AECOM

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 July 2013

[08/2013]

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Ref.: HYDHZMBEEM00_0_1114L.13 14 August 2013

Engineer's Representative
Ove Arup & Partners
Chief Resident Engineer's Office
5 Ying Hei Road, Tung Chung, Lantau
Hong Kong

By Fax (3698 5999) and By Post

Attention: Mr. Michael Lo

Dear Mr. Lo,

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 July 2013

Reference is made to the Environmental Team's submission of the Monthly Environmental Monitoring & Audit Report for July 2013 (letter ref. 60249820/C/RMKY13081401 dated 14 August 2013) copied to us by E-mail on 14 August 2013.

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/A (for TM-CLKL Southern Landfall Reclamation only).

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. C M Wong	(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 8 December 2011 (EP-354/2009/A) (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 July 2013. As informed by the Contractor, major activities in the reporting period were:-

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
- Laying stone blanket
- Band drain installation
- Backfill cellular structure
- 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
- 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	14 sessions
Impact dolphin monitoring	2 surveys
Joint Environmental site inspection	4 sessions

Breaches of Action and Limit Levels for Air Quality

All 1-Hour TSP and 24-hour TSP results were below the Action and Limit Level in the reporting month.

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

Three (3) Action Level exceedances were recorded at measured suspended solids (SS) values (in mg/L) in the reporting month. Investigation results show that the exceedances were not due to the Project works.

Impact Dolphin Monitoring

A total of twenty one dolphin sightings were recorded during the two surveys, eleven on 8 July 2013, six on 23 July 2013 and four on 31 July 2013. Of the twenty one sightings, fourteen were “on effort” (which are all under favourable condition) and seven were “opportunistic”. A total of sixty one 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 21 sightings made, three were classified as travelling; two sightings were recorded as ‘multiple’ behavior (both a combination of feeding and surface active); 11 sightings was recorded as feeding, two as surface active, three as travelling and; three as “unknown” in Figure 5d.

Complaint, Notification of Summons and Successful Prosecution

No complaint, summons or 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).

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 8 December 2011 (EP-354/2009/A) (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 seventeenth 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 July 2013.

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
Engineer's Representative (ER) (Ove Arup & Partners Hong Kong Limited)	Chief Resident Engineer	Roger Marechal	3698 5700	2698 5999
IEC / ENPO (ENVIRON Hong Kong Limited)	Independent Environmental Checker	Raymond Dai	3743 0788	3548 6988
	Environmental Project Office Leader	Y. H. Hui	3743 0788	3548 6988
Contractor (China Harbour Engineering Company Limited)	General Manager (S&E)	Daniel Leung	3157 1086	2578 0413
	Environmental Officer	C. M. Wong	3157 1086	2578 0413
	24-hour Hotline	Alan C.C. Yeung	9448 0325	--
ET (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
- Laying stone blanket
- Band drain installation
- Backfill cellular structure
- 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
- 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 ±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 ±3 °C; the relative humidity (RH) was < 50% and not variable by more than ±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^3/min, and complied with the range specified in the updated EM&A Manual (i.e. 0.6-1.7 m^3/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 SENSI 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 July 2013 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 ($\mu g/m^3$)	Range ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
AMS2	78	75 – 84	374	500
AMS3A	79	75 – 84	368	500
AMS7	77	73 – 83	370	500

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

	Average ($\mu g/m^3$)	Range ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
AMS2	14	10 – 16	176	260
AMS3A	46	15 – 154	167	260
AMS7	25	18 – 45	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 and 24-hour TSP results were below the Action and Limit Level at all monitoring locations in the reporting month.

2.7.4 The event action plan is annexed in Appendix L.

2.7.5 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
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.

Remarks: Monitoring

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 July 2013 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	65	63 – 67*	75
NMS3A	62	57 – 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
Impact Stations: IS5, IS(Mf)6, IS7, IS8, IS(Mf)9, IS10, IS(Mf)11, IS(Mf)16, IS17 *Control/Far Field Stations:* CS(Mf)3, CS(Mf)5, CS4, CS6, CSA *Sensitive Receiver Stations:* SR3-SR7, SR10A&SR10B	• Depth, m • Temperature, ^{o}C • Salinity, ppt • Dissolved Oxygen (DO), mg/L • DO Saturation, % • Turbidity, NTU • pH • Suspended Solids (SS), mg/L	Three times per week during mid-ebb and mid-flood tides (within ± 1.75 hour of the predicted time)	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).

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^{o}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 July 2013 is provided in Appendix F.

Remark: Due to adverse weather on 1 July 2013, the water quality monitoring scheduled on mid-flood tide was cancelled.

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 No water quality exceedance was recorded in the reporting month.

4.7.4 Total of three (3) Action Level Exceedances at measured Suspended Solids (mg/L) were recorded during the reporting month. The number of exceedances recorded in the reporting month at each impact station is summarized in Table 4.5.

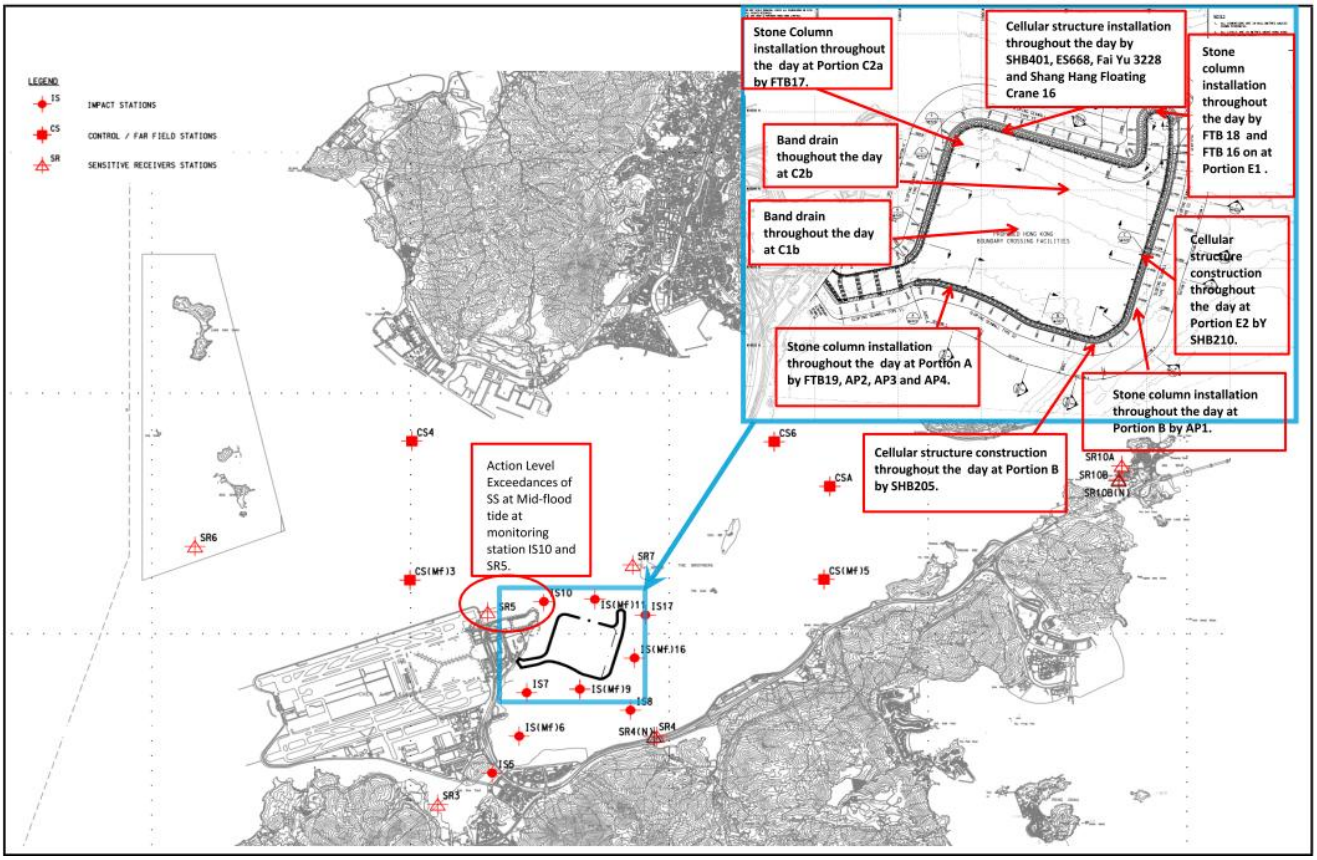
Table 4.5 Summary of Water Quality Exceedances

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	0	0	0
	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	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
IS(Mf)9	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
IS10	Action	0	0	0	0	0	0	0	**1 (26 July 13)**	0	**1**
	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	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
SR4(N)	Action	0	0	0	0	0	0	0	0	0	0

Station	Exceedance Level	DO (S&M)		DO (Bottom)		Turbidity		SS		Total	
		Ebb	Flood	Ebb	Flood	Ebb	Flood	Ebb	Flood	Ebb	Flood
	Limit	0	0	0	0	0	0	0	0	0	0
SR5	Action	0	0	0	0	0	0	0	**2 (26 and 31 July 13)**	0	**2**
	Limit	0	0	0	0	0	0	0	0	0	0
SR6	Action	0	0	0	0	0	0	0	0	0	0
	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
Total	**Action**	0	0	0	0	0	0	0	0	**3**	
	Limit	0	0	0	0	0	0	0	0	0	

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

4.7.5 Two (2) Action Level exceedances at measured Suspended Solids (mg/L) where recorded on 26 July 2013 during mid-flood tide at monitoring station IS10 and SR5. For Action Level exceedances at measured Suspended Solids (mg/L), 23.9 mg/L and 23.8 mg/L were recorded at Monitoring Station IS10 and SR5 respectively.



4.7.5.1 For works activities carried out on 26 July 2013, please refer to above layout map which shows the locations active works.

4.7.5.2 Same type of works were carried out at the same location on 24 and 29 July 13 but Suspended Solids values recorded at IS10 and SR5 on 24 and 29 July 13 are all below the Action and Limit Level during the same tide on the same day which indicates project works are unlikely to contribute to the action level exceedance recorded at IS10 and SR5.

4.7.5.3 Suspended solids values recorded at Monitoring Stations CS(Mf)3 located downstream of monitoring station IS10 and SR5 during mid-flood tide were below the action and limit level.

4.7.5.4 No silt plume was observed flowing from the inside of the perimeter silt curtain to the outside of the perimeter silt curtain when monitoring works were conducted IS10 on 26 July 13 during mid flood tide.

4.7.5.5 Turbidity measurements results at IS10 and SR5 were 14.8(NTU) and 13.7(NTU) respectively during flood tide and are all below the Action and Limit Level. It is considered that the turbidity recorded at IS10 and IS(Mf)11 were not adversely affected by active works.

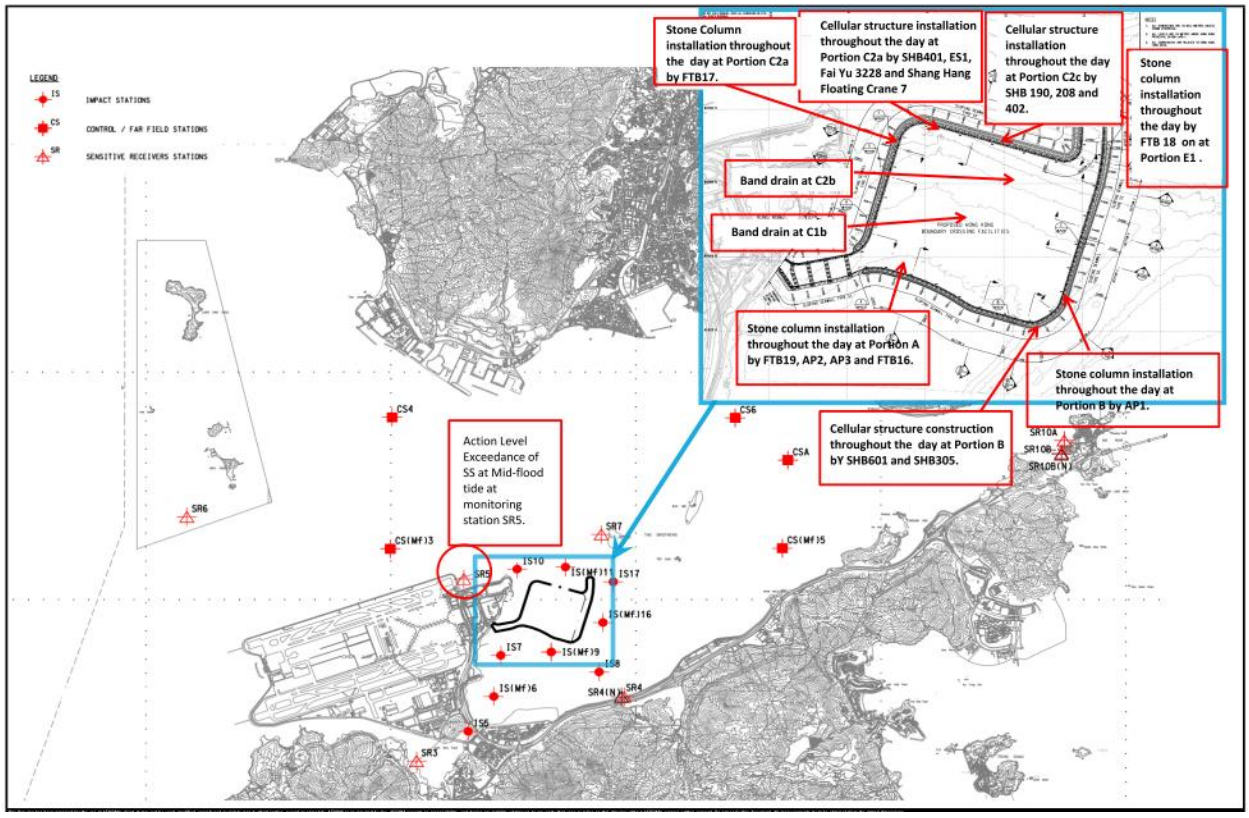
4.7.5.6 The exceedances were likely due to local effects in the vicinity of IS10 and SR5.

4.7.5.7 The exceedances were considered as non-Project related.

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

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

4.7.6 One (1) Action Level exceedances at measured Suspended Solids (mg/L) where recorded on 31 July 2013 during mid-flood tide at monitoring station SR5. For Action Level exceedance at measured Suspended Solids (mg/L), 23.6 mg/L was recorded.



4.7.6.1 For works activities carried out on 31 July 2013, please refer to above layout map which shows the locations active works.

4.7.6.2 Same type of works were carried out at the same location on 29 July 13 but Suspended Solids values recorded at SR5 on 29 July 13 is below the Action and Limit Level during the same tide which indicates project works is unlikely to contribute to the limit level exceedance recorded at SR5.

4.7.6.3 Monitoring Stations IS10 and IS(Mf)11 which are considered downstream and closer to the active works than monitoring Station SR5. Since the Suspended Solids values recorded at IS10 and IS(Mf)11 are all below the Action and Limit Level during same tide on the same day which shows that the water quality noted at IS10 and IS(Mf)11 which are downstream of and closer to active works during flood tide than SR5 were not adversely affected by active works. Hence it is considered that the exceedance recorded at SR5 is not related to the Project.

4.7.6.4 The exceedance was likely due to local effects in the vicinity of SR5.

4.7.6.5 The exceedance was considered as non-Project related.

4.7.6.6 Nevertheless, 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 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:

Northeast Lantau survey area; and

Northwest Lantau survey area.

5.4.2 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)

	HK Grid System		Long Lat in WGS84	
ID	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 July 2013 is provided in Appendix F.

5.7 Results and Observations

5.7.1 Dolphin surveys were conducted on 8, 9, 23 and 31 July 2013. In summary, a total of 222.0km of “on effort” survey was conducted, 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 July 2013 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	08-07-13	NWL	1	29.9	**63.5**
	08-07-13	NWL	2	22.1	
	08-07-13	NWL	3	11.5	
	09-07-13	NWL	1	10.0	**47.7**
	09-07-13	NEL	1	27.2	
	09-07-13	NEL	2	9.2	
	09-07-13	NEL	3	1.3	
2	23-07-13	NWL	0	3.8	**58.4**
	23-07-13	NWL	1	32.6	
	23-07-13	NWL	2	22.0	
	31-07-13	NWL	2	12.3	**52.4**
	31-07-13	NWL	3	3.2	
	31-07-13	NEL	1	2.0	
	31-07-13	NEL	2	25.9	
	31-07-13	NEL	3	9.0	
TOTAL in July 2013					**222.0**

*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 July 2013

Date	Location	No. Sightings "on effort"	No. Sightings "opportunistic"
08-07-13	NW L	5	6
	NEL	0	0
09-07-13	NW L	0	0
	NEL	0	0
23-07-13	NW L	6	0
	NEL	0	0
31-07-13	NW L	0	0
	NEL	3	1
TOTAL in July 2013		**14**	**7**

Table 5.5 The Encounter Rate of Number of Dolphin Sightings & Total Number of Dolphins per Area^

Encounter Rate of Number of Dolphin Sightings (STG)*						
Date	**NEL Track**	**NWL Track**	**NEL Sightings**	**NWL Sightings**	**NEL Encounter Rate**	**NWL Encounter Rate**
08 - 09/07/2013	37.7 km	73.5 km	0	5	0.0	6.8
23 & 31/07/2013	36.9 km	73.9 km	3	6	8.1	8.1
Encounter Rate of Total Number of Dolphins (ANI)**						
Date	**NEL Track**	**NWL Track**	**NEL Dolphins**	**NWL Dolphins**	**NEL Encounter Rate**	**NWL Encounter Rate**
08 - 09/07/2013	37.7 km	73.5 km	0	27	0.0	36.7
23 & 31/07/2013	36.9 km	73.9 km	3	15	8.1	20.3

* 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.
^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 twenty one dolphin sightings were recorded during the two surveys, eleven on 8 July 2013, six on 23 July 2013 and four on 31 July 2013. Of the twenty one sightings, fourteen were “on effort” (which are all under favourable condition) and seven were “opportunistic”. A total of sixty one 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 twenty one sightings made, three were classified as travelling; two sightings were recorded as ‘multiple’ behavior (both a combination of feeding and surface active); 11 sightings was recorded as feeding, two as surface active, three as travelling and; three as “unknown” in Figure 5d.

5.7.5 One mother and calf pair was observed. Although close approaches were not made to these dolphins, it is possible to discern from the images taken that the mother was HZMB 098 who was first sighted in May 2013 at which time she had a calf. Location and image data of the sighting is provided).

5.7.6 Photo ID analyses is completed (as of 13/08/13). Of the twenty one sightings recorded, sixteen dolphins were individually identifiable, ten of which were re-sightings (HZMB 011; 016; 022; 023; 040; 054; 069; 076; 077; 098) and six of which were new to the catalogue (HZMB 100-105). Twenty eight individuals were photographed clearly that could not be added to the catalogue as they lacked unique and identifiable features. A summary table and images are presented in Appendix K.

5.7.7 Noteworthy Observation:

- Marine construction activities which are not part of the HKBCF Contract continue in NWL, in particular, in the vicinity of transect line 1 and 2. Previously reported dredging activities continued at the Brothers Islands, in the vicinity of transect lines 11 and 12.
- In NWL, strong currents occurred throughout July 2013, in particular following a period of thunder storms and heavy rain which occurred on and around 24-25 July 2013.

5.7.8 The event action plan is annexed in Appendix L.

6 ENVIRONMENTAL SITE INSPECTION AND AUDIT

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, 4 site inspections were carried out on 4, 11, 17 and 25 July 2013.

6.1.2 Particular observations during the site inspections are described below:

Air Quality

6.1.3 No adverse observation was identified in the reporting month.

Noise

6.1.4 No adverse observation was identified in the reporting month.

Water Quality

6.1.5 Defects were observed around portion C2a (northwest part of the perimeter silt curtain). The Contractor rectified the defects of the silt curtain at portion C2a so that potential silt plume could be effectively prevented from dispersing to the outside of the perimeter silt curtain (Closed)

6.1.6 Open holes was observed within the frame of bunding on barge Evershine No.1 and barge SHB401. The Contractor was advised to rectify the situation by sealing the open hole properly to prevent potential waste oil leakage. The Contractor rectified the situation by sealing the open hole properly to prevent potential waste oil leakage. (Closed)

6.1.7 It was observed that the frame of bunding on barge SHB 401 was deformed. The Contractor was reminded to fix the deformed part of frame so that the bunding may have appropriate height to confine potential oil leakage. (reminder)

6.1.8 Oil stain was found on barge Evershine No.1. The Contractor was reminded to provide mitigation measures such adsorbents to clean the oil stain. The Contractor immediately provided mitigation measures such as adsorbents to clean the oil stain and treated the used absorbents as chemical waste. (Closed)

6.1.9 Oil stain was discovered over the sea on 25 July 2013 at 11:20 near the cell K038 at Portion B. The Contractor was advised to follow the actions stated on the Spill Response Plan and clear the oil waste on sea. The Contractor rectified the situation and clear the oil waste on sea using absorption boom according to the Spill Response Plan. The used absorption boom was disposed of as chemical waste. (Closed)

6.1.10 One of the generators was observed without bunding/drip tray on barge 401. The Contractor was advised to provide mitigation measures such as bunding/drip tray to confine potential oil leakage or to relocate the generator to an area with bunding. (Follow up)

Chemical and Waste Management

Waste

6.1.11 Oil drums were found improperly stored on barge FTB 17. The Contractor was reminded to provide mitigation measures such as drip tray or bunding to all oil drums The Contractor immediately provided mitigation measures and relocate the oil drum inside bunding. (Closed)

6.1.12 Oil drums were found without chemical label on barge SHB 209 and Evershine No.1. The Contractor immediately provided chemical labels to oil drums. (Closed)

6.1.13 Oil drums were improperly covered on barge FTB 17. The Contractor was reminded to provide mitigation measures such as lid to oil drums to prevent potential spillage The Contractor immediately provided mitigation measures such a relocate the waste oil to another oil drum with lid to prevent potential spillage. (Closed)

6.1.14 General waste was observed improperly covered. The Contractor immediately provided mitigation measures such as to remove the general waste via a waste collector. The Contractor was reminded to provide mitigation measures such bin bag(s) or container to properly cover all general waste. (Reminder)

Landscape and Visual Impact

6.1.15 No relevant works was carried out in the reporting month.

Others

6.1.16 No other adverse observation was identified in the reporting month.

6.1.17 The Contractor had rectified most of the observations as identified during environmental site inspection in the reporting month. 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, 397,704 m^3 of fill were imported for the Project use in the reporting period. 5.501 tonnes of plastic, 4 tonnes of chemical waste and 26m^3 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/A	08/12/2010	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-RS0122-13	08/02/2013	04/08/2013	CHEC	Marine-based areas in Contract HY/2010/02
NCO	Construction Noise Permit	GW-RE0634-13	24/06/2013	31/12/2013	CHEC	Works Area WA4 in Contract HY/2010/02
NCO	Construction Noise Permit	GW-RW0424-13	28/06/2013	27/12/2013	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 these measures were well implemented.

6.5 Summary of Exceedances of the Environmental Quality Performance Limit

6.5.1 All 1-Hour TSP and 24-hour TSP results were below the Action and Limit Level in the reporting month.

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

6.5.3 Three (3) Action Level exceedances were recorded at measured suspended solids (SS) values (in mg/L) in the reporting month. Investigation results show that the exceedances were not due to the Project works.

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 No complaints, summons and prosecution was received in the reporting period.

6.6.3 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 August and September 2013 will be:-

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
- Laying stone blanket
- Band drain installation
- Backfill cellular structure
- 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
- 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 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.

7.3 Monitoring Schedule for the Coming Month

7.3.1 The tentative schedule for environmental monitoring in August 2013 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 and 24-hour TSP results were below the Action and Limit Level in the reporting month.

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

8.1.4 Three (3) Action Level exceedances were recorded at measured suspended solids (SS) values (in mg/L) in the reporting month. Investigation results show that the exceedances were not due to the Project works.

8.1.5 A total of twenty one dolphin sightings were recorded during the two surveys, eleven on 8 July 2013, six on 23 July 2013 and four on 31 July 2013. Of the twenty one sightings, fourteen were “on effort” (which are all under favourable condition) and seven were “opportunistic”. A total of sixty one 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 21 sightings made, three were classified as travelling; two sightings were recorded as ‘multiple’ behavior (both a combination of feeding and surface active); 11 sightings was recorded as feeding, two as surface active, three as travelling and; three as “unknown” in Figure 5d.

8.1.7 Environmental site inspection was carried out 4 times in July 2013. Recommendations on remedial actions were given to the Contractors for the deficiencies identified during the site audits.

8.1.8 No complaints, summons and 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 or enclosure for noisy plants. 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.
- Better scheduling of construction works to minimize noise nuisance.

Water Quality Impact

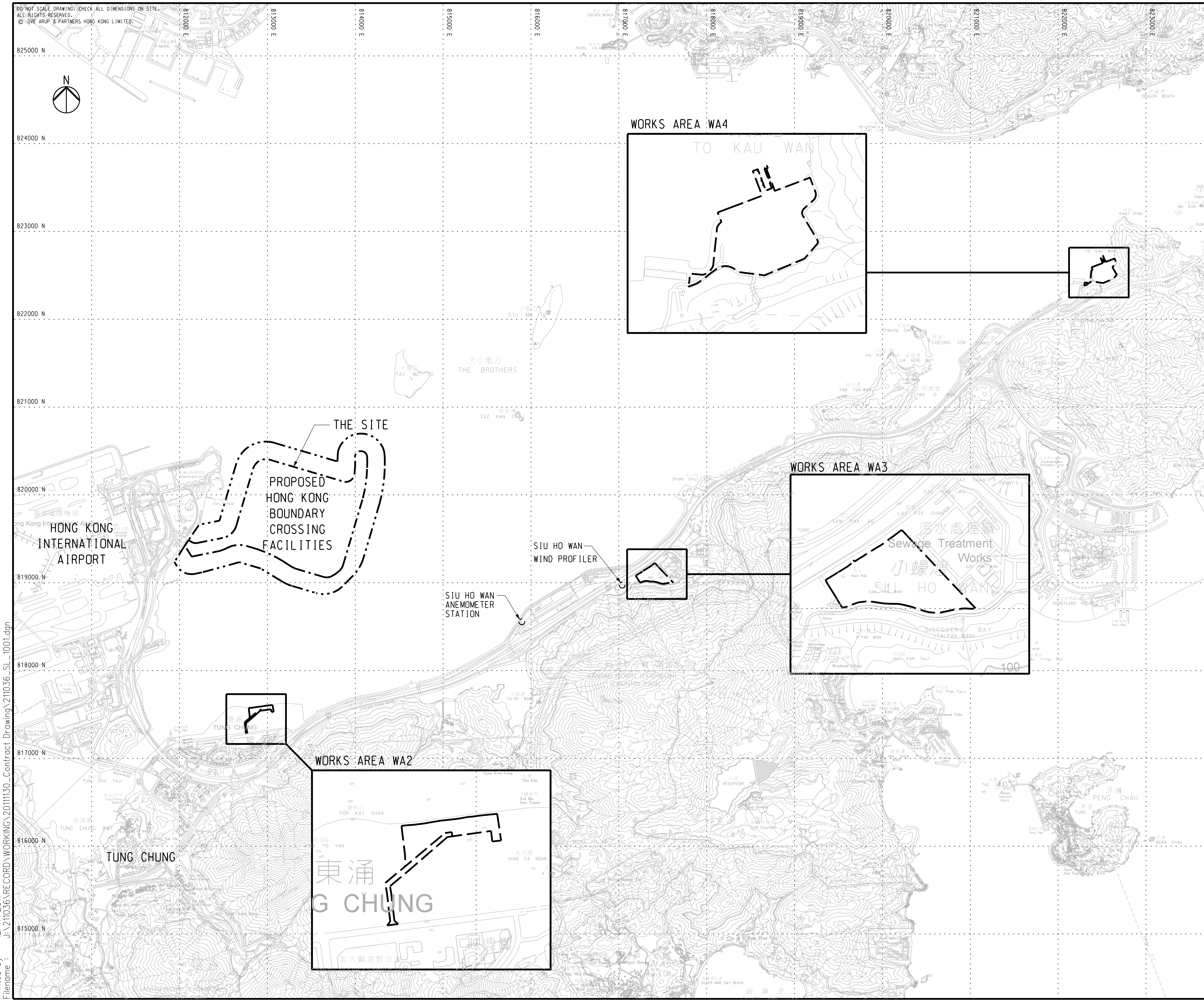
- Regular review and maintenance of silt curtain systems, drainage systems and desilting facilities in order to make sure they are functioning effectively.
- Construction of seawall should be completed as early as possible.
- Regular inspect and review the loading process from barges to avoid splashing 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.

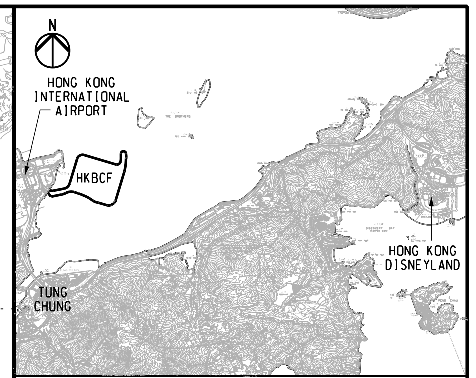
Chemical and Waste Management

- 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.





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 奥雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Supported By :
- Ecosystems Ltd.
- EDA Marine Ltd.
- Geotechnical Consulting Group (Asia) Ltd.
- Hong Kong Cetacean Research Project
- InteliBuild 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

KEY PLAN

Drawing no.			Rev.
211036/SL/1001			-
Drawn: RL	Date: 11/09	Checked: KKY	Approved: DML
Scale: 1:20000 @A1 1:40000 @A3		Status: WORKING	

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

Printed by : 12/17/2011
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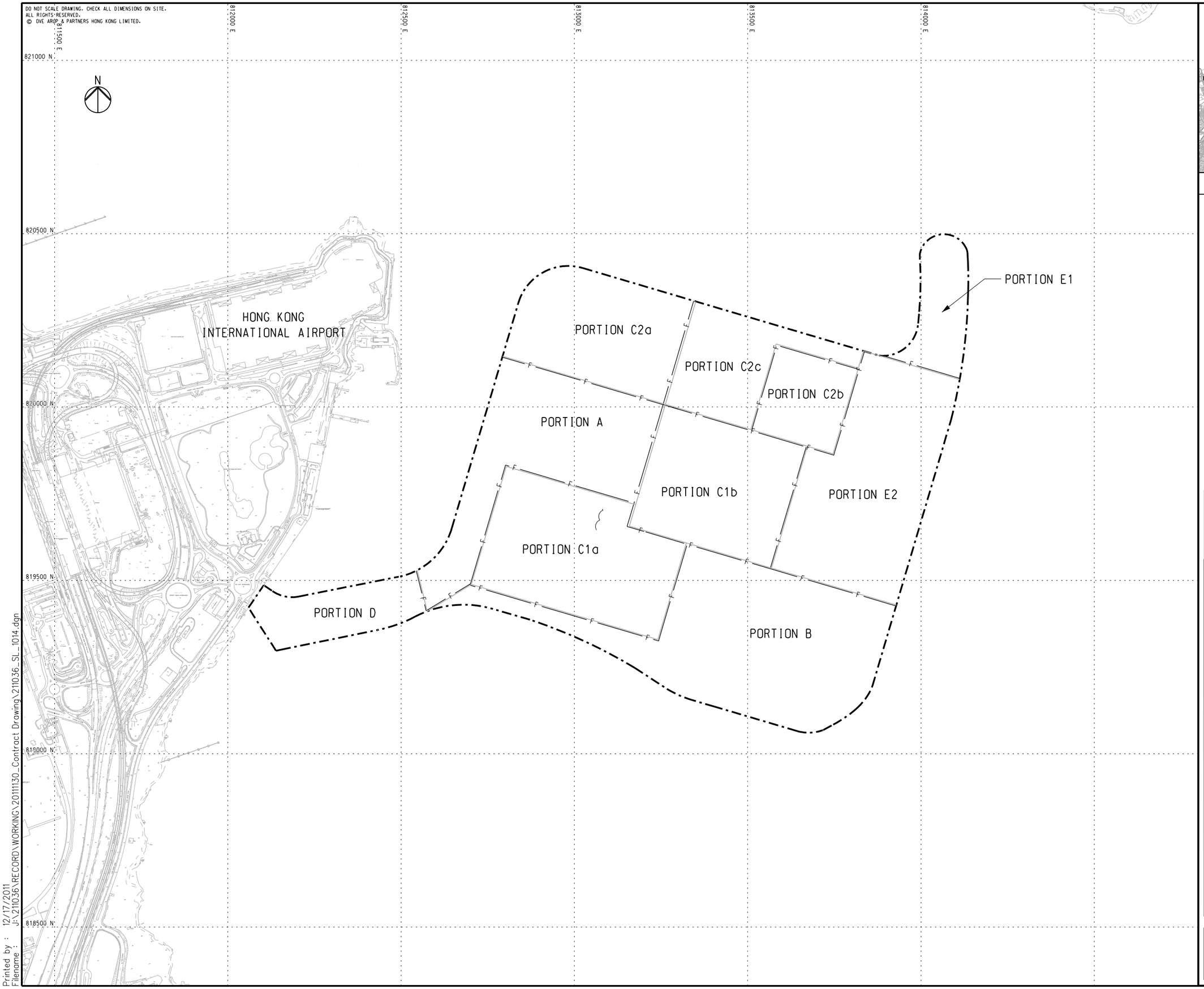

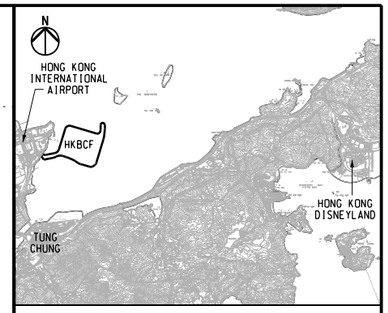

KEY PLAN

NOTES

1. FOR LEGENDS AND NOTES FOR CHAIN LINK FENCE AND GATE REFER TO DRG NO. 211036/SL/1013.
2. 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.
3. FOR SETTING OUT COORDINATES OF DIFFERENT PORTIONS OF SITE REFER TO DRG NO. 211036/SL/1003.
4. ACCESS POINTS BETWEEN PORTIONS SHALL BE PROVIDED BY THE CONTRACTOR. AND THE LOCATIONS SHALL BE AGREED WITH THE ENGINEER ON SITE.
5. 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

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
- InteliBuild 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 HORADING PLAN
(SHEET 2 OF 3)

Drawing no.	Rev.
211036/SL/1014	-

Drawn	Date	Checked	Approved
RL	06/10	KKY	DML

Scale 1:5000 @A1 1:10000 @A3
Status WORKING

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

Printed by : 12/17/2011
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ISO A3 297mm x 420mm

Checked:

Project Management Initials:

809000 E
810000 E
811000 E
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813000 E
814000 E
815000 E

820000 N
819000 N
818000 N
817000 N
816000 N

PROPOSED HONG KONG BOUNDARY CROSSING FACILITIES

AMS7

AMS6

AMS3A
NMS3A

AMS2
NMS2

CHEK LAP KOK

HONG KONG INTERNATIONAL AIRPORT

SCENIC HILL

Pak Sha Tsui

TUNG CHUNG

LEGEND

AMS1 AIR MONITORING STATIONS

NMS1 NOISE MONITORING STATIONS

WIND STATION

AECOM

Figure 2

IMPACT AIR QUALITY AND NOISE
MONITORING STATIONS AND WIND STATION

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

Project No.: 60249820 Date: MAY 2012

Plot File by: Lammd 03/05/2012
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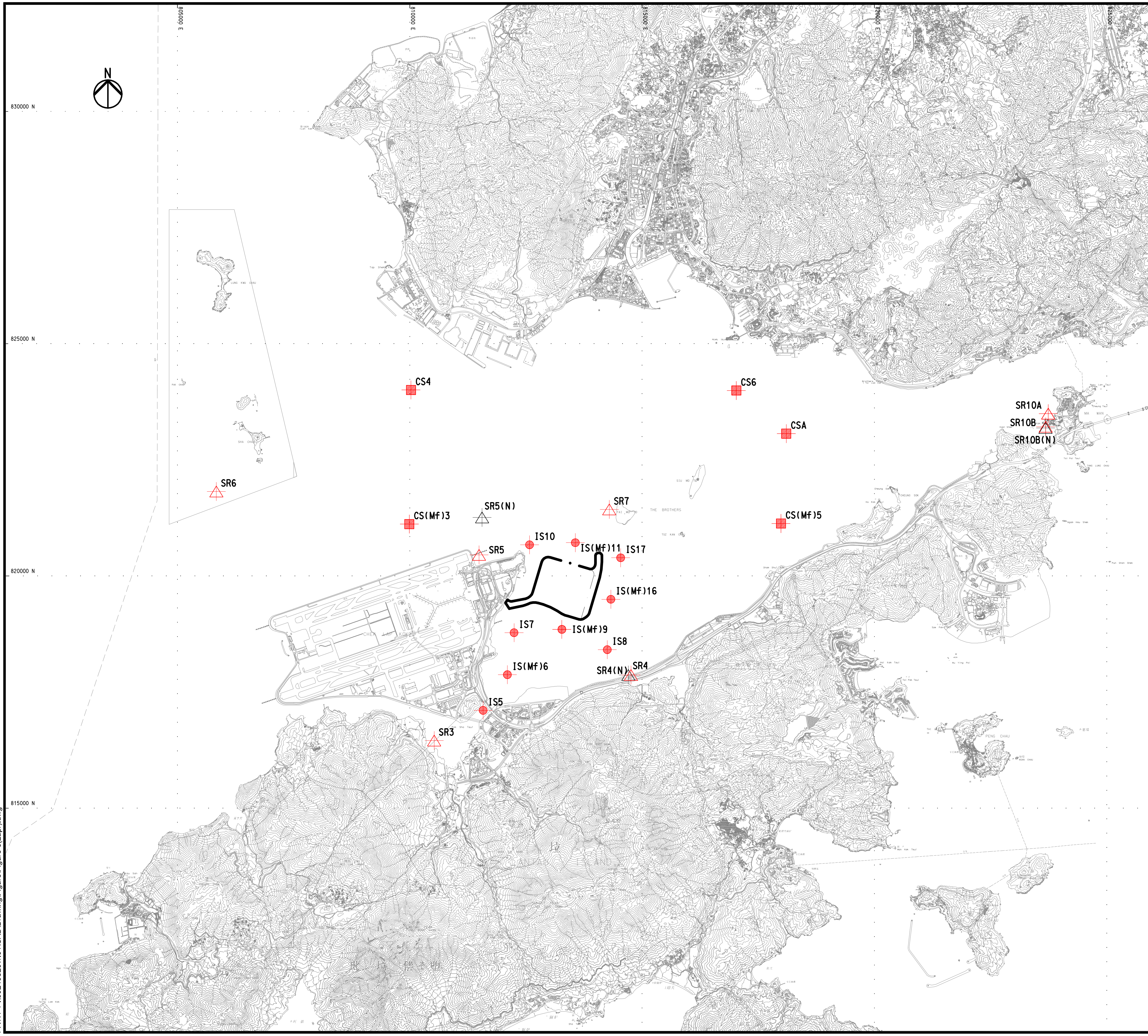


LEGEND

- IS — IMPACT STATIONS
- CS — CONTROL / FAR FIELD STATIONS
- SR — SENSITIVE RECEIVERS STATIONS
- SR — SENSITIVE RECEIVERS STATIONS (RELOCATED)

SETTING OUT SCHEDULE

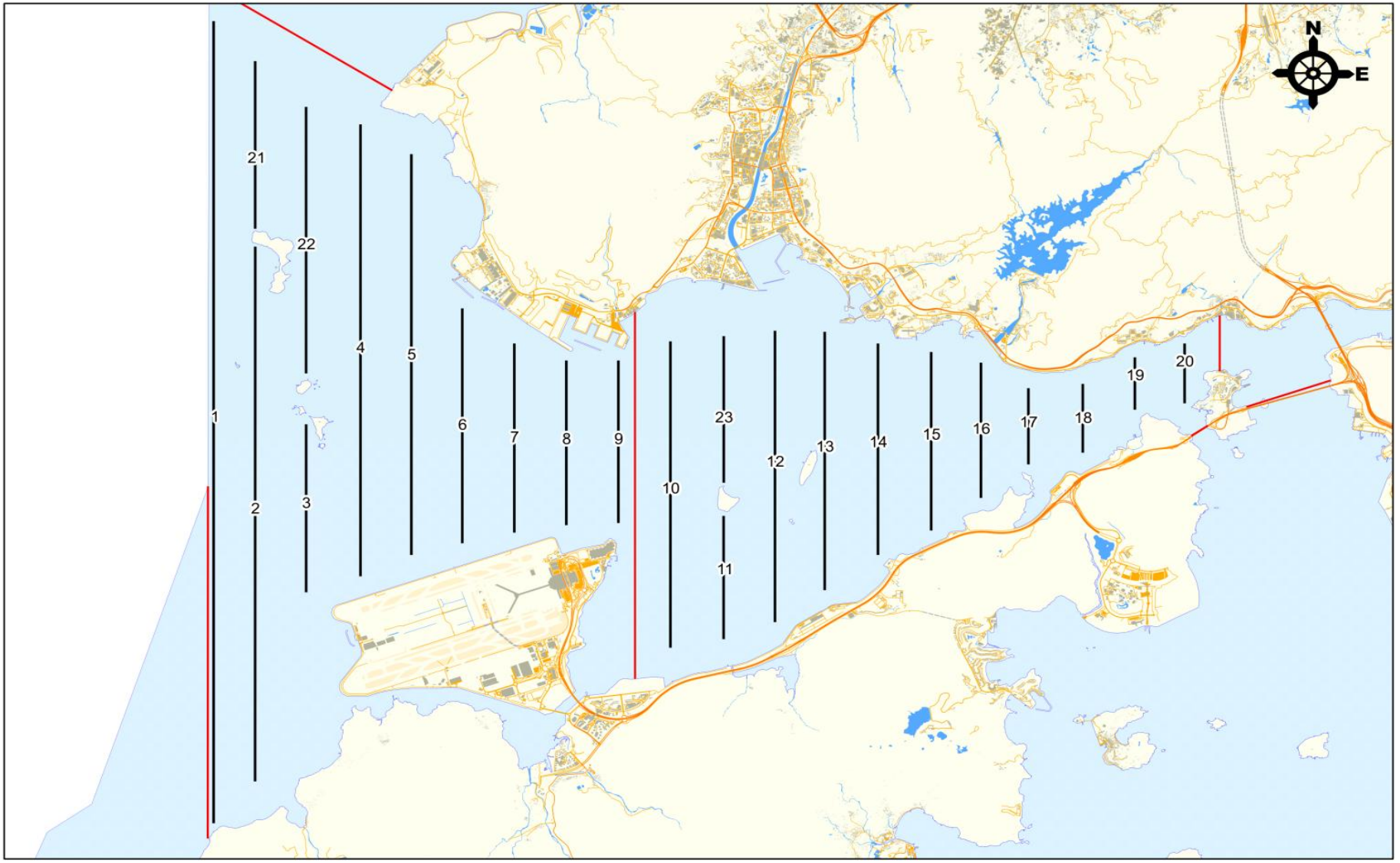
MONITORING STATIONS	CO-ORDINATES	
	EASTING	NORTHING
IS5	811579	817106
IS(Mf)6	812101	817873
IS7	812244	818777
IS8	814251	818412
IS(Mf)9	813273	818850
IS10	812577	820670
IS(Mf)11	813562	820716
IS(Mf)16	814328	819497
IS17	814539	820391
SR3	810525	816456
SR4(N)	814705	817859
SR5	811489	820455
SR5(N)	811555	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

HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS
Project No.: 60249820 Date: APR 2012

IMPACT WATER QUALITY MONITORING STATIONS

AECOM

Figure 3



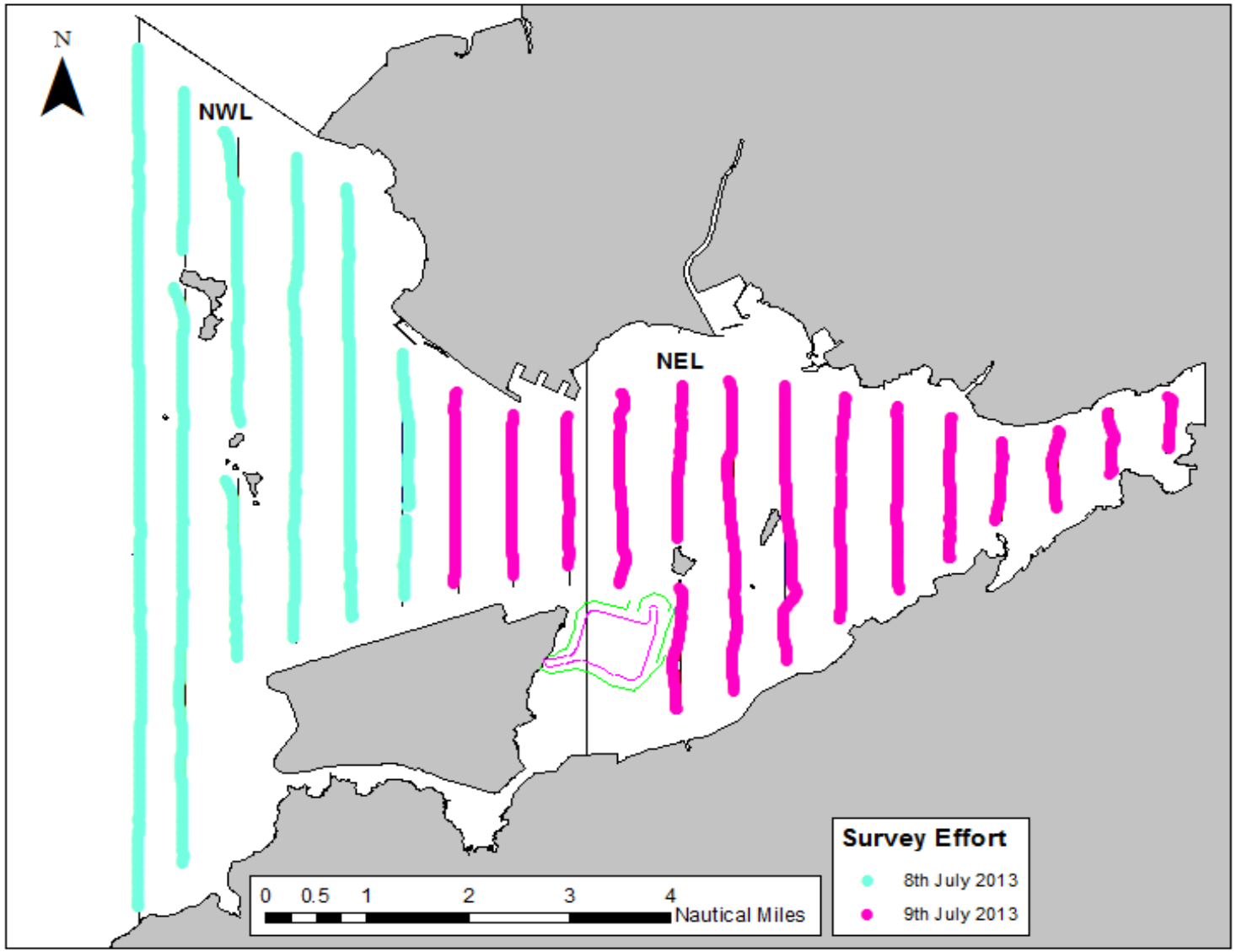
***Remark: Transect 10 is now 3.6km in length due to the HKBCF construction site. The total transect length for both NEL and NWL combined is 111km.**

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

AECOM

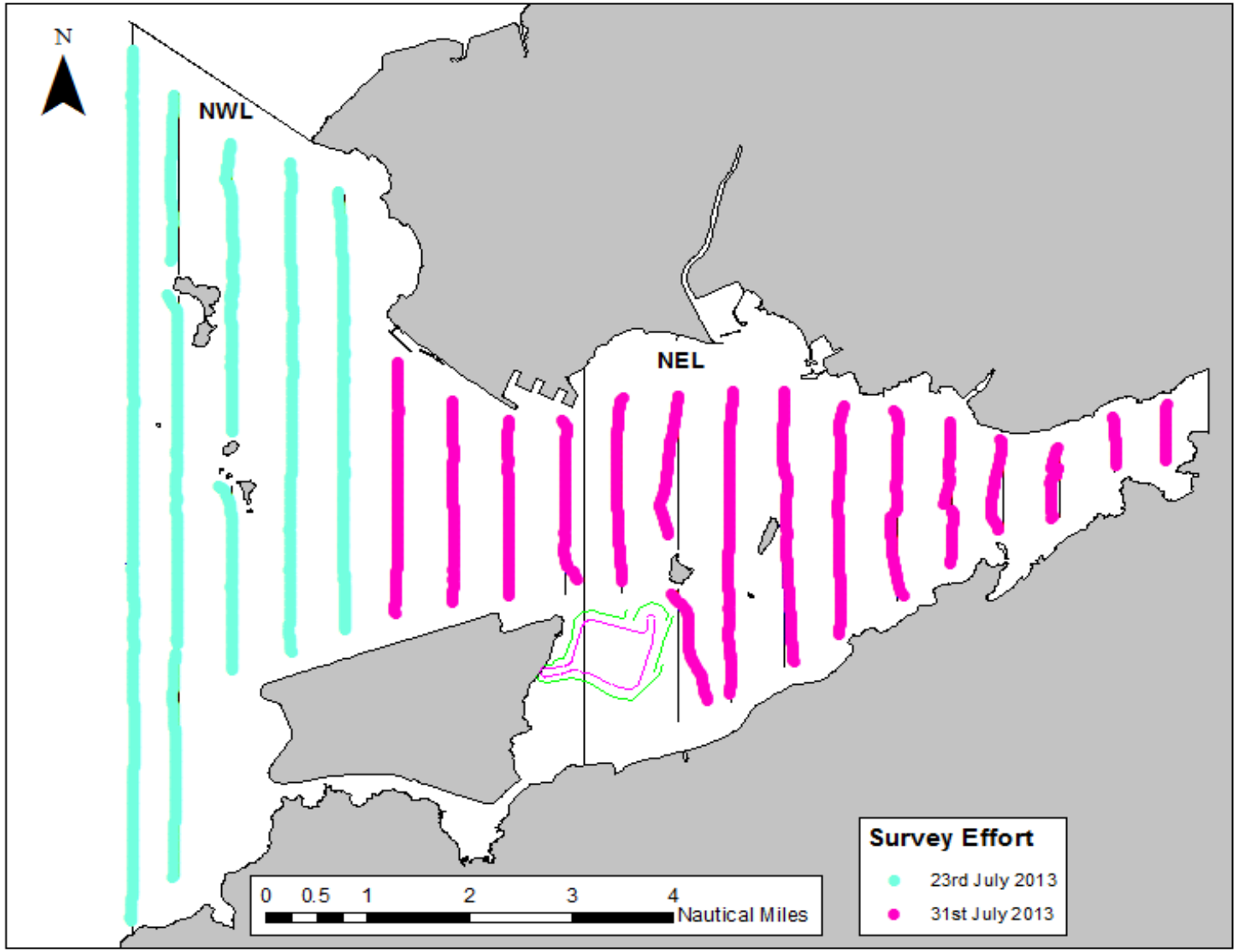
Figure 4



HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES - RECLAMATION WORKS
Project No.: 60249820 Date: August 2013

Impact Dolphin Monitoring Survey
Efforts on 8&9 July 2013

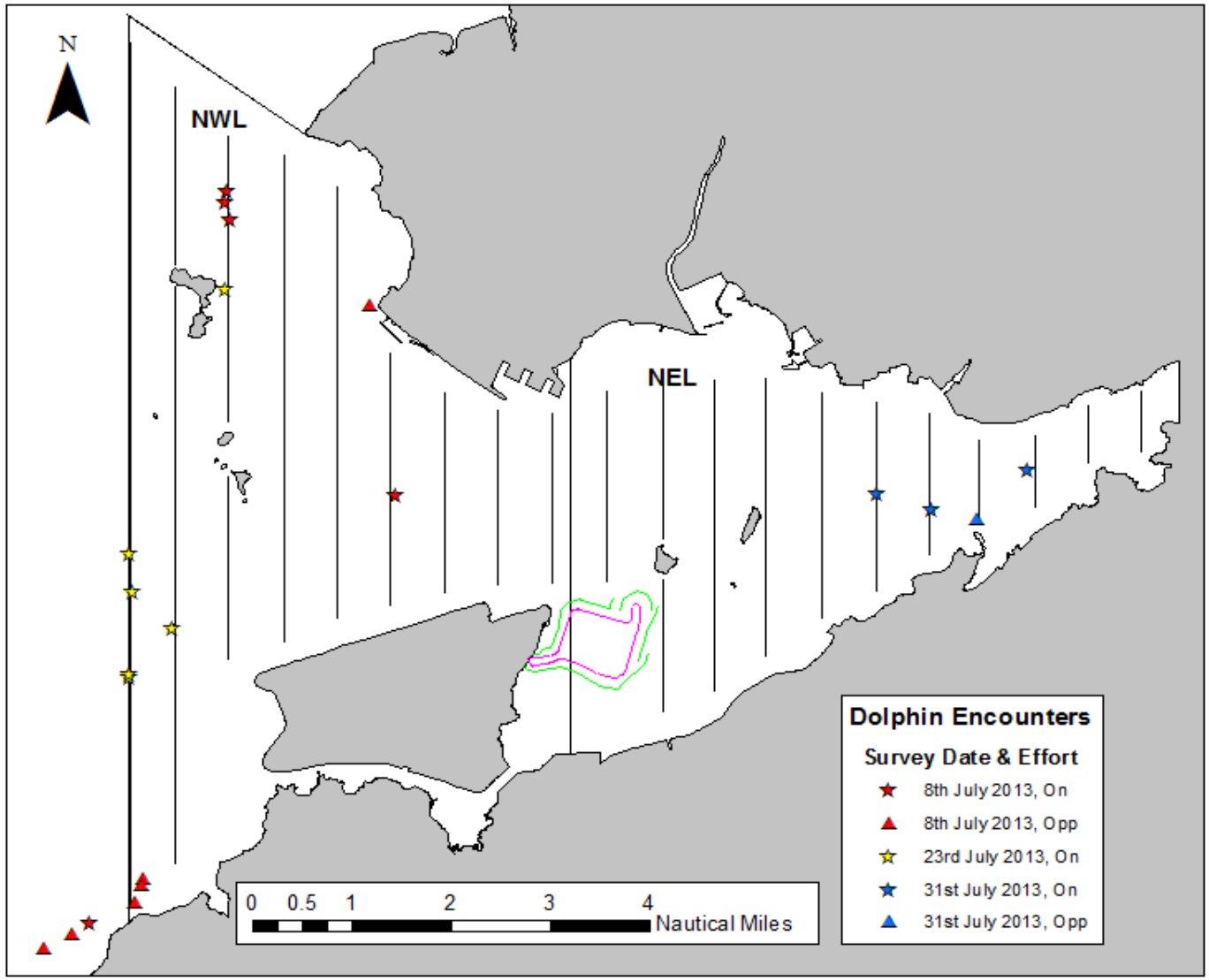
Figure 5a



HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS
Project No.: 60249820 Date: August 2013

Impact Dolphin Monitoring Survey
Efforts on 23 and 31 July 2013

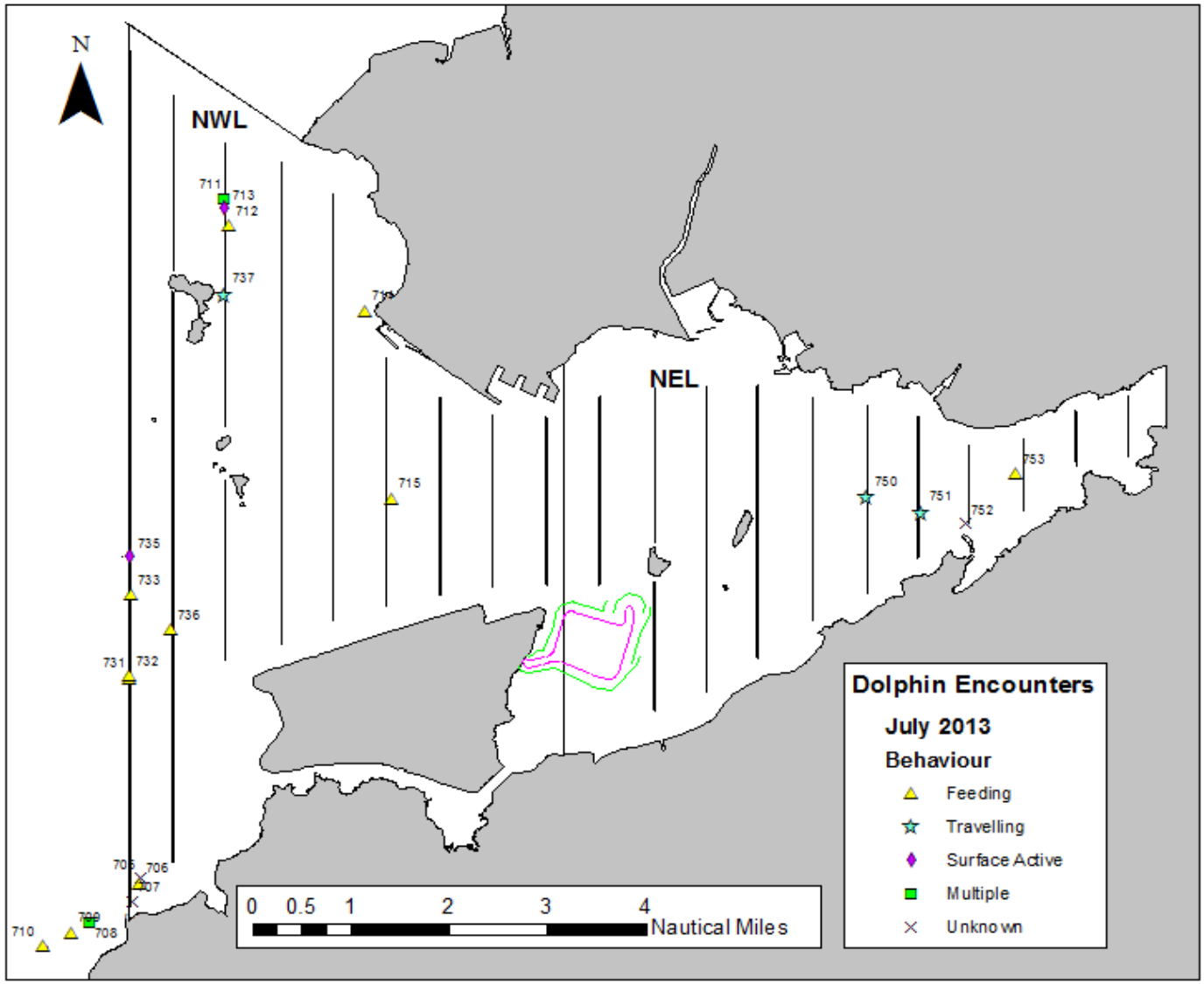
Figure 5b



HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS
Project No.: 60249820 Date: August 2013

Impact Dolphin Monitoring Survey
Sightings in July 2013

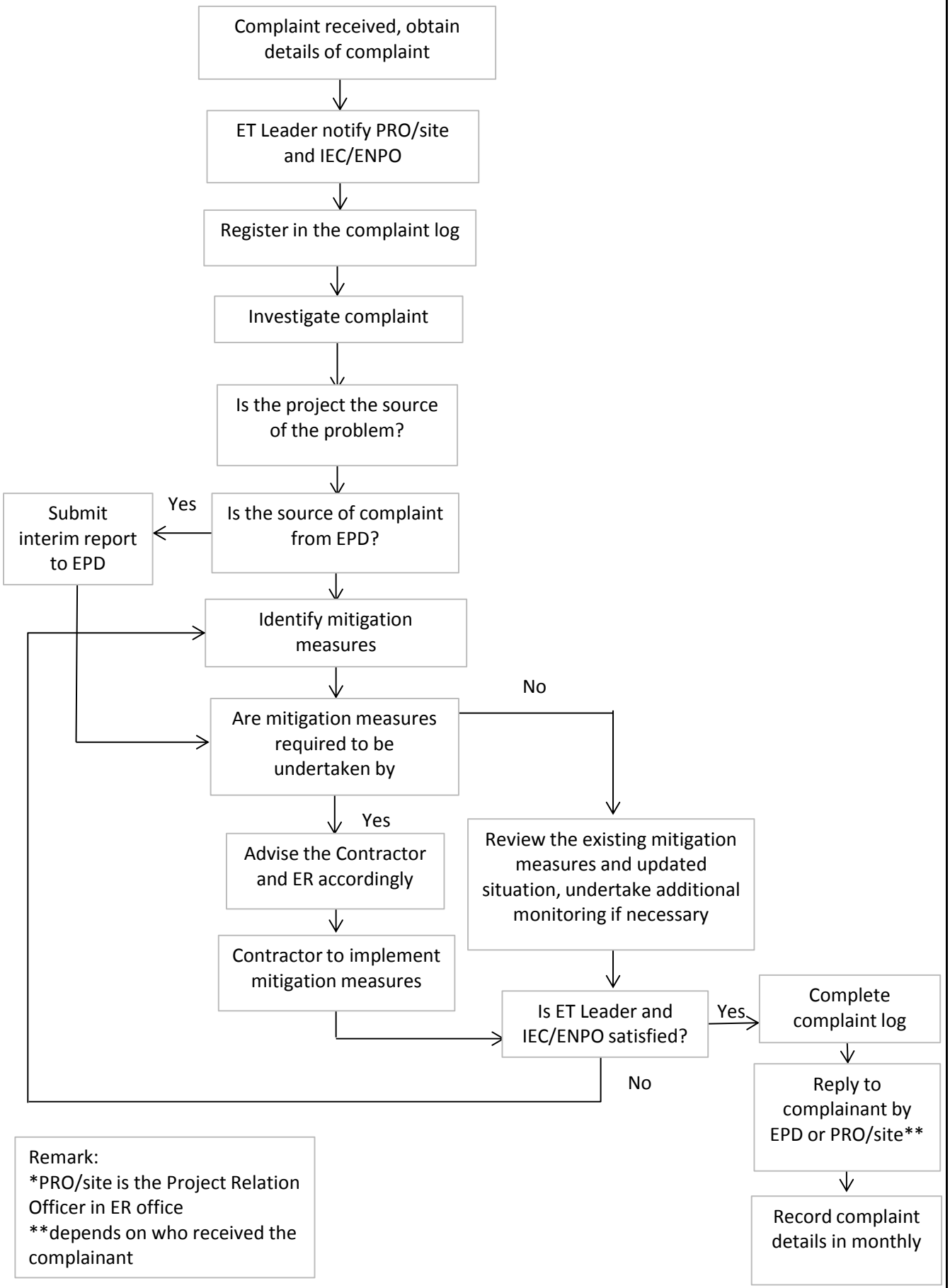
Figure 5c



HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS
Project No.: 60249820 Date: August 2013

