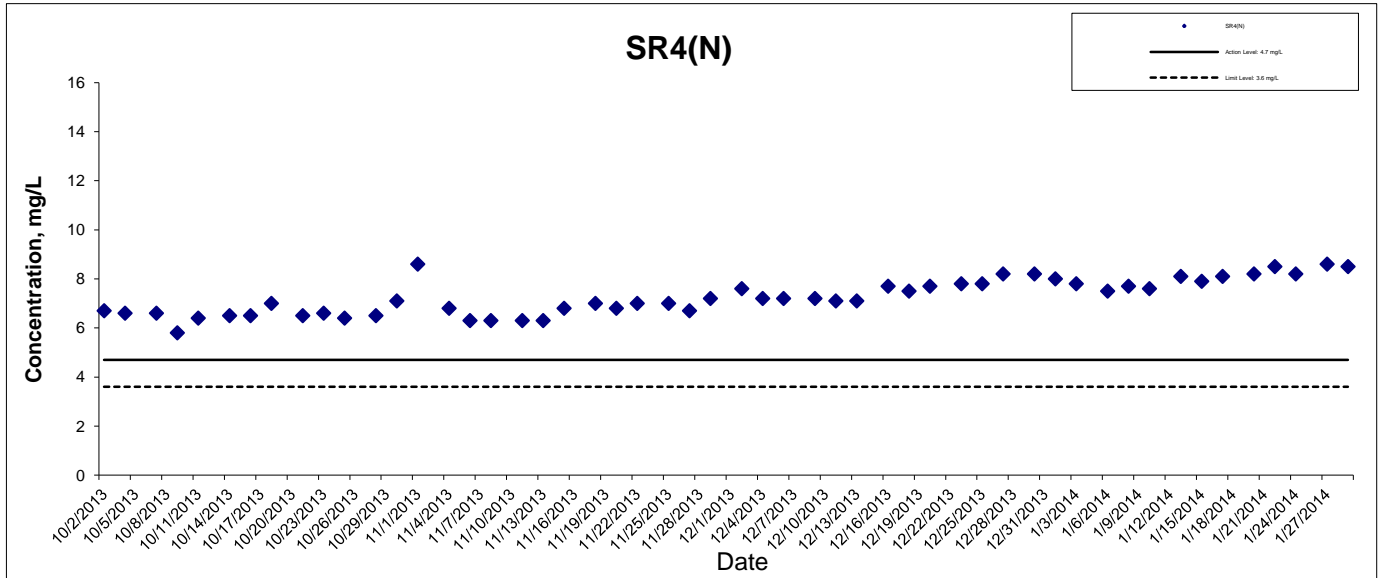


## Dissolved Oxygen (Bottom) at Mid-Ebb Tide



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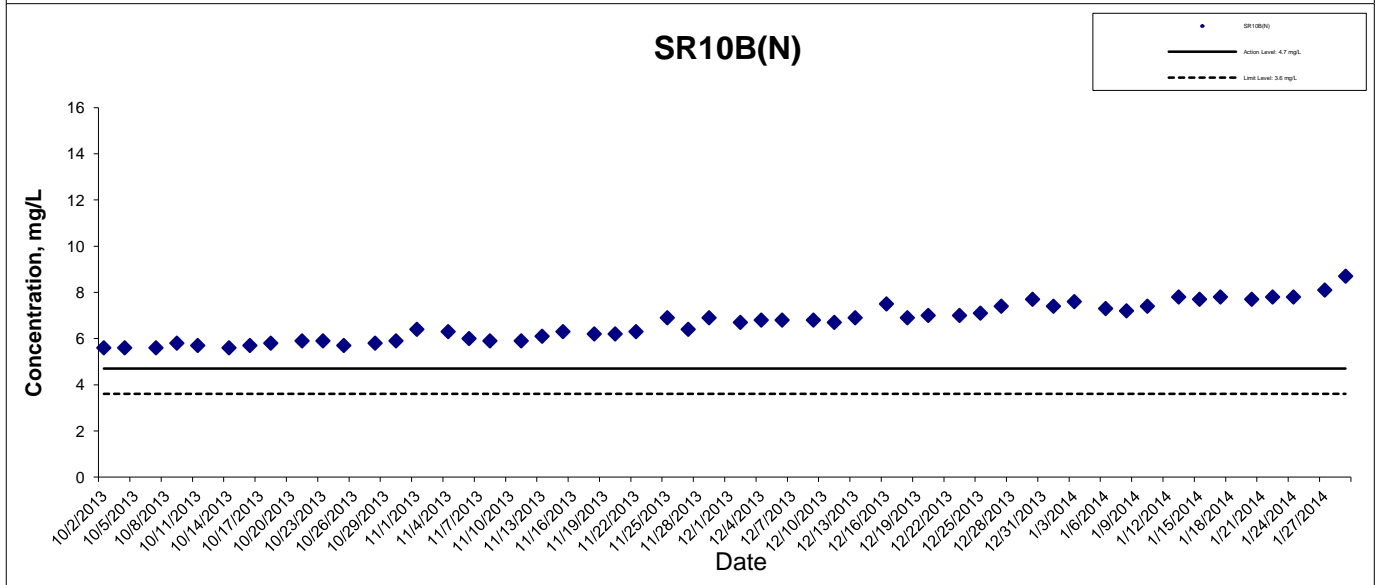
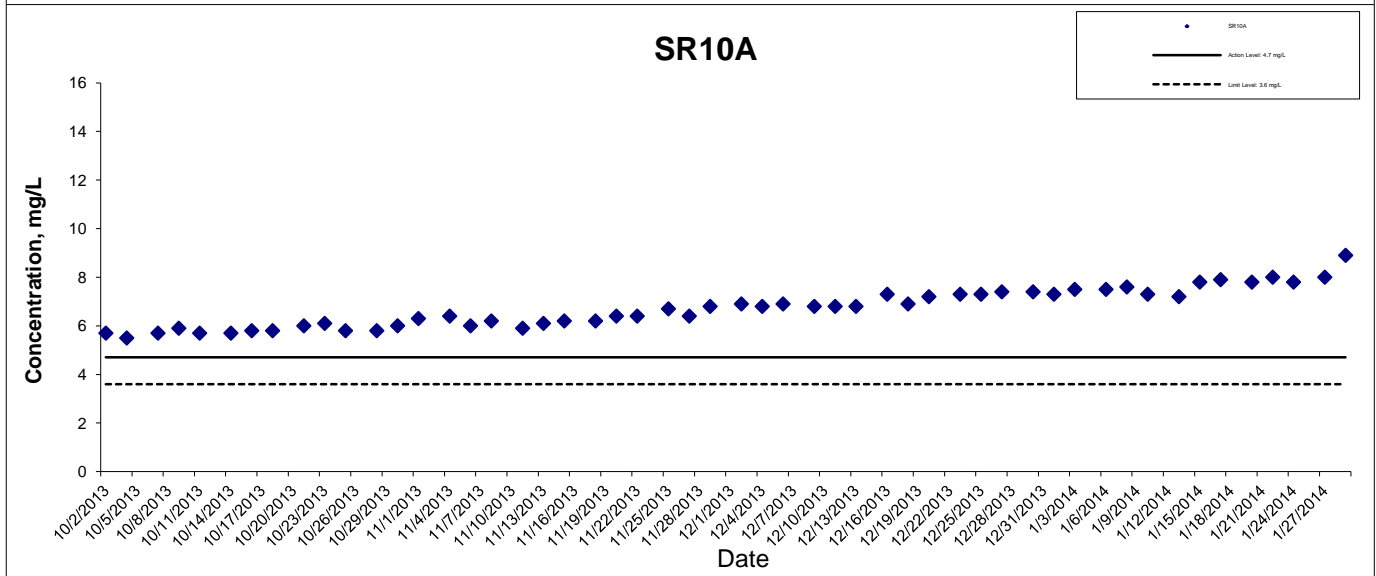
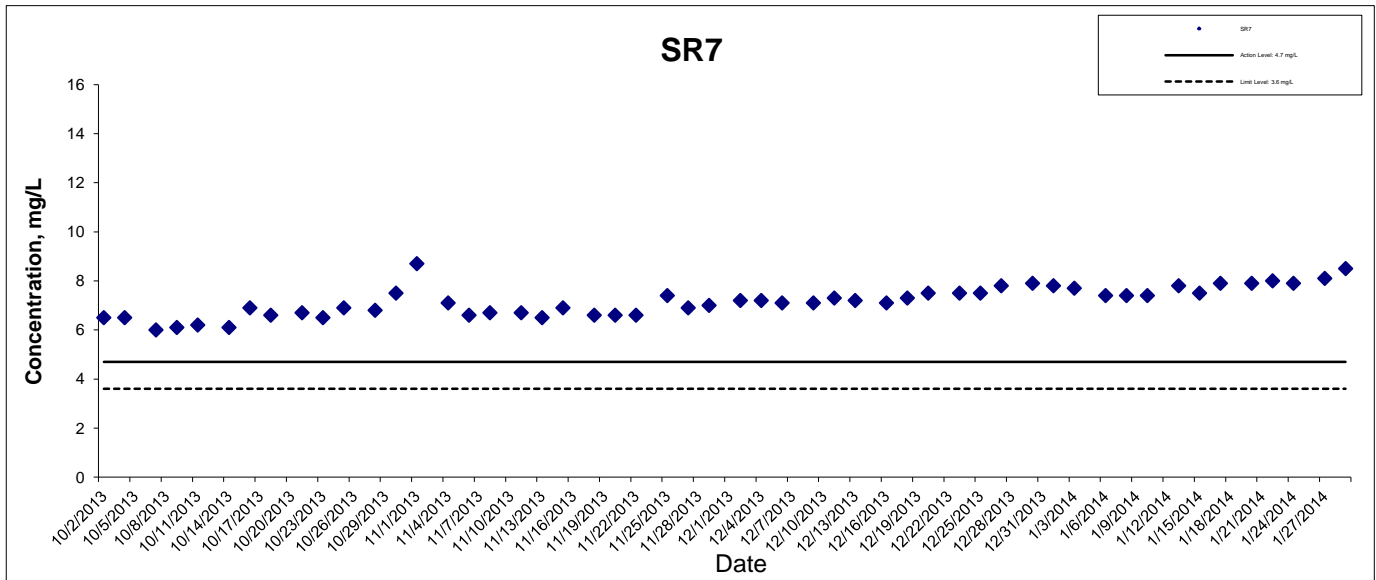
## Dissolved Oxygen (Bottom) at Mid-Ebb Tide



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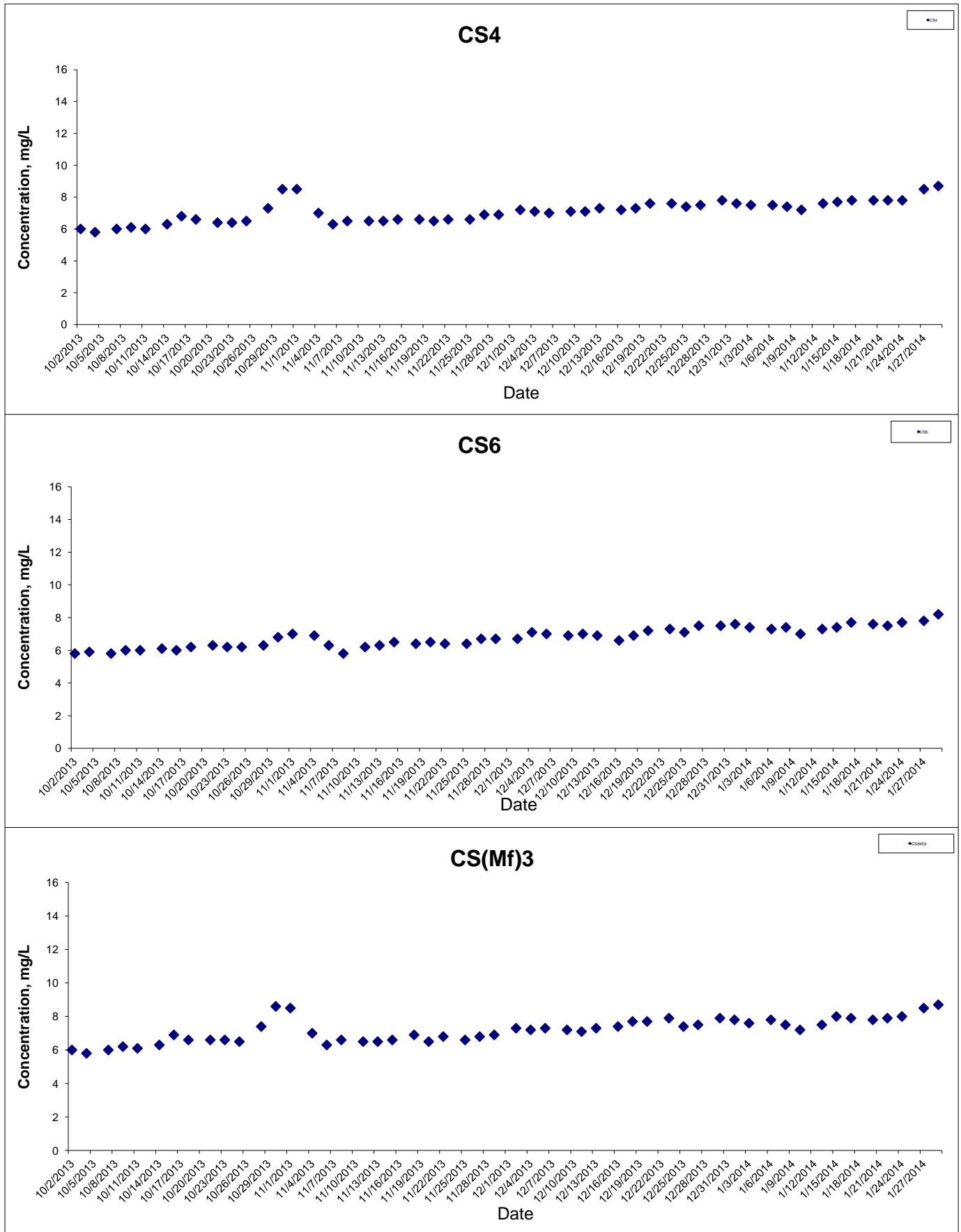


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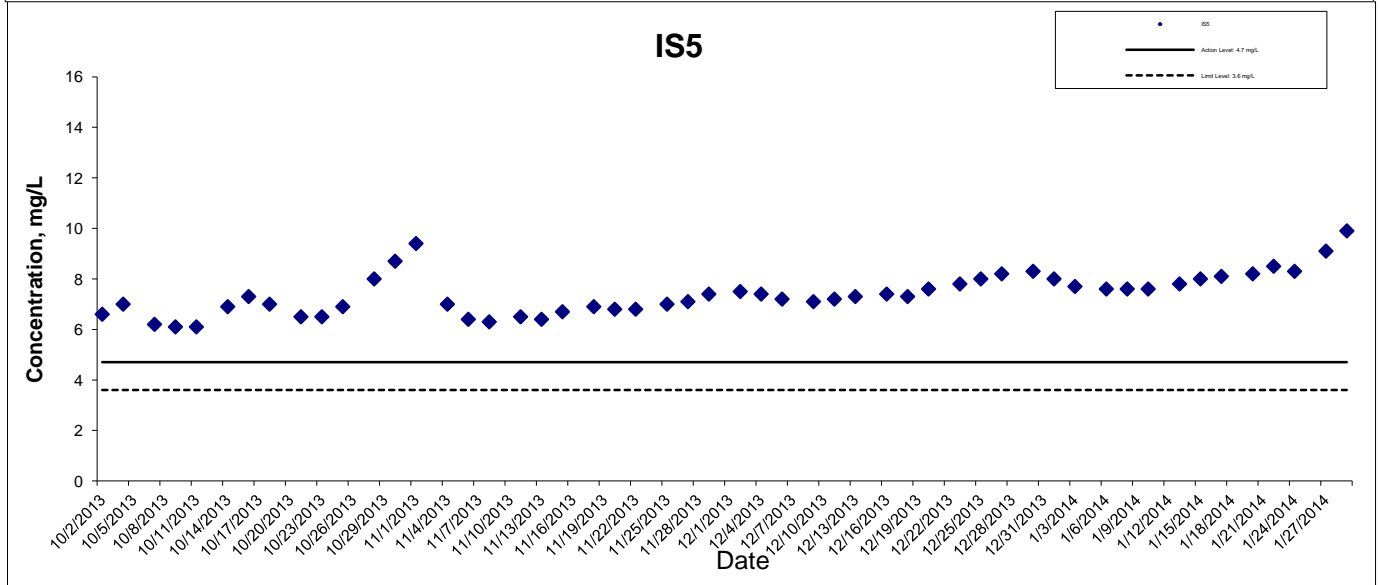
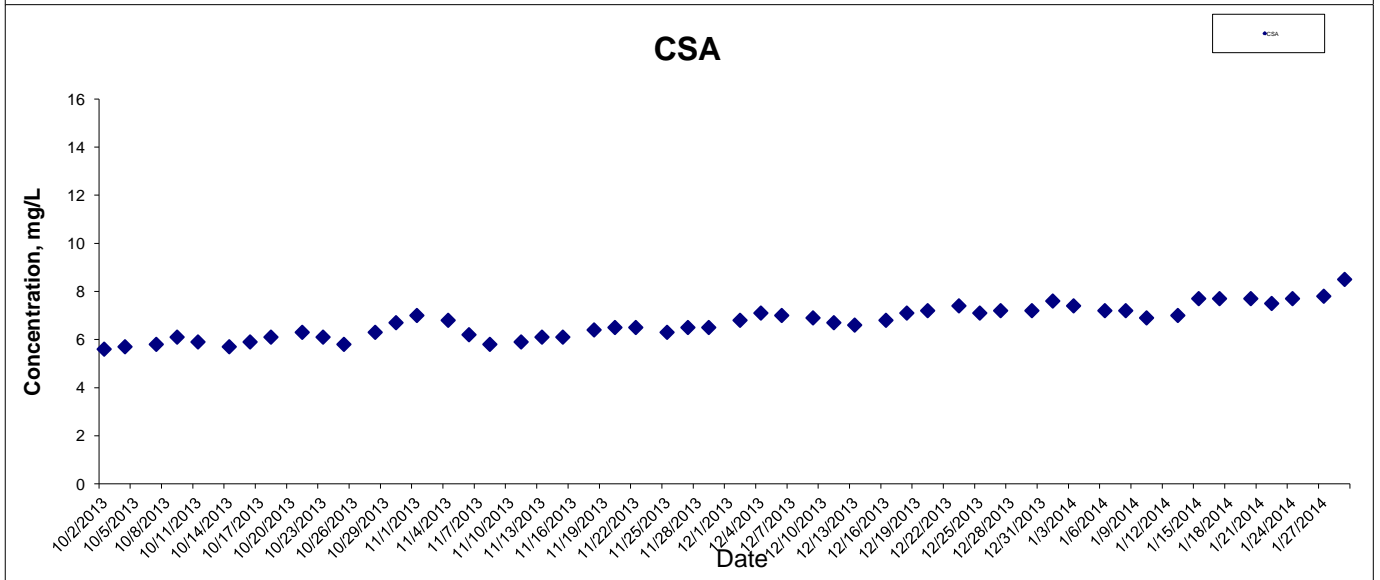
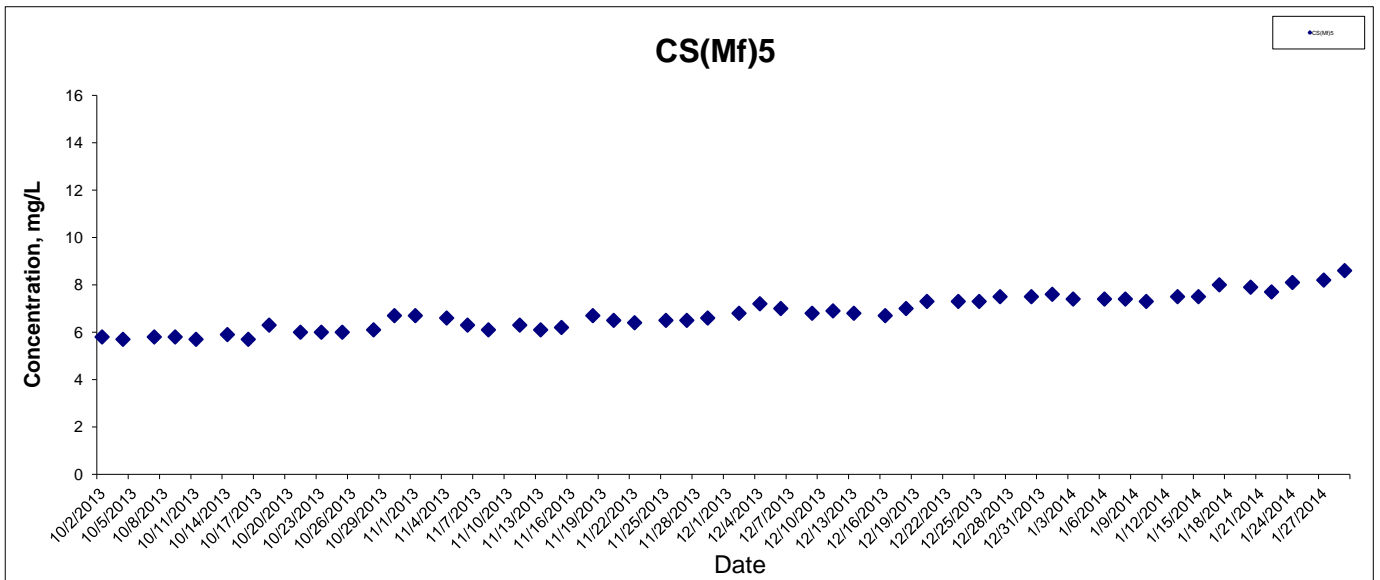
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## Dissolved Oxygen (Bottom) at Mid-Flood Tide



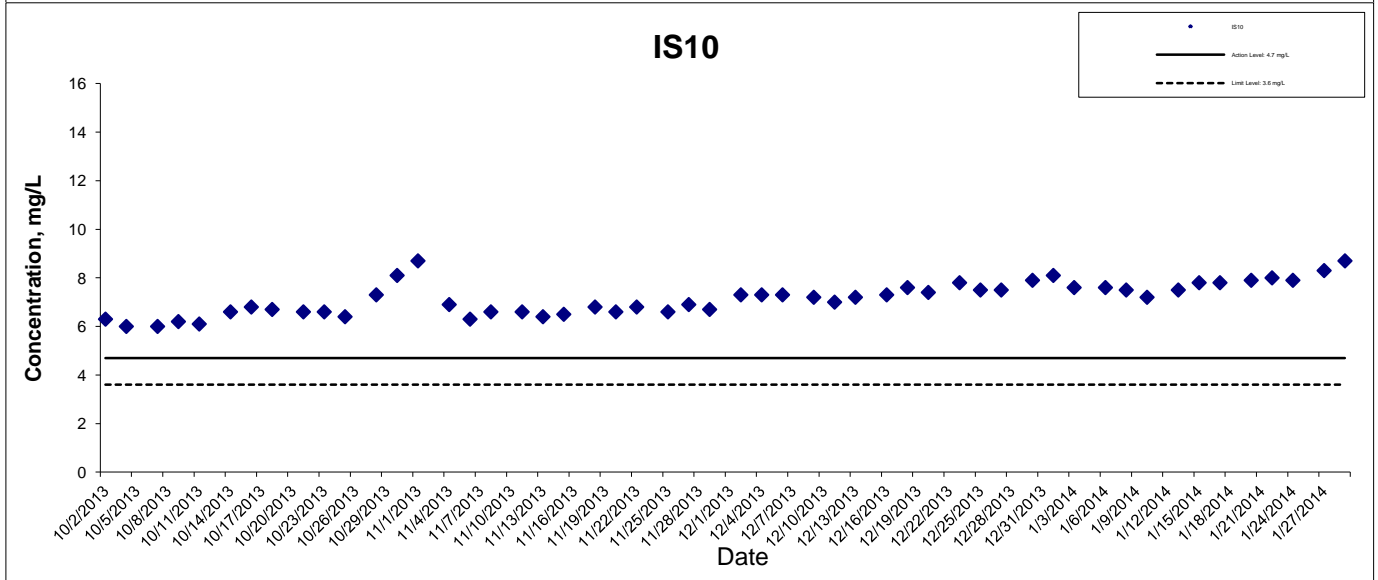
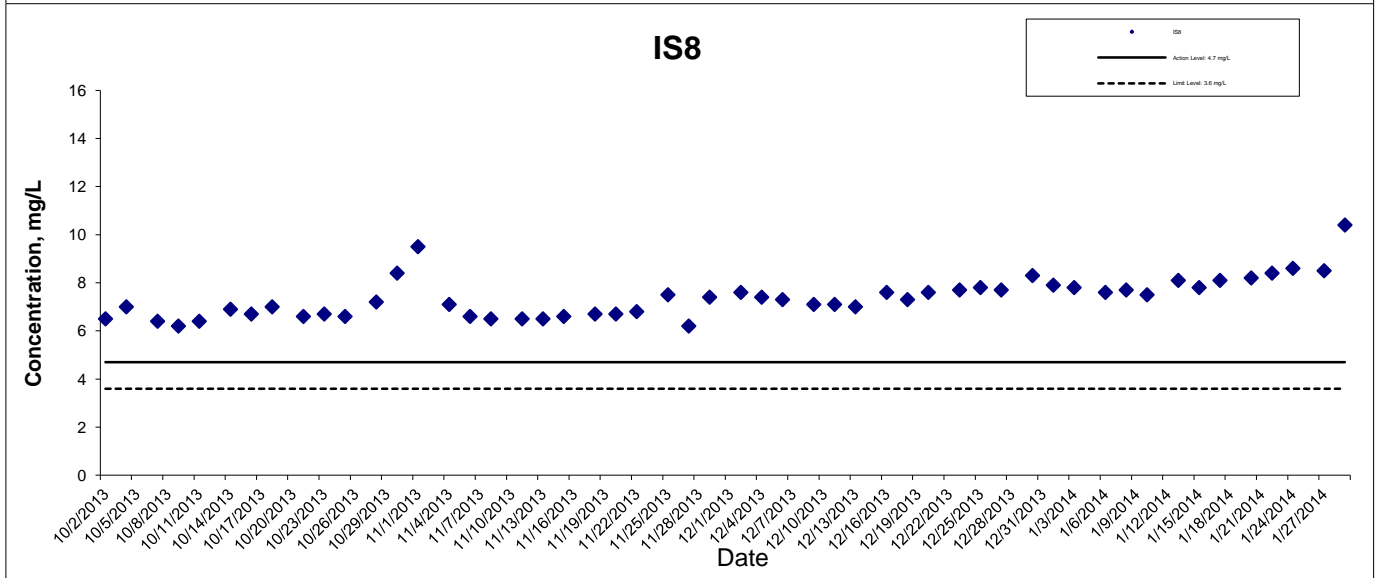
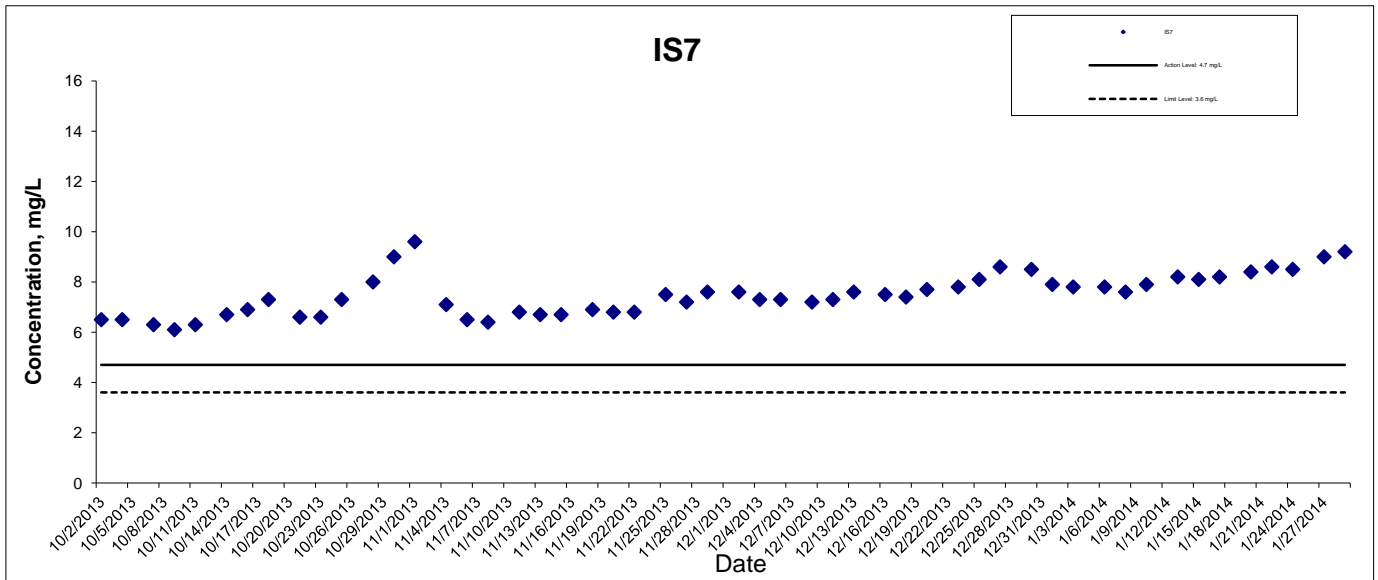
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## Dissolved Oxygen (Bottom) at Mid-Flood Tide



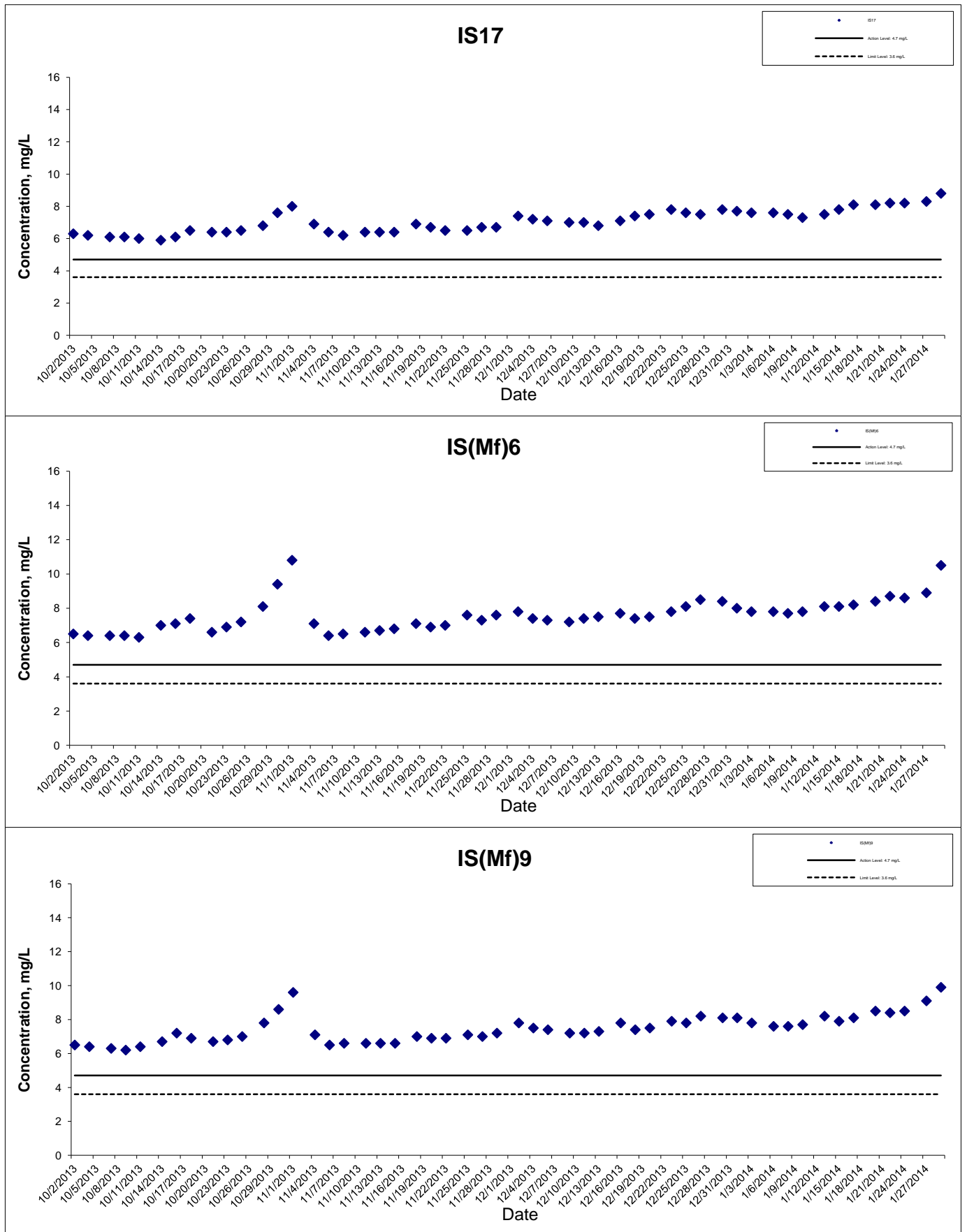
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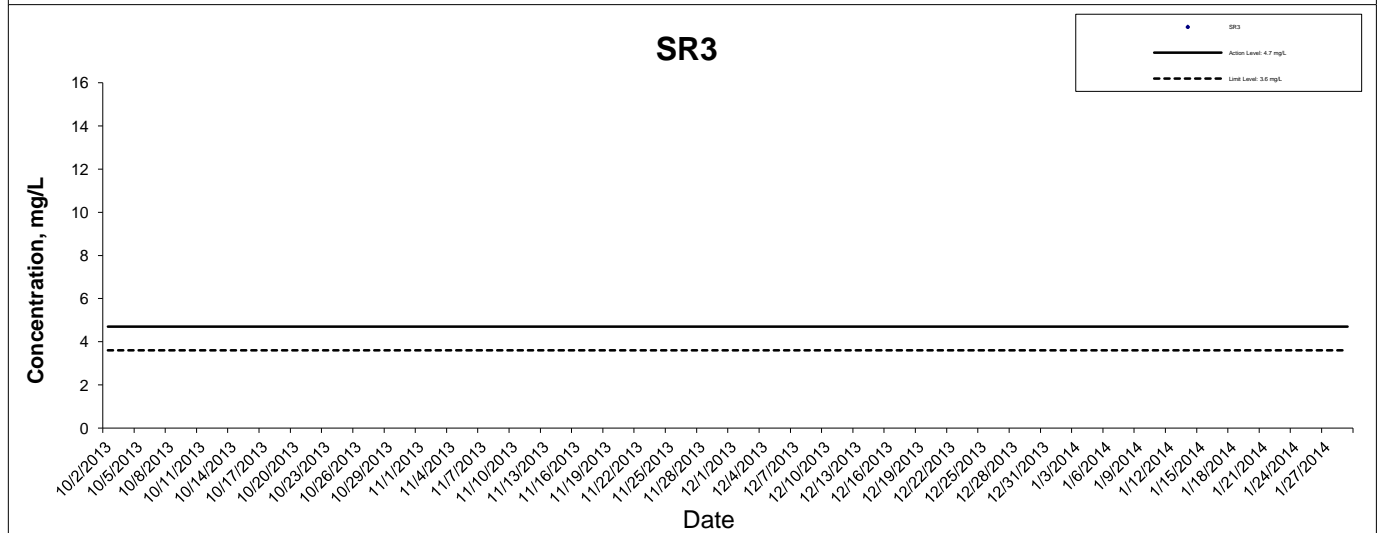
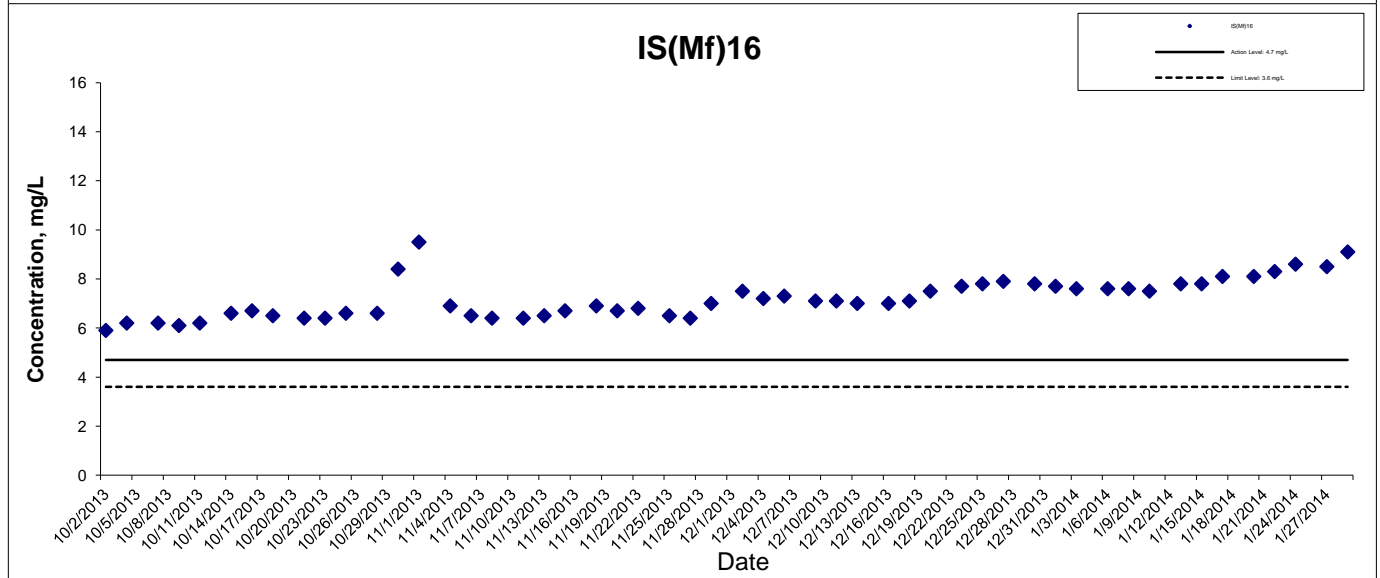
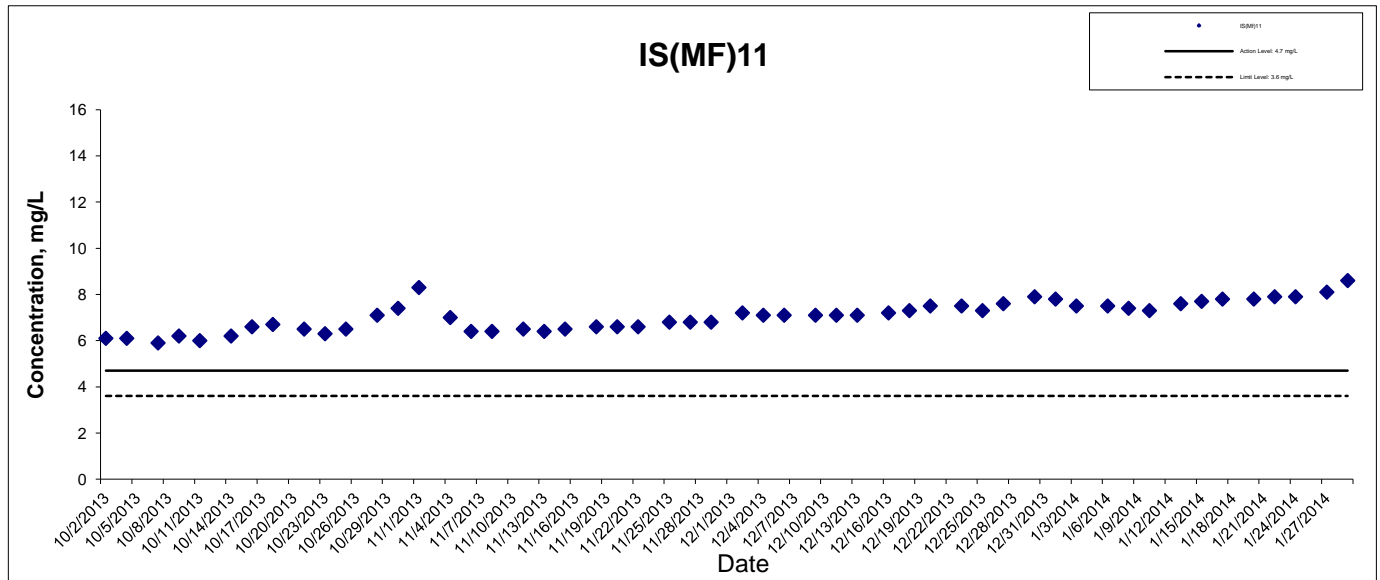
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## Dissolved Oxygen (Bottom) at Mid-Flood Tide



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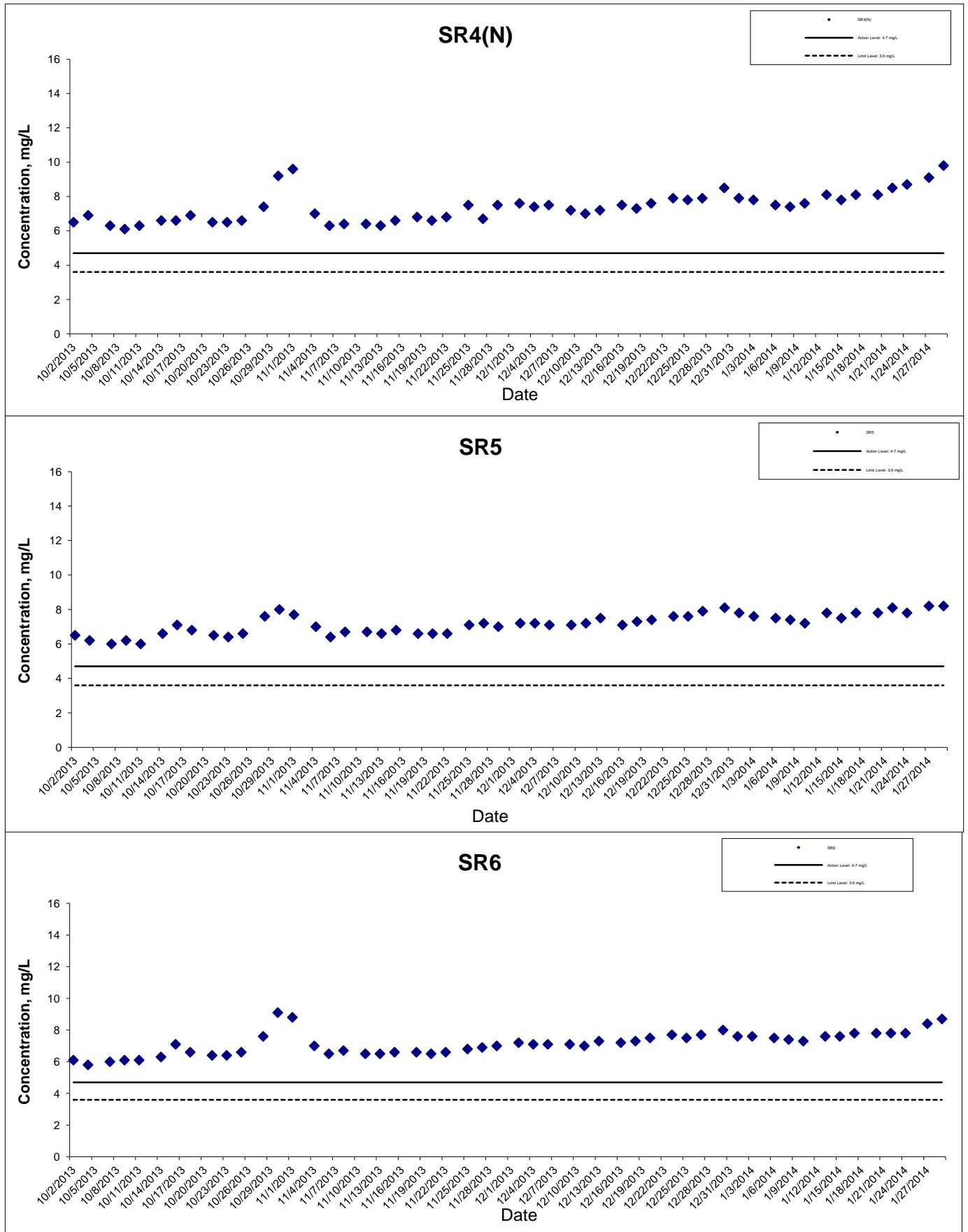
## Dissolved Oxygen (Bottom) at Mid-Flood Tide



As the measured water depths were less than 3 m during all monitoring days, water samples are collected at mid-depth only.