Impact Dolphin Monitoring Survey
Behaviour Map in July 2013

Figure 5d

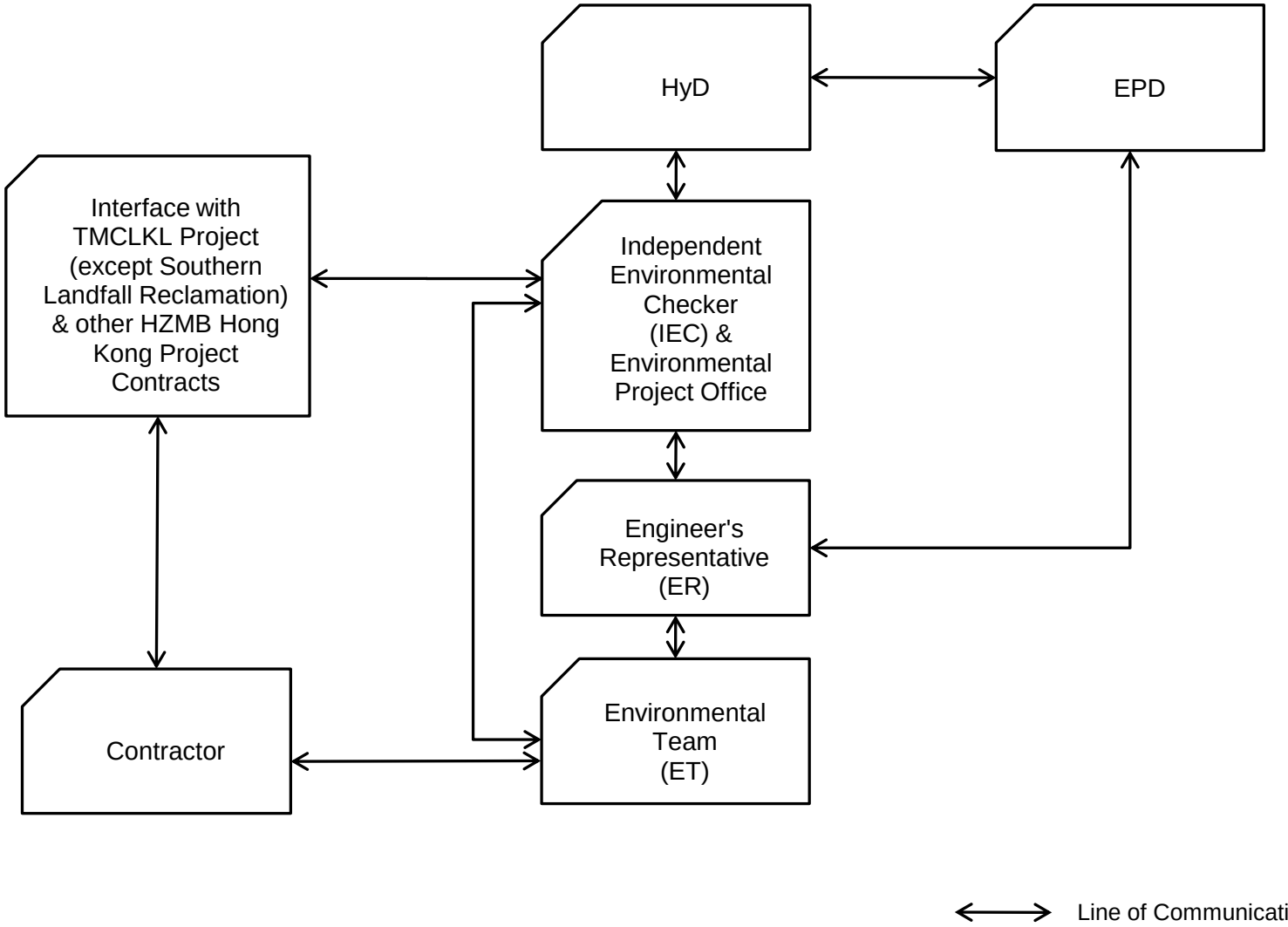


HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS

AECOM

Environmental Complaint Handling Procedure

Project No.: 60249820 **Date: July 2012** **Figure 6**



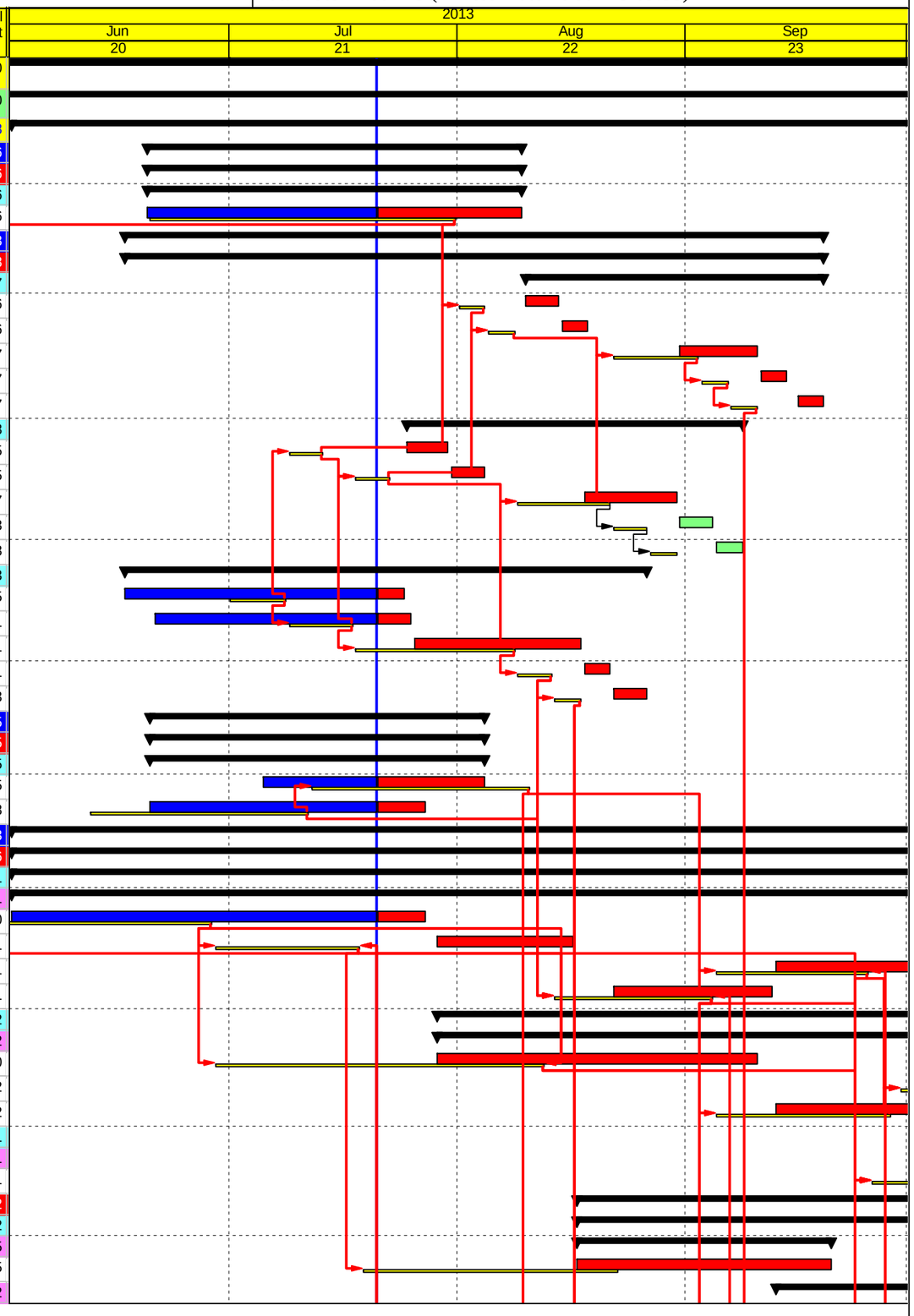
HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
--RECLAMATION WORKS
Project No.: 60249820 Date: April 2013

Project Organisation for Environmental Works

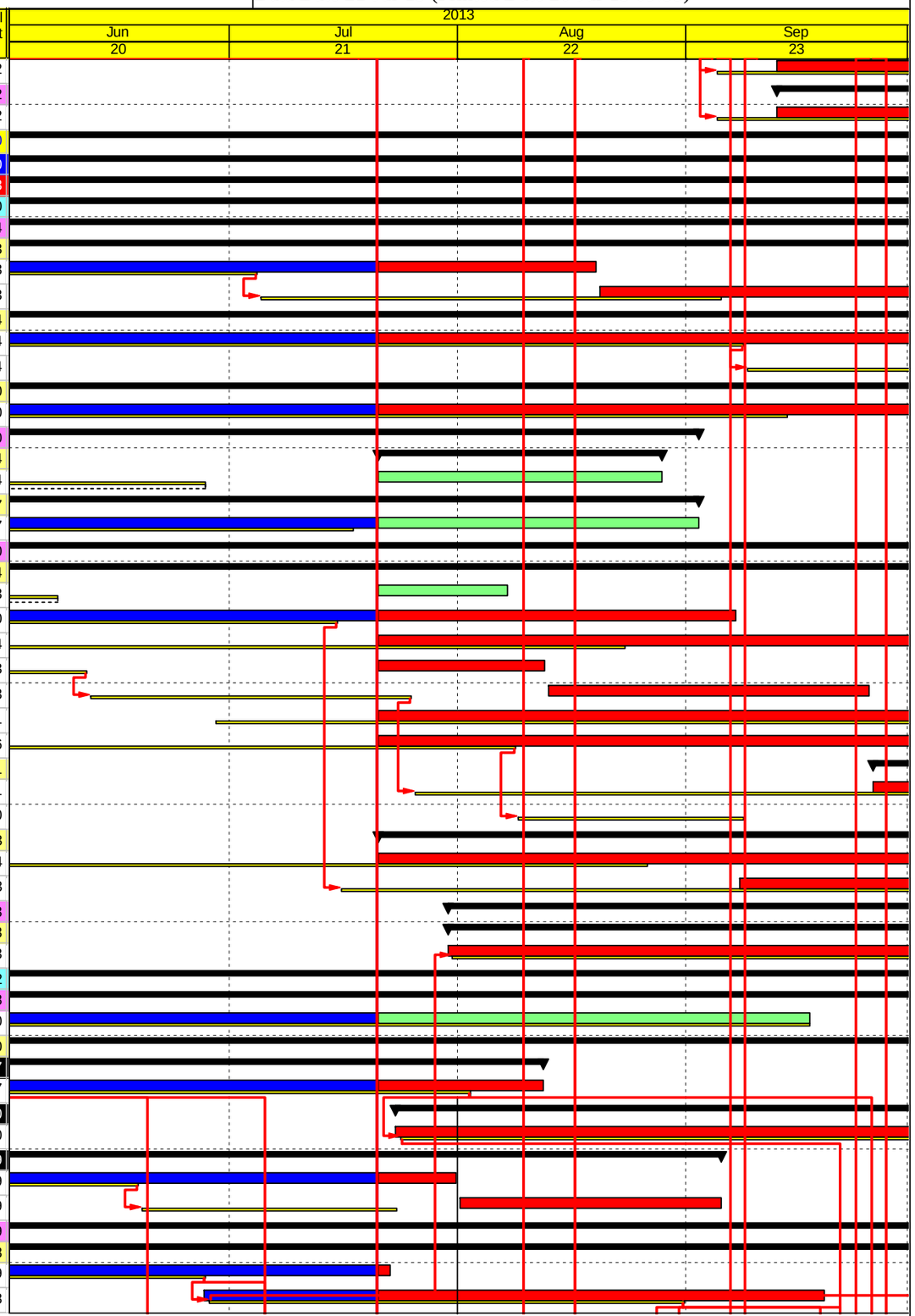
AECOM

Appendix A

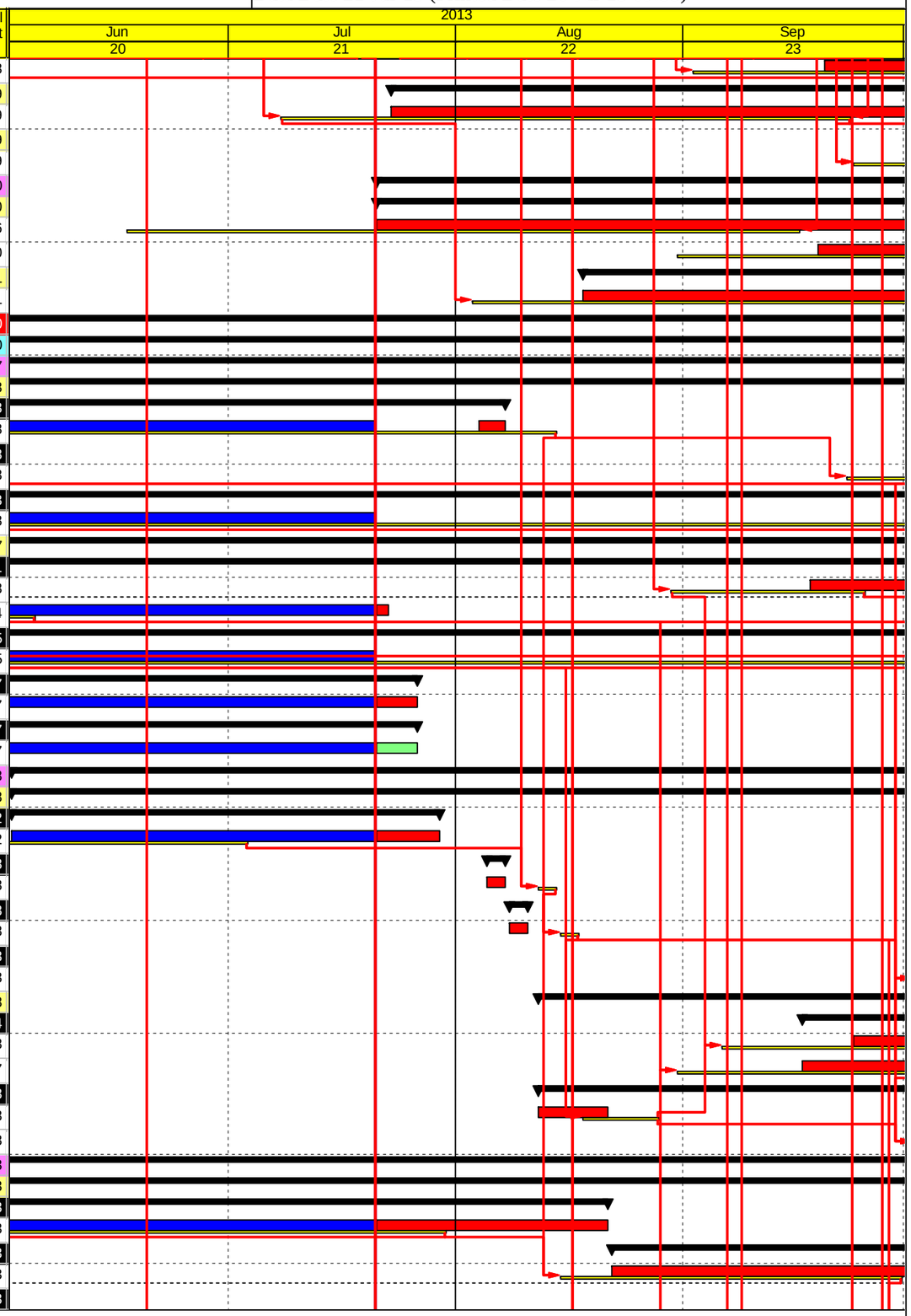
Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Total Float
20th Monthly Progress Report status as in 21 July 2013		1935	1352	30-Nov-11 A	02-Apr-17	0
Work Zone, as defined in PS Clause 1.03(6)		1781	1352	02-May-12 A	02-Apr-17	0
Portion A		158	108	01-Jun-13 A	05-Nov-13	1188
Ground Treatment		39	19	20-Jun-13 A	09-Aug-13	-236
Stone Columns C118 - C134 6,399Nos.		39	19	20-Jun-13 A	09-Aug-13	-236
Portion AC118 - C121 4Cells 1,460Nos.		39	19	20-Jun-13 A	09-Aug-13	-236
SC0A-1020a	Stone Columns PA C118 - C121 4cells [Additional SC - 856 nr] FTI	39	19	20-Jun-13 A	09-Aug-13	-236
Sloping Seawalls		81	56	17-Jun-13 A	19-Sep-13	1138
Rockfill		81	56	17-Jun-13 A	19-Sep-13	1138
Seawall Portion A at C118 - C121		37	37	10-Aug-13	19-Sep-13	-247
RFA0-2010	PA at C121 - C118 Geotextile	4	4	10-Aug-13	14-Aug-13	-236
RFA0-2020	PA at C121 - C118 Rock Cat0 Bottom Fill	4	4	15-Aug-13	18-Aug-13	-236
RFA0-2030	PA at C121 - C118 Rock Cat1 Rock Core	10	10	31-Aug-13	10-Sep-13	-247
RFA0-2040	PA at C121 - C118 Rock Cat0 Behind Rock Core	4	4	11-Sep-13	14-Sep-13	-247
RFA0-2050	PA at C121 - C118 Under Layer	4	4	16-Sep-13	19-Sep-13	-247
Seawall Portion A at C122 - C126		42	42	25-Jul-13	08-Sep-13	1148
RFA0-1010	PA at C126 - C122 Geotextile	5	5	25-Jul-13	30-Jul-13	-235
RFA0-1020	PA at C126 - C122 Rock Cat0 Bottom Fil	5	5	31-Jul-13	04-Aug-13	-235
RFA0-1030	PA at C126 - C122 Rock Cat1 Rock Core	12	12	18-Aug-13	30-Aug-13	-247
RFA0-1040	PA at C126 - C122 Rock Cat0 Behind Rock Core	4	4	31-Aug-13	04-Sep-13	1148
RFA0-1050	PA at C126 - C122 Under Layer	4	4	05-Sep-13	08-Sep-13	1148
Seawall Portion A at C127 - C134		59	34	17-Jun-13 A	26-Aug-13	-243
RFA0-3010	PA at C127 - C134 Geotextile	8	4	17-Jun-13 A	24-Jul-13	-235
RFA0-3020	PA at C127 - C134 Rock Cat0 Bottom Fill	8	5	21-Jun-13 A	25-Jul-13	-251
RFA0-3030	PA at C127 - C134 Rock Cat1 Rock Core	21	21	26-Jul-13	17-Aug-13	-251
RFA0-3040	PA at C127 - C134 Rock Cat0 Behind Rock Core	4	4	18-Aug-13	21-Aug-13	-251
RFA0-3050	PA at C127 - C134 Under Layer	4	4	22-Aug-13	26-Aug-13	-243
Reclamation		43	14	20-Jun-13 A	04-Aug-13	-215
Portion A Sand Blanket		43	14	20-Jun-13 A	04-Aug-13	-215
Land Portion A		43	14	20-Jun-13 A	04-Aug-13	-215
SABRA0-020	Sand Blankets 278,750m3 PA Edge Area C118 to C126 10,000m3	28	14	05-Jul-13 A	04-Aug-13	-215
SABRA0-030	Sand Blankets 278,750m3 PA Edge Area C127 to C134 10,000m3	28	7	20-Jun-13 A	27-Jul-13	-228
Portion A		158	108	01-Jun-13 A	05-Nov-13	-213
Reclamation		146	100	01-Jun-13 A	05-Nov-13	-236
Portion A Marine Fill upto +2.5mPD		116	70	01-Jun-13 A	04-Oct-13	-251
Land Portion A		116	70	01-Jun-13 A	04-Oct-13	-251
PA6-MFA0-010	Marine Fill Type A Sand 100% at PA Main Area at C118 - C121 53(	27	7	01-Jun-13 A	27-Jul-13	-230
PA6-MFA0-020	Marine Fill Type A Sand 100% at PA Main Area at C122 - C126 53	18	18	29-Jul-13	16-Aug-13	-221
PA6-MFA0-030	Marine Fill Type A Sand 100% at PA Edge Area at C118 - C126 53	20	20	13-Sep-13	04-Oct-13	-251
PA6-MFA0-040	Marine Fill Type A Sand 100% at PA Edge Area at C127 - C134 53	20	20	22-Aug-13	12-Sep-13	-251
Portion A Land Band Drain		89	89	29-Jul-13	01-Nov-13	-232
Land Portion A		89	89	29-Jul-13	01-Nov-13	-232
PA6-VBDA0-0:	Vertical Band Drains12,3832 / 137,334nrs by land plant at PA C11(	41	41	29-Jul-13	10-Sep-13	-230
PA6-VBDA0-0:	Vertical Band Drains 68,667nrs by land plant at PA C118 - C126 E(	23	23	08-Oct-13	01-Nov-13	-232
PA6-VBDA0-0:	Vertical Band Drains 68,667nrs by land plant at PA C127 - C134 E(	23	23	13-Sep-13	07-Oct-13	-232
Portion A Earthwork Fill upto +5.5mPD		30	30	05-Oct-13	05-Nov-13	-251
Land Portion A		30	30	05-Oct-13	05-Nov-13	-251
PA6-EFA0-010	Earthwork Fill Type D at PA at C119 - C126 Main Area 584,184,m3	30	30	05-Oct-13	05-Nov-13	-251
Portion A Instrumentation		53	53	17-Aug-13	19-Oct-13	-162
Portion A Instrumentation - SD		53	53	17-Aug-13	19-Oct-13	-162
SD-24 C123		30	30	17-Aug-13	20-Sep-13	-155
PA6-CTSD-240	Installation of SD-24 (C123) PA	30	30	17-Aug-13	20-Sep-13	-155
SD-25 C128		30	30	13-Sep-13	19-Oct-13	-162



Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Total Float
PA6-CTSD-250	Installation of SD-25 (C128) PA	30	30	13-Sep-13	19-Oct-13	-162
SD-26 C133		30	30	13-Sep-13	19-Oct-13	-162
PA6-CTSD-260	Installation of SD-26 (C133) PA	30	30	13-Sep-13	19-Oct-13	-162
Portion B, C & E		1781	1352	02-May-12 A	02-Apr-17	0
Portion B, C & E		1781	1352	02-May-12 A	02-Apr-17	0
Seawall		654	209	02-May-12 A	14-Feb-14	1143
Ground Treatment		280	190	15-Apr-13 A	14-Feb-14	1060
Stone Columns for Sloping Seawall by Marine Plant		202	112	15-Apr-13 A	18-Nov-13	-184
Portion C2a C113 - C117 5Cells 2,164Nos FTB17		176	86	15-Apr-13 A	21-Oct-13	-173
SC0A-5020	Stone Columns PC2a C113 - C117 5cells 952nrs/2164nrs (15nrs/d	75	28	15-Apr-13 A	19-Aug-13	-173
SC0A-5020a	Stone Columns PC2a C113 - C117 5cells [Additional SC - 1,159 nr	58	58	20-Aug-13	21-Oct-13	-173
Portion B K13 - K17 4Cells 2,052Nos. AP1		192	112	26-Apr-13 A	18-Nov-13	-184
SC0B-1000	Stone Columns PB K013 - K017 5Cells 1,855 / 2,052Nos FTB-AF	126	70	26-Apr-13 A	04-Oct-13	-184
SC0B-1000a	Stone Columns PB K013 - K017 5Cells [Additional SC - 638 nr] F	42	42	05-Oct-13	18-Nov-13	-184
Portion B K18 - K23 7Cells 2,146Nos. AP4		132	90	26-Apr-13 A	25-Oct-13	-200
SC0B-2000	Stone Columns PB K018 - K023 6Cells 1,949 / 2,146Nos FTB-AP2	132	90	26-Apr-13 A	25-Oct-13	-200
Stone Columns Inside cellular structures by Marine Plant		117	40	25-Apr-13 A	02-Sep-13	1210
Seawall Portion E2 at C060 - C067 8cells @80nrs/cell 640nrs		36	36	21-Jul-13	28-Aug-13	1214
SCIE2-010	Stone Columns inside cells & 2rows 8cells 537/ 640nrs (15nrs/day)	36	36	21-Jul-13	28-Aug-13	1214
Seawall Portion E1 at C068 - C091 24cells @80nrs/cell 1,920nrs		78	40	25-Apr-13 A	02-Sep-13	27
SCIE1-010	Stone Columns inside cells & 2rows 16cells 1,280nrs (15nrs/day) C	78	40	25-Apr-13 A	02-Sep-13	27
Stone Columns Outside cellular Structures by Marine Plant		261	190	06-May-13 A	14-Feb-14	1060
Seawall Portion B at K024 - K051 28cells 5,729nrs		187	116	06-May-13 A	22-Nov-13	1134
SCOB-A005	Modifcation of stone columns barge FTB16	17	17	21-Jul-13	07-Aug-13	1233
SCOB-A010	Stone Columns outermost K024 - K032 9cells 779 / 921nrs (15nrs/	66	45	06-May-13 A	07-Sep-13	-190
SCOB-A020	Stone Columns outermost K033 - K045 13cells 1,330nrs (15nrs/da	89	89	21-Jul-13	24-Oct-13	-234
SCOB-A030	Setup Gravel pump system FTB20 stone column barge	21	21	21-Jul-13	12-Aug-13	-173
SCOB-A040	Stone Columns outermost K046 - K051 6cells 614nrs (15nrs/day) I	41	41	13-Aug-13	25-Sep-13	-173
SCOB-B010	Stone Columns beside K024 - K040 17cells 1,739nrs (15nrs/day) F	116	116	21-Jul-13	22-Nov-13	-261
SCOB-B030	Stone Columns beside K041 - K051 11cells 1,125nrs (15nrs/day) F	75	75	21-Jul-13	09-Oct-13	-186
Seawall Portion E2 at K052 - C067 16cells 4,236nrs		128	128	26-Sep-13	14-Feb-14	-141
SCOE2-A010	Stone Columns outermost K052 - K067 16cells 1912nrs (15nrs/da	128	128	26-Sep-13	14-Feb-14	-141
SCOE2-B010	Stone Columns beside K052 - K055 4cells 410nrs (15nrs/day) FTE	28	28	10-Oct-13	08-Nov-13	-120
Seawall Portion E1 at C068 - C090 23cells 6,841nrs		136	136	21-Jul-13	14-Dec-13	-43
SCOE1-A020	Stone Columns outermost C070 - C074 5cells 1,368nrs (15nrs/da	91	91	21-Jul-13	26-Oct-13	-24
SCOE1-A030	Stone Columns outermost C075 - C084 10cells 1,368nrs (15nrs/da	91	91	08-Sep-13	14-Dec-13	-43
Stone Columns Inside cells by Land Plant		78	78	30-Jul-13	22-Oct-13	-223
Seawall Portion B at K024 - C051 28cells 3,080nrs		78	78	30-Jul-13	22-Oct-13	-223
V3-SCIB0-010	Stone Columns inside cells & 2rows PB K024 - K040 17cells 1,870	78	78	30-Jul-13	22-Oct-13	-223
Cellular Structures		616	171	02-May-12 A	07-Jan-14	-52
Cellular Main Cells 89cells		536	91	02-May-12 A	19-Oct-13	28
CS10000	Production of Y Junction for Cellular Walls Construction	504	59	02-May-12 A	17-Sep-13	60
Full Guide Frames Method 89cells		399	84	13-Aug-12 A	19-Oct-13	-290
Portion C2a C112 to C103 10cells		69	21	28-May-13 A	12-Aug-13	-317
CSC2a-000	Portion C2a Cellular Structure C112 to C103 10cells Type_C 63,32	69	21	28-May-13 A	12-Aug-13	-317
Portion C2c C102 to C91 12cells		81	81	23-Jul-13	19-Oct-13	-290
CSC2c-000	Portion C2c Cellular Structure C102 to C091 12cells Type_C 81,33	81	81	23-Jul-13	19-Oct-13	-290
Portion E2 K052 to C067 16cells		358	43	13-Aug-12 A	05-Sep-13	-249
CS00E2-010	Portion E2 Cellular Structure K052 to C063 10cells (except K055 a	285	10	13-Aug-12 A	31-Jul-13	-249
CS00E2-020	Portion E2 Cellular Structure C064 to C067 4cells 19,731m3	33	33	01-Aug-13	05-Sep-13	-249
Connecting Arcs		268	158	24-Mar-13 A	07-Jan-14	-319
Portion B between K024 to K051 27arcs		201	91	24-Mar-13 A	26-Oct-13	-308
CA00B-000	Portion B Connecting Arc structure 1st install K038 & other 2arcs	89	2	24-Mar-13 A	22-Jul-13	-319
CA00B-010	Portion B Connecting Arc structure K024 -K040 15arcs Type_C 30	60	56	27-Jun-13 A	19-Sep-13	-308



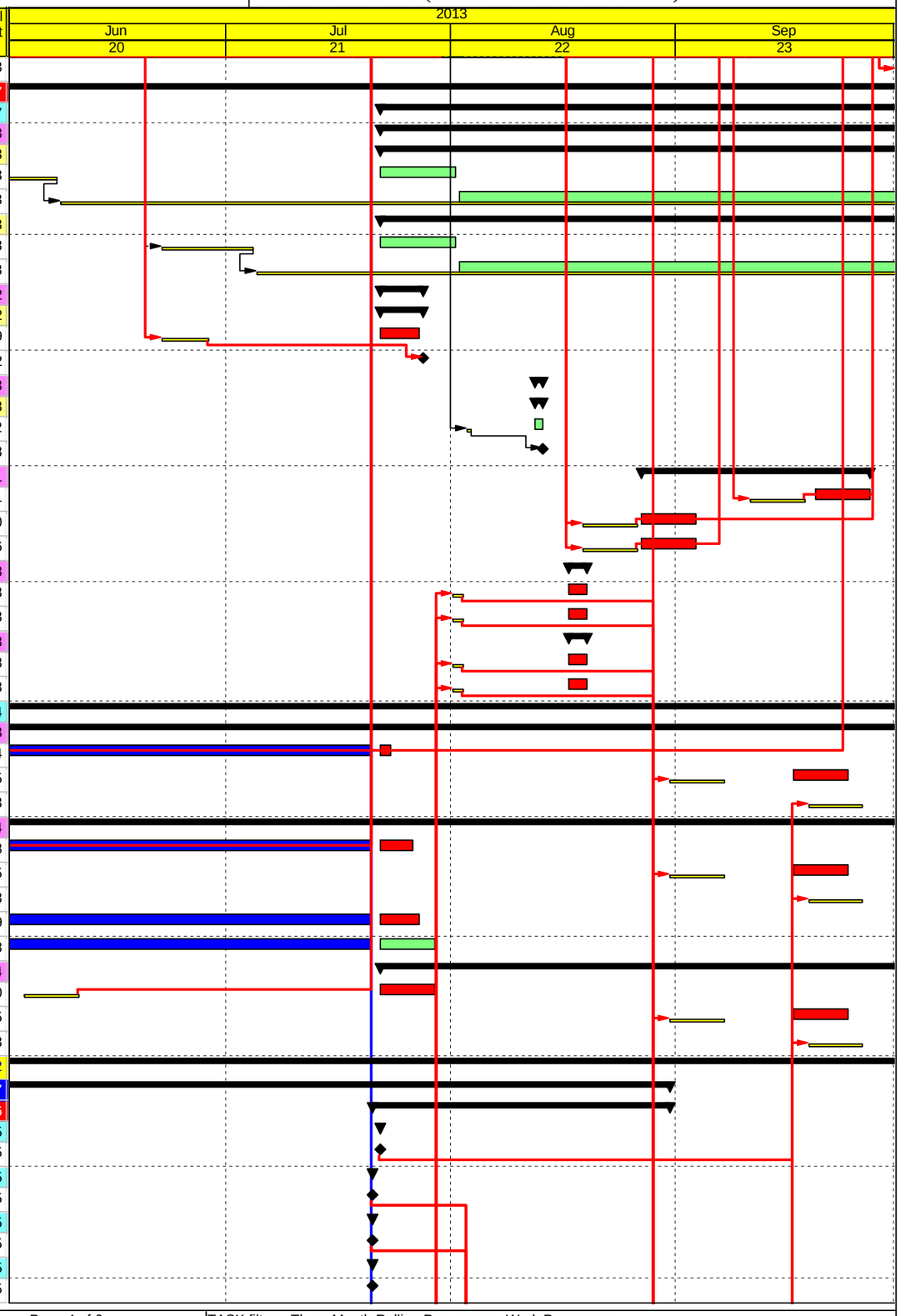
Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Total Float
CA00B-020	Portion B Connecting Arc structure K041 - K051 10arcs (except KC	35	35	20-Sep-13	26-Oct-13	-308
Portion C2a between C112 to C103 9arcs		72	72	23-Jul-13	08-Oct-13	-319
CAC2a-000	Portion C2a Connecting Arc structure C103-C112 9arcs Type_C 3	72	72	23-Jul-13	08-Oct-13	-319
Portion C2c between C103 to C091 12arcs		84	84	09-Oct-13	07-Jan-14	-319
CAC2c-000	Portion C2c Connecting Arc structure C102 to C091 12arcs Type_	84	84	09-Oct-13	07-Jan-14	-319
Capping Beams		105	105	21-Jul-13	11-Nov-13	-90
Portion B between K024 to K040 Capping Beams		105	105	21-Jul-13	11-Nov-13	-190
CB025-00010	Capping Beams structure K024 - K040 17cells	85	85	21-Jul-13	20-Oct-13	-206
CB025-00020	Capping Beams structure K041 - K051 11cells	50	50	19-Sep-13	11-Nov-13	-190
Portion C2a between C112 to C103 Capping Beams		60	60	18-Aug-13	21-Oct-13	-71
CBC2a-000	Capping Beams structure C112 to C103 10cells	60	60	18-Aug-13	21-Oct-13	-71
Reclamation		1513	1352	25-Jan-13 A	02-Apr-17	-1230
Ground Treatment		1513	1352	25-Jan-13 A	02-Apr-17	-1230
Geotextile		1395	1250	25-Jan-13 A	02-Apr-17	-1137
Existing Seabed Below -5mPD		191	98	10-Apr-13 A	17-Nov-13	-128
Land Portion C2b		118	4	10-Apr-13 A	07-Aug-13	-208
GERC2b-010	Geotextile for sand blanket at Portion C2b	118	4	10-Apr-13 A	07-Aug-13	-208
Land Portion E2 Northern Part		8	8	09-Oct-13	17-Oct-13	-128
GERE2-010	Geotextile for sand blanket at Portion E2 Northern (seabed below ·	8	8	09-Oct-13	17-Oct-13	-128
Land Portion E1		156	2	17-May-13 A	17-Nov-13	-128
GERE1-010	Geotextile for sand blanket at Portion E1	156	2	17-May-13 A	17-Nov-13	-128
Existing Seabed above -5mPD		1395	1250	25-Jan-13 A	02-Apr-17	-1137
Land Portion B		240	79	25-Jan-13 A	14-Oct-13	-191
GERB0-010	Geotextile for sand blanket at Portion B K013 - K040	25	25	18-Sep-13	14-Oct-13	-238
GERB0-020	Geotextile for sand blanket at Portion B K041 - K051	118	2	25-Jan-13 A	22-Jul-13	-114
Land Portion C1a		1344	13	25-Mar-13 A	02-Apr-17	-1425
GERC1a-010	Geotextile for sand blanket at Portion C1a 199,200m3	1344	13	25-Mar-13 A	02-Apr-17	-1425
Land Portion C1b		58	6	26-Mar-13 A	26-Jul-13	-7
GERC1b-010	Geotextile for sand blanket at Portion C1b 145,000m3	58	6	26-Mar-13 A	26-Jul-13	-7
Land Portion E2 Southern Part		31	6	24-Apr-13 A	26-Jul-13	107
GERE2-012	Geotextile for sand blanket at Portion E2 Southern (seabed above	31	6	24-Apr-13 A	26-Jul-13	107
Sand Blankets		160	114	01-Jun-13 A	20-Nov-13	-128
Existing Seabed below -5mPD		157	111	01-Jun-13 A	17-Nov-13	-128
Land Portion C2a		37	8	01-Jun-13 A	29-Jul-13	-202
SABRC2a-0	Sand Blankets at Portion C2a 73,000m3 2,000m3/day	37	8	01-Jun-13 A	29-Jul-13	-202
Land Portion C2c		3	3	05-Aug-13	07-Aug-13	-208
SABRC2c-0:	Sand Blankets at Portion C2c 10,000m3/day	3	3	05-Aug-13	07-Aug-13	-208
Land Portion C2b		3	3	08-Aug-13	10-Aug-13	-208
SABRC2b-0	Sand Blankets at Portion C2b 18,000m3 10,000m3/day	3	3	08-Aug-13	10-Aug-13	-208
Land Portion E2 Northern Part		29	29	18-Oct-13	17-Nov-13	-128
SABRE2-010	Sand Blankets at Portion E2 142,000m3 5,000m3/day North	29	29	18-Oct-13	17-Nov-13	-128
Existing Seabed Above -5mPD		94	94	12-Aug-13	20-Nov-13	-128
Land Portion B		36	36	17-Sep-13	24-Oct-13	-174
SABRB0-010	Sand Blankets at Portion B K013 - K040 286,500m3 10,000m3/da	29	29	24-Sep-13	24-Oct-13	-238
SABRB0-020	Sand Blankets at Portion B K041 - K051 286,500m3 10,000m3/da	29	29	17-Sep-13	17-Oct-13	-167
Land Portion C1a		94	94	12-Aug-13	20-Nov-13	-128
SABRC1a-0	Sand Blankets at Portion C1a 100,000m3 10,000m3/day	10	10	12-Aug-13	21-Aug-13	-208
SABRC1a-0:	Sand Blankets at Portion C1a 160,000m3 5,000m3/day	32	32	18-Oct-13	20-Nov-13	-128
Vertical Band Drains		189	117	04-May-13 A	23-Nov-13	-113
Vertical Band Drains by Marine Plant		189	117	04-May-13 A	23-Nov-13	-113
Land Portion C2a		81	30	04-May-13 A	21-Aug-13	-113
VBDC2a-010	Vertical Band Drains 97,288nrs by marine plant at Portion C2a	81	30	04-May-13 A	21-Aug-13	-113
Land Portion C2c		43	43	22-Aug-13	07-Oct-13	-113
VBDC2c-010	Vertical Band Drains 61,920 / 62,400nrs by marine plant at Portion	43	43	22-Aug-13	07-Oct-13	-113
Land Portion C2b		44	44	08-Oct-13	23-Nov-13	-113



Remaining Level of Effort | Primary Baseline | Remaining Work | Milestone
Actual Level of Effort | Actual Work | Critical Remaining Work | Summary

TASK filters: Three Month Rolling Programme, Work Programme.

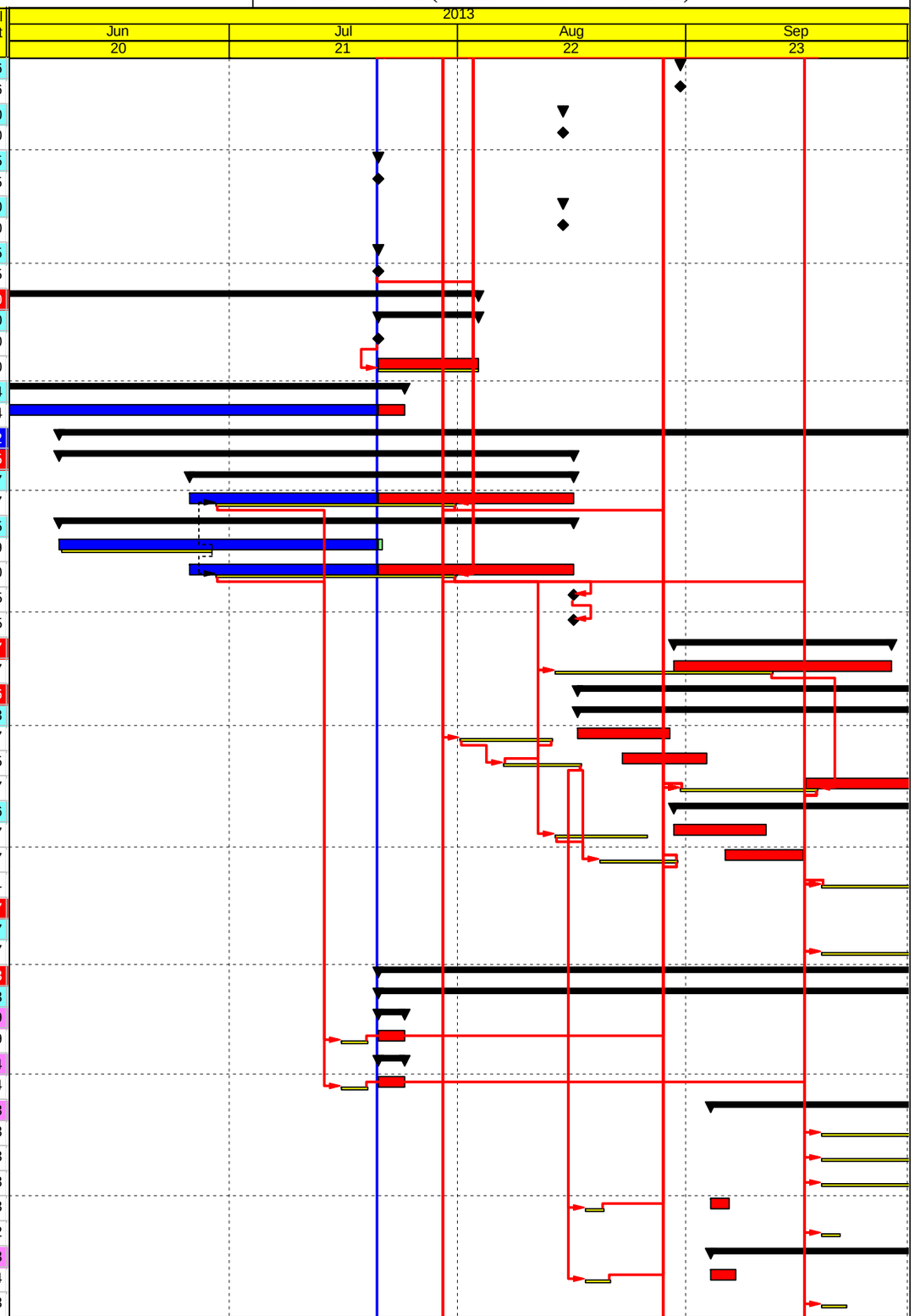
Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Total Float
VBDC2b-010	Vertical Band Drains 62,400nrs by marine plant at Portion C2b	44	44	08-Oct-13	23-Nov-13	-113
Geotechnical Instrumentation Works		401	314	26-Apr-13 A	31-May-14	1037
Geotechnical Instrumentation Works for Seawalls		314	314	22-Jul-13	31-May-14	1037
Cluster Type SA 2nrs Piezometer, Extensometer and Settlement Marker Clust		314	314	22-Jul-13	31-May-14	33
SA-1 K048 Portion B		314	314	22-Jul-13	31-May-14	33
CTSA1-010	Installation of SA-1 C048 (within 10days after filling C048) Portion I	10	10	22-Jul-13	01-Aug-13	28
CTSA1-020	Montioring of SA-1 C048 Portion B by weekly for subsequent 10mt	303	303	02-Aug-13	31-May-14	33
SA-2 C113 Portion C2a		314	314	22-Jul-13	31-May-14	33
CTSA2-010	Installation of SA-2 C113 (within 10days after filling C113) Portion C	10	10	22-Jul-13	01-Aug-13	28
CTSA2-020	Monitoring of SA-2 C113 Portion C2a by weekly for subsequent 10	303	303	02-Aug-13	31-May-14	33
Cluster Type SB 2nrs Inclinometer Cluster inside cells		6	6	22-Jul-13	28-Jul-13	-22
SB-2 C112 Portion C2a		6	6	22-Jul-13	28-Jul-13	-22
CTSB2-010	Installation of SB-2 C112 Portion C2a	6	6	22-Jul-13	27-Jul-13	-19
CTSB2-020	Commencement of Monitoring of SB-2 C112 Portion C2a	0	0	28-Jul-13		-22
Cluster Type SC 3nrs Strain Guage and Inclinometer Cluster inside cells		1	1	12-Aug-13	13-Aug-13	1328
SC-3 C108 Portion C2a		1	1	12-Aug-13	13-Aug-13	1328
CTSC3-010	Installation of SC-3 C108 Portion C2a	1	1	12-Aug-13	13-Aug-13	1092
CTSC3-020	Commencement of Monitoring of SC-3 C108 Portion C2a	0	0	13-Aug-13		1328
Cluster Type SE 26nrs Surface movement marker cluster at top of cell and sl		28	28	27-Aug-13	27-Sep-13	-221
CTSE-240	Installation of SE-24 (C121) Portion A	7	7	20-Sep-13	27-Sep-13	-221
CTSE-250	Installation of SE-25 (C126) Portion A	7	7	27-Aug-13	03-Sep-13	-200
CTSE-260	Installation of SE-26 (C131) Portion A	7	7	27-Aug-13	03-Sep-13	-216
Cluster Type DV 4nrs Surface movement marker and inclinometer cluster at V		2	2	17-Aug-13	19-Aug-13	-348
CTDV-010	Installation of combined inclinometer and extensometer at seawall V	2	2	17-Aug-13	19-Aug-13	-348
CTDV-020	Installation of surface movement markers at seawall V2 Portion D	2	2	17-Aug-13	19-Aug-13	-348
Cluster Type DS 4nrs Surface movement marker and inclinometer cluster at S		2	2	17-Aug-13	19-Aug-13	-348
CTDS-010	Installation of DS-1 to DS2 Portion D	2	2	17-Aug-13	19-Aug-13	-348
CTDS-020	Installation of DS-3 to DS4 Portion D	2	2	17-Aug-13	19-Aug-13	-348
Geotechnical Instrumentation Works for Reclamation RA & RB		141	71	26-Apr-13 A	12-Oct-13	444
RA		135	71	04-May-13 A	12-Oct-13	-233
CTRA-010	Installation of RA 5sets at Portion A	15	2	04-May-13 A	23-Jul-13	-164
CTRA-020	Installation of RA 2sets at Portion D (CH0 - 225)	7	7	17-Sep-13	24-Sep-13	-345
CTRA-030	Installation of RA 2sets at Portion D (CH225 - 450)	7	7	05-Oct-13	12-Oct-13	-253
RB		141	71	26-Apr-13 A	12-Oct-13	444
SMT1-010	Installation of at Portion A	21	5	30-Apr-13 A	26-Jul-13	-178
SMT1-020	Installation of at Portion D (CH0 - 225)	7	7	17-Sep-13	24-Sep-13	-345
SMT1-030	Installation of at Portion D (CH225 - 450)	7	7	05-Oct-13	12-Oct-13	-253
SMT1-070	Installation of at Portion C2a	25	6	26-Apr-13 A	27-Jul-13	-19
SMT1-090	Installation of at Portion C2c	14	7	11-May-13 A	29-Jul-13	508
Settlement Marker Type 2		71	71	22-Jul-13	12-Oct-13	-244
SMT2-010	M2 - Installation of at Portion A	7	7	22-Jul-13	29-Jul-13	-180
SMT2-020	M2 - Installation of at Portion D (CH0 - 225)	7	7	17-Sep-13	24-Sep-13	-345
SMT2-030	M2 - Installation of at Portion D (CH225 - 450)	7	7	05-Oct-13	12-Oct-13	-253
Portion D		322	100	11-Dec-12 A	28-Oct-13	1252
Submission		263	41	11-Dec-12 A	31-Aug-13	-127
Design Submission		41	41	21-Jul-13	31-Aug-13	-166
Settlement Assessment for Reclamation with land-based Drain		0	0	22-Jul-13	22-Jul-13	-345
PD-DGN-01010	Settlement Assessment for Reclamation with Land based band dra	0	0		22-Jul-13*	-345
Stability Analysis and Settlement Assessment for Vertical Seawall w No Dredg		0	0	21-Jul-13	21-Jul-13	-425
PD-DGN-02010	Stability Analysis and settlement assessment for vertical seawall wit	0	0		21-Jul-13*	-425
Stability Analysis and Settlement Assessment for Sloping Seawall w No Dredg		0	0	21-Jul-13	21-Jul-13	-425
PD-DGN-03010	Stability Analysis and Settlement Assessment for Sloping seawall w	0	0		21-Jul-13*	-425
Structural Analysis for Culverts C1 - C4 w Precast Method		0	0	21-Jul-13	21-Jul-13	-125
PD-DGN-05010	Structural analysis for Box Culverts C1 - C4 with Precast Method	0	0		21-Jul-13*	-125



Remaining Level of Effort | Primary Baseline | Remaining Work | Milestone
Actual Level of Effort | Actual Work | Critical Remaining Work | Summary

TASK filters: Three Month Rolling Programme, Work Programme.

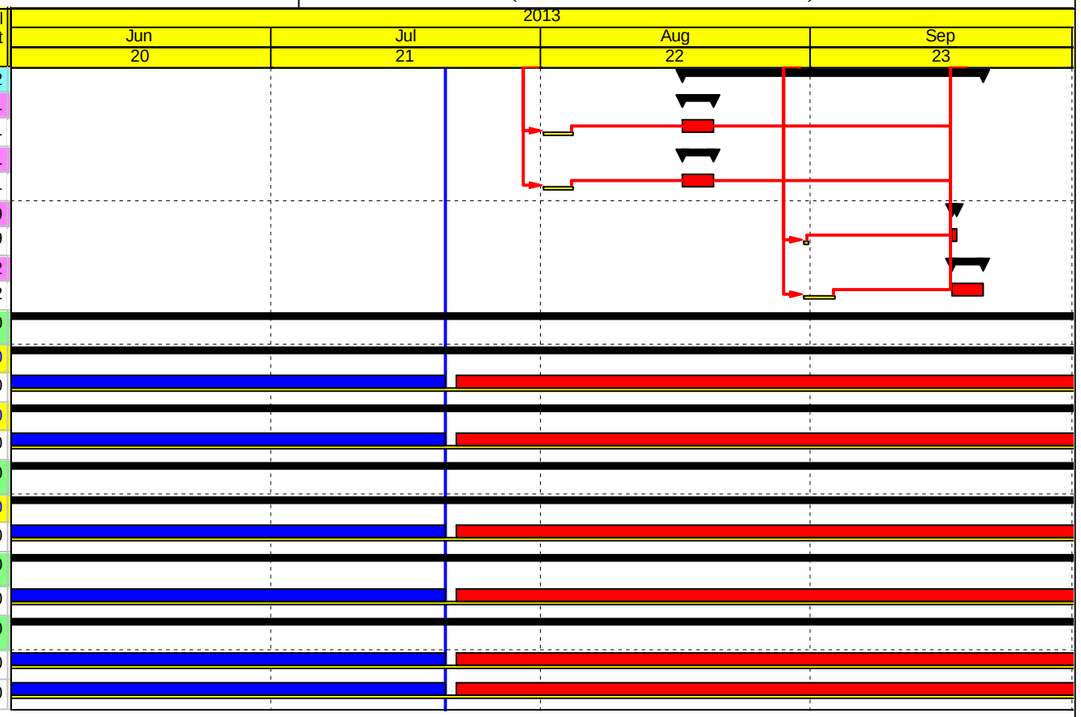
Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Total Float
Drainage Impact Assessment & Temporary Diversion (stg2 - for construction		0	0	31-Aug-13	31-Aug-13	-166
PD-DGN-07010	Drainage Impact Assessment and Temporary Diversion (stage 2 - f	0	0		31-Aug-13*	-166
Structural Analysis for Box Culvert EC1 w Precast & Cast in-situ Method		0	0	15-Aug-13	15-Aug-13	-150
PD-DGN-09010	Structural Analysis for Box culvert EC1 with Precast and Cast in-sitı	0	0		15-Aug-13*	-150
Detailed General Arrangement & RC drawings for C1 to C4 w Precast Method		0	0	21-Jul-13	21-Jul-13	-125
PD-DGN-10010	Detailed General Arrangement and RC drawings for Box culverts C	0	0		21-Jul-13*	-125
Detailed General Arrangement & RC drawings for EC1 w Precast & Cast insitu		0	0	15-Aug-13	15-Aug-13	-150
PD-DGN-11010	Detailed General Arrangement and RC drawings for Box Culverts I	0	0		15-Aug-13*	-150
Detailed Drawings for Temporary and Permanent Seawalls, Reclamation & Su		0	0	21-Jul-13	21-Jul-13	-425
PD-DGN-12010	Detailed Drawings for Temporary and Permanent Seawalls, Reclai	0	0		21-Jul-13*	-425
Method Statement Submission		236	14	11-Dec-12 A	03-Aug-13	-100
Extension Culvert EC1		14	14	21-Jul-13	03-Aug-13	-100
PD-MTD-06010	MTD for culvert EC1 - Preparation & Submission	0	0	21-Jul-13*		-100
PD-MTD-06020	MTD for culvert EC1- Approval	14	14	21-Jul-13	03-Aug-13	-100
Float & Sink installation of Culvert C1 - C4		165	4	11-Dec-12 A	24-Jul-13	-94
PD-MTD-07020	MTD for Float & Sink of culvert C1 - C4 - Approval	165	4	11-Dec-12 A	24-Jul-13	-94
Construction		140	100	08-Jun-13 A	28-Oct-13	1252
Seawall Construction		67	27	08-Jun-13 A	16-Aug-13	1325
North Portion (North CH 5700 - 6136)		30	25	25-Jun-13 A	16-Aug-13	-417
SI1-SW-A1592	Temporary Seawall Construction at North Portion D	30	25	25-Jun-13 A	16-Aug-13	-417
South Portion (South CH 0 - 450)		67	27	08-Jun-13 A	16-Aug-13	1325
SI1-SW-A1612	Stone Blankets & Geotextile Type 1 for Seawall at East Portion D	20	1	08-Jun-13 A	21-Jul-13	1249
SI1-SW-A1614	Temporary Seawall Construction at South Portion D	30	25	25-Jun-13 A	16-Aug-13	-400
SI1-SW-A1674	Completion of Temporary Seawall S4 Portion D	0	0		16-Aug-13*	-15
SI1-SW-A1684	Allow access to HY/2011/03	0	0		16-Aug-13*	-15
Temporary Drainage Diversion		30	30	30-Aug-13	28-Sep-13	-447
SI1-TD-0010	Temporary Drainage Construction	30	30	30-Aug-13	28-Sep-13	-447
Reclamation below +2.5mPD		66	66	17-Aug-13	21-Oct-13	-446
West Portion (South CH 0 - 225 & North CH 5900 - 6136)		49	49	17-Aug-13	04-Oct-13	-453
SI1-A1610	D - Lay Geotextile West Portion	12	12	17-Aug-13	29-Aug-13	-417
SI1-A1615	D - Lay Sand Blanket West Portion 57,200m3 5,000m3/day	10	10	23-Aug-13	03-Sep-13	-415
SI1-A1630	D - Marine Fill Type A Sand 100% upto + 2.5 mPD at West Portion	17	17	17-Sep-13	04-Oct-13	-417
East Portion (South CH 225 - 450 & North CH 5700 - 5900)		53	53	30-Aug-13	21-Oct-13	-446
SI1-A1624	D - Lay Geotextile East Portion	12	12	30-Aug-13	11-Sep-13	-417
SI1-A1625	D - Lay Sand Blanket East Portion 57,200m3 5,000m3/day	10	10	06-Sep-13	16-Sep-13	-417
SI1-A1635	D - Marine Fill Type A sand 100% upto + 2.5 mPD at East Portion	16	16	05-Oct-13	21-Oct-13	-411
Vertical Band Drain by Land Base		22	22	05-Oct-13	28-Oct-13	-417
West Portion (South CH 0 -225 & North CH5900 - 6136)		22	22	05-Oct-13	28-Oct-13	-417
SI1-A1631	D - Install vertical band drain 12,339nrs at West by Land Plant	22	22	05-Oct-13	28-Oct-13	-417
Instrumentation & Monitoring Requirements		90	90	21-Jul-13	18-Oct-13	-443
West Portion		90	90	21-Jul-13	18-Oct-13	-443
Vertical Seawalls - Cluster Type DV-1 & DV-2		4	4	21-Jul-13	24-Jul-13	-399
SI1-DV-1010	D - Surface Movements Marker (Type 3B) 4nrs west	4	4	21-Jul-13	24-Jul-13	-399
Sloping Seawalls - Cluster Type DS-1 & DS-2		4	4	21-Jul-13	24-Jul-13	-374
SI1-DS-1010	D - Surface Movement Marker (Type 3B) 4nrs east	4	4	21-Jul-13	24-Jul-13	-374
Reclamation - Cluster Type RA 3sets		45	45	04-Sep-13	18-Oct-13	-443
SI1-RA-1010	D - Extensometer 3nrs	14	14	05-Oct-13	18-Oct-13	-443
SI1-RA-1020	D - Standpiipe / Casagrande Piezometer 3nrs	14	14	05-Oct-13	18-Oct-13	-443
SI1-RA-1030	D - Double Tip Virbrating Wire Piezometer 9nrs	14	14	05-Oct-13	18-Oct-13	-443
SI1-RA-1040	D - Sub-surface Settlement Marker 3nrs	3	3	04-Sep-13	06-Sep-13	-443
SI1-RA-1050	D - Settlement Marker (Type 2) 6nrs	3	3	05-Oct-13	07-Oct-13	-432
Reclamation - Cluster Type RB 4sets		35	35	04-Sep-13	08-Oct-13	-433
SI1-RB-1010	D - Sub-Surface Settlement Marker 4nrs west	4	4	04-Sep-13	07-Sep-13	-444
SI1-RB-1020	D - Settlement Marker (Type 2) 4nrs west	4	4	05-Oct-13	08-Oct-13	-433



Remaining Level of Effort | Primary Baseline | Remaining Work | Milestone
Actual Level of Effort | Actual Work | Critical Remaining Work | Summary

TASK filters: Three Month Rolling Programme, Work Programme.

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Total Float
East Portion		35	35	17-Aug-13	20-Sep-13	-432
Vertical Seawalls - Cluster Type DV-3 & DV-4		4	4	17-Aug-13	20-Aug-13	-401
SI1-DV-1050	D - Surface Movements Marker (Type 3B) 4nrs east	4	4	17-Aug-13	20-Aug-13	-401
Sloping Seawalls - Cluster Type DS-3 & DS-4		4	4	17-Aug-13	20-Aug-13	-401
SI1-DS-1050	D - Surface Movement Marker (Type 3B) 4nrs east	4	4	17-Aug-13	20-Aug-13	-401
Reclamation - Cluster Type RA 1set		1	1	17-Sep-13	17-Sep-13	-429
SI1-RA-1090	D - Sub-surface Settlement Marker 1nr	1	1	17-Sep-13	17-Sep-13	-429
Reclamation - Cluster Type RB 4sets		4	4	17-Sep-13	20-Sep-13	-432
SI1-RB-1030	D - Sub-Surface Settlement Marker 4nrs east	4	4	17-Sep-13	20-Sep-13	-432
Works Area WA2 (Tung Chung)		1570	1084	30-Nov-11 A	28-Feb-17	0
Zone A		1434	1084	21-May-12 A	28-Feb-17	0
A1880	Maintenance of Engineer's Accommodation	1434	1084	21-May-12 A	28-Feb-17	0
Zone B		615	129	30-Nov-11 A	20-Dec-13	0
A3090	Maintenance of Site	615	129	30-Nov-11 A	20-Dec-13	0
Works Area WA3 (Siu Ho Wan STW)		1467	1084	08-Apr-12 A	28-Feb-17	0
Zone A		1467	1084	08-Apr-12 A	28-Feb-17	0
WA3-1020	Maintenance of Accomodation for Public Works Region Laboratory	1467	1084	08-Apr-12 A	28-Feb-17	0
Works Area WA4 (To Kau Wan)		548	129	23-Feb-12 A	20-Dec-13	0
A1910	Maintenance of Site Zone A	548	129	23-Feb-12 A	20-Dec-13	0
Works Area TKO Fill Bank		1254	1011	25-Sep-12 A	30-Nov-16	0
WA-TKO-1040	Operate and Maintain Public Fill Sorting Facilities in Zone A, B1 & E	1254	1011	25-Sep-12 A	30-Nov-16	0
WA-TKO-1050	Maintainance of Site in Zone C	570	327	25-Sep-12 A	22-Aug-14	0



Appendix C - Implementation Schedule of Environmental Mitigation Measures

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
Air Quality				
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: • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; • A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones. • 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; • When there are open excavation and reinstatement works, hoarding of not less	All construction sites	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered		

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		on the top and the 3 sides; • Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; • 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. • No burning of debris or other materials on the works areas is allowed; • 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; • Open dropping heights for excavated materials shall be controlled to a maximum height of 2m to minimise the fugitive dust arising from unloading; • 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; • 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		

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		system; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.		
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: • Loading, unloading, handling, transfer or storage of any dusty materials should be carried out in totally enclosed system; • All dust-laden air or waste gas generated by the process operations should be properly extracted and vented to fabric filtering system to meet the emission limits for TSP;	All construction sites	N/A

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		• Vents for all silos and cement/ pulverised fuel ash (PFA) weighing scale should be fitted with fabric filtering system; • The materials which may generate airborne dusty emissions should be wetted by water spray system; • All receiving hoppers should be enclosed on three sides up to 3m above unloading point; • All conveyor transfer points should be totally enclosed; • All access and route roads within the premises should be paved and wetted; and • Vehicle cleaning facilities should be provided and used by all concrete trucks before leaving the premises to wash off any dust on the wheels and/or body.		
S5.5.2.7 of HKBCFEIA	A6	The following mitigation measures should be adopted to prevent fugitive dust emissions at barging point: • All road surface within the barging facilities will be paved; • Dust enclosures will be provided for the loading ramp; • Vehicles will be required to pass through designated wheels wash facilities; and • Continuous water spray at the loading points.	All construction sites	N/A (Construction in process)
Construction Noise (Air borne)				
S6.4.10 of HKBCFEIA	N1	Use of good site practices to limit noise emissions by considering the following: • only well-maintained plant should be operated on-site and plant should be	All construction sites	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • mobile plant should be sited as far away from NSRs as possible and practicable; • material stockpiles, mobile container site officer and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.		
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^2), 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	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
			EIA report at all construction sites	
S6.4.14 of HKBCFEIA	N5	Sequencing operation of construction plants where practicable.	All construction sites where practicable	V
S5.1 of TMCLKLEIA	N6	Implement a noise monitoring under EM&A programme.	Selected representative noise monitoring station	V
Waste Management (Construction Waste)				
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	*Construction and Demolition Material* The following mitigation measures should be implemented in handling the waste: • Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement; • Carry out on-site sorting;	All construction sites	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		• Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; • Adopt 'Selective Demolition' technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible; • Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified; • Implement an enhanced Waste Management Plan similar to ETWBTC (Works) No. 19/2005 – "Environmental Management on Construction Sites" to encourage on-site sorting of C&D materials and to minimize their generation during the course of construction; • In addition, disposal of the C&D materials onto any sensitive locations such as agricultural lands, etc. should be avoided. The Contractor shall propose the final disposal sites to the Project Proponent and get its approval before implementation; and • The surplus surcharge should be transferred to a fill bank.		
S8.3.9-S8.3.11 of HKBCFEIA and S12.6 of	WM5	*C&D Waste* • Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&D materials. The use of more durable formwork or plastic facing for the construction works should be considered. Use of wooden	All construction sites	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
TMCLKLEIA		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. • The Contractor should recycle as much of the C&D materials as possible on-site. Public fill and C&D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage.		
S8.2.12-S8.3.15 of HKBCFEIA and S12.6 of TMCLKLEIA	WM6	*Chemical Waste* • Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. • Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450 liters unless the specification has been approved by the EPD; and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation. • The storage area for chemical wastes should be clearly labelled and used solely for	All construction sites	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		the storage of chemical waste; enclosed on at least 3 sides; have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20 % of the total volume of waste stored in that area, whichever is the greatest; have adequate ventilation; covered to prevent rainfall entering; and arranged so that incompatible materials are adequately separated. • Disposal of chemical waste should be via a licensed waste collector; be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre which also offers a chemical 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	*Sewage* • Adequate numbers of portable toilets should be provided for the workers. The portable toilets should be maintained in a state, which will not deter the workers from utilizing these portable toilets. Night soil should be collected by licensed collectors regularly.	All construction sites	V
S8.3.17 of HKBCFEIA and S12.6 of TMCLKLEIA	WM8	*General Refuse* • 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. • A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on	All construction sites	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law. • Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labelled bins for their deposit should be provided if feasible. • Office wastes can be reduced through the recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme should be considered by the Contractor. In addition, waste separation facilities for paper, aluminum cans, plastic bottles etc., should be provided. • Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedure, including reduction, reuse and recycling of wastes. • 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. • All waste containers shall be in a secure area on hardstanding.		

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
Water Quality (Construction Phase)				
	W1	Mitigation during the marine works to reduce impacts to within acceptable levels have been recommended and will comprise a series of measures that restrict the method and sequencing of backfilling, as well as protection measures. Details of the measures are provided below: • 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; • 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; • 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; • 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	During filling	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		m3 for HKBCF and TMCLKL southern landfall reclamation during the filling operation; and • 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 m3 for the remaining filling operations for HKBCF and TMCLKL southern landfall reclamation. • 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 to prevent sediment loss at navigation accesses. The length of each staggered layers shall be at least 200m; • Single layer silt curtain to be applied around the North-east airport water intake; • The silt-curtains should be maintained in good condition to ensure the sediment plume generated from filling be confined effectively within the site boundary; • The filling works shall be scheduled to spread the works evenly over a working day; • Cellular structure shall be used for seawall construction; • 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; • 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		

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		surrounding waters; and • 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.		
S9.11.1.3 of HKBCFEIA and S6.10 of TMCLKLEIA	W2	<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: • wastewater from temporary site facilities should be controlled to prevent direct discharge to surface or marine waters; • sewage effluent and discharges from on-site kitchen facilities shall be directed to Government sewer in accordance with the requirements of the WPCO or collected for disposal offsite. The use of soakaways shall be avoided; • storm drainage shall be directed to storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins. Channels, earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks; • silt removal facilities, channels and manholes shall be maintained and any	All land-based construction sites	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		deposited silt and grit shall be removed regularly, including specifically at the onset of and after each rainstorm; • temporary access roads should be surfaced with crushed stone or gravel; • rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities; • measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system; • open stockpiles of construction materials (e.g. aggregates and sand) on site should be covered with tarpaulin or similar fabric during rainstorms; • manholes (including any newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers; • discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system; • all vehicles and plant should be cleaned before they leave the construction site to ensure that no earth, mud or debris is deposited by them on roads. A wheel washing bay should be provided at every site exit; • wheel wash overflow shall be directed to silt removal facilities before being		

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		discharged to the storm drain; • the section of construction road between the wheel washing bay and the public road should be surfaced with crushed stone or coarse gravel; • wastewater generated from concreting, plastering, internal decoration, cleaning work and other similar activities, shall be screened to remove large objects; • vehicle and plant servicing areas, vehicle wash bays and lubrication facilities shall be located under roofed areas. The drainage in these covered areas shall be connected to foul sewers via a petrol interceptor in accordance with the requirements of the WPCO or collected for offsite disposal; • the contractors shall prepare an oil / chemical cleanup plan and ensure that leakages or spillages are contained and cleaned up immediately; • waste oil should be collected and stored for recycling or disposal, in accordance with the Waste Disposal Ordinance; • all fuel tanks and chemical storage areas should be provided with locks and be sited on sealed areas. The storage areas should be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank; and • surface run-off from bunded areas should pass through oil/grease traps prior to discharge to the storm water system..		
S9.14 of HKBCFEIA	W3	Implement a water quality monitoring programme	At identified monitoring location	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
and S6.10 of TMCLKLEIA				
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
Ecology (Construction Phase)				
S10.7 of HKBCFEIA and S8.14 of TMCLKLEIA	E1	• Install silt curtain during the construction • Limit works fronts • Construct seawall prior to reclamation filling where practicable • Good site practices • Strict enforcement of no marine dumping • Site runoff control • Spill response plan	Seawall, reclamation area	V
S10.7 of HKBCFEIA	E2	• 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.	Land-based works areas	V
S10.7 of HKBCFEIA and S8.14 of TMCLKLEIA	E3	• Good site practices, including strictly following the permitted works hours, using quieter machines where practicable, and avoiding excessive lightings during night time.	Land-based works areas	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
S10.7 of HKBCFEIA and S8.14 of TMCLKLEIA	E4	• Dolphin Exclusion Zone • Dolphin watching plan	Marine works	V
S10.7 of HKBCFEIA and S8.14 of TMCLKLEIA	E5	• Decouple compressors and other equipment on working vessels • Proposal on design and implementation of acoustic decoupling measures applied during reclamation works • Avoidance of percussive piling	Marine works	V
S10.7 of HKBCFEIA and S8.14 of TMCLKLEIA	E6	• Control vessel speed • Skipper training • Predefined and regular routes for working vessels; avoid Brothers Islands	Marine traffic	V
S10.10 of HKBCFEIA and S8.14 of TMCLKLEIA	E7	• Vessel based dolphin monitoring	Northeast and Northwest Lantau	V
Fisheries				
S11.7 of HKBCFEIA	F1	• Reduce re-suspension of sediments • Limit works fronts • Good site practices	Seawall, reclamation area	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		• Strict enforcement of no marine dumping • Spill response plan		
S11.7 of HKBCFEIA	F2	• Install silt-grease trap in the drainage system collecting surface runoff	Reclamation area	V
Landscape & Visual (Construction Phase)				
S14.3.3. 3 of HKBCFEIA and S10.9 of TMCLKLEIA	LV1	*Mitigate Landscape Impacts* G1/CM4 Grass-hydroseed or sheeting bare soil surface and stock pile areas. G9 Reserve of loose natural granite rocks for re-use. Provide new coastline to adopt "natural-look" by means of using armour rocks in the form of natural rock materials and planting strip area accommodating screen buffer to enhance "natural-look" of new coastline.	All construction site areas	N/A
S10.9 of TMCLKLEIA	LV2	*Mitigate Landscape Impacts* 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	*Mitigate Visual Impacts* V1 Minimize time for construction activities during construction period.	All construction site areas	V
S10.9 of TMCLKLEIA	LV5	*Mitigate Visual Impacts* CM6 Control night-time lighting and glare by hooding all lights.	All construction site areas	V
EM&A				

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
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	• An Environmental Team needs to be employed as per the EM&A Manual. • Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures. • An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with.	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 $\mu g/m^3$	500 $\mu g/m^3$
AMS3A*	368 $\mu g/m^3$	500 $\mu g/m^3$
AMS6	360 $\mu g/m^3$	500 $\mu g/m^3$
AMS7	370 $\mu g/m^3$	500 $\mu g/m^3$

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 $\mu g/m^3$	260 $\mu g/m^3$
AMS3A*	167 $\mu g/m^3$	260 $\mu g/m^3$
AMS6	173 $\mu g/m^3$	260 $\mu g/m^3$
AMS7	183 $\mu g/m^3$	260 $\mu g/m^3$

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

Parameters	**Action**	**Limit**
DO in mg L^{-1} (Surface, Middle & Bottom)	Surface and Middle 5.0 Bottom 4.7	Surface and Middle 4 .2 (except 5 mg/L for FCZ) Bottom 3.6
SS in mg L^{-1} (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 and130% 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):

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

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

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

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station	Site Boundary of Site Office (WA2) (AMS3A)	Operator:	Choi Wing Ho
Cal. Date:	24-Jun-13	Next Due Date:	24-Aug-13
Equipment No.:	A-001-79T	Serial No.	3384

Ambient Condition			
Temperature, Ta (K)	302	Pressure, Pa (mmHg)	753.3

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.	Orfice			HVS Flow Recorder	
	DH (orifice), in. of water	$[DH \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (m^3/min) **X - axis**	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) **Y-axis**
18	7.8	2.76	1.41	45.0	44.50
13	6.6	2.54	1.29	39.0	38.57
10	5.2	2.26	1.15	32.0	31.65
7	3.9	1.95	0.99	26.0	25.71
5	2.5	1.56	0.79	17.0	16.81

By Linear Regression of Y on X

Slope , mw = 44.3746 **Intercept, bw =** -18.4936

Correlation Coefficient* = 0.9978

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m^3/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)]$^{1/2}$= **39.63**

Remarks: _____

QC Reviewer: WS CHAN Signature: _____ Date: 25/6/13

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station	Tung Chung Development Pier (AMS2)	Operator:	Choi Wing Ho
Cal. Date:	24-Jun-13	Next Due Date:	24-Aug-13
Equipment No.:	A-001-78T	Serial No.	3383

Ambient Condition			
Temperature, Ta (K)	302	Pressure, Pa (mmHg)	753.3

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	$[DH \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (m^3/min) **X-axis**	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) **Y-axis**
18	8.6	2.90	1.48	44.0	43.51
13	7.5	2.71	1.38	40.0	39.56
10	5.9	2.40	1.22	36.0	35.60
7	4.1	2.00	1.02	31.0	30.66
5	2.6	1.59	0.81	24.0	23.74

By Linear Regression of Y on X

Slope , mw = **28.3325** **Intercept, bw =** **1.1742**

Correlation Coefficient* = **0.9946**

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m^3/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; $IC = (mw \times Qstd + bw) \times [(760 / Pa) \times (Ta / 298)]^{1/2} =$ **38.43**

Remarks: _____

QC Reviewer: WS CHAN Signature: _____ Date: 25/6/13

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station	Hong Kong SkyCity Marriott Hotel (AMS7)	Operator:	Choi Wing Ho
Cal. Date:	24-Jun-13	Next Due Date:	24-Aug-13
Equipment No.:	A-001-80T	Serial No.	3385

Ambient Condition			
Temperature, Ta (K)	302	Pressure, Pa (mmHg)	753.3

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	$[DH \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (m^3/min) **X-axis**	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) **Y-axis**
18	8.0	2.80	1.42	46.0	45.49
13	6.6	2.54	1.29	41.0	40.55
10	5.4	2.30	1.17	33.0	32.64
7	4.0	1.98	1.00	26.0	25.71
5	3.0	1.71	0.87	20.0	19.78

By Linear Regression of Y on X

Slope , mw = 47.1701 **Intercept, bw =** -21.4775

Correlation Coefficient* = 0.9949

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m^3/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; $IC = (mw \times Qstd + bw) \times [(760 / Pa) \times (Ta / 298)]^{1/2}$ = **40.29**

Remarks: _____

QC Reviewer: WS CHAN Signature: _____ Date: 25/6/13

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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)
0.9884	0.7110	1.4090
0.9842	1.0125	1.9926
0.9821	1.1327	2.2278
0.9811	1.1863	2.3365
0.9759	1.4352	2.8179

Qstd slope (m) = 1.94727
intercept (b) = 0.02332
coefficient (r) = 0.99998

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

Va	(x axis) Qa	(y axis)
0.9957	0.7163	0.8889
0.9915	1.0201	1.2570
0.9894	1.1412	1.4054
0.9884	1.1952	1.4740
0.9832	1.4459	1.7777

Qa slope (m) = 1.21935
intercept (b) = 0.01471
coefficient (r) = 0.99998

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_o: *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[1] (mg/m^3) **Y-axis**	Total Count[2]	Count/ Minute[3] **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.005.09a***
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_o:	*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[1] (mg/m^3) **Y-axis**	Total Count[2]	Count/ Minute[3] **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_o:	*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[1] (mg/m^3) **Y-axis**	Total Count[2]	Count/ Minute[3] **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_o:	*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[1] (mg/m^3) **Y-axis**	Total Count[2]	Count/ Minute[3] **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_o: *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[1] (mg/m^3) **Y-axis**	Total Count[2]	Count/ Minute[3] **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_o: *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[1] (mg/m^3) **Y-axis**	Total Count[2]	Count/ Minute[3] **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

綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.
G/F., 9/F., 12/F., 13/F. & 20/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong.
香港黃竹坑道37號利達中心地下，9樓，12樓，13樓及20樓
E-mail: smec@cigismec.com Website: www.cigismec.com
Tel : (852) 2873 6860
Fax : (852) 2555 7533

HKLAS 028 CAL

CERTIFICATE OF CALIBRATION

Certificate No.: 12CA1008 02 **Page** 1 **of** 2

Item tested

Description:	Sound Level Meter (Type 1)	,	Microphone	Preamp
Manufacturer:	Rion Co., Ltd.	,	Rion Co., Ltd.	Rion Co., Ltd.
Type/Model No.:	NL-31	,	UC-53A	NH-19
Serial/Equipment No.:	00320528 /N.00T.03A	,	90565	75883
Adaptors used:	-	,	-	-

Item submitted by

Customer Name:	AECOM ASIA CO., LTD.
Address of Customer:	-
Request No.:	-
Date of receipt:	08-Oct-2012

Date of test: 08-Oct-2012

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 ± 1) °C
Relative humidity:	(60 ± 10) %
Air pressure:	(1000 ± 5) 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 ±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:** 08-Oct-2012 **Company Chop:** SOILS AND MATERIALS ENGINEERING COMPANY LTD. 綜合試驗有限公司

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.

綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.
G/F., 9/F., 12/F., 13/F. & 20/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong.
香港黃竹坑道37號利達中心地下，9樓，12樓，13樓及20樓
E-mail: smec@cigismec.com Website: www.cigismec.com
Tel : (852) 2873 6860
Fax : (852) 2555 7533

HOKLAS 028 CAL

CERTIFICATE OF CALIBRATION

Certificate No.: 12CA0817 01 **Page:** 1 **of** 2

Item tested

Description:	Acoustical Calibrator (Class 1)
Manufacturer:	Rion Co., Ltd.
Type/Model No.:	NC-73
Serial/Equipment No.:	10307223 / N.004.08
Adaptors used:	-

Item submitted by

Curstomer:	AECOM ASIA CO., LTD.
Address of Customer:	-
Request No.:	-
Date of receipt:	17-Aug-2012

Date of test: 17-Aug-2012

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	05-Jan-2013	CEPREI
Measuring amplifier	B&K 2610	2346941	29-Dec-2012	CEPREI
Signal generator	DS 360	61227	29-May-2013	CEPREI
Digital multi-meter	34401A	US36087050	16-Dec-2012	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:	995 ± 5 hPa

Test specifications

1, 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.

2, The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.

3, 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

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

SOILS AND MATERIALS ENGINEERING COMPANY LTD. 綜合試驗有限公司

Approved Signatory: Huang Jian Min/Feng Jun Qi **Date:** 17-Aug-2012 **Company Chop:**

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

綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.
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HOKLAS 028 CAL

CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 12CA0817 01 **Page:** 2 **of** 2

1, Measured Sound Pressure Level

The output Sound Pressure Level in the calibrator head was measured at the setting and frequency shown using a calibrated laboratory standard microphone and insert voltage technique. The results are given in below with the estimated uncertainties.

(Output level in dB re 20 μPa)

Frequency Shown Hz	Output Sound Pressure Level Setting dB	Measured Output Sound Pressure Level dB	Estimated Uncertainty dB
1000	94.00	93.69	0.10

2, Sound Pressure Level Stability - Short Term Fluctuations

The Short Term Fluctuations was determined by measuring the maximum and minimum of the fast weighted DC output of the B&K 2610 measuring amplifier over a 20 second time interval as required in the standard. The Short Term Fluctuation was found to be:

At 1000 Hz **STF = 0.002 dB**

Estimated uncertainty 0.005 dB

3, Actual Output Frequency

The determination of actual output frequency was made using a B&K 4180 microphone together with a B&K 2673 preamplifier connected to a B&K 2610 measuring amplifier. The AC output of the B&K 2610 was taken to an universal counter which was used to determine the frequency averaged over 20 second of operation as required by the standard. The actual output frequency at 1 KHz was:

At 1000 Hz **Actual Frequency = 988.9 Hz**

Estimated uncertainty 0.2 Hz Coverage factor k = 2.2

4, Total Noise and Distortion

For the Total Noise and Distortion measurement, the unfiltered AC output of the B&K 2610 measuring amplifier was connected to an Agilent Type 8903 B distortion analyser. The TND result at 1 KHz was:

At 1000 Hz **TND = 0.7%**

Estimated uncertainty 0.7%

The uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95 %. A coverage factor of 2 is assumed unless explicitly stated.

- End -

Calibrated by: Fung Chi Yip **Date:** 17-Aug-2012

Checked by: Chan Chun Lam **Date:** 17-Aug-2012

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

Work Order: HK1309345
Date of Issue: 11/04/2013
Client: AECOM ASIA COMPANY LIMITED

Description: Sonde Environmental Monitoring System
Brand Name: YSI
Model No.: 6820 V2
Serial No.: 12D100972
Equipment No.: W.026.36
Date of Calibration: 10 April, 2013 Date of next Calibration: 10 July, 2013

Parameters:

Conductivity

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

Expected Reading (uS/cm)	Displayed Reading (uS/cm)	Tolerance (%)
146.9	140.5	-4.4
6667	6125	-8.1
12890	11870	-7.9
58670	53640	-8.6
	Tolerance Limit (±%)	10.0

Dissolved Oxygen

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

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
3.98	4.09	0.11
5.29	5.38	0.09
7.05	7.22	0.17
	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	4.15	0.15
7.0	7.14	0.14
10.0	10.18	0.18
	Tolerance Limit (±pH unit)	0.20

Salinity

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

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.02	--
10	9.96	-0.4
20	19.98	-0.1
30	30.11	0.4
	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: HK1309345
Date of Issue: 11/04/2013
Client: AECOM ASIA COMPANY LIMITED

Description: Sonde Environmental Monitoring System
Brand Name: YSI
Model No.: 6820 V2
Serial No.: 12D100972
Equipment No.: W.026.36
Date of Calibration: 10 April, 2013 Date of next Calibration: 10 July, 2013

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)
16.0	16.50	0.5
25.5	25.88	0.4
35.0	35.22	0.2
	Tolerance Limit (±°C)	2.0

Turbidity

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

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0	--
4	4.2	5.0
10	10.2	2.0
20	20.4	2.0
50	47.1	-5.8
100	104.4	4.4
	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: HK1318311
Date of Issue: 12/07/2013
Client: AECOM ASIA COMPANY LIMITED

Description: Sonde Environmental Monitoring System
Brand Name: YSI
Model No.: 6820 V2
Serial No.: 12D100972
Equipment No.: --
Date of Calibration: 09 July, 2013 Date of next Calibration: 09 October, 2013

Parameters:

Conductivity

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

Expected Reading (uS/cm)	Displayed Reading (uS/cm)	Tolerance (%)
146.9	145.5	-1.0
6667	6351	-4.7
12890	12650	-1.9
58670	58450	-0.4
	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	3.85	0.05
5.00	5.06	0.06
7.51	7.46	-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	3.99	-0.01
7.0	7.10	0.10
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	0.01	--
10	9.62	-3.8
20	19.73	-1.4
30	29.96	-0.1
	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: HK1318311
Date of Issue: 12/07/2013
Client: AECOM ASIA COMPANY LIMITED

Description: Sonde Environmental Monitoring System
Brand Name: YSI
Model No.: 6820 V2
Serial No.: 12D100972
Equipment No.: --
Date of Calibration: 09 July, 2013 Date of next Calibration: 09 October, 2013

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)
15.0	14.63	-0.4
24.5	24.57	0.1
35.5	35.22	-0.3
	Tolerance Limit (±°C)	2.0

Turbidity

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

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.0	--
4	4.1	2.5
10	9.7	-3.0
20	20.3	1.5
50	49.2	-1.6
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: HK1313282
Date of Issue: 20/05/2013
Client: AECOM ASIA COMPANY LIMITED

Description: YSI Sonde
Brand Name: YSI
Model No.: 6820 V2
Serial No.: 12A101545
Equipment No.: W.026.35
Date of Calibration: 16 May, 2013 Date of next Calibration: 16 August, 2013

Parameters:

Conductivity

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

Expected Reading (uS/cm)	Displayed Reading (uS/cm)	Tolerance (%)
146.9	148.9	1.4
6667	6290	-5.7
12890	12670	-1.7
58670	56290	-4.1
	Tolerance Limit (±%)	10.0

Dissolved Oxygen

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

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
3.85	3.92	0.07
5.90	5.87	-0.03
7.35	7.40	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	4.06	0.06
7.0	7.16	0.16
10.0	10.16	0.16
	Tolerance Limit (±pH unit)	0.20

Salinity

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

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.02	--
10	9.70	-3.0
20	19.11	-4.5
30	29.32	-2.3
	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: HK1313282
Date of Issue: 20/05/2013
Client: AECOM ASIA COMPANY LIMITED

Description: YSI Sonde
Brand Name: YSI
Model No.: 6820 V2
Serial No.: 12A101545
Equipment No.: W.026.35
Date of Calibration: 16 May, 2013 Date of next Calibration: 16 August, 2013

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)
15.0	14.35	-0.7
23.5	23.16	-0.3
36.0	36.27	0.3
	Tolerance Limit (±°C)	2.0

Turbidity

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

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.1	--
4	4.2	5.0
10	10.2	2.0
20	20.9	4.5
50	50.7	1.4
100	96.7	-3.3
	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

Hong Kong Boundary Crossing Facilities – Reclamation Works
Impact Monitoring Schedule for July 2013

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	01-Jul	02-Jul	03-Jul	04-Jul	05-Jul	06-Jul
	Impact Water Quality Monitoring Mid-Ebb 8:00 Mid-Flood* 13:44		Impact Water Quality Monitoring Mid-Ebb 10:03 Mid-Flood 16:36		Impact Water Quality Monitoring Mid-Ebb 11:30 Mid-Flood 18:30 24-hour TSP 1-hour TSP Noise	
07-Jul	08-Jul	09-Jul	10-Jul	11-Jul	12-Jul	13-Jul
	Impact Water Quality Monitoring Mid-Ebb 13:16 Mid-Flood 20:13 Dolphin Survey	Dolphin Survey	Impact Water Quality Monitoring Mid-Flood 7:25 Mid-Ebb 14:23	24-hour TSP 1-hour TSP Noise	Impact Water Quality Monitoring Mid-Flood 8:42 Mid-Ebb 15:27	
14-Jul	15-Jul	16-Jul	17-Jul	18-Jul	19-Jul	20-Jul
	Impact Water Quality Monitoring Mid-Flood 11:07 Mid-Ebb 17:22		Impact Water Quality Monitoring Mid-Ebb 7:41 Mid-Flood 14:07 24-hour TSP 1-hour TSP Noise		Impact Water Quality Monitoring Mid-Ebb 9:56 Mid-Flood 17:13	
21-Jul	22-Jul	23-Jul	24-Jul	25-Jul	26-Jul	27-Jul
	Impact Water Quality Monitoring Mid-Ebb 12:34 Mid-Flood 19:46	24-hour TSP 1-hour TSP Noise Dolphin Survey	Impact Water Quality Monitoring Mid-Flood 7:20 Mid-Ebb 14:08		Impact Water Quality Monitoring Mid-Flood 9:01 Mid-Ebb 15:34	
28-Jul	29-Jul	30-Jul	31-Jul			
	Impact Water Quality Monitoring Mid-Flood 11:48 Mid-Ebb 17:30 24-hour TSP 1-hour TSP Noise		Impact Water Quality Monitoring Mid-Ebb 8:19 Mid-Flood 14:56 Dolphin Survey			

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

*The monitoring scheduled for mid- flood tide only 1 July 13 was cancelled due to adverse weather condition.

Hong Kong Boundary Crossing Facilities – Reclamation Works
Tentative Impact Monitoring Schedule for August 2013

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					02-Aug	03-Aug
					Impact Water Quality Monitoring Mid-Ebb 10:24 Mid-Flood 17:43	24-hour TSP 1-hour TSP
04-Aug	05-Aug	06-Aug	07-Aug	08-Aug	09-Aug	10-Aug
	Impact Water Quality Monitoring Mid-Ebb 12:20 Mid-Flood 19:14 Dolphin Survey	Dolphin Survey	Impact Water Quality Monitoring Mid-Ebb 13:28 Mid-Flood 20:07		Impact Water Quality Monitoring Mid-Flood 7:55 Mid-Ebb 14:30 24-hour TSP 1-hour TSP Noise	
11-Aug	12-Aug	13-Aug	14-Aug	15-Aug	16-Aug	17-Aug
	Impact Water Quality Monitoring Mid-Flood 10:04 Mid-Ebb 16:14	Dolphin Survey	Impact Water Quality Monitoring Mid-Flood 12:27 Mid-Ebb 18:06	24-hour TSP 1-hour TSP Noise Dolphin Survey	Impact Water Quality Monitoring Mid-Ebb 8:21 Mid-Flood 16:01	
18-Aug	19-Aug	20-Aug	21-Aug	22-Aug	23-Aug	24-Aug
	Impact Water Quality Monitoring Mid-Ebb 11:31 Mid-Flood 18:42		Impact Water Quality Monitoring Mid-Ebb 13:05 Mid-Flood 19:56 24-hour TSP 1-hour TSP Noise		Impact Water Quality Monitoring Mid-Flood 8:03 Mid-Ebb 14:28	
25-Aug	26-Aug	27-Aug	28-Aug	29-Aug	30-Aug	31-Aug
	Impact Water Quality Monitoring Mid-Flood 10:28 Mid-Ebb 16:13	24-hour TSP 1-hour TSP Noise	Impact Water Quality Monitoring Mid-Flood 12:40 Mid-Ebb 17:43		Impact Water Quality Monitoring Mid-Ebb 8:30 Mid-Flood 21:14 Dolphin Survey	

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. (μg/m^3)	Actino Level (μg/m^3)	Limit Level (μg/m^3)
05-Jul-13	1st Hour	Sunny	--*	11:17	75	374	500
05-Jul-13	2nd Hour	Sunny	--*	12:17	75	374	500
05-Jul-13	3rd Hour	Sunny	--*	13:17	75	374	500
11-Jul-13	1st Hour	Sunny	--*	11:36	76	374	500
11-Jul-13	2nd Hour	Sunny	--*	12:36	75	374	500
11-Jul-13	3rd Hour	Sunny	--*	13:36	77	374	500
17-Jul-13	1st Hour	Cloudy	2.3	10:45	75	374	500
17-Jul-13	2nd Hour	Cloudy	2.9	11:45	75	374	500
17-Jul-13	3rd Hour	Cloudy	2.6	12:45	76	374	500
23-Jul-13	1st Hour	Cloudy	2.8	11:58	84	374	500
23-Jul-13	2nd Hour	Cloudy	4.7	12:58	83	374	500
23-Jul-13	3rd Hour	Cloudy	4.4	13:58	82	374	500
29-Jul-13	1st Hour	Sunny	0.8	13:17	83	374	500
29-Jul-13	2nd Hour	Sunny	2.2	14:17	84	374	500
29-Jul-13	3rd Hour	Sunny	0.3	15:17	82	374	500
				Average	78		
				Min	75		
				Max	84		

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. (μg/m^3)	Actino Level (μg/m^3) ^	Limit Level (μg/m^3)
05-Jul-13	1st Hour	Sunny	--*	11:28	77	368	500
05-Jul-13	2nd Hour	Sunny	--*	12:28	75	368	500
05-Jul-13	3rd Hour	Sunny	--*	13:28	76	368	500
11-Jul-13	1st Hour	Sunny	--*	11:25	75	368	500
11-Jul-13	2nd Hour	Sunny	--*	12:25	76	368	500
11-Jul-13	3rd Hour	Sunny	--*	13:25	77	368	500
17-Jul-13	1st Hour	Cloudy	1.3	10:09	77	368	500
17-Jul-13	2nd Hour	Cloudy	2.3	11:09	76	368	500
17-Jul-13	3rd Hour	Cloudy	2.9	12:09	77	368	500
23-Jul-13	1st Hour	Cloudy	2.8	11:32	83	368	500
23-Jul-13	2nd Hour	Cloudy	2.8	12:32	84	368	500
23-Jul-13	3rd Hour	Cloudy	4.7	13:32	82	368	500
29-Jul-13	1st Hour	Sunny	0.8	13:30	84	368	500
29-Jul-13	2nd Hour	Sunny	2.2	14:30	84	368	500
29-Jul-13	3rd Hour	Sunny	0.3	15:30	83	368	500
				Average	79		
				Min	75		
				Max	84		

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. (μg/m^3)	Actino Level (μg/m^3)	Limit Level (μg/m^3)
05-Jul-13	1st Hour	Sunny	--*	11:07	73	370	500
05-Jul-13	2nd Hour	Sunny	--*	12:07	74	370	500
05-Jul-13	3rd Hour	Sunny	--*	13:07	74	370	500
11-Jul-13	1st Hour	Sunny	--*	11:52	74	370	500
11-Jul-13	2nd Hour	Sunny	--*	12:52	75	370	500
11-Jul-13	3rd Hour	Sunny	--*	13:52	74	370	500
17-Jul-13	1st Hour	Cloudy	1.3	10:34	74	370	500
17-Jul-13	2nd Hour	Cloudy	2.3	11:34	73	370	500
17-Jul-13	3rd Hour	Cloudy	2.9	12:34	74	370	500
23-Jul-13	1st Hour	Cloudy	2.8	11:46	82	370	500
23-Jul-13	2nd Hour	Cloudy	4.7	12:46	83	370	500
23-Jul-13	3rd Hour	Cloudy	4.4	13:46	83	370	500
29-Jul-13	1st Hour	Sunny	0.8	13:05	83	370	500
29-Jul-13	2nd Hour	Sunny	2.2	14:05	82	370	500
29-Jul-13	3rd Hour	Sunny	0.3	15:05	82	370	500
				Average	77		
				Min	73		
				Max	83		

*Average wind speed was not available due to wind measuring equipment under maintenance.

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. (^oC)	Atmospheric Pressure(hPa)	Flow Rate (m^3/min.) Initial	Flow Rate (m^3/min.) Final	Av. flow (m^3/min)	Total vol. (m^3)	Filter Weight (g) Initial	Filter Weight (g) Final	Particulate weight(g)	Elapse Time Initial	Elapse Time Final	Sampling Time(hrs.)	Conc. ($\mu g/m^3$)	Actino Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
04-Jul-13	16:00	05-Jul-13	16:00	Sunny	29.8	1007.5	1.33	1.33	1.33	1912.3	3.5414	3.5612	0.0198	2021.84	2045.84	24.00	10	176	260
10-Jul-13	16:00	11-Jul-13	16:00	Sunny	28.8	1008.3	1.33	1.33	1.33	1912.3	3.5401	3.5715	0.0314	2045.84	2069.84	24.00	16	176	260
16-Jul-13	16:00	17-Jul-13	16:00	Cloudy	26.2	1006.9	1.33	1.33	1.33	1912.3	3.5355	3.5670	0.0315	2069.84	2093.84	24.00	16	176	260
22-Jul-13	16:00	23-Jul-13	16:00	Cloudy	27.4	1008.5	1.33	1.33	1.33	1912.3	3.6765	3.6988	0.0223	2093.84	2117.84	24.00	12	176	260
29-Jul-13	9:00	30-Jul-13	9:00	Sunny	28.0	1008.5	1.33	1.33	1.33	1912.3	3.6838	3.7138	0.0300	2117.84	2141.84	24.00	16	176	260
																Average	14		
																Min	10		
																Max	16		

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. (^oC)	Atmospheric Pressure(hPa)	Flow Rate (m^3/min.) Initial	Flow Rate (m^3/min.) Final	Av. flow (m^3/min)	Total vol. (m^3)	Filter Weight (g) Initial	Filter Weight (g) Final	Particulate weight(g)	Elapse Time Initial	Elapse Time Final	Sampling Time(hrs.)	Conc. ($\mu g/m^3$)	Actino Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
04-Jul-13	16:00	05-Jul-13	16:00	Sunny	29.8	1007.5	1.32	1.32	1.32	1903.7	3.5334	3.5775	0.0441	1970.03	1994.03	24.00	23	167	260
10-Jul-13	16:00	11-Jul-13	16:00	Sunny	28.8	1008.3	1.32	1.32	1.32	1903.7	3.5279	3.5645	0.0366	1994.03	2018.03	24.00	19	167	260
16-Jul-13	16:00	17-Jul-13	16:00	Cloudy	26.2	1006.9	1.32	1.32	1.32	1903.7	3.6535	3.6934	0.0399	2018.03	2042.03	24.00	21	167	260
22-Jul-13	16:00	23-Jul-13	16:00	Cloudy	27.4	1008.5	1.32	1.32	1.32	1903.7	3.6790	3.9714	0.2924	2042.03	2066.03	24.00	154	167	260
29-Jul-13	9:00	30-Jul-13	9:00	Sunny	28.0	1008.5	1.32	1.32	1.32	1903.7	3.6733	3.7020	0.0287	2066.03	2090.03	24.00	15	167	260
																Average	46		
																Min	15		
																Max	154		

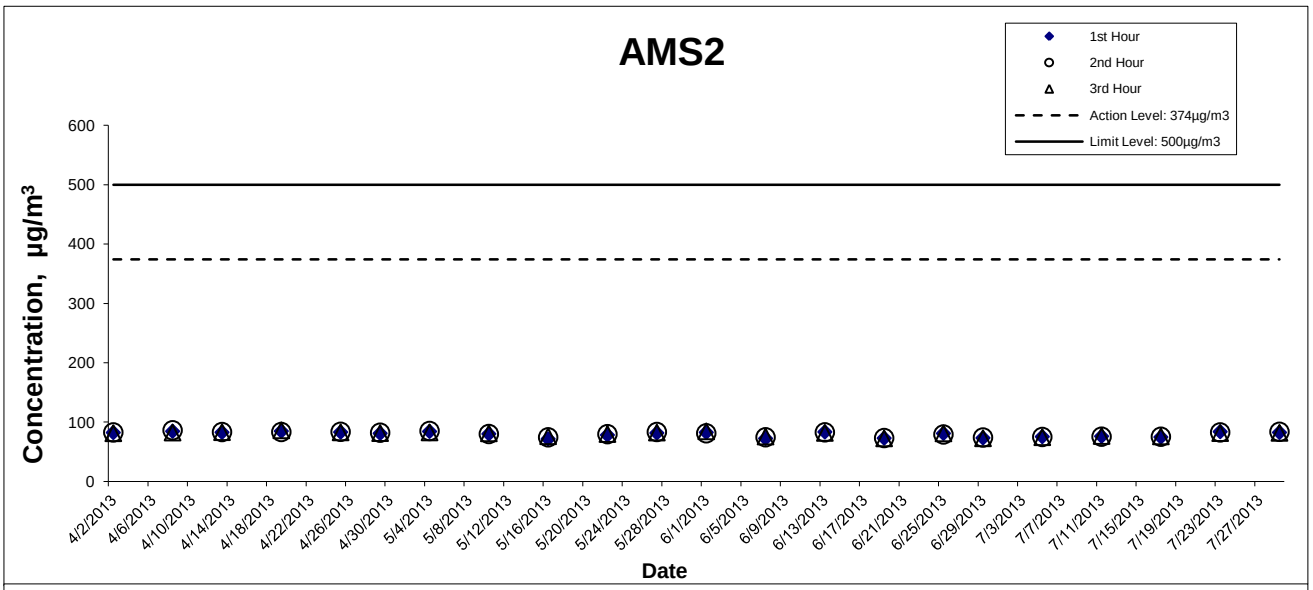
Remarks:
^ Action Level set out at AMS3 Ho Yu College is adopted.

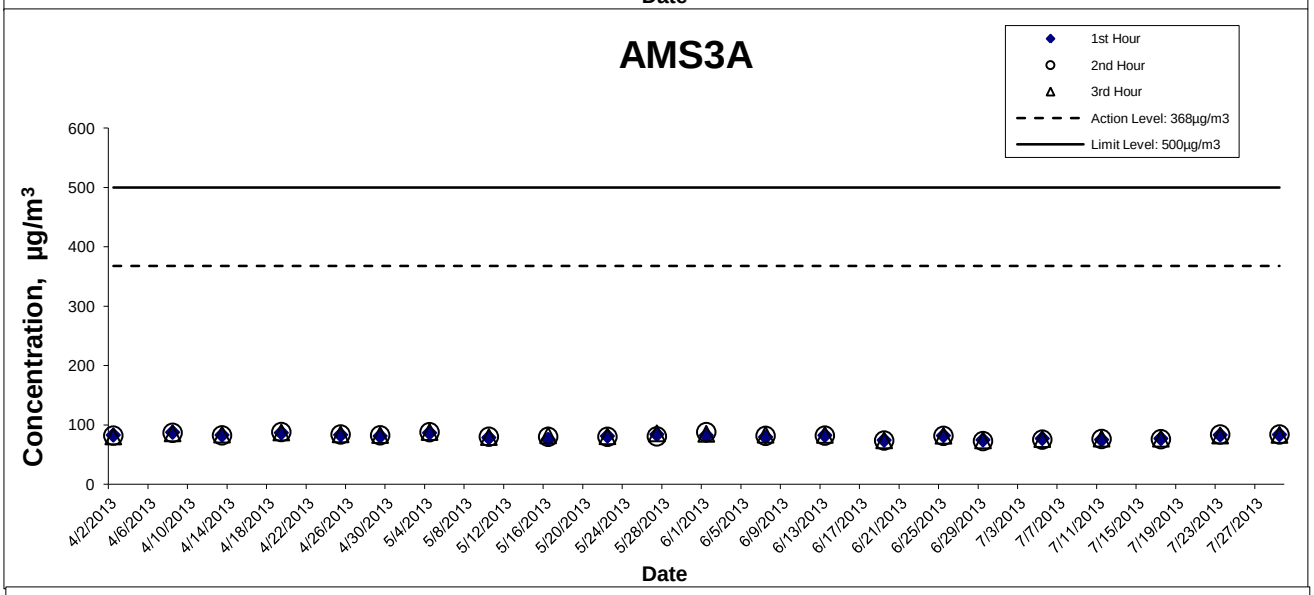
24-hour TSP Monitoring Results at Station AMS7 - Hong Kong SkyCity Marriott Hotel

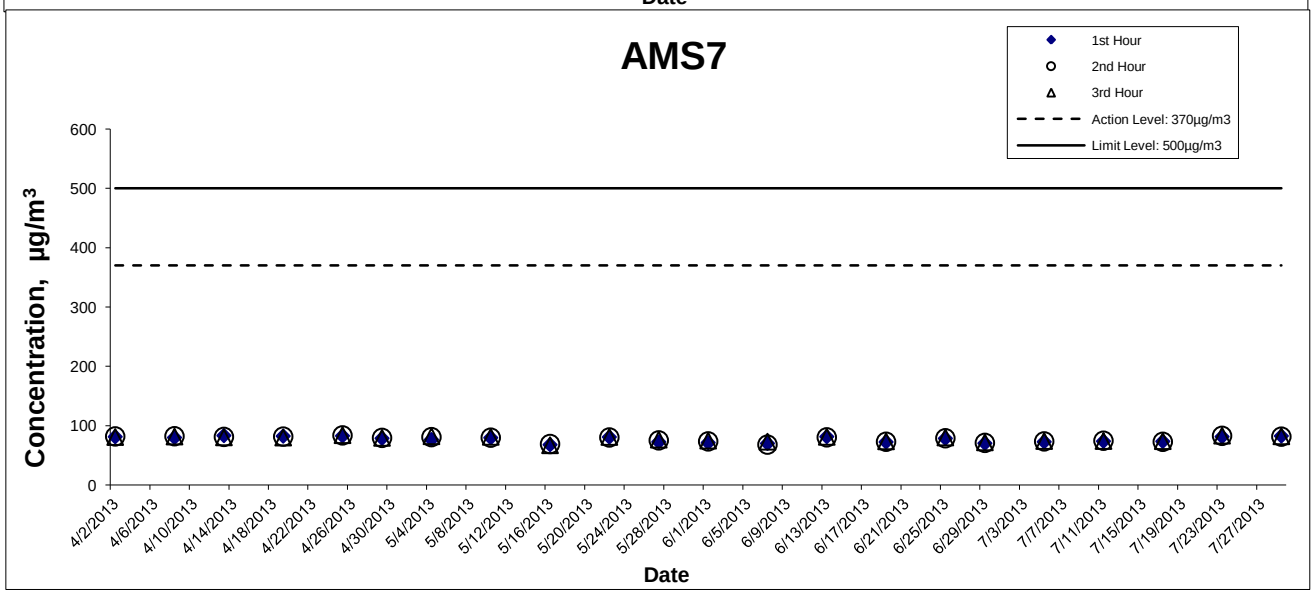
Start Date	Start Time	End Date	End Time	Weather Condition	Air Temp. (^oC)	Atmospheric Pressure(hPa)	Flow Rate (m^3/min.) Initial	Flow Rate (m^3/min.) Final	Av. flow (m^3/min)	Total vol. (m^3)	Filter Weight (g) Initial	Filter Weight (g) Final	Particulate weight(g)	Elapse Time Initial	Elapse Time Final	Sampling Time(hrs.)	Conc. ($\mu g/m^3$)	Actino Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
04-Jul-13	16:00	05-Jul-13	16:00	Sunny	29.8	1007.5	1.33	1.33	1.33	1916.6	3.5383	3.5753	0.0370	1997.38	2021.38	24.00	19	183	260
11-Jul-13	18:30	12-Jul-13	18:30	Fine	29.7	1005.2	1.33	1.33	1.33	1916.6	3.6670	3.7538	0.0868	2027.98	2051.98	24.00	45	183	260
16-Jul-13	16:00	17-Jul-13	16:00	Cloudy	26.2	1006.9	1.33	1.33	1.33	1916.6	3.6580	3.6922	0.0342	2051.98	2075.98	24.00	18	183	260
22-Jul-13	16:00	23-Jul-13	16:00	Cloudy	27.4	1008.5	1.33	1.33	1.33	1916.6	3.6830	3.7239	0.0409	2075.98	2099.98	24.00	21	183	260
29-Jul-13	9:00	30-Jul-13	9:00	Sunny	28.0	1008.5	1.33	1.33	1.33	1916.6	3.6640	3.6989	0.0349	2099.98	2123.98	24.00	18	183	260
																Average	24		
																Average	25		
																Min	18		
																Max	45		

^ Monitroing at AMS7 was rescheduled from 10-July-13 to 11-July-13 due to power failure of the Hotel.

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







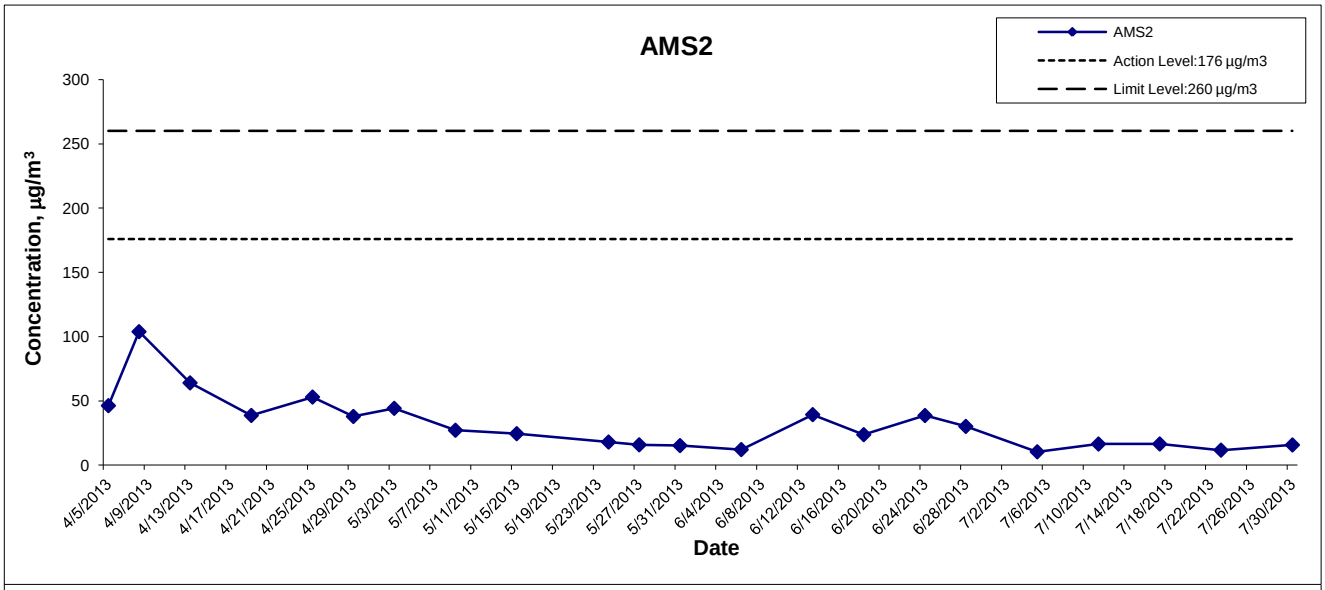
HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS

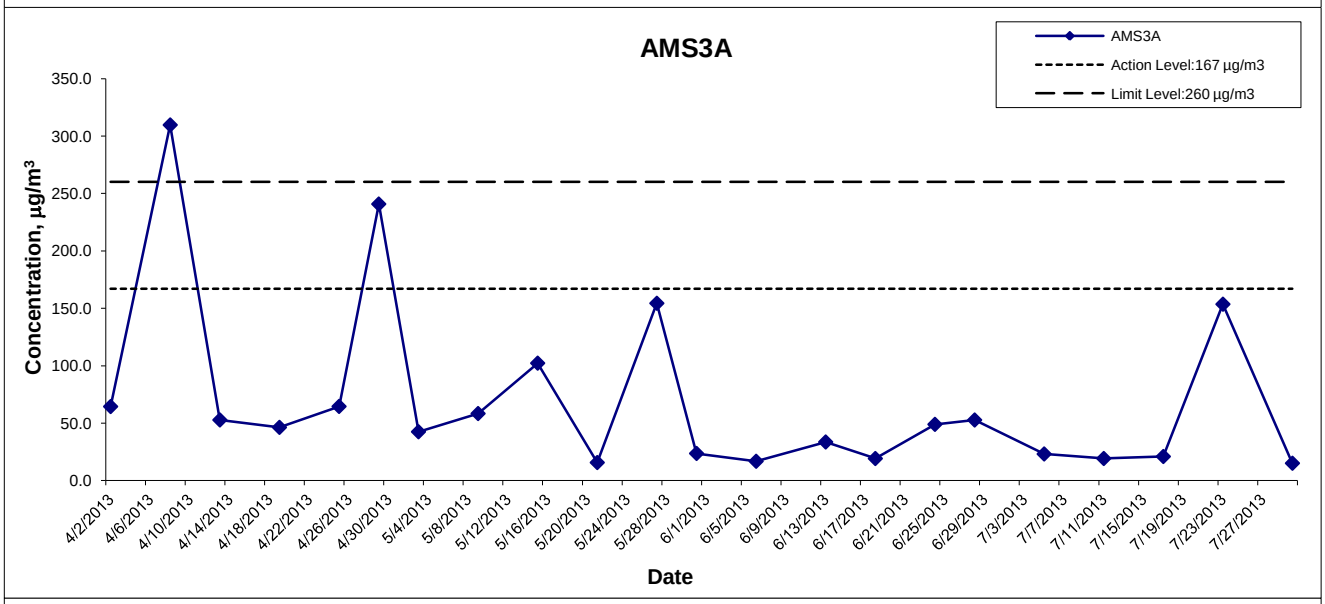
AECOM

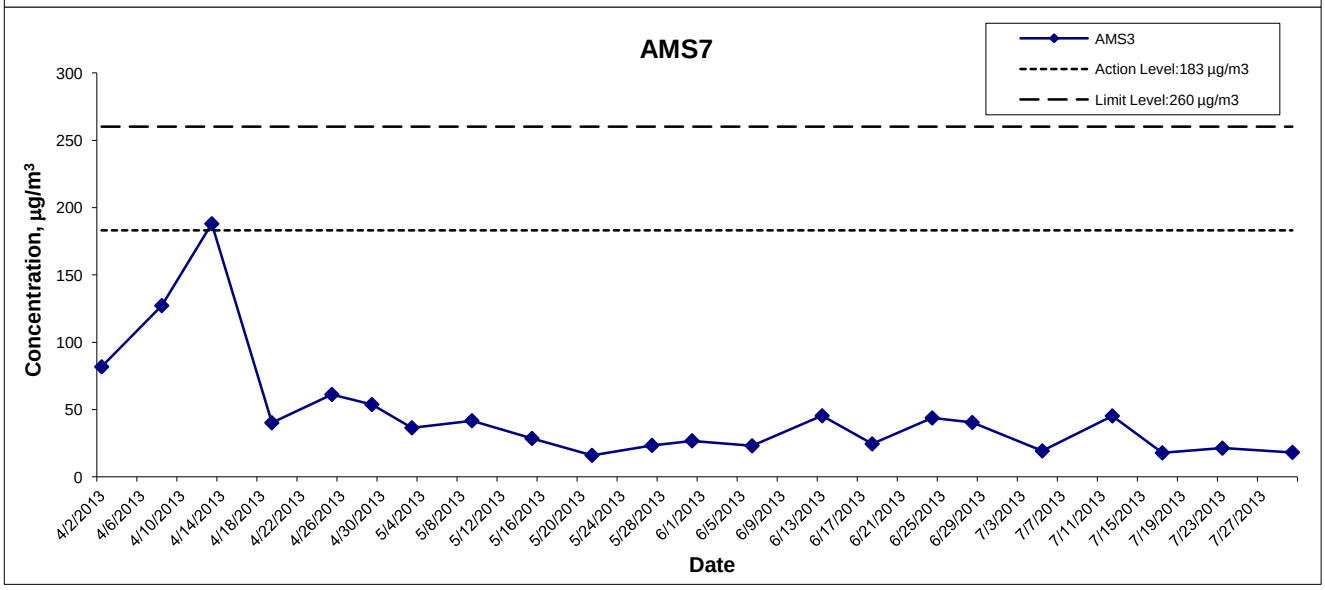
Graphical Presentation of Impact 1-hour TSP Monitoring Results

Project No.: 60249820 **Date: August 2013**

Appendix G







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

AECOM

Graphical Presentation of Impact 24-hour TSP Monitoring Results

Project No.: 60249820 **Date: August 2013**

Appendix G

APPENDIX H Meteorological Data for Monitoring Periods on Monitoring Dates in July 2013

WIND DATA

Date	Time	Averaged Wind Speed (m/s)	Averaged Wind Direction (degrees)
7/16/13	15:09:17	1.11	61.63
7/16/13	16:09:17	2.43	97.53
7/16/13	17:09:17	0.11	351.3
7/16/13	18:09:17	1.92	125.38
7/16/13	19:09:17	0.43	144.17
7/16/13	20:09:17	0.2	184.54
7/16/13	21:09:17	0.27	167.66
7/16/13	22:09:17	0.46	125.94
7/16/13	23:09:17	3.76	135
7/17/13	00:09:17	0.25	156.47
7/17/13	01:09:17	2.74	85.56
7/17/13	02:09:17	2.08	75.38
7/17/13	03:09:17	1.65	97.86
7/17/13	04:09:17	1.12	131.75
7/17/13	05:09:17	1.71	150.21
7/17/13	06:09:17	0.42	140.48
7/17/13	07:09:17	1.97	111.4
7/17/13	08:09:17	0.99	80.64
7/17/13	09:09:17	2.97	59.39
7/17/13	10:09:17	1.26	71.02
7/17/13	11:09:17	2.32	99.99
7/17/13	12:09:17	2.91	108.38
7/17/13	13:09:17	2.64	159.83
7/17/13	14:09:17	3.76	147.75
7/17/13	15:09:17	2.32	149.87
7/17/13	16:09:17	2.76	94.06
7/22/13	15:09:17	2.69	110.73
7/22/13	16:09:17	2.94	77.4
7/22/13	17:09:17	0.1	132.2
7/22/13	18:09:17	2.71	83.21
7/22/13	19:09:17	2.53	101.55
7/22/13	20:09:17	3.9	94.84
7/22/13	21:09:17	2.03	117.1
7/22/13	22:09:17	1.52	130.41
7/22/13	23:09:17	3.27	100.21
7/23/13	00:09:17	1.12	124.48
7/23/13	01:09:17	1.71	105.81
7/23/13	02:09:17	1.05	112.18
7/23/13	03:09:17	1.73	108.04
7/23/13	04:09:17	0.56	112.29
7/23/13	05:09:17	0.94	108.04
7/23/13	06:09:17	0.62	86.01
7/23/13	07:09:17	1.41	98.2
7/23/13	08:09:17	0.87	33.11
7/23/13	09:09:17	4.06	110.28
7/23/13	10:09:17	0.66	97.98
7/23/13	11:09:17	2.76	106.03
7/23/13	12:09:17	2.83	95.74
7/23/13	13:09:17	4.67	89.14
7/23/13	14:09:17	4.39	113.3
7/23/13	15:09:17	1.34	104.91
7/23/13	16:09:17	2.55	164.3
7/29/13	08:09:17	1.41	31.32
7/29/13	09:09:17	1.57	50.78
7/29/13	10:09:17	2.35	81.09
7/29/13	11:09:17	0.77	8.5
7/29/13	12:09:17	1.29	82.09
7/29/13	13:09:17	0.81	260.04
7/29/13	14:09:17	2.22	40.49
7/29/13	15:09:17	0.25	348.51
7/29/13	16:09:17	2.88	78.96
7/29/13	17:09:17	1.55	70.24
7/29/13	18:09:17	1.34	60.28
7/29/13	19:09:17	0.83	111.73
7/29/13	20:09:17	0.57	281.62
7/29/13	21:09:17	0.25	143.38
7/29/13	22:09:17	0.28	109.27
7/29/13	23:09:17	1.78	93.73

APPENDIX H Meteorological Data for Monitoring Periods on Monitoring Dates in July 2013

WIND DATA

Date	Time	Averaged Wind Speed (m/s)	Averaged Wind Direction (degrees)
7/30/13	00:09:17	0.29	118.67
7/30/13	01:09:17	0.13	161.95
7/30/13	02:09:17	0.13	126.5
7/30/13	03:09:17	0.25	107.93
7/30/13	04:09:17	0.18	127.84
7/30/13	05:09:17	0.15	118.89
7/30/13	06:09:17	0.34	118.78
7/30/13	07:09:17	0.2	121.8
7/30/13	08:09:17	0.18	55.36
7/30/13	09:09:17	0.03	296.95

*Data on 4 - 11 June 13 unavailable due to malfunction of facility caused by inclement whether, facility under was maintenance.

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)#				Averaged Wind Speed (m/s)	Baseline Noise Level, dB(A)	Limit Level, dB(A)	Exceedance (Y/N)
		Time	L90	L10	Leq				
05-Jul-13	Sunny	15:13	60	65	63	<5m/s	62.9	75	N
11-Jul-13	Sunny	15:50	63	67	65	<5m/s	62.9	75	N
17-Jul-13	Cloudy	11:07	61	70	66	<5m/s	62.9	75	N
23-Jul-13	Cloudy	10:40	62	71	67	<5m/s	62.9	75	N
29-Jul-13	Sunny	14:35	62	66	64	<5m/s	62.9	75	N
		Min	60	65	63				
		Max	63	71	67				
		Average	--	--	65				

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

Date	Weather Condition	Noise Level for 30-min, dB(A)#				Averaged Wind Speed (m/s)	Baseline Noise Level, dB(A) ^	Limit Level, dB(A)**	Exceedance (Y/N)
		Time	L90	L10	Leq				
05-Jul-13	Sunny	14:55	55	59	57	<5m/s	66.3	70	N
11-Jul-13	Sunny	14:30	59	64	62	<5m/s	66.3	70	N
17-Jul-13	Cloudy	14:25	60	67	65	<5m/s	66.3	70	N
23-Jul-13	Cloudy	11:28	63	69	66	<5m/s	66.3	70	N
29-Jul-13	Sunny	13:28	65	68	67	<5m/s	66.3	70	N
		Min	55	59	57				
		Max	65	69	67				
		Average	--	--	65				

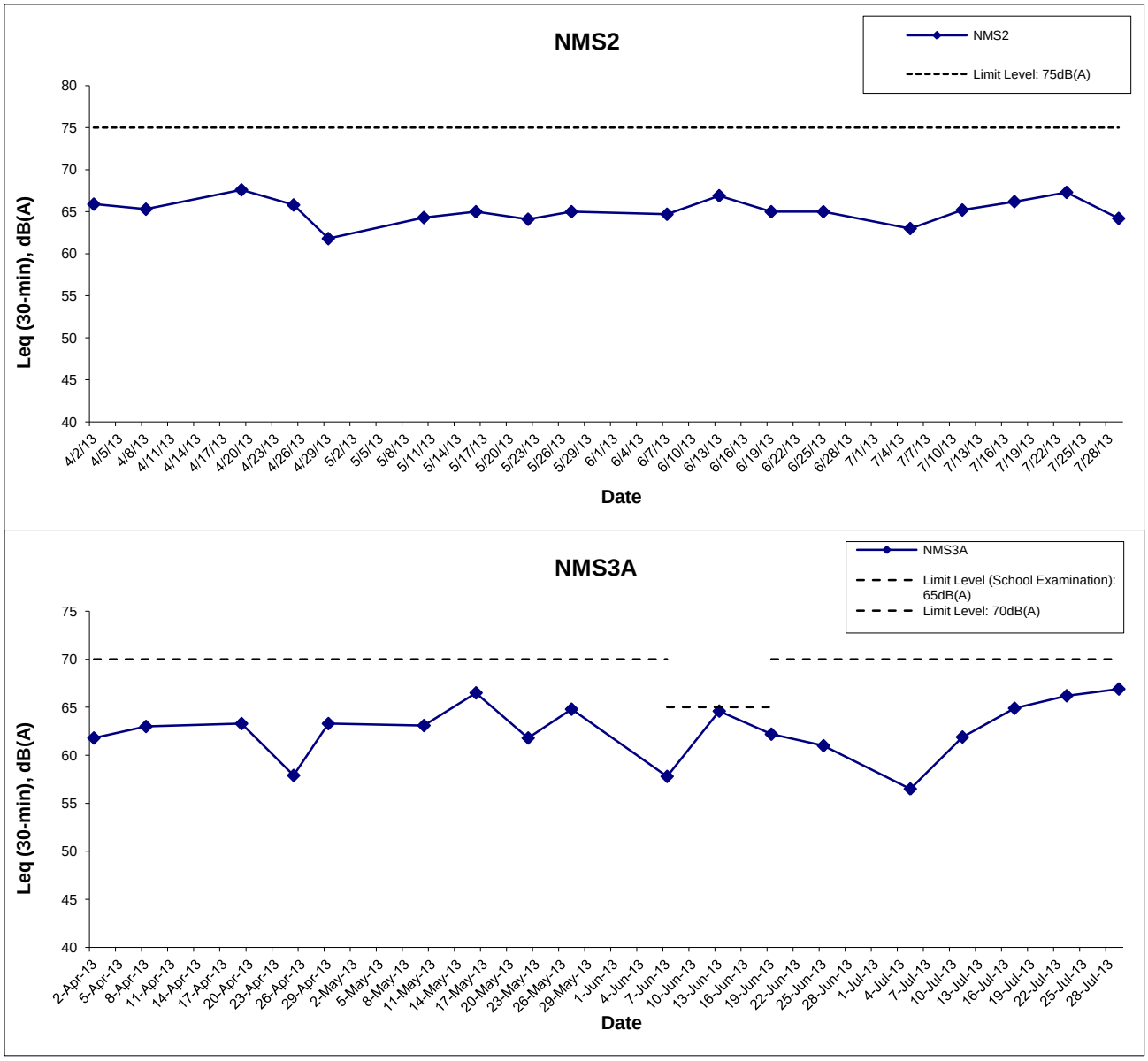
Remark:

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.

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-Jul-13	Rainy	Rough	08:21	6.6	Surface	1.0	29.3 29.3	29.3	8.3 8.3	8.3	13.1 13.2	13.2	87.3 87.5	87.4	6.2 6.2	6.2	6.0	5.2 5.3	5.3	5.8	3.2 3.4	3.3	3.8
					Middle	3.3	28.2 28.2	28.2	8.2 8.2	8.2	19.9 20.0	20.0	81.8 81.7	81.8	5.7 5.7	5.7		5.8 5.7	5.8		4.4 3.5	4.0	
					Bottom	5.6	27.6 27.7	27.7	8.2 8.1	8.2	24.5 24.6	24.6	80.1 80.1	80.1	5.5 5.5	5.5	5.5	6.4 6.3	6.4		4.1 4.2	4.2	
3-Jul-13	Sunny	Moderate	10:47	6.2	Surface	1.0	29.5 29.5	29.5	8.2 8.2	8.2	10.5 10.5	10.5	88.2 89.4	88.8	6.4 6.4	6.4	6.3	7.5 7.2	7.4	8.8	4.9 4.5	4.7	4.9
					Middle	3.1	29.1 29.1	29.1	8.2 8.2	8.2	12.7 12.9	12.8	85.5 84.0	84.8	6.1 6.0	6.1		9.3 9.3	9.3		4.3 4.8	4.6	
					Bottom	5.2	29.0 29.1	29.1	8.2 8.2	8.2	18.7 18.8	18.7	87.4 86.7	87.1	6.1 6.1	6.1	6.1	9.5 9.6	9.6		5.8 5.2	5.5	
5-Jul-13	Sunny	Moderate	12:31	6.9	Surface	1.0	29.8 29.6	29.7	8.4 8.3	8.4	10.7 12.1	11.4	92.2 94.3	93.3	6.6 6.7	6.7	6.2	6.7 6.4	6.6	7.0	5.9 4.7	5.3	5.8
					Middle	3.5	29.5 29.5	29.5	8.3 8.3	8.3	12.5 12.7	12.6	79.1 82.1	80.6	5.6 5.8	5.7		6.8 6.5	6.7		6.4 6.5	6.5	
					Bottom	5.9	29.0 28.7	28.9	8.2 8.2	8.2	18.0 20.1	19.0	75.1 68.6	71.9	5.2 4.7	5.0	5.0	7.6 7.8	7.7		5.8 5.4	5.6	
8-Jul-13	Sunny	Moderate	13:56	6.5	Surface	1.0	29.5 29.5	29.5	8.4 8.4	8.4	12.6 12.6	12.6	98.5 95.8	97.2	7.0 6.8	6.9	6.5	5.7 5.8	5.8	6.4	3.9 4.4	4.2	4.3
					Middle	3.3	29.1 29.0	29.0	8.3 8.3	8.3	13.2 14.0	13.6	83.1 83.8	83.5	5.9 6.0	6.0		6.6 6.2	6.4		4.2 3.8	4.0	
					Bottom	5.5	28.6 28.8	28.7	8.2 8.2	8.2	18.0 17.2	17.6	80.6 84.2	82.4	5.7 5.9	5.8	5.8	7.2 6.8	7.0		4.1 5.3	4.7	
10-Jul-13	Sunny	Moderate	13:58	6.4	Surface	1.0	29.5 29.5	29.5	8.4 8.4	8.4	14.7 14.9	14.8	89.4 89.8	89.6	6.3 6.3	6.3	6.2	5.9 5.6	5.8	7.1	3.5 3.1	3.3	3.8
					Middle	3.2	29.0 29.1	29.1	8.4 8.4	8.4	17.4 16.8	17.1	84.6 86.3	85.5	5.9 6.0	6.0		7.5 7.6	7.6		3.8 4.2	4.0	
					Bottom	5.4	29.0 28.9	28.9	8.4 8.3	8.4	17.5 18.0	17.8	85.8 85.0	85.4	6.0 5.9	6.0	6.0	7.6 7.9	7.8		4.0 3.9	4.0	
12-Jul-13	Sunny	Moderate	14:44	7.6	Surface	1.0	30.2 30.1	30.1	8.4 8.4	8.4	16.8 17.0	16.9	100.5 98.6	99.6	6.9 6.8	6.9	6.6	4.0 4.2	4.1	6.4	2.6 2.0	2.3	2.6
					Middle	3.8	29.6 29.5	29.5	8.4 8.4	8.4	17.8 18.0	17.9	92.8 88.0	90.4	6.4 6.1	6.2		5.7 5.5	5.6		3.0 2.5	2.8	
					Bottom	6.6	28.9 28.6	28.7	8.3 8.3	8.3	18.5 18.6	18.6	81.2 82.3	81.8	5.6 5.8	5.7	5.7	9.2 9.8	9.5		2.8 2.8	2.8	
15-Jul-13	Rainy	Moderate	16:59	6.5	Surface	1.0	28.9 28.9	28.9	8.2 8.2	8.2	16.0 16.1	16.0	88.0 88.1	88.1	6.2 6.2	6.2	6.1	3.3 3.2	3.3	3.3	3.3 3.2	3.3	3.9
					Middle	3.3	28.9 28.9	28.9	8.2 8.2	8.2	17.2 16.8	17.0	84.5 84.2	84.4	5.9 5.9	5.9		3.1 3.2	3.2		4.3 3.0	3.7	
					Bottom	5.5	28.9 28.9	28.9	8.2 8.2	8.2	18.9 19.0	18.9	86.3 85.8	86.1	6.0 6.0	6.0	6.0	3.3 3.3	3.3		4.5 4.6	4.6	
17-Jul-13	Fine	Moderate	08:23	6.5	Surface	1.0	27.9 27.8	27.8	7.9 8.0	7.9	21.6 22.9	22.3	84.1 84.7	84.4	5.9 6.0	5.9	5.8	4.3 4.6	4.5	6.8	2.7 3.0	2.9	3.2
					Middle	3.3	27.5 27.4	27.5	7.8 8.0	7.9	23.9 24.1	24.0	81.6 82.8	82.2	5.6 5.8	5.7		6.4 6.9	6.7		3.7 3.3	3.5	
					Bottom	5.5	27.1 27.2	27.1	7.9 7.6	7.8	25.5 25.4	25.4	71.9 70.4	71.2	5.0 4.9	4.9	4.9	9.0 9.5	9.3		3.3 3.1	3.2	
19-Jul-13	Sunny	Moderate	10:27	6.2	Surface	1.0	28.1 28.1	28.1	8.0 8.0	8.0	21.8 21.8	21.8	88.3 87.6	88.0	6.1 6.1	6.1	6.1	2.5 2.5	2.5	2.8	2.8 3.2	3.0	2.7
					Middle	3.1	28.1 28.1	28.1	8.0 8.0	8.0	21.8 21.8	21.8	87.1 88.0	87.6	6.0 6.1	6.1		3.0 2.6	2.8		3.2 2.3	2.8	
					Bottom	5.2	27.9 27.8	27.9	8.0 8.0	8.0	21.9 22.0	22.0	86.3 87.6	87.0	6.0 6.1	6.0	6.0	3.0 3.1	3.1		2.1 2.6	2.4	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Sunny	Moderate	12:56	6.5	Surface	1.0	27.9 27.9	27.9	8.0 8.0	8.0	23.4 23.5	23.5	78.6 73.5	76.1	5.3 5.1	5.2	5.2	4.2 4.3	4.3	4.5	6.6 6.9	6.8	5.7
					Middle	3.3	27.7 27.7	27.7	8.0 8.0	8.0	24.6 25.4	25.0	75.6 74.3	75.0	5.2 5.1	5.1		4.6 4.5	4.6		4.7 5.8	5.3	
					Bottom	5.5	27.7 27.5	27.6	8.0 8.0	8.0	26.5 26.9	26.7	73.3 75.5	74.4	5.0 5.2	5.1	5.1	4.5 4.5	4.5		4.2 5.7	5.0	
24-Jul-13	Cloudy	Moderate	13:31	6.6	Surface	1.0	27.9 27.9	27.9	8.0 8.0	8.0	23.9 24.0	24.0	79.5 79.8	79.7	5.5 5.5	5.5	5.5	4.6 4.9	4.8	5.4	6.1 6.5	6.3	6.0
					Middle	3.3	27.9 27.9	27.9	8.0 8.1	8.0	24.7 24.7	24.7	79.9 80.7	80.3	5.5 5.5	5.5		5.3 5.5	5.4		6.9 5.8	6.4	
					Bottom	5.6	27.9 27.9	27.9	8.0 8.1	8.1	25.0 25.3	25.1	80.2 81.4	80.8	5.5 5.6	5.5	5.5	5.9 6.2	6.1		5.5 5.3	5.4	
26-Jul-13	Cloudy	Moderate	15:16	6.4	Surface	1.0	27.8 27.7	27.7	8.0 8.0	8.0	22.5 22.5	22.5	80.9 81.3	81.1	5.6 5.6	5.6	5.7	8.6 8.7	8.7	9.0	8.8 9.2	9.0	8.6
					Middle	3.2	27.6 27.6	27.6	8.0 8.0	8.0	23.6 23.5	23.5	81.8 82.5	82.2	5.7 5.7	5.7		8.9 8.6	8.8		8.6 7.6	8.1	
					Bottom	5.4	27.6 27.6	27.6	8.0 8.0	8.0	23.8 24.0	23.9	81.3 82.0	81.7	5.6 5.7	5.6	5.6	9.5 9.7	9.6		7.8 9.4	8.6	
29-Jul-13	Sunny	Moderate	17:03	6.5	Surface	1.0	29.6 29.5	29.5	8.0 8.0	8.0	13.9 14.4	14.2	79.2 83.6	81.4	5.6 5.9	5.7	5.5	6.4 6.3	6.4	8.2	3.2 3.9	3.6	4.1
					Middle	3.3	28.2 28.2	28.2	7.9 7.9	7.9	19.0 19.4	19.2	77.0 76.4	76.7	5.4 5.3	5.3		8.9 8.8	8.9		4.5 3.6	4.1	
					Bottom	5.5	27.9 27.8	27.9	7.9 7.9	7.9	21.8 21.9	21.9	74.0 74.4	74.2	5.2 5.2	5.2	5.2	9.3 9.3	9.3		4.0 5.1	4.6	
31-Jul-13	Fine	Moderate	08:41	7.1	Surface	1.0	29.4 29.4	29.4	8.1 8.1	8.1	15.3 15.0	15.1	92.6 86.7	89.7	6.5 5.9	6.2	5.9	4.0 3.7	3.9	6.1	2.6 2.2	2.4	2.5
					Middle	3.6	28.0 28.0	28.0	8.0 7.9	8.0	22.4 22.8	22.6	78.8 79.7	79.3	5.4 5.6	5.5		5.7 5.6	5.7		2.1 2.7	2.4	
					Bottom	6.1	27.8 27.7	27.7	7.9 8.0	8.0	26.1 26.3	26.2	70.5 69.9	70.2	4.9 4.8	4.8	4.8	8.8 8.5	8.7		2.7 2.4	2.6	