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### Dissolved Oxygen (Bottom) at Mid-Flood Tide



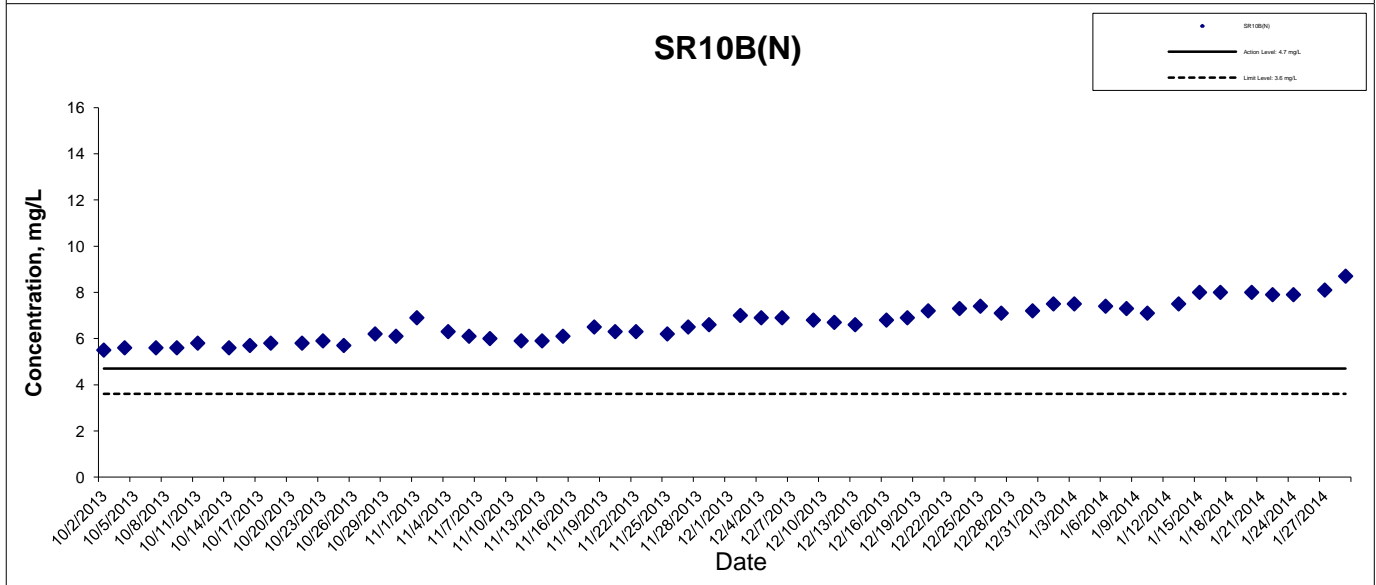
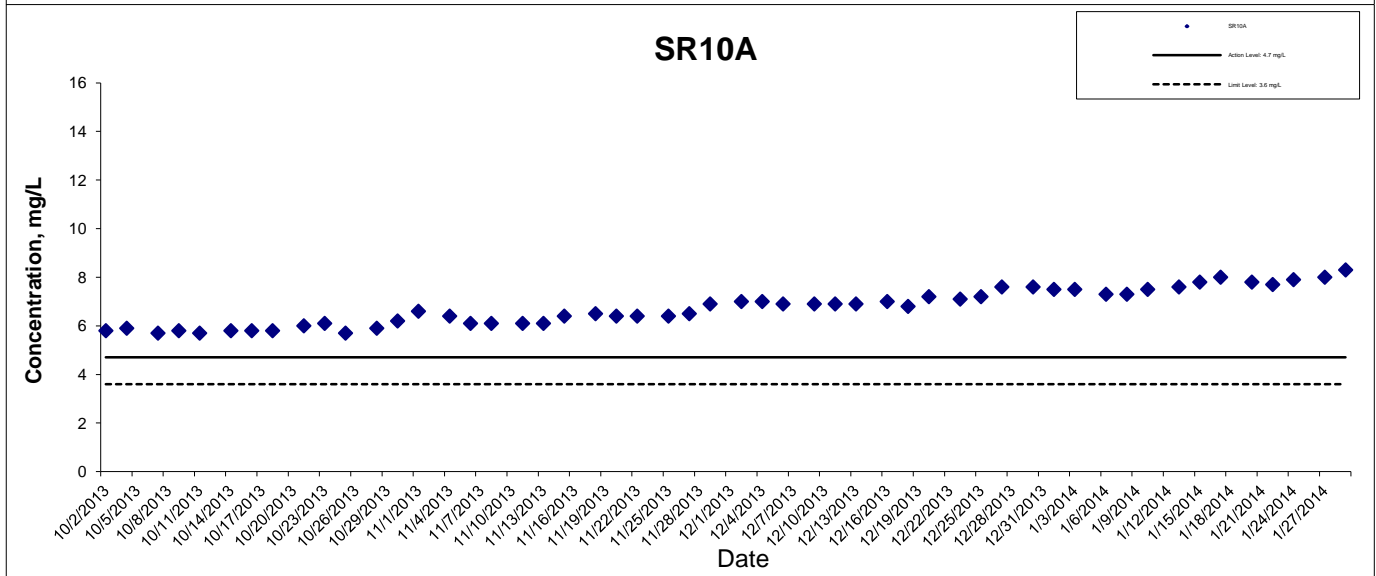
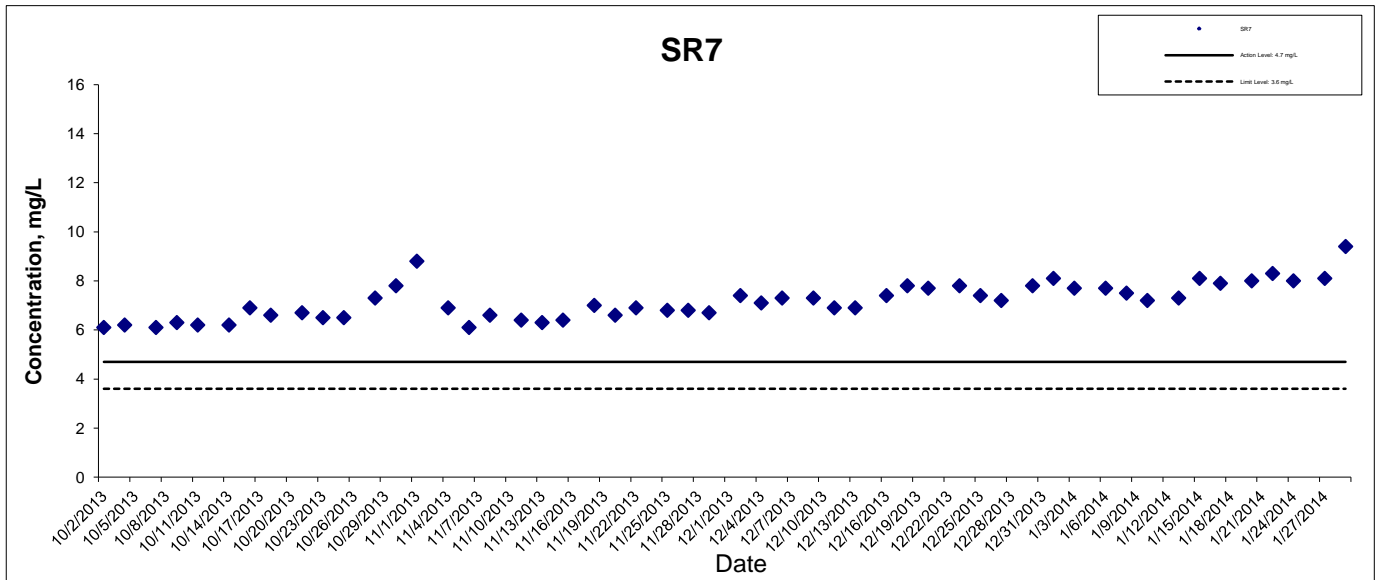
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HONG KONG - ZHUHAI - MACAO BRIDGE  
 HONG KONG BOUNDARY CROSSING FACILITIES  
 - RECLAMATION WORKS

Graphical Presentation of Impact Water Quality  
 Monitoring Results



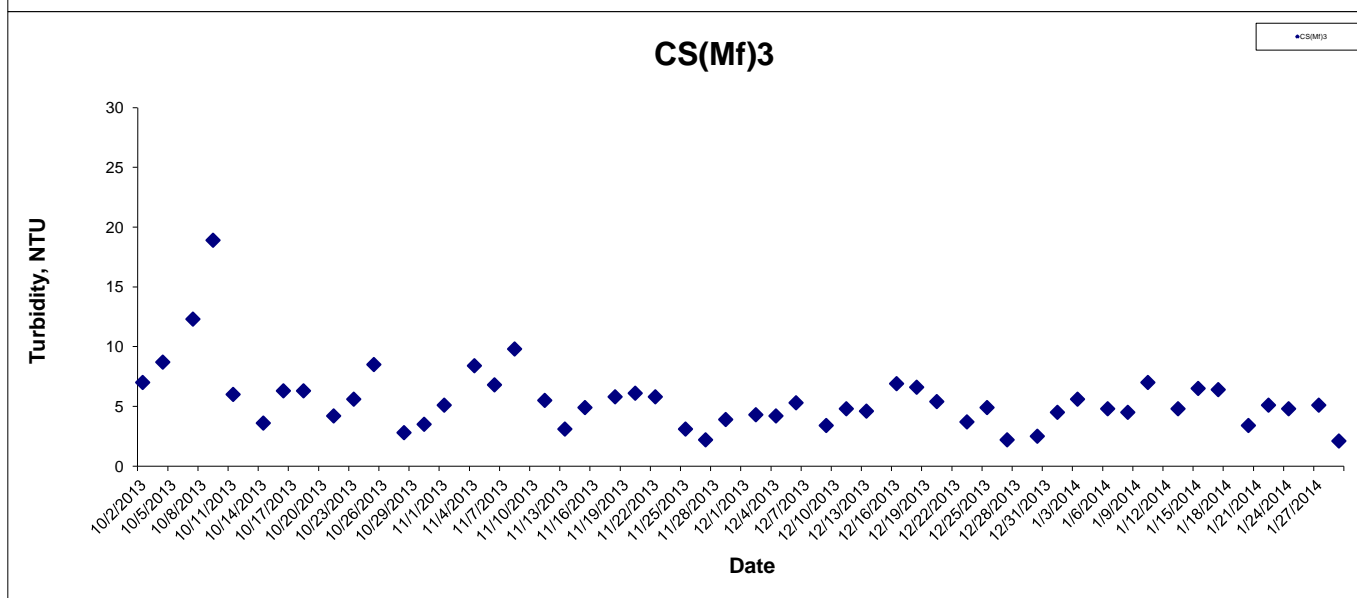
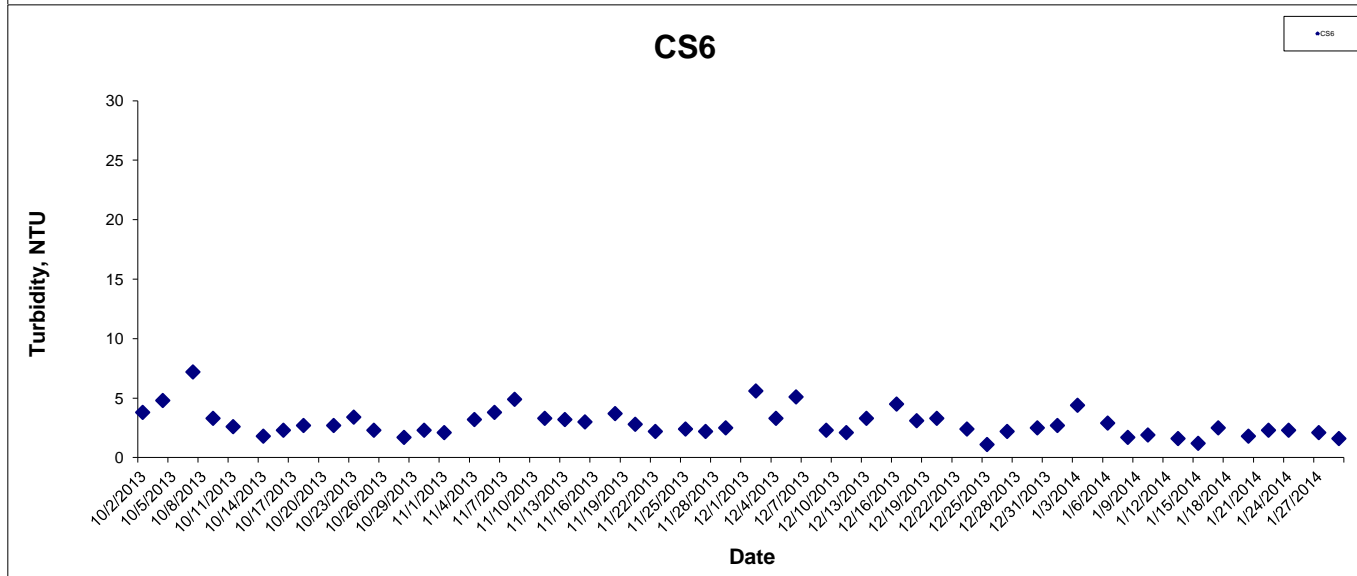
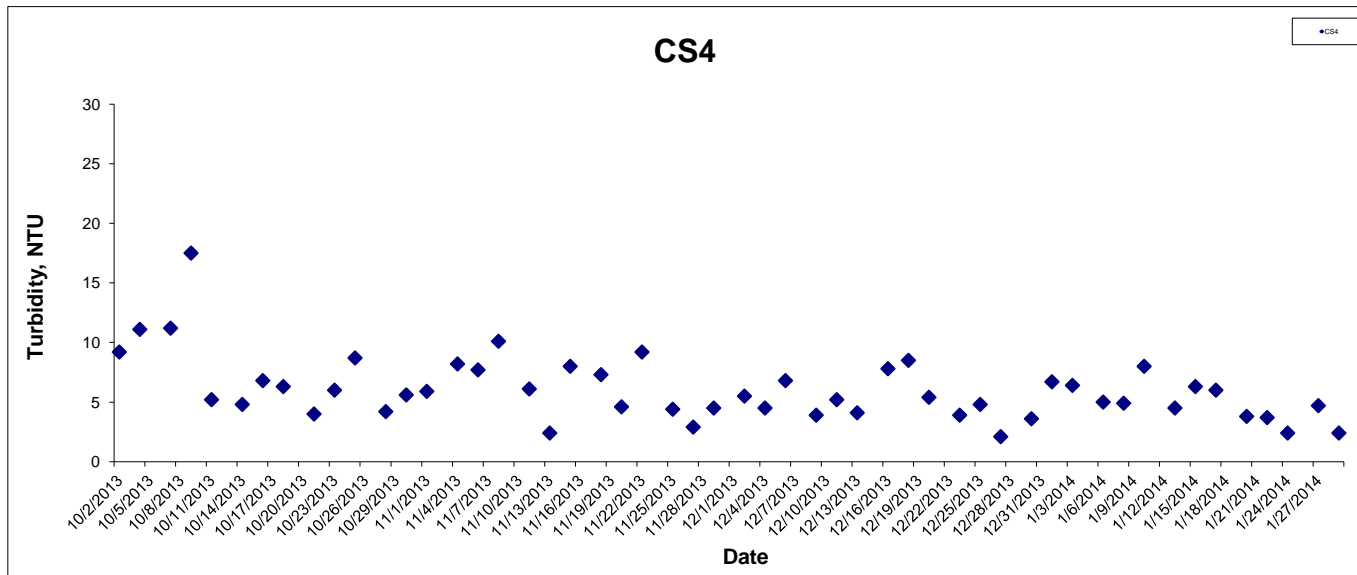
## Dissolved Oxygen (Bottom) at Mid-Flood Tide



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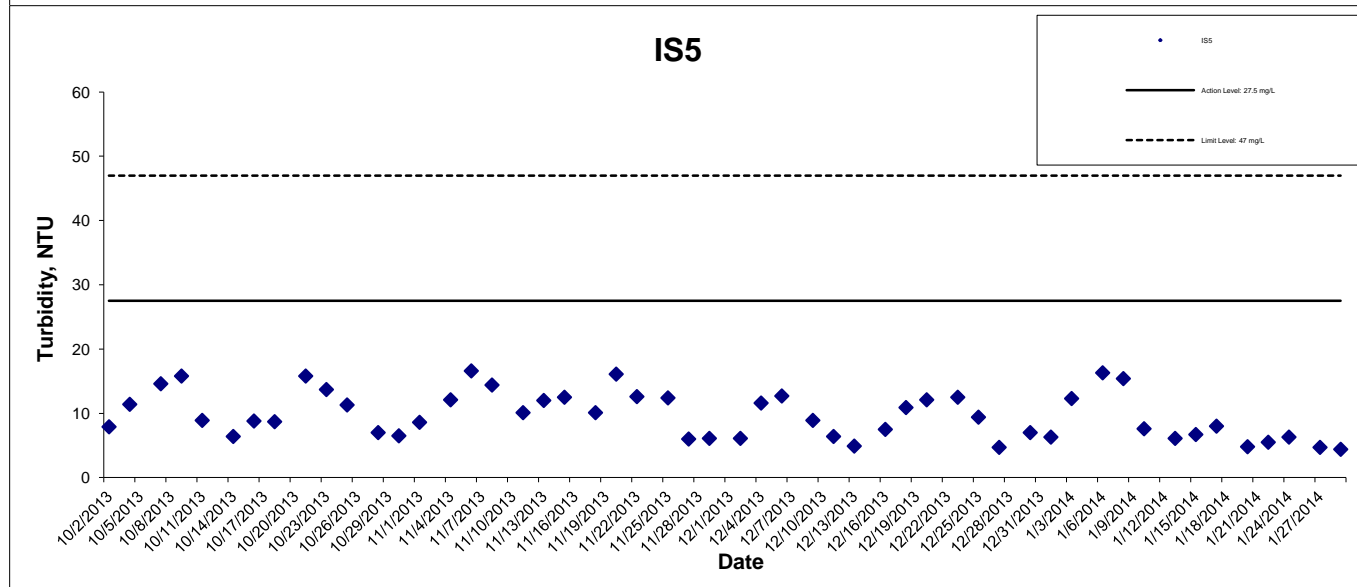
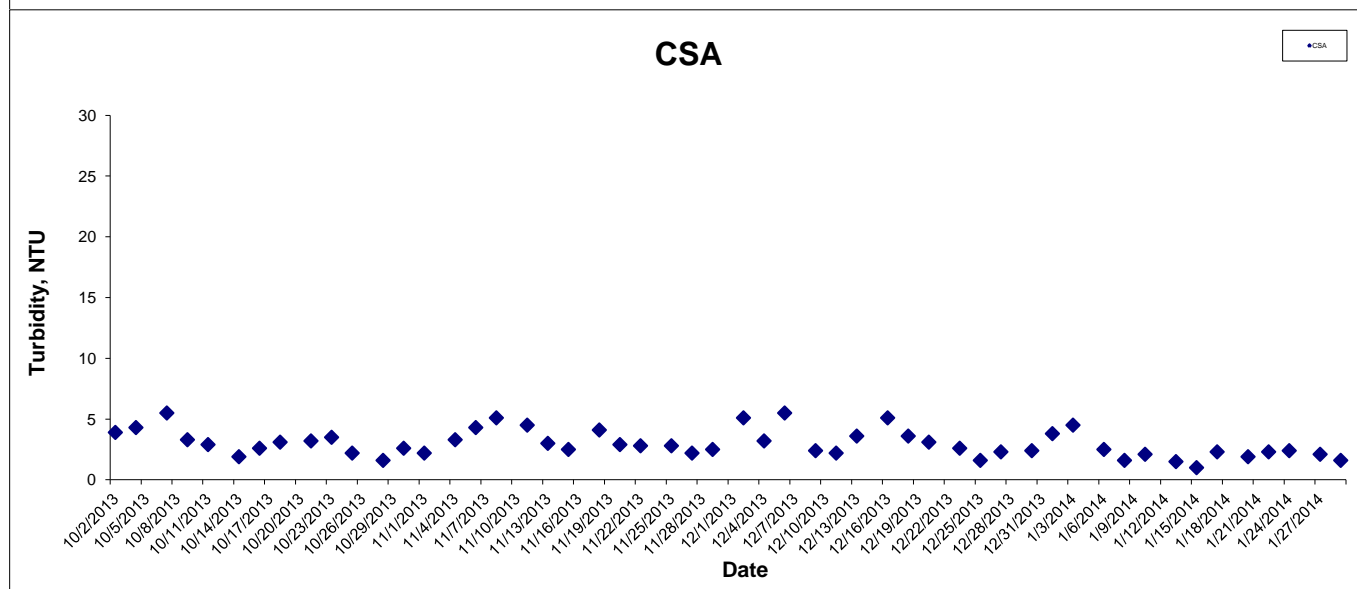
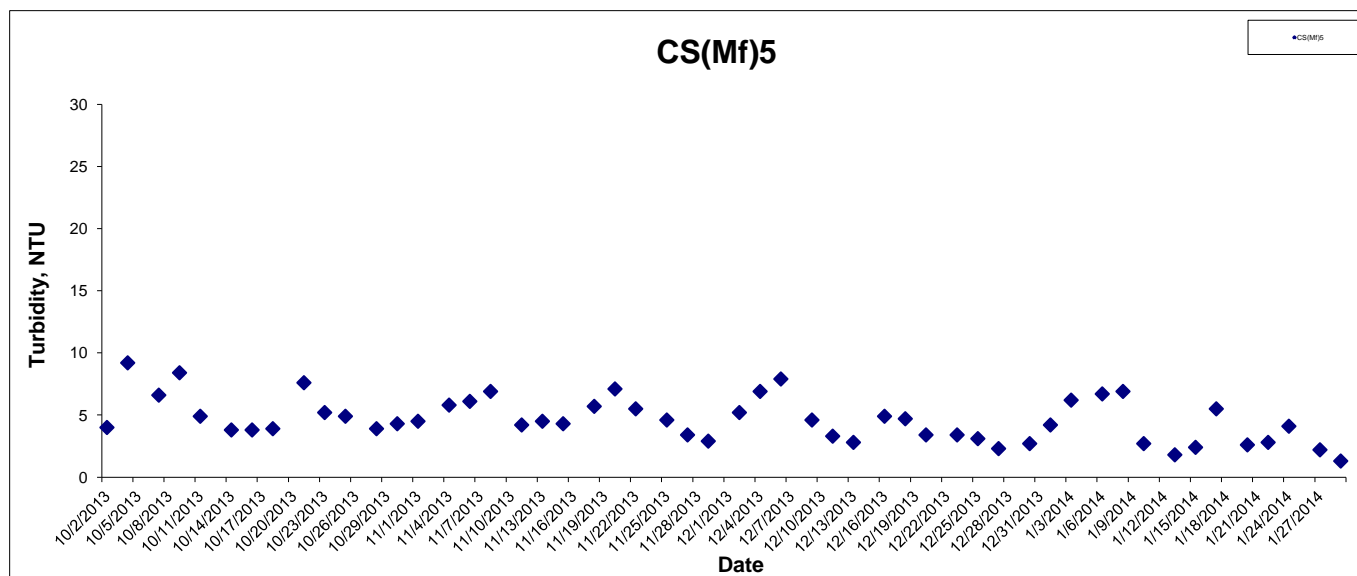


## Turbidity at Mid-Ebb Tide



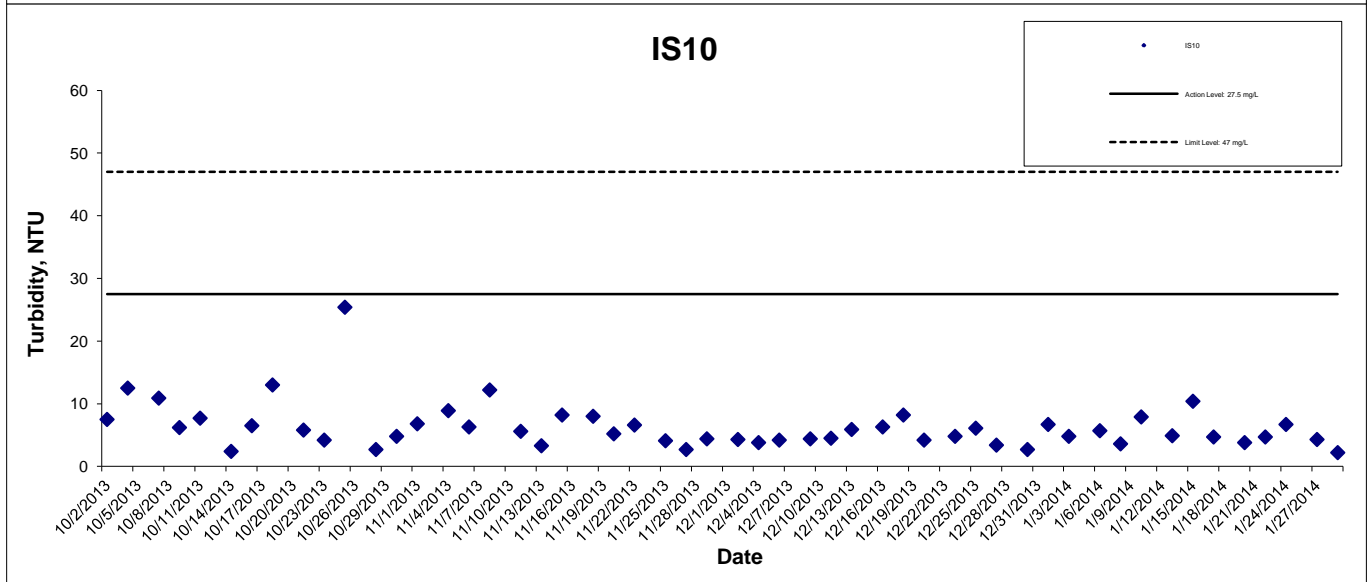
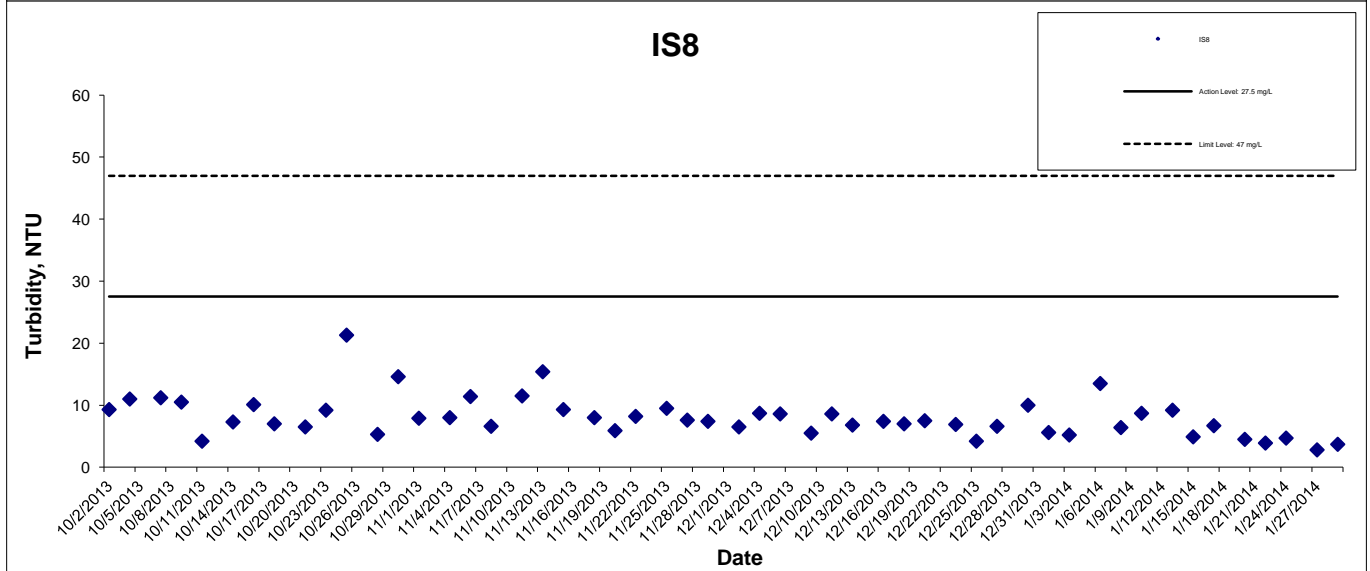
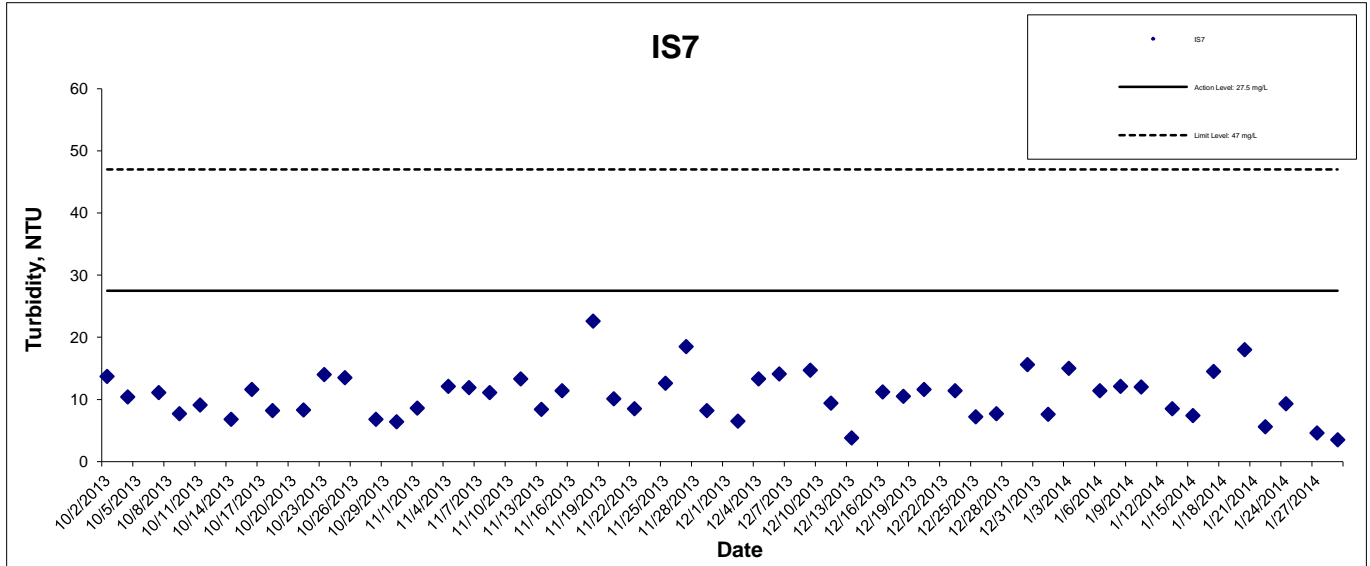
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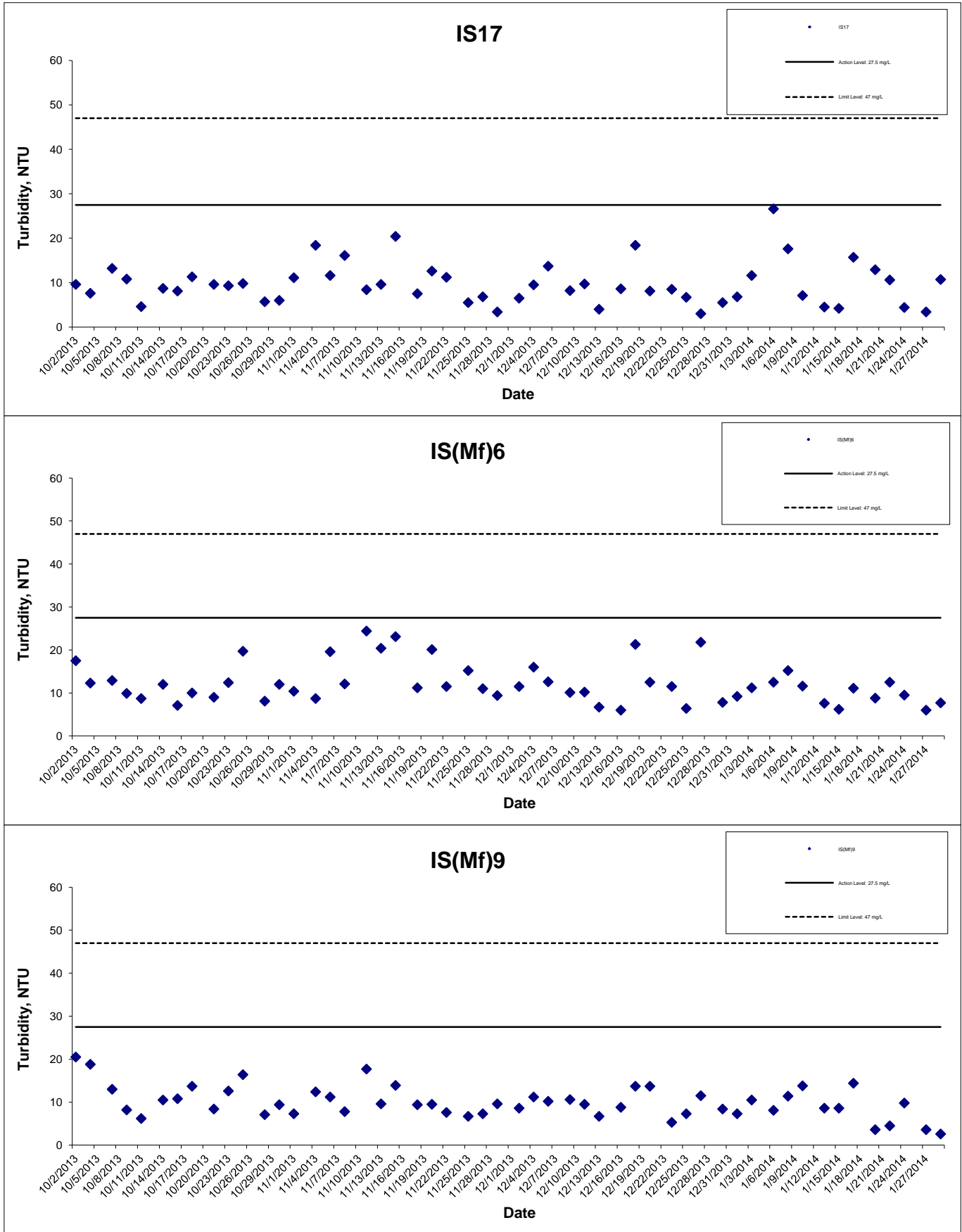
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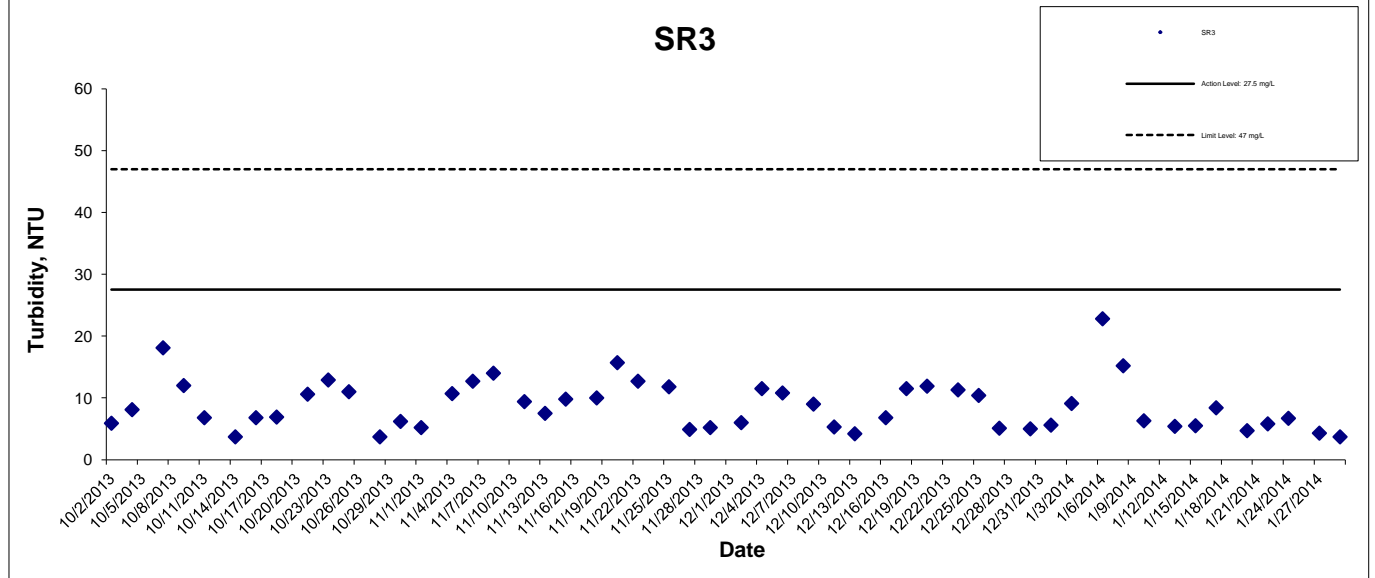
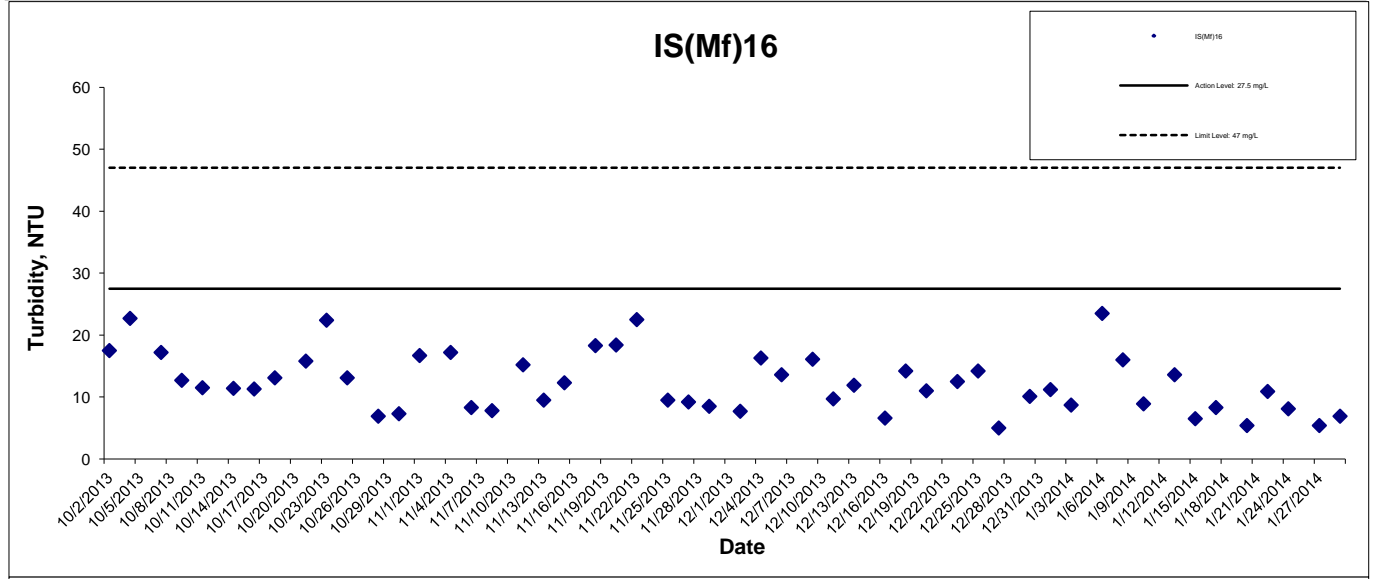
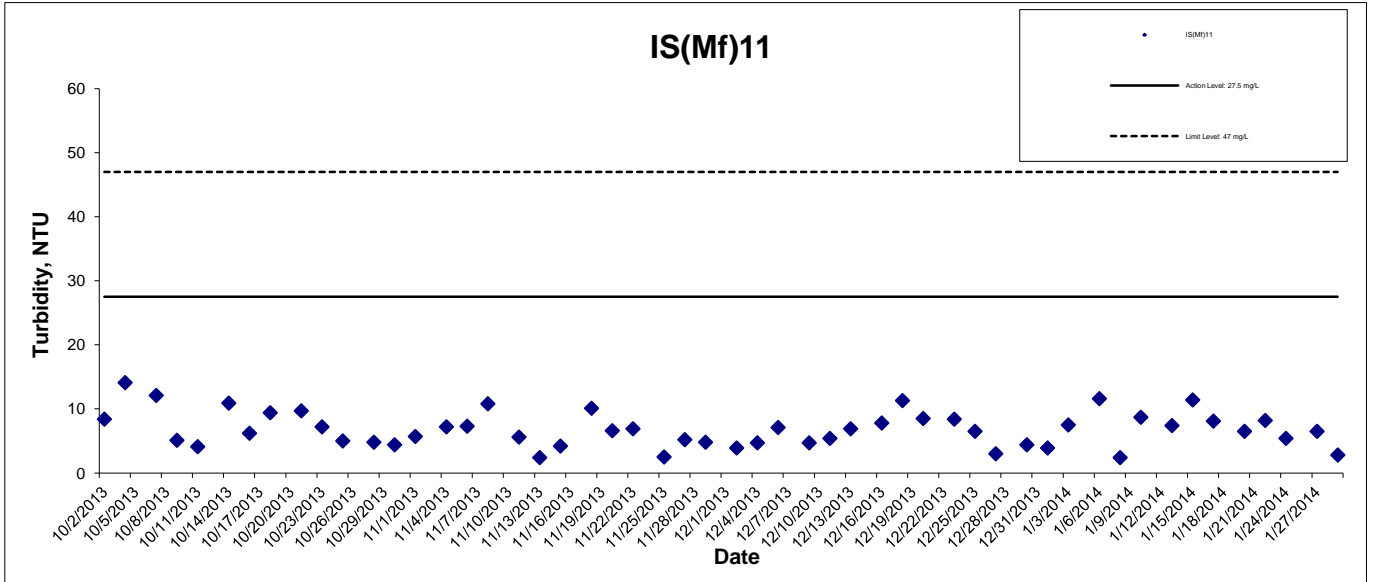
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## Turbidity at Mid-Ebb Tide