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
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Rainy	Rough	12:55	6.8	Surface	1.0	29.7 29.7	29.7	8.3 8.3	8.3	15.1 15.1	15.1	103.7 102.8	103.3	7.3 7.2	7.2	6.8	4.2 4.3	4.3	4.7	5.5 5.5	5.5	5.0
					Middle	3.4	29.2 29.2	29.2	8.2 8.2	8.2	17.9 17.0	17.4	92.2 93.1	92.7	6.4 6.5	6.4		4.8 4.6	4.7		4.9 4.1	4.5	
					Bottom	5.8	28.4 28.5	28.5	8.1 8.2	8.2	20.6 20.6	20.6	78.5 78.3	78.4	5.4 5.4	5.4	5.4	5.1 5.0	5.1		4.5 5.2	4.9	
3-Jul-13	Sunny	Moderate	16:15	6.3	Surface	1.0	30.2 30.2	30.2	8.3 8.3	8.3	5.0 5.0	5.0	86.2 86.1	86.2	6.3 6.3	6.3	6.1	10.3 10.3	10.3	10.4	7.7 6.1	6.9	6.9
					Middle	3.2	29.4 29.4	29.4	8.2 8.2	8.2	9.7 9.6	9.6	80.9 78.6	79.8	5.9 5.7	5.8		10.2 10.4	10.3		5.7 6.6	6.2	
					Bottom	5.3	29.4 28.8	29.1	8.0 8.1	8.0	18.1 17.4	17.7	84.5 78.5	81.5	5.8 5.5	5.7	5.7	10.3 10.6	10.5		8.1 7.1	7.6	
5-Jul-13	Sunny	Moderate	18:01	6.9	Surface	1.0	30.4 30.4	30.4	8.6 8.6	8.6	8.5 8.5	8.5	115.4 116.0	115.7	8.3 8.3	8.3	7.8	10.1 9.9	10.0	12.9	6.3 7.4	6.9	6.6
					Middle	3.5	30.0 30.2	30.1	8.5 8.5	8.5	9.7 9.6	9.7	100.0 102.0	101.0	7.2 7.3	7.2		13.5 13.2	13.4		6.2 6.0	6.1	
					Bottom	5.9	28.9 29.1	29.0	8.2 8.2	8.2	20.0 20.0	20.0	89.4 93.2	91.3	6.2 6.4	6.3	6.3	15.5 15.0	15.3		7.0 6.8	6.9	
8-Jul-13	Fine	Moderate	19:33	6.3	Surface	1.0	29.6 29.6	29.6	8.4 8.4	8.4	10.9 10.9	10.9	103.3 103.7	103.5	7.4 7.4	7.4	7.5	8.4 8.0	8.2	7.9	6.4 7.0	6.7	6.8
					Middle	3.2	29.4 29.4	29.4	8.4 8.4	8.4	12.2 12.2	12.2	105.4 104.2	104.8	7.5 7.4	7.5		7.7 8.1	7.9		7.5 6.2	6.9	
					Bottom	5.3	29.4 29.4	29.4	8.4 8.4	8.4	12.6 12.6	12.6	103.5 104.0	103.8	7.4 7.4	7.4	7.4	7.9 7.4	7.7		7.0 6.7	6.9	
10-Jul-13	Sunny	Moderate	07:59	6.7	Surface	1.0	29.0 29.0	29.0	8.3 8.3	8.3	14.8 14.7	14.7	81.8 81.5	81.7	5.8 5.8	5.8	5.7	9.3 9.6	9.5	9.6	6.7 5.6	6.2	6.2
					Middle	3.4	28.7 28.7	28.7	8.3 8.3	8.3	16.5 15.6	16.1	76.8 78.4	77.6	5.4 5.6	5.5		9.7 9.6	9.7		6.7 6.6	6.7	
					Bottom	5.7	28.1 27.9	28.0	8.2 8.2	8.2	20.9 21.5	21.2	76.2 79.8	78.0	5.3 5.6	5.4	5.4	9.6 9.3	9.5		5.9 5.2	5.6	
12-Jul-13	Sunny	Moderate	09:08	7.2	Surface	1.0	29.1 29.0	29.0	8.3 8.3	8.3	18.4 18.7	18.6	88.8 86.9	87.9	6.2 6.0	6.1	5.7	8.7 9.2	9.0	12.4	5.6 4.7	5.2	5.4
					Middle	3.6	28.7 28.0	28.3	8.2 8.2	8.2	19.6 22.6	21.1	76.8 72.6	74.7	5.3 5.0	5.2		12.6 13.1	12.9		5.2 4.3	4.8	
					Bottom	6.2	27.8 27.9	27.9	8.2 8.2	8.2	23.2 22.8	23.0	69.3 73.7	71.5	4.8 5.1	4.9	4.9	16.0 14.7	15.4		6.0 6.4	6.2	
15-Jul-13	Rainy	Moderate	11:21	6.5	Surface	1.0	29.2 29.1	29.1	8.3 8.3	8.3	17.7 17.9	17.8	89.0 87.2	88.1	6.2 6.0	6.1	6.0	5.5 5.7	5.6	6.3	3.5 3.5	3.5	3.2
					Middle	3.3	29.1 28.5	28.8	8.3 8.2	8.3	18.8 20.3	19.5	83.9 82.3	83.1	5.8 5.7	5.8		6.7 6.5	6.6		2.7 3.2	3.0	
					Bottom	5.5	28.8 28.0	28.4	8.3 8.1	8.2	20.2 22.9	21.5	74.9 76.1	75.5	5.2 5.2	5.2	5.2	6.6 6.6	6.6		3.1 3.1	3.1	
17-Jul-13	Sunny	Moderate	13:32	6.6	Surface	1.0	28.4 28.4	28.4	8.0 8.0	8.0	19.2 19.2	19.2	96.2 96.2	96.2	6.7 6.7	6.7	6.4	3.1 3.1	3.1	6.0	3.1 3.9	3.5	3.2
					Middle	3.3	28.2 28.0	28.1	8.0 8.0	8.0	19.8 21.8	20.8	87.0 84.2	85.6	6.1 5.8	6.0		5.5 5.9	5.7		2.5 3.2	2.9	
					Bottom	5.6	27.6 27.5	27.5	8.0 7.9	8.0	23.8 23.8	23.8	82.6 78.1	80.4	5.7 5.4	5.6	5.6	9.7 8.8	9.3		3.0 3.3	3.2	
19-Jul-13	Fine	Moderate	16:40	6.3	Surface	1.0	28.7 28.8	28.8	8.1 8.1	8.1	19.9 19.8	19.9	93.0 94.6	93.8	6.4 6.6	6.5	6.2	4.0 3.8	3.9	5.9	3.0 2.2	2.6	2.9
					Middle	3.2	28.2 28.2	28.2	8.1 8.1	8.1	20.7 21.7	21.2	85.3 83.8	84.6	5.9 5.8	5.9		5.5 5.8	5.7		3.9 2.5	3.2	
					Bottom	5.3	27.4 27.5	27.5	8.0 8.0	8.0	23.8 23.7	23.8	82.6 82.4	82.5	5.7 5.7	5.7	5.7	8.2 7.8	8.0		3.0 3.0	3.0	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Sunny	Moderate	19:28	6.4	Surface	1.0	28.4 28.4	28.4	7.9 7.9	7.9	20.7 20.7	20.7	73.2 73.4	73.3	5.1 5.1	5.1	5.1	5.4 5.3	5.4	6.1	5.8 5.5	5.7	6.1
					Middle	3.2	28.3 28.3	28.3	7.9 7.9	7.9	21.0 21.1	21.0	72.6 72.4	72.5	5.0 5.0	5.0		6.2 6.2	6.2		6.0 6.1	6.1	
					Bottom	5.4	28.3 28.3	28.3	7.9 7.9	7.9	21.3 21.3	21.3	72.7 73.0	72.9	5.0 5.1	5.0	5.0	6.5 6.7	6.6		7.0 6.1	6.6	
24-Jul-13	Rainy	Moderate	07:43	6.8	Surface	1.0	27.9 27.9	27.9	7.9 7.9	7.9	23.3 23.3	23.3	75.1 76.1	75.6	5.2 5.2	5.2	5.2	10.8 10.3	10.6	12.1	7.4 7.2	7.3	8.3
					Middle	3.4	27.8 27.8	27.8	7.8 7.9	7.9	24.2 23.8	24.0	74.5 74.2	74.4	5.1 5.1	5.1		11.8 12.1	12.0		9.0 7.8	8.4	
					Bottom	5.8	27.5 27.6	27.5	7.7 7.9	7.8	25.8 25.7	25.8	76.5 71.7	74.1	5.2 4.9	5.1	5.1	13.6 13.5	13.6		9.2 8.9	9.1	
26-Jul-13	Cloudy	Moderate	09:18	6.6	Surface	1.0	27.6 27.6	27.6	7.9 7.9	7.9	22.2 22.8	22.5	78.7 76.9	77.8	5.5 5.3	5.4	5.4	12.2 12.5	12.4	12.4	5.4 6.9	6.2	6.3
					Middle	3.3	27.6 27.6	27.6	7.9 7.9	7.9	23.9 22.8	23.3	76.9 78.7	77.8	5.3 5.5	5.4		12.2 12.3	12.3		6.2 5.9	6.1	
					Bottom	5.6	27.6 27.6	27.6	7.9 7.9	7.9	24.4 24.4	24.4	78.3 81.0	79.7	5.4 5.6	5.5	5.5	12.4 12.5	12.5		6.8 6.4	6.6	
29-Jul-13	Sunny	Moderate	12:06	6.5	Surface	1.0	28.9 28.9	28.9	7.9 7.9	7.9	15.6 15.6	15.6	80.1 80.8	80.5	5.7 5.7	5.7	5.6	9.5 9.5	9.5	9.4	4.5 4.7	4.6	4.0
					Middle	3.3	28.1 28.3	28.2	7.9 7.9	7.9	18.7 17.2	17.9	76.3 78.3	77.3	5.4 5.6	5.5		9.4 9.4	9.4		3.9 3.6	3.8	
					Bottom	5.5	28.0 28.2	28.1	7.8 7.9	7.9	20.8 20.8	20.8	77.2 77.6	77.4	5.4 5.5	5.4	5.4	9.4 9.3	9.4		3.8 3.6	3.7	
31-Jul-13	Sunny	Moderate	14:19	6.8	Surface	1.0	29.9 30.0	30.0	8.1 8.1	8.1	15.7 15.7	15.7	97.3 97.6	97.5	6.8 6.8	6.8	6.2	3.5 3.3	3.4	5.3	2.9 3.3	3.1	2.9
					Middle	3.4	28.7 28.7	28.7	7.9 8.0	8.0	20.8 21.0	20.9	79.1 79.8	79.5	5.5 5.5	5.5		4.3 4.1	4.2		2.5 3.2	2.9	
					Bottom	5.8	28.0 28.0	28.0	7.9 7.9	7.9	23.7 23.9	23.8	77.1 80.4	78.8	5.3 5.5	5.4	5.4	8.0 8.3	8.2		2.6 2.6	2.6	

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
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Rainy	Rough	08:37	18.2	Surface	1.0	29.3 29.3	29.3	8.2 8.2	8.2	14.8 14.7	14.7	91.2 90.5	90.9	6.5 6.4	6.4	6.1	5.5 5.6	5.6	6.6	3.7 3.9	3.8	4.2
					Middle	9.1	27.8 27.8	27.8	8.2 8.1	8.2	26.8 26.9	26.8	83.3 83.9	83.6	5.8 5.8	5.8		6.3 6.7	6.5		4.4 4.5	4.5	
					Bottom	17.2	27.2 27.2	27.2	8.1 8.1	8.1	28.7 28.8	28.7	74.8 73.8	74.3	5.1 5.1	5.1	5.1	7.8 7.5	7.7		4.1 4.7	4.4	
3-Jul-13	Sunny	Moderate	11:07	16.8	Surface	1.0	29.6 29.6	29.6	8.2 8.2	8.2	10.4 10.4	10.4	87.8 88.6	88.2	6.3 6.4	6.3	6.1	7.8 7.9	7.9	8.2	3.5 4.8	4.2	4.5
					Middle	8.4	29.1 29.1	29.1	8.2 8.2	8.2	13.4 13.4	13.4	80.9 83.1	82.0	5.8 5.9	5.8		8.3 8.1	8.2		5.8 4.3	5.1	
					Bottom	15.8	28.8 28.8	28.8	8.2 8.1	8.1	19.6 19.6	19.6	82.6 86.0	84.3	5.7 6.0	5.8	5.8	8.7 8.4	8.6		4.6 4.0	4.3	
5-Jul-13	Sunny	Moderate	12:46	18.4	Surface	1.0	29.8 29.8	29.8	8.4 8.4	8.4	11.0 11.4	11.2	99.2 99.4	99.3	7.1 7.1	7.1	7.0	6.2 5.9	6.1	6.5	4.6 5.4	5.0	5.7
					Middle	9.2	29.7 29.6	29.7	8.4 8.3	8.3	11.8 11.9	11.9	97.4 97.1	97.3	6.9 6.9	6.9		6.5 6.6	6.6		5.6 6.1	5.9	
					Bottom	17.4	29.6 29.0	29.3	8.3 8.2	8.3	19.5 19.9	19.7	92.4 92.0	92.2	6.6 6.5	6.6	6.6	6.8 6.9	6.9		6.5 5.9	6.2	
8-Jul-13	Sunny	Moderate	14:18	17.0	Surface	1.0	29.5 29.5	29.5	8.4 8.4	8.4	12.7 12.7	12.7	96.3 94.2	95.3	6.9 6.7	6.8	6.2	7.2 7.8	7.5	9.6	4.7 4.8	4.8	4.6
					Middle	8.5	28.5 28.7	28.6	8.2 8.3	8.2	18.1 18.0	18.1	79.6 79.3	79.5	5.6 5.6	5.6		8.6 9.2	8.9		4.6 4.7	4.7	
					Bottom	16.0	28.5 28.5	28.5	8.2 8.2	8.2	19.2 19.4	19.3	70.4 76.0	73.2	4.9 5.3	5.1	5.1	12.5 12.3	12.4		3.9 4.8	4.4	
10-Jul-13	Sunny	Moderate	13:32	16.2	Surface	1.0	29.5 29.5	29.5	8.4 8.4	8.4	14.6 14.8	14.7	87.6 87.4	87.5	6.2 6.1	6.2	5.8	7.2 7.0	7.1	7.2	3.1 4.3	3.7	3.8
					Middle	8.1	28.8 28.9	28.8	8.3 8.4	8.3	18.8 17.9	18.3	78.5 76.4	77.5	5.5 5.3	5.4		7.3 7.1	7.2		4.3 3.6	4.0	
					Bottom	15.2	28.4 28.4	28.4	8.3 8.3	8.3	22.6 22.4	22.5	75.6 75.7	75.7	5.2 5.2	5.2	5.2	7.2 7.1	7.2		4.0 3.5	3.8	
12-Jul-13	Sunny	Moderate	14:27	18.4	Surface	1.0	30.3 30.7	30.5	8.4 8.4	8.4	16.8 16.2	16.5	98.2 97.7	98.0	6.7 6.7	6.7	6.2	5.0 5.7	5.4	10.5	2.4 2.3	2.4	2.3
					Middle	9.2	29.3 29.3	29.3	8.4 8.4	8.4	18.4 18.5	18.5	81.6 79.4	80.5	5.6 5.5	5.6		13.3 12.6	13.0		2.5 2.0	2.3	
					Bottom	17.4	28.1 28.5	28.3	8.3 8.3	8.3	24.7 21.3	23.0	74.5 71.4	73.0	5.1 4.9	5.0	5.0	13.1 12.8	13.0		2.4 2.2	2.3	
15-Jul-13	Rainy	Moderate	16:34	16.5	Surface	1.0	28.9 28.9	28.9	8.2 8.2	8.2	16.3 16.4	16.3	82.9 83.4	83.2	5.8 5.9	5.9	5.7	3.2 3.3	3.3	3.4	3.5 3.8	3.7	3.6
					Middle	8.3	28.8 28.8	28.8	8.2 8.2	8.2	19.0 19.2	19.1	77.2 78.0	77.6	5.4 5.4	5.4		3.1 3.0	3.1		3.1 3.6	3.4	
					Bottom	15.5	28.5 28.5	28.5	8.2 8.2	8.2	21.4 20.8	21.1	77.9 77.8	77.9	5.4 5.4	5.4	5.4	3.8 3.8	3.8		3.6 3.9	3.8	
17-Jul-13	Fine	Moderate	08:42	18.1	Surface	1.0	27.9 27.9	27.9	8.0 8.0	8.0	21.4 21.9	21.6	85.7 87.3	86.5	6.0 6.1	6.0	5.8	4.0 4.3	4.2	6.2	3.1 4.4	3.8	3.9
					Middle	9.1	27.4 27.4	27.4	8.0 8.0	8.0	24.2 24.1	24.1	79.7 80.5	80.1	5.4 5.5	5.5		7.6 7.3	7.5		4.2 3.9	4.1	
					Bottom	17.1	27.2 27.2	27.2	8.0 8.0	8.0	25.0 24.9	24.9	73.2 71.4	72.3	5.1 5.0	5.0	5.0	7.2 6.8	7.0		3.8 3.6	3.7	
19-Jul-13	Sunny	Moderate	10:44	18.3	Surface	1.0	28.1 28.1	28.1	8.0 8.0	8.0	21.8 21.8	21.8	82.1 82.1	82.1	5.7 5.7	5.7	5.5	2.9 2.9	2.9	3.8	3.2 2.2	2.7	2.9
					Middle	9.2	27.3 27.2	27.2	8.0 8.0	8.0	24.3 24.7	24.5	76.0 77.6	76.8	5.2 5.3	5.3		4.4 4.3	4.4		2.3 2.8	2.6	
					Bottom	17.3	27.1 27.2	27.1	8.0 8.0	8.0	26.4 25.6	26.0	70.5 70.0	70.3	4.8 4.9	4.8	4.8	4.2 4.0	4.1		3.4 3.1	3.3	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Sunny	Moderate	13:29	16.3	Surface	1.0	27.9 27.9	27.9	8.0 8.0	8.0	23.9 23.9	23.9	75.5 73.3	74.4	5.2 5.0	5.1	5.1	7.6 7.5	7.6	7.5	9.1 8.6	8.9	8.2
					Middle	8.2	27.7 27.6	27.6	8.0 8.0	8.0	25.1 25.9	25.5	73.0 72.9	73.0	5.0 5.0	5.0		7.6 7.7	7.7		8.1 8.3	8.2	
					Bottom	15.3	27.7 27.6	27.6	8.0 8.0	8.0	26.6 26.2	26.4	71.6 71.9	71.8	4.9 4.9	4.9	4.9	7.3 7.3	7.3		7.6 7.6	7.6	
24-Jul-13	Cloudy	Moderate	13:13	19.0	Surface	1.0	27.9 27.9	27.9	8.0 8.0	8.0	24.0 24.0	24.0	80.5 79.6	80.1	5.5 5.5	5.5	5.6	9.2 8.6	8.9	12.2	10.6 9.0	9.8	10.3
					Middle	9.5	27.9 27.9	27.9	8.1 8.1	8.1	26.8 26.4	26.6	82.8 82.4	82.6	5.6 5.6	5.6		13.1 13.5	13.3		11.1 10.1	10.6	
					Bottom	18.0	27.9 27.9	27.9	8.1 8.1	8.1	27.3 27.2	27.2	81.9 81.7	81.8	5.5 5.5	5.5	5.5	14.6 14.2	14.4		11.2 10.0	10.6	
26-Jul-13	Cloudy	Moderate	14:43	16.2	Surface	1.0	27.7 27.7	27.7	8.0 8.0	8.0	22.5 22.5	22.5	83.3 83.7	83.5	5.7 5.8	5.7	5.7	8.6 8.5	8.6	9.2	9.1 9.1	9.1	9.0
					Middle	8.1	27.6 27.6	27.6	8.0 8.0	8.0	24.3 24.3	24.3	82.1 82.4	82.3	5.7 5.7	5.7		9.5 9.5	9.5		9.1 9.4	9.3	
					Bottom	15.2	27.6 27.6	27.6	8.0 8.0	8.0	24.3 24.4	24.4	82.6 81.2	81.9	5.7 5.6	5.6	5.6	9.6 9.4	9.5		8.8 8.4	8.6	
29-Jul-13	Sunny	Moderate	16:38	16.4	Surface	1.0	29.2 29.2	29.2	8.0 8.0	8.0	15.4 16.0	15.7	81.0 79.5	80.3	5.7 5.6	5.7	5.5	8.7 8.4	8.6	8.6	3.7 3.3	3.5	4.1
					Middle	8.2	27.8 27.9	27.8	7.9 7.9	7.9	22.1 21.5	21.8	76.4 72.9	74.7	5.3 5.1	5.2		8.8 8.5	8.7		4.8 3.1	4.0	
					Bottom	15.4	27.8 27.8	27.8	7.9 7.9	7.9	22.2 22.1	22.1	72.8 71.4	72.1	5.1 5.0	5.0	5.0	8.4 8.5	8.5		5.2 4.3	4.8	
31-Jul-13	Fine	Moderate	08:58	18.1	Surface	1.0	29.4 29.4	29.4	8.1 8.1	8.1	14.7 14.8	14.8	93.2 92.5	92.9	6.6 6.5	6.5	5.8	4.3 4.2	4.3	6.3	3.7 3.3	3.5	3.6
					Middle	9.1	27.7 27.8	27.8	8.0 8.0	8.0	25.7 25.3	25.5	75.3 73.8	74.6	5.1 5.0	5.1		5.5 5.2	5.4		4.0 4.2	4.1	
					Bottom	17.1	27.7 27.6	27.7	8.0 8.0	8.0	26.5 26.6	26.6	70.7 69.9	70.3	4.9 4.8	4.8	4.8	9.3 8.9	9.1		3.2 3.3	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
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Rainy	Rough	12:41	18.6	Surface	1.0	29.7 29.7	29.7	8.4 8.4	8.4	15.3 15.3	15.3	101.7 102.2	102.0	7.1 7.1	7.1	6.6	4.6 4.9	4.8	5.7	4.6 3.4	4.0	5.0
					Middle	9.3	28.5 28.4	28.5	8.3 8.3	8.3	15.4 15.8	15.6	85.7 85.4	85.6	6.0 6.0	6.0		5.8 5.6	5.7		4.7 4.5	4.6	
					Bottom	17.6	27.3 27.4	27.4	8.2 8.2	8.2	20.9 20.8	20.8	75.4 76.3	75.9	5.2 5.3	5.3	5.3	6.7 6.3	6.5		6.8 5.9	6.4	
3-Jul-13	Sunny	Moderate	15:50	16.8	Surface	1.0	30.1 30.3	30.2	8.3 8.3	8.3	5.6 5.1	5.3	86.2 86.3	86.3	6.3 6.3	6.3	5.9	10.1 10.3	10.2	10.4	5.8 6.6	6.2	6.7
					Middle	8.4	29.1 29.2	29.1	8.2 8.1	8.2	12.7 13.1	12.9	75.9 77.6	76.8	5.4 5.5	5.5		10.4 10.2	10.3		7.3 7.4	7.4	
					Bottom	15.8	28.8 28.9	28.9	8.1 8.1	8.1	17.5 17.3	17.4	77.5 79.9	78.7	5.4 5.6	5.5	5.5	10.5 10.9	10.7		6.9 6.3	6.6	
5-Jul-13	Sunny	Moderate	17:47	18.3	Surface	1.0	30.5 30.4	30.4	8.6 8.6	8.6	8.5 8.8	8.7	117.0 116.0	116.5	8.4 8.3	8.3	7.7	9.4 9.3	9.4	11.4	5.9 5.7	5.8	6.5
					Middle	9.2	30.1 30.0	30.0	8.5 8.5	8.5	10.1 10.4	10.3	100.1 100.0	100.1	7.2 7.1	7.1		12.4 12.2	12.3		7.3 7.4	7.4	
					Bottom	17.3	28.9 28.9	28.9	8.2 8.2	8.2	20.1 19.4	19.8	91.2 85.5	88.4	6.3 5.9	6.1	6.1	12.5 12.6	12.6		6.3 6.5	6.4	
8-Jul-13	Fine	Moderate	19:14	16.6	Surface	1.0	29.5 29.5	29.5	8.4 8.4	8.4	11.1 11.2	11.2	102.5 101.3	101.9	7.4 7.3	7.3	7.1	8.8 9.1	9.0	10.9	6.7 6.7	6.7	6.9
					Middle	8.3	29.3 29.3	29.3	8.4 8.3	8.3	12.9 12.9	12.9	99.4 94.9	97.2	7.1 6.8	6.9		11.4 10.7	11.1		7.3 7.3	7.3	
					Bottom	15.6	29.2 29.1	29.2	8.3 8.3	8.3	13.6 14.4	14.0	96.6 93.8	95.2	6.9 6.7	6.8	6.8	12.9 12.1	12.5		6.5 7.0	6.8	
10-Jul-13	Sunny	Moderate	08:28	17.3	Surface	1.0	29.0 28.9	28.9	8.3 8.3	8.3	14.8 15.0	14.9	79.6 77.2	78.4	5.6 5.5	5.6	5.5	8.5 8.6	8.6	8.7	5.4 5.7	5.6	5.7
					Middle	8.7	28.5 28.1	28.3	8.3 8.2	8.2	20.1 20.7	20.4	76.0 78.2	77.1	5.3 5.4	5.3		8.6 8.8	8.7		5.3 6.0	5.7	
					Bottom	16.3	28.2 28.1	28.2	8.2 8.2	8.2	22.1 22.1	22.1	72.5 72.2	72.4	5.1 5.0	5.0	5.0	8.9 8.9	8.9		6.0 5.3	5.7	
12-Jul-13	Sunny	Moderate	09:29	18.6	Surface	1.0	29.1 29.1	29.1	8.3 8.3	8.3	18.4 18.3	18.4	89.3 88.0	88.7	6.2 6.1	6.2	5.7	7.3 8.1	7.7	11.1	5.3 5.2	5.3	5.5
					Middle	9.3	28.0 28.1	28.0	8.2 8.2	8.2	22.6 22.3	22.4	73.9 74.4	74.2	5.1 5.1	5.1		11.5 11.3	11.4		5.4 5.0	5.2	
					Bottom	17.6	27.9 27.9	27.9	8.2 8.2	8.2	23.0 22.9	23.0	71.9 71.3	71.6	5.0 4.9	5.0	5.0	13.5 14.6	14.1		6.3 5.4	5.9	
15-Jul-13	Rainy	Moderate	11:49	17.2	Surface	1.0	29.1 29.2	29.1	8.3 8.3	8.3	17.9 17.9	17.9	88.8 83.5	86.2	6.2 5.8	6.0	5.8	7.8 7.6	7.7	8.1	2.4 3.8	3.1	3.2
					Middle	8.6	28.9 28.3	28.6	8.3 8.3	8.3	19.2 19.2	19.2	82.8 79.7	81.3	5.7 5.5	5.6		8.1 8.3	8.2		2.5 3.4	3.0	
					Bottom	16.2	28.2 28.0	28.1	8.2 8.2	8.2	22.8 22.8	22.8	75.4 76.3	75.9	5.2 5.3	5.2	5.2	8.5 8.2	8.4		3.7 3.4	3.6	
17-Jul-13	Sunny	Moderate	13:12	17.8	Surface	1.0	28.4 28.4	28.4	8.0 8.0	8.0	19.4 19.3	19.3	94.9 94.4	94.7	6.6 6.6	6.6	5.9	3.3 3.5	3.4	7.5	3.1 2.5	2.8	3.0
					Middle	8.9	27.4 27.4	27.4	7.9 7.9	7.9	24.0 24.1	24.0	73.6 76.6	75.1	5.1 5.3	5.2		7.0 7.3	7.2		2.8 2.8	2.8	
					Bottom	16.8	27.4 27.4	27.4	7.9 7.9	7.9	24.3 24.1	24.2	68.9 70.0	69.5	4.8 4.8	4.8	4.8	11.5 12.2	11.9		3.7 3.2	3.5	
19-Jul-13	Fine	Moderate	16:22	17.7	Surface	1.0	28.7 28.7	28.7	8.1 8.1	8.1	20.0 20.1	20.1	92.7 92.1	92.4	6.4 6.4	6.4	5.7	3.9 4.3	4.1	5.4	3.6 3.1	3.4	3.6
					Middle	8.9	27.4 27.4	27.4	8.0 8.0	8.0	23.9 23.8	23.8	72.6 72.7	72.7	5.0 5.0	5.0		5.7 5.5	5.6		4.1 3.4	3.8	
					Bottom	16.7	27.4 27.3	27.3	8.0 8.0	8.0	24.1 24.4	24.2	77.3 75.9	76.6	5.4 5.3	5.3	5.3	6.8 6.2	6.5		3.5 3.8	3.7	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Sunny	Moderate	18:53	17.1	Surface	1.0	28.4 28.4	28.4	8.0 8.0	8.0	20.8 20.8	20.8	73.2 73.1	73.2	5.1 5.1	5.1	5.1	5.9 6.1	6.0	6.4	7.5 6.1	6.8	7.3
					Middle	8.6	28.3 28.2	28.3	8.0 8.0	8.0	21.3 21.4	21.4	73.0 72.7	72.9	5.1 5.0	5.0		6.5 6.3	6.4		6.4 7.8	7.1	
					Bottom	16.1	28.3 28.2	28.3	7.9 7.9	7.9	21.2 21.5	21.4	72.2 71.6	71.9	5.0 5.0	5.0	5.0	6.5 6.8	6.7		7.0 8.8	7.9	
24-Jul-13	Rainy	Moderate	08:00	18.9	Surface	1.0	27.9 27.9	27.9	7.9 7.9	7.9	23.2 23.2	23.2	77.4 77.5	77.5	5.3 5.4	5.3	5.2	11.3 11.5	11.4	12.5	11.1 11.5	11.3	11.0
					Middle	9.5	27.6 27.7	27.7	7.9 7.9	7.9	25.5 25.2	25.4	73.6 73.4	73.5	5.0 5.0	5.0		11.9 12.3	12.1		10.9 11.4	11.2	
					Bottom	17.9	27.6 27.6	27.6	7.9 7.9	7.9	25.6 25.7	25.7	72.5 72.8	72.7	5.0 5.0	5.0	5.0	14.2 13.8	14.0		10.5 10.5	10.5	
26-Jul-13	Cloudy	Moderate	09:47	17.3	Surface	1.0	27.7 27.7	27.7	8.0 8.0	8.0	22.8 22.8	22.8	76.4 75.8	76.1	5.3 5.3	5.3	5.3	11.3 11.2	11.3	11.8	6.8 6.9	6.9	7.1
					Middle	8.7	27.6 27.6	27.6	8.0 8.0	8.0	24.3 24.3	24.3	75.2 75.5	75.4	5.2 5.2	5.2		11.8 11.5	11.7		6.4 6.9	6.7	
					Bottom	16.3	27.6 27.6	27.6	7.9 8.0	7.9	24.4 24.4	24.4	75.0 74.7	74.9	5.2 5.1	5.2	5.2	12.1 12.4	12.3		8.3 7.2	7.8	
29-Jul-13	Sunny	Moderate	12:37	17.2	Surface	1.0	28.8 29.0	28.9	7.9 7.9	7.9	15.9 15.6	15.7	79.2 80.3	79.8	5.6 5.7	5.6	5.5	7.3 7.1	7.2	7.3	5.5 4.4	5.0	4.9
					Middle	8.6	28.0 28.0	28.0	7.8 7.8	7.8	20.6 20.3	20.5	76.1 76.1	76.1	5.3 5.3	5.3		7.4 7.3	7.4		4.0 5.3	4.7	
					Bottom	16.2	28.1 28.1	28.1	7.8 7.8	7.8	20.9 20.6	20.7	78.4 77.9	78.2	5.5 5.4	5.4	5.4	7.1 7.2	7.2		4.8 5.0	4.9	
31-Jul-13	Sunny	Moderate	13:57	17.8	Surface	1.0	30.0 30.0	30.0	8.1 8.1	8.1	15.7 15.8	15.8	99.8 96.5	98.2	6.9 6.7	6.8	6.0	8.0 7.8	7.9	7.5	2.9 3.0	3.0	3.2
					Middle	8.9	27.9 27.9	27.9	7.9 7.9	7.9	24.0 24.0	24.0	75.8 75.6	75.7	5.2 5.2	5.2		6.2 6.1	6.2		4.0 2.7	3.4	
					Bottom	16.8	27.8 27.9	27.9	7.9 7.9	7.9	25.0 25.0	25.0	70.4 69.4	69.9	4.8 4.8	4.8	4.8	8.2 8.5	8.4		3.4 3.2	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
*** Cancelled due to adverse weather condition and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CS(Mf)5 - -Tide

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-Jul-13	Rainy	Rough	07:32	12.2	Surface	1.0	29.3 29.2	29.3	8.4 8.4	8.4	14.0 14.0	14.0	89.4 88.5	89.0	6.3 6.3	6.3	5.9	5.4 5.4	5.4	6.2	5.5 5.1	5.3	5.6
					Middle	6.1	28.5 28.5	28.5	8.3 8.3	8.3	19.6 19.6	19.6	77.8 78.9	78.4	5.4 5.5	5.5		5.7 6.1	5.9		4.9 5.3	5.1	
					Bottom	11.2	26.9 26.9	26.9	8.3 8.3	8.3	26.8 27.0	26.9	78.9 78.1	78.5	5.4 5.4	5.4	5.4	7.3 7.2	7.3		6.1 6.9	6.5	
3-Jul-13	Sunny	Moderate	09:22	13.1	Surface	1.0	29.3 29.3	29.3	8.3 8.3	8.3	11.3 11.5	11.4	92.0 91.6	91.8	6.6 6.6	6.6	6.5	4.5 4.4	4.5	3.9	6.8 6.6	6.7	5.8
					Middle	6.6	28.8 28.8	28.8	8.3 8.3	8.3	16.0 15.9	16.0	90.1 90.4	90.3	6.4 6.4	6.4		4.0 3.9	4.0		5.2 5.4	5.3	
					Bottom	12.1	28.4 28.4	28.4	8.2 8.3	8.3	21.0 20.8	20.9	88.3 89.9	89.1	6.1 6.2	6.2	6.2	3.2 3.1	3.2		5.5 5.3	5.4	
5-Jul-13	Sunny	Moderate	11:11	12.4	Surface	1.0	29.8 29.9	29.9	8.4 8.4	8.4	11.4 11.2	11.3	95.3 96.4	95.9	6.8 6.9	6.8	6.1	5.8 5.8	5.8	6.1	3.8 4.1	4.0	5.0
					Middle	6.2	29.4 29.4	29.4	8.4 8.4	8.4	13.5 13.6	13.5	75.1 74.7	74.9	5.3 5.3	5.3		5.9 5.8	5.9		5.7 6.7	6.2	
					Bottom	11.4	26.0 25.6	25.8	8.3 8.3	8.3	27.7 29.9	28.8	73.0 69.5	71.3	5.1 4.8	4.9	4.9	6.5 6.5	6.5		5.3 4.5	4.9	
8-Jul-13	Sunny	Moderate	12:53	12.0	Surface	1.0	29.3 29.1	29.2	8.5 8.5	8.5	13.9 14.0	13.9	89.3 84.0	86.7	6.3 6.0	6.2	5.8	6.6 6.6	6.6	7.1	4.4 5.8	5.1	5.4
					Middle	6.0	28.4 28.4	28.4	8.4 8.4	8.4	17.7 17.6	17.7	75.5 75.7	75.6	5.3 5.3	5.3		7.3 7.3	7.3		5.2 5.6	5.4	
					Bottom	11.0	26.5 26.6	26.6	8.3 8.3	8.3	26.4 26.0	26.2	71.6 72.1	71.9	5.0 5.0	5.0	5.0	7.5 7.5	7.5		6.0 5.4	5.7	
10-Jul-13	Sunny	Moderate	14:20	13.6	Surface	1.0	29.2 29.2	29.2	8.1 8.1	8.1	17.5 17.5	17.5	84.3 83.5	83.9	5.9 5.8	5.8	5.5	4.6 4.4	4.5	5.5	3.5 4.5	4.0	4.6
					Middle	6.8	27.9 27.9	27.9	8.0 8.0	8.0	21.0 20.9	21.0	73.1 72.2	72.7	5.1 5.0	5.1		5.9 5.5	5.7		4.1 5.9	5.0	
					Bottom	12.6	27.6 27.4	27.5	8.0 8.0	8.0	22.7 23.4	23.1	71.0 71.4	71.2	5.0 5.0	5.0	5.0	6.2 6.6	6.4		5.1 4.2	4.7	
12-Jul-13	Sunny	Moderate	15:41	12.2	Surface	1.0	29.6 29.7	29.6	8.1 8.2	8.2	18.1 18.3	18.2	88.3 90.6	89.5	6.1 6.2	6.2	5.7	3.3 3.3	3.3	3.6	1.5 1.7	1.6	1.8
					Middle	6.1	28.6 28.5	28.6	8.1 8.1	8.1	21.0 21.4	21.2	74.9 73.4	74.2	5.2 5.1	5.1		3.8 3.6	3.7		1.4 1.3	1.4	
					Bottom	11.2	26.4 26.6	26.5	8.0 8.0	8.0	28.2 27.4	27.8	73.2 73.3	73.3	5.0 5.0	5.0	5.0	3.7 3.8	3.8		2.7 2.3	2.5	
15-Jul-13	Rainy	Moderate	17:01	13.8	Surface	1.0	28.7 28.7	28.7	8.2 8.2	8.2	20.3 20.3	20.3	86.3 83.3	84.8	6.0 5.8	5.9	5.6	3.2 3.3	3.3	3.0	3.5 3.4	3.5	5.3
					Middle	6.9	27.0 26.7	26.8	8.1 8.1	8.1	26.1 26.9	26.5	76.7 75.9	76.3	5.3 5.2	5.3		2.8 2.5	2.7		5.6 6.1	5.9	
					Bottom	12.8	26.4 26.7	26.5	8.1 8.1	8.1	27.8 27.1	27.5	71.4 72.5	72.0	4.9 5.0	5.0	5.0	3.0 2.9	3.0		6.6 6.4	6.5	
17-Jul-13	Fine	Moderate	07:20	12.2	Surface	1.0	27.8 27.7	27.7	8.3 8.3	8.3	21.4 21.6	21.5	75.0 74.9	75.0	5.2 5.2	5.2	5.2	3.3 3.4	3.4	3.4	3.4 3.9	3.7	5.3
					Middle	6.1	26.5 26.3	26.4	8.2 8.3	8.3	27.1 26.7	26.9	73.1 72.2	72.7	5.1 5.0	5.1		3.4 3.3	3.4		6.1 6.3	6.2	
					Bottom	11.2	25.4 25.6	25.5	8.2 8.2	8.2	30.0 29.5	29.8	68.8 70.0	69.4	4.8 4.8	4.8	4.8	3.4 3.4	3.4		6.5 5.7	6.1	
19-Jul-13	Sunny	Moderate	09:37	12.0	Surface	1.0	27.1 27.2	27.2	8.3 8.3	8.3	25.1 24.8	25.0	76.7 76.4	76.6	5.3 5.3	5.3	5.2	2.7 2.5	2.6	3.4	3.4 4.0	3.7	2.9
					Middle	6.0	27.0 27.0	27.0	8.3 8.3	8.3	25.5 25.4	25.5	72.6 73.7	73.2	5.0 5.1	5.1		3.5 3.7	3.6		3.2 2.1	2.7	
					Bottom	11.0	25.6 25.6	25.6	8.2 8.2	8.2	29.5 29.5	29.5	69.6 72.8	71.2	4.8 5.0	4.9	4.9	4.0 4.1	4.1		2.6 2.1	2.4	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CS(Mf)5 - -Tide

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-Jul-13	Sunny	Moderate	11:44	13.1	Surface	1.0	27.9 27.9	27.9	8.2 8.2	8.2	25.2 25.2	25.2	82.8 81.5	82.2	5.7 5.6	5.6	5.6	5.0 5.1	5.1	5.3	7.2 7.0	7.1	7.4
					Middle	6.6	27.3 27.3	27.3	8.3 8.2	8.2	25.8 25.7	25.7	82.3 80.2	81.3	5.6 5.4	5.5		5.2 5.4	5.3		6.8 7.5	7.2	
					Bottom	12.1	26.8 27.5	27.2	8.3 8.2	8.2	27.8 27.3	27.6	77.1 76.3	76.7	5.3 5.2	5.3	5.3	5.5 5.4	5.5		8.5 7.2	7.9	
24-Jul-13	Cloudy	Moderate	14:14	13.4	Surface	1.0	27.8 27.8	27.8	8.2 8.3	8.3	25.1 25.1	25.1	83.4 82.5	83.0	5.7 5.6	5.7	5.6	8.4 8.2	8.3	9.1	6.6 7.8	7.2	7.9
					Middle	6.7	27.7 27.8	27.8	8.3 8.2	8.3	25.7 25.7	25.7	80.9 79.8	80.4	5.5 5.4	5.5		8.8 8.9	8.9		7.8 6.2	7.0	
					Bottom	12.4	27.2 27.2	27.2	8.2 8.2	8.2	27.4 27.2	27.3	75.6 75.6	75.6	5.2 5.2	5.2	5.2	9.9 10.0	10.0		9.9 9.1	9.5	
26-Jul-13	Cloudy	Moderate	15:13	13.3	Surface	1.0	27.7 27.6	27.6	8.2 8.2	8.2	23.6 23.6	23.6	78.1 79.0	78.6	5.4 5.5	5.4	5.3	9.0 8.6	8.8	10.5	8.5 7.9	8.2	10.5
					Middle	6.7	27.4 27.4	27.4	8.2 8.2	8.2	25.3 25.3	25.3	73.3 73.8	73.6	5.0 5.1	5.1		11.6 12.0	11.8		12.0 12.0	12.0	
					Bottom	12.3	27.4 27.4	27.4	8.2 8.1	8.2	25.5 25.6	25.5	73.9 76.0	75.0	5.1 5.2	5.1	5.1	11.0 10.7	10.9		11.4 11.4	11.4	
29-Jul-13	Sunny	Moderate	17:14	13.5	Surface	1.0	29.3 29.4	29.4	8.2 8.2	8.2	17.8 19.1	18.4	88.0 89.0	88.5	6.1 6.1	6.1	6.0	2.5 2.3	2.4	2.8	3.7 4.3	4.0	4.1
					Middle	6.8	28.8 28.4	28.6	8.2 8.2	8.2	20.0 20.7	20.3	84.4 83.0	83.7	5.8 5.8	5.8		2.6 2.8	2.7		4.3 4.5	4.4	
					Bottom	12.5	27.9 27.7	27.8	8.2 8.2	8.2	23.1 24.2	23.7	81.2 80.1	80.7	5.6 5.5	5.6	5.6	3.2 3.1	3.2		3.6 3.9	3.8	
31-Jul-13	Fine	Moderate	07:55	12.2	Surface	1.0	28.9 28.8	28.9	8.3 8.3	8.3	18.5 18.5	18.5	87.0 84.9	86.0	6.1 5.9	6.0	5.6	2.1 2.2	2.2	2.3	2.3 2.4	2.4	2.8
					Middle	6.1	28.2 28.2	28.2	8.2 8.2	8.2	22.7 22.7	22.7	74.2 73.9	74.1	5.1 5.1	5.1		2.2 2.3	2.3		2.4 3.8	3.1	
					Bottom	11.2	26.5 26.5	26.5	8.2 8.2	8.2	28.9 28.9	28.9	73.2 74.0	73.6	5.0 5.1	5.0	5.0	2.3 2.3	2.3		2.4 3.2	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
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13***	Rainy	Rough	-	-	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
3-Jul-13	Sunny	Moderate	16:39	12.6	Surface	1.0	30.0 30.0	30.0	8.4 8.4	8.4	13.6 13.6	13.6	96.3 91.9	94.1	6.8 6.5	6.6	5.9	4.0 4.3	4.2	4.9	4.2 5.0	4.6	4.3
					Middle	6.3	27.9 28.1	28.0	8.2 8.2	8.2	21.5 21.0	21.3	73.4 75.0	74.2	5.1 5.2	5.2		5.0 4.5	4.8		4.6 4.1	4.4	
					Bottom	11.6	27.6 27.4	27.5	8.2 8.2	8.2	24.8 24.7	24.8	80.2 79.0	79.6	5.5 5.4	5.5	5.5	5.7 5.6	5.7		3.7 3.8	3.8	
5-Jul-13	Sunny	Moderate	18:46	12.5	Surface	1.0	30.7 30.6	30.6	8.8 8.6	8.7	11.6 11.7	11.7	126.8 122.9	124.9	8.9 8.6	8.8	7.5	6.3 6.4	6.4	8.7	6.4 6.3	6.4	6.4
					Middle	6.3	27.2 27.3	27.2	8.3 8.3	8.3	25.5 25.4	25.4	87.1 89.4	88.3	6.1 6.3	6.2		9.5 9.0	9.3		6.6 6.5	6.6	
					Bottom	11.5	25.6 25.6	25.6	8.3 8.3	8.3	29.7 29.7	29.7	73.7 75.5	74.6	5.2 5.2	5.2	5.2	10.5 10.1	10.3		6.2 6.0	6.1	
8-Jul-13	Fine	Moderate	20:16	12.4	Surface	1.0	29.2 29.2	29.2	8.5 8.5	8.5	14.9 14.9	14.9	86.7 90.6	88.7	6.1 6.4	6.3	5.9	7.0 7.2	7.1	7.4	2.3 2.1	2.2	2.7
					Middle	6.2	27.3 27.5	27.4	8.4 8.4	8.4	22.1 22.1	22.1	79.7 76.4	78.1	5.6 5.4	5.5		7.3 7.2	7.3		3.1 3.3	3.2	
					Bottom	11.4	26.8 26.8	26.8	8.4 8.3	8.3	26.7 26.7	26.7	75.1 72.8	74.0	5.2 5.1	5.2	5.2	7.8 7.8	7.8		2.9 2.4	2.7	
10-Jul-13	Sunny	Moderate	06:53	13.4	Surface	1.0	28.6 28.6	28.6	8.1 8.1	8.1	16.7 16.7	16.7	82.5 81.6	82.1	5.8 5.8	5.8	5.6	4.0 4.0	4.0	3.4	2.9 3.8	3.4	3.3
					Middle	6.7	28.3 28.3	28.3	8.1 8.1	8.1	18.6 19.2	18.9	74.5 76.1	75.3	5.2 5.3	5.3		3.2 3.2	3.2		3.1 3.1	3.1	
					Bottom	12.4	25.9 27.8	26.9	8.0 8.1	8.0	22.3 21.7	22.0	73.7 72.9	73.3	5.1 5.1	5.1	5.1	2.9 3.1	3.0		3.2 3.3	3.3	
12-Jul-13	Sunny	Moderate	08:23	12.9	Surface	1.0	28.9 28.8	28.8	8.1 8.1	8.1	18.3 18.7	18.5	78.2 78.9	78.6	5.5 5.5	5.5	5.4	2.5 2.6	2.6	2.8	3.1 3.1	3.1	3.7
					Middle	6.5	26.8 26.9	26.9	8.0 8.0	8.0	26.3 26.1	26.2	74.6 75.4	75.0	5.2 5.3	5.2		2.6 2.5	2.6		3.9 3.3	3.6	
					Bottom	11.9	26.2 26.2	26.2	8.0 8.0	8.0	28.8 28.9	28.9	71.8 73.2	72.5	4.9 5.0	5.0	5.0	3.1 3.2	3.2		4.8 3.9	4.4	
15-Jul-13	Rainy	Moderate	10:19	13.7	Surface	1.0	28.8 28.8	28.8	8.2 8.2	8.2	19.8 19.6	19.7	84.9 84.7	84.8	5.9 5.9	5.9	5.6	2.5 2.6	2.6	2.6	2.4 2.5	2.5	2.5
					Middle	6.9	26.6 27.3	27.0	8.1 8.1	8.1	26.9 25.9	26.4	78.1 76.5	77.3	5.4 5.3	5.3		2.5 2.3	2.4		2.6 2.2	2.4	
					Bottom	12.7	26.5 26.5	26.5	8.1 8.1	8.1	27.7 27.8	27.7	72.8 71.9	72.4	5.0 5.0	5.0	5.0	2.7 2.6	2.7		2.7 2.5	2.6	
17-Jul-13	Sunny	Moderate	14:41	13.0	Surface	1.0	27.5 27.5	27.5	8.3 8.4	8.4	23.5 23.5	23.5	79.3 79.9	79.6	5.5 5.5	5.5	5.4	2.3 2.3	2.3	2.4	3.7 3.9	3.8	4.4
					Middle	6.5	27.3 25.3	26.3	8.3 8.2	8.3	29.4 29.4	29.4	79.9 75.0	77.5	5.5 5.2	5.3		2.3 2.3	2.3		3.3 4.9	4.1	
					Bottom	12.0	24.9 25.2	25.0	8.2 8.2	8.2	31.4 31.1	31.3	71.4 72.4	71.9	4.9 5.0	5.0	5.0	2.5 2.5	2.5		4.9 5.8	5.4	
19-Jul-13	Fine	Moderate	17:22	12.7	Surface	1.0	27.1 27.4	27.3	8.3 8.3	8.3	25.7 25.4	25.5	75.9 77.5	76.7	5.2 5.3	5.3	5.2	3.2 3.1	3.2	3.3	3.4 2.6	3.0	3.4
					Middle	6.4	25.7 25.7	25.7	8.2 8.2	8.2	29.4 29.3	29.3	74.2 73.5	73.9	5.1 5.1	5.1		3.3 3.5	3.4		3.2 3.1	3.2	
					Bottom	11.7	25.9 25.5	25.7	8.2 8.2	8.2	29.4 29.9	29.6	69.1 71.9	70.5	4.8 5.0	4.9	4.9	3.4 3.3	3.4		4.0 4.1	4.1	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Sunny	Moderate	19:46	13.0	Surface	1.0	27.6 27.6	27.6	8.2 8.2	8.2	25.5 25.4	25.5	80.5 75.5	78.0	5.5 5.2	5.3	5.2	5.3 5.3	5.3	5.6	4.5 4.1	4.3	5.2
					Middle	6.5	26.7 26.9	26.8	8.2 8.2	8.2	27.9 27.5	27.7	76.0 74.2	75.1	5.2 5.1	5.1		5.7 5.6	5.7		5.7 5.0	5.4	
					Bottom	12.0	26.6 26.6	26.6	8.2 8.2	8.2	28.2 28.2	28.2	68.4 70.0	69.2	4.7 4.8	4.7	4.7	5.6 5.8	5.7		5.4 6.2	5.8	
24-Jul-13	Rainy	Moderate	06:24	13.6	Surface	1.0	27.7 27.7	27.7	8.2 8.2	8.2	24.4 24.4	24.4	79.3 79.0	79.2	5.4 5.4	5.4	5.3	2.8 2.7	2.8	3.6	5.8 4.4	5.1	6.5
					Middle	6.8	27.5 27.5	27.5	8.2 8.2	8.2	25.8 25.9	25.9	75.4 74.5	75.0	5.2 5.1	5.1		3.5 3.3	3.4		7.7 7.4	7.6	
					Bottom	12.6	27.1 27.1	27.1	8.2 8.2	8.2	27.2 27.2	27.2	75.0 75.3	75.2	5.1 5.2	5.1	5.1	4.5 4.6	4.6		7.0 6.4	6.7	
26-Jul-13	Cloudy	Moderate	08:14	13.7	Surface	1.0	27.5 27.5	27.5	8.2 8.2	8.2	23.4 23.3	23.4	76.8 76.8	76.8	5.3 5.3	5.3	5.2	5.4 5.7	5.6	8.2	6.3 4.9	5.6	5.3
					Middle	6.9	27.1 27.1	27.1	8.2 8.1	8.2	27.0 26.7	26.9	74.2 73.7	74.0	5.1 5.0	5.1		9.5 9.1	9.3		5.2 4.3	4.8	
					Bottom	12.7	27.1 27.1	27.1	8.1 8.2	8.2	27.0 27.2	27.1	72.3 71.6	72.0	5.0 4.9	4.9	4.9	9.9 9.3	9.6		5.1 5.7	5.4	
29-Jul-13	Sunny	Moderate	11:00	13.5	Surface	1.0	28.2 28.2	28.2	8.1 8.1	8.1	19.1 19.2	19.1	78.4 78.1	78.3	5.5 5.5	5.5	5.4	4.1 4.0	4.1	4.5	3.4 4.0	3.7	3.8
					Middle	6.8	27.9 28.0	28.0	8.1 8.1	8.1	20.8 20.8	20.8	73.6 74.2	73.9	5.1 5.2	5.2		4.5 4.7	4.6		4.3 3.4	3.9	
					Bottom	12.5	27.5 27.5	27.5	8.1 8.1	8.1	23.4 24.1	23.8	73.1 72.7	72.9	5.1 5.0	5.0	5.0	4.8 4.6	4.7		3.5 4.3	3.9	
31-Jul-13	Sunny	Moderate	15:04	12.7	Surface	1.0	29.0 29.0	29.0	8.5 8.5	8.5	21.2 21.2	21.2	108.7 106.4	107.6	7.4 7.3	7.4	6.4	2.8 2.9	2.9	4.7	4.8 4.6	4.7	5.2
					Middle	6.4	27.4 27.5	27.5	8.2 8.2	8.2	26.1 26.0	26.0	79.4 75.6	77.5	5.5 5.2	5.3		5.6 5.8	5.7		4.6 4.8	4.7	
					Bottom	11.7	25.7 25.7	25.7	8.2 8.2	8.2	31.1 31.0	31.1	71.3 71.5	71.4	4.9 4.9	4.9	4.9	5.5 5.7	5.6		7.1 5.5	6.3	

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
*** Cancelled due to adverse weather condition and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CS6 - -Tide

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-Jul-13	Rainy	Rough	07:08	9.8	Surface	1.0	29.0 29.0	29.0	8.2 8.3	8.3	14.0 14.0	14.0	93.8 94.7	94.3	6.6 6.7	6.7	6.3	4.1 4.2	4.2	4.6	3.0 4.3	3.7	4.1
					Middle	4.9	28.3 28.3	28.3	8.2 8.2	8.2	19.0 19.0	19.0	83.2 83.8	83.5	5.8 5.8	5.8		4.5 4.7	4.6		4.6 4.3	4.5	
					Bottom	8.8	27.5 27.5	27.5	8.2 8.2	8.2	22.8 23.0	22.9	80.6 80.3	80.5	5.6 5.6	5.6	5.6	4.9 5.2	5.1		3.2 4.7	4.0	
3-Jul-13	Sunny	Moderate	09:31	9.7	Surface	1.0	29.1 29.0	29.0	8.3 8.3	8.3	11.8 11.6	11.7	91.9 91.8	91.9	6.6 6.6	6.6	6.5	4.0 3.9	4.0	3.5	4.9 4.7	4.8	4.9
					Middle	4.9	28.5 28.5	28.5	8.3 8.3	8.3	19.4 19.4	19.4	90.8 90.7	90.8	6.3 6.3	6.3		3.2 3.1	3.2		4.7 4.6	4.7	
					Bottom	8.7	28.5 28.4	28.5	8.3 8.3	8.3	19.9 20.6	20.3	91.5 91.3	91.4	6.4 6.3	6.3	6.3	3.3 3.5	3.4		5.7 4.6	5.2	
5-Jul-13	Sunny	Moderate	10:56	10.1	Surface	1.0	29.3 29.4	29.4	8.3 8.3	8.3	14.2 13.6	13.9	86.6 87.8	87.2	6.1 6.2	6.2	6.0	4.2 4.0	4.1	3.7	4.1 4.7	4.4	4.6
					Middle	5.1	28.9 28.9	28.9	8.3 8.3	8.3	17.2 18.0	17.6	82.5 82.6	82.6	5.8 5.8	5.8		3.7 3.5	3.6		4.4 4.7	4.6	
					Bottom	9.1	28.6 28.4	28.5	8.3 8.3	8.3	19.3 19.9	19.6	81.5 80.4	81.0	5.7 5.6	5.6	5.6	3.3 3.2	3.3		5.0 4.7	4.9	
8-Jul-13	Sunny	Moderate	12:28	9.7	Surface	1.0	29.2 29.0	29.1	8.4 8.4	8.4	13.4 14.2	13.8	92.8 90.1	91.5	6.6 6.4	6.5	6.1	5.0 5.3	5.2	5.6	3.8 3.2	3.5	4.3
					Middle	4.9	28.2 28.2	28.2	8.3 8.3	8.3	18.3 18.7	18.5	80.7 79.6	80.2	5.7 5.6	5.6		4.2 4.6	4.4		4.6 3.8	4.2	
					Bottom	8.7	27.0 27.0	27.0	8.2 8.3	8.3	24.3 24.2	24.3	71.1 72.1	71.6	5.0 5.0	5.0	5.0	7.2 7.0	7.1		5.8 4.8	5.3	
10-Jul-13	Sunny	Moderate	15:10	9.7	Surface	1.0	29.4 29.3	29.3	8.3 8.3	8.3	17.5 17.7	17.6	80.6 79.5	80.1	5.6 5.5	5.6	5.4	4.8 4.9	4.9	5.6	4.0 3.9	4.0	3.8
					Middle	4.9	28.3 28.1	28.2	8.3 8.3	8.3	19.9 20.3	20.1	73.9 75.1	74.5	5.2 5.2	5.2		5.7 5.9	5.8		3.6 3.2	3.4	
					Bottom	8.7	28.2 27.5	27.9	8.2 8.2	8.2	23.8 24.3	24.1	75.5 74.5	75.0	5.2 5.1	5.2	5.2	6.1 6.3	6.2		4.4 3.3	3.9	
12-Jul-13	Sunny	Moderate	16:13	10.3	Surface	1.0	29.0 28.9	29.0	8.3 8.3	8.3	19.5 19.6	19.6	81.7 82.9	82.3	5.7 5.7	5.7	5.5	3.0 3.2	3.1	4.0	1.9 1.7	1.8	2.4
					Middle	5.2	28.0 28.0	28.0	8.2 8.2	8.2	22.6 22.8	22.7	75.2 78.8	77.0	5.2 5.4	5.3		4.3 4.2	4.3		2.1 2.0	2.1	
					Bottom	9.3	27.9 27.9	27.9	8.2 8.2	8.2	23.4 23.5	23.5	71.6 69.6	70.6	4.9 4.8	4.9	4.9	4.7 4.5	4.6		3.4 2.9	3.2	
15-Jul-13	Rainy	Moderate	18:12	9.8	Surface	1.0	28.6 28.6	28.6	8.3 8.3	8.3	19.9 20.0	20.0	85.8 85.4	85.6	6.0 5.9	5.9	5.7	2.4 2.3	2.4	2.3	3.5 3.4	3.5	3.6
					Middle	4.9	28.2 28.2	28.2	8.2 8.3	8.2	21.5 21.8	21.7	78.9 79.6	79.3	5.5 5.5	5.5		2.2 2.2	2.2		3.3 3.3	3.3	
					Bottom	8.8	27.6 27.6	27.6	8.1 8.2	8.2	24.1 24.1	24.1	79.0 78.7	78.9	5.4 5.4	5.4	5.4	2.2 2.3	2.3		4.0 4.2	4.1	
17-Jul-13	Fine	Moderate	06:51	9.7	Surface	1.0	27.6 27.6	27.6	8.1 8.1	8.1	22.4 22.4	22.4	92.5 91.8	92.2	6.4 6.4	6.4	6.1	2.0 2.2	2.1	2.0	3.6 3.5	3.6	3.7
					Middle	4.9	26.7 26.6	26.7	8.1 8.0	8.1	25.8 26.2	26.0	82.3 83.4	82.9	5.7 5.8	5.7		2.1 2.3	2.2		4.2 3.6	3.9	
					Bottom	8.7	26.4 26.4	26.4	8.0 8.0	8.0	26.8 26.7	26.7	69.2 69.5	69.4	4.8 4.8	4.8	4.8	1.8 1.6	1.7		3.8 3.1	3.5	
19-Jul-13	Sunny	Moderate	09:06	10.0	Surface	1.0	27.7 27.6	27.6	8.1 8.1	8.1	23.3 23.6	23.4	86.7 87.3	87.0	6.0 6.0	6.0	5.6	1.7 1.7	1.7	1.8	2.4 3.9	3.2	4.0
					Middle	5.0	26.9 26.9	26.9	8.0 8.0	8.0	25.9 25.9	25.9	73.6 74.3	74.0	5.1 5.1	5.1		2.0 1.7	1.9		3.1 4.8	4.0	
					Bottom	9.0	26.1 26.1	26.1	8.0 8.0	8.0	28.0 28.0	28.0	70.1 70.8	70.5	4.9 4.9	4.9	4.9	1.9 1.8	1.9		4.8 5.0	4.9	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CS6 - -Tide

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-Jul-13	Sunny	Moderate	11:41	10.1	Surface	1.0	27.6 27.6	27.6	8.0 8.0	8.0	25.2 25.2	25.2	74.6 74.3	74.5	5.1 5.1	5.1	5.1	2.7 2.8	2.8	3.2	3.6 3.7	3.7	3.7
					Middle	5.1	26.9 26.8	26.8	8.0 8.0	8.0	27.0 27.1	27.1	73.4 73.3	73.4	5.0 5.0	5.0		3.3 3.3	3.3		3.0 3.4	3.2	
					Bottom	9.1	26.7 26.9	26.8	8.0 8.0	8.0	27.6 27.4	27.5	69.9 70.8	70.4	4.8 4.9	4.8	4.8	3.5 3.5	3.5		3.3 4.8	4.1	
24-Jul-13	Cloudy	Moderate	14:51	8.9	Surface	1.0	27.7 27.7	27.7	8.0 8.0	8.0	25.3 25.2	25.2	84.3 85.0	84.7	6.3 6.3	6.3	6.3	3.5 3.3	3.4	3.8	6.9 5.9	6.4	7.0
					Middle	4.5	27.8 27.8	27.8	8.0 8.0	8.0	25.4 25.4	25.4	84.0 83.0	83.5	6.3 6.2	6.2		3.5 3.7	3.6		7.4 6.0	6.7	
					Bottom	7.9	27.8 27.8	27.8	8.0 8.0	8.0	25.4 25.4	25.4	81.9 83.6	82.8	6.1 6.2	6.1	6.1	4.5 4.5	4.5		8.7 7.1	7.9	
26-Jul-13	Cloudy	Moderate	16:15	9.4	Surface	1.0	27.6 27.7	27.6	8.0 8.0	8.0	23.2 23.3	23.3	77.0 79.6	78.3	5.3 5.5	5.4	5.4	4.9 4.9	4.9	5.4	5.0 6.2	5.6	6.2
					Middle	4.7	27.5 27.5	27.5	8.0 8.0	8.0	24.4 24.4	24.4	78.5 76.5	77.5	5.4 5.3	5.3		5.6 5.4	5.5		6.8 5.5	6.2	
					Bottom	8.4	27.4 27.4	27.4	8.0 8.0	8.0	25.1 24.9	25.0	75.7 77.0	76.4	5.2 5.3	5.3	5.3	5.7 5.8	5.8		7.1 6.6	6.9	
29-Jul-13	Sunny	Moderate	18:22	9.6	Surface	1.0	29.6 29.7	29.7	8.0 8.0	8.0	18.4 18.3	18.4	90.3 90.7	90.5	6.2 6.2	6.2	5.9	2.8 2.6	2.7	2.8	2.1 3.0	2.6	2.6
					Middle	4.8	28.2 28.2	28.2	8.0 8.0	8.0	20.4 20.7	20.6	78.8 79.9	79.4	5.5 5.6	5.5		2.7 2.7	2.7		2.5 2.4	2.5	
					Bottom	8.6	27.6 27.6	27.6	8.0 8.0	8.0	24.8 24.1	24.5	78.7 76.9	77.8	5.4 5.3	5.4	5.4	2.9 2.8	2.9		2.6 2.5	2.6	
31-Jul-13	Fine	Moderate	07:21	9.6	Surface	1.0	28.8 28.8	28.8	8.0 8.0	8.0	18.9 18.5	18.7	85.3 86.0	85.7	5.9 6.0	6.0	5.7	2.6 2.4	2.5	2.5	3.3 4.1	3.7	4.4
					Middle	4.8	28.1 27.9	28.0	8.0 8.0	8.0	22.2 23.3	22.7	75.9 76.5	76.2	5.2 5.3	5.3		3.0 2.8	2.9		5.2 4.4	4.8	
					Bottom	8.6	27.8 27.8	27.8	8.0 8.0	8.0	24.4 24.5	24.5	78.9 76.3	77.6	5.4 5.2	5.3	5.3	2.2 2.2	2.2		5.4 4.0	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
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13***	Rainy	Rough	-	-	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
3-Jul-13	Sunny	Moderate	17:38	9.9	Surface	1.0	30.1 30.1	30.1	8.4 8.4	8.4	12.1 12.0	12.1	93.1 92.7	92.9	6.6 6.5	6.6	6.0	4.2 4.0	4.1	3.7	4.6 4.1	4.4	4.4
					Middle	5.0	28.4 28.4	28.4	8.2 8.2	8.2	19.5 19.5	19.5	76.2 78.1	77.2	5.3 5.5	5.4		3.3 3.1	3.2		4.1 4.7	4.4	
					Bottom	8.9	27.7 27.5	27.6	8.2 8.2	8.2	23.9 24.5	24.2	79.9 76.0	78.0	5.5 5.2	5.4	5.4	3.7 3.8	3.8		4.0 4.7	4.4	
5-Jul-13	Sunny	Moderate	19:13	10.1	Surface	1.0	29.9 30.0	30.0	8.6 8.6	8.6	13.6 13.0	13.3	115.0 115.7	115.4	8.1 8.1	8.1	7.8	4.1 4.0	4.1	4.3	6.7 7.0	6.9	8.0
					Middle	5.1	29.5 29.3	29.4	8.5 8.4	8.4	15.8 17.5	16.6	105.6 105.6	105.6	7.4 7.3	7.4		4.2 4.3	4.3		7.9 8.3	8.1	
					Bottom	9.1	28.9 28.8	28.9	8.4 8.3	8.3	19.1 20.5	19.8	102.0 101.2	101.6	7.1 7.0	7.0	7.0	4.4 4.5	4.5		9.1 9.0	9.1	
8-Jul-13	Fine	Moderate	21:00	10.0	Surface	1.0	29.4 29.4	29.4	8.5 8.5	8.5	14.1 14.0	14.1	105.8 108.1	107.0	7.5 7.7	7.6	7.1	5.1 5.1	5.1	6.3	4.6 4.4	4.5	4.4
					Middle	5.0	29.2 29.2	29.2	8.4 8.4	8.4	14.7 14.7	14.7	93.7 91.9	92.8	6.6 6.5	6.6		6.0 6.6	6.3		4.1 3.9	4.0	
					Bottom	9.0	28.2 28.4	28.3	8.2 8.3	8.3	18.2 18.4	18.3	82.5 85.3	83.9	5.8 6.0	5.9	5.9	7.3 7.5	7.4		5.0 4.5	4.8	
10-Jul-13	Sunny	Moderate	06:46	10.0	Surface	1.0	28.8 28.7	28.7	8.3 8.3	8.3	16.9 16.5	16.7	77.9 77.3	77.6	5.5 5.5	5.5	5.3	2.5 2.5	2.5	2.6	4.5 4.2	4.4	4.3
					Middle	5.0	27.7 27.7	27.7	8.3 8.2	8.3	22.6 22.5	22.6	73.8 71.2	72.5	5.2 5.1	5.1		2.7 2.5	2.6		3.0 4.5	3.8	
					Bottom	9.0	26.8 26.4	26.6	8.2 8.2	8.2	26.7 27.4	27.1	72.2 69.9	71.1	5.0 5.0	5.0	5.0	2.7 2.5	2.6		4.7 4.6	4.7	
12-Jul-13	Sunny	Moderate	07:44	10.6	Surface	1.0	28.9 28.8	28.8	8.3 8.3	8.3	18.8 19.1	18.9	82.5 85.7	84.1	5.7 6.0	5.8	5.5	2.6 2.3	2.5	2.3	3.7 3.2	3.5	3.9
					Middle	5.3	28.4 28.6	28.5	8.2 8.2	8.2	21.0 20.6	20.8	72.5 73.7	73.1	5.0 5.1	5.1		1.7 1.9	1.8		4.4 4.0	4.2	
					Bottom	9.6	27.3 26.9	27.1	8.2 8.2	8.2	24.0 24.9	24.4	70.0 73.0	71.5	4.9 5.1	5.0	5.0	2.6 2.7	2.7		3.5 4.5	4.0	
15-Jul-13	Rainy	Moderate	10:16	10.1	Surface	1.0	28.9 28.9	28.9	8.3 8.3	8.3	19.3 19.3	19.3	85.2 84.9	85.1	5.9 5.9	5.9	5.6	1.7 1.6	1.7	1.7	3.0 2.3	2.7	2.7
					Middle	5.1	28.6 28.6	28.6	8.3 8.3	8.3	20.8 20.8	20.8	77.7 76.4	77.1	5.4 5.3	5.3		1.7 1.7	1.7		2.6 2.4	2.5	
					Bottom	9.1	26.8 26.6	26.7	8.2 8.2	8.2	26.5 27.0	26.8	75.4 73.8	74.6	5.2 5.1	5.1	5.1	1.6 1.6	1.6		3.0 2.6	2.8	
17-Jul-13	Sunny	Moderate	15:00	9.5	Surface	1.0	27.4 27.7	27.6	8.0 8.1	8.0	24.0 23.3	23.6	88.9 79.3	84.1	6.1 5.5	5.8	5.7	2.9 3.0	3.0	2.5	3.1 3.4	3.3	3.3
					Middle	4.8	26.0 26.1	26.1	8.0 7.8	7.9	28.1 28.0	28.1	76.3 81.7	79.0	5.3 5.7	5.5		2.5 2.3	2.4		2.9 2.5	2.7	
					Bottom	8.5	25.8 25.8	25.8	8.0 7.7	7.8	28.9 29.0	29.0	74.5 73.7	74.1	5.2 5.1	5.1	5.1	2.3 2.1	2.2		3.7 4.2	4.0	
19-Jul-13	Fine	Moderate	18:05	10.4	Surface	1.0	27.4 27.3	27.4	8.1 8.1	8.1	25.2 25.5	25.4	85.5 81.6	83.6	5.9 5.6	5.7	5.5	2.6 2.5	2.6	3.0	2.7 2.8	2.8	3.4
					Middle	5.2	26.5 26.4	26.4	8.1 8.1	8.1	27.2 27.9	27.6	73.7 76.6	75.2	5.1 5.3	5.2		2.9 3.1	3.0		2.8 3.5	3.2	
					Bottom	9.4	26.3 25.8	26.0	8.1 8.1	8.1	28.2 29.3	28.8	79.6 79.3	79.5	5.5 5.5	5.5	5.5	3.2 3.5	3.4		3.9 4.2	4.1	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Sunny	Moderate	20:42	10.0	Surface	1.0	27.3 27.3	27.3	8.0 8.0	8.0	26.7 26.6	26.7	74.3 73.6	74.0	5.1 5.0	5.1	5.1	3.1 3.2	3.2	3.6	3.4 2.6	3.0	3.8
					Middle	5.0	26.7 26.6	26.6	8.0 8.0	8.0	27.9 28.0	27.9	73.3 73.9	73.6	5.0 5.0	5.0		3.8 3.8	3.8		3.7 4.7	4.2	
					Bottom	9.0	26.7 26.5	26.6	8.0 8.0	8.0	27.8 28.2	28.0	70.6 73.7	72.2	4.8 5.1	4.9	4.9	3.7 3.6	3.7		4.8 3.7	4.3	
24-Jul-13	Rainy	Moderate	06:25	9.0	Surface	1.0	27.8 27.8	27.8	8.0 8.0	8.0	24.6 24.3	24.4	77.8 78.0	77.9	5.3 5.4	5.3	5.2	3.3 3.2	3.3	3.5	5.0 4.3	4.7	5.1
					Middle	4.5	27.5 27.6	27.6	8.0 8.0	8.0	25.9 25.9	25.9	73.5 73.6	73.6	5.0 5.0	5.0		3.2 3.3	3.3		4.7 5.0	4.9	
					Bottom	8.0	27.3 27.4	27.4	8.0 8.0	8.0	26.6 26.4	26.5	72.8 73.7	73.3	5.0 5.0	5.0	5.0	3.9 3.7	3.8		5.7 5.5	5.6	
26-Jul-13	Cloudy	Moderate	08:15	10.2	Surface	1.0	27.6 27.6	27.6	7.9 7.9	7.9	22.7 22.7	22.7	76.6 75.9	76.3	5.3 5.3	5.3	5.3	4.3 4.3	4.3	4.4	5.2 4.5	4.9	5.5
					Middle	5.1	27.6 27.6	27.6	7.9 7.9	7.9	24.5 24.6	24.5	76.0 75.5	75.8	5.2 5.2	5.2		4.5 4.4	4.5		4.8 5.5	5.2	
					Bottom	9.2	27.4 27.5	27.5	7.9 7.9	7.9	25.7 25.3	25.5	74.1 74.5	74.3	5.1 5.1	5.1	5.1	4.5 4.4	4.5		5.9 7.1	6.5	
29-Jul-13	Sunny	Moderate	10:56	10.1	Surface	1.0	28.6 28.6	28.6	7.9 7.9	7.9	18.5 18.4	18.4	80.0 80.7	80.4	5.6 5.6	5.6	5.4	3.0 3.1	3.1	3.1	2.9 3.8	3.4	3.3
					Middle	5.1	27.9 27.7	27.8	7.9 7.9	7.9	20.6 20.8	20.7	75.1 74.3	74.7	5.3 5.2	5.2		3.1 3.1	3.1		2.9 3.4	3.2	
					Bottom	9.1	27.6 27.5	27.5	7.9 7.9	7.9	25.2 25.2	25.2	77.0 77.3	77.2	5.3 5.3	5.3	5.3	2.9 3.0	3.0		2.9 3.4	3.2	
31-Jul-13	Sunny	Moderate	15:48	10.0	Surface	1.0	29.2 28.8	29.0	8.2 8.1	8.2	20.4 20.9	20.6	111.8 112.2	112.0	7.7 7.7	7.7	6.5	2.8 2.9	2.9	3.6	2.3 2.1	2.2	2.4
					Middle	5.0	27.5 27.5	27.5	8.0 8.0	8.0	24.9 25.1	25.0	76.8 77.0	76.9	5.3 5.3	5.3		3.6 3.5	3.6		2.8 2.1	2.5	
					Bottom	9.0	26.9 26.9	26.9	8.1 8.0	8.0	27.4 27.4	27.4	70.3 70.9	70.6	4.8 4.9	4.9	4.9	4.3 4.4	4.4		2.6 2.2	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
*** Cancelled due to adverse weather condition and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CSA - -Tide