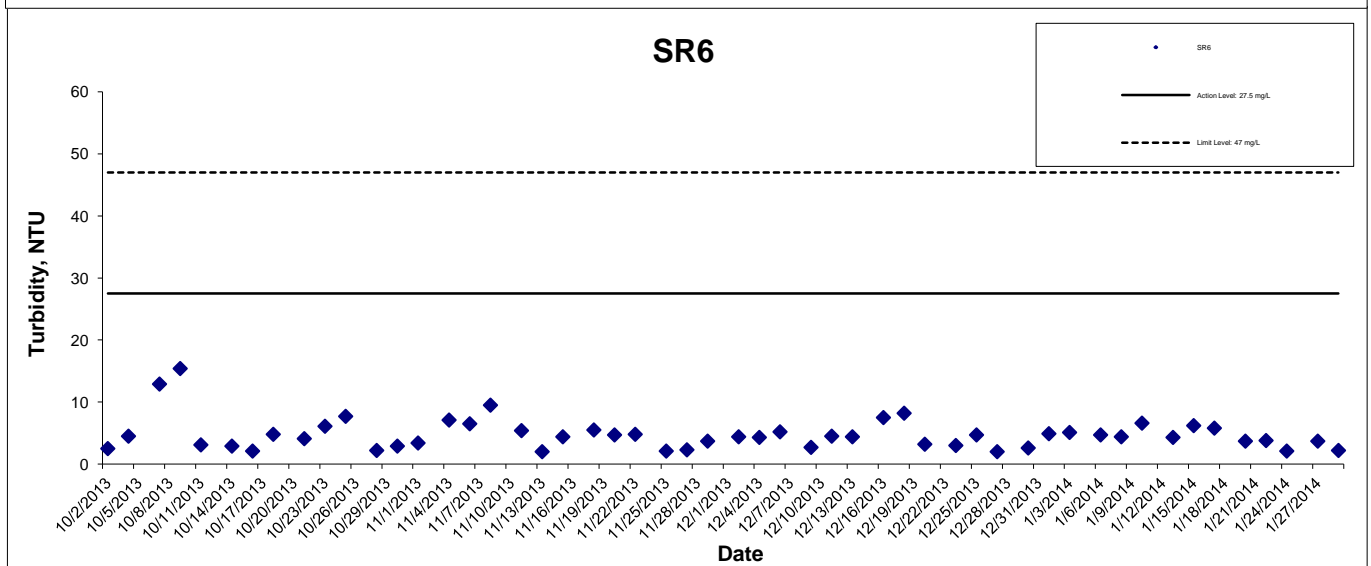
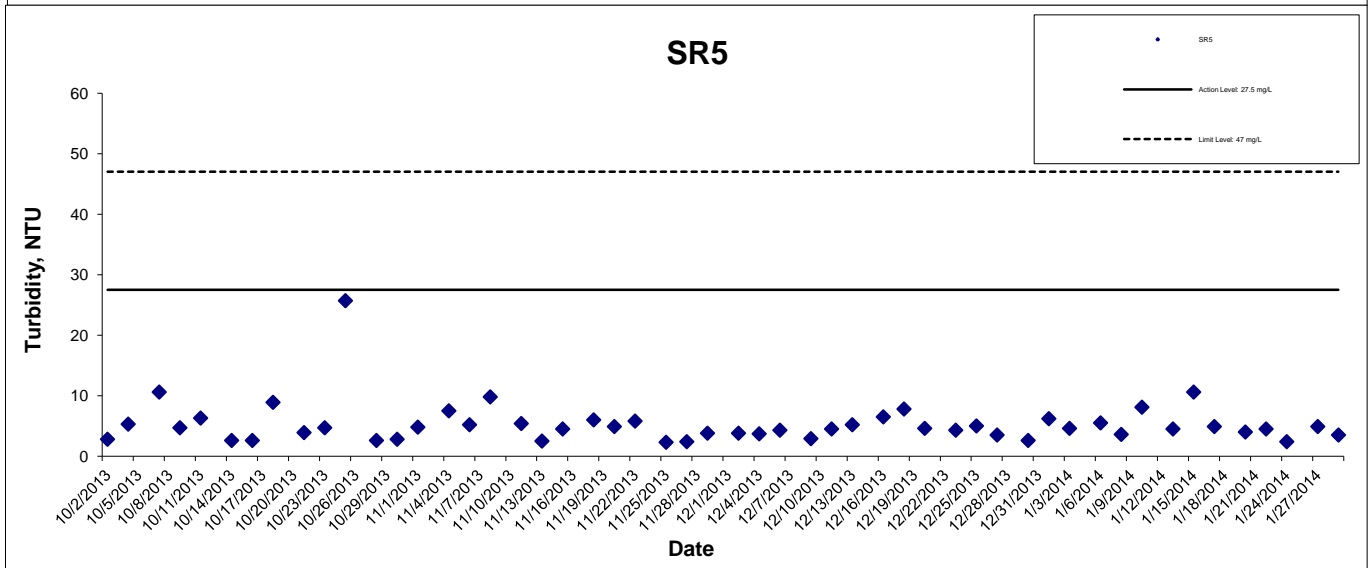
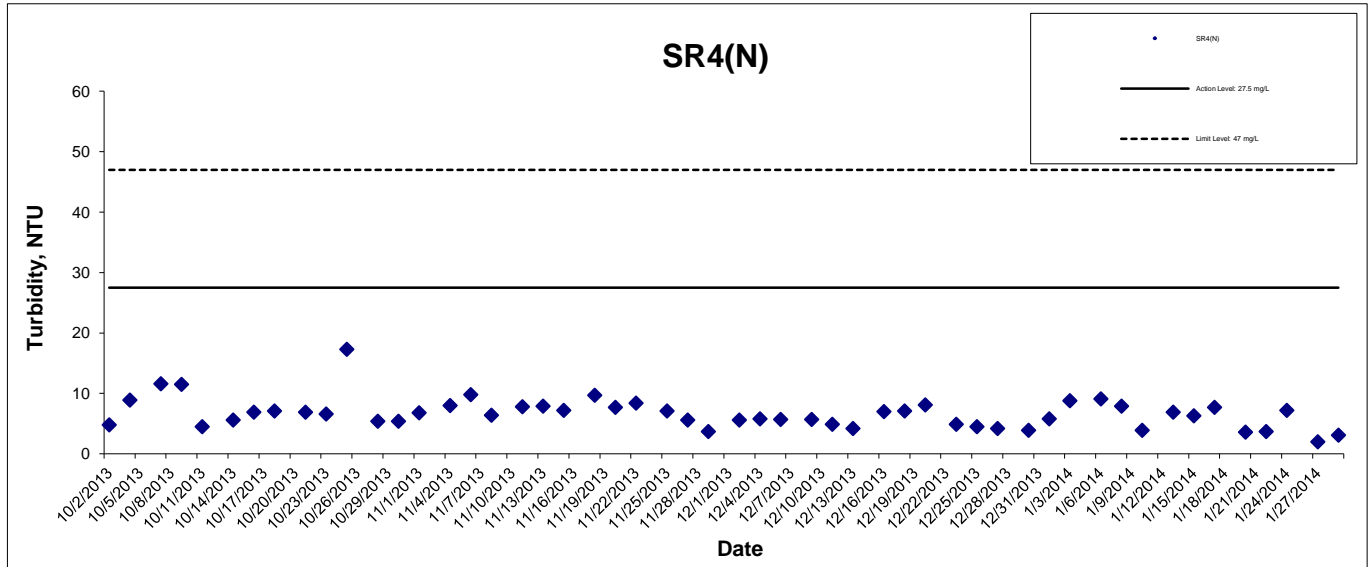
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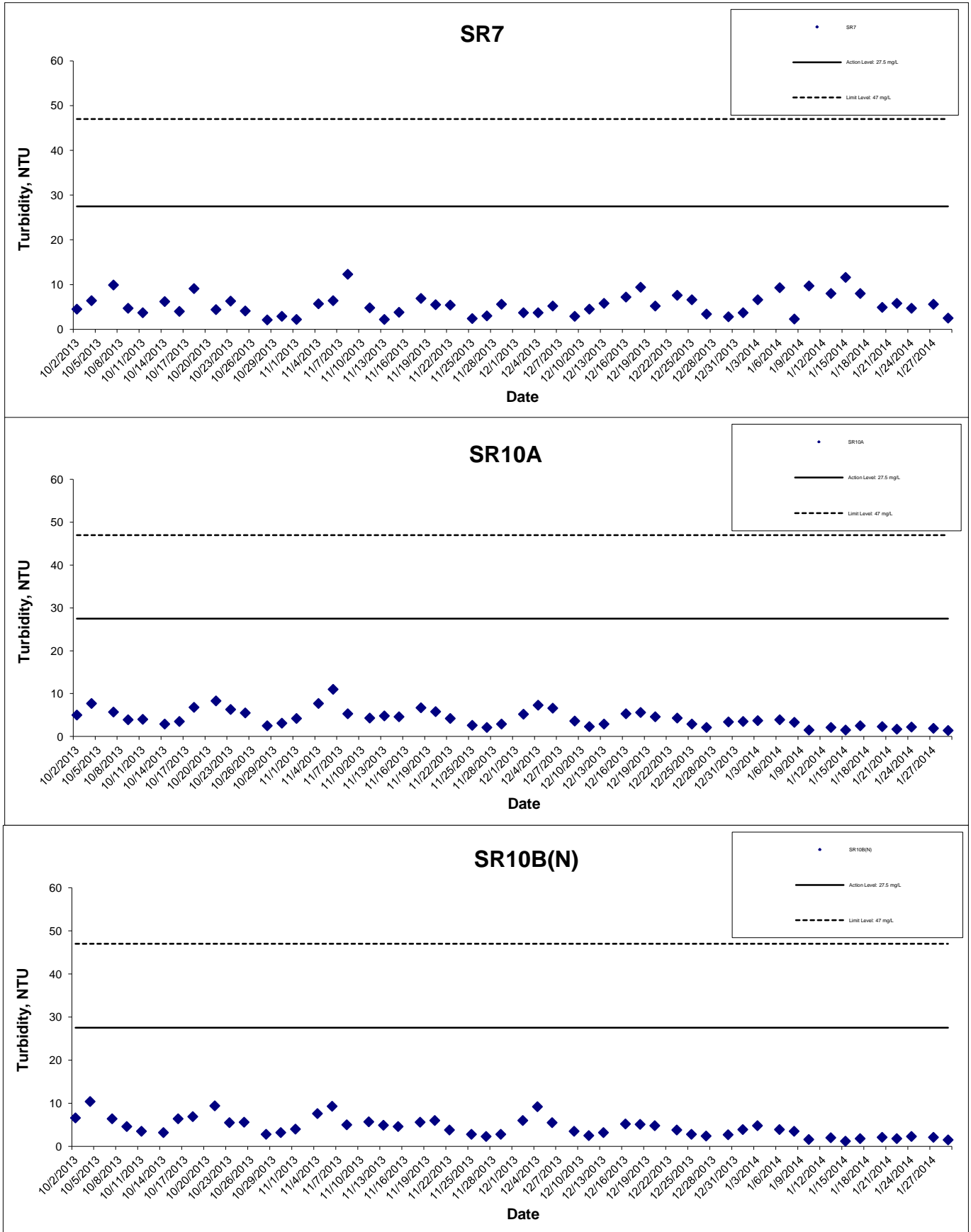
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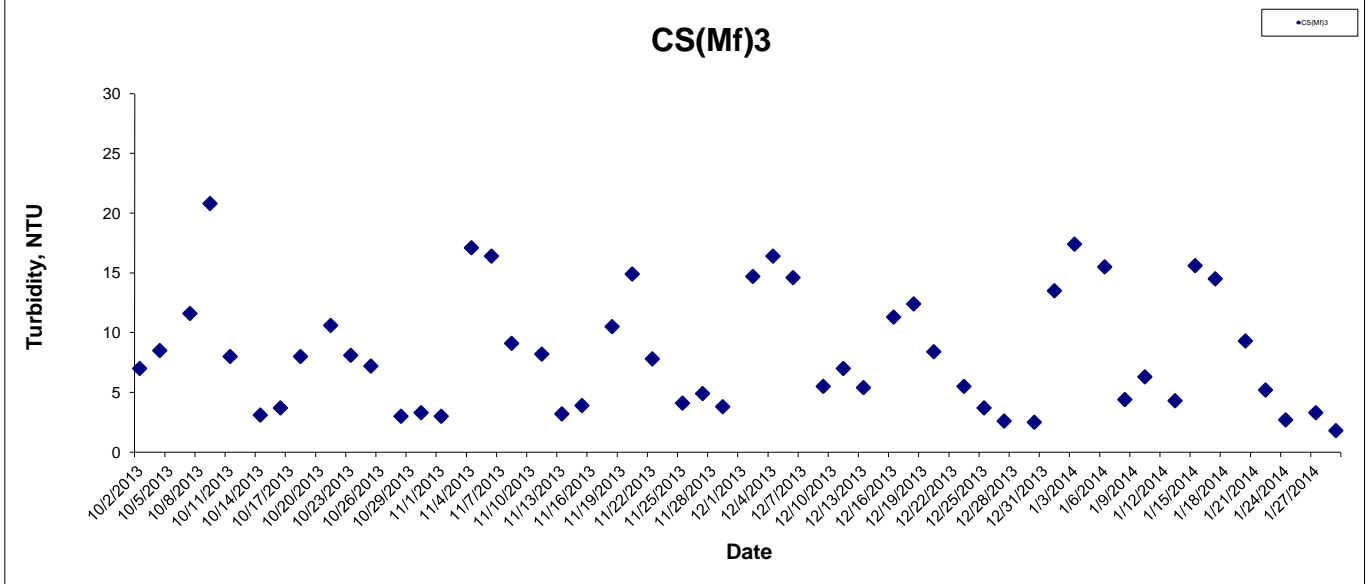
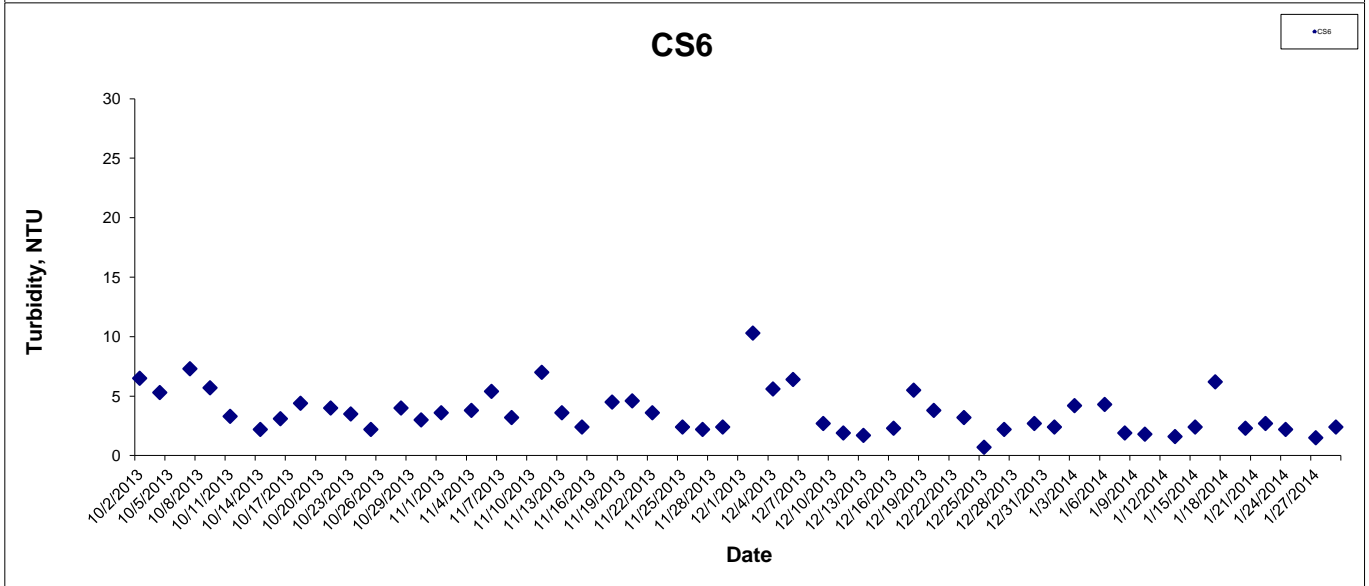
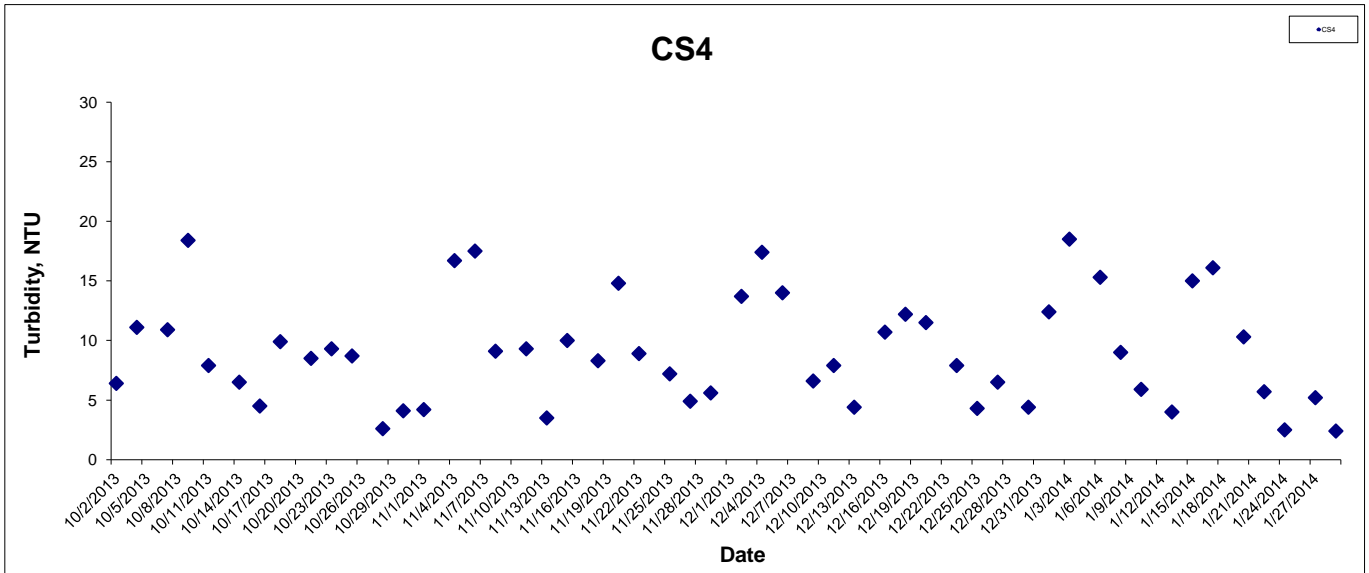
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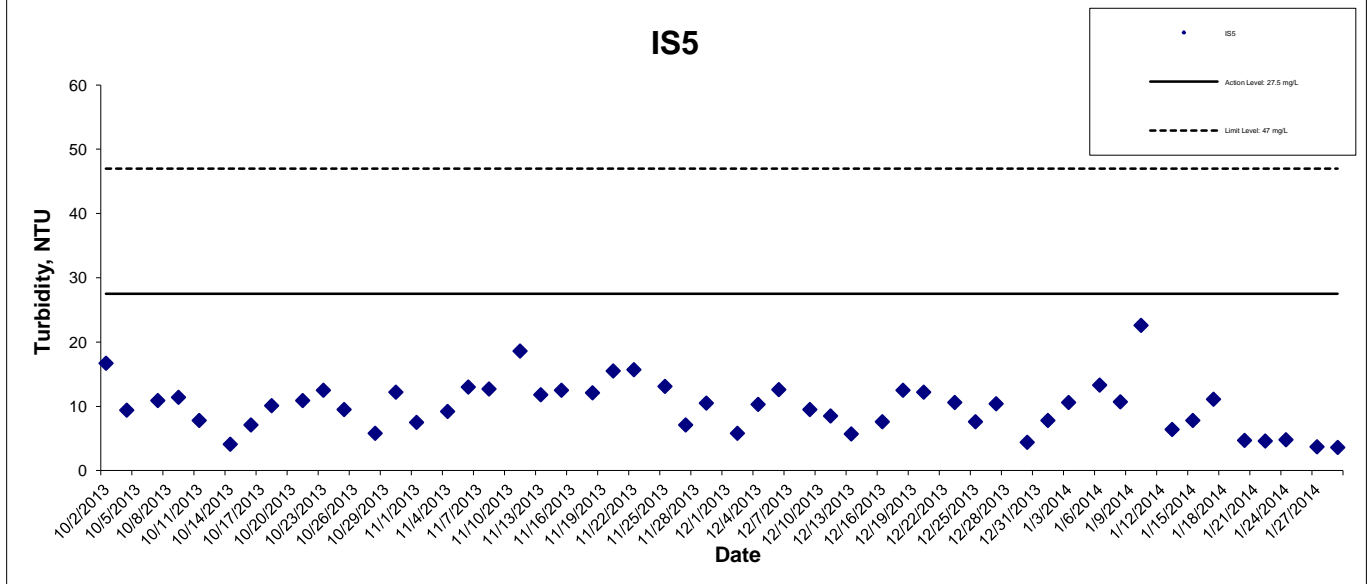
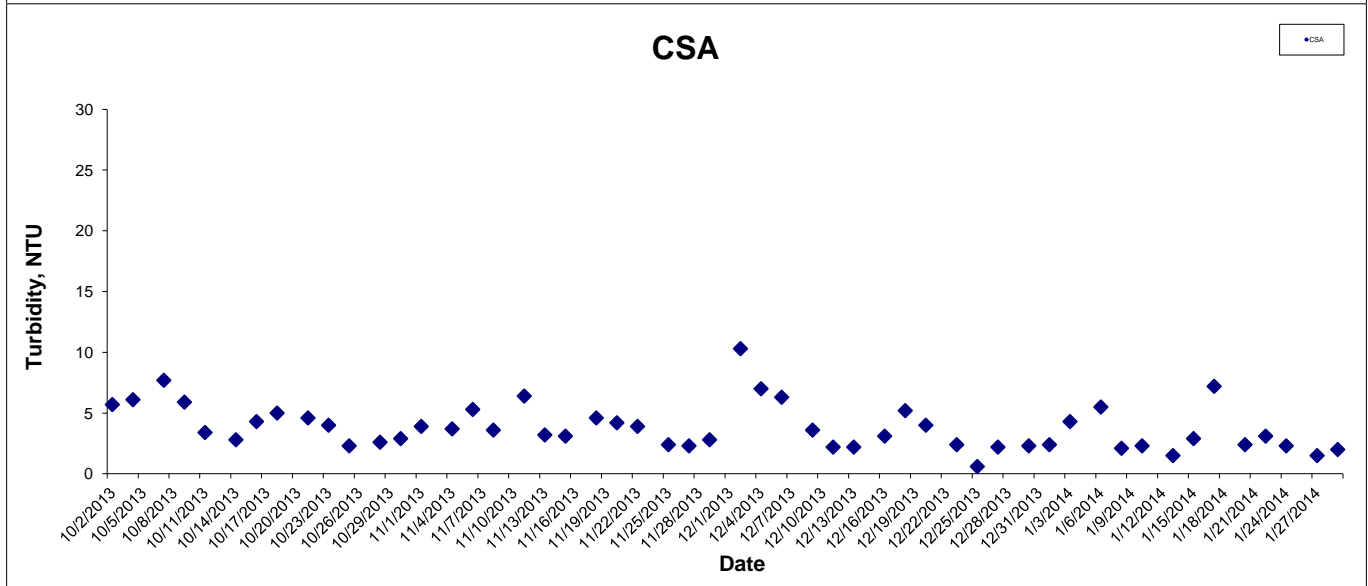
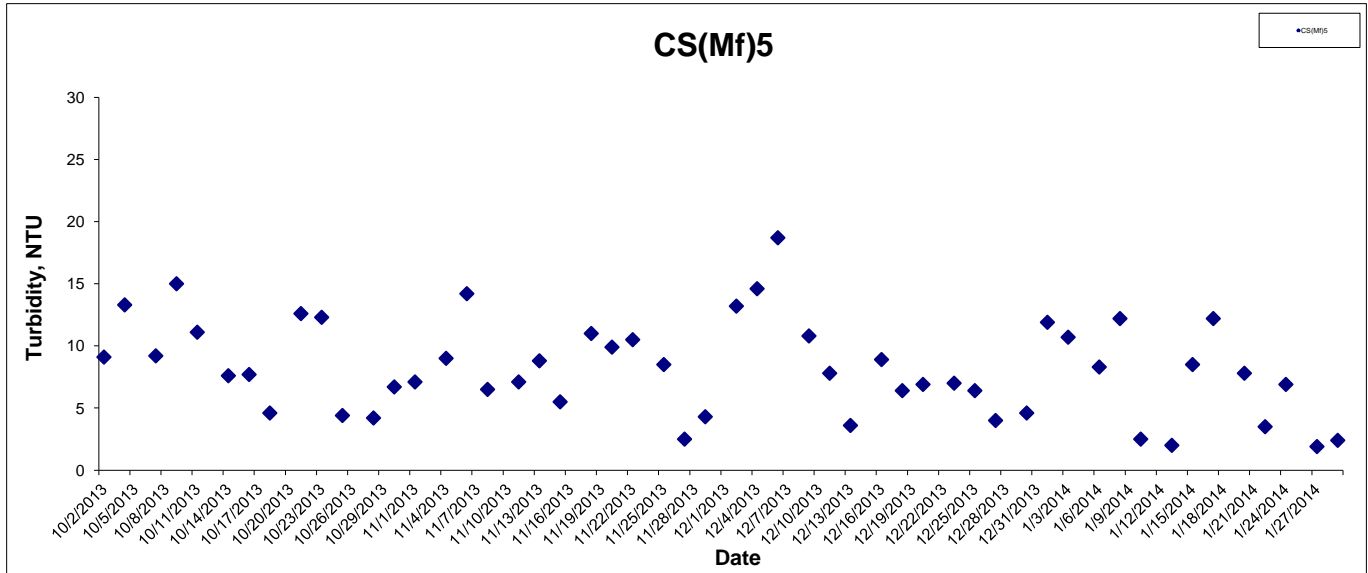
## Turbidity at Mid-Flood Tide



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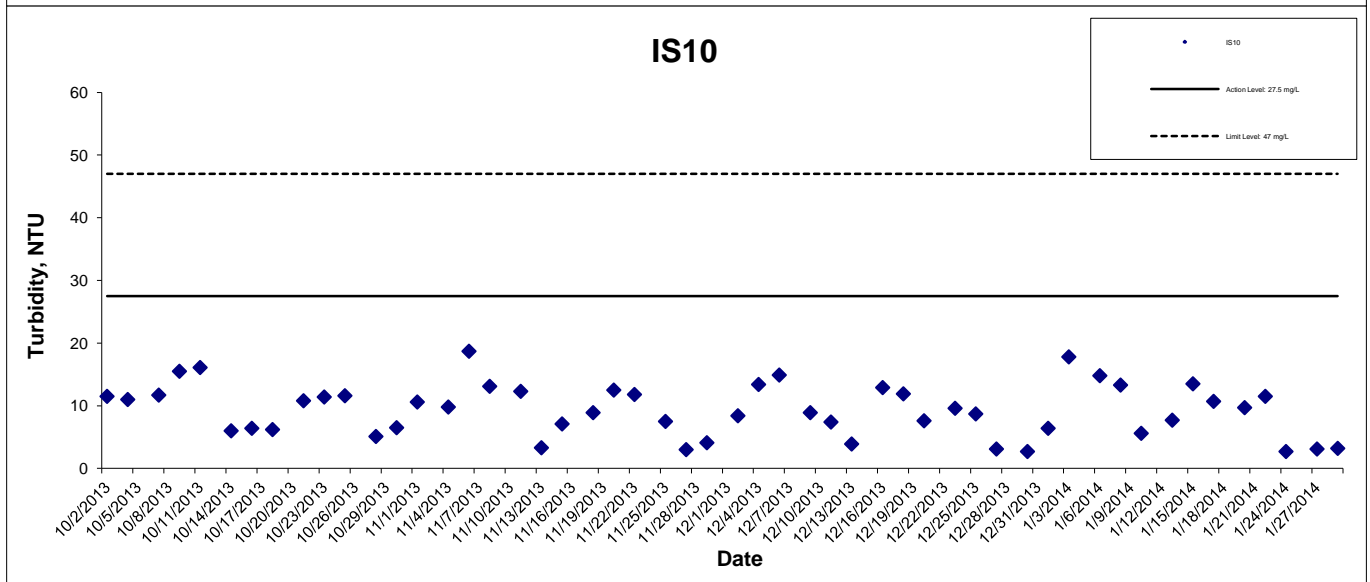
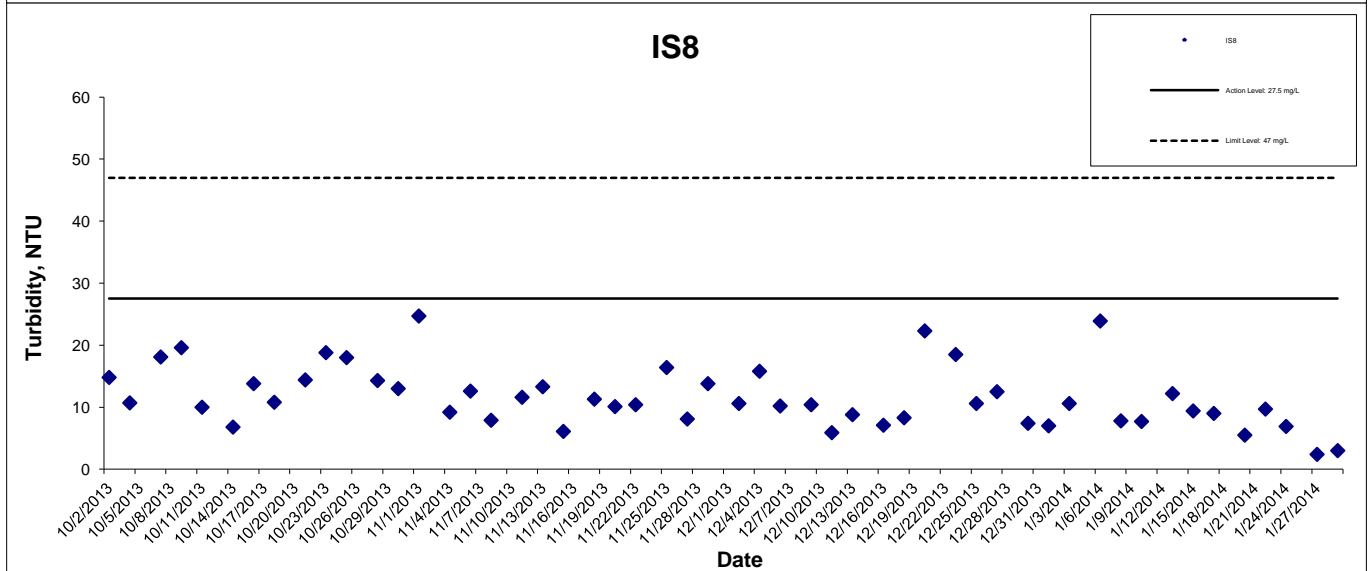
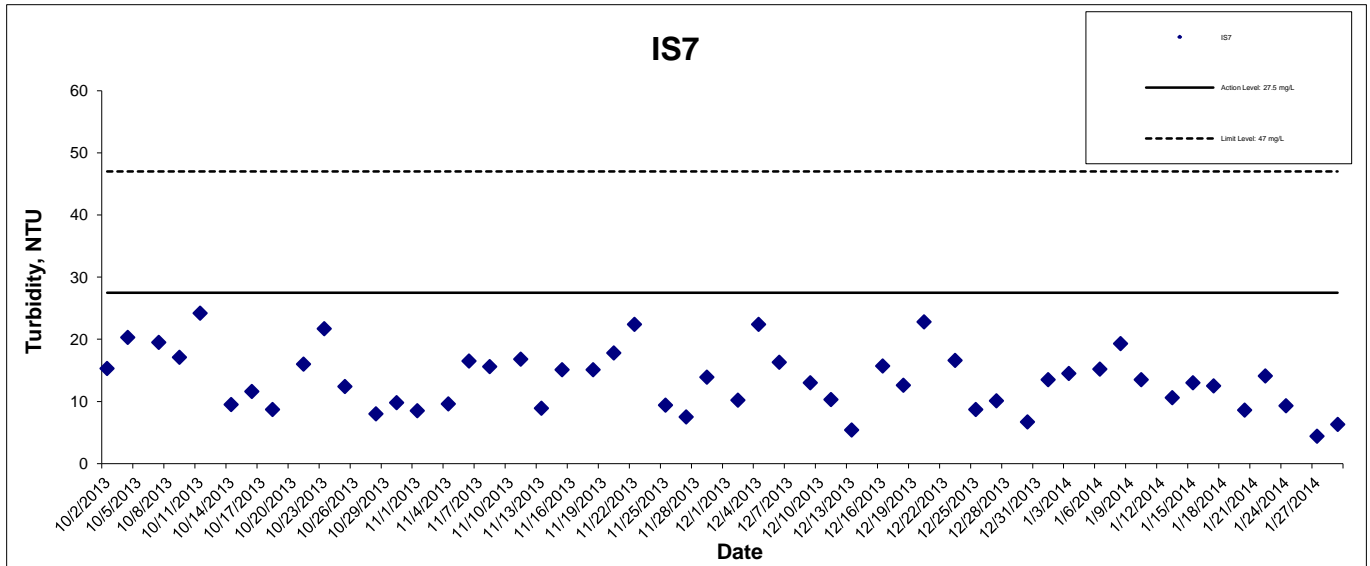