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-Jul-13	Rainy	Rough	06:51	36.4	Surface	1.0	29.1 29.0	29.1	8.3 8.4	8.4	14.6 14.6	14.6	99.4 99.1	99.3	7.0 7.0	7.0	6.5	4.7 4.7	4.7	5.5	4.4 4.2	4.3	4.0
					Middle	18.2	26.7 26.7	26.7	8.3 8.3	8.3	25.4 25.3	25.3	85.1 86.0	85.6	5.9 6.0	5.9		5.7 5.3	5.5		4.0 4.0	4.0	
					Bottom	35.4	25.0 25.1	25.1	8.2 8.2	8.2	31.1 31.0	31.0	70.3 70.0	70.2	4.8 4.8	4.8	4.8	6.1 6.4	6.3		3.3 4.2	3.8	
3-Jul-13	Sunny	Moderate	09:20	34.5	Surface	1.0	29.0 29.1	29.1	8.4 8.3	8.3	10.7 10.7	10.7	90.4 90.5	90.5	6.6 6.6	6.6	5.9	2.1 2.1	2.1	2.1	5.8 5.4	5.6	5.1
					Middle	17.3	28.1 27.8	28.0	8.4 8.4	8.4	21.9 22.2	22.0	75.0 72.9	74.0	5.2 5.1	5.1		2.1 2.0	2.1		4.7 5.4	5.1	
					Bottom	33.5	25.7 25.8	25.8	8.2 8.2	8.2	30.0 30.3	30.1	75.7 73.8	74.8	5.2 5.1	5.1	5.1	2.1 2.2	2.2		4.2 5.0	4.6	
5-Jul-13	Sunny	Moderate	10:45	36.6	Surface	1.0	29.3 29.3	29.3	8.3 8.3	8.3	13.6 13.7	13.7	84.3 84.7	84.5	6.0 6.0	6.0	5.8	4.2 4.1	4.2	3.4	3.9 4.2	4.1	4.2
					Middle	18.3	28.8 28.7	28.8	8.3 8.3	8.3	17.6 17.6	17.6	80.6 80.6	80.6	5.6 5.7	5.6		3.2 3.1	3.2		5.0 4.5	4.8	
					Bottom	35.6	28.4 28.4	28.4	8.2 8.3	8.3	20.3 20.2	20.3	79.3 79.6	79.5	5.5 5.5	5.5	5.5	2.8 2.8	2.8		3.9 3.4	3.7	
8-Jul-13	Sunny	Moderate	12:12	37.3	Surface	1.0	29.3 29.2	29.3	8.4 8.4	8.4	13.7 13.3	13.5	93.9 96.9	95.4	6.7 6.9	6.8	6.1	5.5 5.4	5.5	5.7	4.0 3.7	3.9	5.1
					Middle	18.7	28.1 27.9	28.0	8.3 8.2	8.3	19.1 20.1	19.6	77.7 74.8	76.3	5.5 5.2	5.4		5.5 5.8	5.7		5.8 5.4	5.6	
					Bottom	36.3	27.2 27.4	27.3	8.2 8.0	8.1	22.7 23.5	23.1	74.5 77.3	75.9	5.2 5.4	5.3	5.3	6.1 5.9	6.0		6.0 5.7	5.9	
10-Jul-13	Sunny	Moderate	15:21	34.6	Surface	1.0	29.2 29.1	29.2	8.3 8.3	8.3	17.8 17.9	17.9	78.4 78.6	78.5	5.5 5.5	5.5	5.4	4.2 4.5	4.4	7.0	3.5 3.0	3.3	3.9
					Middle	17.3	27.4 27.5	27.5	8.2 8.2	8.2	24.4 24.3	24.3	74.0 75.6	74.8	5.1 5.3	5.2		8.1 8.6	8.4		4.2 4.1	4.2	
					Bottom	33.6	27.2 27.6	27.4	8.2 8.2	8.2	25.1 24.5	24.8	72.0 72.4	72.2	5.0 5.0	5.0	5.0	8.3 8.2	8.3		4.7 3.7	4.2	
12-Jul-13	Sunny	Moderate	16:26	36.2	Surface	1.0	29.0 29.0	29.0	8.3 8.3	8.3	19.3 19.1	19.2	92.7 90.9	91.8	6.4 6.3	6.4	6.0	2.0 1.9	2.0	2.8	1.7 1.5	1.6	1.7
					Middle	18.1	27.8 27.7	27.8	8.2 8.2	8.2	23.3 23.9	23.6	80.7 78.0	79.4	5.6 5.4	5.5		3.9 3.9	3.9		2.0 1.5	1.8	
					Bottom	35.2	27.3 27.7	27.5	8.2 8.2	8.2	25.6 24.2	24.9	70.9 71.7	71.3	4.9 5.0	4.9	4.9	2.5 2.7	2.6		1.6 1.5	1.6	
15-Jul-13	Rainy	Moderate	18:24	34.7	Surface	1.0	28.6 28.7	28.6	8.4 8.4	8.4	19.9 19.9	19.9	86.7 89.5	88.1	6.0 6.2	6.1	5.6	2.2 2.2	2.2	2.3	2.6 2.4	2.5	3.0
					Middle	17.4	27.5 27.5	27.5	8.3 8.3	8.3	24.6 24.4	24.5	74.3 73.9	74.1	5.1 5.1	5.1		2.3 2.3	2.3		3.1 3.1	3.1	
					Bottom	33.7	25.7 25.7	25.7	8.2 8.2	8.2	29.7 29.8	29.7	71.6 73.7	72.7	4.9 5.1	5.0	5.0	2.4 2.4	2.4		3.1 3.5	3.3	
17-Jul-13	Fine	Moderate	06:37	35.9	Surface	1.0	27.7 27.7	27.7	8.0 8.1	8.0	22.9 21.7	22.3	86.2 83.8	85.0	6.0 5.8	5.9	5.8	2.0 2.0	2.0	2.2	4.6 4.5	4.6	5.3
					Middle	18.0	26.3 26.4	26.4	7.9 8.0	8.0	27.2 26.8	27.0	83.5 81.7	82.6	5.8 5.7	5.7		2.3 2.2	2.3		5.4 5.4	5.4	
					Bottom	34.9	26.3 26.2	26.2	7.9 8.0	7.9	27.6 28.1	27.8	71.8 70.2	71.0	5.0 4.9	4.9	4.9	2.2 2.1	2.2		5.8 5.7	5.8	
19-Jul-13	Sunny	Moderate	08:50	36.0	Surface	1.0	27.7 27.5	27.6	8.1 8.1	8.1	23.3 23.8	23.6	84.4 86.0	85.2	5.8 6.0	5.9	5.7	1.9 1.6	1.8	2.2	3.3 4.4	3.9	3.7
					Middle	18.0	25.7 26.0	25.9	8.0 8.0	8.0	29.1 28.3	28.7	79.5 78.8	79.2	5.5 5.5	5.5		2.2 2.1	2.2		3.7 3.7	3.7	
					Bottom	35.0	25.5 25.5	25.5	8.0 8.0	8.0	29.8 30.0	29.9	72.2 72.2	72.2	5.0 5.0	5.0	5.0	2.5 2.7	2.6		3.2 3.9	3.6	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CSA - -Tide

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-Jul-13	Sunny	Moderate	11:33	34.9	Surface	1.0	27.6 27.5	27.6	8.0 8.0	8.0	25.2 25.4	25.3	74.9 74.5	74.7	5.1 5.1	5.1	5.1	2.9 2.9	2.9	3.6	5.3 4.8	5.1	4.5
					Middle	17.5	26.4 26.1	26.3	8.0 8.0	8.0	27.7 29.0	28.3	73.2 73.1	73.2	5.0 5.0	5.0		4.1 4.1	4.1		4.1 3.9	4.0	
					Bottom	33.9	26.7 26.0	26.3	8.0 8.0	8.0	28.1 29.9	29.0	69.3 70.5	69.9	4.8 4.8	4.8	4.8	3.9 3.8	3.9		4.0 4.8	4.4	
24-Jul-13	Cloudy	Moderate	15:08	36.2	Surface	1.0	27.5 27.4	27.5	8.0 8.1	8.1	25.3 25.3	25.3	83.7 83.8	83.8	6.1 6.1	6.1	6.1	2.3 2.2	2.3	3.9	6.1 5.4	5.8	6.8
					Middle	18.1	27.7 27.6	27.7	8.1 8.0	8.0	25.4 25.4	25.4	82.9 82.9	82.9	6.0 6.0	6.0		4.0 3.8	3.9		7.3 7.0	7.2	
					Bottom	35.2	27.7 27.7	27.7	8.0 8.0	8.0	25.4 25.4	25.4	82.7 82.7	82.7	6.0 6.0	6.0	6.0	5.3 5.5	5.4		6.9 7.6	7.3	
26-Jul-13	Cloudy	Moderate	16:27	34.5	Surface	1.0	27.7 27.6	27.7	8.0 8.0	8.0	23.1 23.0	23.1	77.1 75.7	76.4	5.3 5.3	5.3	5.2	4.4 4.6	4.5	4.7	7.8 6.9	7.4	7.5
					Middle	17.3	27.2 27.1	27.1	8.0 8.0	8.0	26.2 26.5	26.4	72.7 72.6	72.7	5.0 5.0	5.0		4.8 4.8	4.8		7.8 7.5	7.7	
					Bottom	33.5	27.1 27.1	27.1	8.0 8.0	8.0	27.7 27.9	27.8	73.1 73.4	73.3	5.0 5.0	5.0	5.0	4.8 5.0	4.9		7.5 7.3	7.4	
29-Jul-13	Sunny	Moderate	18:32	35.1	Surface	1.0	29.7 29.6	29.6	8.0 8.0	8.0	18.4 18.5	18.4	89.9 91.0	90.5	6.2 6.3	6.2	5.8	2.5 2.5	2.5	2.5	3.0 3.3	3.2	3.4
					Middle	17.6	27.1 27.3	27.2	8.0 8.0	8.0	26.4 25.8	26.1	75.1 81.4	78.3	5.2 5.6	5.4		2.3 2.3	2.3		3.1 4.1	3.6	
					Bottom	34.1	26.8 26.7	26.8	8.0 8.0	8.0	27.9 28.2	28.1	75.7 73.5	74.6	5.2 5.0	5.1	5.1	2.6 2.7	2.7		3.3 3.5	3.4	
31-Jul-13	Fine	Moderate	07:07	36.1	Surface	1.0	28.8 28.8	28.8	8.0 8.0	8.0	18.5 18.7	18.6	88.3 85.7	87.0	6.2 6.0	6.1	5.7	2.1 2.2	2.2	2.2	2.6 3.2	2.9	3.4
					Middle	18.1	27.7 27.7	27.7	8.0 8.0	8.0	24.7 24.9	24.8	75.3 76.1	75.7	5.2 5.2	5.2		2.1 2.1	2.1		3.4 2.6	3.0	
					Bottom	35.1	27.1 26.9	27.0	8.0 8.0	8.0	27.5 28.0	27.8	74.9 72.2	73.6	5.1 4.9	5.0	5.0	2.4 2.3	2.4		4.4 4.2	4.3	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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 (^{o}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-Jul-13***	Rainy	Rough	-	-	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
3-Jul-13	Sunny	Moderate	17:47	35.5	Surface	1.0	29.5 29.6	29.6	8.3 8.4	8.4	13.8 12.8	13.3	91.7 94.5	93.1	6.5 6.7	6.6	6.2	4.4 4.6	4.5	4.5	4.2 5.3	4.8	3.9
					Middle	17.8	27.3 27.4	27.3	8.2 8.2	8.2	25.0 24.8	24.9	81.3 80.7	81.0	5.7 5.7	5.7		4.6 4.6	4.6		3.2 3.4	3.3	
					Bottom	34.5	26.9 27.3	27.1	8.2 8.2	8.2	28.6 26.4	27.5	74.5 77.8	76.2	5.1 5.3	5.2	5.2	4.4 4.4	4.4		3.4 3.9	3.7	
5-Jul-13	Sunny	Moderate	19:25	36.5	Surface	1.0	30.2 30.2	30.2	8.6 8.6	8.6	12.5 12.5	12.5	117.1 115.6	116.4	8.2 8.1	8.2	7.7	4.3 4.3	4.3	4.6	6.0 5.0	5.5	6.1
					Middle	18.3	29.2 29.1	29.2	8.4 8.4	8.4	17.8 18.0	17.9	103.4 102.2	102.8	7.2 7.1	7.1		4.5 4.3	4.4		6.6 6.3	6.5	
					Bottom	35.5	28.6 28.5	28.5	8.3 8.3	8.3	21.1 21.2	21.1	99.9 100.7	100.3	6.9 7.0	6.9	6.9	5.1 5.2	5.2		6.5 6.3	6.4	
8-Jul-13	Fine	Moderate	21:16	38.3	Surface	1.0	29.3 29.4	29.4	8.5 8.5	8.5	13.9 14.0	13.9	101.9 104.7	103.3	7.2 7.4	7.3	6.4	5.2 5.0	5.1	6.1	3.1 3.5	3.3	3.7
					Middle	19.2	28.3 28.5	28.4	8.3 8.3	8.3	19.2 17.2	18.2	75.8 78.5	77.2	5.3 5.5	5.4		5.6 5.7	5.7		4.0 4.2	4.1	
					Bottom	37.3	28.1 27.6	27.8	8.2 8.2	8.2	19.8 21.7	20.7	75.4 76.1	75.8	5.3 5.3	5.3	5.3	7.3 7.7	7.5		3.0 4.2	3.6	
10-Jul-13	Sunny	Moderate	06:37	36.8	Surface	1.0	28.7 28.7	28.7	8.2 8.2	8.2	16.6 17.4	17.0	79.7 79.2	79.5	5.6 5.6	5.6	5.5	5.2 5.0	5.1	4.2	5.4 5.5	5.5	5.3
					Middle	18.4	26.2 26.2	26.2	8.2 8.2	8.2	28.0 28.0	28.0	74.0 75.0	74.5	5.2 5.3	5.3		3.9 3.7	3.8		6.1 4.5	5.3	
					Bottom	35.8	25.9 26.0	25.9	8.2 8.2	8.2	29.0 29.0	29.0	71.0 73.8	72.4	5.0 5.2	5.1	5.1	3.7 3.8	3.8		4.6 5.8	5.2	
12-Jul-13	Sunny	Moderate	07:33	38.3	Surface	1.0	28.8 28.8	28.8	8.3 8.3	8.3	19.0 18.9	19.0	80.5 82.3	81.4	5.6 5.7	5.7	5.5	3.0 3.1	3.1	2.6	4.6 4.0	4.3	4.2
					Middle	19.2	28.2 27.9	28.1	8.2 8.2	8.2	22.1 22.2	22.2	76.9 75.5	76.2	5.3 5.2	5.3		2.3 2.2	2.3		3.7 3.9	3.8	
					Bottom	37.3	27.1 27.1	27.1	8.2 8.2	8.2	24.9 25.3	25.1	69.9 71.1	70.5	4.8 4.9	4.9	4.9	2.5 2.4	2.5		4.1 5.1	4.6	
15-Jul-13	Rainy	Moderate	10:08	35.5	Surface	1.0	28.9 28.9	28.9	8.3 8.3	8.3	19.2 19.2	19.2	87.2 86.0	86.6	6.0 6.0	6.0	5.7	1.5 1.5	1.5	1.6	2.4 2.6	2.5	2.5
					Middle	17.8	26.4 26.3	26.4	8.2 8.2	8.2	27.6 27.8	27.7	76.6 77.2	76.9	5.3 5.4	5.3		1.5 1.5	1.5		2.3 2.5	2.4	
					Bottom	34.5	26.0 26.4	26.2	8.2 8.2	8.2	29.0 28.3	28.6	70.8 72.4	71.6	4.9 5.0	4.9	4.9	1.9 1.9	1.9		2.6 2.5	2.6	
17-Jul-13	Sunny	Moderate	15:11	36.3	Surface	1.0	27.7 27.8	27.8	8.1 8.1	8.1	23.3 23.1	23.2	97.7 99.2	98.5	6.7 6.9	6.8	6.0	2.1 2.1	2.1	2.1	2.9 3.5	3.2	4.2
					Middle	18.2	25.8 25.9	25.8	8.0 8.0	8.0	28.8 28.6	28.7	74.0 73.8	73.9	5.1 5.1	5.1		2.2 2.0	2.1		4.1 5.1	4.6	
					Bottom	35.3	25.8 25.8	25.8	8.0 8.0	8.0	28.9 28.8	28.9	77.2 77.3	77.3	5.3 5.4	5.3	5.3	2.2 2.1	2.2		4.7 4.7	4.7	
19-Jul-13	Fine	Moderate	18:20	35.8	Surface	1.0	27.4 27.4	27.4	8.1 8.1	8.1	25.3 25.3	25.3	84.4 85.6	85.0	5.8 5.9	5.8	5.5	2.1 2.0	2.1	2.7	2.9 2.4	2.7	3.1
					Middle	17.9	25.8 26.3	26.1	8.0 8.1	8.1	29.3 27.8	28.5	77.0 73.4	75.2	5.3 5.1	5.2		3.0 2.8	2.9		3.0 2.8	2.9	
					Bottom	34.8	26.3 25.9	26.1	8.1 8.1	8.1	28.0 29.5	28.8	74.6 74.4	74.5	5.1 5.1	5.1	5.1	2.8 3.1	3.0		4.0 3.4	3.7	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Sunny	Moderate	20:50	36.0	Surface	1.0	27.3 27.3	27.3	8.0 8.0	8.0	26.7 26.5	26.6	73.4 73.5	73.5	5.0 5.0	5.0	5.0	4.4 4.2	4.3	4.4	3.5 3.8	3.7	4.7
					Middle	18.0	26.5 26.6	26.6	8.0 8.0	8.0	28.1 27.9	28.0	73.2 73.3	73.3	5.0 5.0	5.0		4.3 4.3	4.3		3.7 4.8	4.3	
					Bottom	35.0	26.5 26.7	26.6	8.0 8.0	8.0	28.2 28.1	28.1	69.7 69.3	69.5	4.8 4.8	4.8	4.8	4.4 4.5	4.5		5.6 6.6	6.1	
24-Jul-13	Rainy	Moderate	06:11	37.1	Surface	1.0	27.8 27.8	27.8	8.0 8.0	8.0	24.5 24.4	24.5	78.1 78.8	78.5	5.4 5.4	5.4	5.2	3.4 3.2	3.3	4.1	3.2 2.6	2.9	3.4
					Middle	18.6	27.3 27.4	27.3	7.9 8.0	8.0	27.0 26.4	26.7	73.6 73.7	73.7	5.0 5.0	5.0		4.4 4.3	4.4		3.5 4.1	3.8	
					Bottom	36.1	27.2 27.3	27.2	7.9 8.0	7.9	27.4 26.9	27.2	71.7 72.7	72.2	4.9 5.0	4.9	4.9	4.5 4.7	4.6		3.6 3.6	3.6	
26-Jul-13	Cloudy	Moderate	08:08	36.5	Surface	1.0	27.6 27.6	27.6	7.9 7.9	7.9	22.8 22.7	22.8	75.8 75.8	75.8	5.3 5.3	5.3	5.2	4.7 4.9	4.8	5.7	5.3 4.7	5.0	5.2
					Middle	18.3	27.3 27.3	27.3	7.9 7.9	7.9	26.0 26.0	26.0	73.1 73.0	73.1	5.1 5.1	5.1		5.5 5.8	5.7		5.5 5.2	5.4	
					Bottom	35.5	27.2 27.1	27.2	7.9 7.9	7.9	26.4 27.9	27.2	70.3 71.9	71.1	4.8 4.9	4.9	4.9	6.5 6.4	6.5		4.7 5.9	5.3	
29-Jul-13	Sunny	Moderate	10:47	36.4	Surface	1.0	28.9 28.8	28.8	7.9 8.0	7.9	18.4 18.3	18.3	83.0 81.6	82.3	5.8 5.7	5.7	5.5	2.5 2.5	2.5	3.1	4.2 3.8	4.0	3.6
					Middle	18.2	27.1 27.3	27.2	8.0 8.0	8.0	26.1 25.3	25.7	73.2 73.8	73.5	5.2 5.2	5.2		3.3 3.1	3.2		3.0 3.6	3.3	
					Bottom	35.4	27.1 27.1	27.1	7.9 7.9	7.9	27.3 27.5	27.4	71.2 73.8	72.5	4.9 5.0	4.9	4.9	3.7 3.7	3.7		3.3 3.4	3.4	
31-Jul-13	Sunny	Moderate	16:03	36.9	Surface	1.0	29.1 29.2	29.2	8.2 8.2	8.2	20.4 20.4	20.4	105.2 111.9	108.6	7.2 7.7	7.4	6.3	3.1 3.0	3.1	4.5	1.8 2.0	1.9	1.9
					Middle	18.5	26.8 27.1	26.9	8.0 8.0	8.0	27.7 27.0	27.3	74.6 75.3	75.0	5.1 5.2	5.1		5.1 5.1	5.1		1.7 1.8	1.8	
					Bottom	35.9	26.7 26.5	26.6	8.0 8.0	8.0	28.0 28.6	28.3	71.0 70.9	71.0	4.9 4.9	4.9	4.9	5.1 5.2	5.2		1.9 1.9	1.9	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Rainy	Rough	08:45	3.2	Surface	1.0	29.6 29.6	29.6	8.5 8.5	8.5	16.2 16.2	16.2	112.8 112.5	112.7	7.9 7.8	7.9	7.9	8.4 8.5	8.5	8.8	9.4 9.2	9.3	9.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	29.6 29.6	29.6	8.5 8.5	8.5	16.2 16.2	16.2	111.7 111.4	111.6	7.8 7.8	7.8	7.8	9.1 8.9	9.0		10.2 10.1	10.2	
3-Jul-13	Sunny	Moderate	10:30	3.1	Surface	1.0	29.3 29.2	29.3	8.3 8.3	8.3	13.8 13.9	13.9	102.5 102.1	102.3	7.3 7.2	7.3	7.3	10.0 9.3	9.7	10.3	12.2 11.0	11.6	11.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.1	29.2 29.0	29.1	8.3 8.3	8.3	15.1 14.7	14.9	101.9 101.0	101.5	7.2 7.2	7.2	7.2	10.7 11.0	10.9		11.4 11.4	11.4	
5-Jul-13	Sunny	Moderate	12:18	3.3	Surface	1.0	30.9 30.7	30.8	8.6 8.6	8.6	12.2 12.5	12.4	122.7 121.6	122.2	8.5 8.5	8.5	8.5	10.1 10.2	10.2	10.2	9.5 10.5	10.0	10.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	30.2 30.0	30.1	8.6 8.5	8.5	14.4 16.0	15.2	108.6 109.4	109.0	7.6 7.6	7.6	7.6	10.2 10.1	10.2		9.5 10.6	10.1	
8-Jul-13	Sunny	Moderate	14:04	3.2	Surface	1.0	29.2 29.2	29.2	8.5 8.5	8.5	15.3 15.3	15.3	97.1 95.8	96.5	6.9 6.8	6.8	6.8	13.4 13.8	13.6	13.6	10.4 9.4	9.9	9.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	29.0 29.0	29.0	8.5 8.5	8.5	15.9 16.0	16.0	94.6 94.5	94.6	6.7 6.7	6.7	6.7	13.4 13.7	13.6		9.4 9.2	9.3	
10-Jul-13	Sunny	Moderate	13:01	3.3	Surface	1.0	29.3 29.2	29.3	8.1 8.1	8.1	17.3 17.8	17.6	89.7 88.4	89.1	6.2 6.1	6.2	6.2	11.0 10.7	10.9	11.6	8.5 7.4	8.0	8.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	29.3 29.1	29.2	8.1 8.1	8.1	17.5 18.2	17.8	89.6 88.5	89.1	6.2 6.2	6.2	6.2	12.9 11.5	12.2		7.7 8.5	8.1	
12-Jul-13	Sunny	Moderate	14:18	3.1	Surface	1.0	29.7 29.6	29.7	8.1 8.2	8.2	19.0 19.0	19.0	94.6 96.1	95.4	6.5 6.6	6.5	6.5	6.3 6.3	6.3	6.3	8.0 8.6	8.3	8.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.1	29.5 29.5	29.5	8.1 8.1	8.1	19.5 19.4	19.4	96.0 95.2	95.6	6.6 6.5	6.5	6.5	6.3 6.2	6.3		8.7 7.7	8.2	
15-Jul-13	Rainy	Moderate	15:58	3.3	Surface	1.0	29.1 29.1	29.1	8.2 8.2	8.2	19.7 20.0	19.9	100.1 96.7	98.4	6.9 6.7	6.8	6.8	8.0 8.7	8.4	7.9	5.3 5.7	5.5	5.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	29.0 29.0	29.0	8.2 8.2	8.2	20.2 20.1	20.1	97.7 98.6	98.2	6.7 6.8	6.8	6.8	7.6 6.9	7.3		6.1 5.9	6.0	
17-Jul-13	Fine	Moderate	08:31	3.0	Surface	1.0	28.0 28.0	28.0	8.3 8.3	8.3	21.0 21.2	21.1	73.5 74.2	73.9	5.1 5.2	5.1	5.1	10.1 10.5	10.3	10.5	4.8 6.2	5.5	7.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.0	27.8 28.0	27.9	8.2 8.2	8.2	22.4 22.2	22.3	72.1 72.7	72.4	5.0 5.0	5.0	5.0	10.8 10.6	10.7		9.5 9.6	9.6	
19-Jul-13	Sunny	Moderate	10:47	3.1	Surface	1.0	27.9 27.9	27.9	8.3 8.3	8.3	23.7 23.7	23.7	78.7 78.9	78.8	5.4 5.4	5.4	5.4	10.4 10.5	10.5	10.7	6.5 6.6	6.6	6.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.1	27.5 27.6	27.6	8.2 8.2	8.2	24.4 24.2	24.3	78.1 78.2	78.2	5.4 5.4	5.4	5.4	10.9 10.7	10.8		5.4 6.9	6.2	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Sunny	Moderate	12:49	3.3	Surface	1.0	28.3 28.3	28.3	8.2 8.2	8.2	23.7 23.6	23.7	92.2 97.1	94.7	6.3 6.6	6.4	6.4	6.3 6.0	6.2	6.3	6.6 6.2	6.4	6.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	27.8 28.3	28.0	8.2 8.2	8.2	25.8 25.0	25.4	92.4 90.3	91.4	6.3 6.2	6.2	6.2	6.2 6.6	6.4		5.3 5.9	5.6	
24-Jul-13	Cloudy	Moderate	13:07	3.2	Surface	1.0	27.7 27.7	27.7	8.2 8.1	8.2	24.0 24.0	24.0	81.1 80.8	81.0	5.6 5.6	5.6	5.6	4.8 4.7	4.8	5.2	7.4 6.2	6.8	6.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	27.8 27.7	27.7	8.2 8.1	8.1	24.2 24.2	24.2	81.1 81.2	81.2	5.6 5.6	5.6	5.6	5.6 5.4	5.5		7.7 6.2	7.0	
26-Jul-13	Cloudy	Moderate	14:12	3.3	Surface	1.0	27.4 27.4	27.4	8.2 8.2	8.2	23.5 23.5	23.5	85.8 84.7	85.3	6.0 5.9	5.9	5.9	11.3 10.6	11.0	12.9	8.5 9.6	9.1	9.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	27.3 27.3	27.3	8.2 8.2	8.2	23.5 23.5	23.5	87.6 84.8	86.2	6.1 5.9	6.0	6.0	14.7 14.9	14.8		9.9 9.3	9.6	
29-Jul-13	Sunny	Moderate	16:09	3.4	Surface	1.0	28.9 29.0	29.0	8.2 8.2	8.2	19.8 20.0	19.9	91.5 91.6	91.6	6.3 6.3	6.3	6.3	13.3 13.2	13.3	14.1	3.5 4.8	4.2	4.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	28.9 28.8	28.9	8.2 8.2	8.2	20.1 20.1	20.1	91.7 91.1	91.4	6.3 6.3	6.3	6.3	15.0 14.7	14.9		3.4 4.2	3.8	
31-Jul-13	Fine	Moderate	08:58	3.2	Surface	1.0	29.4 29.4	29.4	8.3 8.3	8.3	17.3 17.3	17.3	96.9 97.1	97.0	6.7 6.7	6.7	6.7	3.5 3.5	3.5	3.6	5.2 4.0	4.6	4.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	29.4 29.4	29.4	8.3 8.3	8.3	19.8 19.5	19.7	97.8 97.1	97.5	6.7 6.7	6.7	6.7	3.6 3.5	3.6		5.1 4.6	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
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Rainy	Rough	12:37	3.4	Surface	1.0	29.8 29.9	29.9	8.5 8.5	8.5	17.0 17.0	17.0	119.1 117.4	118.3	8.2 8.1	8.2	8.2	9.4 9.3	9.4	9.6	10.9 10.7	10.8	11.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	29.8 29.8	29.8	8.5 8.5	8.5	17.0 17.0	17.0	118.7 114.0	116.4	8.2 7.9	8.0	8.0	9.7 9.7	9.7		11.4 11.6	11.5	
3-Jul-13	Sunny	Moderate	15:25	3.2	Surface	1.0	30.2 29.9	30.1	8.6 8.6	8.6	14.7 14.8	14.7	129.3 128.2	128.8	9.0 9.0	9.0	9.0	11.3 11.1	11.2	13.3	8.4 8.1	8.3	8.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	29.6 29.6	29.6	8.5 8.5	8.5	15.0 15.1	15.0	120.8 121.1	121.0	8.5 8.5	8.5	8.5	15.7 14.8	15.3		9.4 8.5	9.0	
5-Jul-13	Sunny	Moderate	17:33	3.1	Surface	1.0	32.1 32.0	32.1	8.6 8.6	8.6	11.9 11.9	11.9	145.5 138.2	141.9	9.9 9.4	9.6	9.6	10.3 10.5	10.4	10.4	8.6 8.9	8.8	8.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.1	31.8 31.3	31.5	8.6 8.5	8.6	12.1 12.3	12.2	140.0 131.3	135.7	9.6 9.1	9.3	9.3	10.2 10.5	10.4		8.8 8.7	8.8	
8-Jul-13	Fine	Moderate	19:02	2.8	Surface	1.0	29.7 29.7	29.7	8.6 8.6	8.6	14.7 14.8	14.8	106.6 108.8	107.7	7.5 7.6	7.5	7.5	16.4 16.6	16.5	16.6	16.8 17.7	17.3	13.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	1.8	29.3 29.6	29.5	8.6 8.6	8.6	15.6 15.2	15.4	104.4 107.3	105.9	7.3 7.5	7.4	7.4	16.5 16.6	16.6		9.7 8.6	9.2	
10-Jul-13	Sunny	Moderate	08:00	3.3	Surface	1.0	29.0 29.0	29.0	8.1 8.1	8.1	15.8 15.8	15.8	88.7 89.7	89.2	6.3 6.3	6.3	6.3	5.8 5.8	5.8	5.9	3.8 5.2	4.5	4.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	29.0 29.0	29.0	8.1 8.1	8.1	15.9 15.9	15.9	91.7 89.1	90.4	6.5 6.3	6.4	6.4	6.0 5.9	6.0		5.3 5.1	5.2	
12-Jul-13	Sunny	Moderate	09:28	3.1	Surface	1.0	29.1 29.1	29.1	8.1 8.1	8.1	18.1 17.9	18.0	85.2 86.2	85.7	5.9 6.0	6.0	6.0	3.8 3.7	3.8	3.7	3.2 3.1	3.2	2.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.1	29.1 29.1	29.1	8.1 8.1	8.1	18.3 18.3	18.3	87.5 84.9	86.2	6.1 5.9	6.0	6.0	3.6 3.6	3.6		2.2 2.4	2.3	
15-Jul-13	Rainy	Moderate	11:19	3.3	Surface	1.0	29.2 29.2	29.2	8.2 8.2	8.2	19.6 19.6	19.6	104.6 104.3	104.5	7.2 7.2	7.2	7.2	4.6 5.0	4.8	5.3	3.1 3.2	3.2	3.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	29.2 29.1	29.2	8.2 8.2	8.2	19.6 19.6	19.6	104.4 103.9	104.2	7.2 7.2	7.2	7.2	5.7 5.6	5.7		4.0 3.5	3.8	
17-Jul-13	Sunny	Moderate	12:57	3.1	Surface	1.0	28.4 28.4	28.4	8.5 8.5	8.5	20.9 20.9	20.9	118.2 117.5	117.9	8.2 8.1	8.2	8.2	4.9 5.0	5.0	5.1	5.1 5.0	5.1	5.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.1	28.4 28.4	28.4	8.5 8.5	8.5	21.0 20.9	21.0	114.3 117.8	116.1	7.9 8.2	8.0	8.0	5.2 5.1	5.2		5.4 6.9	6.2	
19-Jul-13	Fine	Moderate	16:09	3.0	Surface	1.0	28.4 28.4	28.4	8.5 8.5	8.5	24.4 24.4	24.4	114.4 111.9	113.2	7.8 7.6	7.7	7.7	11.4 11.5	11.5	11.5	12.4 11.1	11.8	12.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.0	28.4 28.4	28.4	8.5 8.5	8.5	24.4 24.4	24.4	113.7 108.2	111.0	7.7 7.3	7.5	7.5	11.5 11.4	11.5		12.7 13.6	13.2	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Sunny	Moderate	18:47	2.9	Surface	1.0	28.2 28.2	28.2	8.2 8.2	8.2	24.8 24.8	24.8	88.5 91.3	89.9	6.0 6.2	6.1	6.1	17.8 17.5	17.7	17.7	18.6 20.1	19.4	19.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	1.9	28.2 28.2	28.2	8.2 8.2	8.2	24.8 24.8	24.8	89.8 88.0	88.9	6.1 6.0	6.0	6.0	17.7 17.7	17.7		19.5 20.7	20.1	
24-Jul-13	Rainy	Moderate	07:33	3.3	Surface	1.0	27.9 27.9	27.9	8.2 8.2	8.2	24.0 24.0	24.0	78.3 78.2	78.3	5.4 5.4	5.4	5.4	5.8 5.4	5.6	6.0	6.4 6.6	6.5	6.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	28.0 28.0	28.0	8.2 8.2	8.2	24.4 24.4	24.4	78.2 78.3	78.3	5.3 5.4	5.3	5.3	6.5 6.2	6.4		6.3 6.0	6.2	
26-Jul-13	Cloudy	Moderate	09:15	3.2	Surface	1.0	27.3 27.3	27.3	8.2 8.2	8.2	23.7 23.7	23.7	85.9 84.9	85.4	6.0 5.9	5.9	5.9	9.6 8.8	9.2	9.3	8.4 9.2	8.8	10.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	27.3 27.3	27.3	8.2 8.1	8.1	23.8 23.8	23.8	84.8 87.2	86.0	5.9 6.1	6.0	6.0	9.2 9.6	9.4		11.5 12.4	12.0	
29-Jul-13	Sunny	Moderate	12:17	3.4	Surface	1.0	28.7 28.7	28.7	8.2 8.2	8.2	19.3 19.6	19.4	89.7 89.4	89.6	6.2 6.2	6.2	6.2	9.9 10.1	10.0	10.8	4.1 4.8	4.5	4.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	28.7 28.7	28.7	8.2 8.2	8.2	19.8 19.5	19.7	90.7 89.4	90.1	6.3 6.2	6.2	6.2	11.7 11.4	11.6		3.4 4.3	3.9	
31-Jul-13	Sunny	Moderate	13:51	3.2	Surface	1.0	30.0 30.1	30.0	8.7 8.7	8.7	17.6 17.7	17.6	142.9 141.8	142.4	9.8 9.7	9.8	9.8	9.5 9.6	9.6	9.7	5.9 6.1	6.0	6.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	29.9 29.9	29.9	8.5 8.5	8.5	18.1 18.1	18.1	133.3 127.1	130.2	9.1 8.7	8.9	8.9	9.8 9.7	9.8		7.5 6.3	6.9	

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
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Rainy	Rough	08:29	3.6	Surface	1.0	29.4 29.4	29.4	8.4 8.4	8.4	16.3 16.3	16.3	103.2 105.0	104.1	7.2 7.3	7.3	7.3	8.9 8.4	8.7	8.6	9.4 8.6	9.0	9.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	29.1 29.2	29.2	8.4 8.4	8.4	16.8 16.4	16.6	100.2 101.3	100.8	7.0 7.1	7.0	7.0	8.6 8.4	8.5		10.6 9.7	10.2	
3-Jul-13	Sunny	Moderate	10:19	3.6	Surface	1.0	29.0 28.9	29.0	8.3 8.3	8.3	14.9 15.0	14.9	98.8 95.3	97.1	7.0 6.8	6.9	6.9	9.5 8.6	9.1	10.2	12.3 12.1	12.2	16.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	28.6 28.9	28.7	8.3 8.3	8.3	16.1 15.4	15.7	94.5 97.2	95.9	6.7 6.9	6.8	6.8	11.1 11.4	11.3		19.8 19.7	19.8	
5-Jul-13	Sunny	Moderate	12:04	3.7	Surface	1.0	30.4 30.3	30.3	8.6 8.6	8.6	11.9 11.8	11.9	116.9 118.4	117.7	8.2 8.4	8.3	8.3	9.2 9.6	9.4	9.6	9.0 9.6	9.3	9.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	29.8 29.8	29.8	8.5 8.5	8.5	14.7 15.0	14.9	110.9 110.6	110.8	7.8 7.7	7.7	7.7	9.9 9.6	9.8		8.6 9.2	8.9	
8-Jul-13	Sunny	Moderate	13:51	3.8	Surface	1.0	29.5 29.3	29.4	8.5 8.5	8.5	14.6 14.9	14.8	87.5 86.1	86.8	6.2 6.1	6.1	6.1	11.4 11.6	11.5	11.5	7.4 7.2	7.3	7.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	29.0 29.0	29.0	8.4 8.4	8.4	16.9 17.1	17.0	81.7 77.7	79.7	5.7 5.4	5.6	5.6	11.4 11.5	11.5		8.3 7.5	7.9	
10-Jul-13	Sunny	Moderate	13:14	3.6	Surface	1.0	29.0 29.1	29.1	8.1 8.1	8.1	17.2 17.0	17.1	83.7 82.2	83.0	5.9 5.8	5.8	5.8	10.3 9.8	10.1	11.3	4.9 3.9	4.4	7.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	29.0 28.8	28.9	8.1 8.0	8.1	17.5 19.0	18.3	85.0 85.5	85.3	5.9 5.9	5.9	5.9	12.1 12.9	12.5		10.3 9.8	10.1	
12-Jul-13	Sunny	Moderate	14:32	3.7	Surface	1.0	29.5 29.5	29.5	8.2 8.2	8.2	18.8 18.8	18.8	95.4 94.7	95.1	6.6 6.5	6.5	6.5	5.0 4.9	5.0	5.0	4.0 4.3	4.2	4.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	29.2 29.2	29.2	8.1 8.1	8.1	19.8 19.6	19.7	95.1 95.6	95.4	6.5 6.6	6.6	6.6	4.8 4.9	4.9		4.2 4.0	4.1	
15-Jul-13	Rainy	Moderate	16:12	3.6	Surface	1.0	28.9 29.0	29.0	8.2 8.2	8.2	19.7 19.8	19.8	98.5 93.7	96.1	6.8 6.5	6.6	6.6	6.0 6.4	6.2	6.8	6.2 5.4	5.8	6.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	29.0 29.0	29.0	8.2 8.2	8.2	19.8 20.1	20.0	97.2 93.1	95.2	6.7 6.4	6.6	6.6	7.2 7.3	7.3		6.4 6.4	6.4	
17-Jul-13	Fine	Moderate	08:16	3.7	Surface	1.0	27.9 28.0	28.0	8.3 8.3	8.3	20.6 20.6	20.6	82.5 82.6	82.6	5.8 5.8	5.8	5.8	5.7 5.6	5.7	5.8	4.3 3.3	3.8	4.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	27.8 27.7	27.8	8.2 8.2	8.2	22.6 22.6	22.6	78.8 74.7	76.8	5.5 5.2	5.3	5.3	5.7 5.8	5.8		4.7 6.4	5.6	
19-Jul-13	Sunny	Moderate	10:35	3.7	Surface	1.0	27.6 27.6	27.6	8.3 8.3	8.3	24.0 24.0	24.0	87.5 86.5	87.0	6.0 6.0	6.0	6.0	6.2 6.4	6.3	6.4	3.1 3.9	3.5	4.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	27.4 27.3	27.4	8.3 8.3	8.3	24.5 24.8	24.6	87.6 86.6	87.1	6.1 6.0	6.0	6.0	6.5 6.4	6.5		5.2 5.1	5.2	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Sunny	Moderate	12:36	3.6	Surface	1.0	28.2 28.2	28.2	8.3 8.3	8.3	24.3 24.3	24.3	97.6 90.4	94.0	6.7 6.2	6.4	6.4	6.4 6.4	6.4	6.6	7.3 7.2	7.3	8.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	28.2 27.9	28.0	8.3 8.3	8.3	24.6 25.3	24.9	89.6 90.7	90.2	6.1 6.2	6.2	6.2	6.8 6.6	6.7		9.1 8.1	8.6	
24-Jul-13	Cloudy	Moderate	13:23	3.3	Surface	1.0	27.8 27.8	27.8	8.1 8.2	8.2	23.8 23.8	23.8	78.4 77.8	78.1	5.4 5.4	5.4	5.4	4.9 4.8	4.9	5.3	5.1 5.8	5.5	5.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	27.7 27.7	27.7	8.2 8.1	8.1	24.0 23.9	23.9	77.3 77.4	77.4	5.3 5.3	5.3	5.3	5.6 5.8	5.7		6.6 5.1	5.9	
26-Jul-13	Cloudy	Moderate	14:27	3.4	Surface	1.0	27.5 27.4	27.5	8.2 8.2	8.2	23.3 23.3	23.3	83.0 84.7	83.9	5.8 5.9	5.8	5.8	16.8 17.5	17.2	19.1	16.3 17.9	17.1	19.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	27.5 27.5	27.5	8.1 8.2	8.2	23.6 23.7	23.6	86.4 83.5	85.0	6.0 5.8	5.9	5.9	20.6 21.2	20.9		22.1 20.4	21.3	
29-Jul-13	Sunny	Moderate	16:22	3.4	Surface	1.0	28.8 28.8	28.8	8.2 8.2	8.2	19.3 19.3	19.3	91.1 90.9	91.0	6.3 6.3	6.3	6.3	8.3 8.5	8.4	11.3	3.8 4.0	3.9	4.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	28.5 28.6	28.6	8.2 8.2	8.2	19.9 19.6	19.8	89.6 90.1	89.9	6.2 6.3	6.2	6.2	14.3 14.1	14.2		4.2 4.7	4.5	
31-Jul-13	Fine	Moderate	08:45	3.6	Surface	1.0	29.2 29.2	29.2	8.3 8.3	8.3	17.4 17.5	17.4	89.2 90.8	90.0	6.2 6.3	6.3	6.3	8.2 8.3	8.3	8.6	3.3 3.3	3.3	3.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	29.0 29.1	29.1	8.2 8.2	8.2	19.7 19.7	19.7	87.9 84.9	86.4	6.1 5.9	6.0	6.0	8.9 8.9	8.9		3.7 3.9	3.8	

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
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Rainy	Rough	12:51	3.6	Surface	1.0	29.5 29.5	29.5	8.5 8.5	8.5	16.9 16.9	16.9	117.0 115.4	116.2	8.1 8.0	8.1	8.1	5.7 5.7	5.7	6.1	5.8 6.0	5.9	5.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	29.4 29.5	29.5	8.5 8.5	8.5	17.0 16.9	17.0	111.9 116.5	114.2	7.8 8.1	7.9	7.9	6.4 6.6	6.5		5.4 5.5	5.5	
3-Jul-13	Sunny	Moderate	15:42	3.5	Surface	1.0	29.8 29.6	29.7	8.4 8.5	8.4	13.4 14.1	13.8	112.8 109.3	111.1	8.0 7.7	7.8	7.8	9.5 9.2	9.4	11.6	9.5 8.7	9.1	11.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	29.5 29.5	29.5	8.5 8.4	8.5	14.4 14.5	14.4	105.5 111.6	108.6	7.4 7.9	7.6	7.6	13.3 14.1	13.7		13.2 12.6	12.9	
5-Jul-13	Sunny	Moderate	17:47	3.5	Surface	1.0	31.0 31.0	31.0	8.6 8.5	8.5	12.0 12.0	12.0	142.7 141.0	141.9	9.7 9.6	9.7	9.7	11.4 11.5	11.5	12.5	8.0 7.4	7.7	7.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	30.7 30.5	30.6	8.5 8.4	8.5	13.1 13.6	13.3	146.2 137.4	141.8	10.0 9.4	9.7	9.7	13.4 13.6	13.5		6.7 6.9	6.8	
8-Jul-13	Fine	Moderate	19:20	3.5	Surface	1.0	29.6 29.6	29.6	8.6 8.6	8.6	15.1 15.2	15.2	106.4 103.0	104.7	7.5 7.2	7.3	7.3	7.4 7.6	7.5	7.6	6.2 6.8	6.5	6.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	29.3 29.3	29.3	8.5 8.5	8.5	16.2 16.2	16.2	98.8 96.8	97.8	6.9 6.8	6.8	6.8	7.7 7.5	7.6		6.4 7.0	6.7	
10-Jul-13	Sunny	Moderate	07:46	3.5	Surface	1.0	29.0 29.0	29.0	8.0 8.0	8.0	17.3 17.5	17.4	85.7 82.9	84.3	6.0 5.8	5.9	5.9	10.6 10.8	10.7	11.2	6.0 6.4	6.2	7.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	29.0 29.0	29.0	8.0 8.0	8.0	17.5 17.6	17.5	88.6 83.6	86.1	6.2 5.8	6.0	6.0	11.6 11.5	11.6		7.8 8.0	7.9	
12-Jul-13	Sunny	Moderate	09:15	3.8	Surface	1.0	28.9 28.9	28.9	8.0 8.1	8.1	18.5 18.5	18.5	78.7 79.4	79.1	5.5 5.5	5.5	5.5	4.7 4.8	4.8	5.0	6.0 5.7	5.9	6.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	28.9 28.9	28.9	8.0 8.0	8.0	19.7 19.8	19.7	78.9 80.1	79.5	5.5 5.5	5.5	5.5	5.1 5.1	5.1		6.5 6.3	6.4	
15-Jul-13	Rainy	Moderate	11:07	3.7	Surface	1.0	29.0 29.0	29.0	8.2 8.2	8.2	19.6 19.6	19.6	89.9 91.1	90.5	6.2 6.3	6.2	6.2	4.0 4.2	4.1	5.1	3.6 4.5	4.1	4.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	28.9 28.9	28.9	8.1 8.1	8.1	20.0 20.3	20.2	89.7 88.3	89.0	6.2 6.1	6.1	6.1	5.9 6.3	6.1		5.0 5.2	5.1	
17-Jul-13	Sunny	Moderate	13:17	3.6	Surface	1.0	28.4 28.4	28.4	8.4 8.4	8.4	20.9 21.0	21.0	95.3 95.7	95.5	6.6 6.6	6.6	6.6	3.6 3.7	3.7	4.5	2.9 3.5	3.2	3.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	28.1 28.0	28.1	8.3 8.3	8.3	22.1 22.3	22.2	84.0 88.7	86.4	5.8 6.1	6.0	6.0	5.2 5.2	5.2		4.0 3.3	3.7	
19-Jul-13	Fine	Moderate	16:27	3.6	Surface	1.0	27.9 28.0	28.0	8.4 8.4	8.4	24.3 24.2	24.2	99.3 100.2	99.8	6.8 6.9	6.8	6.8	9.6 9.3	9.5	9.6	2.2 2.4	2.3	2.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	27.8 27.8	27.8	8.4 8.4	8.4	24.8 24.7	24.8	99.0 98.6	98.8	6.8 6.8	6.8	6.8	9.9 9.4	9.7		2.8 2.1	2.5	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Sunny	Moderate	19:07	3.6	Surface	1.0	28.4 28.3	28.3	8.3 8.3	8.3	24.5 24.7	24.6	95.9 92.9	94.4	6.5 6.3	6.4	6.4	7.0 7.4	7.2	7.3	5.7 4.6	5.2	5.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	28.2 28.3	28.3	8.3 8.3	8.3	24.9 24.9	24.9	92.1 94.5	93.3	6.3 6.4	6.3	6.3	7.4 7.2	7.3		6.0 7.2	6.6	
24-Jul-13	Rainy	Moderate	07:17	3.6	Surface	1.0	27.9 27.9	27.9	8.2 8.2	8.2	23.8 23.8	23.8	75.3 75.6	75.5	5.2 5.2	5.2	5.2	6.6 6.8	6.7	7.3	6.2 5.5	5.9	6.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	27.9 27.9	27.9	8.2 8.2	8.2	24.2 24.2	24.2	75.7 75.1	75.4	5.2 5.2	5.2	5.2	7.8 7.8	7.8		7.7 6.6	7.2	
26-Jul-13	Cloudy	Moderate	09:02	3.5	Surface	1.0	27.5 27.5	27.5	8.2 8.2	8.2	22.4 22.5	22.4	81.6 82.0	81.8	5.7 5.7	5.7	5.7	7.6 8.2	7.9	8.5	4.1 3.7	3.9	4.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	27.5 27.5	27.5	8.1 8.2	8.2	23.6 23.5	23.6	81.9 81.6	81.8	5.7 5.7	5.7	5.7	8.9 9.3	9.1		4.7 3.3	4.0	
29-Jul-13	Sunny	Moderate	12:03	3.5	Surface	1.0	28.2 28.2	28.2	8.1 8.1	8.1	19.4 19.3	19.4	82.2 82.0	82.1	5.8 5.7	5.8	5.8	12.0 11.8	11.9	12.7	4.6 5.4	5.0	4.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	28.2 28.2	28.2	8.1 8.1	8.1	20.7 20.6	20.6	81.3 81.0	81.2	5.7 5.6	5.6	5.6	13.6 13.3	13.5		4.3 5.0	4.7	
31-Jul-13	Sunny	Moderate	14:06	3.7	Surface	1.0	30.0 30.1	30.0	8.6 8.7	8.6	18.5 18.5	18.5	132.9 132.4	132.7	9.1 9.0	9.1	9.1	8.3 8.1	8.2	8.4	6.1 7.3	6.7	6.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	29.5 29.5	29.5	8.4 8.4	8.4	19.7 20.2	19.9	118.2 127.4	122.8	8.1 8.7	8.4	8.4	8.6 8.5	8.6		7.1 5.9	6.5	

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
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Rainy	Rough	07:55	11.0	Surface	1.0	28.9 29.0	29.0	8.3 8.3	8.3	16.1 16.1	16.1	96.7 95.9	96.3	6.8 6.7	6.8	6.1	7.7 7.5	7.6	8.3	4.4 4.0	4.2	5.1
					Middle	5.5	28.0 28.0	28.0	8.2 8.2	8.2	21.9 21.9	21.9	78.0 79.8	78.9	5.4 5.5	5.4		8.3 8.4	8.4		4.9 4.6	4.8	
					Bottom	10.0	26.3 26.3	26.3	8.1 8.1	8.1	27.5 27.3	27.4	71.7 71.8	71.8	4.9 4.9	4.9	4.9	9.0 8.9	9.0		5.6 6.9	6.3	
3-Jul-13	Sunny	Moderate	10:28	10.1	Surface	1.0	29.2 29.3	29.2	8.3 8.3	8.3	10.2 10.2	10.2	85.3 86.0	85.7	6.2 6.3	6.2	5.9	8.3 8.2	8.3	8.5	3.6 2.9	3.3	3.2
					Middle	5.1	28.9 28.5	28.7	8.2 8.2	8.2	17.1 18.1	17.6	75.1 77.5	76.3	5.3 5.7	5.5		8.6 8.4	8.5		2.9 3.2	3.1	
					Bottom	9.1	27.5 27.5	27.5	8.1 8.1	8.1	24.6 24.6	24.6	70.9 74.9	72.9	5.0 5.2	5.1	5.1	8.6 8.6	8.6		3.0 3.5	3.3	
5-Jul-13	Sunny	Moderate	12:05	11.6	Surface	1.0	29.8 30.0	29.9	8.3 8.4	8.3	11.6 10.0	10.8	91.4 92.1	91.8	6.5 6.6	6.5	6.2	5.9 6.0	6.0	7.2	3.8 3.9	3.9	4.1
					Middle	5.8	29.5 29.5	29.5	8.2 8.2	8.2	14.0 14.0	14.0	82.4 81.3	81.9	5.8 5.7	5.8		6.7 6.9	6.8		4.6 3.9	4.3	
					Bottom	10.6	29.2 28.7	28.9	8.2 8.2	8.2	16.1 16.9	16.5	78.6 78.9	78.8	5.5 5.4	5.5	5.5	8.6 8.8	8.7		4.5 3.8	4.2	
8-Jul-13	Sunny	Moderate	13:29	10.3	Surface	1.0	29.1 29.2	29.1	8.4 8.5	8.5	13.5 13.3	13.4	94.7 95.3	95.0	6.8 6.8	6.8	6.2	7.9 7.5	7.7	9.9	6.9 6.0	6.5	6.1
					Middle	5.2	28.8 28.8	28.8	8.3 8.3	8.3	16.0 15.4	15.7	78.0 77.5	77.8	5.5 5.5	5.5		10.2 9.6	9.9		6.7 6.0	6.4	
					Bottom	9.3	26.7 27.1	26.9	8.2 8.2	8.2	24.2 23.5	23.8	73.5 72.1	72.8	5.2 5.1	5.1	5.1	12.1 12.0	12.1		5.2 5.4	5.3	
10-Jul-13	Sunny	Moderate	14:23	11.0	Surface	1.0	29.7 29.7	29.7	8.4 8.4	8.4	14.9 15.0	14.9	92.8 95.3	94.1	6.5 6.7	6.6	6.0	6.5 6.5	6.5	10.8	4.2 3.2	3.7	6.2
					Middle	5.5	28.6 28.4	28.5	8.3 8.3	8.3	20.9 21.5	21.2	76.9 77.7	77.3	5.4 5.5	5.4		12.4 12.5	12.5		5.5 6.5	6.0	
					Bottom	10.0	27.6 27.6	27.6	8.2 8.2	8.2	23.7 23.4	23.6	70.8 72.1	71.5	4.9 5.0	4.9	4.9	13.2 13.3	13.3		8.4 9.2	8.8	
12-Jul-13	Sunny	Moderate	15:10	10.0	Surface	1.0	30.1 30.2	30.2	8.5 8.5	8.5	16.8 16.7	16.7	102.5 100.3	101.4	7.1 6.9	7.0	6.1	6.5 7.0	6.8	10.0	3.6 4.1	3.9	4.0
					Middle	5.0	28.3 28.0	28.2	8.2 8.2	8.2	22.4 23.3	22.8	73.8 76.1	75.0	5.1 5.2	5.2		9.8 9.5	9.7		4.4 3.2	3.8	
					Bottom	9.0	27.5 27.1	27.3	8.2 8.2	8.2	24.7 26.0	25.4	69.3 69.2	69.3	4.8 4.8	4.8	4.8	13.2 13.7	13.5		4.2 4.5	4.4	
15-Jul-13	Rainy	Moderate	17:21	10.1	Surface	1.0	28.9 28.9	28.9	8.3 8.3	8.3	18.0 18.0	18.0	82.6 82.2	82.4	5.8 5.7	5.7	5.5	3.1 3.0	3.1	4.7	2.7 2.7	2.7	2.7
					Middle	5.1	28.3 28.3	28.3	8.3 8.3	8.3	21.5 21.5	21.5	74.9 74.9	74.9	5.2 5.2	5.2		4.3 4.5	4.4		2.1 2.8	2.5	
					Bottom	9.1	27.4 27.7	27.5	8.2 8.2	8.2	25.1 24.6	24.9	71.1 74.4	72.8	4.9 5.1	5.0	5.0	6.5 6.6	6.6		3.0 2.6	2.8	
17-Jul-13	Fine	Moderate	07:52	10.2	Surface	1.0	28.0 27.9	27.9	8.0 8.0	8.0	20.3 20.5	20.4	82.6 83.1	82.9	5.8 5.8	5.8	5.6	3.8 4.0	3.9	7.5	3.7 2.9	3.3	3.2
					Middle	5.1	27.4 27.7	27.6	8.0 8.0	8.0	23.4 22.4	22.9	76.0 75.5	75.8	5.3 5.3	5.3		7.7 7.3	7.5		3.3 2.9	3.1	
					Bottom	9.2	26.3 26.4	26.3	8.0 8.0	8.0	27.8 27.6	27.7	72.6 71.9	72.3	5.0 5.0	5.0	5.0	11.4 10.9	11.2		3.0 3.2	3.1	
19-Jul-13	Sunny	Moderate	10:00	10.6	Surface	1.0	27.8 27.8	27.8	8.1 8.1	8.1	22.1 22.2	22.2	90.3 88.7	89.5	6.3 6.2	6.2	6.0	2.2 2.2	2.2	2.5	2.4 2.3	2.4	2.6
					Middle	5.3	27.6 27.6	27.6	8.0 8.0	8.0	22.9 22.9	22.9	83.6 82.5	83.1	5.8 5.7	5.8		2.7 2.7	2.7		2.2 3.0	2.6	
					Bottom	9.6	27.5 27.5	27.5	8.0 8.0	8.0	23.0 23.1	23.1	83.0 84.1	83.6	5.8 5.8	5.8	5.8	2.6 2.8	2.7		3.1 2.3	2.7	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Sunny	Moderate	12:34	10.3	Surface	1.0	28.0 28.0	28.0	8.0 8.0	8.0	23.5 23.7	23.6	78.4 78.6	78.5	5.4 5.4	5.4	5.4	4.7 4.7	4.7	7.0	4.0 4.3	4.2	4.8
					Middle	5.2	27.9 27.9	27.9	8.0 8.0	8.0	24.7 24.4	24.5	78.2 77.3	77.8	5.4 5.3	5.3		7.8 7.7	7.8		5.3 4.2	4.8	
					Bottom	9.3	27.8 27.9	27.8	8.0 8.0	8.0	25.9 25.6	25.7	79.3 77.7	78.5	5.4 5.3	5.3	5.3	8.3 8.5	8.4		4.7 5.8	5.3	
24-Jul-13	Cloudy	Moderate	13:57	10.6	Surface	1.0	27.9 27.9	27.9	8.0 8.0	8.0	24.4 24.3	24.4	81.5 81.3	81.4	5.6 5.6	5.6	5.6	5.5 5.1	5.3	8.3	4.5 3.7	4.1	4.8
					Middle	5.3	27.9 27.9	27.9	8.1 8.1	8.1	25.0 25.0	25.0	81.4 80.8	81.1	5.6 5.5	5.5		7.0 7.3	7.2		5.2 5.1	5.2	
					Bottom	9.6	27.9 27.9	27.9	8.1 8.0	8.1	26.3 26.2	26.2	79.6 80.8	80.2	5.4 5.5	5.4	5.4	12.1 12.8	12.5		4.7 5.5	5.1	
26-Jul-13	Cloudy	Moderate	15:36	10.5	Surface	1.0	27.7 27.7	27.7	8.0 8.0	8.0	22.5 22.5	22.5	83.6 83.7	83.7	5.8 5.8	5.8	5.8	15.4 14.8	15.1	15.1	4.9 5.0	5.0	4.3
					Middle	5.3	27.6 27.6	27.6	8.0 8.0	8.0	23.5 23.5	23.5	83.3 83.4	83.4	5.8 5.8	5.8		14.9 14.9	14.9		3.9 3.5	3.7	
					Bottom	9.5	27.6 27.6	27.6	8.0 8.0	8.0	24.6 24.6	24.6	83.2 83.1	83.2	5.7 5.7	5.7	5.7	15.2 15.1	15.2		4.0 4.5	4.3	
29-Jul-13	Sunny	Moderate	17:23	10.6	Surface	1.0	30.6 30.3	30.5	8.0 8.0	8.0	13.2 14.1	13.6	82.3 81.3	81.8	5.7 5.7	5.7	5.5	6.3 6.4	6.4	6.3	3.5 4.1	3.8	3.9
					Middle	5.3	27.6 27.7	27.6	7.9 7.9	7.9	22.6 21.7	22.1	76.3 74.2	75.3	5.3 5.2	5.2		6.4 6.2	6.3		3.7 2.8	3.3	
					Bottom	9.6	27.4 27.4	27.4	7.9 7.9	7.9	24.8 24.9	24.8	73.3 73.3	73.3	5.1 5.1	5.1	5.1	6.3 6.3	6.3		5.1 4.2	4.7	
31-Jul-13	Fine	Moderate	08:15	9.7	Surface	1.0	29.0 28.8	28.9	8.0 8.0	8.0	16.9 18.4	17.6	85.6 81.2	83.4	6.0 5.7	5.8	5.5	3.8 3.6	3.7	7.4	2.0 2.4	2.2	2.3
					Middle	4.9	28.3 28.2	28.3	8.0 8.0	8.0	22.0 22.1	22.0	76.0 76.2	76.1	5.1 5.2	5.2		8.2 8.6	8.4		2.1 2.8	2.5	
					Bottom	8.7	27.8 28.0	27.9	8.0 7.9	7.9	25.8 25.5	25.7	70.7 70.0	70.4	4.9 4.8	4.9	4.9	9.7 10.3	10.0		2.2 2.0	2.1	