## Turbidity at Mid-Flood Tide



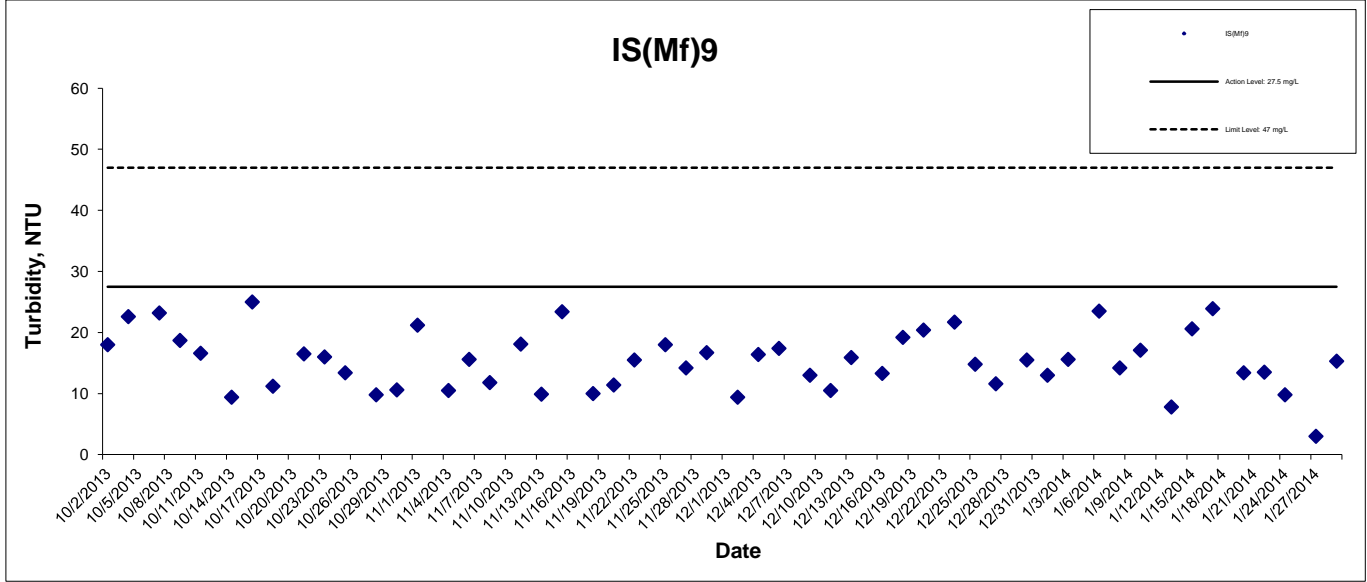
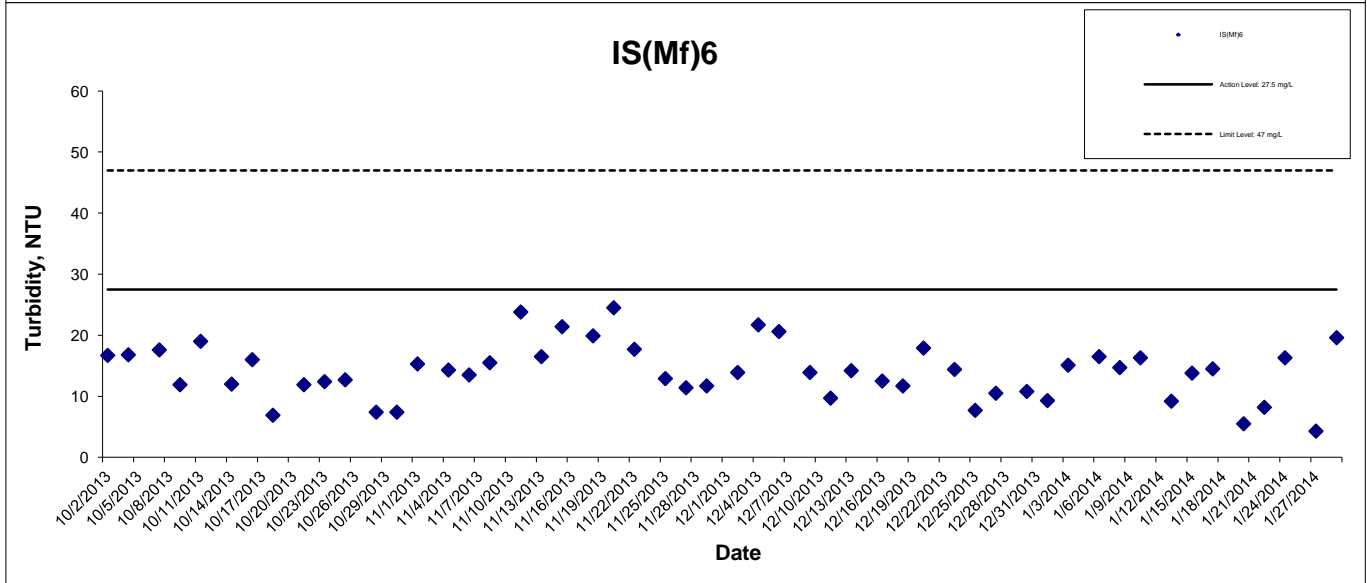
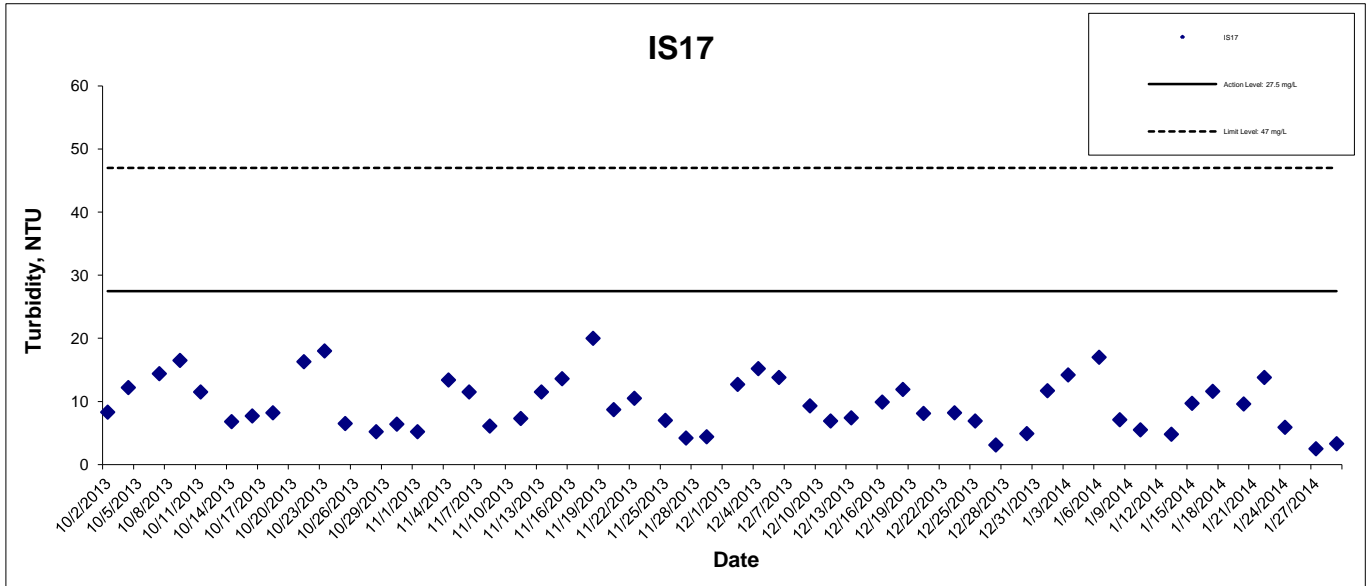
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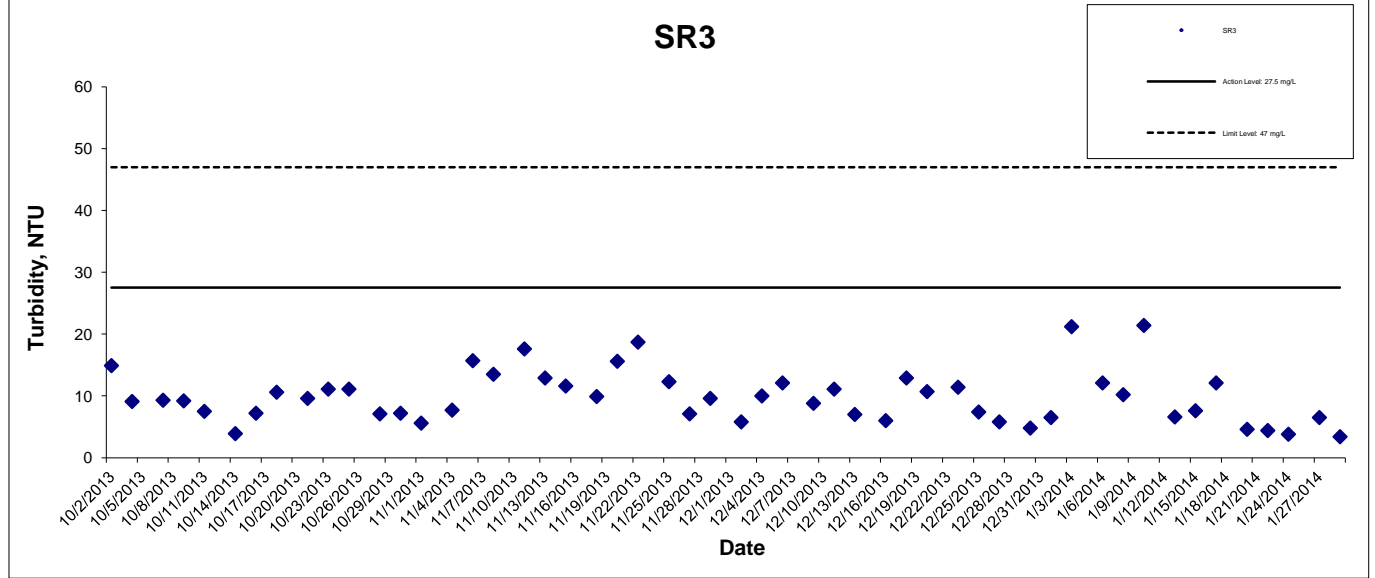
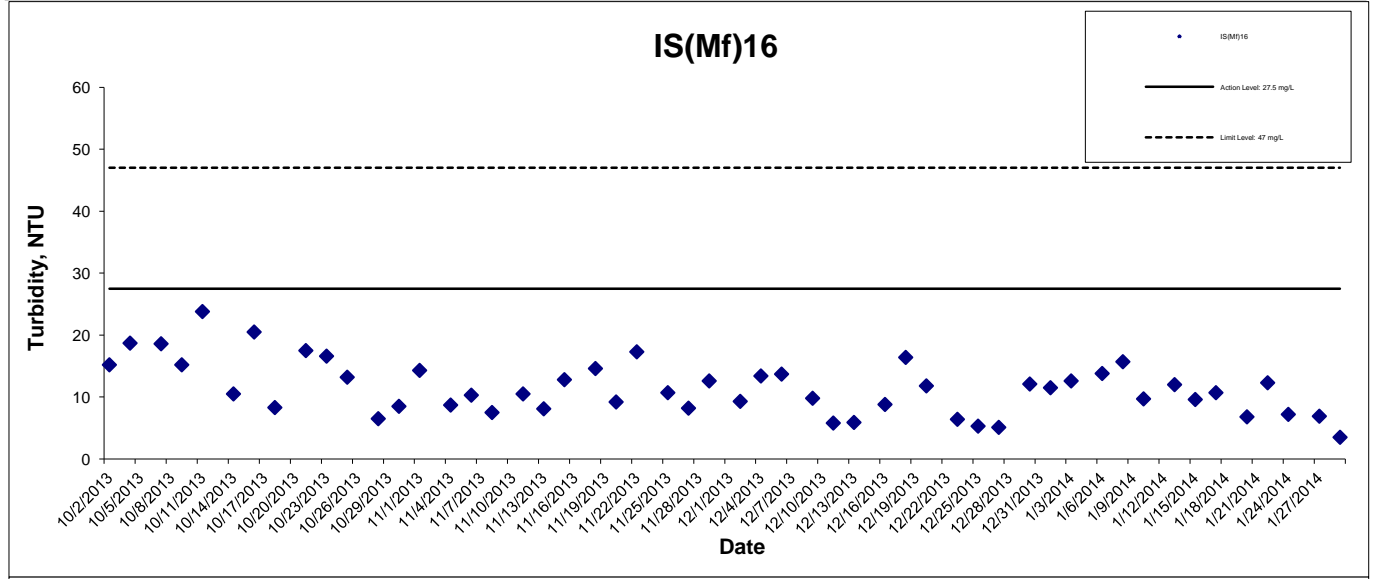
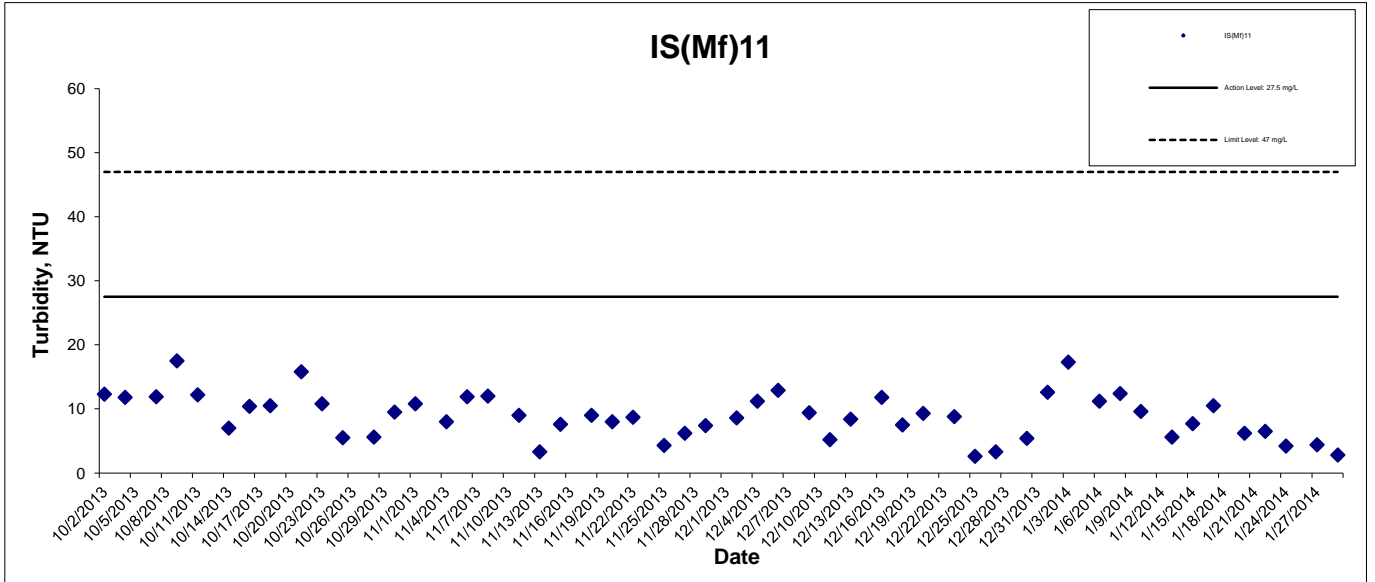
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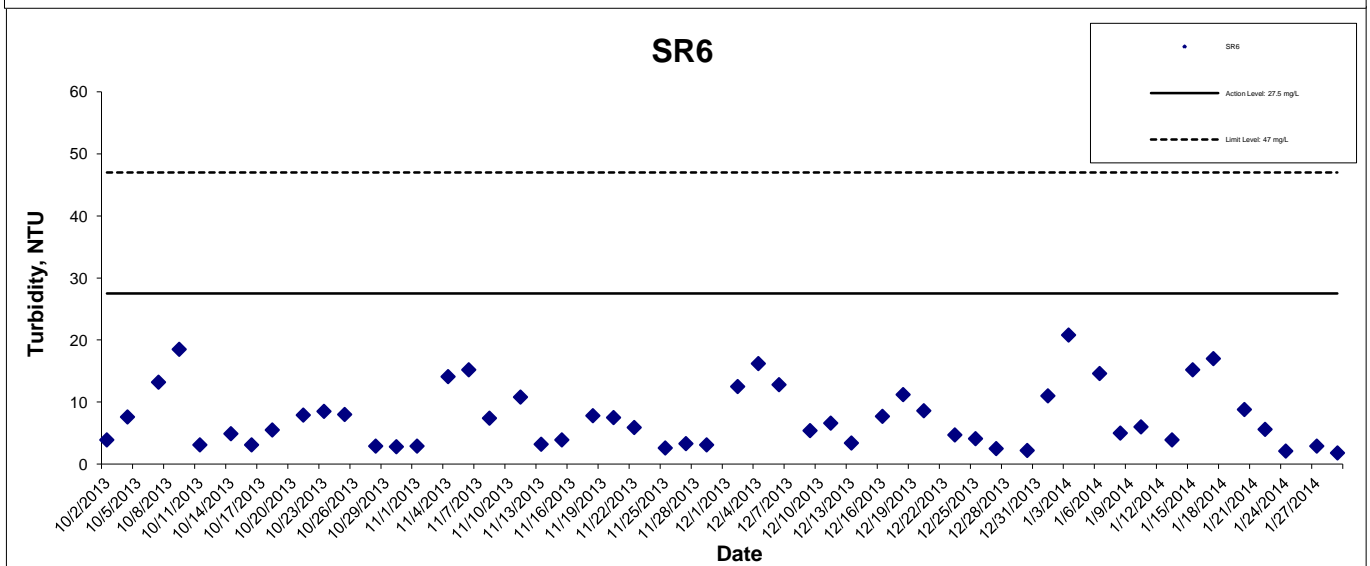
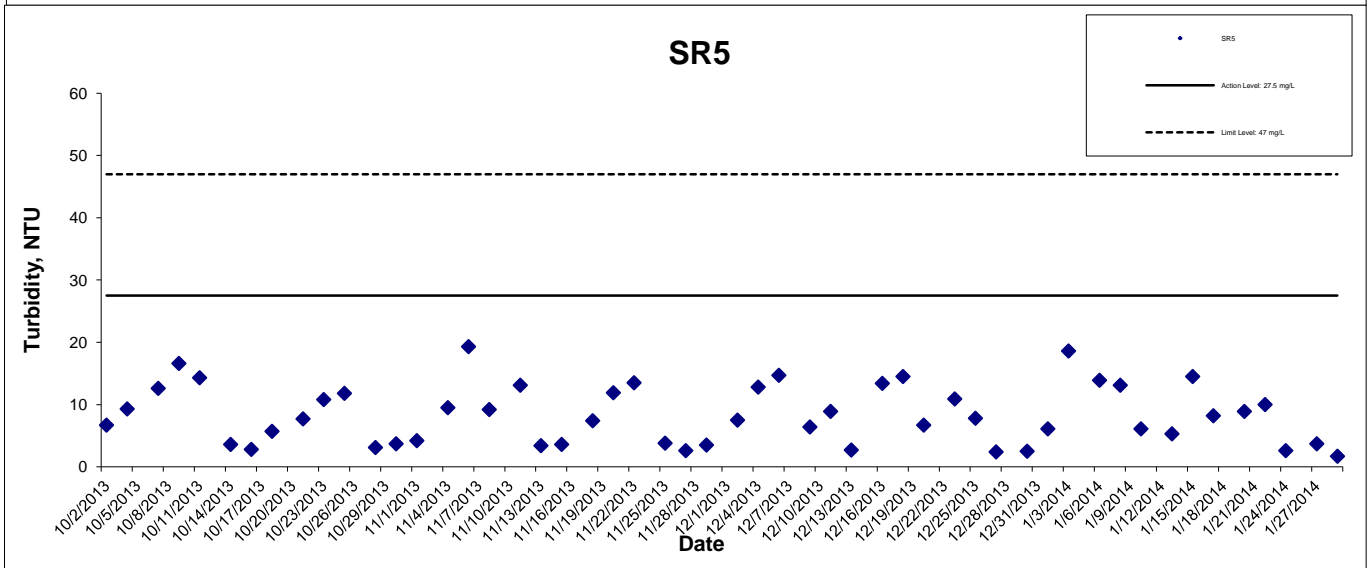
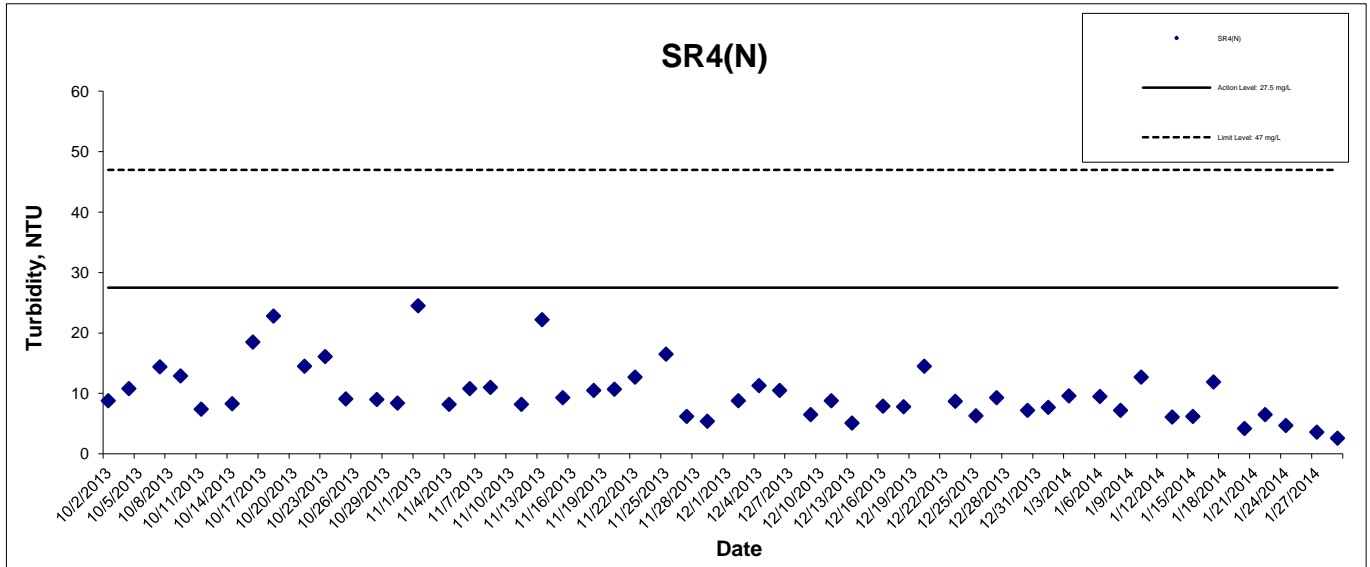
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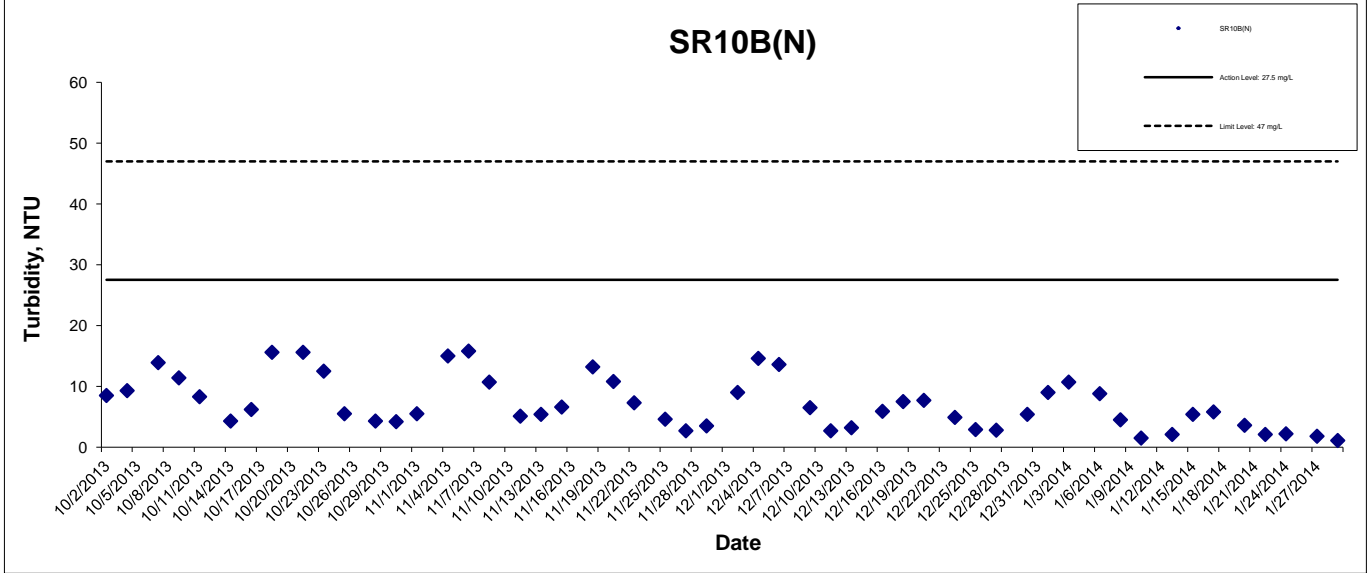
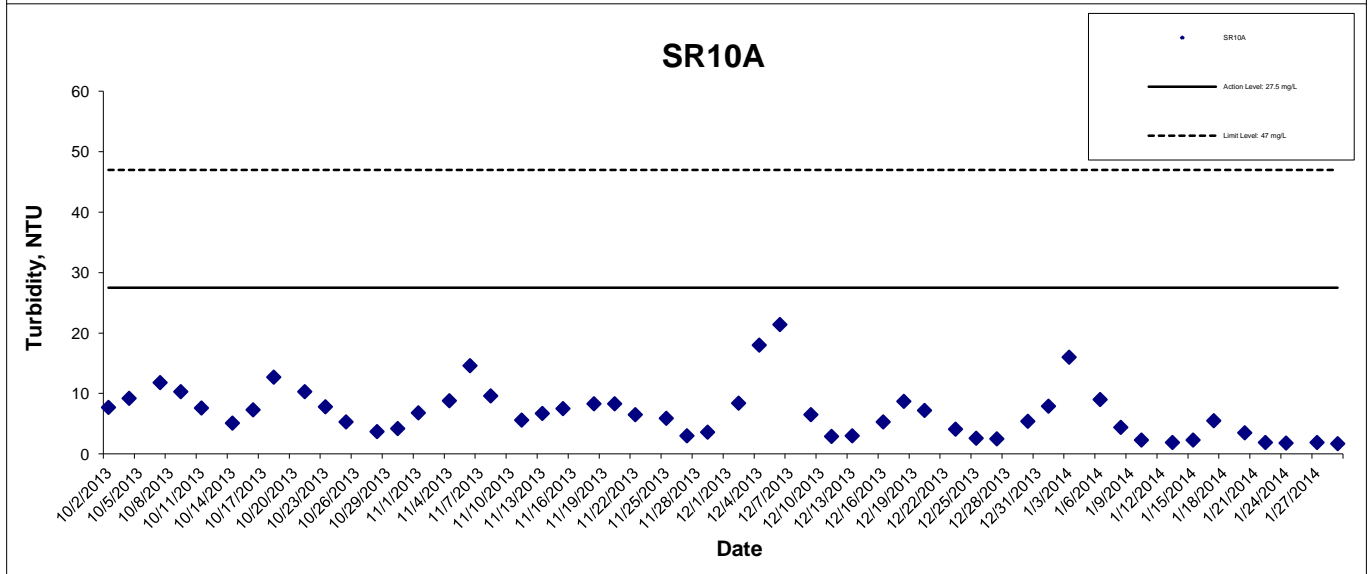
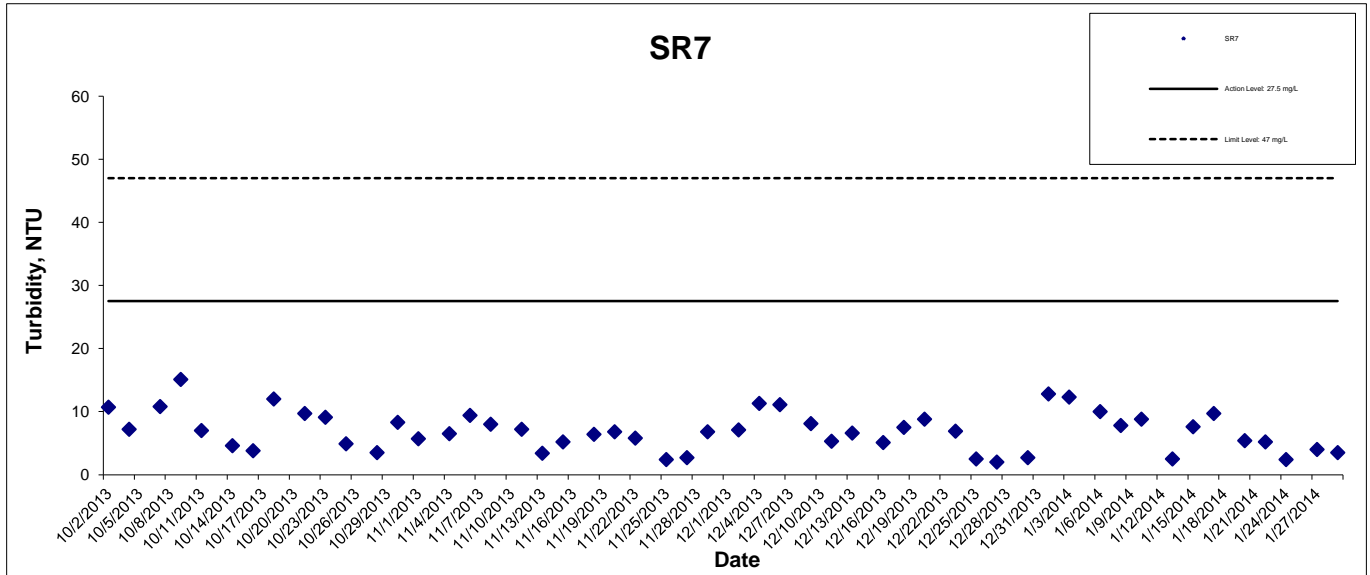
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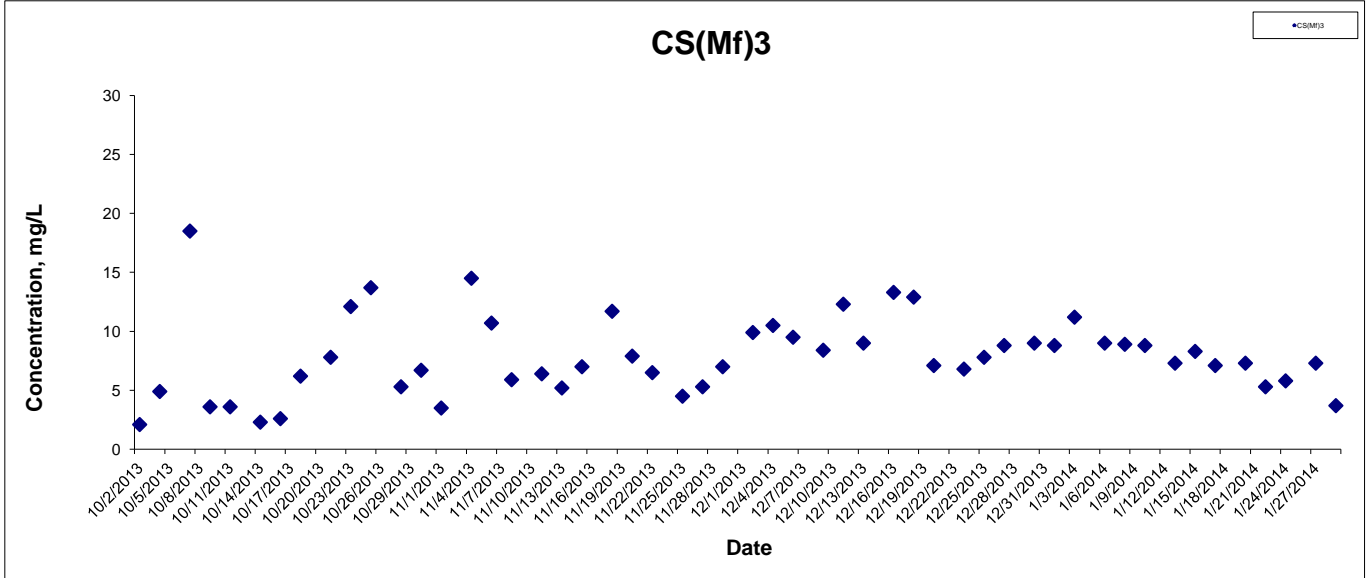
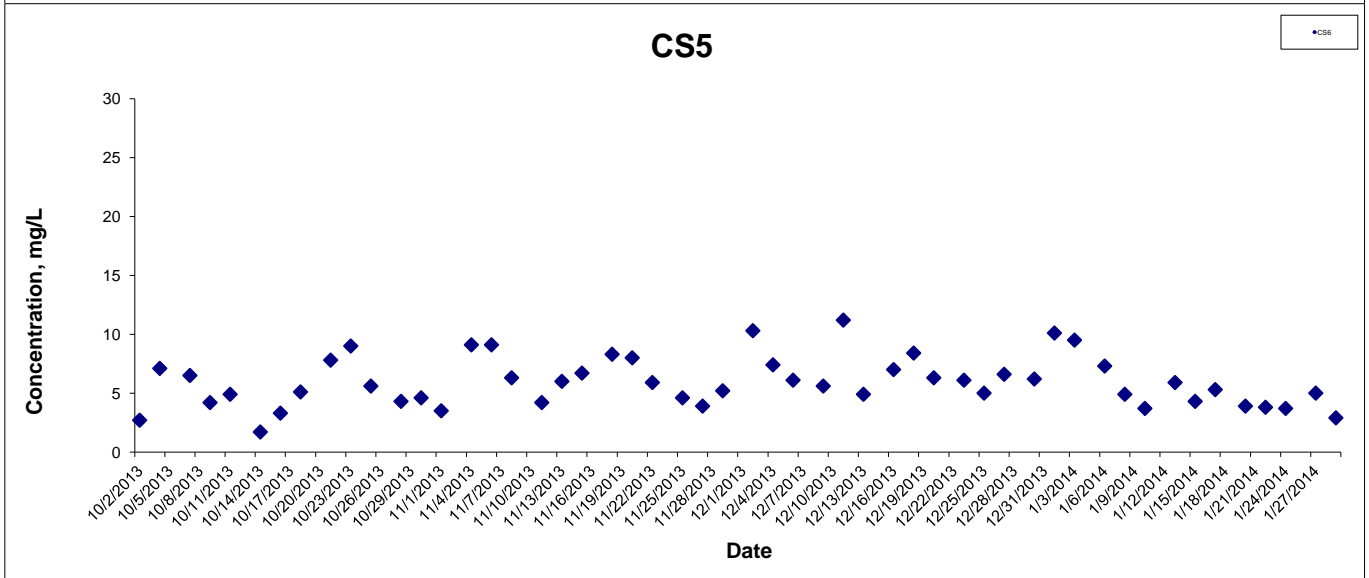
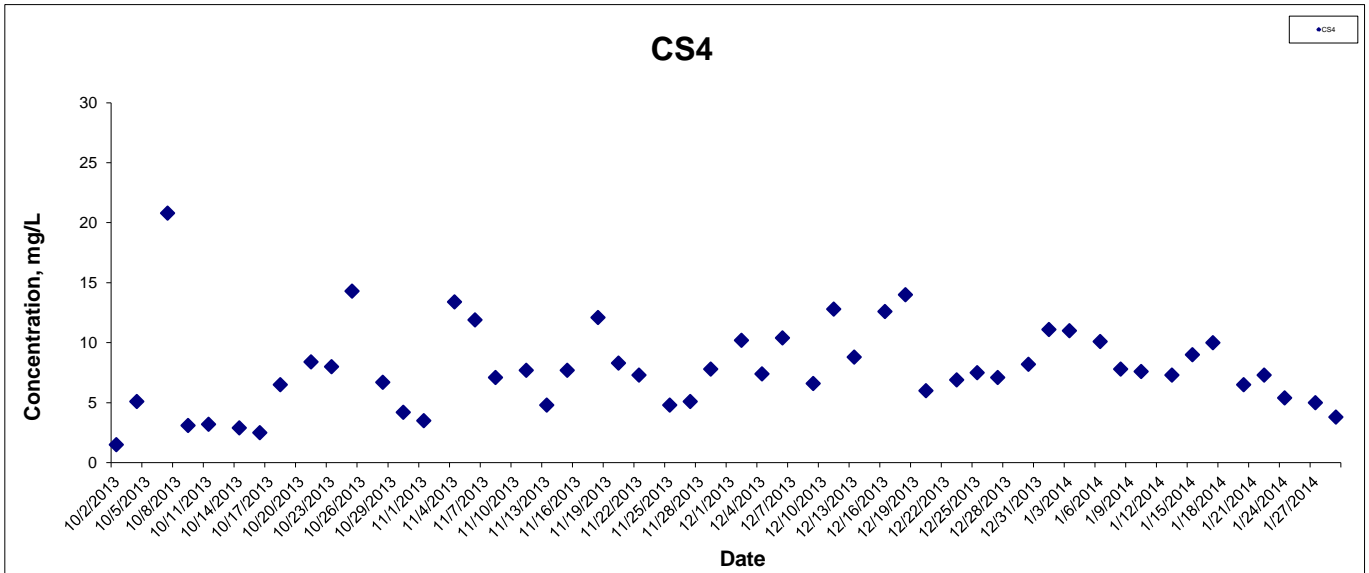
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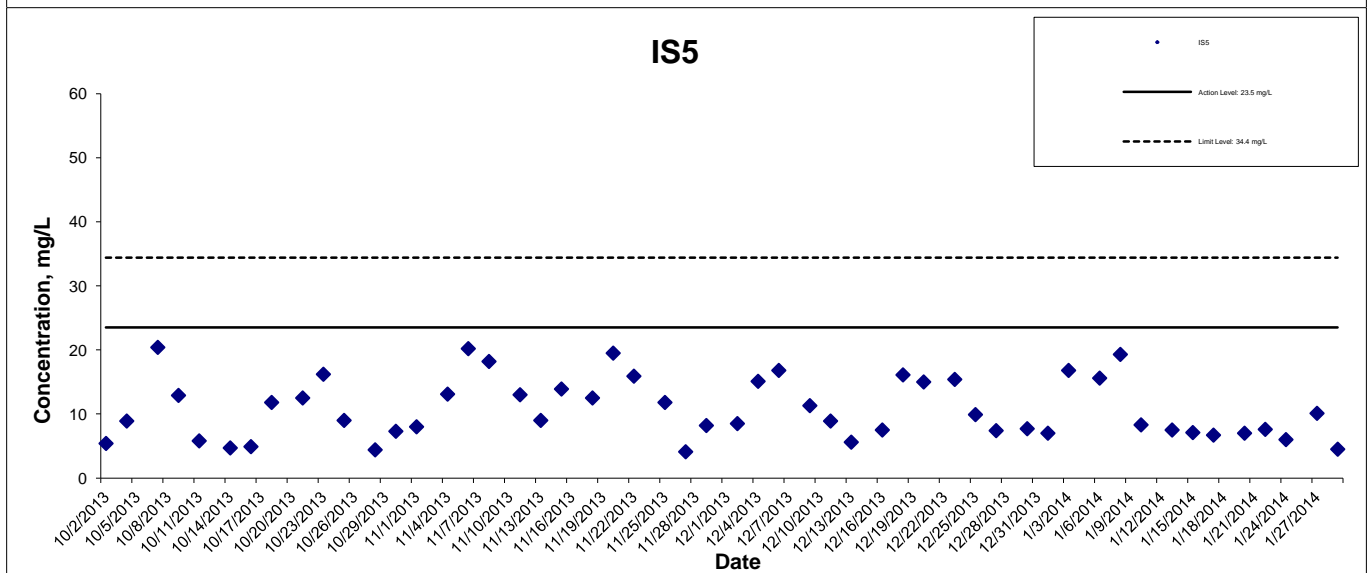
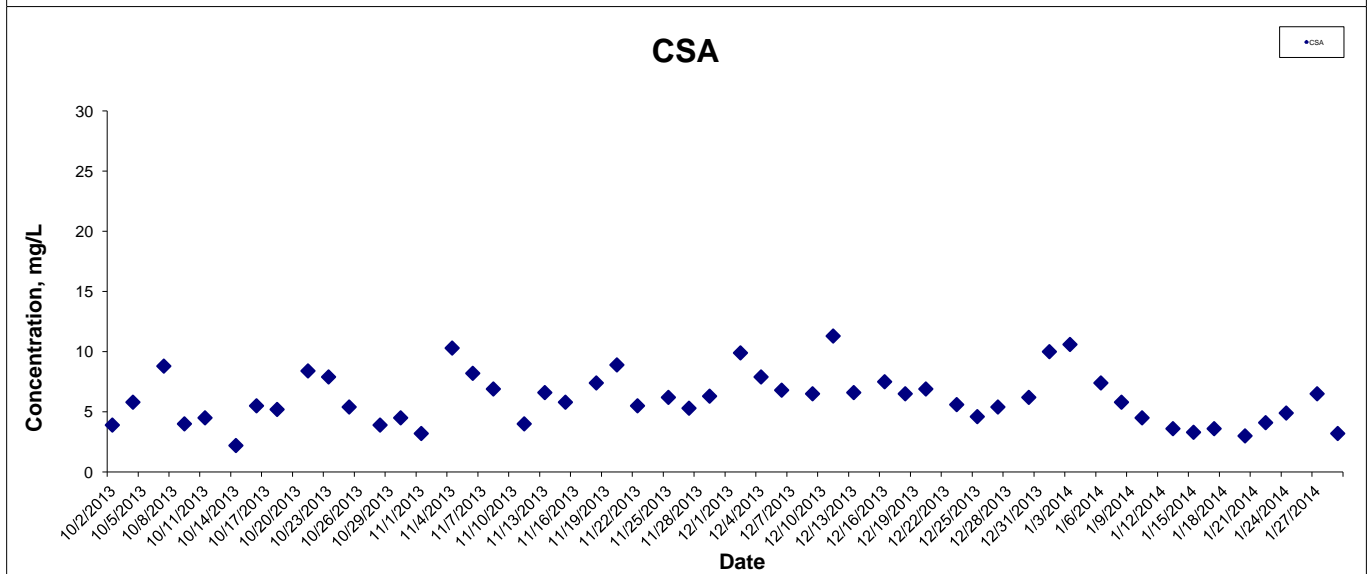
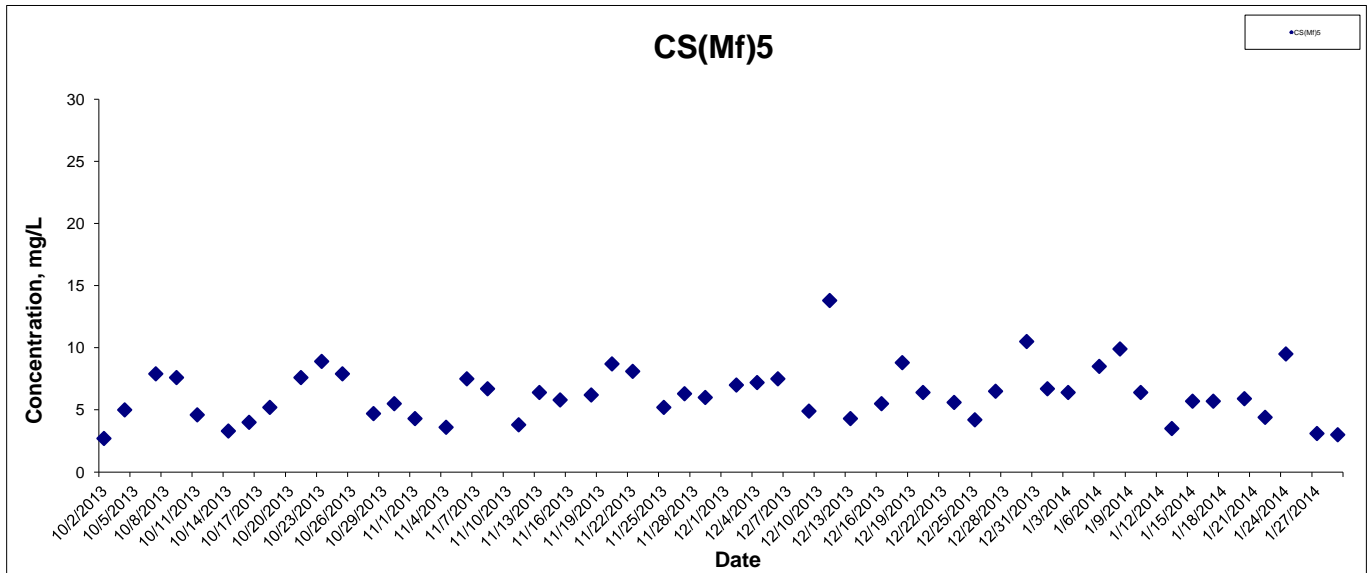
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## Suspended Solids at Mid-Ebb Tide