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
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Rainy	Rough	13:25	11.2	Surface	1.0	29.6 29.6	29.6	8.4 8.4	8.4	16.7 16.7	16.7	107.3 106.3	106.8	7.5 7.4	7.4	6.6	13.8 13.4	13.6	14.8	12.6 12.9	12.8	13.0
					Middle	5.6	28.0 27.9	28.0	8.3 8.3	8.3	22.7 22.7	22.7	83.0 83.7	83.4	5.7 5.8	5.7		15.0 15.3	15.2		12.3 13.1	12.7	
					Bottom	10.2	26.8 26.8	26.8	8.2 8.2	8.2	26.8 25.1	26.0	90.3 89.1	89.7	6.2 6.2	6.2	6.2	15.8 15.6	15.7		13.4 13.6	13.5	
3-Jul-13	Sunny	Moderate	16:37	10.7	Surface	1.0	30.0 30.2	30.1	8.3 8.3	8.3	7.4 7.4	7.4	88.3 89.2	88.8	6.4 6.5	6.4	6.0	10.3 10.1	10.2	10.5	3.4 4.0	3.7	4.9
					Middle	5.4	29.1 28.8	28.9	8.2 8.2	8.2	17.6 16.9	17.3	75.1 78.1	76.6	5.2 5.7	5.5		10.5 10.7	10.6		5.7 4.8	5.3	
					Bottom	9.7	27.4 27.4	27.4	8.1 8.1	8.1	25.1 24.9	25.0	72.5 74.0	73.3	5.3 5.1	5.2	5.2	10.8 10.5	10.7		5.7 5.4	5.6	
5-Jul-13	Sunny	Moderate	18:23	11.3	Surface	1.0	30.7 30.5	30.6	8.7 8.6	8.7	9.7 10.8	10.3	127.9 127.9	127.9	9.1 9.0	9.0	8.6	16.5 16.3	16.4	19.9	4.3 4.7	4.5	4.8
					Middle	5.7	30.1 30.5	30.3	8.5 8.6	8.5	13.3 12.0	12.7	113.2 116.7	115.0	7.9 8.2	8.1		20.8 21.0	20.9		4.4 4.8	4.6	
					Bottom	10.3	29.2 29.1	29.1	8.3 8.3	8.3	18.1 16.4	17.3	101.4 100.5	101.0	7.0 7.1	7.0	7.0	22.2 22.5	22.4		4.8 5.8	5.3	
8-Jul-13	Fine	Moderate	19:58	10.5	Surface	1.0	29.5 29.5	29.5	8.5 8.5	8.5	12.5 12.4	12.4	107.5 108.0	107.8	7.7 7.7	7.7	7.0	9.7 8.9	9.3	10.8	6.4 5.9	6.2	6.1
					Middle	5.3	29.5 29.5	29.5	8.5 8.5	8.5	14.8 14.9	14.9	89.6 88.5	89.1	6.3 6.2	6.3		9.5 9.9	9.7		5.7 6.9	6.3	
					Bottom	9.5	26.7 26.8	26.7	8.1 8.1	8.1	26.6 26.0	26.3	77.0 75.5	76.3	5.3 5.3	5.3	5.3	13.2 13.3	13.3		5.8 6.0	5.9	
10-Jul-13	Sunny	Moderate	07:39	10.5	Surface	1.0	28.8 28.8	28.8	8.3 8.3	8.3	16.5 16.4	16.5	79.5 79.3	79.4	5.6 5.6	5.6	5.4	8.9 8.9	8.9	8.8	7.5 6.9	7.2	7.7
					Middle	5.3	28.4 28.6	28.5	8.2 8.3	8.3	19.3 17.9	18.6	72.2 72.2	72.2	5.0 5.1	5.1		8.8 8.8	8.8		8.1 7.1	7.6	
					Bottom	9.5	27.2 27.0	27.1	8.2 8.2	8.2	25.0 25.2	25.1	72.8 69.7	71.3	5.0 4.9	5.0	5.0	8.7 8.9	8.8		8.0 8.6	8.3	
12-Jul-13	Sunny	Moderate	08:39	10.4	Surface	1.0	29.0 28.9	29.0	8.3 8.3	8.3	19.4 19.6	19.5	80.7 78.8	79.8	5.6 5.5	5.5	5.3	7.5 7.8	7.7	9.5	10.9 10.7	10.8	10.7
					Middle	5.2	28.3 28.2	28.2	8.2 8.2	8.2	21.4 21.8	21.6	75.0 72.9	74.0	5.2 5.0	5.1		8.6 9.0	8.8		9.1 10.6	9.9	
					Bottom	9.4	28.1 27.4	27.7	8.2 8.2	8.2	23.2 24.9	24.1	73.8 71.1	72.5	5.1 4.9	5.0	5.0	11.7 12.1	11.9		11.8 10.7	11.3	
15-Jul-13	Rainy	Moderate	11:01	10.6	Surface	1.0	28.9 28.9	28.9	8.3 8.3	8.3	19.7 19.7	19.7	84.5 86.0	85.3	5.8 5.9	5.9	5.6	10.9 10.9	10.9	11.2	13.7 14.8	14.3	14.5
					Middle	5.3	28.7 28.8	28.7	8.3 8.3	8.3	19.9 20.0	20.0	74.8 77.6	76.2	5.2 5.4	5.3		11.3 11.4	11.4		14.1 14.9	14.5	
					Bottom	9.6	27.0 26.9	27.0	8.2 8.2	8.2	27.3 27.3	27.3	70.5 73.2	71.9	4.8 5.0	4.9	4.9	11.3 11.2	11.3		15.0 14.4	14.7	
17-Jul-13	Sunny	Moderate	13:57	10.5	Surface	1.0	28.2 28.2	28.2	8.1 8.1	8.1	20.9 20.9	20.9	96.5 97.9	97.2	6.7 6.8	6.8	6.2	9.9 8.8	9.4	9.4	8.4 7.9	8.2	8.4
					Middle	5.3	27.4 27.4	27.4	8.0 8.0	8.0	23.3 23.5	23.4	78.7 79.0	78.9	5.5 5.5	5.5		7.2 7.6	7.4		8.8 7.4	8.1	
					Bottom	9.5	27.1 26.8	26.9	8.0 8.0	8.0	25.5 25.3	25.4	71.5 68.7	70.1	4.9 4.8	4.9	4.9	11.8 11.2	11.5		8.5 9.4	9.0	
19-Jul-13	Fine	Moderate	17:05	10.0	Surface	1.0	28.2 28.2	28.2	8.1 8.1	8.1	23.4 23.4	23.4	91.9 88.8	90.4	6.3 6.1	6.2	6.0	8.6 8.7	8.7	10.7	4.8 3.1	4.0	4.5
					Middle	5.0	26.6 26.9	26.8	8.0 8.0	8.0	26.3 25.7	26.0	82.0 86.9	84.5	5.7 6.0	5.8		9.3 9.6	9.5		4.1 4.8	4.5	
					Bottom	9.0	26.3 26.4	26.3	8.0 8.0	8.0	27.4 27.2	27.3	71.3 71.3	71.3	4.9 4.9	4.9	4.9	13.7 14.1	13.9		5.0 5.2	5.1	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Sunny	Moderate	19:51	10.8	Surface	1.0	28.3 28.3	28.3	8.0 8.0	8.0	22.2 23.2	22.7	80.5 80.4	80.5	5.5 5.5	5.5	5.5	7.4 7.4	7.4	7.5	5.0 4.9	5.0	5.4
					Middle	5.4	28.2 28.2	28.2	8.0 8.0	8.0	23.5 23.6	23.5	80.0 79.7	79.9	5.5 5.5	5.5		7.5 7.3	7.4		5.0 5.7	5.4	
					Bottom	9.8	28.2 28.2	28.2	8.0 8.0	8.0	23.9 24.1	24.0	80.3 79.7	80.0	5.5 5.4	5.5	5.5	7.7 7.7	7.7		5.9 5.5	5.7	
24-Jul-13	Rainy	Moderate	07:16	10.8	Surface	1.0	27.9 27.9	27.9	7.9 7.9	7.9	23.7 23.8	23.7	75.2 75.8	75.5	5.2 5.2	5.2	5.2	8.3 7.9	8.1	10.2	9.7 8.0	8.9	11.5
					Middle	5.4	27.8 27.9	27.8	7.9 7.9	7.9	24.3 24.2	24.3	75.2 74.2	74.7	5.2 5.1	5.1		9.8 9.5	9.7		12.9 13.3	13.1	
					Bottom	9.8	27.6 27.6	27.6	7.8 7.9	7.9	25.9 26.0	25.9	74.1 71.6	72.9	5.1 4.9	5.0	5.0	12.5 13.1	12.8		12.2 13.0	12.6	
26-Jul-13	Cloudy	Moderate	08:55	10.9	Surface	1.0	27.6 27.6	27.6	7.9 7.9	7.9	22.9 22.8	22.9	78.3 77.6	78.0	5.4 5.4	5.4	5.4	14.3 14.6	14.5	14.8	23.2 24.5	23.9	**23.9**
					Middle	5.5	27.6 27.6	27.6	8.0 8.0	8.0	23.0 23.1	23.1	76.4 77.8	77.1	5.3 5.4	5.4		14.7 14.3	14.5		23.1 23.3	23.2	
					Bottom	9.9	27.6 27.6	27.6	7.9 7.9	7.9	24.1 24.8	24.5	79.2 77.3	78.3	5.5 5.3	5.4	5.4	15.4 15.1	15.3		25.4 24.0	24.7	
29-Jul-13	Sunny	Moderate	11:43	10.8	Surface	1.0	28.5 28.5	28.5	7.9 7.9	7.9	18.1 18.3	18.2	82.4 80.2	81.3	5.8 5.6	5.7	5.6	10.2 10.2	10.2	10.3	3.6 2.9	3.3	3.1
					Middle	5.4	28.1 28.0	28.0	7.9 7.9	7.9	20.2 20.2	20.2	77.4 75.7	76.6	5.4 5.3	5.4		10.4 10.4	10.4		2.2 2.9	2.6	
					Bottom	9.8	27.7 27.6	27.6	7.9 7.9	7.9	23.6 24.0	23.8	77.8 75.7	76.8	5.4 5.2	5.3	5.3	10.1 10.4	10.3		3.4 3.6	3.5	
31-Jul-13	Sunny	Moderate	14:45	9.7	Surface	1.0	29.9 29.8	29.9	8.2 8.2	8.2	18.1 18.3	18.2	104.1 99.3	101.7	7.1 6.8	7.0	6.3	13.9 13.3	13.6	10.6	11.6 10.4	11.0	12.6
					Middle	4.9	27.9 27.9	27.9	7.9 7.9	7.9	23.4 24.0	23.7	79.6 80.0	79.8	5.5 5.5	5.5		8.9 8.7	8.8		13.4 12.3	12.9	
					Bottom	8.7	27.0 26.9	27.0	8.0 7.9	7.9	27.3 27.0	27.2	70.1 69.9	70.0	4.8 4.8	4.8	4.8	9.5 9.1	9.3		13.6 14.4	14.0	

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
*** Cancelled due to adverse weather condition and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS(Mf)11 - -Tide

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-Jul-13	Rainy	Rough	07:46	11.2	Surface	1.0	28.9 28.9	28.9	8.3 8.3	8.3	16.0 16.1	16.0	86.6 87.6	87.1	6.1 6.1	6.1	5.8	6.6 6.8	6.7	7.7	4.6 5.2	4.9	5.6
					Middle	5.6	27.1 27.2	27.2	8.2 8.2	8.2	22.5 22.4	22.4	78.6 79.3	79.0	5.5 5.5	5.5		7.5 7.7	7.6		6.6 5.3	6.0	
					Bottom	10.2	25.6 25.6	25.6	8.2 8.2	8.2	26.9 26.9	26.9	74.2 73.7	74.0	5.1 5.1	5.1	5.1	8.8 8.5	8.7		5.9 5.6	5.8	
3-Jul-13	Sunny	Moderate	10:18	10.3	Surface	1.0	29.5 29.4	29.4	8.2 8.3	8.3	11.4 11.6	11.5	87.3 85.7	86.5	6.3 6.1	6.2	5.9	5.7 6.0	5.9	6.0	4.2 3.6	3.9	4.0
					Middle	5.2	28.9 29.0	28.9	8.2 8.2	8.2	16.1 17.4	16.7	78.3 78.5	78.4	5.5 5.5	5.5		5.8 6.1	6.0		3.6 3.7	3.7	
					Bottom	9.3	28.0 28.1	28.1	8.1 8.1	8.1	23.2 23.3	23.2	74.5 77.3	75.9	5.1 5.3	5.2	5.2	5.9 6.0	6.0		3.7 4.9	4.3	
5-Jul-13	Sunny	Moderate	11:51	11.4	Surface	1.0	29.7 29.7	29.7	8.3 8.3	8.3	10.0 10.7	10.3	83.4 84.2	83.8	6.0 6.0	6.0	5.7	5.6 5.6	5.6	6.1	5.1 5.1	5.1	5.1
					Middle	5.7	29.4 29.2	29.3	8.2 8.2	8.2	14.0 14.4	14.2	78.3 74.2	76.3	5.5 5.3	5.4		5.8 6.0	5.9		5.2 5.1	5.2	
					Bottom	10.4	28.5 28.7	28.6	8.2 8.2	8.2	19.9 17.5	18.7	72.4 72.9	72.7	5.0 5.1	5.1	5.1	6.8 6.5	6.7		5.6 4.6	5.1	
8-Jul-13	Sunny	Moderate	13:20	9.8	Surface	1.0	29.3 29.4	29.3	8.4 8.5	8.5	12.8 12.8	12.8	92.0 98.6	95.3	6.6 7.0	6.8	6.0	8.2 8.1	8.2	9.7	4.2 4.8	4.5	4.5
					Middle	4.9	28.5 28.5	28.5	8.3 8.3	8.3	17.9 17.7	17.8	73.0 74.0	73.5	5.1 5.2	5.2		9.2 8.9	9.1		5.3 4.3	4.8	
					Bottom	8.8	28.3 28.4	28.3	8.2 8.3	8.3	18.7 18.4	18.5	73.2 73.6	73.4	5.1 5.2	5.2	5.2	11.5 11.9	11.7		4.3 4.3	4.3	
10-Jul-13	Sunny	Moderate	14:39	10.4	Surface	1.0	29.3 29.5	29.4	8.4 8.4	8.4	16.4 16.1	16.3	82.3 84.9	83.6	5.8 5.9	5.8	5.5	8.3 8.1	8.2	8.5	4.5 3.4	4.0	8.1
					Middle	5.2	28.2 28.6	28.4	8.2 8.3	8.3	19.7 19.7	19.7	74.8 72.5	73.7	5.2 5.0	5.1		8.5 8.6	8.6		9.7 8.1	8.9	
					Bottom	9.4	27.5 27.4	27.4	8.2 8.2	8.2	24.2 24.3	24.2	72.6 70.1	71.4	5.0 4.9	4.9	4.9	8.6 8.8	8.7		10.9 11.8	11.4	
12-Jul-13	Sunny	Moderate	15:21	10.5	Surface	1.0	29.6 29.5	29.6	8.4 8.4	8.4	17.6 17.6	17.6	95.1 93.9	94.5	6.6 6.5	6.5	6.0	4.5 4.7	4.6	8.6	3.2 2.2	2.7	3.5
					Middle	5.3	28.2 28.6	28.4	8.2 8.3	8.3	22.7 22.2	22.5	77.5 78.6	78.1	5.3 5.4	5.4		9.6 9.6	9.6		2.9 2.6	2.8	
					Bottom	9.5	27.4 27.2	27.3	8.2 8.2	8.2	25.2 25.6	25.4	71.9 75.5	73.7	4.9 5.2	5.1	5.1	11.7 11.3	11.5		5.5 4.2	4.9	
15-Jul-13	Rainy	Moderate	17:33	10.2	Surface	1.0	28.8 28.8	28.8	8.3 8.3	8.3	19.8 19.5	19.6	82.0 81.3	81.7	5.7 5.6	5.7	5.4	3.3 3.2	3.3	4.6	2.9 2.7	2.8	2.5
					Middle	5.1	28.2 28.2	28.2	8.2 8.3	8.2	22.1 22.2	22.1	72.8 73.7	73.3	5.0 5.1	5.1		4.8 4.9	4.9		2.2 2.2	2.2	
					Bottom	9.2	27.6 27.3	27.5	8.2 8.1	8.1	24.7 25.0	24.9	74.2 72.8	73.5	5.1 5.0	5.1	5.1	5.7 5.4	5.6		3.1 2.1	2.6	
17-Jul-13	Fine	Moderate	07:39	9.7	Surface	1.0	28.1 28.0	28.0	8.0 8.0	8.0	19.8 19.7	19.7	88.0 85.2	86.6	6.2 5.9	6.0	5.8	4.4 4.6	4.5	6.4	2.3 3.4	2.9	4.5
					Middle	4.9	27.2 27.2	27.2	8.0 8.0	8.0	24.8 24.8	24.8	80.2 79.7	80.0	5.5 5.5	5.5		7.5 7.3	7.4		4.1 4.7	4.4	
					Bottom	8.7	26.9 27.0	27.0	8.0 7.9	8.0	25.5 25.5	25.5	69.8 71.5	70.7	4.8 5.0	4.9	4.9	7.2 7.4	7.3		6.4 5.9	6.2	
19-Jul-13	Sunny	Moderate	09:50	10.8	Surface	1.0	27.7 27.7	27.7	8.0 8.0	8.0	22.6 22.7	22.6	81.8 83.7	82.8	5.7 5.8	5.7	5.5	3.6 3.9	3.8	8.0	2.2 2.1	2.2	2.6
					Middle	5.4	26.9 27.0	27.0	8.0 8.0	8.0	25.6 25.0	25.3	76.1 77.7	76.9	5.3 5.4	5.3		10.3 9.8	10.1		3.3 2.8	3.1	
					Bottom	9.8	26.2 26.5	26.3	8.0 8.0	8.0	27.9 27.4	27.7	71.3 71.5	71.4	4.9 5.0	4.9	4.9	9.4 10.5	10.0		2.2 2.6	2.4	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS(Mf)11 - -Tide

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-Jul-13	Sunny	Moderate	12:22	10.1	Surface	1.0	27.9 27.9	27.9	8.0 8.0	8.0	24.3 24.3	24.3	76.2 77.1	76.7	5.2 5.3	5.3	5.2	4.6 4.6	4.6	4.9	5.9 5.5	5.7	5.0
					Middle	5.1	27.5 27.6	27.6	8.0 8.0	8.0	26.7 26.3	26.5	76.1 73.7	74.9	5.2 5.0	5.1		4.6 4.5	4.6		4.3 5.4	4.9	
					Bottom	9.1	27.5 27.5	27.5	8.0 8.0	8.0	27.7 27.6	27.6	74.2 72.9	73.6	5.1 4.9	5.0	5.0	5.2 5.5	5.4		4.9 4.0	4.5	
24-Jul-13	Cloudy	Moderate	14:09	9.8	Surface	1.0	27.9 27.9	27.9	8.1 8.1	8.1	25.9 26.4	26.2	79.4 79.9	79.7	5.6 5.6	5.6	5.6	4.5 4.7	4.6	6.2	4.5 4.6	4.6	5.3
					Middle	4.9	27.9 27.9	27.9	8.1 8.0	8.1	24.1 24.1	24.1	79.6 80.3	80.0	5.6 5.6	5.6		6.2 6.0	6.1		6.6 5.8	6.2	
					Bottom	8.8	28.0 28.0	28.0	8.1 8.0	8.1	24.4 24.4	24.4	82.2 80.1	81.2	5.8 5.6	5.7	5.7	7.8 7.7	7.8		4.8 5.6	5.2	
26-Jul-13	Cloudy	Moderate	15:46	10.4	Surface	1.0	27.7 27.7	27.7	8.0 8.0	8.0	22.7 22.7	22.7	83.8 85.1	84.5	5.8 5.9	5.9	5.9	10.2 10.3	10.3	10.3	2.3 2.7	2.5	3.9
					Middle	5.2	27.6 27.6	27.6	8.0 8.0	8.0	24.0 24.3	24.1	85.6 83.5	84.6	5.9 5.8	5.8		10.2 10.3	10.3		4.5 4.7	4.6	
					Bottom	9.4	27.6 27.6	27.6	8.0 8.0	8.0	24.7 24.8	24.8	84.1 87.7	85.9	5.8 6.0	5.9	5.9	10.6 10.1	10.4		5.3 4.0	4.7	
29-Jul-13	Sunny	Moderate	17:34	10.1	Surface	1.0	30.0 29.9	30.0	8.0 8.0	8.0	14.5 14.8	14.7	84.8 84.8	84.8	5.9 5.9	5.9	5.7	4.9 4.8	4.9	5.4	3.5 2.7	3.1	3.5
					Middle	5.1	28.0 27.9	28.0	7.9 7.9	7.9	21.6 21.5	21.6	77.5 82.3	79.9	5.4 5.7	5.5		5.3 5.4	5.4		3.9 3.5	3.7	
					Bottom	9.1	27.5 27.8	27.7	7.9 7.9	7.9	23.8 23.6	23.7	75.7 76.7	76.2	5.3 5.3	5.3	5.3	5.7 5.9	5.8		4.0 3.6	3.8	
31-Jul-13	Fine	Moderate	08:07	10.1	Surface	1.0	29.0 29.0	29.0	8.0 8.0	8.0	17.4 17.5	17.5	87.5 82.9	85.2	6.1 5.8	6.0	5.7	4.2 4.4	4.3	5.9	2.1 2.8	2.5	2.6
					Middle	5.1	27.7 27.7	27.7	7.9 7.9	7.9	23.9 24.1	24.0	76.3 77.6	77.0	5.2 5.3	5.3		7.4 7.4	7.4		2.9 2.5	2.7	
					Bottom	9.1	27.6 27.7	27.6	7.9 7.9	7.9	24.7 24.5	24.6	71.7 69.3	70.5	4.9 4.8	4.9	4.9	6.2 5.8	6.0		3.0 2.2	2.6	

Remarks:
vel; 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
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13***	Rainy	Rough	-	-	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
3-Jul-13	Sunny	Moderate	16:50	10.6	Surface	1.0	30.3 30.1	30.2	8.3 8.3	8.3	7.6 8.2	7.9	90.2 96.1	93.2	6.5 6.9	6.7	6.3	6.9 6.9	6.9	8.1	4.1 4.4	4.3	4.9
					Middle	5.3	28.7 28.6	28.6	8.2 8.2	8.2	16.6 16.7	16.6	82.2 85.8	84.0	5.8 5.9	5.9		8.1 8.2	8.2		4.7 5.7	5.2	
					Bottom	9.6	27.7 28.4	28.1	8.1 8.2	8.1	21.2 21.2	21.2	80.1 77.3	78.7	5.5 5.5	5.5	5.5	9.4 9.2	9.3		4.9 5.3	5.1	
5-Jul-13	Sunny	Moderate	18:34	11.3	Surface	1.0	30.4 30.4	30.4	8.6 8.6	8.6	11.9 12.0	11.9	128.8 128.7	128.8	9.1 9.1	9.1	8.7	6.4 6.5	6.5	6.7	5.5 6.6	6.1	5.7
					Middle	5.7	30.2 30.3	30.3	8.6 8.6	8.6	13.3 13.2	13.2	116.4 116.7	116.6	8.2 8.2	8.2		6.7 6.5	6.6		6.1 5.6	5.9	
					Bottom	10.3	29.3 29.0	29.2	8.3 8.3	8.3	16.6 17.3	16.9	101.0 101.1	101.1	7.1 7.1	7.1	7.1	7.0 6.9	7.0		5.4 5.0	5.2	
8-Jul-13	Fine	Moderate	20:10	9.4	Surface	1.0	29.5 29.5	29.5	8.4 8.5	8.4	11.3 12.5	11.9	100.0 102.4	101.2	7.2 7.3	7.2	6.7	8.1 9.0	8.6	10.2	5.8 5.2	5.5	5.5
					Middle	4.7	29.0 29.0	29.0	8.3 8.3	8.3	15.3 15.3	15.3	89.7 86.2	88.0	6.3 6.1	6.2		9.3 9.1	9.2		5.8 5.5	5.7	
					Bottom	8.4	28.3 28.3	28.3	8.3 8.2	8.2	19.0 19.0	19.0	87.3 82.4	84.9	6.1 5.8	5.9	5.9	12.5 12.8	12.7		4.9 5.9	5.4	
10-Jul-13	Sunny	Moderate	07:30	10.1	Surface	1.0	28.8 28.7	28.8	8.3 8.3	8.3	15.8 15.8	15.8	79.3 76.9	78.1	5.6 5.4	5.5	5.3	6.5 6.3	6.4	7.5	4.6 5.5	5.1	5.2
					Middle	5.1	28.2 28.3	28.3	8.2 8.2	8.2	19.7 19.5	19.6	74.8 73.3	74.1	5.2 5.1	5.1		7.7 7.5	7.6		5.0 4.4	4.7	
					Bottom	9.1	27.3 27.2	27.2	8.2 8.2	8.2	24.3 24.8	24.6	72.0 72.0	72.0	5.0 5.0	5.0	5.0	8.6 8.5	8.6		6.1 5.2	5.7	
12-Jul-13	Sunny	Moderate	08:28	9.7	Surface	1.0	28.8 28.8	28.8	8.3 8.3	8.3	18.3 18.2	18.3	85.8 82.7	84.3	6.0 5.8	5.9	5.6	5.5 5.7	5.6	8.2	2.8 2.3	2.6	2.9
					Middle	4.9	27.8 27.8	27.8	8.2 8.2	8.2	23.0 22.8	22.9	75.2 73.3	74.3	5.3 5.1	5.2		9.8 9.2	9.5		2.9 3.2	3.1	
					Bottom	8.7	27.8 27.8	27.8	8.2 8.2	8.2	23.0 23.3	23.2	70.4 69.7	70.1	4.9 4.8	4.8	4.8	9.5 9.5	9.5		2.8 3.3	3.1	
15-Jul-13	Rainy	Moderate	10:51	10.4	Surface	1.0	29.0 29.0	29.0	8.3 8.3	8.3	18.0 18.1	18.0	86.9 87.2	87.1	6.1 6.1	6.1	5.9	5.4 5.5	5.5	5.7	2.8 2.3	2.6	3.1
					Middle	5.2	28.6 28.3	28.4	8.3 8.3	8.3	21.6 21.1	21.3	82.3 79.1	80.7	5.7 5.5	5.6		5.9 5.7	5.8		2.5 3.2	2.9	
					Bottom	9.4	27.7 27.7	27.7	8.2 8.3	8.3	23.6 23.6	23.6	78.4 79.2	78.8	5.4 5.5	5.4	5.4	5.8 5.9	5.9		4.0 3.7	3.9	
17-Jul-13	Sunny	Moderate	14:12	10.7	Surface	1.0	28.3 28.2	28.2	8.1 8.1	8.1	20.8 21.0	20.9	85.4 86.3	85.9	5.9 6.0	6.0	5.7	9.3 9.8	9.6	10.5	8.8 9.4	9.1	8.8
					Middle	5.4	27.3 27.4	27.4	8.0 8.0	8.0	23.7 23.3	23.5	76.0 77.5	76.8	5.3 5.4	5.3		9.9 9.6	9.8		8.8 7.9	8.4	
					Bottom	9.7	25.8 25.9	25.8	8.0 8.0	8.0	28.9 28.6	28.8	79.1 78.0	78.6	5.5 5.4	5.4	5.4	11.7 12.7	12.2		8.5 9.1	8.8	
19-Jul-13	Fine	Moderate	17:17	10.5	Surface	1.0	28.1 28.1	28.1	8.1 8.1	8.1	22.9 22.9	22.9	89.1 91.9	90.5	6.1 6.3	6.2	5.7	7.0 7.6	7.3	9.7	4.7 4.0	4.4	4.3
					Middle	5.3	26.8 26.7	26.8	8.0 8.0	8.0	26.5 26.6	26.5	74.5 74.5	74.5	5.1 5.1	5.1		9.8 9.3	9.6		3.5 4.0	3.8	
					Bottom	9.5	26.7 26.8	26.7	8.1 8.1	8.1	26.6 26.6	26.6	79.0 81.6	80.3	5.5 5.6	5.5	5.5	12.5 11.6	12.1		4.1 5.0	4.6	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Sunny	Moderate	20:02	10.4	Surface	1.0	27.8 27.8	27.8	8.0 8.0	8.0	24.1 24.1	24.1	74.4 78.8	76.6	5.1 5.4	5.3	5.2	7.4 7.6	7.5	7.5	4.6 4.1	4.4	5.2
					Middle	5.2	27.7 27.8	27.7	8.0 8.0	8.0	25.1 24.7	24.9	75.5 73.9	74.7	5.2 5.1	5.1		7.6 7.6	7.6		5.1 5.0	5.1	
					Bottom	9.4	27.7 27.7	27.7	8.0 8.0	8.0	25.2 25.3	25.2	74.1 75.9	75.0	5.1 5.2	5.1	5.1	7.5 7.4	7.5		6.5 5.6	6.1	
24-Jul-13	Rainy	Moderate	07:06	10.2	Surface	1.0	27.9 27.8	27.8	7.9 8.0	8.0	23.6 23.7	23.6	77.5 78.0	77.8	5.3 5.4	5.4	5.4	3.3 3.0	3.2	5.2	3.9 4.4	4.2	4.6
					Middle	5.1	27.9 27.8	27.9	8.0 8.0	8.0	25.1 25.1	25.1	77.6 77.1	77.4	5.3 5.3	5.3		6.0 5.8	5.9		5.5 4.8	5.2	
					Bottom	9.2	27.7 27.8	27.7	8.0 7.9	8.0	25.7 25.2	25.4	75.0 74.1	74.6	5.2 5.1	5.1	5.1	6.3 6.4	6.4		4.5 4.3	4.4	
26-Jul-13	Cloudy	Moderate	08:48	10.6	Surface	1.0	27.6 27.6	27.6	8.0 8.0	8.0	22.9 22.8	22.9	77.1 77.4	77.3	5.3 5.4	5.4	5.3	5.4 5.6	5.5	6.1	7.9 8.2	8.1	7.6
					Middle	5.3	27.6 27.7	27.7	8.0 8.0	8.0	24.0 24.0	24.0	75.5 75.4	75.5	5.2 5.2	5.2		6.4 6.2	6.3		7.8 7.6	7.7	
					Bottom	9.6	27.6 27.6	27.6	7.9 7.9	7.9	24.8 24.8	24.8	75.5 76.4	76.0	5.2 5.2	5.2	5.2	6.6 6.3	6.5		6.5 7.5	7.0	
29-Jul-13	Sunny	Moderate	11:34	10.5	Surface	1.0	28.6 28.6	28.6	7.9 7.9	7.9	18.5 18.6	18.5	81.5 81.4	81.5	5.7 5.7	5.7	5.6	3.1 3.3	3.2	3.2	3.6 2.5	3.1	3.5
					Middle	5.3	28.1 28.2	28.2	7.9 7.9	7.9	20.1 19.7	19.9	77.1 77.3	77.2	5.4 5.4	5.4		3.1 3.2	3.2		3.4 2.5	3.0	
					Bottom	9.5	27.7 27.7	27.7	7.9 7.9	7.9	22.9 22.8	22.9	77.3 77.8	77.6	5.4 5.4	5.4	5.4	3.2 3.2	3.2		5.0 3.8	4.4	
31-Jul-13	Sunny	Moderate	14:57	10.4	Surface	1.0	29.8 29.4	29.6	8.3 8.2	8.2	18.3 18.8	18.5	99.8 99.6	99.7	6.9 6.9	6.9	6.1	5.2 5.5	5.4	6.4	2.1 2.4	2.3	2.7
					Middle	5.2	27.7 27.7	27.7	8.0 8.0	8.0	24.1 24.3	24.2	75.9 77.1	76.5	5.2 5.3	5.3		6.1 5.8	6.0		2.2 3.7	3.0	
					Bottom	9.4	27.7 27.6	27.7	8.0 8.0	8.0	24.3 24.4	24.3	72.7 73.4	73.1	5.0 5.1	5.0	5.0	7.9 7.7	7.8		2.6 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
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Rainy	Rough	07:59	6.2	Surface	1.0	29.1 29.1	29.1	8.3 8.3	8.3	16.2 16.2	16.2	85.8 87.7	86.8	6.0 6.2	6.1	5.9	5.7 5.5	5.6	5.6	7.5 7.0	7.3	8.0
					Middle	3.1	28.5 28.6	28.6	8.3 8.3	8.3	18.3 18.3	18.3	84.7 78.3	81.5	5.9 5.5	5.7		5.8 5.6	5.7		7.1 8.8	8.0	
					Bottom	5.2	28.3 28.5	28.4	8.3 8.3	8.3	20.6 21.1	20.8	78.4 77.6	78.0	5.5 5.4	5.4	5.4	5.2 5.6	5.4		8.6 8.8	8.7	
3-Jul-13	Sunny	Moderate	09:55	6.8	Surface	1.0	29.1 29.1	29.1	8.3 8.3	8.3	14.0 13.9	13.9	90.9 90.1	90.5	6.5 6.4	6.4	6.5	8.7 8.3	8.5	10.0	4.3 5.8	5.1	5.9
					Middle	3.4	28.8 28.8	28.8	8.3 8.3	8.3	16.1 16.1	16.1	93.0 91.0	92.0	6.6 6.4	6.5		9.5 9.1	9.3		6.6 6.4	6.5	
					Bottom	5.8	28.8 28.8	28.8	8.2 8.3	8.3	19.8 19.9	19.9	89.1 95.0	92.1	6.2 6.6	6.4	6.4	12.0 12.2	12.1		6.3 5.8	6.1	
5-Jul-13	Sunny	Moderate	11:41	6.1	Surface	1.0	30.2 30.2	30.2	8.4 8.4	8.4	12.4 12.4	12.4	90.3 95.3	92.8	6.4 6.7	6.5	5.9	9.0 9.5	9.3	9.7	8.6 8.1	8.4	8.5
					Middle	3.1	29.7 29.5	29.6	8.4 8.3	8.4	13.8 14.3	14.1	76.1 74.6	75.4	5.4 5.3	5.3		9.7 9.4	9.6		8.7 8.2	8.5	
					Bottom	5.1	28.3 28.3	28.3	8.2 8.2	8.2	21.7 21.9	21.8	73.7 72.9	73.3	5.1 5.0	5.1	5.1	10.3 10.1	10.2		8.5 8.8	8.7	
8-Jul-13	Sunny	Moderate	13:27	6.4	Surface	1.0	29.8 29.9	29.8	8.5 8.5	8.5	15.0 15.0	15.0	101.7 103.1	102.4	7.1 7.2	7.2	6.7	7.2 7.1	7.2	7.9	4.5 5.3	4.9	5.5
					Middle	3.2	29.1 29.3	29.2	8.4 8.5	8.5	15.3 15.2	15.3	85.4 86.2	85.8	6.0 6.1	6.1		8.1 7.9	8.0		6.5 5.6	6.1	
					Bottom	5.4	28.9 28.7	28.8	8.4 8.4	8.4	16.2 17.0	16.6	85.8 83.3	84.6	6.1 5.9	6.0	6.0	8.4 8.4	8.4		5.7 5.1	5.4	
10-Jul-13	Sunny	Moderate	13:41	6.9	Surface	1.0	29.2 29.4	29.3	8.1 8.1	8.1	17.8 17.6	17.7	81.6 82.2	81.9	5.7 5.7	5.7	5.5	9.2 8.6	8.9	9.1	6.3 6.5	6.4	7.1
					Middle	3.5	28.5 28.4	28.5	8.1 8.1	8.1	19.0 19.1	19.1	74.6 73.9	74.3	5.2 5.2	5.2		9.1 8.8	9.0		7.7 8.1	7.9	
					Bottom	5.9	27.7 28.0	27.9	8.0 8.0	8.0	22.8 22.3	22.6	76.2 76.4	76.3	5.3 5.3	5.3	5.3	8.9 9.7	9.3		7.4 6.7	7.1	
12-Jul-13	Sunny	Moderate	15:04	6.5	Surface	1.0	29.6 29.6	29.6	8.1 8.1	8.1	19.4 19.6	19.5	86.2 86.3	86.3	5.9 5.9	5.9	5.7	4.6 4.9	4.8	4.8	4.9 4.9	4.9	4.3
					Middle	3.3	29.3 29.1	29.2	8.1 8.1	8.1	20.1 20.4	20.3	77.4 78.6	78.0	5.3 5.4	5.4		4.5 4.6	4.6		4.3 3.9	4.1	
					Bottom	5.5	27.8 27.8	27.8	8.1 8.0	8.1	23.5 23.4	23.5	77.1 76.2	76.7	5.3 5.2	5.3	5.3	4.9 4.8	4.9		4.0 3.7	3.9	
15-Jul-13	Rainy	Moderate	16:36	7.0	Surface	1.0	28.8 28.8	28.8	8.2 8.2	8.2	20.4 20.4	20.4	87.6 88.0	87.8	6.1 6.1	6.1	5.8	9.7 10.3	10.0	11.6	8.5 8.6	8.6	8.5
					Middle	3.5	28.3 28.4	28.4	8.1 8.1	8.1	21.0 21.1	21.0	79.0 81.1	80.1	5.5 5.6	5.5		10.9 11.1	11.0		8.3 8.1	8.2	
					Bottom	6.0	27.5 27.3	27.4	8.1 8.1	8.1	24.8 25.4	25.1	84.4 81.4	82.9	5.8 5.6	5.7	5.7	14.1 13.2	13.7		8.8 8.3	8.6	
17-Jul-13	Fine	Moderate	07:53	6.3	Surface	1.0	27.8 27.8	27.8	8.3 8.3	8.3	21.3 21.3	21.3	79.5 79.9	79.7	5.5 5.6	5.6	5.4	3.4 3.5	3.5	3.8	3.7 2.9	3.3	3.3
					Middle	3.2	27.7 27.7	27.7	8.3 8.3	8.3	21.5 21.9	21.7	74.4 73.9	74.2	5.2 5.2	5.2		3.7 4.0	3.9		3.2 3.0	3.1	
					Bottom	5.3	27.4 27.1	27.2	8.2 8.2	8.2	23.7 24.8	24.2	72.6 74.8	73.7	5.0 5.2	5.1	5.1	3.9 3.9	3.9		3.3 3.4	3.4	
19-Jul-13	Sunny	Moderate	10:10	6.4	Surface	1.0	27.4 27.4	27.4	8.3 8.3	8.3	24.4 24.4	24.4	78.3 77.7	78.0	5.4 5.4	5.4	5.2	3.4 3.5	3.5	3.5	3.5 3.6	3.6	4.8
					Middle	3.2	27.1 27.1	27.1	8.3 8.3	8.3	24.9 25.0	25.0	72.7 72.6	72.7	5.0 5.0	5.0		3.3 3.3	3.3		5.9 5.3	5.6	
					Bottom	5.4	26.6 26.5	26.6	8.2 8.2	8.2	27.0 27.1	27.1	71.6 71.4	71.5	4.9 4.9	4.9	4.9	3.7 3.6	3.7		4.5 6.0	5.3	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Sunny	Moderate	12:13	7.0	Surface	1.0	27.8 27.9	27.8	8.2 8.2	8.2	24.9 24.9	24.9	82.0 81.1	81.6	5.6 5.5	5.6	5.5	7.3 7.5	7.4	7.5	6.6 5.9	6.3	6.7
					Middle	3.5	27.0 27.1	27.1	8.2 8.2	8.2	26.3 26.2	26.2	76.5 78.9	77.7	5.3 5.4	5.3		7.5 7.5	7.5		7.3 7.0	7.2	
					Bottom	6.0	26.7 27.3	27.0	8.2 8.2	8.2	27.6 27.2	27.4	72.2 72.2	72.2	5.0 5.0	5.0	5.0	7.6 7.6	7.6		6.7 6.3	6.5	
24-Jul-13	Cloudy	Moderate	13:52	6.8	Surface	1.0	27.7 27.7	27.7	8.2 8.2	8.2	24.3 24.2	24.3	80.1 80.2	80.2	5.5 5.5	5.5	5.3	6.6 6.4	6.5	7.6	6.6 6.0	6.3	6.7
					Middle	3.4	27.5 27.5	27.5	8.2 8.2	8.2	25.5 25.5	25.5	75.1 74.3	74.7	5.2 5.1	5.1		7.7 7.4	7.6		7.7 6.9	7.3	
					Bottom	5.8	27.1 27.2	27.2	8.2 8.1	8.1	27.2 27.1	27.1	74.1 74.4	74.3	5.1 5.1	5.1	5.1	8.8 8.5	8.7		6.7 6.5	6.6	
26-Jul-13	Cloudy	Moderate	14:51	6.9	Surface	1.0	27.5 27.6	27.6	8.1 8.2	8.2	23.6 23.5	23.6	79.9 79.6	79.8	5.5 5.5	5.5	5.4	13.7 13.5	13.6	15.9	12.0 11.0	11.5	12.0
					Middle	3.5	27.5 27.5	27.5	8.2 8.1	8.2	24.2 23.7	24.0	75.0 78.5	76.8	5.2 5.4	5.3		15.5 15.8	15.7		12.1 12.3	12.2	
					Bottom	5.9	27.4 27.4	27.4	8.1 8.2	8.1	25.0 25.1	25.1	76.4 75.6	76.0	5.3 5.2	5.2	5.2	18.7 18.2	18.5		12.0 12.8	12.4	
29-Jul-13	Sunny	Moderate	16:51	6.8	Surface	1.0	28.9 28.9	28.9	8.2 8.2	8.2	19.8 19.8	19.8	87.0 86.9	87.0	6.0 6.0	6.0	5.8	9.3 9.5	9.4	9.9	8.7 7.2	8.0	7.7
					Middle	3.4	28.4 28.6	28.5	8.1 8.2	8.2	20.5 20.2	20.4	79.2 79.8	79.5	5.5 5.5	5.5		9.7 9.6	9.7		7.9 7.5	7.7	
					Bottom	5.8	28.0 27.9	28.0	8.1 8.1	8.1	21.8 21.7	21.8	76.2 75.2	75.7	5.3 5.2	5.3	5.3	10.5 10.6	10.6		7.7 7.0	7.4	
31-Jul-13	Fine	Moderate	08:22	6.1	Surface	1.0	29.1 29.0	29.1	8.3 8.2	8.3	18.0 18.5	18.3	86.8 85.0	85.9	6.0 5.9	6.0	5.7	10.9 10.4	10.7	11.9	7.3 6.6	7.0	7.1
					Middle	3.1	28.8 29.0	28.9	8.2 8.2	8.2	19.5 18.5	19.0	79.1 74.5	76.8	5.5 5.2	5.3		12.2 12.2	12.2		6.5 7.8	7.2	
					Bottom	5.1	27.8 27.8	27.8	8.1 8.1	8.1	23.8 23.8	23.8	74.8 74.2	74.5	5.2 5.1	5.1	5.1	12.7 12.7	12.7		6.4 7.9	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
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Rainy	Rough	13:17	6.3	Surface	1.0	29.4 29.4	29.4	8.4 8.4	8.4	17.1 17.2	17.1	101.1 101.1	101.1	7.0 7.0	7.0	6.5	8.6 8.5	8.6	9.5	4.6 5.4	5.0	5.3
					Middle	3.2	29.2 29.2	29.2	8.4 8.4	8.4	17.5 17.5	17.5	89.2 84.0	86.6	6.2 5.9	6.0		8.6 8.5	8.6		5.4 6.3	5.9	
					Bottom	5.3	28.4 28.3	28.3	8.3 8.3	8.3	23.0 21.4	22.2	77.8 76.4	77.1	5.3 5.3	5.3	5.3	11.2 11.1	11.2		5.4 4.7	5.1	
3-Jul-13	Sunny	Moderate	16:14	6.8	Surface	1.0	29.9 29.8	29.8	8.3 8.3	8.3	11.9 12.0	12.0	99.2 99.4	99.3	7.0 7.1	7.1	7.0	7.3 7.8	7.6	9.8	5.0 5.2	5.1	5.7
					Middle	3.4	28.9 29.0	29.0	8.4 8.3	8.3	15.2 15.0	15.1	96.4 94.9	95.7	6.8 6.7	6.8		11.2 11.2	11.2		5.9 4.8	5.4	
					Bottom	5.8	28.8 29.2	29.0	8.3 8.3	8.3	20.2 19.5	19.9	94.7 98.1	96.4	6.5 6.8	6.6	6.6	11.0 10.3	10.7		7.0 6.3	6.7	
5-Jul-13	Sunny	Moderate	18:21	6.3	Surface	1.0	30.2 30.2	30.2	8.6 8.5	8.6	12.1 12.1	12.1	112.1 106.9	109.5	7.9 7.5	7.7	6.9	11.7 11.3	11.5	12.6	6.2 7.3	6.8	7.4
					Middle	3.2	29.6 29.5	29.6	8.4 8.4	8.4	14.5 15.5	15.0	86.2 83.9	85.1	6.1 5.9	6.0		12.9 12.4	12.7		7.7 7.0	7.4	
					Bottom	5.3	28.5 28.5	28.5	8.3 8.3	8.3	21.7 20.6	21.2	80.2 82.4	81.3	5.5 5.7	5.6	5.6	13.7 13.6	13.7		8.0 7.9	8.0	
8-Jul-13	Fine	Moderate	19:47	6.0	Surface	1.0	29.4 29.4	29.4	8.5 8.5	8.5	14.4 14.4	14.4	100.8 101.1	101.0	7.1 7.1	7.1	6.8	8.7 8.6	8.7	8.8	4.0 5.0	4.5	4.4
					Middle	3.0	29.3 29.2	29.3	8.5 8.5	8.5	14.7 14.9	14.8	92.4 91.8	92.1	6.5 6.5	6.5		8.8 8.9	8.9		4.9 4.2	4.6	
					Bottom	5.0	29.0 29.0	29.0	8.5 8.5	8.5	15.9 15.9	15.9	88.7 91.7	90.2	6.3 6.5	6.4	6.4	8.9 8.8	8.9		3.8 4.2	4.0	
10-Jul-13	Sunny	Moderate	07:23	6.7	Surface	1.0	28.9 28.9	28.9	8.1 8.1	8.1	16.3 16.2	16.3	79.2 80.4	79.8	5.6 5.7	5.6	5.4	7.4 7.4	7.4	5.8	6.6 6.7	6.7	7.1
					Middle	3.4	28.3 28.6	28.4	8.1 8.1	8.1	19.5 18.5	19.0	72.6 75.1	73.9	5.1 5.3	5.2		4.5 4.2	4.4		6.0 5.7	5.9	
					Bottom	5.7	28.0 28.0	28.0	8.0 8.0	8.0	21.1 21.3	21.2	77.1 70.8	74.0	5.4 4.9	5.2	5.2	5.5 5.8	5.7		9.1 8.2	8.7	
12-Jul-13	Sunny	Moderate	08:50	6.3	Surface	1.0	29.0 29.0	29.0	8.1 8.1	8.1	18.4 18.5	18.4	76.3 78.8	77.6	5.3 5.5	5.4	5.2	5.3 5.4	5.4	5.5	5.9 7.1	6.5	6.9
					Middle	3.2	28.7 28.6	28.7	8.0 8.0	8.0	20.9 19.4	20.1	72.5 72.3	72.4	5.0 5.0	5.0		5.4 5.4	5.4		5.9 6.9	6.4	
					Bottom	5.3	28.1 28.4	28.3	8.0 8.0	8.0	22.7 22.5	22.6	74.2 75.8	75.0	5.1 5.2	5.2	5.2	5.8 5.7	5.8		7.9 7.7	7.8	
15-Jul-13	Rainy	Moderate	10:45	7.2	Surface	1.0	29.0 29.0	29.0	8.2 8.2	8.2	19.5 19.6	19.6	88.0 87.1	87.6	6.1 6.0	6.1	5.8	7.6 8.0	7.8	10.9	2.5 2.1	2.3	2.6
					Middle	3.6	28.8 28.8	28.8	8.1 8.1	8.1	19.7 20.1	19.9	78.7 78.7	78.7	5.5 5.4	5.4		10.6 11.0	10.8		2.5 2.7	2.6	
					Bottom	6.2	28.1 28.1	28.1	8.1 8.1	8.1	22.9 22.8	22.9	75.0 77.1	76.1	5.2 5.3	5.2	5.2	14.2 13.8	14.0		3.0 2.7	2.9	
17-Jul-13	Sunny	Moderate	14:07	6.6	Surface	1.0	28.1 28.1	28.1	8.3 8.3	8.3	21.4 21.2	21.3	91.8 84.4	88.1	6.4 5.9	6.1	5.7	2.1 2.3	2.2	4.7	2.6 2.3	2.5	3.4
					Middle	3.3	27.7 27.8	27.7	8.3 8.3	8.3	22.9 22.5	22.7	74.9 76.8	75.9	5.2 5.3	5.3		4.2 4.3	4.3		2.3 2.9	2.6	
					Bottom	5.6	26.9 26.9	26.9	8.2 8.2	8.2	25.9 25.6	25.7	69.6 69.8	69.7	4.8 4.8	4.8	4.8	7.4 7.7	7.6		5.6 4.5	5.1	
19-Jul-13	Fine	Moderate	16:55	6.3	Surface	1.0	27.8 27.8	27.8	8.3 8.3	8.3	23.6 23.6	23.6	85.3 85.1	85.2	5.9 5.9	5.9	5.7	6.6 7.0	6.8	8.0	3.8 3.1	3.5	3.5
					Middle	3.2	27.3 27.3	27.3	8.3 8.3	8.3	25.0 24.9	25.0	82.3 78.2	80.3	5.7 5.4	5.5		8.4 8.6	8.5		4.2 3.0	3.6	
					Bottom	5.3	27.2 27.2	27.2	8.3 8.3	8.3	25.3 25.3	25.3	78.4 78.7	78.6	5.4 5.4	5.4	5.4	8.5 8.6	8.6		3.2 3.8	3.5	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Sunny	Moderate	19:19	6.6	Surface	1.0	28.0 28.0	28.0	8.2 8.2	8.2	24.0 23.8	23.9	83.0 84.0	83.5	5.7 5.8	5.7	5.7	5.4 5.6	5.5	5.7	5.6 5.4	5.5	6.3
					Middle	3.3	27.9 27.9	27.9	8.2 8.2	8.2	24.5 24.6	24.6	82.9 83.8	83.4	5.7 5.7	5.7		5.5 5.9	5.7		6.4 6.8	6.6	
					Bottom	5.6	28.0 27.9	28.0	8.2 8.2	8.2	24.4 24.7	24.5	81.4 81.8	81.6	5.6 5.6	5.6	5.6	5.8 6.1	6.0		7.3 6.3	6.8	
24-Jul-13	Rainy	Moderate	06:51	7.0	Surface	1.0	27.9 27.9	27.9	8.2 8.2	8.2	24.7 24.6	24.6	74.3 75.4	74.9	5.1 5.2	5.1	5.1	17.2 18.0	17.6	19.7	11.0 10.7	10.9	14.1
					Middle	3.5	27.9 27.9	27.9	8.2 8.2	8.2	24.8 24.8	24.8	74.2 75.8	75.0	5.1 5.2	5.1		19.1 19.9	19.5		16.6 15.0	15.8	
					Bottom	6.0	27.8 27.9	27.9	8.2 8.2	8.2	24.8 24.8	24.8	74.6 76.5	75.6	5.1 5.2	5.2	5.2	21.5 22.3	21.9		16.0 15.2	15.6	
26-Jul-13	Cloudy	Moderate	08:41	7.0	Surface	1.0	27.6 27.6	27.6	8.2 8.2	8.2	23.6 23.7	23.7	77.2 77.9	77.6	5.3 5.4	5.4	5.4	10.3 9.5	9.9	11.2	9.6 10.0	9.8	9.9
					Middle	3.5	27.5 27.6	27.6	8.2 8.2	8.2	24.4 24.4	24.4	75.6 77.2	76.4	5.2 5.3	5.3		10.2 9.3	9.8		9.2 10.6	9.9	
					Bottom	6.0	27.5 27.5	27.5	8.2 8.1	8.2	24.4 24.4	24.4	74.6 78.6	76.6	5.1 5.4	5.3	5.3	14.1 13.8	14.0		10.0 9.8	9.9	
29-Jul-13	Sunny	Moderate	11:27	6.8	Surface	1.0	28.1 28.2	28.1	8.1 8.1	8.1	19.5 19.4	19.4	77.5 78.7	78.1	5.4 5.5	5.5	5.4	10.0 10.2	10.1	10.8	5.8 4.8	5.3	6.0
					Middle	3.4	28.0 28.0	28.0	8.1 8.1	8.1	20.3 20.1	20.2	75.7 75.0	75.4	5.3 5.3	5.3		10.6 10.3	10.5		5.5 6.6	6.1	
					Bottom	5.8	27.8 27.8	27.8	8.1 8.1	8.1	21.6 21.7	21.7	73.3 73.1	73.2	5.1 5.1	5.1	5.1	11.6 11.8	11.7		6.7 6.3	6.5	
31-Jul-13	Sunny	Moderate	14:37	6.4	Surface	1.0	29.6 29.5	29.6	8.6 8.5	8.6	18.9 19.2	19.1	117.6 112.0	114.8	8.1 7.7	7.9	6.6	8.3 8.5	8.4	8.5	5.4 6.6	6.0	7.0
					Middle	3.2	28.6 28.8	28.7	8.3 8.2	8.3	20.2 20.6	20.4	76.7 77.4	77.1	5.2 5.3	5.3		8.4 8.5	8.5		8.0 7.5	7.8	
					Bottom	5.4	28.0 28.1	28.1	8.2 8.2	8.2	24.8 24.4	24.6	74.5 75.1	74.8	5.2 5.1	5.1	5.1	8.9 8.4	8.7		7.0 7.2	7.1	

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
*** Cancelled due to adverse weather condition and safety concern.

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*
1-Jul-13	Rainy	Rough	08:53	8.6	Surface	1.0	29.7 29.7	29.7	8.4 8.4	8.4	16.2 16.1	16.2	95.7 92.5	94.1	6.7 6.4	6.5	6.2	8.5 8.2	8.4	11.0	5.9 6.7	6.3	7.0
					Middle	4.3	27.9 27.7	27.8	8.3 8.3	8.3	24.7 25.0	24.9	81.9 86.0	84.0	5.7 6.0	5.8		12.2 12.2	12.2		6.6 6.2	6.4	
					Bottom	7.6	27.6 27.5	27.6	8.3 8.3	8.3	26.6 26.9	26.8	80.4 76.5	78.5	5.5 5.3	5.4	5.4	12.5 12.5	12.5		7.5 8.8	8.2	
3-Jul-13	Sunny	Moderate	10:38	9.2	Surface	1.0	29.7 29.7	29.7	8.4 8.4	8.4	14.6 14.6	14.6	95.0 96.7	95.9	6.7 6.8	6.7	6.3	8.0 7.4	7.7	9.7	7.6 7.3	7.5	7.5
					Middle	4.6	28.3 28.4	28.4	8.2 8.2	8.2	21.4 22.2	21.8	82.5 83.7	83.1	5.8 5.9	5.9		9.0 9.6	9.3		8.4 8.3	8.4	
					Bottom	8.2	28.3 28.3	28.3	8.2 8.2	8.2	23.9 23.9	23.9	79.0 78.6	78.8	5.4 5.4	5.4	5.4	11.8 12.1	12.0		6.3 7.1	6.7	
5-Jul-13	Sunny	Moderate	12:27	8.4	Surface	1.0	30.7 30.7	30.7	8.6 8.6	8.6	12.4 12.5	12.4	105.1 103.0	104.1	7.3 7.2	7.3	6.4	10.2 10.2	10.2	10.6	9.6 9.1	9.4	9.5
					Middle	4.2	28.4 28.4	28.4	8.4 8.4	8.4	24.6 24.6	24.6	76.6 79.6	78.1	5.4 5.6	5.5		10.7 10.7	10.7		9.3 9.3	9.3	
					Bottom	7.4	28.3 28.3	28.3	8.4 8.4	8.4	26.2 26.3	26.2	75.3 75.0	75.2	5.1 5.1	5.1	5.1	10.6 10.9	10.8		10.0 9.6	9.8	
8-Jul-13	Sunny	Moderate	14:13	8.7	Surface	1.0	29.2 29.1	29.1	8.5 8.5	8.5	15.5 16.2	15.8	88.3 84.8	86.6	6.2 6.0	6.1	5.7	10.3 10.4	10.4	10.5	5.6 4.7	5.2	4.9
					Middle	4.4	28.2 28.3	28.2	8.4 8.4	8.4	22.8 23.0	22.9	75.2 75.5	75.4	5.3 5.3	5.3		10.7 10.8	10.8		4.4 4.6	4.5	
					Bottom	7.7	28.1 28.1	28.1	8.4 8.4	8.4	26.0 26.2	26.1	76.2 72.4	74.3	5.2 4.9	5.0	5.0	10.1 10.5	10.3		5.5 4.6	5.1	
10-Jul-13	Sunny	Moderate	12:53	9.5	Surface	1.0	29.3 29.3	29.3	8.1 8.1	8.1	18.1 18.0	18.1	82.9 84.8	83.9	5.7 5.9	5.8	5.6	10.4 10.0	10.2	12.1	8.6 8.9	8.8	8.4
					Middle	4.8	28.7 28.9	28.8	8.0 8.1	8.0	21.4 19.4	20.4	75.3 78.2	76.8	5.2 5.4	5.3		13.5 12.5	13.0		8.5 8.4	8.5	
					Bottom	8.5	28.6 28.7	28.6	8.0 8.0	8.0	21.1 20.0	20.5	78.7 76.3	77.5	5.4 5.3	5.4	5.4	13.3 12.7	13.0		7.7 8.1	7.9	
12-Jul-13	Sunny	Moderate	14:11	8.3	Surface	1.0	29.4 29.6	29.5	8.1 8.1	8.1	19.9 19.7	19.8	82.4 86.8	84.6	5.6 5.9	5.8	5.6	7.5 7.4	7.5	7.6	6.9 7.4	7.2	7.2
					Middle	4.2	28.6 28.3	28.4	8.0 8.0	8.0	22.4 23.1	22.7	78.1 78.1	78.1	5.4 5.4	5.4		7.6 7.5	7.6		6.5 7.1	6.8	
					Bottom	7.3	28.2 28.1	28.2	8.0 8.0	8.0	24.6 24.8	24.7	75.5 74.9	75.2	5.1 5.1	5.1	5.1	7.8 7.7	7.8		7.6 7.3	7.5	
15-Jul-13	Rainy	Moderate	15:51	9.5	Surface	1.0	29.0 29.0	29.0	8.2 8.2	8.2	20.3 20.4	20.3	89.0 86.7	87.9	6.1 6.0	6.0	5.9	9.6 10.2	9.9	11.0	6.0 5.8	5.9	5.8
					Middle	4.8	28.9 28.7	28.8	8.2 8.1	8.2	20.6 20.9	20.7	85.0 81.6	83.3	5.9 5.6	5.7		10.9 11.9	11.4		6.0 6.6	6.3	
					Bottom	8.5	28.4 28.6	28.5	8.1 8.1	8.1	22.8 22.1	22.4	83.5 84.9	84.2	5.7 5.8	5.8	5.8	12.2 11.2	11.7		5.5 5.0	5.3	
17-Jul-13	Fine	Moderate	08:39	8.4	Surface	1.0	28.0 27.9	28.0	8.2 8.2	8.2	20.6 21.1	20.8	85.6 81.0	83.3	6.0 5.6	5.8	5.7	9.8 9.9	9.9	10.2	4.7 5.1	4.9	5.6
					Middle	4.2	26.8 26.9	26.8	8.2 8.2	8.2	27.0 26.6	26.8	78.3 78.8	78.6	5.5 5.6	5.5		10.5 10.2	10.4		6.6 5.7	6.2	
					Bottom	7.4	26.9 26.7	26.8	8.2 8.2	8.2	27.2 27.4	27.3	71.1 67.6	69.4	5.0 4.7	4.8	4.8	10.4 10.4	10.4		5.3 6.3	5.8	
19-Jul-13	Sunny	Moderate	10:55	8.4	Surface	1.0	27.7 27.7	27.7	8.3 8.3	8.3	24.0 24.0	24.0	73.7 73.3	73.5	5.1 5.1	5.1	5.1	10.9 10.5	10.7	11.4	5.3 5.6	5.5	5.3
					Middle	4.2	27.1 27.1	27.1	8.3 8.3	8.3	25.7 26.1	25.9	72.8 72.7	72.8	5.0 5.0	5.0		11.6 11.8	11.7		5.4 5.3	5.4	
					Bottom	7.4	26.9 27.3	27.1	8.3 8.3	8.3	27.5 27.2	27.4	73.3 71.3	72.3	5.0 4.9	4.9	4.9	11.9 11.7	11.8		5.6 4.3	5.0	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Sunny	Moderate	12:56	9.0	Surface	1.0	28.2 28.1	28.1	8.3 8.3	8.3	24.8 25.1	24.9	87.2 84.8	86.0	5.9 5.8	5.9	5.9	5.4 5.0	5.2	5.3	5.4 4.6	5.0	5.1
					Middle	4.5	27.7 27.6	27.7	8.3 8.3	8.3	26.9 26.9	26.9	84.4 85.4	84.9	5.7 5.8	5.8		5.2 5.4	5.3		4.7 4.4	4.6	
					Bottom	8.0	27.6 27.5	27.5	8.3 8.3	8.3	27.5 27.7	27.6	81.6 81.5	81.6	5.5 5.5	5.5	5.5	5.1 5.6	5.4		5.6 5.8	5.7	
24-Jul-13	Cloudy	Moderate	12:57	9.0	Surface	1.0	27.8 27.8	27.8	8.3 8.3	8.3	24.6 24.8	24.7	78.8 79.6	79.2	5.4 5.5	5.4	5.4	6.8 7.0	6.9	7.7	11.5 11.8	11.7	11.5
					Middle	4.5	27.9 27.9	27.9	8.3 8.3	8.3	26.9 27.0	27.0	78.9 79.2	79.1	5.3 5.3	5.3		7.5 7.8	7.7		11.1 12.1	11.6	
					Bottom	8.0	28.0 27.9	28.0	8.3 8.3	8.3	27.6 27.6	27.6	80.6 79.7	80.2	5.4 5.4	5.4	5.4	8.5 8.2	8.4		11.7 10.9	11.3	
26-Jul-13	Cloudy	Moderate	14:05	9.5	Surface	1.0	27.4 27.4	27.4	8.2 8.2	8.2	23.5 23.5	23.5	85.4 85.4	85.4	5.9 5.9	5.9	5.9	9.1 9.2	9.2	11.9	12.3 11.3	11.8	11.5
					Middle	4.8	27.4 27.4	27.4	8.2 8.2	8.2	24.2 24.1	24.2	84.1 84.2	84.2	5.8 5.8	5.8		13.2 13.6	13.4		12.3 11.1	11.7	
					Bottom	8.5	27.4 27.4	27.4	8.2 8.2	8.2	24.4 24.2	24.3	84.5 84.7	84.6	5.8 5.9	5.8	5.8	12.7 13.4	13.1		10.9 11.0	11.0	
29-Jul-13	Sunny	Moderate	16:01	9.4	Surface	1.0	29.0 29.0	29.0	8.2 8.2	8.2	20.5 20.5	20.5	88.7 88.6	88.7	6.1 6.1	6.1	6.1	8.5 8.2	8.4	9.2	8.7 8.9	8.8	8.6
					Middle	4.7	29.0 29.0	29.0	8.2 8.2	8.2	20.6 20.5	20.6	87.3 86.9	87.1	6.0 6.0	6.0		8.9 8.8	8.9		8.8 8.0	8.4	
					Bottom	8.4	28.7 28.6	28.6	8.2 8.2	8.2	22.1 21.5	21.8	86.7 85.9	86.3	5.9 5.9	5.9	5.9	10.5 10.1	10.3		9.2 7.9	8.6	
31-Jul-13	Fine	Moderate	09:05	8.2	Surface	1.0	29.5 29.7	29.6	8.3 8.3	8.3	17.6 17.3	17.4	80.8 85.9	83.4	5.6 5.9	5.8	5.5	6.7 6.9	6.8	9.3	4.0 4.2	4.1	4.2
					Middle	4.1	27.9 27.9	27.9	8.2 8.2	8.2	25.1 25.2	25.2	74.9 74.9	74.9	5.2 5.2	5.2		10.3 10.5	10.4		3.7 3.9	3.8	
					Bottom	7.2	27.7 27.7	27.7	8.2 8.2	8.2	26.1 26.7	26.4	69.5 71.4	70.5	4.7 4.9	4.8	4.8	10.9 10.4	10.7		5.3 4.3	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
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Rainy	Rough	12:27	8.4	Surface	1.0	30.0 29.9	30.0	8.5 8.5	8.5	16.6 16.7	16.7	106.8 105.9	106.4	7.4 7.3	7.3	6.4	7.7 8.1	7.9	9.3	8.6 8.1	8.4	8.0
					Middle	4.2	27.9 27.9	27.9	8.3 8.3	8.3	24.6 24.9	24.8	79.2 78.3	78.8	5.5 5.4	5.4		9.9 9.8	9.9		8.2 8.3	8.3	
					Bottom	7.4	27.5 27.5	27.5	8.3 8.3	8.3	27.2 27.0	27.1	77.9 75.2	76.6	5.3 5.1	5.2	5.2	10.3 10.0	10.2		7.6 7.0	7.3	
3-Jul-13	Sunny	Moderate	15:14	9.1	Surface	1.0	30.1 30.1	30.1	8.5 8.5	8.5	14.6 14.5	14.6	111.0 110.5	110.8	7.7 7.7	7.7	6.7	11.1 10.8	11.0	12.2	11.6 12.2	11.9	12.8
					Middle	4.6	28.8 28.8	28.8	8.3 8.3	8.3	16.7 16.7	16.7	80.7 78.5	79.6	5.7 5.5	5.6		12.0 11.6	11.8		13.4 13.6	13.5	
					Bottom	8.1	28.4 28.3	28.3	8.2 8.2	8.2	23.1 23.2	23.1	75.2 75.0	75.1	5.2 5.1	5.1	5.1	13.9 13.7	13.8		12.9 12.8	12.9	
5-Jul-13	Sunny	Moderate	17:25	8.2	Surface	1.0	31.6 31.6	31.6	8.6 8.6	8.6	12.3 12.4	12.3	131.8 131.4	131.6	9.1 9.0	9.1	7.9	8.9 8.9	8.9	8.8	10.2 9.6	9.9	10.2
					Middle	4.1	30.0 30.1	30.1	8.5 8.5	8.5	15.7 15.5	15.6	94.8 95.4	95.1	6.6 6.6	6.6		8.6 8.8	8.7		9.6 10.5	10.1	
					Bottom	7.2	28.8 28.8	28.8	8.4 8.4	8.4	22.2 22.0	22.1	90.0 88.2	89.1	6.1 6.0	6.1	6.1	8.6 8.7	8.7		10.1 10.8	10.5	
8-Jul-13	Fine	Moderate	18:53	8.1	Surface	1.0	29.5 29.5	29.5	8.5 8.5	8.5	15.5 15.1	15.3	94.3 92.7	93.5	6.6 6.5	6.6	6.1	10.3 10.5	10.4	10.7	10.2 10.0	10.1	10.3
					Middle	4.1	29.1 29.2	29.2	8.5 8.5	8.5	16.2 16.4	16.3	78.8 81.9	80.4	5.5 5.7	5.6		10.7 10.8	10.8		10.7 9.6	10.2	
					Bottom	7.1	28.8 28.9	28.9	8.4 8.4	8.4	18.6 18.3	18.4	78.3 80.6	79.5	5.5 5.6	5.5	5.5	10.9 10.6	10.8		10.1 11.2	10.7	
10-Jul-13	Sunny	Moderate	08:11	9.3	Surface	1.0	29.0 29.0	29.0	8.1 8.1	8.1	16.8 16.9	16.8	85.8 82.8	84.3	6.0 5.8	5.9	5.6	7.2 7.3	7.3	8.9	6.2 5.9	6.1	6.7
					Middle	4.7	28.5 28.7	28.6	8.0 8.0	8.0	19.5 19.4	19.5	72.9 77.6	75.3	5.0 5.4	5.2		10.0 9.0	9.5		6.6 6.7	6.7	
					Bottom	8.3	28.4 28.4	28.4	8.0 8.0	8.0	22.4 20.9	21.7	68.9 71.9	70.4	4.8 5.0	4.9	4.9	10.0 9.6	9.8		7.6 6.7	7.2	
12-Jul-13	Sunny	Moderate	09:35	8.5	Surface	1.0	29.1 29.1	29.1	8.1 8.1	8.1	19.4 19.4	19.4	80.3 80.4	80.4	5.5 5.5	5.5	5.4	5.8 5.7	5.8	7.0	5.0 6.1	5.6	5.8
					Middle	4.3	28.9 29.0	28.9	8.0 8.0	8.0	20.7 20.3	20.5	74.8 76.8	75.8	5.1 5.2	5.2		7.6 7.3	7.5		6.8 5.5	6.2	
					Bottom	7.5	28.2 28.4	28.3	8.0 8.0	8.0	24.0 24.0	24.0	73.6 73.5	73.6	5.1 5.1	5.1	5.1	7.6 7.9	7.8		6.3 5.0	5.7	
15-Jul-13	Rainy	Moderate	11:26	9.7	Surface	1.0	29.1 29.0	29.0	8.2 8.2	8.2	19.8 19.8	19.8	92.5 86.3	89.4	6.4 6.0	6.2	5.7	8.0 8.0	8.0	9.2	4.6 4.9	4.8	5.1
					Middle	4.9	28.5 28.3	28.4	8.1 8.1	8.1	21.9 22.5	22.2	77.3 74.8	76.1	5.3 5.1	5.2		10.0 10.4	10.2		5.9 5.4	5.7	
					Bottom	8.7	28.3 28.3	28.3	8.1 8.1	8.1	22.7 22.6	22.7	83.0 82.3	82.7	5.7 5.7	5.7	5.7	9.7 8.9	9.3		4.8 4.5	4.7	
17-Jul-13	Sunny	Moderate	12:44	8.1	Surface	1.0	28.3 28.3	28.3	8.4 8.4	8.4	21.1 21.2	21.2	85.5 85.8	85.7	5.9 5.9	5.9	5.5	11.9 11.8	11.9	12.2	5.2 4.5	4.9	5.2
					Middle	4.1	27.4 27.3	27.4	8.2 8.2	8.2	24.5 24.5	24.5	75.2 73.1	74.2	5.2 5.1	5.1		12.5 12.2	12.4		4.7 5.7	5.2	
					Bottom	7.1	26.7 27.0	26.9	8.2 8.2	8.2	27.2 26.8	27.0	71.1 72.5	71.8	4.9 5.0	4.9	4.9	12.3 12.3	12.3		5.8 5.0	5.4	
19-Jul-13	Fine	Moderate	15:59	8.6	Surface	1.0	28.5 28.5	28.5	8.4 8.4	8.4	24.4 24.4	24.4	96.5 94.1	95.3	6.5 6.4	6.5	6.0	8.4 8.4	8.4	8.7	10.6 9.6	10.1	10.4
					Middle	4.3	28.1 28.2	28.1	8.3 8.4	8.3	24.9 24.7	24.8	78.3 81.3	79.8	5.3 5.5	5.4		8.2 8.4	8.3		10.2 10.0	10.1	
					Bottom	7.6	27.4 27.4	27.4	8.3 8.3	8.3	25.9 25.9	25.9	78.8 76.8	77.8	5.4 5.3	5.3	5.3	9.3 9.3	9.3		10.1 11.7	10.9	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Sunny	Moderate	18:36	9.0	Surface	1.0	28.3 28.2	28.2	8.3 8.2	8.3	24.9 25.0	24.9	90.1 85.7	87.9	6.1 5.8	6.0	5.9	10.8 11.1	11.0	11.4	10.7 10.8	10.8	11.5
					Middle	4.5	28.0 28.0	28.0	8.2 8.2	8.2	25.4 25.4	25.4	84.7 84.6	84.7	5.8 5.8	5.8		11.5 11.2	11.4		11.5 10.1	10.8	
					Bottom	8.0	28.0 27.9	27.9	8.2 8.2	8.2	25.5 25.6	25.6	83.8 83.7	83.8	5.7 5.7	5.7	5.7	11.6 11.8	11.7		13.4 12.5	13.0	
24-Jul-13	Rainy	Moderate	07:45	9.4	Surface	1.0	28.0 27.9	28.0	8.2 8.2	8.2	24.5 24.5	24.5	77.2 77.5	77.4	5.3 5.3	5.3	5.3	5.3 5.6	5.5	5.7	7.8 7.3	7.6	7.0
					Middle	4.7	28.0 28.0	28.0	8.2 8.2	8.2	24.5 24.5	24.5	77.2 76.7	77.0	5.3 5.3	5.3		5.9 6.0	6.0		7.2 6.1	6.7	
					Bottom	8.4	27.9 27.9	27.9	8.2 8.2	8.2	24.6 24.6	24.6	76.7 77.0	76.9	5.3 5.3	5.3	5.3	5.5 5.4	5.5		6.7 6.8	6.8	
26-Jul-13	Cloudy	Moderate	09:24	9.3	Surface	1.0	27.3 27.3	27.3	8.2 8.2	8.2	23.5 23.6	23.6	81.9 82.7	82.3	5.7 5.7	5.7	5.7	9.8 10.4	10.1	10.2	11.4 11.1	11.3	13.9
					Middle	4.7	27.3 27.4	27.3	8.2 8.2	8.2	23.8 23.8	23.8	83.0 82.2	82.6	5.8 5.7	5.7		10.5 10.2	10.4		15.9 15.2	15.6	
					Bottom	8.3	27.3 27.3	27.3	8.1 8.2	8.2	23.8 23.8	23.8	84.2 82.3	83.3	5.9 5.7	5.8	5.8	10.1 10.1	10.1		14.7 15.1	14.9	
29-Jul-13	Sunny	Moderate	12:24	9.3	Surface	1.0	28.3 28.3	28.3	8.1 8.1	8.1	20.2 20.2	20.2	84.8 84.9	84.9	5.9 5.9	5.9	5.9	7.6 7.9	7.8	8.3	7.6 7.9	7.8	7.7
					Middle	4.7	28.2 28.2	28.2	8.1 8.1	8.1	20.2 20.3	20.3	83.2 82.8	83.0	5.8 5.8	5.8		8.0 8.2	8.1		6.7 8.3	7.5	
					Bottom	8.3	28.1 28.1	28.1	8.1 8.1	8.1	20.6 20.6	20.6	81.6 82.8	82.2	5.7 5.8	5.7	5.7	9.1 9.0	9.1		8.5 7.2	7.9	
31-Jul-13	Sunny	Moderate	13:41	8.5	Surface	1.0	29.9 29.9	29.9	8.5 8.5	8.5	18.1 18.1	18.1	111.1 112.2	111.7	7.6 7.7	7.6	6.7	7.5 7.4	7.5	9.2	6.2 7.6	6.9	6.7
					Middle	4.3	28.2 29.7	28.9	8.3 8.4	8.3	24.6 23.7	24.2	83.7 84.3	84.0	5.7 5.6	5.7		8.6 8.6	8.6		6.1 7.2	6.7	
					Bottom	7.5	27.6 27.6	27.6	8.2 8.2	8.2	26.9 26.9	26.9	77.6 74.4	76.0	5.3 5.1	5.2	5.2	11.4 11.3	11.4		6.1 7.1	6.6	