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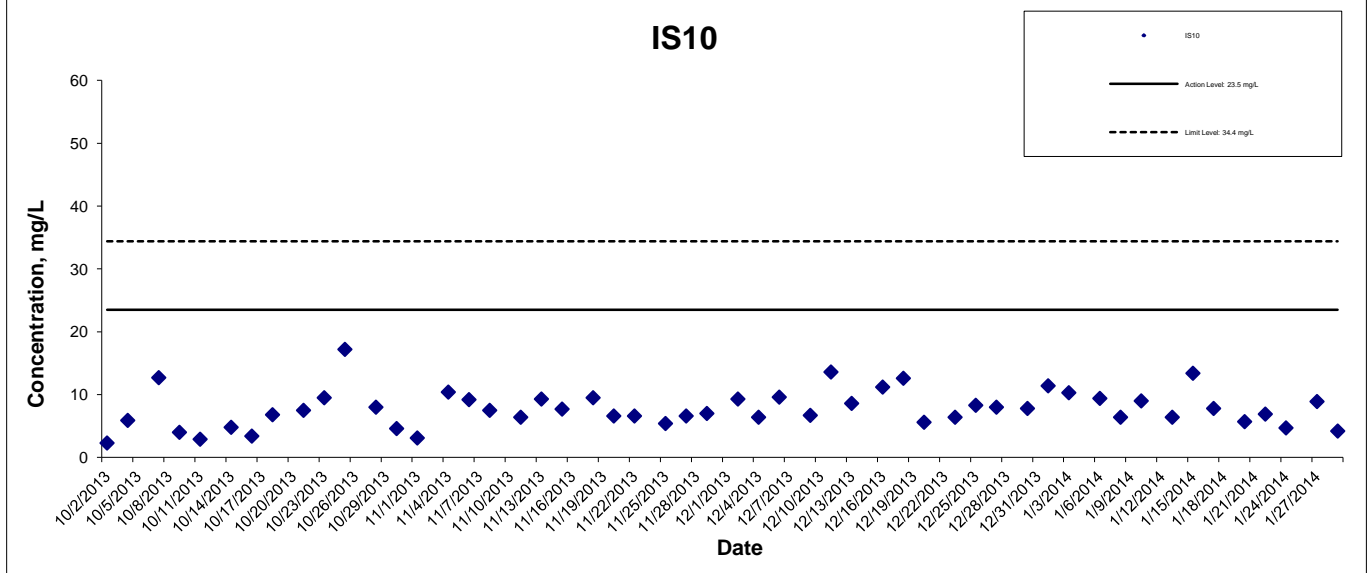
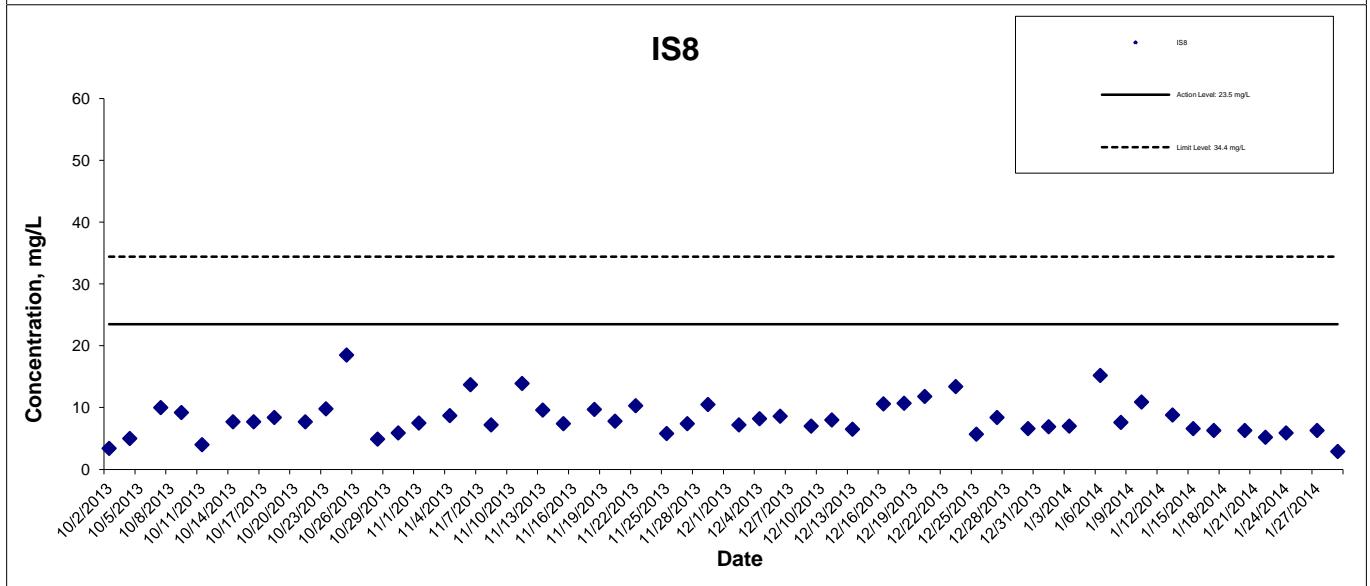
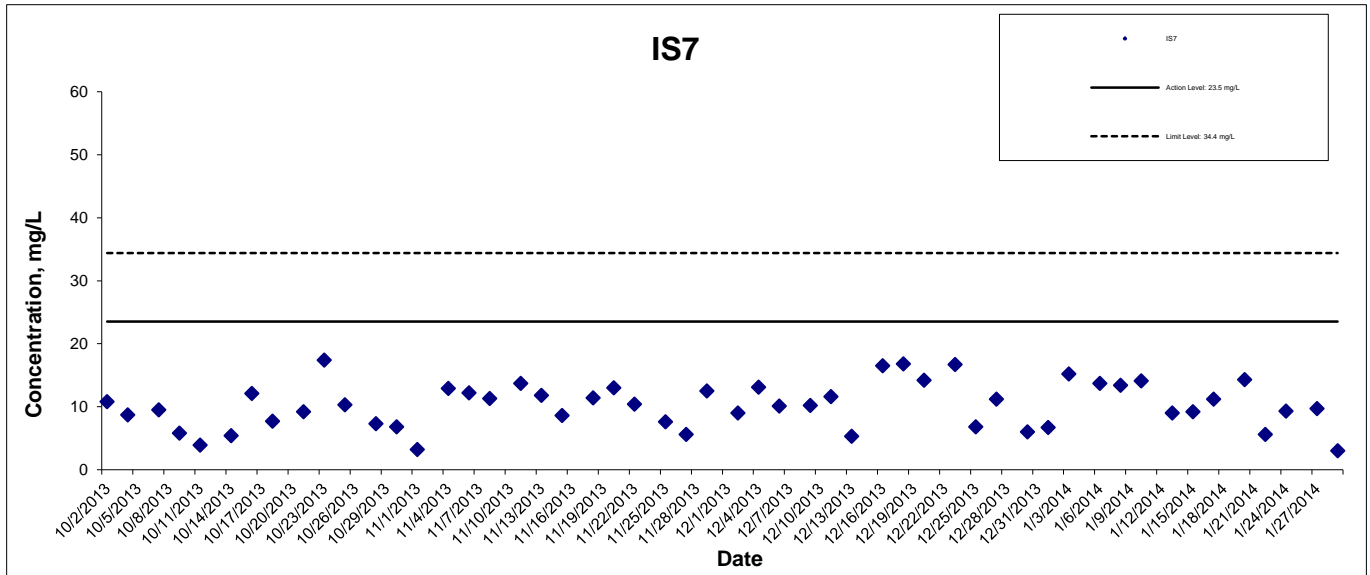
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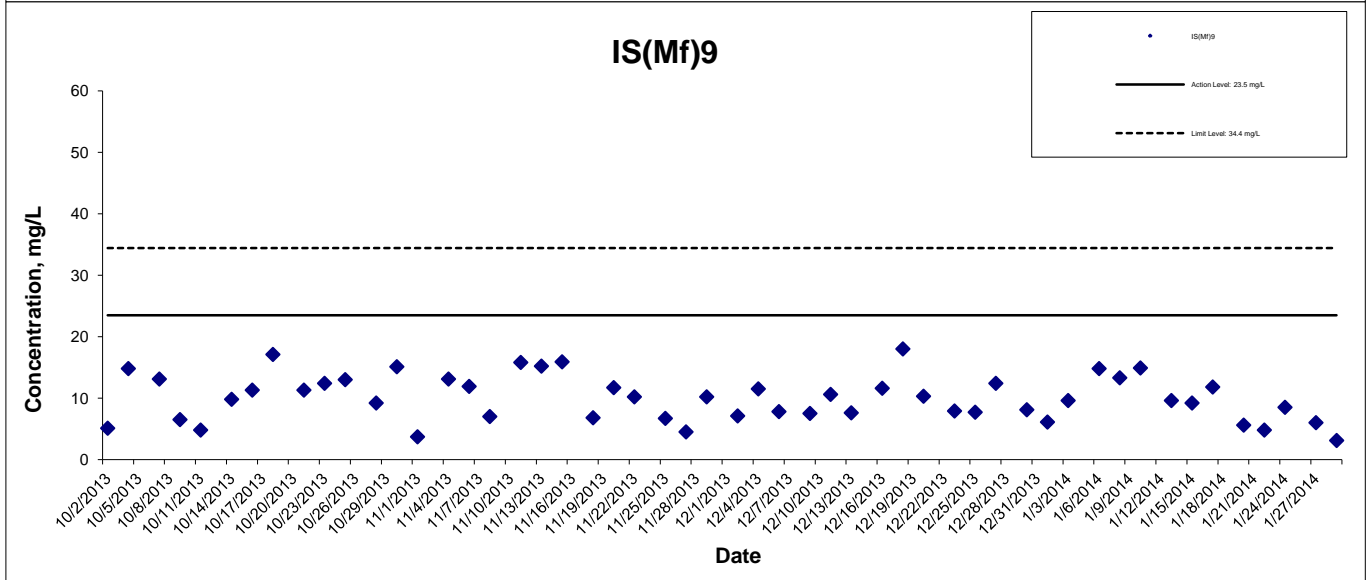
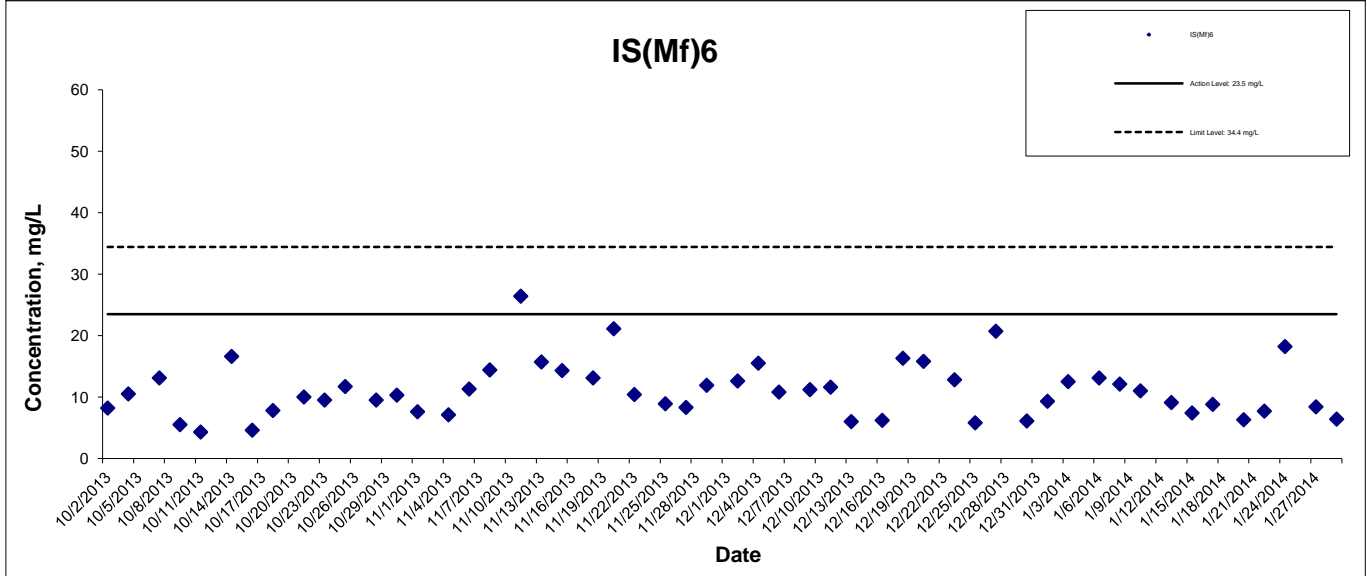
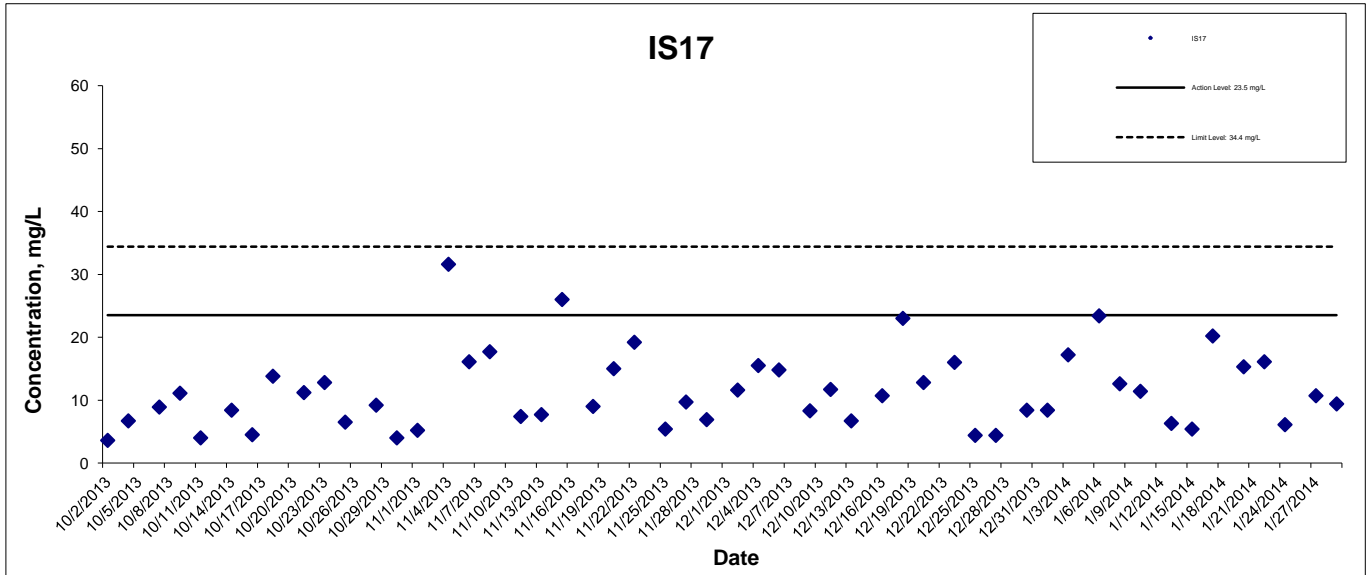


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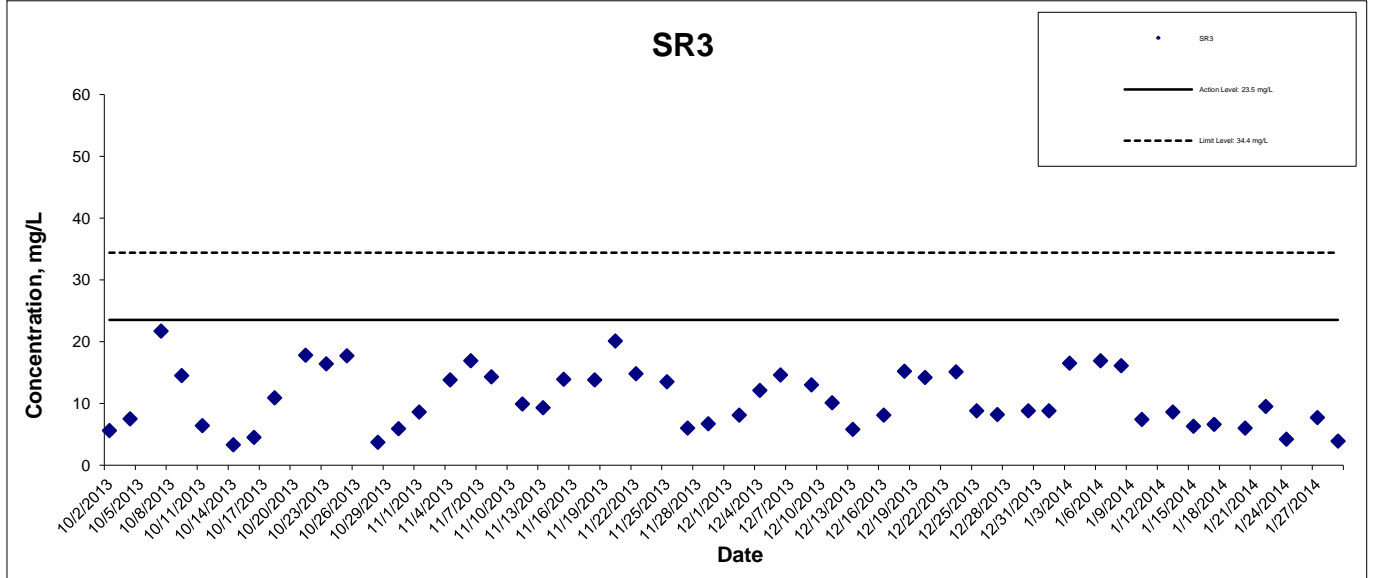
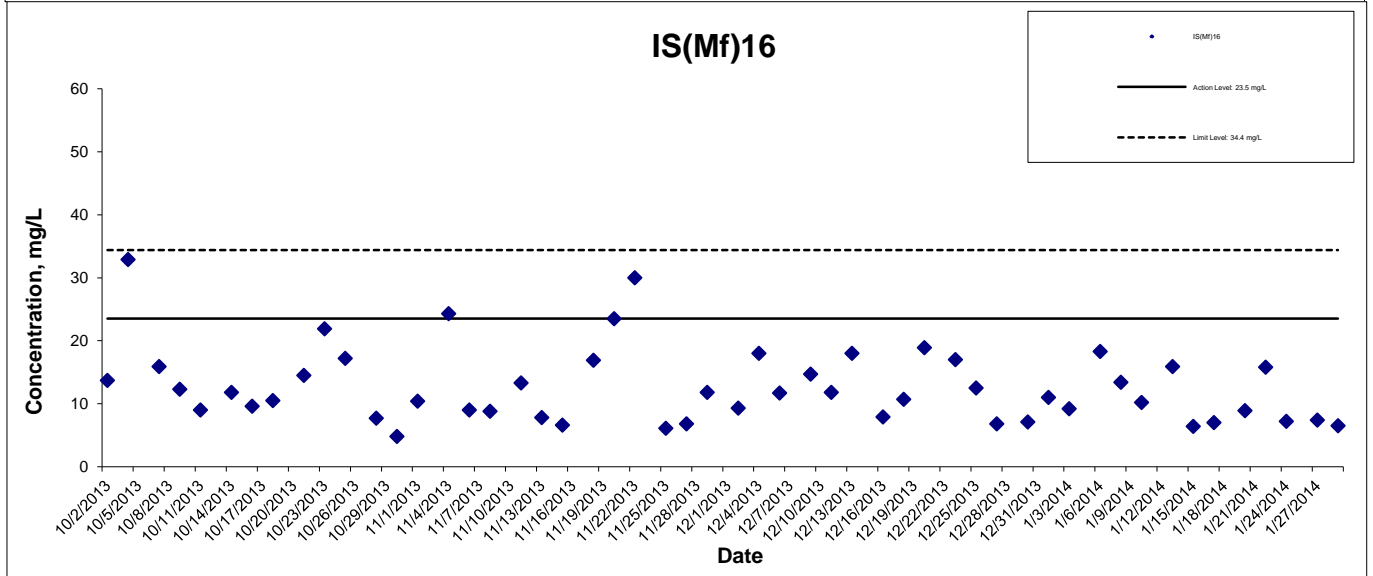
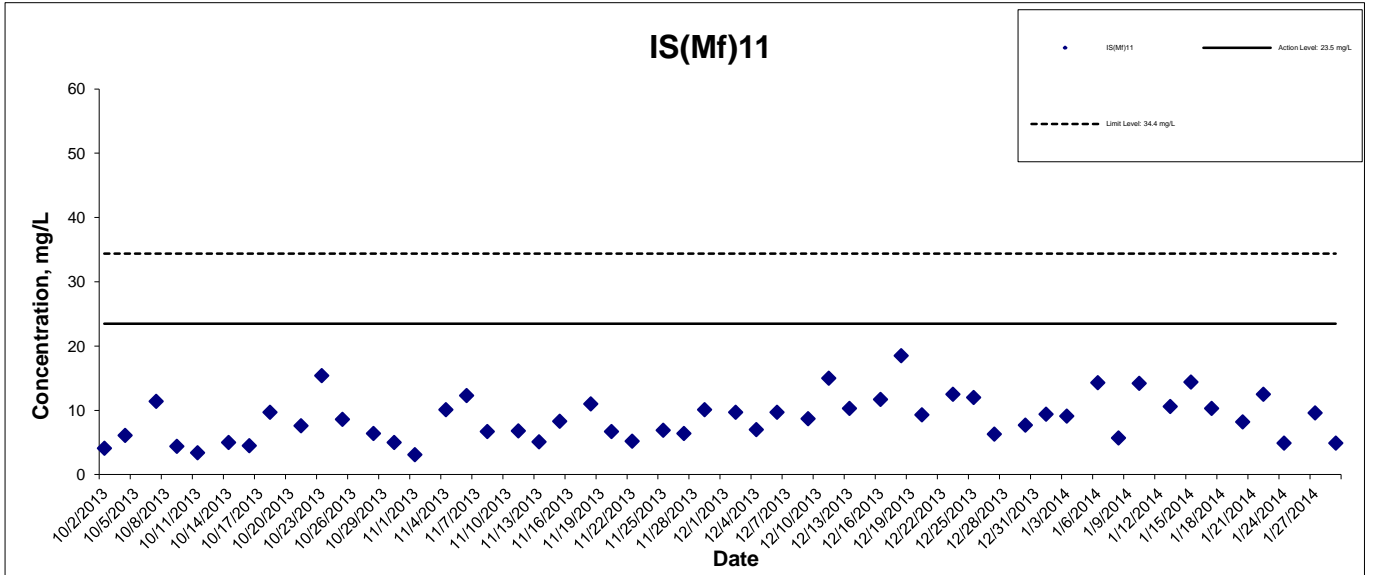
## Suspended Solids at Mid-Ebb Tide



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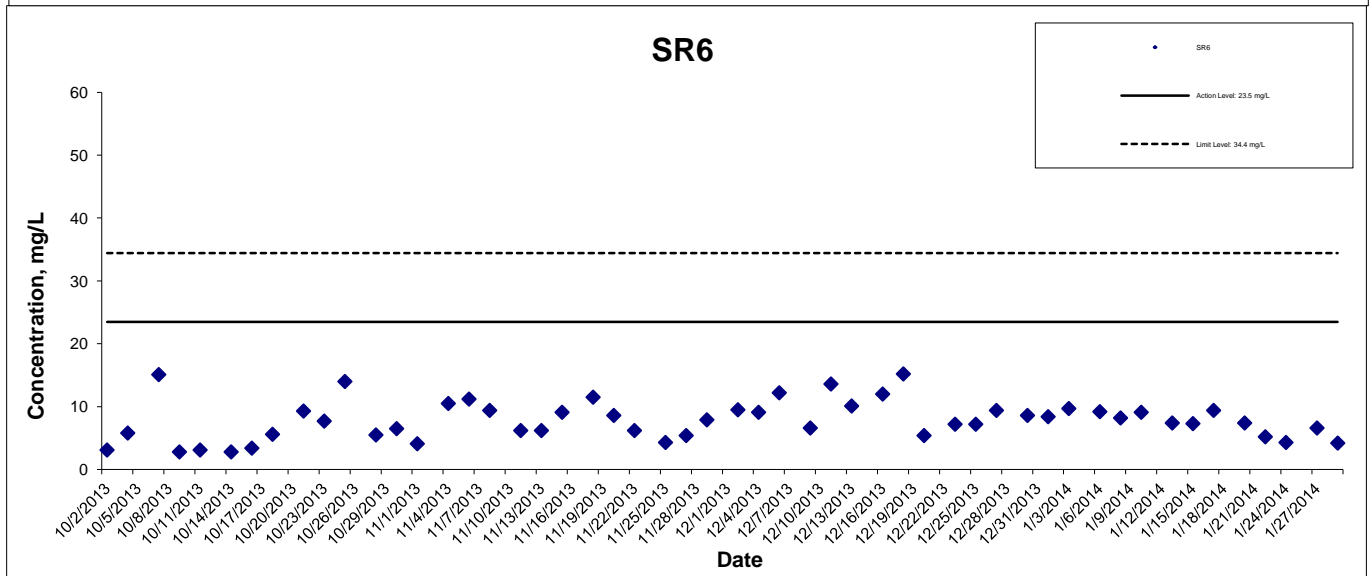
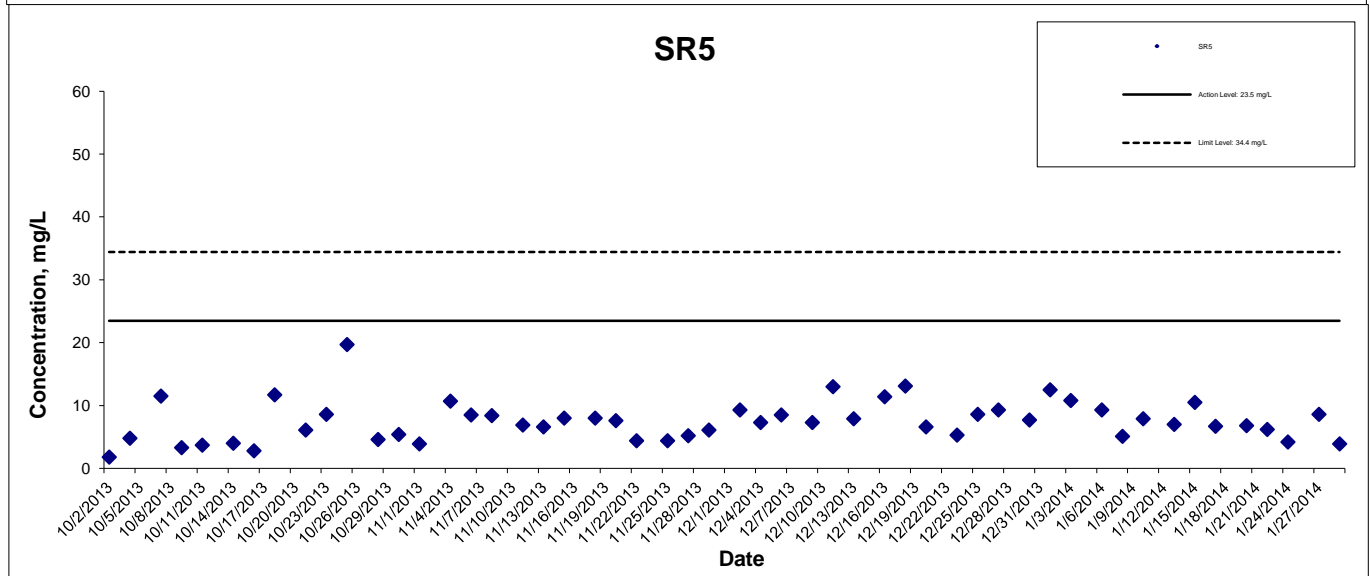
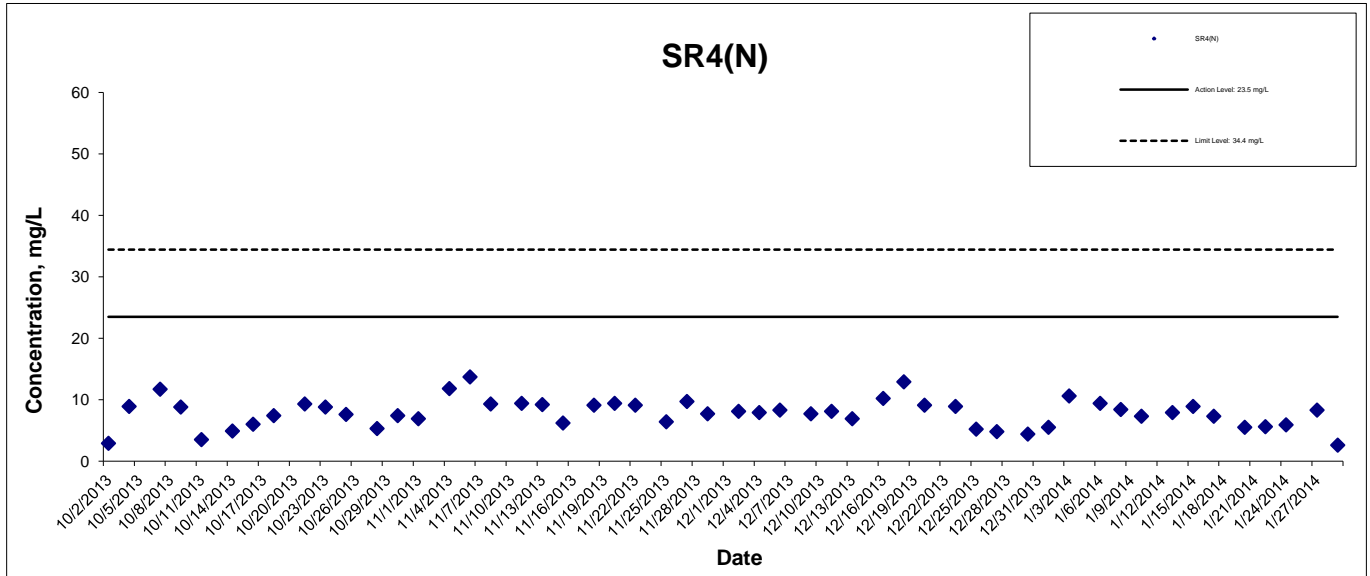


## Suspended Solids at Mid-Ebb Tide



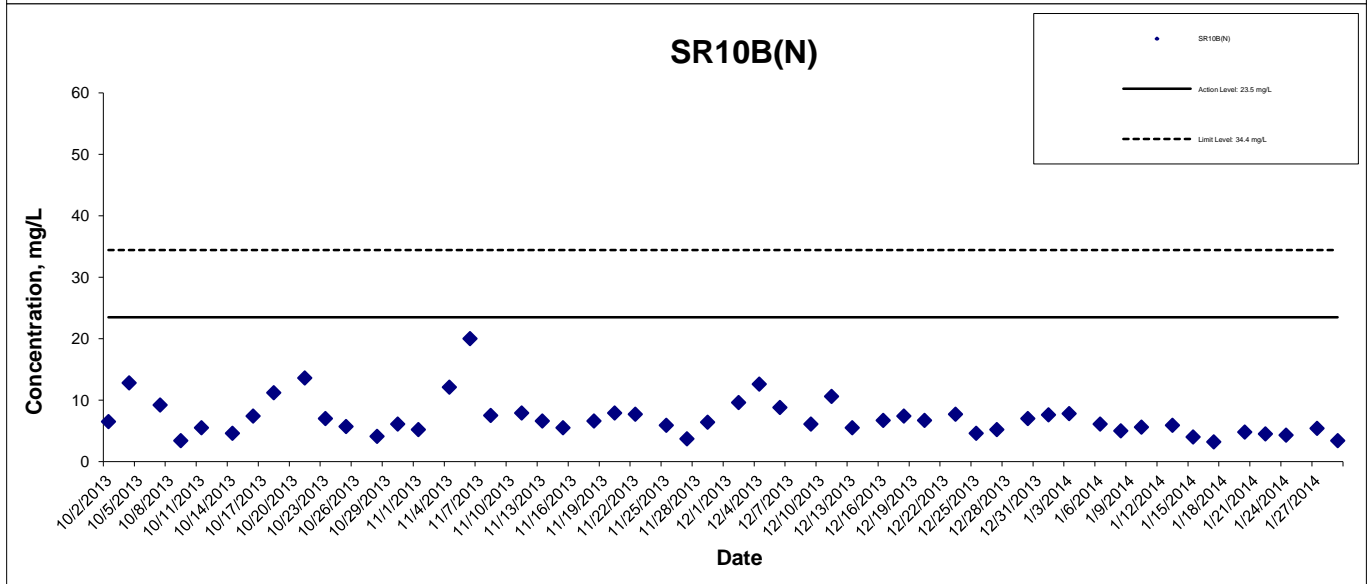
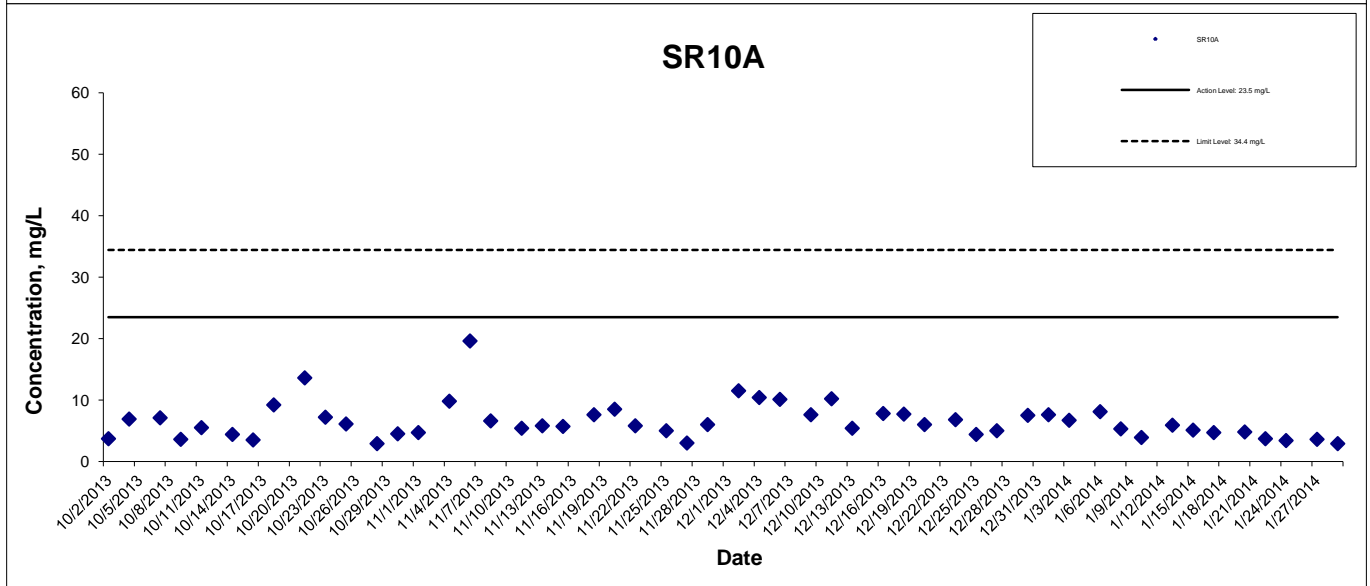
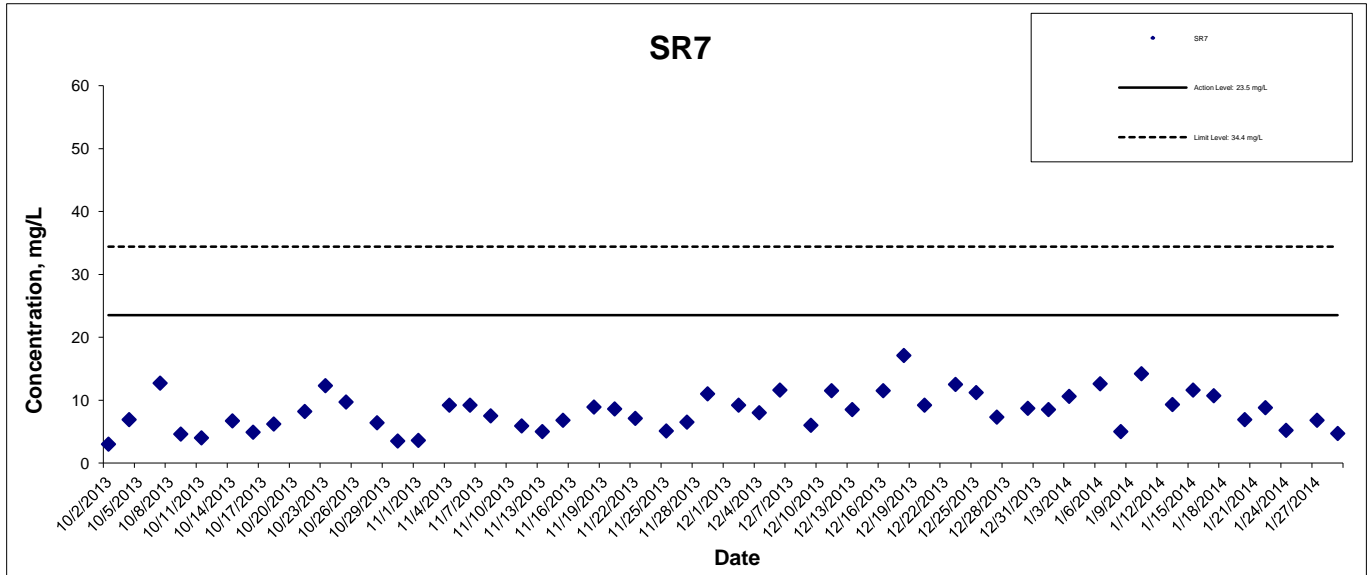
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## Suspended Solids at Mid-Ebb Tide



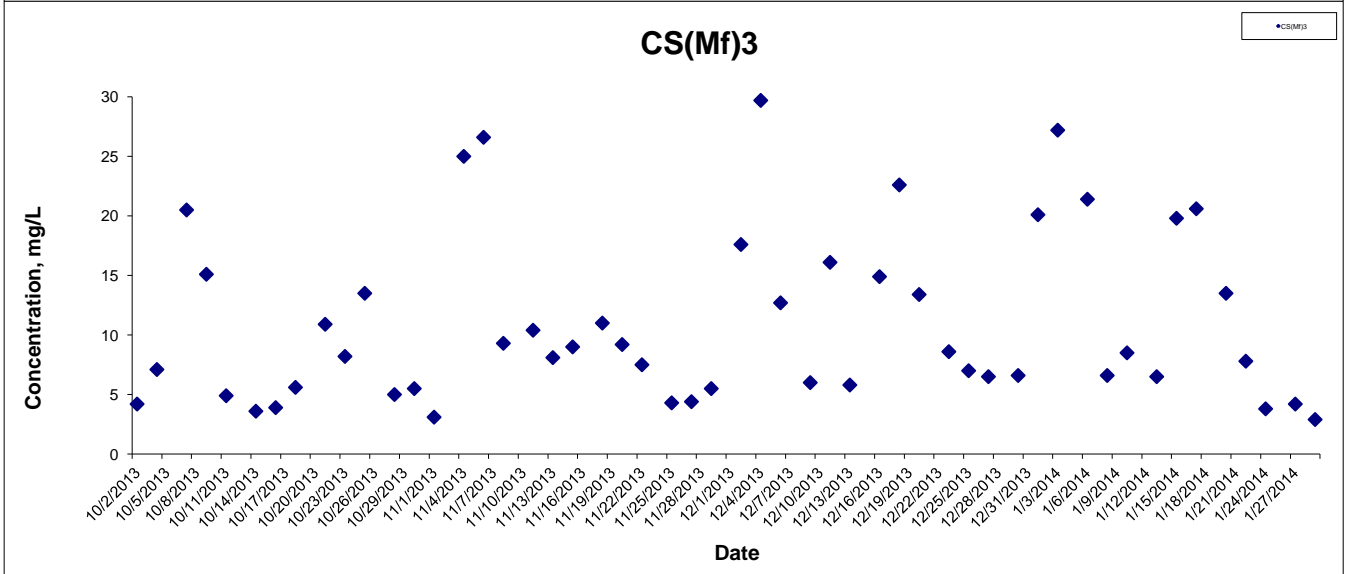
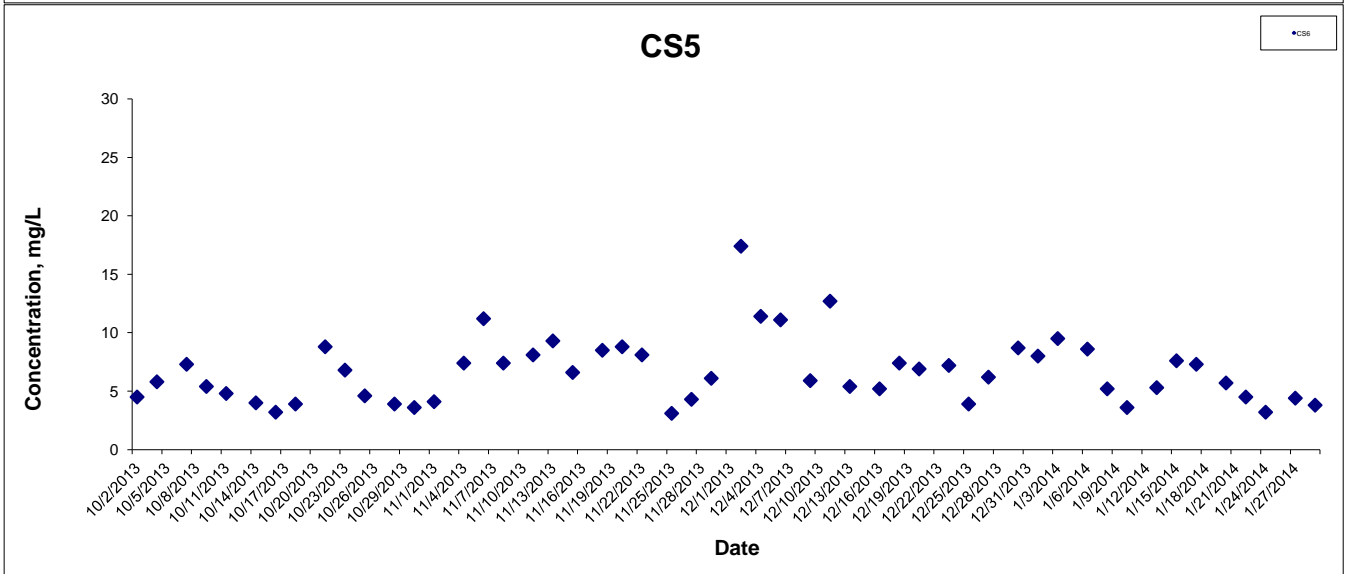
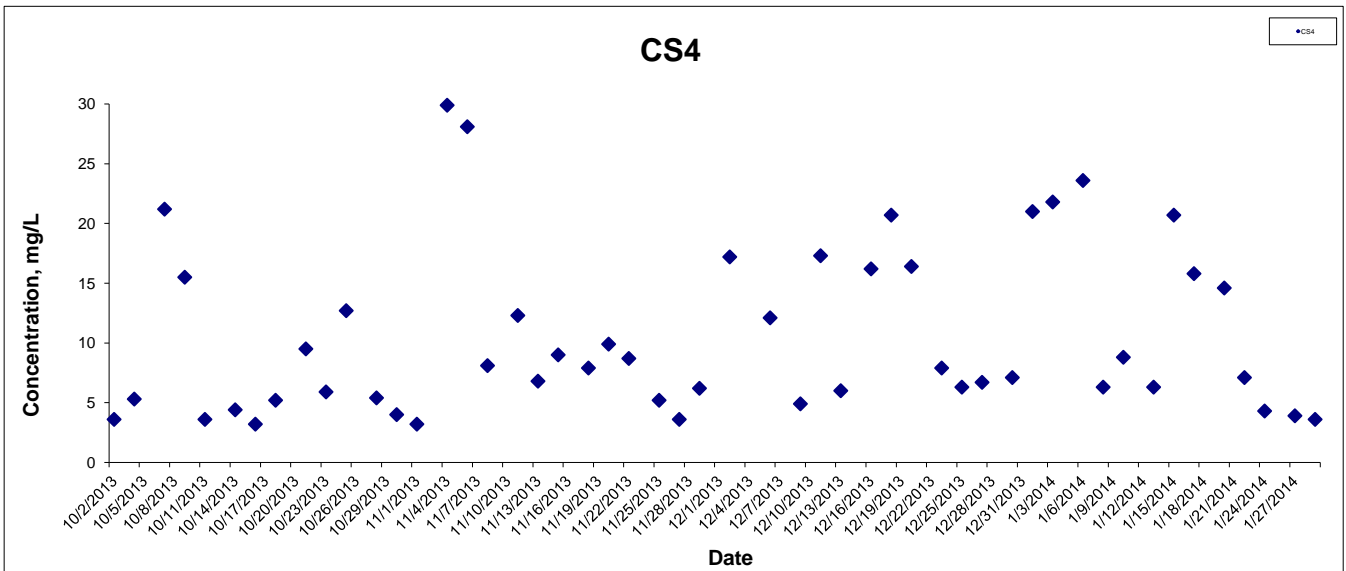
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HONG KONG - ZHUHAI - MACAO BRIDGE

HONG KONG BOUNDARY CROSSING FACILITIES

- RECLAMATION WORKS

Graphical Presentation of Impact Water Quality

Monitoring Results

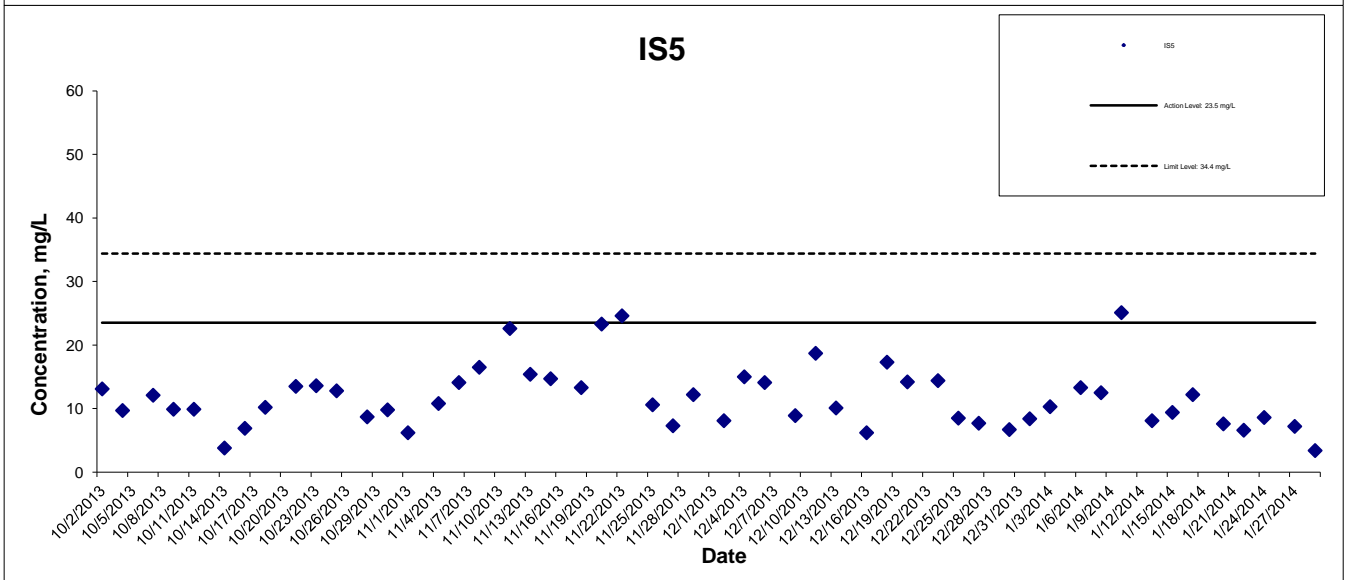
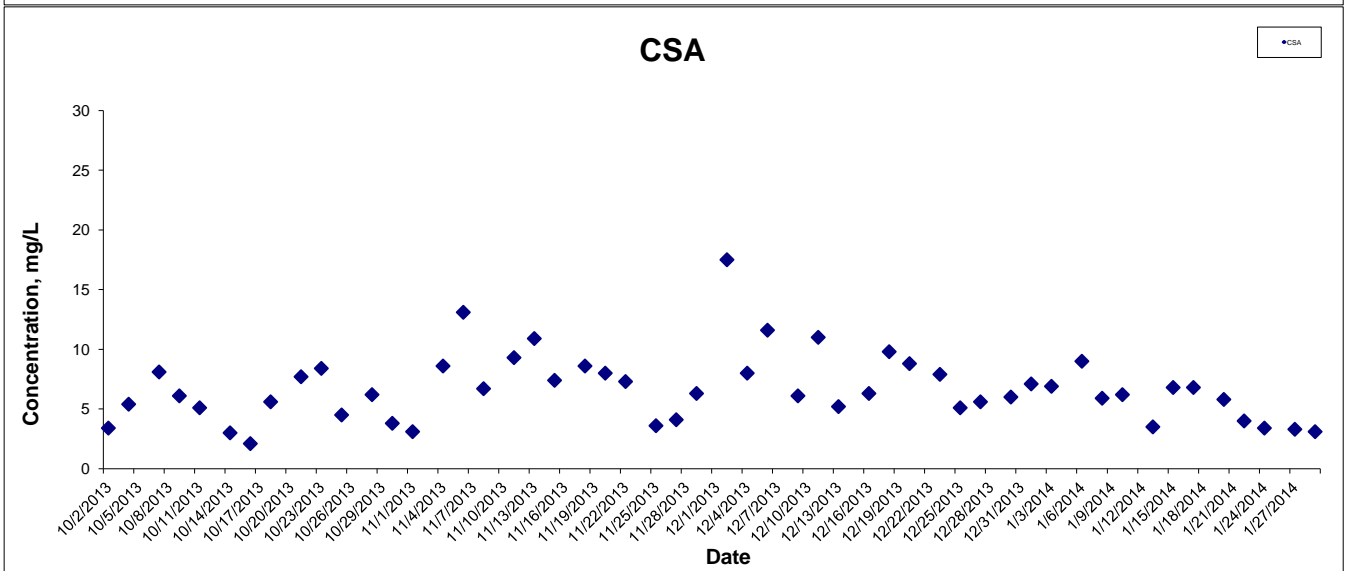
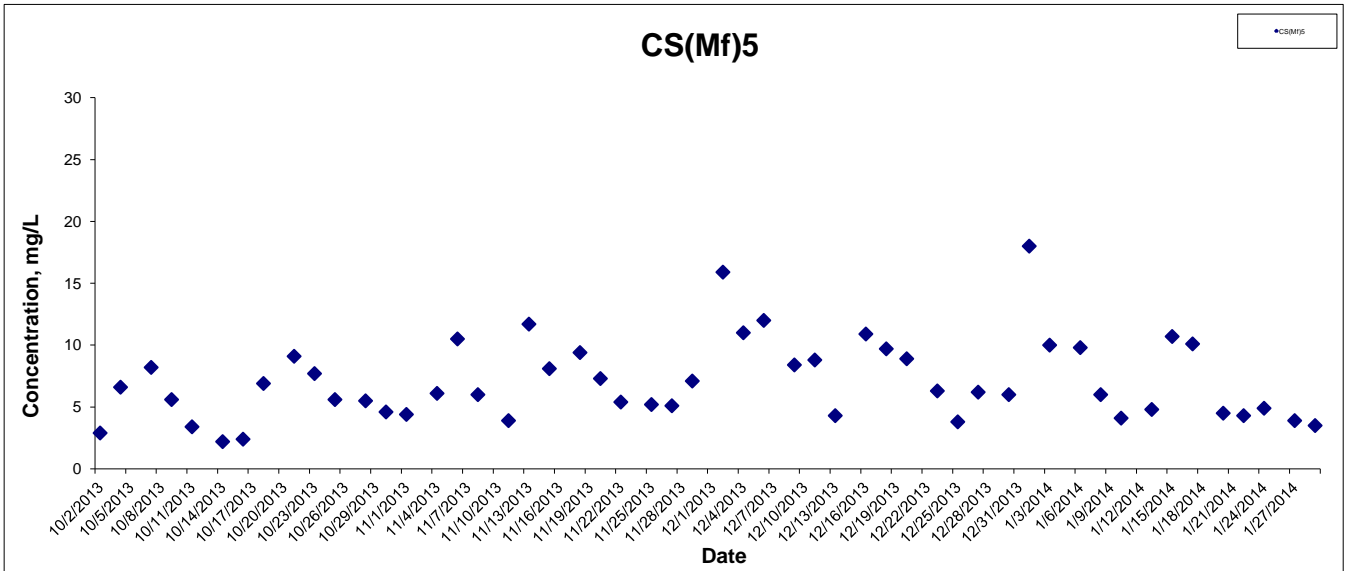
Project No.: 60249820

Date: Feb 2014



Appendix J

## Suspended Solids at Mid-Flood Tide



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- RECLAMATION WORKS

**Graphical Presentation of Impact Water Quality  
Monitoring Results**

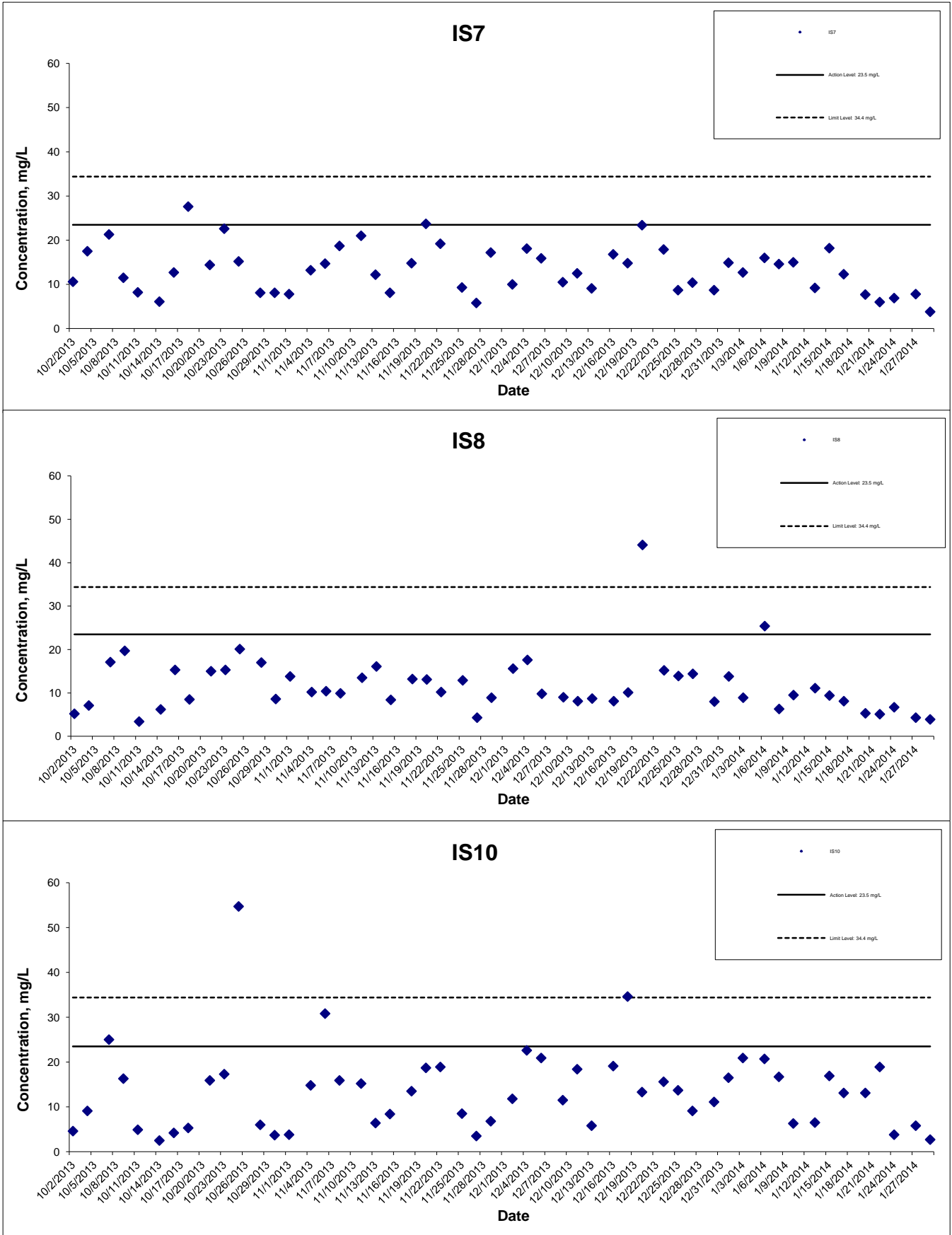


Project No.: 60249820

Date: Feb 2014

Appendix J

## Suspended Solids at Mid-Flood Tide



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HONG KONG BOUNDARY CROSSING FACILITIES

- RECLAMATION WORKS

**Graphical Presentation of Impact Water Quality  
Monitoring Results**



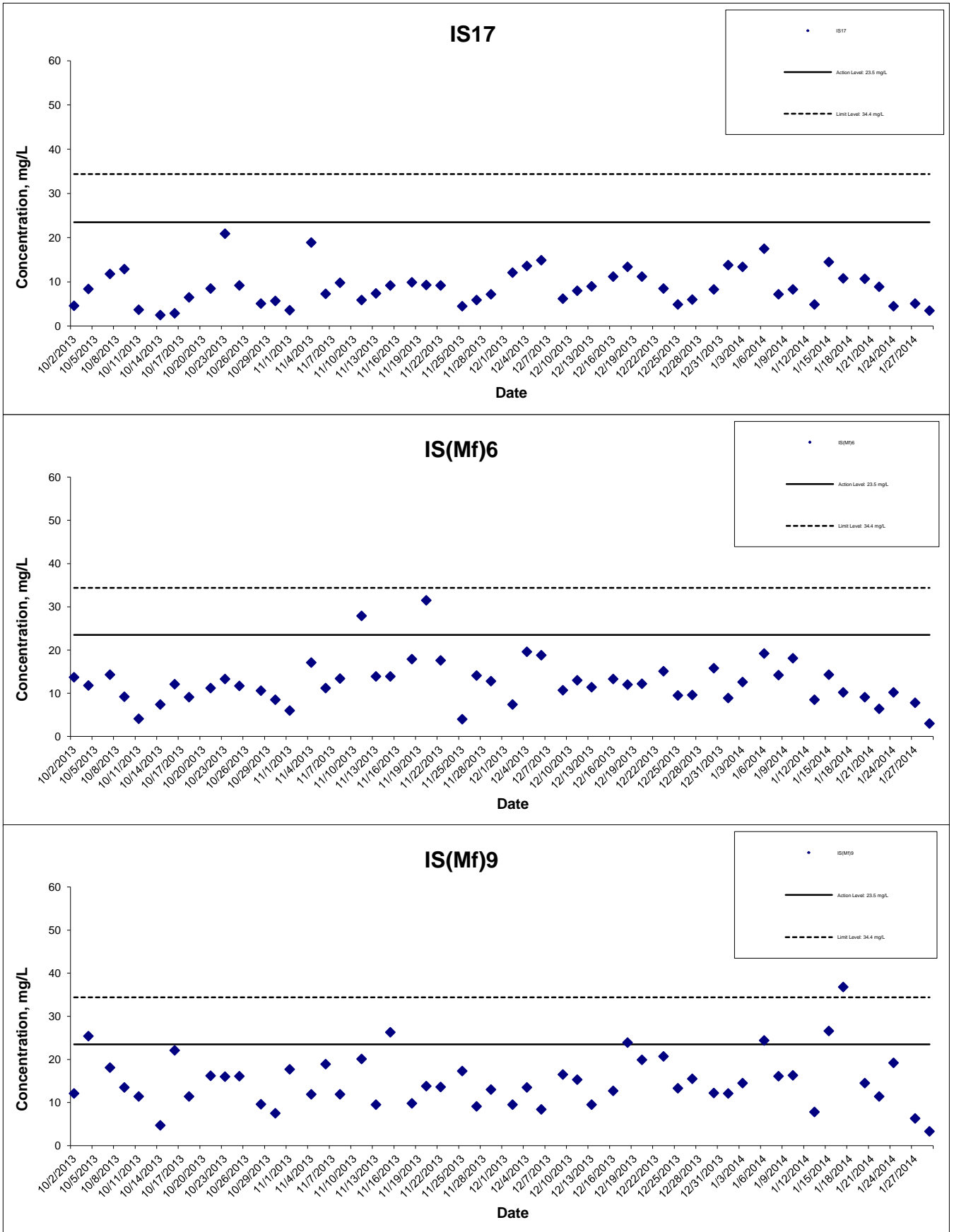
Project No.: 60249820

Date: Feb 2014

Appendix J



## Suspended Solids at Mid-Flood Tide



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HONG KONG BOUNDARY CROSSING FACILITIES

- RECLAMATION WORKS

**Graphical Presentation of Impact Water Quality  
Monitoring Results**

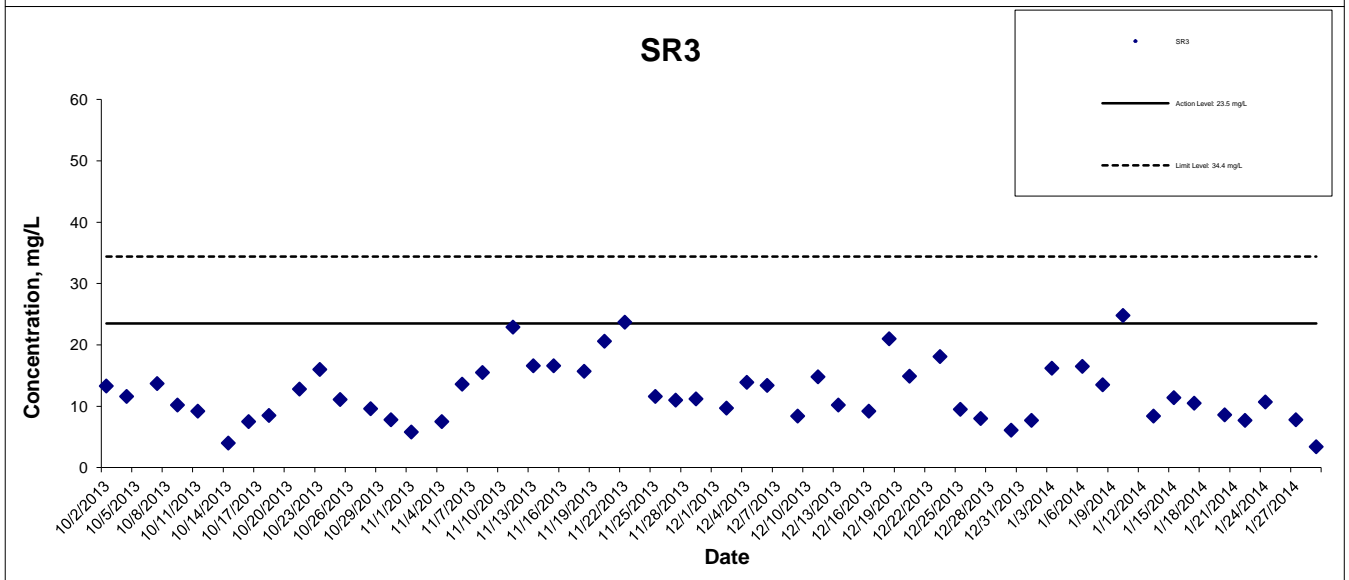
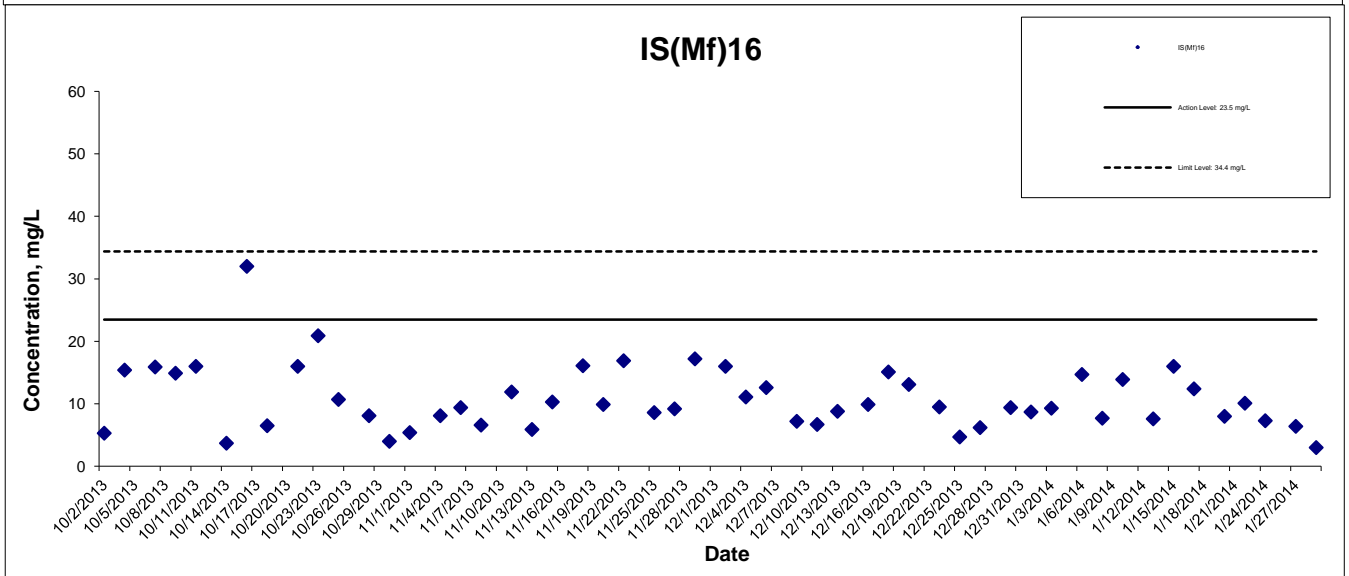
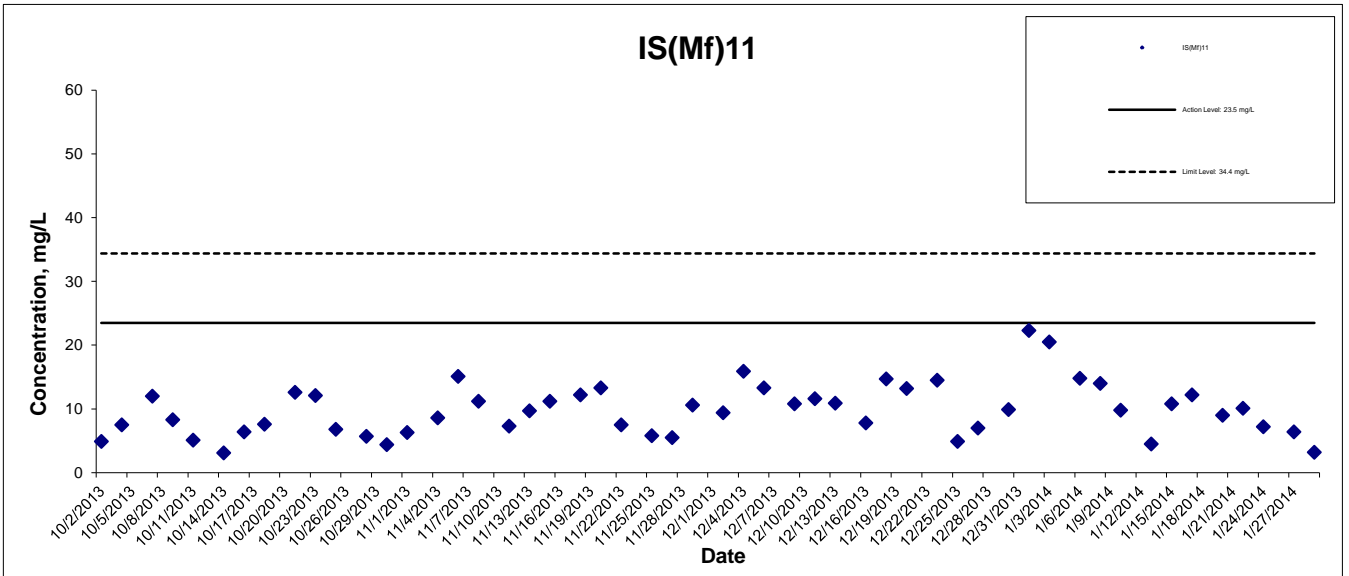


Project No.: 60249820

Date: Feb 2014

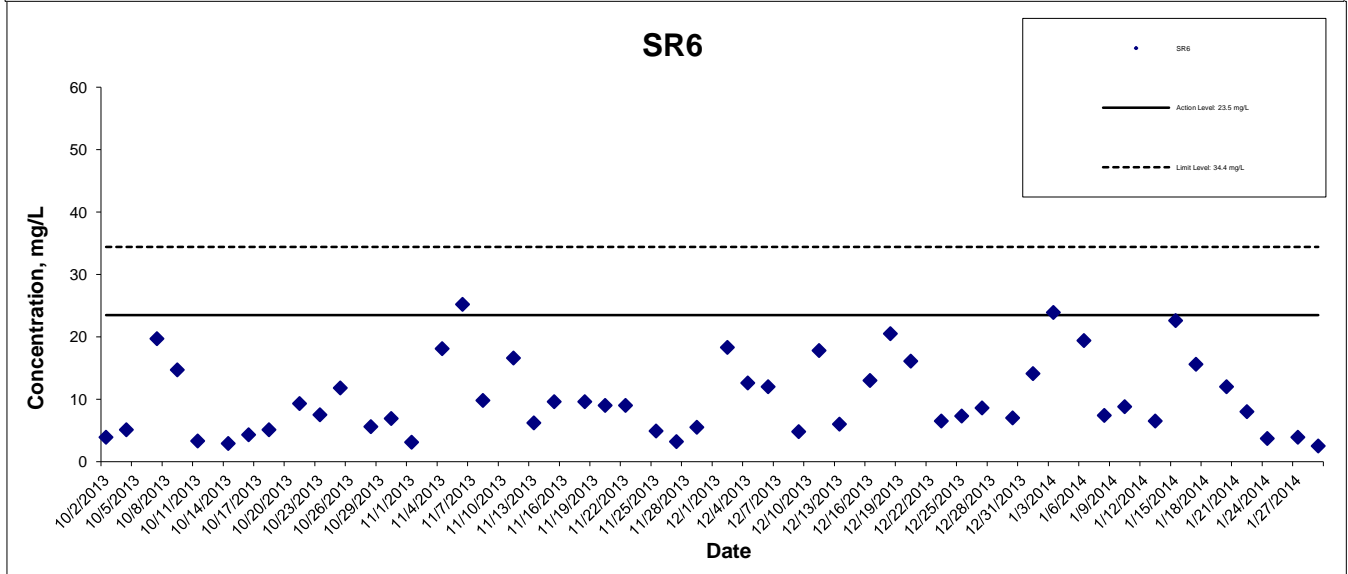
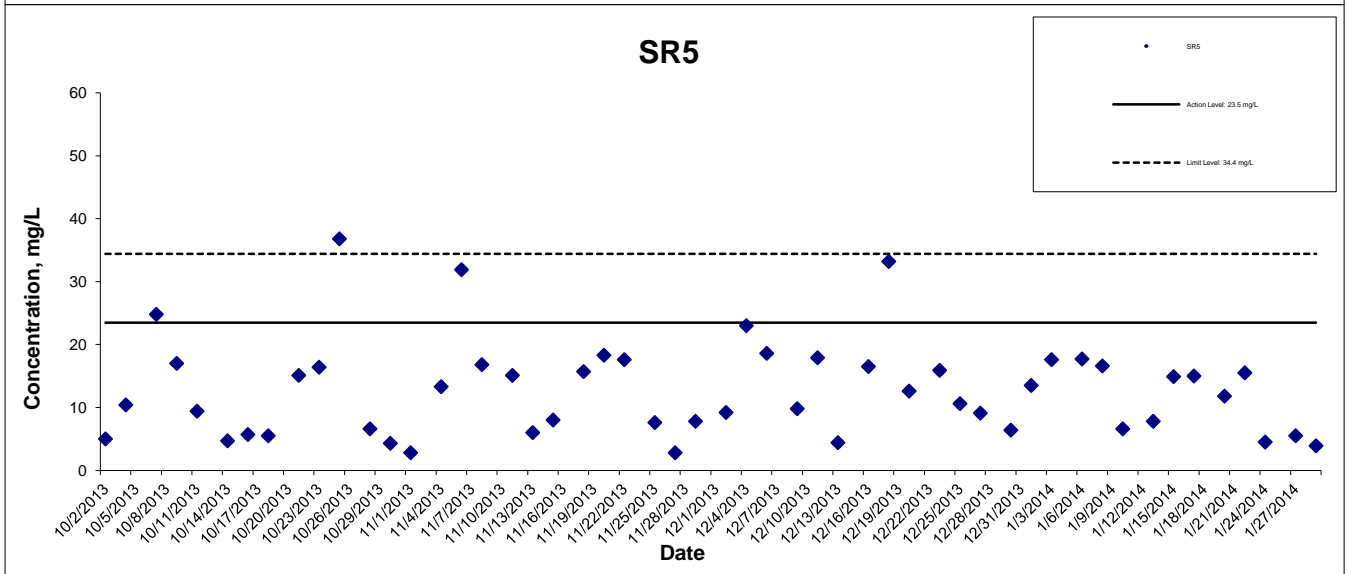
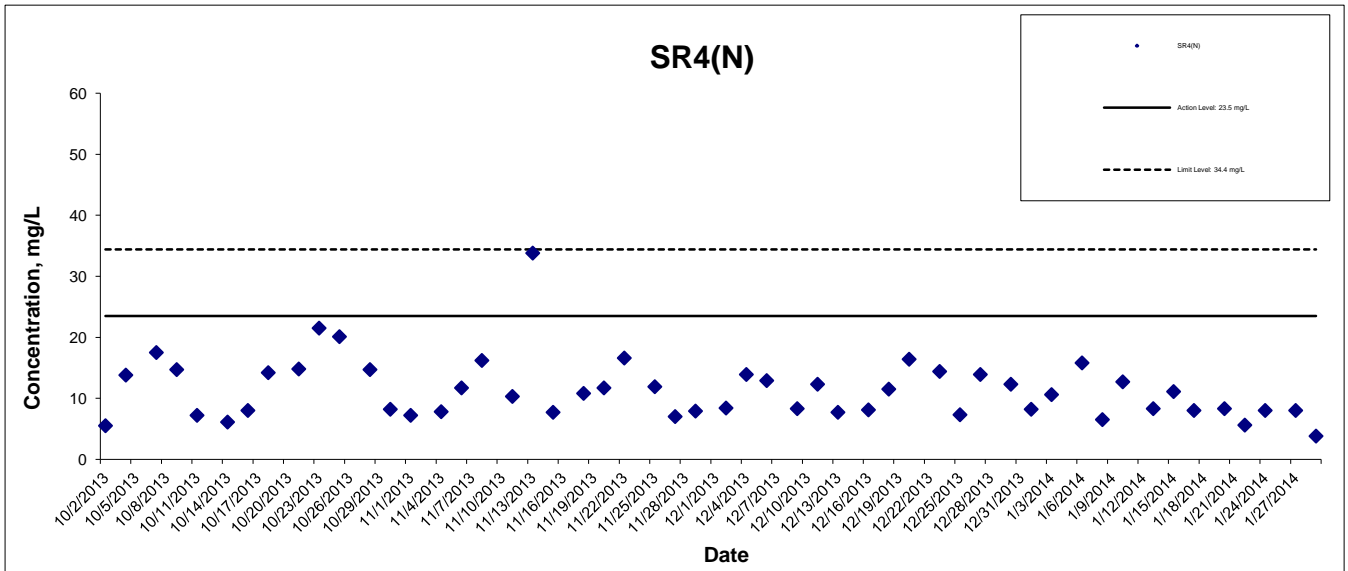
Appendix J

## Suspended Solids at Mid-Flood Tide



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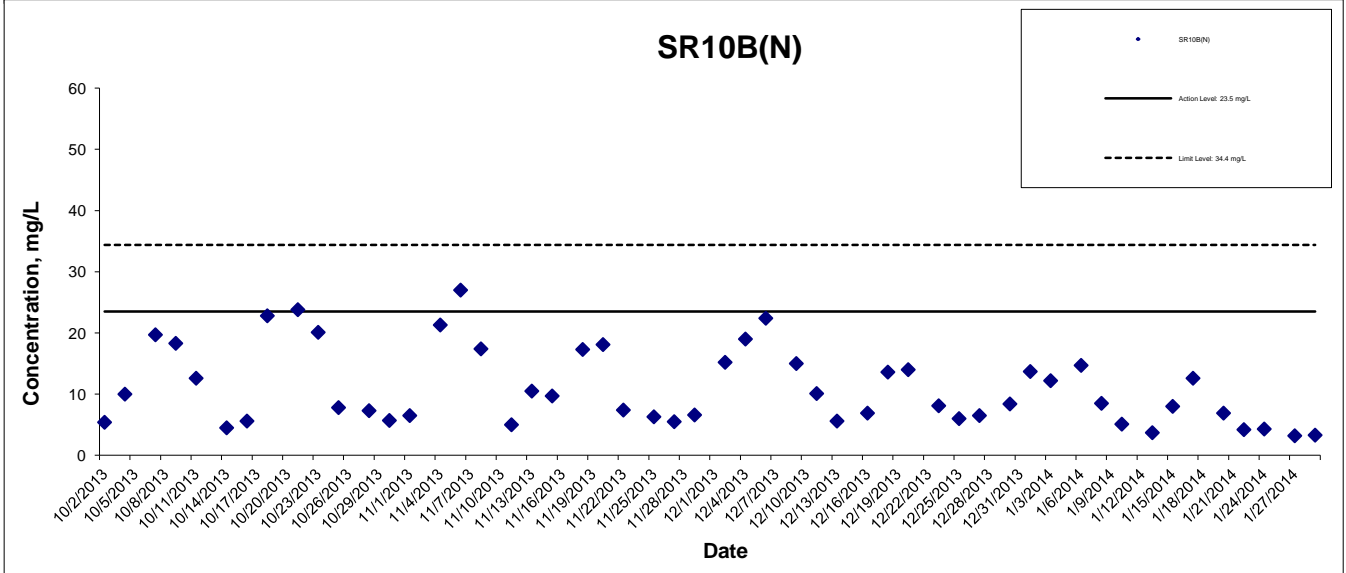
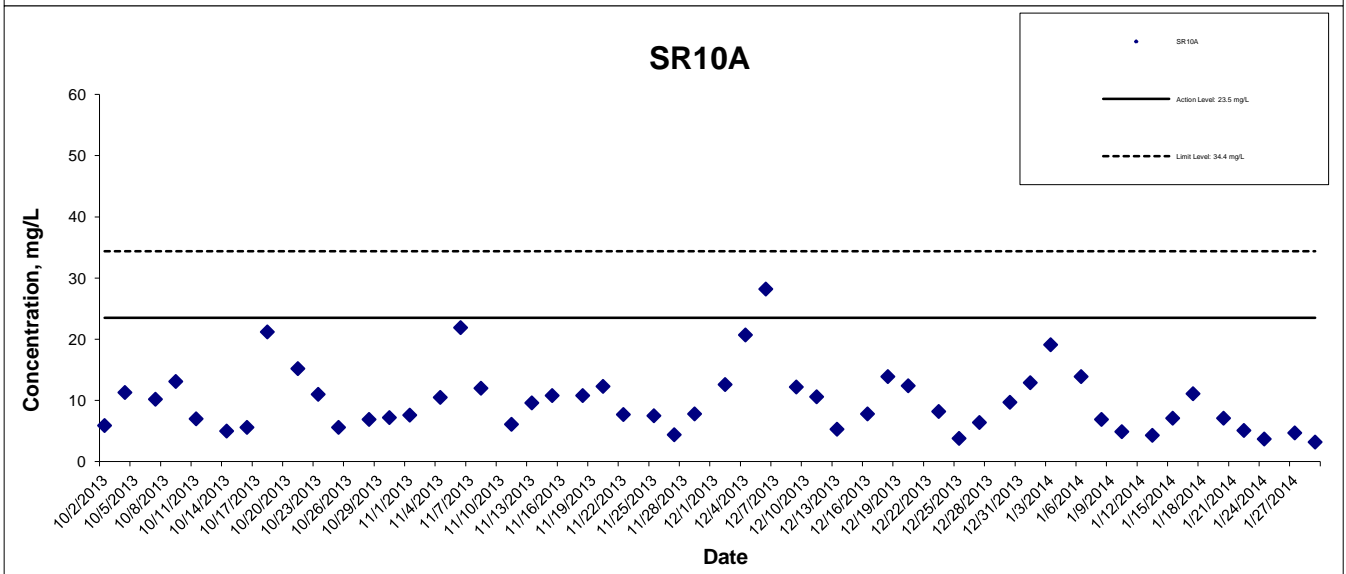
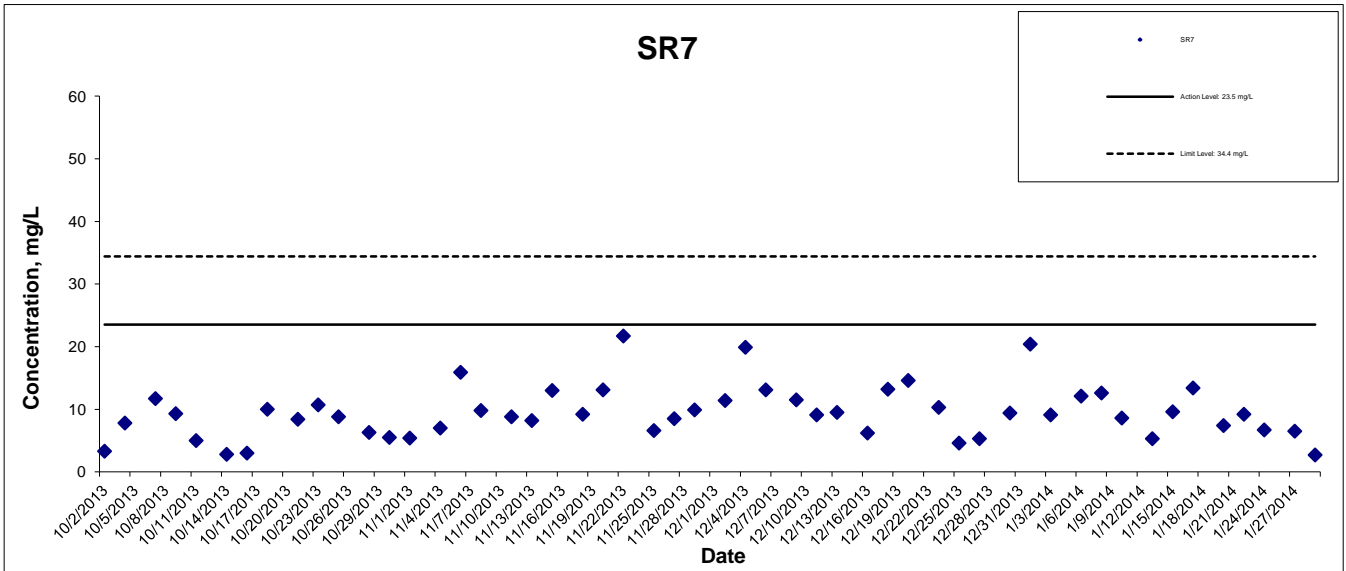
HONG KONG BOUNDARY CROSSING FACILITIES

- RECLAMATION WORKS

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## Suspended Solids at Mid-Flood Tide



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**Appendix K Impact Dolphin Monitoring Survey Sighting Summary**

**Table 1 Impact Dolphin Monitoring Survey Sighting Table**

Project	Contract	Date	Sighting No.	Time	Group Size	Area	Beaufort	PSD	Effort	Type	Northing	Easting	Season	Boat Association
HKBCF	HY/2010/02	06/01/14	887	9:59	3	NWL	3	48	On	Impact	824754	805124	Winter	No
HKBCF	HY/2010/02	06/01/14	888	11:20	8	NWL	2	81	On	Impact	827035	805355	Winter	No
HKBCF	HY/2010/02	06/01/14	890	13:35	1	NWL	3	111	On	Impact	825687	806856	Winter	No
HKBCF	HY/2010/02	06/01/14	891	14:10	1	NWL	2	191	On	Impact	826564	806477	Winter	No
HKBCF	HY/2010/02	06/01/14	892	14:15	13	NWL	2	173	On	Impact	826667	806497	Winter	No
HKBCF	HY/2010/02	06/01/14	893	15:20	2	NWL	2	NA	Opp	Impact	829483	807079	Winter	No
HKBCF	HY/2010/02	09/01/14	897	12:57	1	NEL	2	50	On	Impact	821113	813173	Winter	No
HKBCF	HY/2010/02	09/01/14	898	14:34	1	NWL	2	42	On	Impact	825964	808628	Winter	No
HKBCF	HY/2010/02	10/01/14	900	11:20	4	NWL	2	178	On	Impact	829263	806410	Winter	SMALL TRAWLER
HKBCF	HY/2010/02	10/01/14	901	11:59	2	NWL	2	33	On	Impact	825460	806856	Winter	No

KEY:

Sighting

Opp Opportunistic

On On effort

PSD

Perpendicular Sighting Distance

NEL

North East Lantau

Group Size

Represents best estimate for group encountered

NWL

North West Lantau

# **DECEMBER 2013**

## **Photo Identification Information**

**Table 1. Sightings of Individually Identified Chinese White Dolphin (*Sousa chinensis*) between March 2012 – December 2013**