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
*** Cancelled due to adverse weather condition and safety concern.

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 (^{o}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-Jul-13	Rainy	Rough	08:38	3.3	Surface	1.0	29.5 29.4	29.4	8.4 8.4	8.4	16.0 16.0	16.0	106.3 105.0	105.7	7.4 7.3	7.4	7.4	7.3 7.2	7.3	7.5	7.4 8.2	7.8	7.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	29.4 29.4	29.4	8.4 8.4	8.4	16.0 16.0	16.0	104.7 102.6	103.7	7.3 7.2	7.2	7.2	7.5 7.7	7.6		7.6 7.4	7.5	
3-Jul-13	Sunny	Moderate	10:25	3.4	Surface	1.0	29.3 29.3	29.3	8.3 8.3	8.3	13.9 13.9	13.9	95.9 96.0	96.0	6.8 6.8	6.8	6.8	8.8 9.0	8.9	10.9	13.4 13.6	13.5	14.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	29.0 28.8	28.9	8.3 8.3	8.3	14.9 16.4	15.7	95.4 96.2	95.8	6.8 6.8	6.8	6.8	12.3 13.2	12.8		15.7 15.3	15.5	
5-Jul-13	Sunny	Moderate	12:11	3.4	Surface	1.0	30.2 30.5	30.4	8.5 8.6	8.5	12.4 11.9	12.2	104.9 107.6	106.3	7.4 7.6	7.5	7.5	10.1 10.2	10.2	10.5	9.3 9.0	9.2	9.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	29.8 29.8	29.8	8.4 8.4	8.4	14.3 14.2	14.3	98.1 96.0	97.1	6.9 6.7	6.8	6.8	10.9 10.5	10.7		8.7 8.8	8.8	
8-Jul-13	Sunny	Moderate	13:58	3.1	Surface	1.0	29.3 29.1	29.2	8.5 8.5	8.5	14.3 14.5	14.4	97.9 96.8	97.4	6.9 6.9	6.9	6.9	11.5 11.5	11.5	11.4	5.1 5.3	5.2	5.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.1	28.7 28.9	28.8	8.5 8.5	8.5	15.2 15.3	15.3	86.5 92.8	89.7	6.2 6.6	6.4	6.4	11.1 11.3	11.2		4.4 5.6	5.0	
10-Jul-13	Sunny	Moderate	13:08	3.5	Surface	1.0	29.7 29.8	29.8	8.1 8.1	8.1	16.0 16.5	16.3	89.6 89.6	89.6	6.2 6.2	6.2	6.2	10.2 10.7	10.5	12.9	5.7 5.8	5.8	5.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	28.9 28.8	28.9	8.0 8.1	8.1	17.7 17.9	17.8	81.9 84.9	83.4	5.7 5.9	5.8	5.8	14.8 15.6	15.2		5.1 6.3	5.7	
12-Jul-13	Sunny	Moderate	14:25	3.0	Surface	1.0	29.6 29.5	29.6	8.1 8.1	8.1	19.0 19.0	19.0	94.0 91.2	92.6	6.4 6.3	6.4	6.4	6.6 6.7	6.7	6.8	5.7 5.2	5.5	5.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.0	29.1 29.1	29.1	8.1 8.1	8.1	19.8 19.7	19.7	90.4 88.9	89.7	6.2 6.1	6.2	6.2	6.7 6.8	6.8		4.7 4.5	4.6	
15-Jul-13	Rainy	Moderate	16:05	3.5	Surface	1.0	29.1 29.1	29.1	8.2 8.2	8.2	19.8 19.8	19.8	97.8 96.5	97.2	6.7 6.7	6.7	6.7	7.6 7.9	7.8	8.4	4.8 5.6	5.2	4.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	29.0 29.1	29.0	8.2 8.2	8.2	20.3 20.1	20.2	94.2 98.1	96.2	6.5 6.8	6.6	6.6	9.4 8.5	9.0		4.0 4.4	4.2	
17-Jul-13	Fine	Moderate	08:23	3.2	Surface	1.0	28.0 27.9	27.9	8.3 8.3	8.3	20.6 20.7	20.6	84.2 81.5	82.9	5.9 5.7	5.8	5.8	6.8 6.5	6.7	8.3	3.8 2.1	3.0	4.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	27.6 27.6	27.6	8.3 8.2	8.3	22.6 22.8	22.7	79.9 76.7	78.3	5.6 5.3	5.4	5.4	9.9 9.6	9.8		4.6 5.2	4.9	
19-Jul-13	Sunny	Moderate	10:41	3.1	Surface	1.0	27.8 27.9	27.8	8.4 8.4	8.4	23.7 23.7	23.7	103.5 106.7	105.1	7.1 7.3	7.2	7.2	5.2 5.5	5.4	5.9	5.2 6.5	5.9	5.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.1	27.7 27.6	27.7	8.4 8.4	8.4	23.7 23.8	23.8	101.2 100.5	100.9	7.0 6.9	7.0	7.0	6.3 6.4	6.4		5.2 5.2	5.2	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Sunny	Moderate	12:43	3.4	Surface	1.0	28.0 27.9	27.9	8.2 8.2	8.2	23.8 24.5	24.1	86.7 89.0	87.9	6.0 6.1	6.0	6.0	5.7 5.3	5.5	5.6	7.4 6.3	6.9	6.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	27.8 27.1	27.5	8.2 8.2	8.2	25.9 26.8	26.3	86.7 88.1	87.4	5.9 6.0	6.0	6.0	5.7 5.6	5.7		5.3 6.6	6.0	
24-Jul-13	Cloudy	Moderate	13:15	3.3	Surface	1.0	27.7 27.7	27.7	8.2 8.2	8.2	23.7 23.7	23.7	75.7 75.4	75.6	5.2 5.2	5.2	5.2	4.6 4.5	4.6	4.9	6.6 7.2	6.9	6.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	27.7 27.7	27.7	8.1 8.2	8.1	24.8 24.7	24.7	75.1 75.0	75.1	5.2 5.2	5.2	5.2	5.2 5.2	5.2		5.7 6.3	6.0	
26-Jul-13	Cloudy	Moderate	14:19	3.6	Surface	1.0	27.4 27.4	27.4	8.2 8.2	8.2	23.2 23.2	23.2	86.1 85.4	85.8	6.0 5.9	6.0	6.0	13.4 12.7	13.1	13.6	10.8 9.9	10.4	10.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	27.4 27.4	27.4	8.1 8.2	8.2	23.2 23.2	23.2	86.9 85.6	86.3	6.1 5.9	6.0	6.0	14.3 13.6	14.0		10.4 11.7	11.1	
29-Jul-13	Sunny	Moderate	16:15	3.4	Surface	1.0	29.0 29.1	29.0	8.2 8.2	8.2	18.9 18.9	18.9	89.8 91.2	90.5	6.2 6.3	6.3	6.3	11.0 10.8	10.9	11.9	4.3 3.0	3.7	3.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	28.5 28.6	28.5	8.1 8.2	8.2	20.0 19.9	19.9	88.1 88.5	88.3	6.1 6.1	6.1	6.1	12.9 12.7	12.8		3.8 3.8	3.8	
31-Jul-13	Fine	Moderate	08:51	3.2	Surface	1.0	29.3 29.3	29.3	8.3 8.3	8.3	18.0 18.1	18.1	93.1 94.1	93.6	6.5 6.5	6.5	6.5	8.2 8.1	8.2	8.8	3.7 4.9	4.3	4.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	29.1 29.1	29.1	8.2 8.2	8.2	18.9 19.1	19.0	90.9 91.6	91.3	6.3 6.3	6.3	6.3	9.3 9.3	9.3		4.0 5.4	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
*** Cancelled due to adverse weather condition and safety concern.

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 (^{o}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-Jul-13	Rainy	Rough	12:44	3.3	Surface	1.0	30.0 30.0	30.0	8.5 8.5	8.5	16.7 16.7	16.7	121.6 121.0	121.3	8.4 8.4	8.4	8.4	10.4 10.1	10.3	10.3	11.1 10.4	10.8	10.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	30.0 30.0	30.0	8.5 8.5	8.5	16.6 16.6	16.6	121.1 118.5	119.8	8.4 8.2	8.3	8.3	10.3 10.3	10.3		11.0 10.1	10.6	
3-Jul-13	Sunny	Moderate	15:32	3.2	Surface	1.0	30.6 30.6	30.6	8.5 8.5	8.5	13.5 13.5	13.5	121.4 125.4	123.4	8.4 8.7	8.6	8.6	4.5 4.9	4.7	4.9	6.0 4.7	5.4	5.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	30.5 30.5	30.5	8.5 8.5	8.5	13.7 13.6	13.7	123.1 115.7	119.4	8.6 8.1	8.3	8.3	5.0 5.1	5.1		4.9 4.6	4.8	
5-Jul-13	Sunny	Moderate	17:40	3.3	Surface	1.0	31.9 31.9	31.9	8.6 8.6	8.6	12.0 12.0	12.0	138.0 139.0	138.5	9.4 9.5	9.4	9.4	8.4 8.4	8.4	8.5	7.6 7.5	7.6	7.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	31.6 31.5	31.5	8.6 8.5	8.6	12.1 12.2	12.1	119.6 135.6	127.6	8.2 9.3	8.8	8.8	8.3 8.7	8.5		8.9 7.5	8.2	
8-Jul-13	Fine	Moderate	19:10	3.1	Surface	1.0	29.8 29.7	29.8	8.6 8.6	8.6	14.7 14.7	14.7	109.8 108.4	109.1	7.7 7.6	7.6	7.6	13.5 13.6	13.6	13.5	9.6 8.1	8.9	8.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.1	29.7 29.6	29.6	8.6 8.6	8.6	14.9 15.2	15.1	107.8 108.4	108.1	7.6 7.6	7.6	7.6	13.3 13.5	13.4		9.5 8.2	8.9	
10-Jul-13	Sunny	Moderate	07:52	3.5	Surface	1.0	29.0 29.0	29.0	8.1 8.1	8.1	16.1 16.0	16.0	90.3 92.0	91.2	6.4 6.5	6.4	6.4	6.5 6.5	6.5	6.6	6.5 5.9	6.2	6.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	29.0 29.0	29.0	8.1 8.1	8.1	16.2 16.2	16.2	93.8 90.7	92.3	6.6 6.4	6.5	6.5	6.6 6.6	6.6		7.0 6.0	6.5	
12-Jul-13	Sunny	Moderate	09:21	3.4	Surface	1.0	29.1 29.1	29.1	8.1 8.1	8.1	18.7 18.8	18.8	87.6 88.1	87.9	6.1 6.1	6.1	6.1	3.5 3.5	3.5	3.6	4.0 4.9	4.5	4.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	29.1 29.1	29.1	8.1 8.1	8.1	19.0 18.9	18.9	89.1 87.9	88.5	6.2 6.1	6.1	6.1	3.7 3.5	3.6		4.1 4.6	4.4	
15-Jul-13	Rainy	Moderate	11:12	3.6	Surface	1.0	29.1 29.1	29.1	8.2 8.2	8.2	19.7 19.7	19.7	103.2 102.2	102.7	7.1 7.0	7.1	7.1	6.2 6.3	6.3	6.6	5.2 4.2	4.7	4.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	29.0 29.1	29.1	8.2 8.2	8.2	19.7 19.7	19.7	101.6 103.0	102.3	7.0 7.1	7.1	7.1	6.8 6.7	6.8		4.5 4.1	4.3	
17-Jul-13	Sunny	Moderate	13:07	3.2	Surface	1.0	28.5 28.5	28.5	8.5 8.5	8.5	21.0 21.0	21.0	120.5 122.1	121.3	8.3 8.4	8.4	8.4	4.4 4.3	4.4	4.5	3.9 3.6	3.8	3.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	28.5 28.4	28.4	8.5 8.5	8.5	21.0 21.1	21.1	120.8 120.8	120.8	8.3 8.4	8.3	8.3	4.5 4.5	4.5		3.3 3.2	3.3	
19-Jul-13	Fine	Moderate	16:15	3.4	Surface	1.0	28.4 28.4	28.4	8.5 8.5	8.5	24.4 24.4	24.4	112.4 112.6	112.5	7.6 7.7	7.6	7.6	8.9 8.7	8.8	9.1	7.3 7.4	7.4	7.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	28.3 28.4	28.4	8.5 8.4	8.5	24.5 24.5	24.5	112.5 112.4	112.5	7.6 7.6	7.6	7.6	9.5 9.2	9.4		6.9 6.3	6.6	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Sunny	Moderate	18:59	3.4	Surface	1.0	28.2 28.2	28.2	8.2 8.3	8.3	25.0 25.0	25.0	90.7 93.5	92.1	6.2 6.4	6.3	6.3	15.2 15.7	15.5	15.6	8.7 7.4	8.1	11.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	28.2 28.2	28.2	8.2 8.2	8.2	25.1 25.0	25.1	90.8 90.2	90.5	6.2 6.1	6.1	6.1	15.7 15.5	15.6		14.3 15.5	14.9	
24-Jul-13	Rainy	Moderate	07:25	3.5	Surface	1.0	27.9 27.9	27.9	8.2 8.2	8.2	24.1 24.1	24.1	78.5 78.4	78.5	5.4 5.4	5.4	5.4	6.4 6.2	6.3	6.5	3.6 4.2	3.9	4.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	27.9 27.9	27.9	8.2 8.2	8.2	24.5 24.5	24.5	78.8 78.5	78.7	5.4 5.4	5.4	5.4	6.6 6.8	6.7		6.4 4.8	5.6	
26-Jul-13	Cloudy	Moderate	09:07	3.4	Surface	1.0	27.3 27.3	27.3	8.2 8.2	8.2	23.8 23.8	23.8	84.4 87.2	85.8	5.9 6.1	6.0	6.0	14.0 14.3	14.2	14.8	13.9 14.7	14.3	15.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	27.3 27.3	27.3	8.1 8.2	8.1	23.9 23.9	23.9	85.5 85.7	85.6	5.9 5.9	5.9	5.9	15.8 14.8	15.3		17.1 15.8	16.5	
29-Jul-13	Sunny	Moderate	12:10	3.4	Surface	1.0	28.9 28.9	28.9	8.2 8.2	8.2	19.3 19.3	19.3	89.7 89.6	89.7	6.2 6.2	6.2	6.2	8.2 8.0	8.1	8.7	4.2 4.0	4.1	4.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	28.9 28.9	28.9	8.2 8.2	8.2	19.3 19.3	19.3	89.6 89.7	89.7	6.2 6.2	6.2	6.2	9.1 9.5	9.3		6.2 4.9	5.6	
31-Jul-13	Sunny	Moderate	13:58	3.2	Surface	1.0	30.1 30.1	30.1	8.7 8.7	8.7	17.8 17.8	17.8	140.2 142.3	141.3	9.7 9.8	9.7	9.7	6.7 6.6	6.7	6.7	5.9 5.9	5.9	5.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	30.1 30.1	30.1	8.7 8.7	8.7	17.9 17.9	17.9	141.3 138.2	139.8	9.8 9.5	9.6	9.6	6.7 6.7	6.7		5.0 5.4	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
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Rainy	Rough	08:06	4.1	Surface	1.0	29.3 29.5	29.4	8.4 8.4	8.4	16.5 16.4	16.5	91.4 101.6	96.5	6.4 7.1	6.7	6.7	7.4 7.3	7.4	7.9	9.1 9.8	9.5	9.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	28.9 29.0	29.0	8.3 8.3	8.3	17.7 17.5	17.6	87.0 88.6	87.8	6.1 6.2	6.1	6.1	8.2 8.4	8.3		10.1 8.8	9.5	
3-Jul-13	Sunny	Moderate	10:04	3.7	Surface	1.0	28.8 28.8	28.8	8.3 8.3	8.3	15.1 15.3	15.2	96.6 99.6	98.1	6.9 7.1	7.0	7.0	6.7 6.1	6.4	7.1	5.2 5.3	5.3	6.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	28.6 28.6	28.6	8.3 8.3	8.3	15.8 15.9	15.9	97.5 96.1	96.8	6.9 6.8	6.9	6.9	7.8 7.7	7.8		7.1 6.5	6.8	
5-Jul-13	Sunny	Moderate	11:48	4.1	Surface	1.0	30.6 30.5	30.6	8.5 8.6	8.6	12.0 12.3	12.1	100.5 103.7	102.1	7.0 7.3	7.2	7.2	10.4 10.5	10.5	10.6	7.2 7.6	7.4	7.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	29.1 29.2	29.1	8.3 8.3	8.3	16.5 15.7	16.1	86.8 86.9	86.9	6.1 6.1	6.1	6.1	10.9 10.2	10.6		8.2 8.4	8.3	
8-Jul-13	Sunny	Moderate	13:34	4.1	Surface	1.0	29.3 29.3	29.3	8.5 8.5	8.5	14.4 14.4	14.4	91.5 92.3	91.9	6.5 6.5	6.5	6.5	10.2 10.4	10.3	10.5	3.9 4.8	4.4	4.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	28.8 29.0	28.9	8.4 8.4	8.4	16.1 16.1	16.1	88.9 88.7	88.8	6.3 6.3	6.3	6.3	10.5 10.8	10.7		4.1 5.0	4.6	
10-Jul-13	Sunny	Moderate	13:33	3.9	Surface	1.0	29.4 29.1	29.2	8.1 8.1	8.1	17.1 17.3	17.2	88.2 84.7	86.5	6.1 5.9	6.0	6.0	8.3 9.0	8.7	9.4	4.2 3.2	3.7	4.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	28.7 28.9	28.8	8.1 8.1	8.1	19.2 18.9	19.1	81.1 85.1	83.1	5.6 5.9	5.8	5.8	10.4 9.8	10.1		5.1 4.6	4.9	
12-Jul-13	Sunny	Moderate	14:52	3.9	Surface	1.0	29.8 29.6	29.7	8.1 8.1	8.1	18.8 19.1	18.9	88.3 88.1	88.2	6.0 6.0	6.0	6.0	5.6 5.9	5.8	6.8	4.2 4.2	4.2	4.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	28.9 28.9	28.9	8.1 8.0	8.1	20.8 20.8	20.8	82.5 80.6	81.6	5.7 5.5	5.6	5.6	7.8 7.5	7.7		3.8 5.4	4.6	
15-Jul-13	Rainy	Moderate	16:27	3.8	Surface	1.0	28.9 28.9	28.9	8.2 8.2	8.2	20.0 20.1	20.1	87.3 87.2	87.3	6.0 6.0	6.0	6.0	6.6 7.0	6.8	8.5	5.9 5.2	5.6	4.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	28.9 28.9	28.9	8.1 8.1	8.1	20.4 20.4	20.4	85.2 85.2	85.2	5.9 5.9	5.9	5.9	9.9 10.2	10.1		4.3 3.9	4.1	
17-Jul-13	Fine	Moderate	08:00	3.9	Surface	1.0	28.0 28.0	28.0	8.3 8.3	8.3	20.9 21.0	21.0	74.3 75.1	74.7	5.2 5.2	5.2	5.2	4.1 4.2	4.2	4.3	3.7 4.1	3.9	4.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	27.9 27.7	27.8	8.2 8.2	8.2	22.6 23.1	22.8	74.2 74.3	74.3	5.1 5.1	5.1	5.1	4.4 4.1	4.3		5.3 4.9	5.1	
19-Jul-13	Sunny	Moderate	10:18	3.8	Surface	1.0	27.7 27.6	27.7	8.3 8.3	8.3	24.0 24.1	24.0	76.0 75.1	75.6	5.2 5.2	5.2	5.2	8.4 8.5	8.5	8.6	4.6 3.8	4.2	4.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	27.3 27.4	27.4	8.2 8.2	8.2	24.8 24.7	24.8	75.0 73.8	74.4	5.2 5.1	5.1	5.1	8.5 8.6	8.6		3.2 4.3	3.8	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Sunny	Moderate	12:21	3.7	Surface	1.0	28.1 28.1	28.1	8.2 8.2	8.2	24.5 24.6	24.6	86.0 86.3	86.2	5.9 5.9	5.9	5.9	6.3 6.4	6.4	6.5	5.1 4.9	5.0	5.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	27.9 27.8	27.8	8.2 8.2	8.2	25.6 25.6	25.6	84.9 85.9	85.4	5.8 5.9	5.8	5.8	6.6 6.5	6.6		6.2 7.1	6.7	
24-Jul-13	Cloudy	Moderate	13:43	3.5	Surface	1.0	27.8 27.8	27.8	8.2 8.2	8.2	23.7 23.7	23.7	78.0 78.0	78.0	5.4 5.4	5.4	5.4	4.6 4.8	4.7	5.0	5.8 6.3	6.1	6.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	27.9 27.9	27.9	8.2 8.1	8.2	24.0 24.1	24.1	78.1 78.4	78.3	5.4 5.4	5.4	5.4	5.3 5.2	5.3		5.8 6.0	5.9	
26-Jul-13	Cloudy	Moderate	14:43	3.6	Surface	1.0	27.5 27.5	27.5	8.2 8.2	8.2	23.4 23.4	23.4	83.4 83.7	83.6	5.8 5.8	5.8	5.8	12.9 13.3	13.1	14.1	8.6 7.6	8.1	8.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	27.5 27.5	27.5	8.2 8.2	8.2	23.4 23.4	23.4	83.1 75.4	79.3	5.8 5.2	5.5	5.5	15.2 14.7	15.0		9.1 9.6	9.4	
29-Jul-13	Sunny	Moderate	16:41	3.5	Surface	1.0	28.2 28.5	28.4	8.1 8.1	8.1	20.2 19.8	20.0	76.4 77.4	76.9	5.3 5.4	5.4	5.4	10.7 10.9	10.8	12.2	6.1 7.9	7.0	7.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	28.1 28.1	28.1	8.1 8.1	8.1	20.8 21.1	21.0	71.8 73.1	72.5	5.0 5.1	5.0	5.0	13.5 13.7	13.6		7.0 7.9	7.5	
31-Jul-13	Fine	Moderate	08:28	4.2	Surface	1.0	29.4 29.3	29.4	8.3 8.2	8.3	17.8 17.9	17.9	82.8 81.5	82.2	5.7 5.6	5.7	5.7	9.1 9.1	9.1	9.3	2.6 3.0	2.8	2.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	28.9 28.3	28.6	8.1 8.1	8.1	20.4 22.1	21.3	77.8 73.1	75.5	5.4 5.0	5.2	5.2	9.6 9.4	9.5		2.7 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
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Rainy	Rough	13:09	3.8	Surface	1.0	29.4 29.4	29.4	8.4 8.4	8.4	17.4 17.4	17.4	100.6 101.6	101.1	7.0 7.1	7.0	7.0	5.9 6.2	6.1	6.4	6.8 7.3	7.1	6.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	29.2 29.2	29.2	8.4 8.4	8.4	17.7 17.7	17.7	99.8 98.9	99.4	6.9 6.9	6.9	6.9	6.5 6.6	6.6		6.2 6.9	6.6	
3-Jul-13	Sunny	Moderate	16:04	3.5	Surface	1.0	29.6 29.7	29.6	8.4 8.4	8.4	13.0 12.6	12.8	108.7 107.2	108.0	7.7 7.6	7.7	7.7	5.6 5.5	5.6	6.2	5.2 5.0	5.1	5.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	29.5 28.9	29.2	8.3 8.4	8.4	14.5 15.9	15.2	106.5 110.2	108.4	7.5 7.8	7.6	7.6	6.9 6.7	6.8		6.7 5.7	6.2	
5-Jul-13	Sunny	Moderate	18:09	3.8	Surface	1.0	31.0 31.0	31.0	8.5 8.5	8.5	11.0 10.8	10.9	132.9 134.9	133.9	9.3 9.5	9.4	9.4	10.7 10.2	10.5	12.0	8.4 8.7	8.6	8.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	30.4 29.8	30.1	8.4 8.5	8.5	14.0 15.1	14.6	131.2 131.8	131.5	9.1 9.2	9.1	9.1	13.8 13.1	13.5		8.0 8.4	8.2	
8-Jul-13	Fine	Moderate	19:39	3.7	Surface	1.0	29.6 29.5	29.5	8.5 8.5	8.5	15.1 15.1	15.1	93.4 91.7	92.6	6.6 6.4	6.5	6.5	11.5 11.6	11.6	11.5	7.7 6.5	7.1	6.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	29.0 28.6	28.8	8.4 8.4	8.4	17.6 17.7	17.7	84.5 79.9	82.2	6.0 5.6	5.8	5.8	11.5 11.1	11.3		6.1 7.3	6.7	
10-Jul-13	Sunny	Moderate	07:31	3.6	Surface	1.0	29.0 29.0	29.0	8.1 8.1	8.1	14.7 14.8	14.8	85.8 88.0	86.9	6.1 6.2	6.2	6.2	5.7 5.9	5.8	6.0	4.3 4.9	4.6	4.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	29.0 29.0	29.0	8.1 8.1	8.1	16.4 16.3	16.3	86.4 90.1	88.3	6.1 6.3	6.2	6.2	6.1 6.3	6.2		5.2 4.6	4.9	
12-Jul-13	Sunny	Moderate	08:57	4.0	Surface	1.0	28.8 28.9	28.9	8.0 8.0	8.0	19.3 18.9	19.1	73.1 76.6	74.9	5.1 5.3	5.2	5.2	7.5 7.6	7.6	7.7	3.1 2.6	2.9	4.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	28.8 28.7	28.7	8.0 8.0	8.0	20.1 20.1	20.1	74.6 74.5	74.6	5.2 5.2	5.2	5.2	7.5 7.8	7.7		5.5 6.7	6.1	
15-Jul-13	Rainy	Moderate	10:51	3.7	Surface	1.0	28.9 28.8	28.9	8.1 8.1	8.1	20.0 20.0	20.0	83.5 83.4	83.5	5.8 5.8	5.8	5.8	6.1 6.2	6.2	6.7	2.5 2.1	2.3	8.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	28.8 28.8	28.8	8.1 8.1	8.1	20.3 20.3	20.3	84.0 83.2	83.6	5.8 5.7	5.8	5.8	7.2 7.1	7.2		14.8 14.9	14.9	
17-Jul-13	Sunny	Moderate	13:38	3.8	Surface	1.0	28.3 28.3	28.3	8.4 8.4	8.4	20.7 20.7	20.7	90.0 89.8	89.9	6.3 6.2	6.2	6.2	2.0 2.0	2.0	2.4	2.1 3.3	2.7	2.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	28.0 27.9	27.9	8.3 8.3	8.3	22.2 22.3	22.2	87.8 87.1	87.5	6.1 6.0	6.1	6.1	2.7 2.8	2.8		2.3 2.7	2.5	
19-Jul-13	Fine	Moderate	16:46	4.0	Surface	1.0	28.0 28.0	28.0	8.4 8.4	8.4	24.0 23.8	23.9	96.4 97.2	96.8	6.6 6.6	6.6	6.6	6.3 6.3	6.3	6.5	2.7 3.9	3.3	3.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	27.6 27.8	27.7	8.4 8.4	8.4	25.4 25.6	25.5	96.0 97.4	96.7	6.6 6.7	6.6	6.6	6.6 6.5	6.6		2.9 2.9	2.9	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Sunny	Moderate	18:07	3.4	Surface	1.0	28.4 28.4	28.4	8.3 8.3	8.3	24.6 24.6	24.6	92.6 94.8	93.7	6.3 6.4	6.4	6.4	6.8 6.7	6.8	6.8	3.9 5.6	4.8	5.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	28.0 28.2	28.1	8.3 8.3	8.3	25.2 25.1	25.1	92.8 90.4	91.6	6.3 6.1	6.2	6.2	6.8 6.8	6.8		5.0 6.0	5.5	
24-Jul-13	Rainy	Moderate	06:59	3.7	Surface	1.0	27.9 27.9	27.9	8.2 8.2	8.2	23.2 23.3	23.3	75.6 75.5	75.6	5.2 5.2	5.2	5.2	7.5 7.7	7.6	7.8	3.6 4.9	4.3	4.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	27.9 27.9	27.9	8.2 8.2	8.2	23.6 23.6	23.6	75.2 74.6	74.9	5.2 5.1	5.1	5.1	7.9 8.1	8.0		4.3 4.6	4.5	
26-Jul-13	Cloudy	Moderate	08:47	3.8	Surface	1.0	27.6 27.6	27.6	8.2 8.2	8.2	23.1 23.1	23.1	80.3 81.2	80.8	5.6 5.6	5.6	5.6	12.6 12.8	12.7	13.1	12.4 13.0	12.7	13.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	27.6 27.6	27.6	8.1 8.2	8.1	23.1 23.1	23.1	82.2 80.5	81.4	5.7 5.6	5.6	5.6	13.7 13.1	13.4		13.9 14.8	14.4	
29-Jul-13	Sunny	Moderate	11:36	3.5	Surface	1.0	28.4 28.3	28.4	8.1 8.1	8.1	18.7 18.6	18.7	81.8 81.8	81.8	5.7 5.7	5.7	5.7	5.6 5.8	5.7	6.4	3.8 3.6	3.7	3.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	28.3 28.2	28.2	8.1 8.1	8.1	20.2 19.7	20.0	81.8 81.1	81.5	5.7 5.7	5.7	5.7	7.1 6.9	7.0		3.5 3.7	3.6	
31-Jul-13	Sunny	Moderate	14:24	3.9	Surface	1.0	30.2 29.8	30.0	8.5 8.5	8.5	18.5 18.7	18.6	105.6 101.4	103.5	7.2 7.0	7.1	7.1	9.7 9.6	9.7	10.2	5.6 4.7	5.2	5.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	28.9 28.8	28.9	8.2 8.2	8.2	20.5 21.4	20.9	97.0 97.0	97.0	6.7 6.7	6.7	6.7	10.6 10.5	10.6		5.1 5.4	5.3	

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
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Rainy	Rough	07:53	9.8	Surface	1.0	29.3 29.2	29.3	8.3 8.3	8.3	15.5 16.2	15.9	86.8 84.7	85.8	6.1 5.9	6.0	5.6	4.7 4.8	4.8	4.8	5.6 4.6	5.1	6.0
					Middle	4.9	28.4 28.4	28.4	8.3 8.3	8.3	19.3 19.9	19.6	75.0 72.3	73.7	5.2 5.0	5.1		4.8 4.8	4.8		6.5 7.0	6.8	
					Bottom	8.8	27.2 27.0	27.1	8.3 8.2	8.2	25.5 26.5	26.0	79.2 77.3	78.3	5.5 5.3	5.4	5.4	4.6 4.7	4.7		6.2 6.1	6.2	
3-Jul-13	Sunny	Moderate	09:45	10.8	Surface	1.0	29.3 29.2	29.3	8.2 8.2	8.2	12.4 12.4	12.4	86.3 85.7	86.0	6.2 6.1	6.2	5.9	4.5 4.5	4.5	5.4	4.8 4.0	4.4	5.3
					Middle	5.4	28.6 28.6	28.6	8.2 8.2	8.2	18.3 18.1	18.2	80.9 81.5	81.2	5.5 5.6	5.6		4.9 5.1	5.0		6.1 5.4	5.8	
					Bottom	9.8	28.4 27.5	28.0	8.1 8.2	8.2	23.0 24.4	23.7	76.6 74.4	75.5	5.4 5.2	5.3	5.3	6.9 6.5	6.7		6.0 5.4	5.7	
5-Jul-13	Sunny	Moderate	11:36	10.2	Surface	1.0	29.8 29.9	29.8	8.4 8.4	8.4	11.9 12.0	12.0	85.1 87.3	86.2	6.0 6.2	6.1	5.6	5.3 5.1	5.2	5.6	4.8 5.5	5.2	5.7
					Middle	5.1	28.7 28.9	28.8	8.3 8.3	8.3	18.7 19.0	18.8	71.8 73.6	72.7	5.0 5.1	5.1		4.3 4.4	4.4		5.8 5.7	5.8	
					Bottom	9.2	26.8 27.1	27.0	8.2 8.3	8.3	26.3 25.6	25.9	74.3 73.6	74.0	5.1 5.1	5.1	5.1	7.0 7.2	7.1		6.5 5.9	6.2	
8-Jul-13	Sunny	Moderate	13:20	10.1	Surface	1.0	29.2 29.1	29.1	8.5 8.4	8.5	13.3 13.5	13.4	89.9 87.8	88.9	6.4 6.3	6.3	5.8	6.4 6.4	6.4	7.6	5.8 4.8	5.3	4.9
					Middle	5.1	28.5 28.5	28.5	8.4 8.4	8.4	15.8 16.9	16.4	74.4 74.6	74.5	5.3 5.3	5.3		8.1 7.8	8.0		4.8 4.5	4.7	
					Bottom	9.1	27.6 27.7	27.7	8.3 8.3	8.3	22.3 22.2	22.3	74.1 75.3	74.7	5.2 5.2	5.2	5.2	8.5 8.4	8.5		4.9 4.3	4.6	
10-Jul-13	Sunny	Moderate	14:04	11.5	Surface	1.0	29.6 29.7	29.7	8.2 8.2	8.2	14.9 14.8	14.8	87.7 92.8	90.3	6.2 6.5	6.3	5.8	5.5 5.0	5.3	7.3	4.9 3.8	4.4	5.2
					Middle	5.8	28.2 28.1	28.2	8.0 8.0	8.0	21.1 21.5	21.3	75.9 75.7	75.8	5.3 5.2	5.2		8.3 8.6	8.5		4.3 4.2	4.3	
					Bottom	10.5	28.0 28.1	28.0	8.0 8.0	8.0	22.1 22.0	22.0	68.8 69.0	68.9	4.8 4.8	4.8	4.8	8.3 7.9	8.1		7.1 6.9	7.0	
12-Jul-13	Sunny	Moderate	15:11	10.3	Surface	1.0	30.1 30.0	30.0	8.2 8.2	8.2	16.4 16.6	16.5	95.7 94.9	95.3	6.6 6.6	6.6	6.0	3.5 3.5	3.5	5.4	2.3 2.7	2.5	3.5
					Middle	5.2	27.8 28.0	27.9	8.0 8.0	8.0	23.0 22.3	22.6	77.7 77.4	77.6	5.4 5.4	5.4		6.3 6.2	6.3		3.3 4.8	4.1	
					Bottom	9.3	27.1 27.0	27.1	8.0 8.0	8.0	26.0 26.0	26.0	70.8 73.0	71.9	4.9 5.0	4.9	4.9	6.3 6.6	6.5		3.4 4.5	4.0	
15-Jul-13	Rainy	Moderate	16:43	11.3	Surface	1.0	28.9 28.8	28.9	8.2 8.2	8.2	19.2 19.3	19.3	89.3 85.7	87.5	6.2 5.9	6.1	5.7	3.5 3.6	3.6	5.4	2.8 2.7	2.8	3.6
					Middle	5.7	27.9 28.0	27.9	8.1 8.1	8.1	23.0 23.9	23.4	78.7 74.9	76.8	5.4 5.2	5.3		5.4 5.7	5.6		4.0 4.5	4.3	
					Bottom	10.3	27.2 27.5	27.3	8.1 8.1	8.1	25.6 25.2	25.4	73.8 73.6	73.7	5.1 5.1	5.1	5.1	7.2 6.7	7.0		3.5 4.1	3.8	
17-Jul-13	Fine	Moderate	07:45	10.4	Surface	1.0	28.0 28.0	28.0	8.2 8.2	8.2	19.9 20.5	20.2	72.8 71.9	72.4	5.1 5.0	5.1	5.1	2.6 2.4	2.5	2.8	2.0 1.9	2.0	2.6
					Middle	5.2	27.9 27.5	27.7	8.2 8.2	8.2	23.6 25.2	24.4	72.9 71.8	72.4	5.0 5.0	5.0		2.4 2.4	2.4		3.7 2.7	3.2	
					Bottom	9.4	26.3 25.9	26.1	8.2 8.2	8.2	27.6 28.9	28.3	71.2 70.5	70.9	4.9 4.9	4.9	4.9	3.5 3.2	3.4		2.1 3.0	2.6	
19-Jul-13	Sunny	Moderate	10:01	10.0	Surface	1.0	27.5 27.5	27.5	8.3 8.3	8.3	23.0 23.0	23.0	75.4 74.9	75.2	5.2 5.2	5.2	5.2	2.6 2.7	2.7	4.7	3.2 3.1	3.2	3.4
					Middle	5.0	26.8 26.9	26.9	8.2 8.2	8.2	25.9 25.6	25.7	72.7 73.2	73.0	5.1 5.1	5.1		5.7 5.7	5.7		3.4 2.8	3.1	
					Bottom	9.0	26.8 26.9	26.9	8.2 8.2	8.2	26.4 26.3	26.4	68.8 70.3	69.6	4.8 4.8	4.8	4.8	5.5 5.6	5.6		4.1 3.6	3.9	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Sunny	Moderate	12:06	11.3	Surface	1.0	28.0 28.0	28.0	8.3 8.3	8.3	25.1 25.0	25.1	85.0 85.0	85.0	5.8 5.8	5.8	5.7	3.2 3.3	3.3	3.4	5.1 4.6	4.9	5.3
					Middle	5.7	27.5 27.7	27.6	8.3 8.3	8.3	26.8 26.6	26.7	81.0 79.4	80.2	5.5 5.4	5.5		3.3 3.5	3.4		5.5 4.1	4.8	
					Bottom	10.3	27.2 27.3	27.2	8.3 8.3	8.3	27.9 27.8	27.9	77.9 78.8	78.4	5.3 5.4	5.3	5.3	3.5 3.7	3.6		6.1 6.5	6.3	
24-Jul-13	Cloudy	Moderate	13:59	10.8	Surface	1.0	27.9 27.9	27.9	8.2 8.3	8.3	24.7 24.7	24.7	79.4 79.4	79.4	5.4 5.4	5.4	5.4	7.3 7.1	7.2	7.8	4.7 5.9	5.3	6.0
					Middle	5.4	27.9 27.9	27.9	8.3 8.3	8.3	25.7 25.9	25.8	78.4 78.2	78.3	5.3 5.3	5.3		7.8 7.9	7.9		6.1 6.2	6.2	
					Bottom	9.8	27.8 27.8	27.8	8.3 8.2	8.3	27.6 27.6	27.6	77.6 77.9	77.8	5.2 5.2	5.2	5.2	8.2 8.4	8.3		5.8 7.2	6.5	
26-Jul-13	Cloudy	Moderate	14:59	10.8	Surface	1.0	27.6 27.6	27.6	8.2 8.2	8.2	24.4 24.5	24.4	81.1 81.2	81.2	5.6 5.6	5.6	5.6	8.9 9.8	9.4	11.6	18.8 18.9	18.9	21.3
					Middle	5.4	27.5 27.5	27.5	8.2 8.2	8.2	24.6 24.6	24.6	80.7 79.8	80.3	5.6 5.5	5.5		11.8 11.4	11.6		23.7 22.0	22.9	
					Bottom	9.8	27.5 27.5	27.5	8.2 8.2	8.2	25.0 24.9	24.9	81.9 79.6	80.8	5.6 5.5	5.6	5.6	13.3 14.1	13.7		22.1 21.8	22.0	
29-Jul-13	Sunny	Moderate	17:00	10.8	Surface	1.0	29.2 29.2	29.2	8.2 8.2	8.2	17.0 17.1	17.1	86.5 86.2	86.4	6.0 6.0	6.0	5.7	5.6 5.4	5.5	6.2	2.3 3.7	3.0	3.2
					Middle	5.4	28.2 28.4	28.3	8.1 8.1	8.1	21.0 20.0	20.5	75.0 78.0	76.5	5.2 5.4	5.3		5.9 5.6	5.8		3.1 2.9	3.0	
					Bottom	9.8	27.7 27.6	27.6	8.1 8.1	8.1	23.2 23.8	23.5	73.1 75.7	74.4	5.1 5.2	5.1	5.1	7.3 7.1	7.2		3.8 3.4	3.6	
31-Jul-13	Fine	Moderate	08:14	10.0	Surface	1.0	28.9 28.9	28.9	8.2 8.2	8.2	18.0 18.1	18.1	81.8 82.5	82.2	5.7 5.8	5.7	5.4	3.4 3.3	3.4	3.4	1.8 1.8	1.8	2.9
					Middle	5.0	28.5 27.4	27.9	8.2 8.2	8.2	23.7 24.3	24.0	76.1 73.7	74.9	5.2 5.0	5.1		3.4 3.5	3.5		2.6 3.8	3.2	
					Bottom	9.0	26.7 26.7	26.7	8.2 8.2	8.2	28.1 28.3	28.2	68.6 72.5	70.6	4.7 5.0	4.9	4.9	3.4 3.4	3.4		3.6 3.8	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
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Rainy	Rough	13:26	10.1	Surface	1.0	29.5 29.5	29.5	8.4 8.5	8.5	17.0 17.1	17.1	94.4 100.8	97.6	6.6 7.0	6.8	6.1	8.7 8.4	8.6	9.5	5.3 4.8	5.1	5.0
					Middle	5.1	28.1 28.1	28.1	8.3 8.3	8.3	21.4 21.4	21.4	75.4 79.2	77.3	5.2 5.5	5.4		8.5 8.3	8.4		5.9 4.1	5.0	
					Bottom	9.1	28.1 28.0	28.0	8.3 8.3	8.3	22.8 23.0	22.9	73.7 73.2	73.5	5.1 5.1	5.1	5.1	11.5 11.2	11.4		4.2 5.3	4.8	
3-Jul-13	Sunny	Moderate	16:20	10.2	Surface	1.0	29.5 29.3	29.4	8.3 8.3	8.3	12.7 14.0	13.3	92.2 91.6	91.9	6.6 6.5	6.5	6.3	6.5 7.1	6.8	6.1	4.0 4.1	4.1	4.8
					Middle	5.1	28.7 28.8	28.8	8.3 8.3	8.3	17.4 17.4	17.4	84.7 85.3	85.0	6.0 6.0	6.0		5.4 5.5	5.5		4.8 5.9	5.4	
					Bottom	9.2	28.3 28.3	28.3	8.2 8.2	8.2	20.9 21.3	21.1	82.7 85.8	84.3	5.7 5.9	5.8	5.8	6.1 5.8	6.0		4.7 4.9	4.8	
5-Jul-13	Sunny	Moderate	18:27	10.5	Surface	1.0	29.9 29.8	29.9	8.5 8.5	8.5	12.7 13.4	13.1	103.3 99.6	101.5	7.3 7.0	7.2	6.3	6.9 6.4	6.7	6.8	6.0 6.5	6.3	6.6
					Middle	5.3	29.2 29.2	29.2	8.4 8.4	8.4	15.8 15.6	15.7	77.5 77.0	77.3	5.5 5.4	5.4		6.4 6.6	6.5		7.0 6.5	6.8	
					Bottom	9.5	28.2 28.1	28.1	8.3 8.3	8.3	21.7 21.9	21.8	76.0 74.1	75.1	5.3 5.1	5.2	5.2	7.1 7.4	7.3		7.4 6.2	6.8	
8-Jul-13	Fine	Moderate	19:55	9.8	Surface	1.0	29.1 29.2	29.1	8.4 8.4	8.4	14.0 13.9	14.0	83.3 90.7	87.0	5.9 6.5	6.2	6.0	6.9 6.6	6.8	8.0	4.5 3.9	4.2	5.5
					Middle	4.9	28.4 28.6	28.5	8.4 8.4	8.4	17.3 17.2	17.2	79.9 83.7	81.8	5.5 5.9	5.7		8.6 8.8	8.7		6.6 5.9	6.3	
					Bottom	8.8	28.6 27.9	28.3	8.4 8.3	8.3	18.2 18.2	18.2	77.4 74.6	76.0	5.5 5.3	5.4	5.4	8.5 8.7	8.6		5.4 6.5	6.0	
10-Jul-13	Sunny	Moderate	07:14	11.3	Surface	1.0	28.7 28.7	28.7	8.1 8.1	8.1	16.4 16.8	16.6	79.3 79.5	79.4	5.6 5.6	5.6	5.4	4.2 4.0	4.1	4.2	3.7 4.7	4.2	4.2
					Middle	5.7	28.3 28.3	28.3	8.0 8.0	8.0	19.8 19.9	19.9	74.1 76.3	75.2	5.2 5.3	5.2		4.4 4.3	4.4		4.4 4.2	4.3	
					Bottom	10.3	28.3 28.2	28.3	8.0 8.0	8.0	20.0 20.1	20.0	75.6 78.9	77.3	5.3 5.5	5.4	5.4	4.3 4.0	4.2		3.6 4.3	4.0	
12-Jul-13	Sunny	Moderate	08:42	10.2	Surface	1.0	28.9 28.9	28.9	8.0 8.0	8.0	18.8 18.7	18.7	75.2 76.1	75.7	5.2 5.3	5.3	5.2	3.6 3.7	3.7	3.8	5.0 4.8	4.9	5.4
					Middle	5.1	28.6 28.6	28.6	8.0 8.0	8.0	21.3 20.4	20.8	72.8 72.3	72.6	5.0 5.0	5.0		3.6 3.7	3.7		6.2 5.3	5.8	
					Bottom	9.2	27.9 27.4	27.7	8.0 8.0	8.0	25.0 25.9	25.5	72.5 74.0	73.3	4.9 5.1	5.0	5.0	4.1 4.1	4.1		5.9 5.3	5.6	
15-Jul-13	Rainy	Moderate	10:37	11.5	Surface	1.0	28.9 28.9	28.9	8.1 8.1	8.1	19.5 19.4	19.4	85.0 82.4	83.7	5.9 5.7	5.8	5.6	3.5 3.2	3.4	3.5	2.5 2.2	2.4	2.6
					Middle	5.8	28.2 28.2	28.2	8.1 8.1	8.1	21.9 21.9	21.9	77.1 79.3	78.2	5.3 5.5	5.4		3.5 3.8	3.7		3.2 3.0	3.1	
					Bottom	10.5	28.1 28.2	28.2	8.1 8.1	8.1	22.2 22.2	22.2	81.3 79.4	80.4	5.6 5.5	5.5	5.5	3.6 3.4	3.5		2.1 2.5	2.3	
17-Jul-13	Sunny	Moderate	14:18	10.4	Surface	1.0	28.0 27.9	28.0	8.3 8.3	8.3	21.8 22.1	21.9	81.5 81.1	81.3	5.7 5.6	5.6	5.5	2.5 2.5	2.5	3.3	3.2 3.2	3.2	3.9
					Middle	5.2	27.1 27.2	27.2	8.2 8.2	8.2	24.6 24.2	24.4	74.6 77.5	76.1	5.2 5.4	5.3		3.5 3.6	3.6		4.2 3.1	3.7	
					Bottom	9.4	26.3 26.8	26.5	8.2 8.2	8.2	27.7 27.4	27.5	72.2 74.9	73.6	5.0 5.2	5.1	5.1	3.8 3.7	3.8		5.2 4.4	4.8	
19-Jul-13	Fine	Moderate	17:03	10.2	Surface	1.0	27.5 27.8	27.6	8.3 8.3	8.3	24.3 23.5	23.9	75.6 77.6	76.6	5.2 5.4	5.3	5.2	4.3 4.2	4.3	7.3	2.2 3.6	2.9	2.6
					Middle	5.1	26.8 26.8	26.8	8.2 8.2	8.2	26.1 25.6	25.9	73.2 73.3	73.3	5.1 5.1	5.1		8.8 8.7	8.8		2.6 2.5	2.6	
					Bottom	9.2	26.5 26.3	26.4	8.2 8.2	8.2	27.6 27.8	27.7	68.8 70.1	69.5	4.7 4.8	4.8	4.8	8.5 8.8	8.7		2.3 2.4	2.4	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Sunny	Moderate	19:27	10.9	Surface	1.0	27.8 27.8	27.8	8.2 8.2	8.2	24.6 24.9	24.8	80.2 81.6	80.9	5.5 5.6	5.5	5.4	4.8 5.0	4.9	5.3	5.1 5.8	5.5	5.6
					Middle	5.5	27.5 27.5	27.5	8.2 8.2	8.2	25.8 25.8	25.8	78.3 77.2	77.8	5.4 5.3	5.3		5.5 5.3	5.4		6.2 5.6	5.9	
					Bottom	9.9	27.5 27.5	27.5	8.2 8.2	8.2	25.8 25.9	25.9	75.6 76.0	75.8	5.2 5.2	5.2	5.2	5.6 5.5	5.6		5.9 4.7	5.3	
24-Jul-13	Rainy	Moderate	06:39	11.2	Surface	1.0	27.8 27.9	27.9	8.2 8.2	8.2	23.4 23.5	23.4	80.0 79.2	79.6	5.5 5.5	5.5	5.3	4.3 4.1	4.2	5.5	4.5 4.0	4.3	4.6
					Middle	5.6	27.8 27.8	27.8	8.2 8.2	8.2	24.9 25.0	24.9	73.7 73.9	73.8	5.0 5.1	5.0		5.6 5.4	5.5		5.4 4.3	4.9	
					Bottom	10.2	27.4 27.4	27.4	8.2 8.2	8.2	26.6 26.6	26.6	74.3 74.9	74.6	5.1 5.1	5.1	5.1	6.6 6.8	6.7		4.7 4.6	4.7	
26-Jul-13	Cloudy	Moderate	08:34	11.2	Surface	1.0	27.5 27.6	27.6	8.2 8.2	8.2	22.1 22.4	22.2	81.3 80.0	80.7	5.7 5.6	5.6	5.5	7.8 8.1	8.0	10.9	6.1 6.6	6.4	5.9
					Middle	5.6	27.6 27.6	27.6	8.2 8.2	8.2	24.4 24.7	24.5	79.6 75.3	77.5	5.5 5.2	5.3		11.5 11.5	11.5		6.1 5.7	5.9	
					Bottom	10.2	27.6 27.6	27.6	8.1 8.2	8.2	25.0 24.9	24.9	75.4 75.1	75.3	5.2 5.2	5.2	5.2	13.2 13.0	13.1		5.2 5.4	5.3	
29-Jul-13	Sunny	Moderate	11:19	10.6	Surface	1.0	28.1 28.1	28.1	8.1 8.1	8.1	19.5 19.5	19.5	77.2 77.1	77.2	5.4 5.4	5.4	5.3	4.9 5.1	5.0	6.5	5.7 5.4	5.6	5.7
					Middle	5.3	28.0 27.9	28.0	8.1 8.1	8.1	20.6 20.8	20.7	73.5 73.6	73.6	5.1 5.1	5.1		6.1 6.3	6.2		6.9 5.1	6.0	
					Bottom	9.6	27.7 27.7	27.7	8.1 8.1	8.1	22.6 22.4	22.5	72.7 72.7	72.7	5.1 5.1	5.1	5.1	8.5 8.3	8.4		5.4 5.4	5.4	
31-Jul-13	Sunny	Moderate	14:44	9.9	Surface	1.0	29.5 29.4	29.5	8.6 8.5	8.5	19.1 19.1	19.1	121.0 118.1	119.6	8.3 8.1	8.2	6.8	3.3 3.5	3.4	4.1	4.1 3.6	3.9	3.8
					Middle	5.0	28.5 28.4	28.4	8.3 8.3	8.3	22.6 22.6	22.6	77.0 77.5	77.3	5.3 5.3	5.3		4.1 4.1	4.1		3.4 4.1	3.8	
					Bottom	8.9	26.8 27.4	27.1	8.2 8.2	8.2	26.9 25.6	26.3	77.1 76.2	76.7	5.3 5.2	5.3	5.3	4.9 4.9	4.9		3.8 3.7	3.8	

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
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Rainy	Rough	08:59	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	7.2	-	-	9.1	-	-	8.4
					Middle	0.7	29.8 29.7	29.8	8.4 8.4	8.4	16.2 16.4	16.3	103.9 103.9	103.9	7.2 7.2	7.2		9.1 9.1	9.1		7.9 8.9	8.4	
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
3-Jul-13	Sunny	Moderate	10:46	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	7.4	-	-	6.0	-	-	6.0
					Middle	0.8	29.6 29.7	29.7	8.4 8.4	8.4	14.6 14.6	14.6	104.1 105.6	104.9	7.3 7.4	7.4		5.9 6.1	6.0		6.0 6.0	6.0	
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
5-Jul-13	Sunny	Moderate	12:37	1.2	Surface	-	-	-	-	-	-	-	-	-	-	-	8.4	-	-	6.5	-	-	7.2
					Middle	0.6	30.8 30.7	30.7	8.7 8.7	8.7	12.3 12.3	12.3	121.3 119.3	120.3	8.5 8.3	8.4		6.4 6.5	6.5		7.1 7.2	7.2	
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
8-Jul-13	Sunny	Moderate	14:24	1.2	Surface	-	-	-	-	-	-	-	-	-	-	-	7.1	-	-	6.3	-	-	5.5
					Middle	0.6	29.4 29.4	29.4	8.6 8.6	8.6	15.1 15.1	15.1	99.8 102.3	101.1	7.0 7.2	7.1		6.3 6.3	6.3		5.9 5.1	5.5	
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
10-Jul-13	Sunny	Moderate	12:42	1.8	Surface	-	-	-	-	-	-	-	-	-	-	-	6.8	-	-	8.2	-	-	5.7
					Middle	0.9	29.9 29.6	29.7	8.2 8.2	8.2	17.6 17.8	17.7	100.0 97.1	98.6	6.9 6.7	6.8		8.0 8.3	8.2		5.4 5.9	5.7	
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
12-Jul-13	Sunny	Moderate	14:01	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	6.0	-	-	6.7	-	-	6.0
					Middle	0.7	29.5 29.6	29.5	8.1 8.1	8.1	19.7 19.7	19.7	85.3 88.6	87.0	5.8 6.1	6.0		6.6 6.8	6.7		6.7 5.3	6.0	
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
15-Jul-13	Rainy	Moderate	15:41	1.8	Surface	-	-	-	-	-	-	-	-	-	-	-	6.6	-	-	8.6	-	-	7.3
					Middle	0.9	29.0 29.0	29.0	8.2 8.2	8.2	20.2 20.3	20.3	95.3 97.1	96.2	6.6 6.7	6.6		8.9 8.2	8.6		7.2 7.3	7.3	
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
17-Jul-13	Fine	Moderate	08:50	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	5.1	-	-	4.4	-	-	5.2
					Middle	0.7	28.2 28.1	28.2	8.2 8.2	8.2	20.8 20.8	20.8	73.6 72.5	73.1	5.1 5.1	5.1		4.5 4.3	4.4		4.8 5.6	5.2	
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
19-Jul-13	Sunny	Moderate	11:05	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	5.1	-	-	4.3	-	-	6.7
					Middle	0.7	27.6 27.6	27.6	8.3 8.3	8.3	24.0 24.0	24.0	74.6 74.7	74.7	5.1 5.2	5.1		4.2 4.4	4.3		7.3 6.0	6.7	
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Sunny	Moderate	13:04	1.2	Surface	-	-	-	-	-	-	-	-	-	-	-	6.2	-	-		-	-	
					Middle	0.6	28.2	28.2	8.3	8.3	24.8	24.8	91.3	91.2	6.2	6.2		3.4	3.5	3.5	6.4	6.3	6.3
							28.2		8.3		24.8		91.1		6.2			3.5			6.2		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
24-Jul-13	Cloudy	Moderate	12:43	1.2	Surface	-	-	-	-	-	-	-	-	-	-	-	5.5	-	-		-	-	
					Middle	0.6	27.8	27.8	8.2	8.2	24.6	24.6	80.8	80.9	5.5	5.5		6.2	6.3	6.3	10.3	9.7	9.7
							27.8		8.2		24.6		81.0		5.6			6.3			9.1		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
26-Jul-13	Cloudy	Moderate	13:54	1.8	Surface	-	-	-	-	-	-	-	-	-	-	-	6.1	-	-		-	-	
					Middle	0.9	27.3	27.4	8.1	8.2	23.4	23.4	88.5	88.4	6.2	6.1		11.1	11.2	11.2	11.8	11.1	11.1
							27.4		8.2		23.4		88.2		6.1			11.3			10.4		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
29-Jul-13	Sunny	Moderate	15:50	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	6.3	-	-		-	-	
					Middle	0.7	29.0	29.0	8.2	8.2	20.5	20.5	91.9	92.1	6.3	6.3		8.0	8.0	8.0	9.2	9.7	9.7
							29.0		8.2		20.5		92.2		6.3			8.0			10.2		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
31-Jul-13	Fine	Moderate	09:14	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	6.4	-	-		-	-	
					Middle	0.7	29.6	29.6	8.3	8.3	17.4	17.3	92.2	92.5	6.4	6.4		5.7	5.6	5.6	5.3	5.7	5.7
							29.6		8.3		17.3		92.8		6.4			5.5			6.0		
					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
*** Cancelled due to adverse weather condition and safety concern.