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
HZMB 116		2013-12-26	879	NWL
HZMB 115		2013-12-26	879	NWL
HZMB 114		2013-10-24	827	NWL
HZMB 113		2013-10-24	827	NWL
HZMB 112		2013-10-15	815	NWL
HZMB111		2013-10-15	815	NWL
HZMB 110		2013-10-15	812	NWL
HZMB 108		2013-08-30	780	NEL
HZMB 107		2013-08-21	770	NWL
HZMB 106		2013-08-21	769	NWL
HZMB 105		2013-07-08	711	NWL
HZMB 104		2013-07-08	711	NWL
HZMB 103		2013-07-08	711	NWL
HZMB 102		2013-07-08	706	NWL
HZMB 101		2013-07-08	706	NWL
HZMB 100		2013-07-08	706	NWL
HZMB 099		2013-06-13	681	NWL
		2013-06-13	680	NWL
HZMB 098	NL104	2013-11-02	849	NWL
		2013-11-02	845	NWL
		2013-10-24	831	NWL
		2013-07-08	711	NWL
		2013-05-24	659	NWL
HZMB 097		2013-05-09	647	NWL
HZMB 096		2013-04-01	621	NWL





Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
HZMB 095		2013-08-30	780	NEL
		2013-06-25	697	NWL
		2013-06-13	682	NWL
		2013-04-01	621	NWL
HZMB 094		2013-06-26	703	NWL
		2013-06-25	698	NWL
		2013-03-18	601	NWL
HZMB 093		2013-05-24	657	NWL
		2013-02-21	587	NWL
HZMB 092		2013-02-21	589	NWL
		2013-02-15	581	NWL
HZMB 091		2013-02-15	579	NWL
HZMB 090		2013-06-25	697	NWL
		2013-06-13	682	NWL
		2013-02-15	579	NWL
HZMB 089		2013-02-15	579	NWL
HZMB 088		2013-02-15	579	NWL
HZMB 087		2013-02-15	579	NWL
HZMB 086	NL242	2013-05-09	642	NWL
		2013-02-15	579	NWL
		2011-10-10	Baseline	NWL
HZMB 085		2013-06-26	703	NWL
		2013-02-15	579	NWL
HZMB 084		2013-02-14	575	NWL
HZMB 083	NL136	2013-12-19	863	NWL
		2013-03-28	607	NWL
		2013-02-15	579	NWL

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
		2013-01-28	568	NWL
		2012-01-28	564	NWL
HZMB 082		2013-02-21	587	NWL
		2013-02-15	579	NWL
		2013-01-28	563	NWL
HZMB 081		2013-01-28	559	NWL
		2013-01-28	557	NWL
HZMB 080		2013-01-28	556	NWL
HZMB 079		2013-01-28	556	NWL
HZMB 078		2013-02-15	579	NWL
		2013-01-08	552	NWL
HZMB 077		2013-12-26	878	NWL
		2013-07-08	706	NWL
		2012-12-11	541	NWL
HZMB 076		2013-07-08	706	NWL
		2012-12-11	541	NWL
HZMB 075		2012-12-06	525	NEL
HZMB 074		2013-05-09	647	NWL
		2013-04-01	623	NWL
		2013-04-01	621	NWL
		2013-02-21	594	NEL
		2012-12-10	529	NEL
		2012-12-06	525	NEL
HZMB 073		2013-05-09	647	NWL
		2013-04-01	623	NWL
		2013-04-01	621	NWL
		2013-02-21	594	NEL

		2012-12-10	529	NEL
		2012-12-06	525	NEL
HZMB 072		2012-10-24	476	NWL
<b>Identification Number</b>	<b>Baseline Identification Number</b>	<b>Date (YYYY-MM-DD)</b>	<b>Sighting Number</b>	<b>Area Sighted</b>
HZMB 071		2012-10-24	475	NWL
		2012-10-12	466	NWL
HZMB 070		2012-10-24	476	NWL
HZMB 069		2013-08-21	774	NWL
		2013-07-08	711	NWL
		2012-10-24	476	NWL
HZMB 068		2013-11-01	839	NWL
		2012-10-24	476	NWL
HZMB 067		2012-10-24	475	NWL
HZMB 066	NL93	2013-01-28	559	NWL
		2012-12-11	537	NWL
		2012-10-24	475	NWL
		2012-10-12	466	NWL
HZMB 064		2013-05-09	647	NWL
		2013-01-28	561	NWL
		2012-10-24	475	NWL
		2012-10-12	466	NWL
HZMB 063		2013-05-09	647	NWL
		2012-10-12	466	NWL
HZMB 062		2012-12-06	525	NEL
		2012-10-11	457	NWL
HZMB 060		2012-09-18	447	NWL
HZMB 059		2013-02-21	591	NWL

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		2012-09-18	445	NWL
HZMB 057		2012-09-18	440	NWL
HZMB 056		2012-09-18	442	NWL
		2012-09-05	433	NEL

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
HZMB 055		2012-09-04	425	NWL
HZMB 054	CH34	2013-11-07	854	NWL
		2013-11-02	845	NWL
		2013-10-24	831	NWL
		2013-08-30	780	NEL
		2013-07-08	711	NWL
		2013-09-18	448	NWL
		2012-09-05	432	NEL
		2011-11-07	Baseline	NWL
		2011-11-05	Baseline	NWL
		2011-11-02	Baseline	NWL
		2011-11-01	Baseline	NEL
		2011-11-01	Baseline	NEL
		2011-10-28	Baseline	NWL
2011-10-06	Baseline	NWL		
HZMB 053		2012-09-04	425	NWL
HZMB 052		2012-09-04	423	NWL
HZMB 051	NL213	2013-05-09	644	NWL
		2013-04-01	622	NWL
		2013-02-15	582	NWL
		2013-02-15	581	NWL
		2013-01-28	559	NWL
		2013-01-28	556	NWL
		2012-09-04	422	NWL
HZMB 050		2013-02-15	579	NWL
		2012-09-04	421	NWL

HZMB 049		2012-09-03	419	NWL
HZMB 048		2012-09-03	419	NWL
<b>Identification Number</b>	<b>Baseline Identification Number</b>	<b>Date (YYYY-MM-DD)</b>	<b>Sighting Number</b>	<b>Area Sighted</b>
HZMB 047		2012-09-03	412	NWL
HZMB 046		2012-09-03	412	NWL
HZMB 045		2013-06-13	682	NWL
		2013-02-15	579	NWL
		2012-11-01	495	NWL
HZMB 044	NL98	2013-12-19	864	NWL
		2013-11-02	845	NWL
		2013-11-01	842	NWL
		2013-10-15	819	NWL
		2013-05-09	648	NWL
		2013-05-09	647	NWL
		2013-04-01	623	NWL
		2013-04-01	621	NWL
		2013-02-15	579	NWL
2012-11-01	495	NWL		
HZMB 043		2012-09-03	407	NWL
HZMB 042	NL260	2013-12-19	863	NWL
		2012-11-01	495	NWL
		2011-11-07	Baseline	NWL
HZMB 041	NL24	2013-11-02	845	NWL
		2013-05-09	648	NWL
		2013-05-09	647	NWL
		2013-04-01	623	NWL
		2013-04-01	621	NWL
		2013-02-15	579	NWL
		2012-11-01	495	NWL
		2011-11-06	Baseline	NEL
		2011-11-05	Baseline	NWL
		2011-11-05	Baseline	NWL
2011-10-10	Baseline	NWL		

HZMB 040		2013-10-15	821	NWL
		2013-07-08	714	NWL
		2013-07-08	711	NWL
		2013-02-21	589	NWL
		2012-11-01	493	NWL
Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
HZMB 038		2012-11-01	490	NWL
HZMB 037		2012-11-01	490	NWL
HZMB 036		2012-09-03	407	NWL
		2012-11-01	490	NWL
HZMB 035		2013-02-15	579	NWL
		2012-11-01	490	NWL
HZMB 034		2012-11-01	493	NWL
HZMB 028		2013-04-01	625	NWL
		2012-08-06	373	NWL
HZMB 027		2013-12-19	863	NWL
		2013-02-15	579	NWL
		2013-01-28	568	NWL
		2013-01-28	564	NWL
		2012-06-14	299	NWL
HZMB 026		2013-06-25	697	NWL
		2013-05-09	642	NWL
		2013-01-28	561	NWL
		2012-06-13	295	NEL
HZMB 025		2013-02-22	596	NEL
		2013-02-21	591	NWL
		2012-12-06	525	NEL
		2012-10-11	457	NWL
		2012-06-13	295	NEL
HZMB 024		2013-03-18	601	NWL
		2012-06-13	295	NEL
HZMB 023		2013-07-08	715	NWL
		2013-07-08	711	NWL
		2013-04-01	619	NWL

Contract No. HY/2010/02  
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Hong Kong Boundary Crossing Facilities – Reclamation Works  
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		2013-02-21	589	NWL
		2013-02-15	579	NWL
		2012-07-10	330	NWL



Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
HZMB 022		2013-10-24	827	NWL
		2013-07-08	715	NWL
		2013-07-08	711	NWL
		2013-04-01	619	NWL
		2013-02-21	589	NWL
		2013-02-15	579	NWL
		2012-07-10	330	NWL
HZMB 021	NL37	2012-07-10	330	NWL
		2011-09-16	Baseline	NWL
HZMB 020		2012-07-10	330	NWL
HZMB 019		2012-07-10	330	NWL
HZMB 018		2013-05-09	647	NWL
		2013-02-21	594	NEL
		2012-12-10	529	NEL
		2012-07-10	330	NWL
HZMB 017		2012-07-10	330	NWL
HZMB 016		2013-07-08	706	NWL
		2012-12-11	539	NWL
		2012-09-18	446	NWL
		2012-09-04	421	NWL
		2012-07-10	330	NWL
HZMB 015		2012-07-10	330	NEL
HZMB 014	NL176	2013-12-26	880	NWL
		2012-08-06	373	NWL
		2012-06-13	295	NEL
		2011-11-06	Baseline	NEL
		2011-11-01	Baseline	NEL

		2011-11-01	Baseline	NEL
HZMB 013		2012-05-28	281	NWL
<b>Identification Number</b>	<b>Baseline Identification Number</b>	<b>Date (YYYY-MM-DD)</b>	<b>Sighting Number</b>	<b>Area Sighted</b>
HZMB 012		2012-05-28	281	NWL
HZMB 011	EL01	2013-02-22	597	NEL
		2013-02-21	592	NEL
		2013-02-14	572	NEL
		2012-11-06	517	NEL
		2012-09-19	452	NWL
		2012-03-31	261	NEL
		2011-11-02	Baseline	NWL
		2011-11-01	Baseline	NEL
HZMB 009		2012-05-28	281	NWL
HZMB 008		2012-05-28	281	NWL
HZMB 007	NL246	2012-12-10	529	NEL
HZMB 006		2013-02-21	594	NEL
		2012-12-11	539	NWL
		2012-11-01	495	NWL
		2012-03-29	250	NWL
HZMB 005		2013-11-09	860	NWL
		2013-11-07	858	NWL
		2013-10-15	813	NWL
		2012-12-10	532	NWL
		2012-08-06	374	NWL
		2012-05-28	287	NWL
HZMB 004		2012-09-04	421	NWL
		2012-03-31	262	NWL

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
HZMB 003	NL179	2014-10-15	812	NWL
		2013-06-25	697	NWL
		2012-12-10	529	NEL
		2012-03-31	261	NWL
		2011-11-06	Baseline	NEL
		2011-09-16	Baseline	NWL
HZMB 002	WL111	2013-12-26	878	NWL
		2013-12-19	863	NWL
		2013-11-01	839	NWL
		2013-10-15	819	NWL
		2013-09-24	798	NWL
		2013-02-14	573	NWL
		2012-12-11	536	NWL
		2012-12-11	535	NWL
		2012-10-12	466	NWL
		2012-10-24	475	NWL
		2012-05-28	281	NWL
		2012-03-29	250	NWL
HZMB 001	WL46	2013-08-21	771	NWL
		2013-06-13	681	NWL
		2013-04-01	617	NWL
		2013-02-14	573	NWL
		2012-03-29	250	NWL

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
	CH98	2011-11-02	Baseline	NWL
	NL11	2011-11-02 2011-11-07	Baseline Baseline	NWL NWL
	NL12	2011-11-02	Baseline	NWL
	NL33	2011-09-23 2011-11-01 2011-11-05 2011-11-07	Baseline Baseline Baseline Baseline	NWL NEL NWL NWL
	NL37	2011-09-16	Baseline	NWL
	NL46	2011-10-28	Baseline	NWL

HZMB 002 2013-12-19\_12-28-45\_01



HZMB 002 2013-12-26\_11-15-12\_02



HZMB 002 WL 2013-12-19\_12-32-32



HZMB 014 2013-12-26\_14-27-19\_01



HZMB 027 2013-12-19\_12-12-00



HZMB 027 2013-12-19\_12-17-59\_02



HZMB 042 2013-12-19\_12-31-07



HZMB 044 2013-12-19\_12-42-48



HZMB 077 2013-12-26\_11-09-49



HZMB 083 2013-12-19\_12-18-21



HZMB 115 2013-12-26\_13-54-54\_01



HZMB 116 2013-12-26\_13-59-59



## **Investigation on Shifted Transect Lines by Temporary Silt Curtain**

**Investigation on Shifted Transect Lines by Temporary Silt Curtain (Revised on 17 Feb 14)**

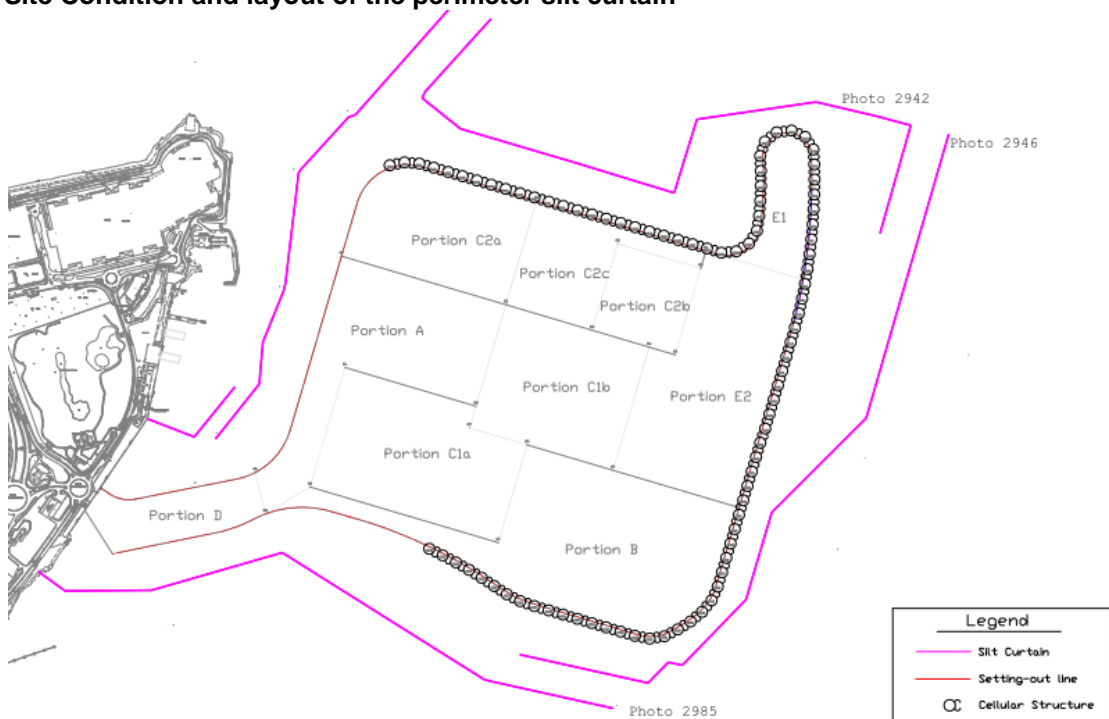
**Narrative of the observations:**

Route travelled on CWD line transect surveys conducted in December 2013 and January 2014 shifted slightly to the east at the northern end of transect line 11 due to works at HKBCF. Survey will be taken as close to transect 11 as possible. IEC and RSS was informed on 7 January 2013 and investigation started on 9 January 2013 after request for investigation received from IEC on the same date.

**Action taken:**





Site visit was conducted on 16 January 2014, together with data review by the dolphin specialist to investigate the condition on layout of the silt curtain for any significant effect on dolphin monitoring, analyses and dolphin behaviour is as followed:

**Site Condition and layout of the perimeter silt curtain**



**Figure 1. Silt curtain layout and corresponding photo code which shows the location where photos were taken.**

**Photo records of the perimeter silt curtain (Photos taken on 16 Jan 14).**

	
<p>2942</p>	<p>2946</p>
	
<p>2985</p>	

**Dolphin specialist’s review on any effect to dolphin monitoring, analyses and dolphin behaviour:**

**Temporary Nature of Current Silt Curtain Deployment**

During impact monitoring the four sightings noted occurred in July (1), August (1), September (1) and November (1). There were no sightings made during impact surveys in NEL between March 2012 and June 2012. In general, NEL is most frequented during the “summer” months which is outside the period proposed for silt curtain re-alignment.

**Proportion of Habitat Affected**

The temporary shift in the silt curtain at Line 11 increases the area inside the silt curtain by 30ha (incl. reclamation site). This is 0.5% of the NEL habitat (land masses excluded). It is not uncommon for dolphins in NEL to also be recorded in NWL. Therefore, the area of habitat which is unavailable is 0.2% of NWL and NEL combined (excluding land masses but not excluding habitat loss from HKLR Project). Further, it is noted that many individual dolphins use NEL, NWL as well as WL and waters in Chinese mainland (AFCD 2013 Annual Dolphin Monitoring Report) i.e., the habitat available to CWD extends throughout the Pearl River Estuary. From what is recorded by AFCD monitoring data and HZMB baseline information, no unique or significant proportion of habitat is being made unavailable to dolphins under the proposed temporary arrangement.

**Dolphin (Line Transect) Monitoring and Analyses**

On analyses of line transect data, the effective strip width (ESW) is the unit which is used to calculate density. The ESW is calculated from the PSD data collected during the line transect. The ESW allows us to calculate an area in which dolphin numbers are recorded and from this we calculate density. When there are irregular coastlines, islands or manmade obstacles which obscure part of the ESW, the area that cannot be viewed is subtracted from the ESW area. So, in the instance of transect 11, the west side of the line has not



been included as part of the NEL area available for dolphin monitoring as it is a land reclamation site and not available for dolphins to inhabit. As the silt curtains have only shifted approximately 200m length of transect and less than 200m to the east, the ESW stays the same on the eastern side of transect 11 without impinging on the ESW of transect 12 therefore, is no overlap between the transects ESW. When overall area calculations are made, the portion of NEL now occupied by the extended silt curtain will be extracted from the overall area. Area will be systematically re-calculated throughout the NEL/NWL habitat for the duration of the impact monitoring as the area surveyed will change over time as various marine works alter the shape of the NEL/NWL habitat. This will not alter the comparability of density calculations.

The analyses conducted for SPSE and DPSE relies on calculating the density for each 1km<sup>2</sup> box straddling the transect lines. If a line shift within a box, as is the case for the silt curtain at the end of line 11, then the unit of effort within the box remains the same as it did before the silt curtain moved. If the unit of effort stays the same, the densities can be compared across previous times directly. If the shift in transect is to take it completely out the box, then the boxes effected may need not be removed from SPSE and DPSE calculations. This is not the case with the current situation at line transect 11. According to the preliminary assessment and review provided by the dolphin specialist, the shift in the transect line is insignificant and will not affect the overall dolphin survey and analysis.

### **Summary Baseline Data and Impact Data (2012-2013) with Relevance to Behaviour**

The methodology statement for the baseline report notes that a behavioural category is assigned to each sighting and then each behavior is plotted on a map. There is no analyses of behavioural data as such with regards to frequency, correction for effort, comparison of trends with previous or historic data, etc. The report lists 17 sightings in all of NEL during the baseline survey of which 12 were recorded over 3 days in a one week period in November 2011. There was clearly high variation in encounter frequency in NEL during the baseline survey; therefore it would have made any analyses of such few data problematic (Baseline report Appendix III). Of the 17 sightings, only two were immediately adjacent to HKBCF at transect line 11 (Baseline report Fig 2) which is 11.7% of all NEL sightings. The baseline report presents behavioural information for only two of the 17 sightings made in NEL; both feeding activities at line transect 10 and 11 (Baseline report Fig 9;10). As there is no behavioural data presented for any other sightings in NEL, it is not possible to review the relative importance of the single groups behavior at transect 11 with respect to any future impact or establishing any “common” or “usual” behaviour.

The impact monitoring conducted for HKBCF between March 2012 and February 2013 allows a review of a years behavioural information which has been looked at in a little more depth, i.e., frequency of occurrence, seasonal change, however, it is also noted no extensive behavioural analyses has been conducted for this period, again, largely due to the paucity of sightings. Of the 36 sightings made in NEL throughout the year, only four were recorded in the vicinity of line transect 11 (11.1%). This is similar to the percentage of total sightings which were recorded during baseline monitoring. It appears that line transect 11 is not an area of high occurrence according to both baseline and impact monitoring sightings. The behaviours recorded at line transect 11 were feeding (2) and milling (2). Milling often occurs after successful foraging bouts and could be associated with feeding behavior. The prime feeding areas for CWD has consistently been recorded in NWL in particularly at Sha Chau Lung Kwu Chau Marine Park, during baseline and impact monitoring as well as historically in AFCD records. No behaviour has been recorded at the northern end of line transect 11 that is not extensively recorded elsewhere in both NEL and NWL and as such, there is no evidence to suggest that the temporary re-alignment in the silt curtain will affect the dolphins behaviour.

### **Conclusion**

Given that only < 0.2 % percent of known dolphin habitat will be temporarily unavailable to dolphins in a time when the immediate environs are rarely used by dolphins and where there is no highly associated or unique behavior recorded, it can be concluded that the proposed temporary shift in silt curtain has no discernible effect on dolphin monitoring, analyses and behaviour in either the short or long term.

## Appendix L – Event Action Plan

### Event / Action Plan for Air Quality

Event	Action			
	ET Leader	IEC	ER	Contractor
<b>Action Level</b>				
Exceedance for one sample	<ol style="list-style-type: none"> <li>1. Identify source, investigate the causes of exceedance and propose remedial measures;</li> <li>2. Inform IEC and ER;</li> <li>3. Repeat measurement to confirm finding;</li> <li>4. Increase monitoring frequency to daily.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method.</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify Contractor.</li> </ol>	<ol style="list-style-type: none"> <li>1. Rectify any unacceptable practice;</li> <li>2. Amend working methods if appropriate.</li> </ol>
Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Identify source;</li> <li>2. Inform IEC and ER;</li> <li>3. Advise the ER on the effectiveness of the proposed remedial measures;</li> <li>4. Repeat measurements to confirm findings;</li> <li>5. Increase monitoring frequency to daily;</li> <li>6. Discuss with IEC and Contractor on remedial actions required;</li> <li>7. If exceedance continues, arrange meeting with IEC and ER;</li> <li>8. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss with ET and Contractor on possible remedial measures;</li> <li>4. Advise the ER on the effectiveness of the proposed remedial measures;</li> <li>5. Supervise Implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Ensure remedial measures properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit proposals for remedial to ER within 3 working days of notification;</li> <li>2. Implement the agreed proposals;</li> <li>3. Amend proposal if appropriate.</li> </ol>

Event	Action			
	ET Leader	IEC	ER	Contractor
<b>Limit Level</b>				
Exceedance for one sample	<ol style="list-style-type: none"> <li>1. Identify source, investigate the causes of exceedance and propose remedial measures;</li> <li>2. Inform ER, Contractor and EPD;</li> <li>3. Repeat measurement to confirm finding;</li> <li>4. Increase monitoring frequency to daily;</li> <li>5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss with ET and Contractor on possible remedial measures;</li> <li>4. Advise the ER on the effectiveness of the proposed remedial measures;</li> <li>5. Supervise implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Ensure remedial measures properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Amend proposal if appropriate.</li> </ol>

Event	Action			
	ET Leader	IEC	ER	Contractor
Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Notify IEC, ER, Contractor and EPD;</li> <li>2. Identify source;</li> <li>3. Repeat measurement to confirm findings;</li> <li>4. Increase monitoring frequency to daily;</li> <li>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;</li> <li>6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken;</li> <li>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;</li> <li>8. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst ER, ET, and Contractor on the potential remedial actions;</li> <li>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly;</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Ensure remedial measures properly implemented;</li> <li>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.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Resubmit proposals if problem still not under control;</li> <li>5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.</li> </ol>

Event / Action Plan for Construction Noise

Event	Action			
	ET Leader	IEC	ER	Contractor
Action Level	<ol style="list-style-type: none"> <li>1. Notify IEC and Contractor;</li> <li>2. Identify source, investigate the causes of exceedance and propose remedial measures;</li> <li>3. Report the results of investigation to the IEC, ER and Contractor;</li> <li>4. Discuss with the Contractor and formulate remedial measures;</li> <li>5. Increase monitoring frequency to check mitigation effectiveness.</li> </ol>	<ol style="list-style-type: none"> <li>1. Review the analysed results submitted by the ET;</li> <li>2. Review the proposed remedial measures by the Contractor and advise the ER accordingly;</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Require Contractor to propose remedial measures for the analysed noise problem;</li> <li>4. Ensure remedial measures are properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit noise mitigation proposals to IEC;</li> <li>2. Implement noise mitigation proposals.</li> </ol>
Limit Level	<ol style="list-style-type: none"> <li>1. Inform IEC, ER, EPD and Contractor;</li> <li>2. Identify source;</li> <li>3. Repeat measurements to confirm findings;</li> <li>4. Increase monitoring frequency;</li> <li>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;</li> <li>6. Inform IEC, ER and EPD the causes and actions taken for the exceedances;</li> <li>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;</li> <li>8. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst ER, ET, and Contractor on the potential remedial actions;</li> <li>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly;</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Require Contractor to propose remedial measures for the analysed noise problem;</li> <li>4. Ensure remedial measures properly implemented;</li> <li>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.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Resubmit proposals if problem still not under control;</li> <li>5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.</li> </ol>

Event / Action Plan for Water Quality

Event	Action			
	ET Leader	IEC	ER	Contractor
Action level being exceeded by one sampling day	<ol style="list-style-type: none"> <li>1. Repeat <i>in situ</i> measurement to confirm findings;</li> <li>2. Identify source(s) of impact;</li> <li>3. Inform IEC, contractor and ER;</li> <li>4. Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>5. Discuss mitigation measures with IEC, ER and Contractor;</li> <li>6. Ensure mitigation measures are implemented;</li> <li>7. Repeat measurement on next day of exceedance to confirm findings.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET and Contractor's working methods;</li> <li>2. Discuss with ET and Contractor on possible remedial actions;</li> <li>3. Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly;</li> <li>4. Assess the effectiveness of the implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of non-compliance in writing;</li> <li>2. Discuss with IEC on the proposed mitigation measures;</li> <li>3. Make agreement on mitigation measures to be implemented;</li> <li>4. Ensure mitigation measures are properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the ER and confirm notification of the non-compliance in writing;</li> <li>2. Rectify unacceptable practice;</li> <li>3. Check all plant and equipment and consider changes of working methods;</li> <li>4. Discuss with ET and IEC on possible remedial actions and propose mitigation measures to IEC and ER;</li> <li>5. Implement the agreed mitigation measures.</li> <li>6. Amend working methods if appropriate.</li> </ol>

Event	Action			
	ET Leader	IEC	ER	Contractor
Action level being exceeded by two or more consecutive sampling days	<ol style="list-style-type: none"> <li>1. Repeat <i>in situ</i> measurement to confirm findings;</li> <li>2. Identify source(s) of impact;</li> <li>3. Inform IEC, Contractor and ER;</li> <li>4. Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>5. Discuss mitigation measures with IEC, ER and Contractor;</li> <li>6. Ensure mitigation measures are implemented;</li> <li>7. Increase the monitoring frequency to daily until no exceedance of Action level;</li> <li>8. Repeat measurement on next day of exceedance to confirm findings.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET and Contractor's working method;</li> <li>2. Discuss with ET and Contractor on possible remedial actions;</li> <li>3. Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly;</li> <li>4. Assess the effectiveness of the implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of non-compliance in writing;</li> <li>2. Discuss with IEC on the proposed mitigation measures;</li> <li>3. Make agreement on mitigation measures to be implemented;</li> <li>4. Ensure mitigation measures are properly implemented;</li> <li>5. Assess the effectiveness of the implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the Engineer and confirm notification of the non-compliance in writing;</li> <li>2. Rectify unacceptable practice;</li> <li>3. Check all plant and equipment and consider changes of working methods;</li> <li>4. Discuss with ET and IEC on possible remedial actions and propose mitigation measures to IEC and ER within 3 working days of notification;</li> <li>5. Implement the agreed mitigation measures;</li> <li>6. Amend working methods if appropriate.</li> </ol>

Event	Action			
	ET Leader	IEC	ER	Contractor
Limit level being exceeded by one sampling day	<ol style="list-style-type: none"> <li>1. Repeat <i>in-situ</i> measurement to confirm findings;</li> <li>2. Identify source(s) of impact;</li> <li>3. Inform IEC, Contractor, ER and EPD;</li> <li>4. Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>5. Discuss mitigation measures with IEC, ER and Contractor;</li> <li>6. Ensure mitigation measures are implemented;</li> <li>7. Increase the monitoring frequency to daily until no exceedance of Limit level.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET and Contractor's working method;</li> <li>2. Discuss with ET and Contractor on possible remedial actions;</li> <li>3. Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly;</li> <li>4. Assess the effectiveness of the implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Discuss with IEC, ET and Contractor on the proposed mitigation measures;</li> <li>3. Request Contractor to critically review the working methods;</li> <li>4. Ensure mitigation measures are properly implemented;</li> <li>5. Assess the effectiveness of the implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the ER and confirm notification of the non-compliance in writing;</li> <li>2. Rectify unacceptable practice;</li> <li>3. Check all plant and equipment and consider changes of working methods;</li> <li>4. Submit proposal of mitigation measures to ER within 3 working days of notification and discuss with ET, IEC and ER;</li> <li>5. Implement the agreed mitigation measures;</li> <li>6. Amend working methods if appropriate.</li> </ol>



Event	Action			
	ET Leader	IEC	ER	Contractor
Limit level being exceeded by two or more consecutive sampling days	<ol style="list-style-type: none"> <li>1. Repeat <i>in-situ</i> measurement to confirm findings;</li> <li>2. Identify source(s) of impact;</li> <li>3. Inform IEC, contractor, ER and EPD;</li> <li>4. Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>5. Discuss mitigation measures with IEC, ER and Contractor;</li> <li>6. Ensure mitigation measures are implemented;</li> <li>7. Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET and Contractor's working method;</li> <li>2. Discuss with ET and Contractor on possible remedial actions;</li> <li>3. Review the Contractor's mitigation measures whenever necessary to assure their effectiveness and advise the ER accordingly.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Discuss with IEC, ET and Contractor on the proposed mitigation measures;</li> <li>3. Request Contractor to critically review the working methods;</li> <li>4. Make agreement on the mitigation measures to be implemented;</li> <li>5. Ensure mitigation measures are properly implemented;</li> <li>6. Assess the effectiveness of the implemented mitigation measures;</li> <li>7. Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the construction activities until no exceedance of Limit level.</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the ER and confirm notification of the non-compliance in writing;</li> <li>2. Take immediate action to avoid further exceedance;</li> <li>3. Rectify unacceptable practice;</li> <li>4. Check all plant and equipment and consider changes of working methods;</li> <li>5. Submit proposal of mitigation measures to ER within 3 working days of notification and discuss with ET, IEC and ER;</li> <li>6. Implement the agreed mitigation measures;</li> <li>7. Resubmit proposals of mitigation measures if problem still not under control;</li> <li>8. As directed by the Engineer, to slow down or to stop all or part of the construction activities until no exceedance of Limit level.</li> </ol>

Event / Action Plan for Dolphin Monitoring

Event	ET Leader	IEC	ER / SOR	Contractor
Action Level	<ol style="list-style-type: none"> <li>Repeat statistical data analysis to confirm findings;</li> <li>Review all available and relevant data, including raw data and statistical analysis results of other parameters covered in the EM&amp;A, to ascertain if differences are as a result of natural variation or previously observed seasonal differences;</li> <li>Identify source(s) of impact;</li> <li>Inform the IEC, ER/SOR and Contractor;</li> <li>Check monitoring data.</li> <li>Review to ensure all the dolphin protective measures are fully and properly implemented and advise on additional measures if necessary.</li> </ol>	<ol style="list-style-type: none"> <li>Check monitoring data submitted by ET and Contractor;</li> <li>Discuss monitoring results and finding with the ET and the Contractor.</li> </ol>	<ol style="list-style-type: none"> <li>Discuss monitoring with the IEC and any other measures proposed by the ET;</li> <li>If ER/SOR is satisfied with the proposal of any other measures, ER/SOR to signify the agreement in writing on the measures to be implemented.</li> </ol>	<ol style="list-style-type: none"> <li>Inform the ER/SOR and confirm notification of the non-compliance in writing;</li> <li>Discuss with the ET and the IEC and propose measures to the IEC and the ER/SOR;</li> <li>Implement the agreed measures.</li> </ol>
Limit Level	<ol style="list-style-type: none"> <li>Repeat statistical data analysis to confirm findings;</li> <li>Review all available and relevant data, including raw data and statistical analysis results of other parameters covered in the EM&amp;A, to ascertain if differences are as a result of natural variation or previously observed seasonal differences;</li> <li>Identify source(s) of impact;</li> <li>Inform the IEC, ER/SOR and Contractor of findings;</li> <li>Check monitoring data;</li> </ol>	<ol style="list-style-type: none"> <li>Check monitoring data submitted by ET and Contractor;</li> <li>Discuss monitoring results and findings with the ET and the Contractor;</li> <li>Attend the meeting to discuss with ET, ER/SOR and Contractor the necessity of additional dolphin monitoring and any other potential mitigation measures.</li> <li>Review proposals for additional monitoring and any other mitigation measures submitted</li> </ol>	<ol style="list-style-type: none"> <li>Attend the meeting to discuss with ET, IEC and Contractor the necessity of additional dolphin monitoring and any other potential mitigation measures.</li> <li>If ER/SOR is satisfied with the proposals for additional dolphin monitoring and/or any other mitigation measures submitted by ET and Contractor and verified by IEC, ER/SOR to signify the agreement in writing on such proposals and any other mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>Inform the ER/SOR and confirm notification of the non-compliance in writing;</li> <li>Attend the meeting to discuss with ET, IEC and ER/SOR the necessity of additional dolphin monitoring and any other potential mitigation measures.</li> <li>Jointly submit with ET to IEC a proposal of additional dolphin monitoring and/or any other mitigation measures when necessary.</li> <li>Implement the agreed additional dolphin monitoring</li> </ol>

	<p>6. Repeat review to ensure all the dolphin protective measures are fully and properly implemented and advise on additional measures if necessary.</p> <p>7. If ET proves that the source of impact is caused by any of the construction activity by the works contract, ET to arrange a meeting to discuss with IEC, ER/SOR and Contractor the necessity of additional dolphin monitoring and/or any other potential mitigation measures (e.g., consider to modify the perimeter silt curtain or consider to control/temporarily stop relevant construction activity etc.) and submit to IEC a proposal of additional dolphin monitoring and/or mitigation measures where necessary.</p>	<p>by ET and Contractor and advise ER/SOR of the results and findings accordingly.</p> <p>5. Supervise / Audit the implementation of additional monitoring and/or any other mitigation measures and advise ER/SOR the results and findings accordingly.</p>	<p>3. Supervise the implementation of additional monitoring and/or any other mitigation measures.</p>	<p>and/or any other mitigation measures.</p>
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# China Harbour Engineering Company Limited

## Monthly Summary Waste Flow Table for January / 2014 (year)

Project : Hong Kong – Zhuhai – Macao Bridge, Hong Kong Boundary Crossing Facilities – Reclamation Works

Contract No.: HY/2010/02

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete (see Note 1)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 2)	Chemical Waste (see Note 4)	Others, e.g. general refuse (see Note 3)
	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000 m <sup>3</sup> )
Jan-14	0.0000	0.0000	0.0000	0.0000	0.0000	1158.9828	0.0000	0.1680	0.0000	2.0000	0.0325
Feb-14											
Mar-14											
Apr-14											
May-14											
Jun-14											
Sub-total	0.0000	0.0000	0.0000	0.0000	0.0000	1158.9828	0.0000	0.1680	0.0000	2.0000	0.0325
Jul-14											
Aug-14											
Sep-14											
Oct-14											
Nov-14											
Dec-14											
Total	0.0000	0.0000	0.0000	0.0000	0.0000	1158.9828	0.0000	0.1680	0.0000	2.0000	0.0325

- Notes:
- (1) Broken concrete for recycling into aggregates.
  - (2) Plastics refer to plastic bottles/ containers, plastic sheets/ foam from packaging materials.
  - (3) Use the conversion factor : 1 full load of dumping truck being equivalent to 6.5m<sup>3</sup> by volume.
  - (4) Chemical waste refer to spent “battery” and “oil with water”.

## Appendix N

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

#### Cumulative statistics on Exceedances

		Total no. recorded in this month	Total no. recorded since project commencement
<b>1-Hour TSP</b>	Action	-	-
	Limit	-	-
<b>24-Hour TSP</b>	Action	-	-
	Limit	-	-
<b>Noise</b>	Action	-	-
	Limit	-	-
<b>Water Quality</b>	Action	-	1
	Limit	-	1
<b>Dolphin Monitoring</b>	Action	-	-
	Limit	-	-

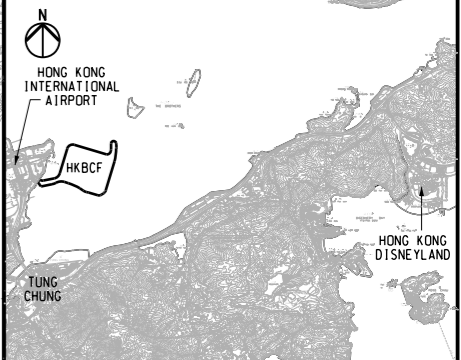
Remarks: Exceedances which are not project-related are not presented in this table.

#### Cumulative statistics on Exceedances, Complaints, Notifications of Summons and Successful Prosecutions

	Date Received	Subject	Status	Total no. received in this month	Total no. received since project commencement
<b>Environmental complaints</b>	06 Jan 14	As informed by the Contractor on 27 Dec 13. A complaint involves barges loaded with sand material without properly covered was blown to the inside of the residential area of Tuen Mun Pierhead Garden which caused disturbance to residence. With refer to available information provided, it cannot indicate that the water quality impact and air quality impact were caused by the vessel of this	Closed	1	14

		Contract and therefore the complaint could not be concluded as related to this Contract.			
	21 Jan 14	EPD referred a complaint from complainant who advised that blackish mud was found along the edge of the construction site of Hong Kong-Zhuhai-Macao Bridge Hong Kong Project near the airport in the morning of 18 January 2014. Therefore in accordance with the investigation results, the complaint is considered as not related to contract HY/2010/02.	Closed	2	15
<b>Notification of summons</b>	-	-	-	-	1
<b>Successful Prosecutions</b>					1

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**KEY PLAN**

- NOTES**
1. ALL COORDINATES ARE RELATED TO HONG KONG 1980 GRID.
  2. ALL LEVELS ARE IN METRES ABOVE HONG KONG PRINCIPAL DATUM (mPD).
  3. REFER TO DRG NO. 211036/SL/1002 FOR THE DEFINITION OF SETTING OUT LINE (SOL) FOR THE HONG KONG BOUNDARY CROSSING FACILITIES (HKBCF) RECLAMATION SITE.
  4. REFER TO DRG NO. 211036/SL/1004 FOR DETAILS OF SITE BOUNDARY.
  5. FOR EXTENT OF SORTING FACILITIES AT FILL BANK AT TSEUNG KWAN O AREA 137 REFER TO DRG NO. 211036/SL/1015.

- LEGEND**
- SITE BOUNDARY
  - SETTING OUT LINE (SOL)
  - WORKS AREA BOUNDARY

Rev	Description	By	Date
-	FOR CONSTRUCTION	HYJL	11/11

Consultant

**ARUP** 奧雅納工程顧問  
Ove Arup & Partners Hong Kong Limited

Supported By :

- Ecosystems Ltd.
- EDA Marine Ltd.
- Geotechnical Consulting Group (Asia) Ltd.
- Hong Kong Cetacean Research Project
- IntelBuild Technyx Asia Limited
- Tony Gee and Partners LLP

Contract No. and Title:  
**Contract No. HY/2010/02**  
**Hong Kong-Zhuhai-Macao Bridge**  
**Hong Kong Boundary Crossing Facilities**  
**- Reclamation Works**

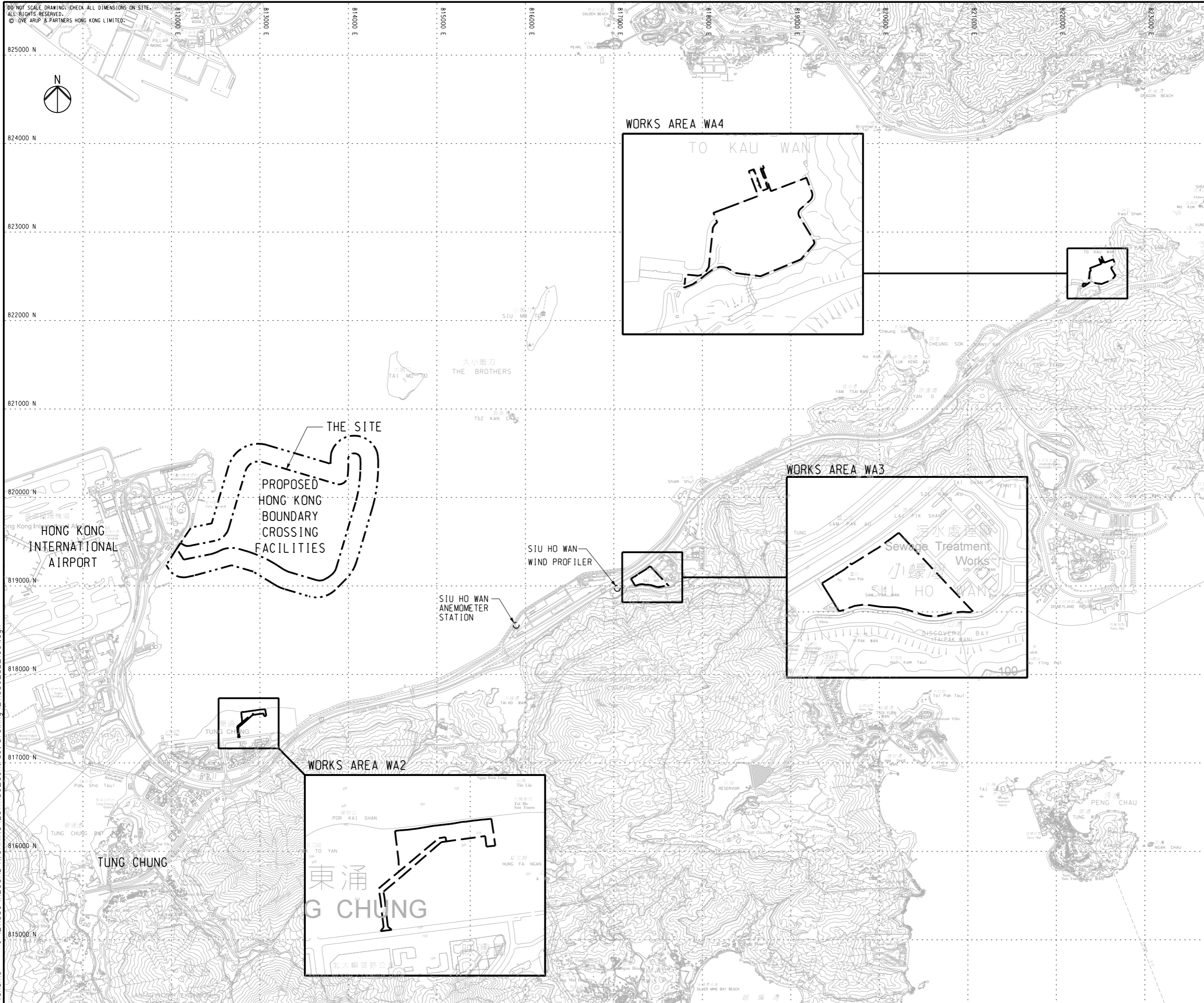
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**KEY PLAN**

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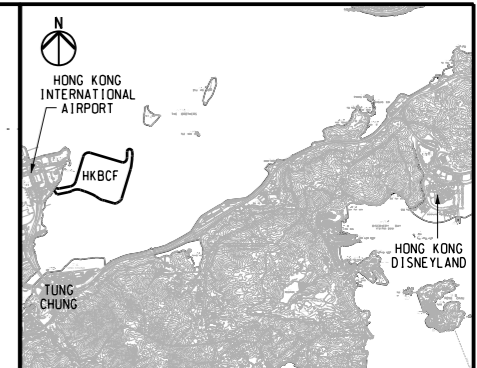
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港珠澳大橋香港工程管理局  
Hong Kong - Zhuhai - Macao Bridge  
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KEY PLAN

NOTES

- FOR LEGENDS AND NOTES FOR CHAIN LINK FENCE AND GATE REFER TO DRG NO. 211036/SL/1013.
- THE ERECTION OF CHAIN LINK FENCE AND GATES SHALL BE COMPLETED BY THE HANDOVER DATE OF EACH PORTION OF SITE, OR AS INSTRUCTED BY THE ENGINEER.
- FOR SETTING OUT COORDINATES OF DIFFERENT PORTIONS OF SITE REFER TO DRG NO. 211036/SL/1003.
- ACCESS POINTS BETWEEN PORTIONS SHALL BE PROVIDED BY THE CONTRACTOR, AND THE LOCATIONS SHALL BE AGREED WITH THE ENGINEER ON SITE.
- FOR HOARDING AND FENCE AT FILL BANK AT TSEUNG KWAN O AREA 137 REFER TO DRG NO. 211036/SL/1015.

LEGEND

- SETTING OUT LINE (SOL)
- WORKS AREA BOUNDARY
- PORTIONS BOUNDARY LINE

Rev	Description	By	Date
-	FOR CONSTRUCTION	HYJL	11/11

Consultant

<b>ARUP</b>	奧雅納工程顧問	•
Ove Arup & Partners Hong Kong Limited		
Supported By :	Ecosystems Ltd.	○
	EDA Marine Ltd.	○
	Geotechnical Consulting Group (Asia) Ltd.	○
	Hong Kong Cetacean Research Project	○
	Intel:Build Technyx Asia Limited	○
	Tony Gee and Partners LLP	○

Contract No. and Title:  
**Contract No. HY/2010/02**  
**Hong Kong-Zhuhai-Macao Bridge**  
**Hong Kong Boundary Crossing Facilities**  
**- Reclamation Works**

Drawing title  
**WORKS AREA LAYOUT**  
**AND HOARDING PLAN**  
**(SHEET 2 OF 3)**

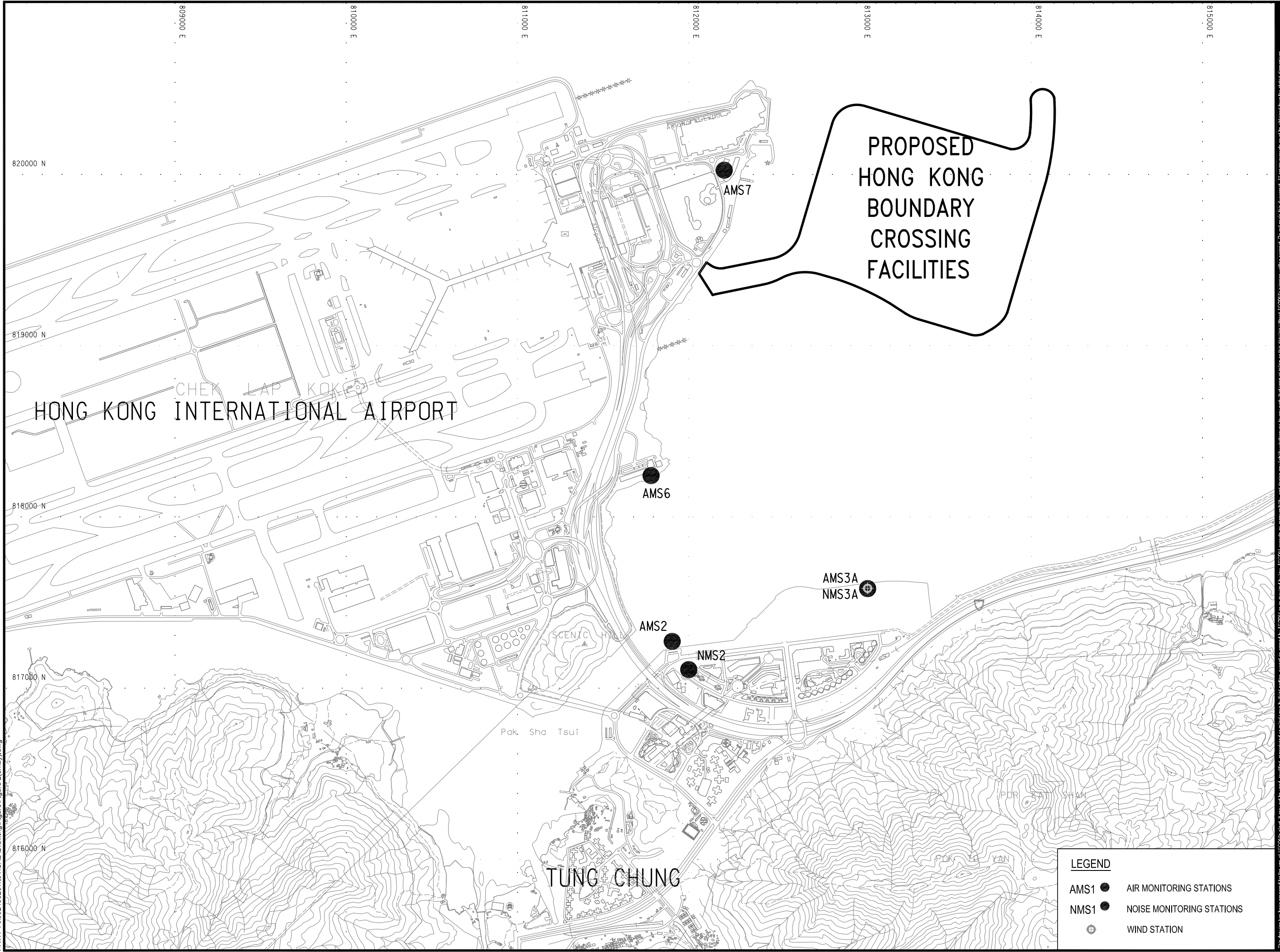
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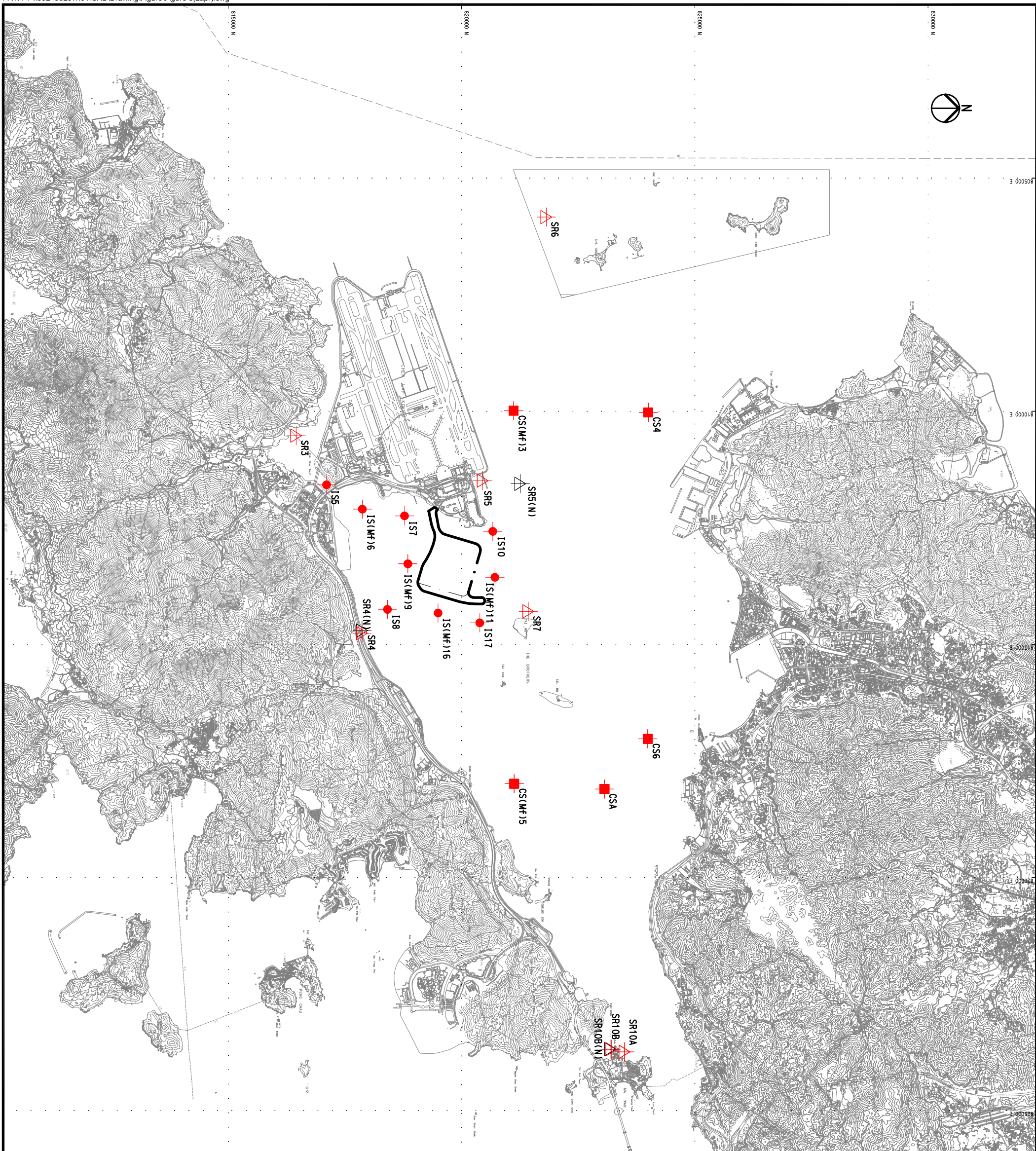
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**LEGEND**

AMS1 ●	AIR MONITORING STATIONS
NMS1 ●	NOISE MONITORING STATIONS
⊕	WIND STATION

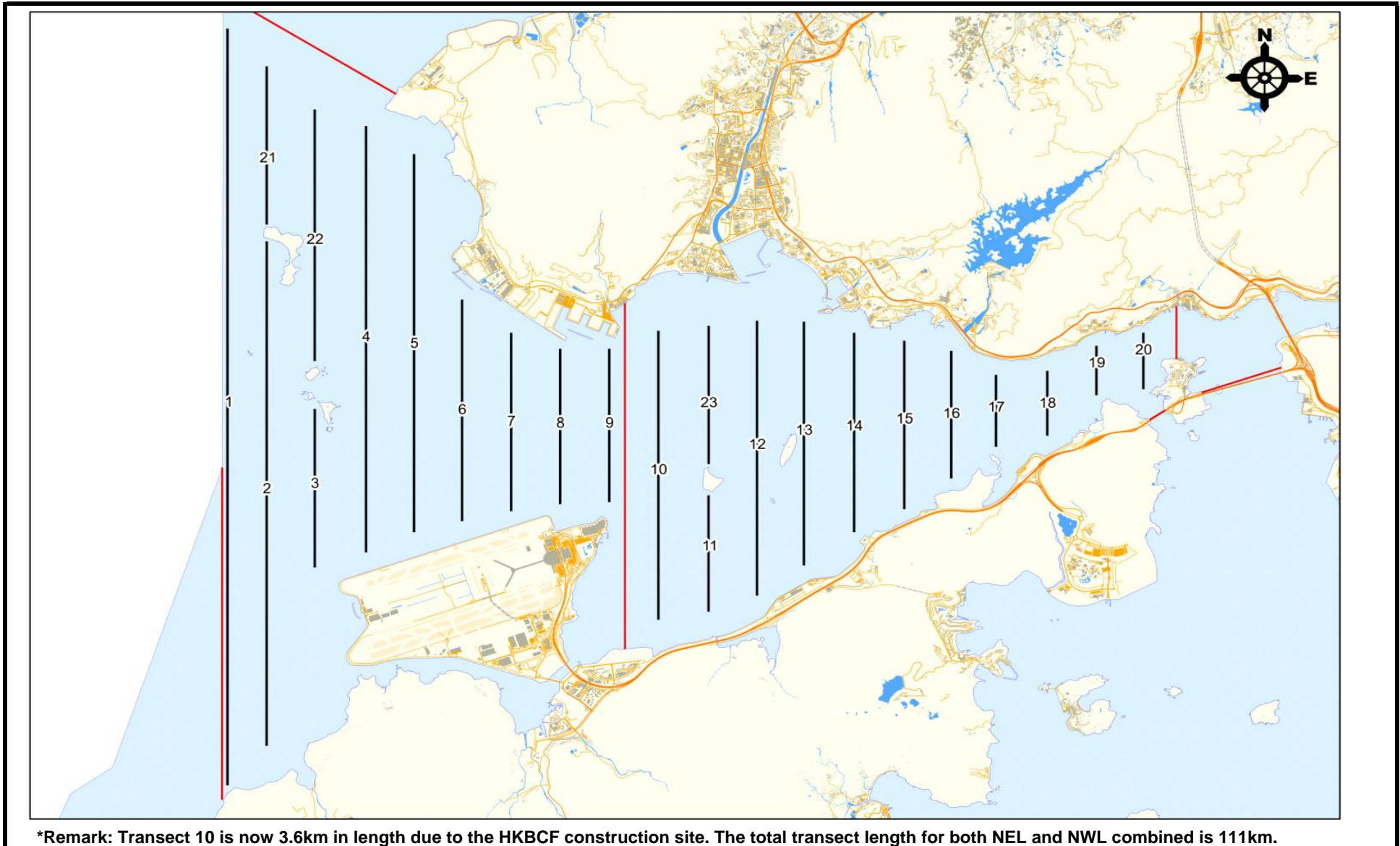


- LEGEND**
- IS IMPACT STATIONS
  - CS CONTROL / FAR FIELD STATIONS
  - SR SENSITIVE RECEIVERS STATIONS
  - SR SENSITIVE RECEIVERS STATIONS (RELOCATED)

**SETTING OUT SCHEDULE**

MONITORING STATIONS	CO-ORDINATES	
	EASTING	NORTHING
IS5	811579	817106
IS(MF)6	812101	817873
IS7	812244	818777
IS8	814251	818412
IS(MF)9	813273	818850
IS10	812577	820670
IS(MF)11	813562	820716
IS(MF)16	814328	819497
IS17	814539	820391
SR3	810525	816456
SR4(N)	814705	817859
SR5	811489	820455
SR5(N)	811555	821258
SR6	805837	821818
SR7	814293	821431
SR10A	823741	823495
SR10B(N)	823683	823187
CS(MF)3	809989	821117
CS(MF)5	817990	821129
CS4	810025	824004
CS6	817028	823992
CSA	818103	823064

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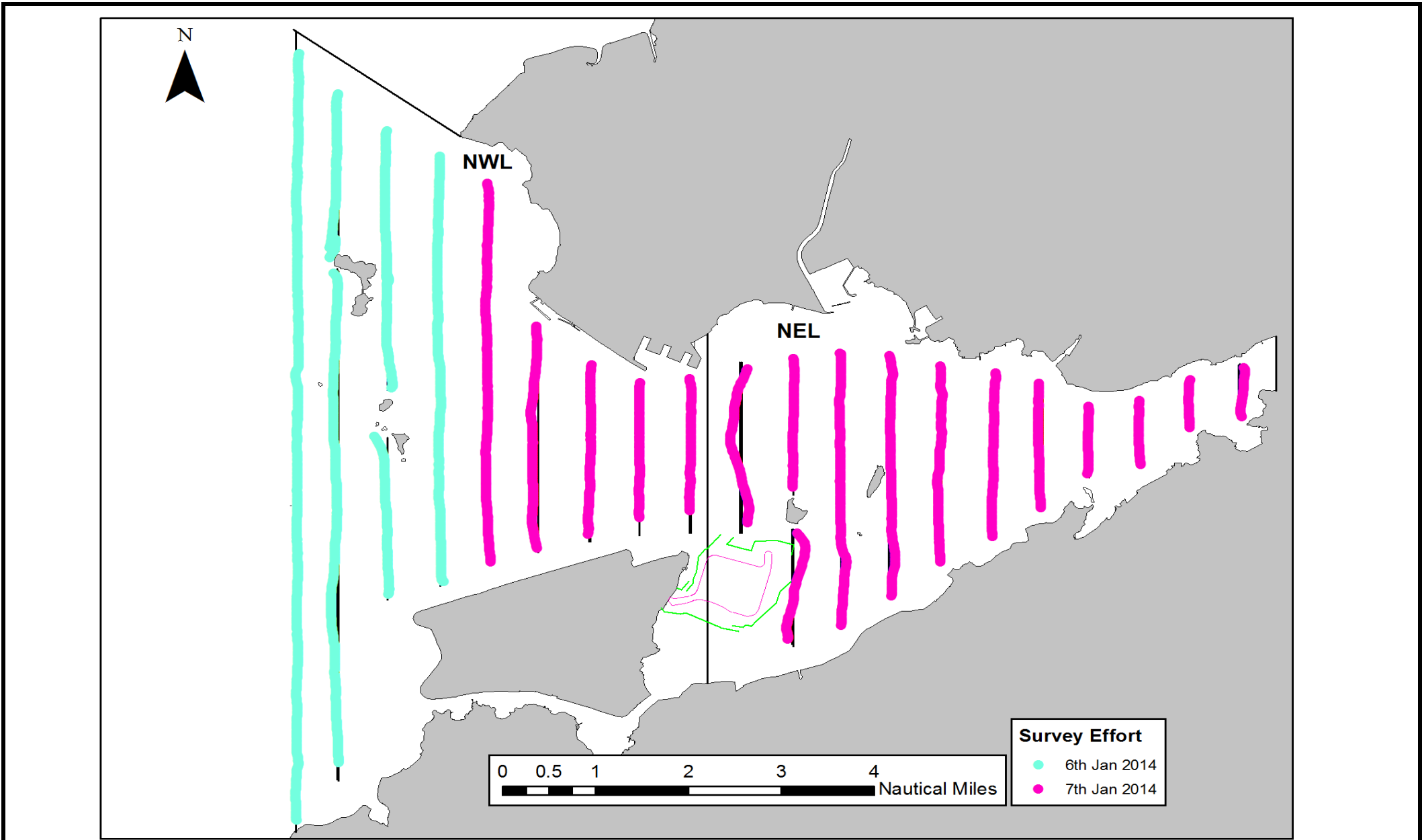
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**HONG KONG - ZHUHAI - MACAO BRIDGE  
 HONG KONG BOUNDARY CROSSING FACILITIES  
 - RECLAMATION WORKS  
 Project No.: 60249820 Date: January 13**

**Impact Dolphin Monitoring  
 Line Transect Layout Map**



**Figure 4**

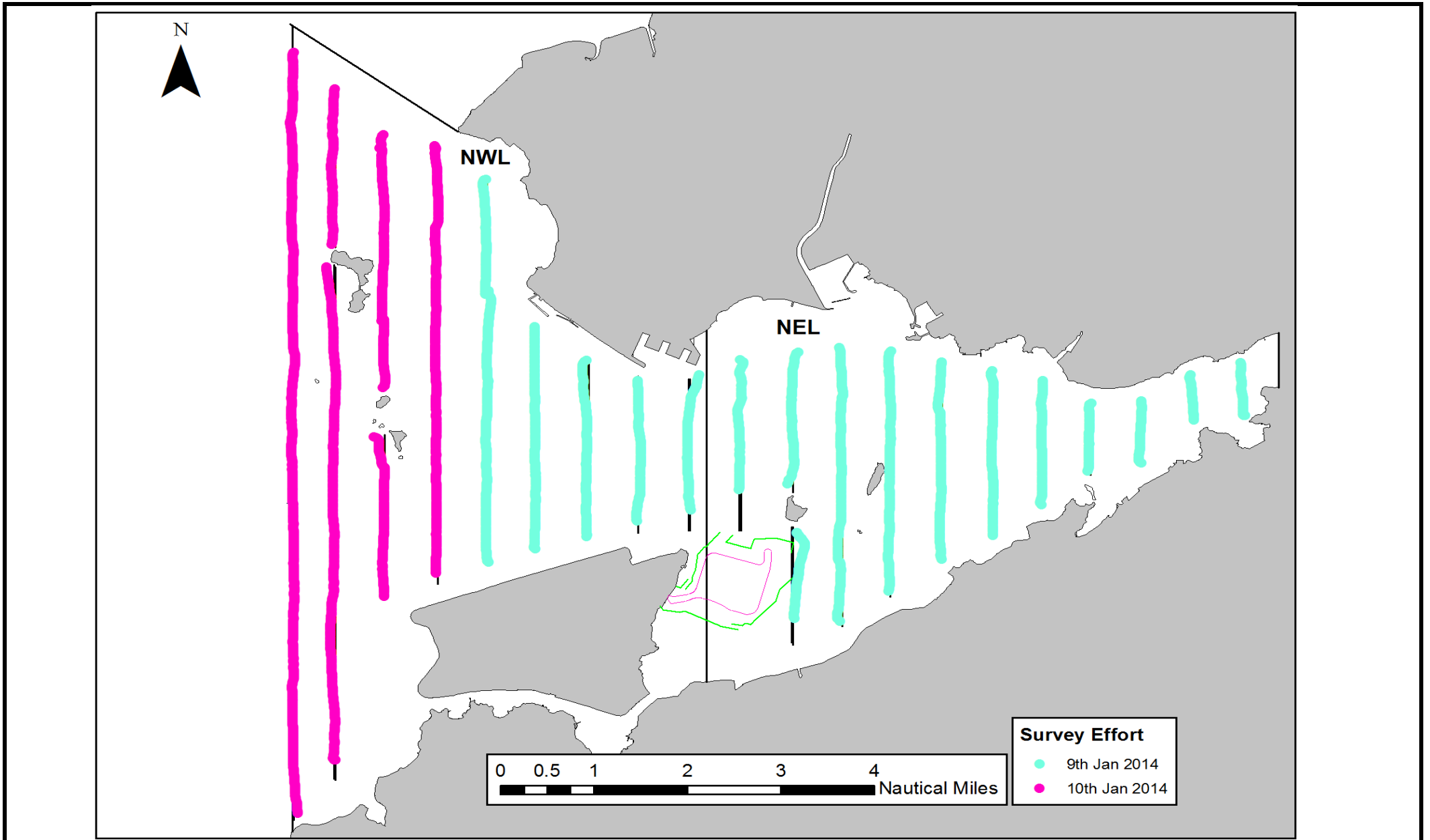


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**HONG KONG BOUNDARY CROSSING FACILITIES**  
**- RECLAMATION WORKS**  
 Project No.: 60249820      Date: February 2014

**Impact Dolphin Monitoring Survey Efforts**  
**on 6 and 7 January 2014**

Figure 5a

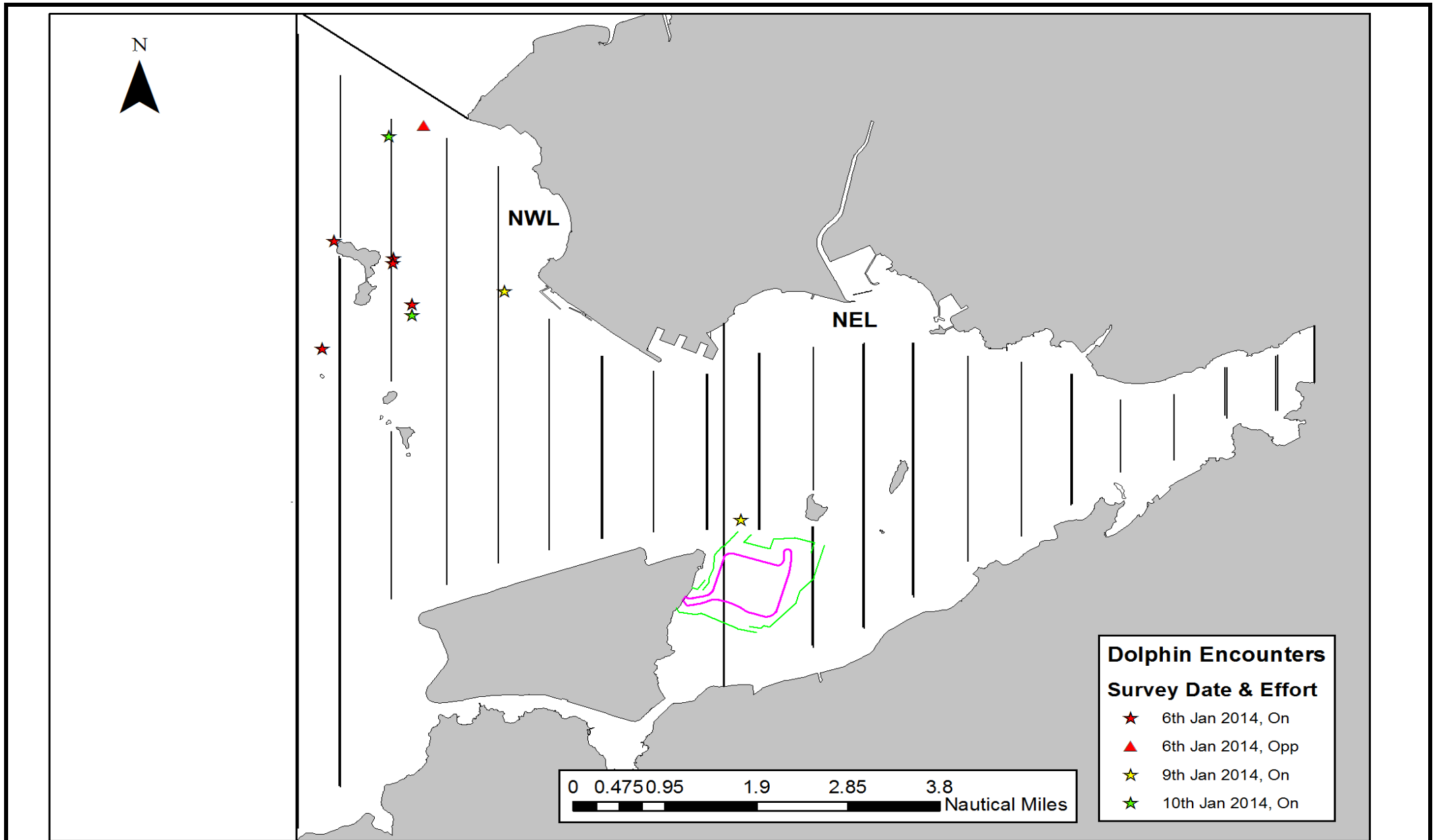


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**HONG KONG BOUNDARY CROSSING FACILITIES**  
**- RECLAMATION WORKS**  
 Project No.: 60249820      Date: February 2014

**Impact Dolphin Monitoring Survey Efforts**  
**on 9 and 10 January 2014**

**Figure 5b**

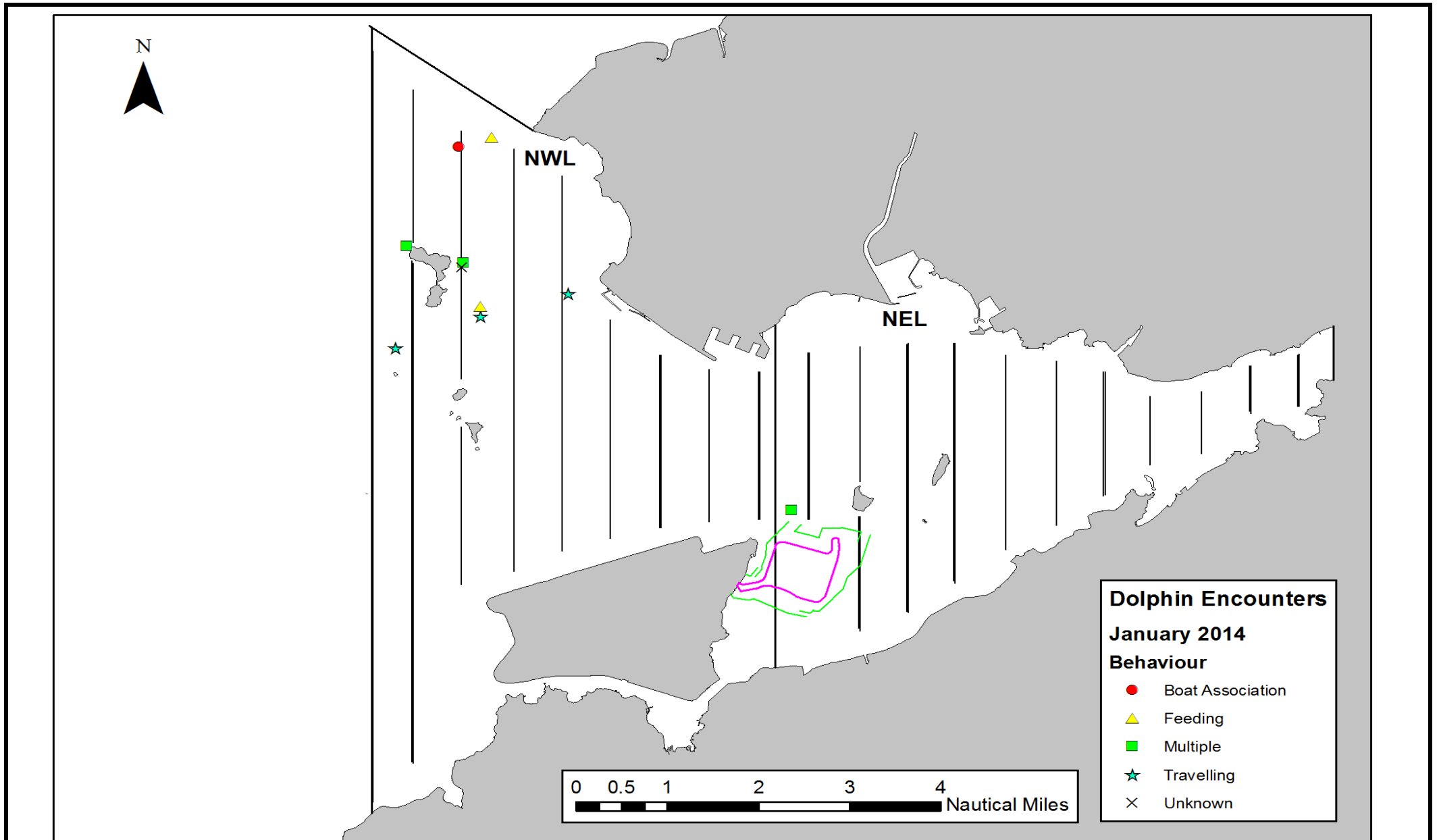


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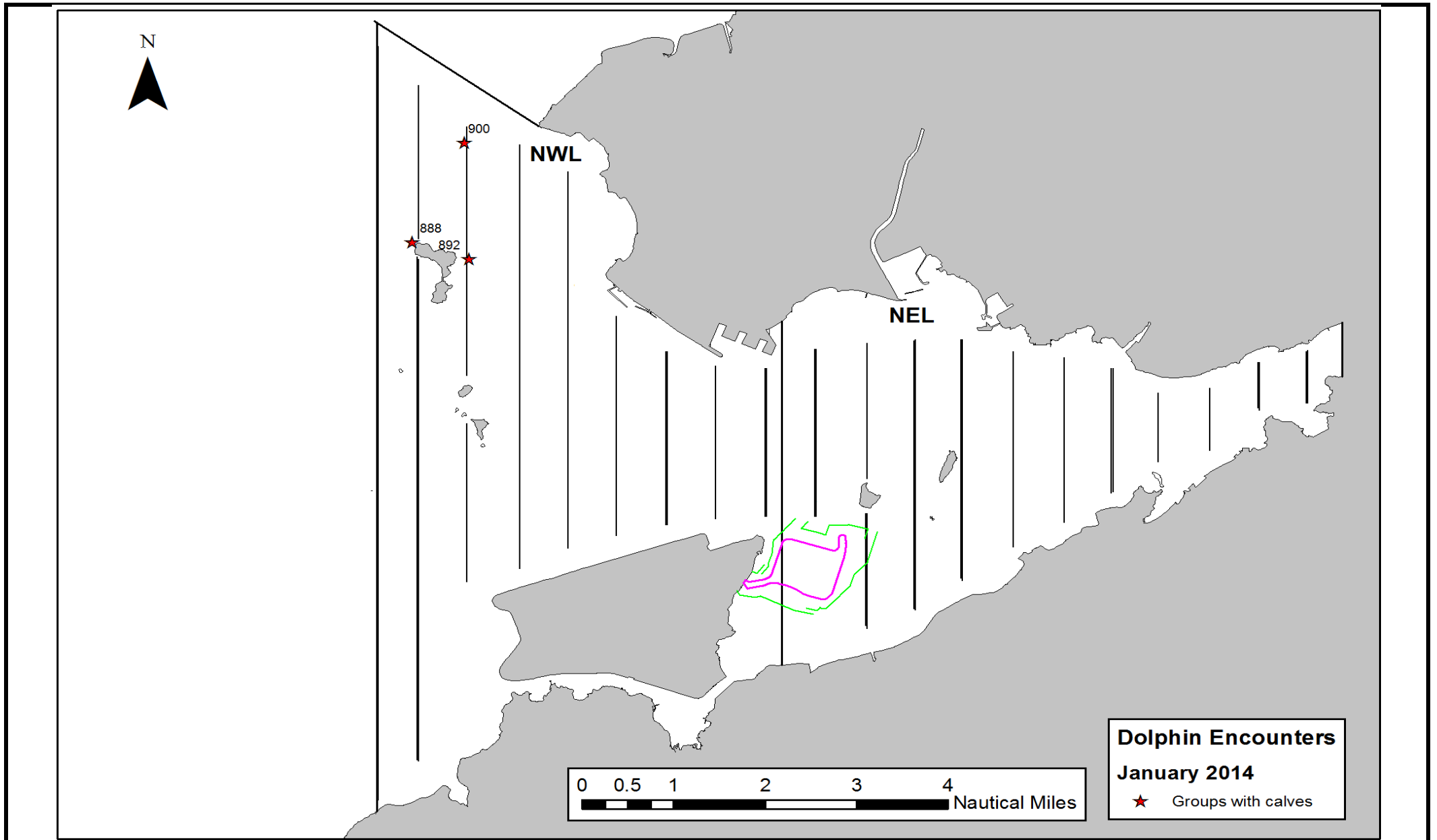
**HONG KONG - ZHUHAI - MACAO BRIDGE**  
**HONG KONG BOUNDARY CROSSING FACILITIES**  
**- RECLAMATION WORKS**  
 Project No.: 60249820      Date: February 2014

**Impact Dolphin Monitoring Survey**  
**Sightings in January 2014**

**Figure 5c**



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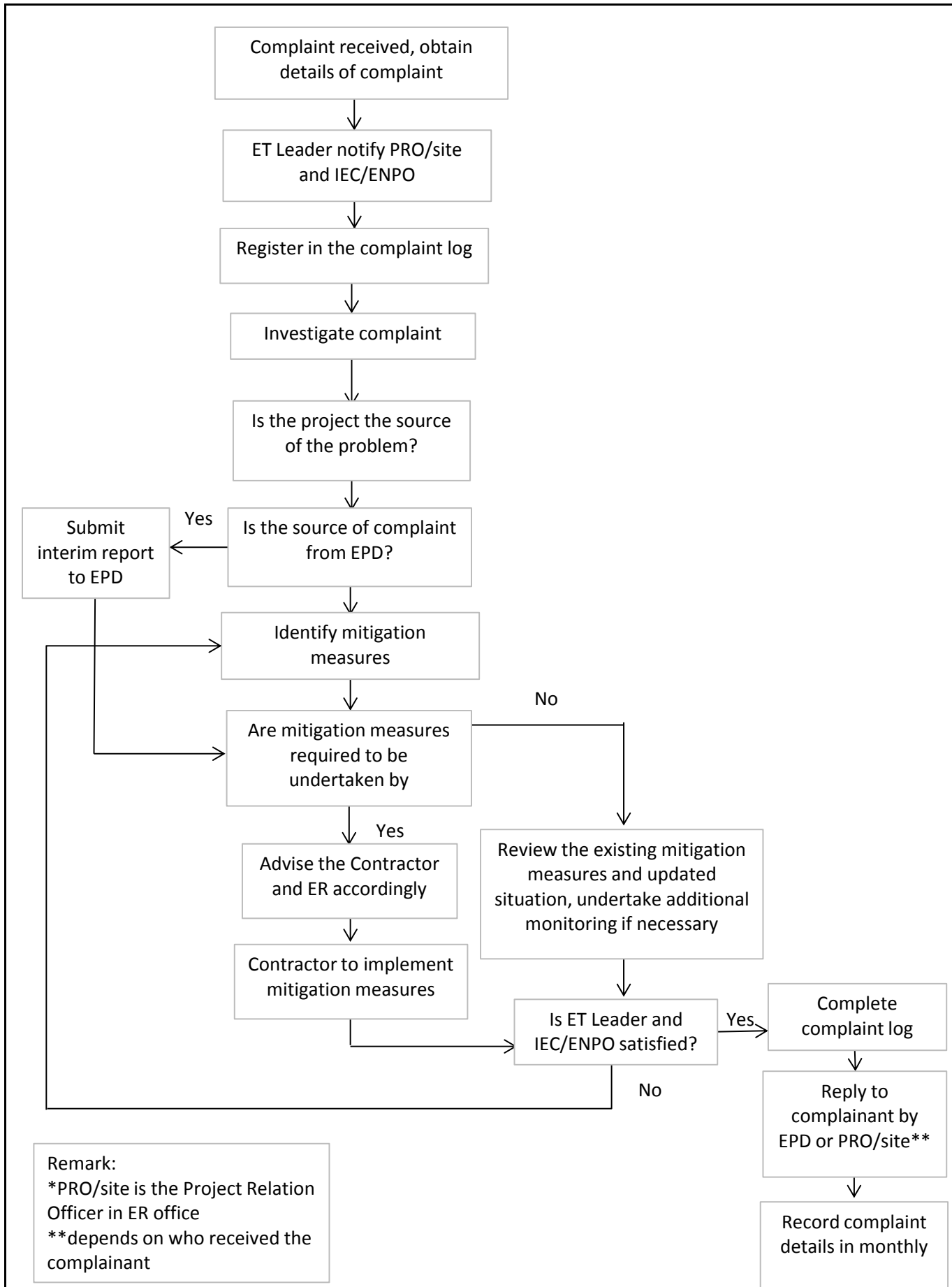
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**HONG KONG BOUNDARY CROSSING FACILITIES**  
**- RECLAMATION WORKS**  
 Project No.: 60249820      Date: February 2014

**Impact Dolphin Monitoring Survey Calf**  
**Map in January 2014**

**Figure 5e**





Remark:  
 \*PRO/site is the Project Relation Officer in ER office  
 \*\*depends on who received the complainant

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