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 (^{o}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-Jul-13	Rainy	Rough	12:20	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	8.1	-	-	9.5	-	-	11.3
					Middle	0.7	29.8	29.8	8.6	8.6	16.8	16.8	116.1	117.7	8.0	8.1		9.5	9.5		11.7	11.3	
							29.8		8.6		16.8		119.3		8.3			9.5			10.9		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
3-Jul-13	Sunny	Moderate	15:01	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	8.3	-	-	6.0	-	-	13.3
					Middle	0.8	30.3	30.2	8.5	8.5	14.5	14.5	118.7	119.3	8.3	8.3		5.8	6.0		13.2	13.3	
							30.2		8.5		14.5		119.8		8.3			6.2			13.3		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
5-Jul-13	Sunny	Moderate	17:15	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	9.1	-	-	9.0	-	-	9.7
					Middle	0.7	31.7	31.6	8.5	8.5	12.3	12.4	139.8	140.3	9.1	9.1		9.1	9.0		9.2	9.7	
							31.6		8.5		12.4		140.8		9.1			8.8			10.1		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
8-Jul-13	Fine	Moderate	18:45	1.2	Surface	-	-	-	-	-	-	-	-	-	-	-	7.9	-	-	10.3	-	-	7.5
					Middle	0.6	29.7	29.7	8.6	8.6	15.0	15.0	111.7	112.8	7.8	7.9		10.2	10.3		8.0	7.5	
							29.7		8.6		15.0		113.8		8.0			10.4			7.0		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
10-Jul-13	Sunny	Moderate	08:19	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	6.3	-	-	6.3	-	-	7.4
					Middle	0.8	29.0	29.0	8.1	8.1	16.8	16.8	89.3	89.5	6.3	6.3		6.2	6.3		7.6	7.4	
							29.0		8.1		16.8		89.7		6.3			6.3			7.2		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
12-Jul-13	Sunny	Moderate	09:45	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	5.8	-	-	4.4	-	-	5.5
					Middle	0.7	29.1	29.1	8.1	8.1	19.8	19.7	83.3	83.7	5.7	5.8		4.5	4.4		5.2	5.5	
							29.1		8.1		19.7		84.1		5.8			4.3			5.8		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
15-Jul-13	Rainy	Moderate	11:33	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	7.0	-	-	4.7	-	-	6.6
					Middle	0.8	29.2	29.2	8.2	8.2	19.6	19.6	101.3	101.6	7.0	7.0		4.4	4.7		6.5	6.6	
							29.2		8.2		19.6		101.8		7.0			4.9			6.7		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
17-Jul-13	Sunny	Moderate	12:37	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	5.7	-	-	11.9	-	-	7.5
					Middle	0.7	28.1	28.1	8.4	8.4	22.2	22.2	83.7	82.7	5.8	5.7		11.9	11.9		7.2	7.5	
							28.1		8.4		22.2		81.7		5.7			11.8			7.8		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
19-Jul-13	Fine	Moderate	15:50	1.2	Surface	-	-	-	-	-	-	-	-	-	-	-	7.4	-	-	8.7	-	-	9.3
					Middle	0.6	28.5	28.5	8.4	8.5	24.4	24.4	107.5	109.3	7.3	7.4		8.8	8.7		9.9	9.3	
							28.5		8.5		24.3		111.1		7.5			8.5			8.6		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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 (^{o}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-Jul-13	Sunny	Moderate	18:30	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	6.2	-	-	10.3	-	-	10.8
					Middle	0.8	28.3	28.3	8.3	8.3	24.9	24.9	92.1	92.0	6.3	6.2		10.1	10.3		11.3	10.8	
							28.3		8.3		24.9		91.9		6.2			10.5			10.3		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
24-Jul-13	Rainy	Moderate	07:56	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	5.8	-	-	4.7	-	-	8.6
					Middle	0.7	27.9	27.9	8.2	8.2	24.2	24.2	84.5	84.1	5.8	5.8		4.7	4.7		9.2	8.6	
							27.9		8.2		24.2		83.6		5.7			4.7			7.9		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
26-Jul-13	Cloudy	Moderate	09:31	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	5.9	-	-	8.7	-	-	12.1
					Middle	0.8	27.3	27.3	8.2	8.2	23.4	23.4	84.1	85.0	5.9	5.9		8.7	8.7		11.8	12.1	
							27.3		8.2		23.4		85.8		6.0			8.6			12.3		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
29-Jul-13	Sunny	Moderate	12:36	1.2	Surface	-	-	-	-	-	-	-	-	-	-	-	6.0	-	-	8.7	-	-	9.7
					Middle	0.6	28.3	28.3	8.1	8.1	20.2	20.2	86.7	86.7	6.0	6.0		8.7	8.7		10.2	9.7	
							28.3		8.1		20.2		86.7		6.0			8.7			9.2		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
31-Jul-13	Sunny	Moderate	13:31	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	8.4	-	-	6.9	-	-	7.9
					Middle	0.7	30.0	29.9	8.5	8.5	18.1	18.1	121.5	122.9	8.3	8.4		6.7	6.9		7.4	7.9	
							29.9		8.5		18.1		124.2		8.5			7.0			8.4		
					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
*** Cancelled due to adverse weather condition and safety concern.

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 (^{o}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-Jul-13	Rainy	Rough	08:15	3.7	Surface	1.0	29.4 29.4	29.4	8.3 8.4	8.4	16.5 16.5	16.5	90.9 93.7	92.3	6.3 6.5	6.4	6.4	8.6 8.1	8.4	8.8	8.0 8.4	8.2	8.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	29.1 29.0	29.1	8.3 8.3	8.3	17.5 17.5	17.5	90.9 87.8	89.4	6.3 6.1	6.2	6.2	9.2 9.2	9.2		8.0 8.0	8.0	
3-Jul-13	Sunny	Moderate	10:09	3.4	Surface	1.0	29.2 29.1	29.1	8.3 8.3	8.3	12.7 12.8	12.8	99.2 101.5	100.4	7.1 7.3	7.2	7.2	3.8 3.7	3.8	3.9	5.3 4.1	4.7	5.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	28.9 29.0	29.0	8.3 8.3	8.3	15.1 15.2	15.2	101.9 100.2	101.1	7.2 7.1	7.2	7.2	4.1 3.9	4.0		5.2 5.3	5.3	
5-Jul-13	Sunny	Moderate	11:53	3.6	Surface	1.0	31.0 30.6	30.8	8.6 8.5	8.6	12.1 12.4	12.3	122.7 119.2	121.0	8.5 8.3	8.4	8.4	8.4 8.4	8.4	8.6	10.0 10.4	10.2	10.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	30.2 30.1	30.1	8.6 8.5	8.5	13.4 13.5	13.5	115.9 117.8	116.9	8.1 8.2	8.2	8.2	8.9 8.5	8.7		9.7 10.5	10.1	
8-Jul-13	Sunny	Moderate	13:40	3.6	Surface	1.0	29.4 29.2	29.3	8.5 8.4	8.5	14.8 15.0	14.9	90.8 88.4	89.6	6.4 6.2	6.3	6.3	11.4 11.2	11.3	11.4	6.9 6.0	6.5	6.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	28.8 28.9	28.8	8.4 8.4	8.4	16.6 16.5	16.6	86.2 86.4	86.3	6.1 6.1	6.1	6.1	11.5 11.4	11.5		6.8 6.0	6.4	
10-Jul-13	Sunny	Moderate	13:26	3.6	Surface	1.0	29.5 29.6	29.6	8.1 8.1	8.1	16.0 16.0	16.0	93.6 95.4	94.5	6.5 6.7	6.6	6.6	6.8 6.2	6.5	6.8	3.6 2.9	3.3	3.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	29.3 29.3	29.3	8.1 8.1	8.1	16.7 16.5	16.6	93.4 95.1	94.3	6.5 6.6	6.6	6.6	7.1 6.9	7.0		4.9 3.8	4.4	
12-Jul-13	Sunny	Moderate	14:43	3.8	Surface	1.0	30.7 30.7	30.7	8.2 8.1	8.1	18.1 18.0	18.1	92.0 91.3	91.7	6.3 6.3	6.3	6.3	3.6 3.8	3.7	3.7	3.0 3.3	3.2	3.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	29.1 29.2	29.2	8.1 8.1	8.1	19.8 19.5	19.6	87.4 83.7	85.6	6.0 5.8	5.9	5.9	3.6 3.6	3.6		3.6 3.4	3.5	
15-Jul-13	Rainy	Moderate	16:21	3.6	Surface	1.0	28.9 29.0	28.9	8.2 8.1	8.2	20.0 19.8	19.9	89.1 89.2	89.2	6.1 6.2	6.1	6.1	7.4 7.0	7.2	7.6	4.2 4.0	4.1	4.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	28.8 28.8	28.8	8.1 8.1	8.1	20.7 20.7	20.7	88.6 85.5	87.1	6.1 5.9	6.0	6.0	7.9 8.0	8.0		5.4 5.7	5.6	
17-Jul-13	Fine	Moderate	08:05	3.8	Surface	1.0	28.0 28.0	28.0	8.3 8.3	8.3	20.9 21.1	21.0	79.1 80.6	79.9	5.5 5.6	5.6	5.6	5.7 5.8	5.8	5.8	3.9 3.1	3.5	4.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	27.9 27.9	27.9	8.3 8.3	8.3	21.2 21.6	21.4	78.0 78.9	78.5	5.4 5.5	5.5	5.5	5.7 5.7	5.7		6.0 5.9	6.0	
19-Jul-13	Sunny	Moderate	10:25	3.8	Surface	1.0	27.9 28.0	27.9	8.3 8.3	8.3	22.8 22.2	22.5	82.4 81.5	82.0	5.7 5.7	5.7	5.7	7.9 7.7	7.8	7.8	3.5 3.4	3.5	3.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	27.8 27.6	27.7	8.3 8.3	8.3	23.3 23.6	23.4	82.3 80.3	81.3	5.7 5.6	5.6	5.6	7.6 7.8	7.7		3.0 3.3	3.2	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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 (^{o}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-Jul-13	Sunny	Moderate	12:26	3.6	Surface	1.0	28.4 28.2	28.3	8.2 8.2	8.2	23.8 24.1	24.0	92.8 89.1	91.0	6.3 6.1	6.2	6.2	4.7 5.0	4.9	5.0	7.7 7.8	7.8	7.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	28.1 28.2	28.1	8.2 8.2	8.2	24.5 24.2	24.4	88.4 90.3	89.4	6.0 6.2	6.1	6.1	5.2 5.0	5.1		6.8 6.3	6.6	
24-Jul-13	Cloudy	Moderate	13:34	3.4	Surface	1.0	27.8 27.8	27.8	8.1 8.1	8.1	23.6 23.7	23.7	75.6 75.8	75.7	5.2 5.2	5.2	5.2	6.3 6.5	6.4	6.6	6.6 6.6	6.6	6.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	27.9 27.8	27.9	8.1 8.0	8.1	24.1 23.9	24.0	75.8 76.2	76.0	5.2 5.2	5.2	5.2	6.6 6.7	6.7		6.8 6.2	6.5	
26-Jul-13	Cloudy	Moderate	14:37	3.4	Surface	1.0	27.5 27.5	27.5	8.1 8.1	8.1	23.3 23.4	23.3	75.8 77.2	76.5	5.3 5.3	5.3	5.3	10.1 10.6	10.4	12.1	10.0 9.1	9.6	9.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	27.5 27.5	27.5	8.1 8.0	8.1	23.5 23.5	23.5	76.1 79.3	77.7	5.3 5.5	5.4	5.4	13.9 13.5	13.7		9.0 9.4	9.2	
29-Jul-13	Sunny	Moderate	16:30	3.5	Surface	1.0	28.2 28.2	28.2	8.2 8.1	8.1	20.1 20.2	20.1	73.2 73.7	73.5	5.1 5.1	5.1	5.1	11.5 11.7	11.6	12.0	7.1 7.6	7.4	8.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	28.0 28.1	28.1	8.2 8.1	8.1	21.1 21.0	21.1	72.1 73.1	72.6	5.0 5.1	5.1	5.1	12.1 12.5	12.3		8.2 9.0	8.6	
31-Jul-13	Fine	Moderate	08:35	3.7	Surface	1.0	29.0 28.9	29.0	8.2 8.2	8.2	17.0 16.9	17.0	84.4 84.9	84.7	5.9 6.0	5.9	5.9	7.4 7.1	7.3	7.8	2.9 3.0	3.0	3.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	29.0 29.0	29.0	8.2 8.2	8.2	18.6 19.1	18.8	85.1 85.3	85.2	5.9 5.9	5.9	5.9	8.2 8.1	8.2		4.2 3.0	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
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Rainy	Rough	13:01	3.6	Surface	1.0	29.4 29.4	29.4	8.4 8.4	8.4	17.4 17.4	17.4	102.9 102.7	102.8	7.1 7.1	7.1	7.1	6.1 6.2	6.2	6.4	7.9 7.4	7.7	7.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	29.3 29.3	29.3	8.4 8.4	8.4	17.6 17.6	17.6	102.1 102.6	102.4	7.1 7.1	7.1	7.1	6.6 6.5	6.6		6.6 7.5	7.1	
3-Jul-13	Sunny	Moderate	15:52	3.6	Surface	1.0	29.6 29.3	29.5	8.4 8.6	8.5	13.8 14.2	14.0	103.7 103.5	103.6	7.3 7.3	7.3	7.3	6.0 6.5	6.3	6.9	6.2 6.6	6.4	7.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	29.3 29.2	29.3	8.5 8.7	8.6	14.7 15.1	14.9	104.9 100.3	102.6	7.4 7.1	7.2	7.2	7.2 7.8	7.5		7.7 8.6	8.2	
5-Jul-13	Sunny	Moderate	18:01	3.7	Surface	1.0	31.3 31.4	31.3	8.6 8.7	8.6	10.6 10.8	10.7	142.1 137.8	140.0	9.8 9.5	9.7	9.7	10.3 10.4	10.4	10.6	5.6 4.3	5.0	4.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	31.4 31.4	31.4	8.7 8.6	8.7	11.2 11.2	11.2	137.6 140.2	138.9	9.5 9.6	9.6	9.6	10.8 10.5	10.7		3.9 2.8	3.4	
8-Jul-13	Fine	Moderate	19:30	3.7	Surface	1.0	29.3 29.2	29.2	8.5 8.6	8.6	15.3 15.5	15.4	93.5 92.3	92.9	6.6 6.5	6.5	6.5	8.4 8.1	8.3	8.5	10.0 9.8	9.9	9.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	28.9 29.0	29.0	8.6 8.5	8.6	16.2 16.2	16.2	90.3 91.8	91.1	6.4 6.5	6.4	6.4	8.5 8.7	8.6		9.9 9.5	9.7	
10-Jul-13	Sunny	Moderate	07:36	3.4	Surface	1.0	28.8 28.8	28.8	8.1 8.1	8.1	17.2 16.8	17.0	79.7 81.8	80.8	5.6 5.8	5.7	5.7	6.5 6.5	6.5	6.5	3.7 3.5	3.6	4.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	28.8 28.8	28.8	8.0 8.0	8.0	17.7 18.0	17.8	80.5 84.4	82.5	5.6 5.9	5.8	5.8	6.5 6.5	6.5		5.6 4.9	5.3	
12-Jul-13	Sunny	Moderate	09:03	3.8	Surface	1.0	29.0 29.2	29.1	8.0 8.1	8.1	18.9 17.2	18.1	85.1 84.7	84.9	5.9 5.9	5.9	5.9	4.4 4.4	4.4	4.4	4.7 3.5	4.1	4.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	29.2 29.1	29.1	8.1 8.1	8.1	17.4 17.4	17.4	84.0 80.3	82.2	5.8 5.6	5.7	5.7	4.3 4.3	4.3		4.3 4.3	4.3	
15-Jul-13	Rainy	Moderate	10:56	3.4	Surface	1.0	28.9 28.9	28.9	8.1 8.1	8.1	20.3 20.2	20.2	83.8 83.6	83.7	5.8 5.8	5.8	5.8	8.0 7.8	7.9	8.5	11.8 12.5	12.2	8.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	28.9 28.9	28.9	8.1 8.1	8.1	20.2 20.3	20.3	83.6 83.9	83.8	5.8 5.8	5.8	5.8	8.8 9.1	9.0		4.8 4.0	4.4	
17-Jul-13	Sunny	Moderate	13:31	3.6	Surface	1.0	28.3 28.4	28.3	8.4 8.4	8.4	21.3 21.3	21.3	89.9 95.3	92.6	6.2 6.6	6.4	6.4	6.8 6.6	6.7	7.7	3.1 2.9	3.0	5.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	28.1 28.3	28.2	8.3 8.4	8.3	22.3 21.7	22.0	90.2 91.5	90.9	6.2 6.3	6.3	6.3	8.5 8.6	8.6		6.6 7.7	7.2	
19-Jul-13	Fine	Moderate	16:38	3.6	Surface	1.0	28.1 28.2	28.2	8.6 8.6	8.6	24.7 24.7	24.7	118.0 118.6	118.3	8.0 8.1	8.1	8.1	5.1 4.8	5.0	5.6	4.3 3.8	4.1	3.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	27.9 27.8	27.8	8.5 8.6	8.5	24.9 24.9	24.9	115.7 117.3	116.5	7.9 8.0	7.9	7.9	6.0 6.2	6.1		3.0 4.2	3.6	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Sunny	Moderate	18:02	3.3	Surface	1.0	28.3 28.2	28.3	8.3 8.3	8.3	24.9 25.0	25.0	91.6 88.7	90.2	6.2 6.0	6.1	6.1	8.5 8.2	8.4	8.6	4.5 3.6	4.1	4.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	28.1 28.0	28.0	8.3 8.4	8.4	25.2 25.3	25.3	87.0 90.6	88.8	5.9 6.2	6.0	6.0	8.9 8.6	8.8		5.1 4.2	4.7	
24-Jul-13	Rainy	Moderate	07:07	3.5	Surface	1.0	27.9 27.9	27.9	8.2 8.2	8.2	23.2 23.3	23.2	75.9 75.9	75.9	5.2 5.2	5.2	5.2	6.4 6.5	6.5	6.7	6.1 7.4	6.8	7.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	27.9 27.9	27.9	8.2 8.2	8.2	23.3 23.3	23.3	76.1 75.8	76.0	5.2 5.2	5.2	5.2	6.9 6.8	6.9		8.1 7.5	7.8	
26-Jul-13	Cloudy	Moderate	08:52	3.5	Surface	1.0	27.6 27.6	27.6	8.2 8.2	8.2	23.1 23.1	23.1	79.4 80.6	80.0	5.5 5.6	5.5	5.5	13.1 13.5	13.3	13.7	10.2 11.5	10.9	12.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	27.6 27.6	27.6	8.2 8.2	8.2	23.1 23.2	23.2	82.6 79.6	81.1	5.7 5.5	5.6	5.6	14.0 14.0	14.0		13.3 13.0	13.2	
29-Jul-13	Sunny	Moderate	11:47	3.5	Surface	1.0	28.3 28.4	28.4	8.1 8.1	8.1	18.5 18.7	18.6	81.5 81.9	81.7	5.7 5.7	5.7	5.7	8.3 8.5	8.4	9.4	3.8 3.7	3.8	3.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	28.2 28.3	28.2	8.1 8.1	8.1	19.9 20.2	20.1	81.3 81.6	81.5	5.7 5.7	5.7	5.7	10.2 10.5	10.4		3.1 3.2	3.2	
31-Jul-13	Sunny	Moderate	14:17	3.7	Surface	1.0	30.0 29.8	29.9	8.5 8.4	8.5	18.4 18.5	18.5	91.8 94.3	93.1	6.3 6.5	6.4	6.4	8.9 8.7	8.8	9.6	4.7 4.8	4.8	5.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	28.5 28.5	28.5	8.2 8.2	8.2	21.0 20.9	21.0	86.4 86.1	86.3	6.0 6.0	6.0	6.0	10.4 10.3	10.4		5.3 5.6	5.5	

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
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Rainy	Rough	08:05	5.4	Surface	1.0	29.1 29.1	29.1	8.3 8.3	8.3	15.6 15.6	15.6	87.8 89.1	88.5	6.2 6.2	6.2	6.2	6.5 6.6	6.6	7.1	5.1 4.9	5.0	5.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.4	28.3 28.2	28.3	8.2 8.2	8.2	21.1 21.1	21.1	75.9 76.1	76.0	5.3 5.3	5.3	5.3	7.7 7.5	7.6		5.6 5.4	5.5	
3-Jul-13	Sunny	Moderate	10:38	4.5	Surface	1.0	29.6 29.5	29.6	8.2 8.2	8.2	12.1 12.3	12.2	90.5 92.0	91.3	6.5 6.6	6.5	6.5	6.1 6.5	6.3	6.4	5.1 4.5	4.8	5.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.5	29.6 29.6	29.6	8.2 8.2	8.2	12.5 12.5	12.5	91.0 95.6	93.3	6.5 6.8	6.6	6.6	6.3 6.4	6.4		6.9 6.2	6.6	
5-Jul-13	Sunny	Moderate	12:15	5.6	Surface	1.0	29.8 29.9	29.9	8.3 8.3	8.3	11.8 11.4	11.6	92.4 93.1	92.8	6.6 6.6	6.6	6.6	6.8 6.4	6.6	7.1	6.2 6.2	6.2	6.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.6	29.5 29.5	29.5	8.2 8.2	8.2	15.8 14.0	14.9	86.3 85.0	85.7	6.0 6.0	6.0	6.0	7.8 7.2	7.5		6.5 6.7	6.6	
8-Jul-13	Sunny	Moderate	13:40	5.0	Surface	1.0	29.2 29.2	29.2	8.5 8.5	8.5	13.1 13.2	13.2	97.7 99.6	98.7	7.0 7.1	7.0	7.0	6.6 6.4	6.5	6.7	4.7 5.6	5.2	6.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.0	28.9 28.9	28.9	8.4 8.4	8.4	14.6 14.7	14.6	96.4 93.4	94.9	6.9 6.6	6.7	6.7	6.8 6.7	6.8		6.3 7.4	6.9	
10-Jul-13	Sunny	Moderate	14:06	4.7	Surface	1.0	29.7 29.6	29.7	8.4 8.4	8.4	14.9 14.9	14.9	100.7 100.2	100.5	7.1 7.0	7.0	7.0	4.7 4.7	4.7	4.9	4.3 4.2	4.3	4.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.7	29.6 29.6	29.6	8.4 8.4	8.4	15.1 15.1	15.1	100.0 100.9	100.5	7.0 7.1	7.0	7.0	5.0 4.9	5.0		4.0 3.4	3.7	
12-Jul-13	Sunny	Moderate	14:57	5.5	Surface	1.0	30.0 30.2	30.1	8.5 8.5	8.5	16.8 16.7	16.8	103.7 106.2	105.0	7.2 7.3	7.2	7.2	3.8 3.8	3.8	4.1	2.2 3.1	2.7	3.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	29.6 29.5	29.6	8.4 8.4	8.4	18.2 18.4	18.3	102.1 100.3	101.2	7.0 6.9	7.0	7.0	4.2 4.4	4.3		3.5 4.3	3.9	
15-Jul-13	Rainy	Moderate	17:11	4.4	Surface	1.0	29.0 29.0	29.0	8.2 8.2	8.2	17.3 17.1	17.2	81.3 85.1	83.2	5.7 6.0	5.8	5.8	3.6 3.6	3.6	4.0	2.4 3.3	2.9	2.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.4	28.8 28.7	28.7	8.2 8.1	8.2	20.2 20.3	20.3	79.4 77.6	78.5	5.5 5.4	5.4	5.4	4.4 4.4	4.4		2.8 2.4	2.6	
17-Jul-13	Fine	Moderate	08:06	5.7	Surface	1.0	28.0 28.0	28.0	8.0 8.0	8.0	20.2 20.2	20.2	85.0 84.6	84.8	6.0 5.9	5.9	5.9	4.0 4.2	4.1	4.3	2.1 2.0	2.1	2.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.7	27.8 27.7	27.7	8.0 8.0	8.0	21.9 22.0	21.9	81.2 81.5	81.4	5.7 5.7	5.7	5.7	4.4 4.5	4.5		2.4 3.0	2.7	
19-Jul-13	Sunny	Moderate	10:11	5.5	Surface	1.0	27.7 27.8	27.8	8.1 8.1	8.1	22.2 22.1	22.2	86.7 89.3	88.0	6.0 6.2	6.1	6.1	2.5 2.2	2.4	2.7	2.9 2.8	2.9	2.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	27.6 27.6	27.6	8.0 8.0	8.0	22.8 22.8	22.8	86.4 85.6	86.0	6.0 6.0	6.0	6.0	2.8 3.0	2.9		3.0 2.5	2.8	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Sunny	Moderate	12:45	4.3	Surface	1.0	28.1 28.1	28.1	8.0 8.0	8.0	23.4 23.4	23.4	79.4 78.5	79.0	5.5 5.4	5.4	5.4	3.0 2.9	3.0	3.1	3.1 4.0	3.6	4.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	28.0 28.0	28.0	8.0 8.0	8.0	23.9 23.7	23.8	77.5 78.6	78.1	5.3 5.4	5.4	5.4	3.1 3.0	3.1		4.3 5.0	4.7	
24-Jul-13	Cloudy	Moderate	13:44	5.5	Surface	1.0	27.9 27.9	27.9	7.9 8.0	8.0	24.2 24.2	24.2	82.5 81.6	82.1	5.7 5.6	5.6	5.6	4.3 4.3	4.3	4.5	5.1 4.0	4.6	4.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	27.9 27.9	27.9	7.9 8.0	7.9	25.0 24.6	24.8	84.9 81.9	83.4	5.8 5.6	5.7	5.7	4.7 4.7	4.7		4.6 3.8	4.2	
26-Jul-13	Cloudy	Moderate	15:26	4.6	Surface	1.0	27.7 27.7	27.7	8.0 8.0	8.0	22.5 22.5	22.5	85.3 84.2	84.8	5.9 5.9	5.9	5.9	6.6 6.7	6.7	7.2	3.8 4.1	4.0	4.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.6	27.7 27.7	27.7	8.0 8.0	8.0	23.3 23.2	23.3	84.6 87.3	86.0	5.9 6.0	5.9	5.9	7.9 7.5	7.7		4.7 4.0	4.4	
29-Jul-13	Sunny	Moderate	17:13	4.7	Surface	1.0	28.4 28.8	28.6	8.0 8.0	8.0	18.8 17.1	17.9	83.4 83.9	83.7	5.8 5.9	5.9	5.9	5.1 5.3	5.2	5.2	5.1 6.3	5.7	5.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.7	28.3 28.4	28.3	7.9 7.9	7.9	20.0 20.3	20.1	83.3 83.3	83.3	5.8 5.8	5.8	5.8	5.3 5.0	5.2		5.0 5.2	5.1	
31-Jul-13	Fine	Moderate	08:25	5.3	Surface	1.0	28.8 28.8	28.8	8.0 8.0	8.0	17.4 18.9	18.1	81.8 81.0	81.4	5.7 5.6	5.7	5.7	3.8 3.8	3.8	4.4	2.2 2.1	2.2	2.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.3	28.2 28.2	28.2	7.9 7.9	7.9	24.1 24.0	24.1	76.1 77.5	76.8	5.2 5.3	5.2	5.2	4.8 5.0	4.9		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
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Rainy	Rough	13:13	5.5	Surface	1.0	29.6 29.6	29.6	8.5 8.5	8.5	16.7 16.6	16.6	111.9 110.6	111.3	7.8 7.7	7.7	7.7	12.5 12.4	12.5	13.2	11.6 12.6	12.1	12.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	28.1 28.0	28.0	8.1 8.2	8.2	22.7 22.6	22.6	75.6 76.2	75.9	5.2 5.3	5.2	5.2	13.6 14.1	13.9		11.6 13.0	12.3	
3-Jul-13	Sunny	Moderate	16:26	4.5	Surface	1.0	30.1 30.2	30.1	8.3 8.3	8.3	7.1 7.4	7.2	100.3 99.1	99.7	7.3 7.2	7.2	7.2	8.5 8.6	8.6	9.2	2.6 3.6	3.1	4.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.5	30.2 30.1	30.1	8.3 8.3	8.3	11.5 10.5	11.0	100.1 101.4	100.8	7.1 7.2	7.2	7.2	9.5 9.9	9.7		5.8 4.5	5.2	
5-Jul-13	Sunny	Moderate	18:13	5.5	Surface	1.0	30.5 30.5	30.5	8.6 8.6	8.6	11.6 11.9	11.8	126.5 128.2	127.4	8.9 9.0	9.0	9.0	17.2 17.6	17.4	18.5	5.8 4.7	5.3	5.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	30.1 30.1	30.1	8.5 8.5	8.5	13.4 13.4	13.4	117.2 116.6	116.9	8.2 8.2	8.2	8.2	19.3 19.7	19.5		4.5 4.6	4.6	
8-Jul-13	Fine	Moderate	19:47	5.2	Surface	1.0	29.5 29.5	29.5	8.4 8.4	8.4	12.4 12.1	12.3	109.7 108.2	109.0	7.8 7.7	7.8	7.8	8.1 8.2	8.2	8.8	5.1 6.5	5.8	5.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.2	29.5 29.5	29.5	8.4 8.3	8.4	14.3 14.0	14.2	110.1 103.9	107.0	7.8 7.3	7.5	7.5	9.5 9.3	9.4		4.8 6.3	5.6	
10-Jul-13	Sunny	Moderate	07:49	4.6	Surface	1.0	28.8 28.8	28.8	8.3 8.3	8.3	16.6 16.6	16.6	80.5 80.2	80.4	5.7 5.7	5.7	5.7	10.9 10.6	10.8	10.6	5.9 6.0	6.0	7.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.6	28.5 28.4	28.5	8.3 8.3	8.3	18.4 18.7	18.6	79.7 79.2	79.5	5.6 5.6	5.6	5.6	10.3 10.2	10.3		8.7 7.6	8.2	
12-Jul-13	Sunny	Moderate	08:51	5.6	Surface	1.0	29.0 29.0	29.0	8.3 8.3	8.3	19.4 19.5	19.5	81.9 79.0	80.5	5.7 5.5	5.6	5.6	13.1 12.8	13.0	14.8	10.5 10.0	10.3	11.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.6	28.7 28.6	28.6	8.2 8.2	8.2	20.2 20.5	20.4	76.1 72.9	74.5	5.3 5.0	5.2	5.2	16.6 16.5	16.6		11.6 12.0	11.8	
15-Jul-13	Rainy	Moderate	11:11	4.6	Surface	1.0	28.9 28.9	28.9	8.4 8.4	8.4	19.6 19.6	19.6	92.3 92.2	92.3	6.4 6.4	6.4	6.4	8.4 8.5	8.5	8.5	8.4 7.0	7.7	8.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.6	28.9 28.9	28.9	8.4 8.4	8.4	19.7 19.7	19.7	91.6 92.3	92.0	6.3 6.4	6.4	6.4	8.4 8.5	8.5		8.9 9.1	9.0	
17-Jul-13	Sunny	Moderate	13:47	5.5	Surface	1.0	28.2 28.2	28.2	8.0 8.1	8.0	20.9 20.9	20.9	87.7 87.5	87.6	6.1 6.1	6.1	6.1	4.7 5.0	4.9	7.5	8.1 7.3	7.7	8.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	27.7 27.6	27.6	8.0 7.8	7.9	22.4 22.8	22.6	81.7 78.1	79.9	5.7 5.4	5.6	5.6	9.6 10.5	10.1		8.3 9.1	8.7	
19-Jul-13	Fine	Moderate	16:54	5.6	Surface	1.0	28.1 28.1	28.1	8.1 8.2	8.2	23.2 23.4	23.3	96.8 96.2	96.5	6.7 6.6	6.6	6.6	8.8 9.3	9.1	11.1	5.8 5.4	5.6	5.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.6	27.5 27.5	27.5	8.1 8.1	8.1	24.7 24.8	24.8	91.9 91.8	91.9	6.3 6.3	6.3	6.3	13.1 12.8	13.0		5.0 5.5	5.3	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Sunny	Moderate	19:41	4.6	Surface	1.0	28.3 28.3	28.3	8.0 8.0	8.0	23.0 22.9	22.9	82.6 81.7	82.2	5.7 5.6	5.6	5.6	4.8 4.6	4.7	4.7	8.1 7.3	7.7	7.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.6	28.3 28.3	28.3	8.0 8.0	8.0	23.1 23.4	23.3	82.0 83.8	82.9	5.6 5.7	5.7	5.7	4.8 4.5	4.7		8.1 7.6	7.9	
24-Jul-13	Rainy	Moderate	07:26	5.7	Surface	1.0	27.9 27.9	27.9	7.9 7.9	7.9	23.7 23.7	23.7	75.4 75.4	75.4	5.2 5.2	5.2	5.2	10.5 10.3	10.4	11.7	6.7 7.7	7.2	8.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.7	27.9 27.9	27.9	7.9 7.9	7.9	24.1 24.1	24.1	75.4 75.1	75.3	5.2 5.2	5.2	5.2	12.8 13.2	13.0		8.2 9.4	8.8	
26-Jul-13	Cloudy	Moderate	09:06	4.6	Surface	1.0	27.5 27.6	27.6	7.9 7.9	7.9	22.8 22.8	22.8	78.2 78.2	78.2	5.4 5.4	5.4	5.4	13.6 13.7	13.7	13.7	22.1 22.4	22.3	**23.8**
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.6	27.5 27.6	27.6	7.9 7.9	7.9	22.9 22.8	22.8	78.1 77.9	78.0	5.4 5.4	5.4	5.4	13.9 13.5	13.7		25.4 24.9	25.2	
29-Jul-13	Sunny	Moderate	11:53	4.5	Surface	1.0	28.5 28.4	28.5	7.9 7.9	7.9	18.6 18.7	18.7	83.8 83.5	83.7	5.9 5.9	5.9	5.9	13.2 13.9	13.6	13.5	3.1 4.6	3.9	3.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.5	28.5 28.4	28.5	7.9 7.9	7.9	18.9 19.1	19.0	83.5 83.3	83.4	5.8 5.8	5.8	5.8	13.4 13.4	13.4		3.3 3.0	3.2	
31-Jul-13	Sunny	Moderate	14:34	5.4	Surface	1.0	28.9 29.4	29.1	8.0 8.1	8.1	19.8 18.8	19.3	87.6 88.0	87.8	6.1 6.1	6.1	6.1	17.3 16.9	17.1	15.2	23.5 23.3	23.4	**23.6**
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.4	28.3 28.0	28.1	7.9 8.0	8.0	22.3 23.1	22.7	77.4 76.4	76.9	5.3 5.3	5.3	5.3	12.8 13.6	13.2		23.0 24.3	23.7	

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
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Rainy	Rough	08:57	5.3	Surface	1.0	29.4 29.4	29.4	8.2 8.2	8.2	12.8 12.7	12.8	94.0 93.1	93.6	6.7 6.6	6.6	6.6	4.8 5.1	5.0	5.3	3.1 3.1	3.1	3.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.3	28.1 28.2	28.2	8.2 8.1	8.2	20.3 20.3	20.3	83.0 83.1	83.1	5.7 5.8	5.7	5.7	5.4 5.6	5.5		4.4 3.4	3.9	
3-Jul-13	Sunny	Moderate	11:23	4.5	Surface	1.0	29.6 29.6	29.6	8.2 8.2	8.2	10.4 10.3	10.4	93.0 93.1	93.1	6.7 6.7	6.7	6.7	5.9 5.9	5.9	6.0	4.3 5.1	4.7	4.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.5	29.5 29.6	29.6	8.2 8.2	8.2	10.3 10.3	10.3	92.8 92.6	92.7	6.7 6.7	6.7	6.7	5.9 6.0	6.0		4.6 4.7	4.7	
5-Jul-13	Sunny	Moderate	13:01	5.5	Surface	1.0	30.1 30.1	30.1	8.4 8.4	8.4	10.0 9.3	9.6	106.4 105.9	106.2	7.6 7.6	7.6	7.6	6.1 6.0	6.1	6.2	5.5 5.9	5.7	7.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	30.0 29.9	30.0	8.4 8.4	8.4	10.9 11.1	11.0	105.2 105.6	105.4	7.5 7.5	7.5	7.5	6.2 6.1	6.2		8.0 8.5	8.3	
8-Jul-13	Sunny	Moderate	14:40	5.2	Surface	1.0	29.5 29.5	29.5	8.4 8.4	8.4	12.6 12.6	12.6	99.5 97.5	98.5	7.1 6.9	7.0	7.0	5.9 5.9	5.9	6.0	3.3 2.7	3.0	2.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.2	28.8 28.9	28.9	8.3 8.3	8.3	15.7 14.5	15.1	87.3 91.2	89.3	6.2 6.5	6.3	6.3	6.2 5.9	6.1		2.1 3.1	2.6	
10-Jul-13	Sunny	Moderate	13:09	4.4	Surface	1.0	29.5 29.6	29.6	8.4 8.4	8.4	14.4 14.3	14.3	90.0 92.5	91.3	6.3 6.5	6.4	6.4	4.9 4.8	4.9	5.1	2.7 2.7	2.7	3.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.4	29.2 29.0	29.1	8.4 8.4	8.4	16.8 17.2	17.0	90.0 86.8	88.4	6.3 6.1	6.2	6.2	5.2 5.1	5.2		2.6 4.3	3.5	
12-Jul-13	Sunny	Moderate	14:03	5.4	Surface	1.0	29.7 29.7	29.7	8.4 8.4	8.4	17.9 17.8	17.8	91.5 92.2	91.9	6.3 6.4	6.3	6.3	4.3 4.5	4.4	6.3	2.6 2.4	2.5	2.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.4	28.6 28.4	28.5	8.3 8.3	8.3	22.2 21.2	21.7	79.8 84.7	82.3	5.5 5.9	5.7	5.7	8.2 7.9	8.1		3.4 2.3	2.9	
15-Jul-13	Rainy	Moderate	16:10	4.6	Surface	1.0	28.9 28.8	28.9	8.2 8.2	8.2	17.0 16.7	16.9	84.2 88.1	86.2	5.9 6.2	6.1	6.1	2.7 2.5	2.6	2.6	3.0 4.2	3.6	4.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.6	28.9 28.9	28.9	8.2 8.2	8.2	18.3 16.7	17.5	83.1 86.8	85.0	5.8 6.1	5.9	5.9	2.4 2.5	2.5		4.4 4.1	4.3	
17-Jul-13	Fine	Moderate	09:03	5.3	Surface	1.0	27.9 27.9	27.9	8.0 8.0	8.0	21.5 21.5	21.5	86.0 83.0	84.5	6.0 5.8	5.9	5.9	2.9 2.7	2.8	4.1	2.3 3.0	2.7	2.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.3	27.5 27.4	27.5	8.0 8.0	8.0	24.0 24.1	24.0	71.7 69.2	70.5	5.0 4.8	4.9	4.9	5.3 5.5	5.4		3.0 2.7	2.9	
19-Jul-13	Sunny	Moderate	11:04	5.3	Surface	1.0	28.1 28.1	28.1	8.0 8.0	8.0	21.9 21.9	21.9	82.9 84.2	83.6	5.7 5.8	5.8	5.8	2.6 2.7	2.7	3.4	3.8 3.1	3.5	3.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.3	27.3 27.2	27.3	8.0 8.0	8.0	24.5 24.6	24.5	74.6 75.7	75.2	5.2 5.2	5.2	5.2	3.8 4.2	4.0		3.1 3.2	3.2	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Sunny	Moderate	13:48	4.1	Surface	1.0	28.0 28.0	28.0	8.0 8.0	8.0	23.2 23.1	23.2	73.1 73.6	73.4	5.0 5.1	5.1	5.1	5.5 5.7	5.6	5.6	4.9 5.0	5.0	5.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	27.7 27.8	27.8	8.0 8.0	8.0	24.8 25.1	24.9	71.9 73.0	72.5	4.9 5.0	5.0	5.0	5.6 5.5	5.6		4.9 5.2	5.1	
24-Jul-13	Cloudy	Moderate	12:50	5.6	Surface	1.0	27.9 27.9	27.9	8.0 8.0	8.0	24.0 24.0	24.0	79.6 79.8	79.7	5.5 5.5	5.5	5.5	5.2 5.1	5.2	5.3	4.9 6.0	5.5	7.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.6	27.9 27.9	27.9	8.0 8.0	8.0	25.5 25.5	25.5	80.9 80.1	80.5	5.5 5.5	5.5	5.5	5.3 5.5	5.4		10.6 9.0	9.8	
26-Jul-13	Cloudy	Moderate	14:20	4.5	Surface	1.0	27.7 27.7	27.7	8.0 8.0	8.0	22.6 22.6	22.6	81.3 81.8	81.6	5.6 5.7	5.7	5.7	7.3 7.4	7.4	7.6	8.5 7.8	8.2	7.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.5	27.7 27.6	27.7	8.0 8.0	8.0	23.2 23.5	23.4	81.2 81.5	81.4	5.6 5.6	5.6	5.6	7.7 7.7	7.7		7.4 7.4	7.4	
29-Jul-13	Sunny	Moderate	16:15	4.6	Surface	1.0	29.3 29.0	29.2	8.0 8.0	8.0	15.2 14.2	14.7	78.9 80.7	79.8	5.6 5.7	5.6	5.6	7.7 7.5	7.6	7.6	3.6 2.5	3.1	4.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.6	28.3 27.8	28.1	7.9 7.9	7.9	20.8 21.8	21.3	78.3 73.2	75.8	5.4 5.1	5.3	5.3	7.7 7.5	7.6		6.0 6.0	6.0	
31-Jul-13	Fine	Moderate	09:21	5.4	Surface	1.0	29.3 29.3	29.3	8.1 8.1	8.1	14.8 14.8	14.8	87.4 88.8	88.1	6.2 6.3	6.2	6.2	3.5 3.6	3.6	4.5	2.5 2.4	2.5	2.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.4	27.9 27.9	27.9	8.0 8.0	8.0	24.7 24.6	24.7	73.0 72.8	72.9	5.0 5.0	5.0	5.0	5.2 5.6	5.4		2.6 2.4	2.5	

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
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Rainy	Rough	12:17	5.4	Surface	1.0	29.6 29.6	29.6	8.2 8.2	8.2	15.5 15.5	15.5	98.4 97.4	97.9	6.9 6.8	6.8	6.8	4.9 4.6	4.8	4.6	6.1 6.2	6.2	6.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.4	28.7 28.8	28.8	8.2 8.2	8.2	19.8 18.9	19.4	81.6 80.3	81.0	5.7 5.6	5.6	5.6	4.3 4.4	4.4		6.2 5.8	6.0	
3-Jul-13	Sunny	Moderate	15:25	4.6	Surface	1.0	29.8 29.8	29.8	8.2 8.2	8.2	7.6 7.5	7.5	87.8 87.2	87.5	6.4 6.4	6.4	6.4	8.5 8.7	8.6	8.6	7.6 6.6	7.1	7.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.6	29.6 29.4	29.5	8.2 8.1	8.2	10.1 10.2	10.1	86.7 86.5	86.6	6.3 6.3	6.3	6.3	8.6 8.5	8.6		7.5 6.1	6.8	
5-Jul-13	Sunny	Moderate	17:34	5.5	Surface	1.0	30.5 30.5	30.5	8.6 8.6	8.6	8.6 8.6	8.6	124.3 125.3	124.8	8.9 9.0	8.9	8.9	7.9 8.0	8.0	8.2	7.1 6.8	7.0	6.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	30.0 30.0	30.0	8.5 8.5	8.5	10.4 10.0	10.2	116.8 116.5	116.7	8.3 8.3	8.3	8.3	8.2 8.5	8.4		5.6 6.5	6.1	
8-Jul-13	Fine	Moderate	18:52	5.7	Surface	1.0	29.5 29.5	29.5	8.4 8.4	8.4	11.5 11.7	11.6	104.8 104.4	104.6	7.5 7.5	7.5	7.5	7.9 8.1	8.0	7.8	4.3 4.2	4.3	6.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.7	29.4 29.4	29.4	8.4 8.4	8.4	12.5 12.5	12.5	105.2 104.9	105.1	7.5 7.5	7.5	7.5	7.8 7.2	7.5		7.3 8.0	7.7	
10-Jul-13	Sunny	Moderate	08:43	4.4	Surface	1.0	29.0 29.0	29.0	8.3 8.3	8.3	14.9 14.9	14.9	82.2 82.2	82.2	5.8 5.8	5.8	5.8	7.2 7.6	7.4	7.4	5.4 6.7	6.1	6.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.4	28.8 28.8	28.8	8.3 8.2	8.3	17.6 17.6	17.6	82.1 82.5	82.3	5.8 5.8	5.8	5.8	7.4 7.3	7.4		7.2 6.8	7.0	
12-Jul-13	Sunny	Moderate	09:50	5.7	Surface	1.0	29.0 29.1	29.0	8.3 8.3	8.3	18.5 18.5	18.5	83.6 86.8	85.2	5.8 6.0	5.9	5.9	9.4 8.9	9.2	11.6	5.3 4.2	4.8	4.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.7	28.0 28.0	28.0	8.2 8.2	8.2	22.7 22.7	22.7	70.5 73.9	72.2	4.9 5.1	5.0	5.0	14.2 13.8	14.0		4.2 5.5	4.9	
15-Jul-13	Rainy	Moderate	12:11	4.7	Surface	1.0	29.1 29.1	29.1	8.3 8.3	8.3	18.3 18.0	18.1	90.1 91.2	90.7	6.3 6.3	6.3	6.3	2.6 2.5	2.6	2.6	4.5 4.3	4.4	4.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.7	29.0 29.0	29.0	8.3 8.3	8.3	19.2 19.2	19.2	90.1 88.9	89.5	6.2 6.2	6.2	6.2	2.5 2.5	2.5		3.6 3.7	3.7	
17-Jul-13	Sunny	Moderate	12:48	4.9	Surface	1.0	28.4 28.4	28.4	8.0 8.0	8.0	19.3 19.3	19.3	79.5 79.9	79.7	5.6 5.6	5.6	5.6	3.5 3.7	3.6	4.7	2.6 2.9	2.8	2.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.9	27.8 27.9	27.9	8.0 8.0	8.0	22.2 21.8	22.0	73.5 75.0	74.3	5.1 5.2	5.2	5.2	6.0 5.5	5.8		2.5 2.7	2.6	
19-Jul-13	Fine	Moderate	15:58	5.3	Surface	1.0	28.8 28.8	28.8	8.1 8.1	8.1	19.9 19.9	19.9	96.1 96.1	96.1	6.7 6.7	6.7	6.7	3.2 3.2	3.2	3.6	4.0 3.1	3.6	3.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.3	28.1 28.3	28.2	8.1 8.1	8.1	22.4 21.8	22.1	88.8 89.3	89.1	6.1 6.2	6.2	6.2	4.0 3.7	3.9		4.4 3.7	4.1	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Sunny	Moderate	18:29	4.5	Surface	1.0	28.4 28.4	28.4	8.0 8.0	8.0	20.8 20.9	20.8	74.1 73.8	74.0	5.1 5.1	5.1	5.1	4.4 4.4	4.4	4.5	4.9 5.4	5.2	5.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.5	28.3 28.3	28.3	8.0 8.0	8.0	21.2 21.4	21.3	73.7 73.8	73.8	5.1 5.1	5.1	5.1	4.5 4.5	4.5		5.6 6.3	6.0	
24-Jul-13	Rainy	Moderate	08:23	5.3	Surface	1.0	27.9 27.9	27.9	7.9 7.9	7.9	23.2 23.3	23.2	74.2 74.2	74.2	5.1 5.1	5.1	5.1	11.1 12.0	11.6	12.9	8.8 7.3	8.1	8.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.3	27.7 27.7	27.7	7.9 7.9	7.9	25.2 25.3	25.3	71.7 72.0	71.9	4.9 4.9	4.9	4.9	14.6 13.5	14.1		7.9 7.9	7.9	
26-Jul-13	Cloudy	Moderate	10:09	4.4	Surface	1.0	27.6 27.7	27.6	8.0 8.0	8.0	22.6 22.6	22.6	76.1 75.8	76.0	5.3 5.3	5.3	5.3	5.5 5.4	5.5	6.0	7.3 6.3	6.8	6.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.4	27.6 27.6	27.6	7.9 7.9	7.9	24.1 24.0	24.0	75.7 75.9	75.8	5.2 5.2	5.2	5.2	6.4 6.6	6.5		6.0 6.2	6.1	
29-Jul-13	Sunny	Moderate	12:58	4.4	Surface	1.0	28.8 28.7	28.7	7.9 7.9	7.9	15.9 16.0	15.9	80.6 80.3	80.5	5.7 5.7	5.7	5.7	4.4 4.2	4.3	4.3	2.6 2.7	2.7	2.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.4	28.4 28.5	28.5	7.8 7.8	7.8	17.3 17.1	17.2	80.1 80.0	80.1	5.7 5.7	5.7	5.7	4.4 4.2	4.3		3.3 2.3	2.8	
31-Jul-13	Sunny	Moderate	13:34	5.5	Surface	1.0	30.0 30.0	30.0	8.1 8.1	8.1	15.8 15.8	15.8	100.6 100.1	100.4	7.0 6.9	7.0	7.0	3.4 3.3	3.4	4.3	2.3 2.8	2.6	2.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	28.3 28.3	28.3	8.0 8.0	8.0	22.0 21.9	21.9	84.5 84.5	84.5	5.8 5.8	5.8	5.8	5.3 5.0	5.2		2.1 3.1	2.6	

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
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Rainy	Rough	07:34	5.4	Surface	1.0	28.8 28.8	28.8	8.2 8.3	8.2	16.5 16.5	16.5	84.5 85.1	84.8	5.9 6.0	5.9	5.9	7.4 7.7	7.6	8.2	5.3 5.8	5.6	5.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.4	28.0 28.0	28.0	8.1 8.0	8.1	20.7 20.8	20.7	73.3 72.6	73.0	5.1 5.0	5.1	5.1	8.7 8.8	8.8		5.9 6.4	6.2	
3-Jul-13	Sunny	Moderate	10:11	4.2	Surface	1.0	29.3 29.3	29.3	8.3 8.3	8.3	9.7 10.5	10.1	92.6 93.7	93.2	6.7 6.8	6.7	6.7	9.2 9.4	9.3	9.3	4.3 3.8	4.1	4.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	29.1 29.0	29.1	8.3 8.3	8.3	15.3 15.4	15.4	92.2 95.3	93.8	6.5 6.7	6.6	6.6	9.3 9.2	9.3		5.4 4.3	4.9	
5-Jul-13	Sunny	Moderate	11:40	5.5	Surface	1.0	29.5 29.7	29.6	8.2 8.3	8.3	13.9 13.9	13.9	80.7 82.2	81.5	5.7 5.9	5.8	5.8	5.3 5.3	5.3	5.4	4.8 5.2	5.0	4.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	29.2 29.0	29.1	8.2 8.2	8.2	14.4 16.9	15.7	73.7 75.9	74.8	5.2 5.3	5.3	5.3	5.5 5.4	5.5		4.3 4.9	4.6	
8-Jul-13	Sunny	Moderate	13:09	5.3	Surface	1.0	29.2 29.3	29.2	8.4 8.4	8.4	12.8 12.8	12.8	93.0 95.1	94.1	6.6 6.8	6.7	6.7	6.5 6.3	6.4	6.9	4.5 5.1	4.8	5.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.3	28.7 28.7	28.7	8.1 8.3	8.2	15.9 16.9	16.4	84.9 86.1	85.5	6.0 6.1	6.0	6.0	7.1 7.5	7.3		5.0 6.3	5.7	
10-Jul-13	Sunny	Moderate	14:48	4.5	Surface	1.0	29.1 29.0	29.1	8.3 8.3	8.3	17.2 17.4	17.3	81.3 80.7	81.0	5.7 5.6	5.7	5.7	8.2 8.3	8.3	8.3	5.9 4.6	5.3	5.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.5	28.7 28.6	28.7	8.3 8.3	8.3	19.4 19.4	19.4	79.5 82.2	80.9	5.5 5.7	5.6	5.6	8.4 8.1	8.3		5.9 4.9	5.4	
12-Jul-13	Sunny	Moderate	15:30	5.4	Surface	1.0	29.8 29.7	29.8	8.4 8.4	8.4	17.1 17.3	17.2	99.6 98.5	99.1	6.9 6.8	6.8	6.8	3.5 3.5	3.5	4.1	2.8 3.0	2.9	3.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.4	29.0 29.0	29.0	8.4 8.4	8.4	19.8 19.6	19.7	94.4 94.7	94.6	6.5 6.5	6.5	6.5	4.4 4.7	4.6		3.2 3.8	3.5	
15-Jul-13	Rainy	Moderate	17:40	4.4	Surface	1.0	29.0 29.0	29.0	8.3 8.3	8.3	18.3 18.8	18.6	89.2 87.5	88.4	6.2 6.0	6.1	6.1	2.5 2.5	2.5	2.7	3.5 3.7	3.6	4.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.4	28.4 28.8	28.6	8.3 8.3	8.3	21.4 20.2	20.8	82.2 86.2	84.2	5.7 6.0	5.8	5.8	2.8 2.7	2.8		4.6 4.4	4.5	
17-Jul-13	Fine	Moderate	07:29	5.4	Surface	1.0	28.1 28.1	28.1	7.9 8.0	7.9	19.2 19.4	19.3	76.9 75.8	76.4	5.4 5.3	5.4	5.4	2.9 2.9	2.9	4.0	3.1 3.5	3.3	3.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.4	27.5 27.3	27.4	7.6 7.9	7.8	23.9 24.4	24.2	71.0 73.0	72.0	4.9 5.0	5.0	5.0	4.9 5.0	5.0		2.8 2.7	2.8	
19-Jul-13	Sunny	Moderate	09:41	5.3	Surface	1.0	27.4 27.1	27.3	8.0 8.0	8.0	24.2 25.1	24.6	75.6 76.2	75.9	5.2 5.3	5.2	5.2	6.0 5.8	5.9	7.1	3.1 3.0	3.1	3.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.3	27.1 27.1	27.1	8.0 8.0	8.0	25.3 25.2	25.2	69.1 70.0	69.6	4.8 4.8	4.8	4.8	8.5 7.9	8.2		5.1 4.3	4.7	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Sunny	Moderate	12:14	4.1	Surface	1.0	27.9 27.8	27.9	8.0 8.1	8.0	24.3 24.4	24.3	78.0 78.9	78.5	5.4 5.4	5.4	5.4	5.2 5.4	5.3	5.4	5.5 5.9	5.7	6.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	27.6 27.8	27.7	8.1 8.0	8.1	26.3 25.5	25.9	80.2 78.3	79.3	5.5 5.3	5.4		5.5 5.5	5.5		6.4 7.4	6.9	
24-Jul-13	Cloudy	Moderate	14:17	5.8	Surface	1.0	27.8 27.8	27.8	8.1 8.0	8.1	25.3 25.3	25.3	79.3 79.4	79.4	5.6 5.6	5.6	5.6	4.4 4.7	4.6	5.0	4.7 4.1	4.4	6.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.8	27.9 27.9	27.9	8.1 8.1	8.1	25.3 25.3	25.3	79.7 79.2	79.5	5.6 5.6	5.6	5.6	5.3 5.2	5.3		8.3 7.2	7.8	
26-Jul-13	Cloudy	Moderate	15:53	4.4	Surface	1.0	27.7 27.7	27.7	8.0 8.0	8.0	22.6 22.7	22.7	83.3 83.7	83.5	5.8 5.8	5.8	5.8	6.5 6.6	6.6	7.1	5.4 7.2	6.3	6.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.4	27.7 27.6	27.6	8.0 8.0	8.0	23.5 23.6	23.6	83.3 82.9	83.1	5.8 5.7	5.7	5.7	7.6 7.4	7.5		7.2 7.5	7.4	
29-Jul-13	Sunny	Moderate	17:41	4.4	Surface	1.0	30.0 29.9	30.0	8.0 8.0	8.0	14.5 14.4	14.5	90.8 93.8	92.3	6.3 6.6	6.5	6.5	3.3 3.2	3.3	3.3	2.4 3.2	2.8	2.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.4	28.8 29.2	29.0	7.9 7.9	7.9	18.8 18.7	18.7	90.2 91.2	90.7	6.3 6.3	6.3	6.3	3.3 3.3	3.3		2.2 2.5	2.4	
31-Jul-13	Fine	Moderate	07:57	5.2	Surface	1.0	29.1 29.0	29.0	8.0 8.0	8.0	17.3 17.0	17.2	89.2 87.7	88.5	6.2 6.1	6.2	6.2	3.3 3.0	3.2	3.4	3.1 2.9	3.0	3.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.2	28.4 28.1	28.3	7.8 7.9	7.9	23.2 23.3	23.3	83.0 78.6	80.8	5.7 5.4	5.5	5.5	3.3 3.7	3.5		2.5 3.3	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
*** Cancelled due to adverse weather condition and safety concern.

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 (^{o}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-Jul-13	Rainy	Rough	-	-	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	-	- -	-	-
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	-	- -	-	-
					Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
3-Jul-13	Sunny	Moderate	16:57	4.4	Surface	1.0	30.1 29.9	30.0	8.3 8.3	8.3	9.4 9.8	9.6	95.3 95.5	95.4	6.8 6.9	6.8	6.8	6.8 6.9	6.9	7.0	3.8 4.1	4.0	3.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.4	29.1 29.4	29.2	8.2 8.2	8.2	14.3 14.8	14.5	93.0 94.4	93.7	6.6 6.7	6.6	6.6	7.0 6.9	7.0		3.6 3.2	3.4	
5-Jul-13	Sunny	Moderate	18:43	5.6	Surface	1.0	30.4 30.4	30.4	8.6 8.6	8.6	12.2 12.3	12.3	131.6 131.2	131.4	9.2 9.2	9.2	9.2	6.4 6.2	6.3	6.5	4.7 4.3	4.5	4.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.6	30.1 30.4	30.3	8.6 8.6	8.6	13.4 13.3	13.4	122.8 121.5	122.2	8.6 8.5	8.5	8.5	6.5 6.9	6.7		5.0 4.7	4.9	
8-Jul-13	Fine	Moderate	20:19	5.5	Surface	1.0	29.5 29.4	29.4	8.5 8.4	8.4	12.5 13.0	12.7	103.1 101.9	102.5	7.4 7.3	7.3	7.3	8.6 8.8	8.7	10.4	4.7 4.8	4.8	5.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	29.0 29.1	29.1	8.4 8.4	8.4	15.1 15.1	15.1	97.4 100.7	99.1	6.9 7.1	7.0	7.0	12.3 11.9	12.1		5.9 6.1	6.0	
10-Jul-13	Sunny	Moderate	07:23	4.5	Surface	1.0	28.8 28.8	28.8	8.3 8.3	8.3	15.9 15.9	15.9	83.6 84.6	84.1	5.9 6.0	5.9	5.9	5.5 5.5	5.5	5.5	2.3 3.5	2.9	3.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.5	28.7 28.7	28.7	8.3 8.3	8.3	16.5 16.7	16.6	83.7 86.5	85.1	5.9 6.1	6.0	6.0	5.3 5.5	5.4		4.3 5.1	4.7	
12-Jul-13	Sunny	Moderate	08:19	5.6	Surface	1.0	28.8 28.8	28.8	8.3 8.3	8.3	18.3 18.1	18.2	80.3 80.3	80.3	5.6 5.6	5.6	5.6	4.1 4.4	4.3	5.8	3.9 3.9	3.9	4.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.6	28.0 28.0	28.0	8.2 8.2	8.2	22.6 22.7	22.6	81.3 80.2	80.8	5.6 5.5	5.6	5.6	7.0 7.5	7.3		4.7 3.5	4.1	
15-Jul-13	Rainy	Moderate	10:43	4.4	Surface	1.0	29.1 29.1	29.1	8.3 8.3	8.3	18.1 18.2	18.1	94.8 95.1	95.0	6.6 6.6	6.6	6.6	2.3 2.1	2.2	2.2	2.2 2.2	2.2	2.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.4	29.0 29.0	29.0	8.3 8.2	8.3	18.4 18.4	18.4	94.8 95.1	95.0	6.6 6.6	6.6	6.6	2.3 2.1	2.2		2.6 3.7	3.2	
17-Jul-13	Sunny	Moderate	14:21	5.5	Surface	1.0	28.2 28.3	28.2	8.1 8.1	8.1	20.8 20.8	20.8	86.7 88.2	87.5	6.0 6.1	6.1	6.1	9.6 9.5	9.6	10.5	8.1 8.4	8.3	8.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	27.6 27.6	27.6	8.0 8.0	8.0	22.8 22.6	22.7	76.8 76.5	76.7	5.3 5.3	5.3	5.3	10.5 12.1	11.3		7.4 8.1	7.8	
19-Jul-13	Fine	Moderate	17:27	5.5	Surface	1.0	28.1 28.1	28.1	8.1 8.1	8.1	23.0 23.0	23.0	89.7 89.5	89.6	6.2 6.2	6.2	6.2	5.6 5.3	5.5	7.0	3.5 2.6	3.1	3.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	27.1 26.9	27.0	8.1 8.1	8.1	25.8 26.1	26.0	83.3 86.8	85.1	5.7 6.0	5.9	5.9	8.8 8.2	8.5		2.8 3.0	2.9	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Sunny	Moderate	20:09	4.5	Surface	1.0	27.8 27.9	27.8	8.0 8.0	8.0	24.0 23.7	23.8	73.9 73.9	73.9	5.1 5.1	5.1	5.1	4.1 3.8	4.0	4.0	4.5 4.9	4.7	5.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.5	27.8 27.8	27.8	8.0 8.0	8.0	24.3 24.4	24.4	74.1 73.0	73.6	5.1 5.0	5.1	5.1	3.9 3.9	3.9		6.9 6.3	6.6	
24-Jul-13	Rainy	Moderate	06:58	5.5	Surface	1.0	27.8 27.8	27.8	7.9 7.8	7.9	23.7 23.8	23.8	77.5 79.0	78.3	5.3 5.4	5.4	5.4	3.6 4.0	3.8	5.7	5.7 5.2	5.5	5.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	27.8 27.8	27.8	7.6 7.9	7.8	24.7 24.8	24.8	75.3 75.1	75.2	5.2 5.1	5.2	5.2	7.7 7.5	7.6		6.2 5.7	6.0	
26-Jul-13	Cloudy	Moderate	08:39	4.4	Surface	1.0	27.6 27.6	27.6	7.9 7.9	7.9	23.0 23.0	23.0	79.4 78.5	79.0	5.5 5.4	5.5	5.5	6.6 6.3	6.5	6.6	5.6 7.2	6.4	7.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.4	27.6 27.6	27.6	7.9 7.9	7.9	23.5 23.8	23.7	78.7 79.8	79.3	5.4 5.5	5.5	5.5	6.7 6.5	6.6		8.4 10.0	9.2	
29-Jul-13	Sunny	Moderate	11:24	4.6	Surface	1.0	28.5 28.6	28.5	7.9 7.9	7.9	18.8 18.6	18.7	84.7 84.0	84.4	5.9 5.9	5.9	5.9	3.2 3.3	3.3	3.4	3.6 5.2	4.4	4.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.6	28.5 28.4	28.5	7.9 8.0	7.9	19.2 19.4	19.3	84.1 85.3	84.7	5.9 6.0	5.9	5.9	3.3 3.4	3.4		4.9 5.7	5.3	
31-Jul-13	Sunny	Moderate	15:05	5.5	Surface	1.0	29.8 29.7	29.7	8.2 8.2	8.2	18.2 18.2	18.2	108.4 112.6	110.5	7.5 7.8	7.6	7.6	5.8 5.5	5.7	7.8	4.5 4.1	4.3	4.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	28.0 28.0	28.0	8.0 8.0	8.0	23.2 23.1	23.2	84.8 87.6	86.2	5.8 6.0	5.9	5.9	10.0 9.7	9.9		4.0 4.2	4.1	

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
*** Cancelled due to adverse weather condition and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR10A - -Tide

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-Jul-13	Rainy	Rough	06:57	6.3	Surface	1.0	28.5 28.5	28.5	8.4 8.4	8.4	18.9 19.0	19.0	89.4 88.9	89.2	6.2 6.2	6.2	6.1	2.7 2.7	2.7	2.6	5.9 5.3	5.6	5.5
					Middle	3.2	28.3 28.3	28.3	8.3 8.3	8.3	21.1 20.9	21.0	86.8 87.7	87.3	6.0 6.1	6.0		2.5 2.5	2.5		4.3 5.5	4.9	
					Bottom	5.3	28.2 28.4	28.3	8.3 8.3	8.3	21.4 21.2	21.3	87.4 89.8	88.6	6.1 6.2	6.1	6.1	2.5 2.6	2.6		6.1 5.6	5.9	
3-Jul-13	Sunny	Moderate	08:45	6.8	Surface	1.0	28.7 28.7	28.7	8.4 8.3	8.4	15.4 16.5	16.0	101.4 101.6	101.5	7.2 7.2	7.2	7.2	2.5 2.3	2.4	2.5	4.2 4.6	4.4	4.4
					Middle	3.4	28.6 28.6	28.6	8.4 8.4	8.4	17.7 17.6	17.6	101.2 101.0	101.1	7.1 7.1	7.1		2.7 2.9	2.8		4.3 3.8	4.1	
					Bottom	5.8	28.6 28.6	28.6	8.3 8.3	8.3	18.0 17.8	17.9	100.7 101.1	100.9	7.1 7.1	7.1	7.1	2.2 2.4	2.3		4.6 4.6	4.6	
5-Jul-13	Sunny	Moderate	10:31	6.4	Surface	1.0	30.0 29.9	29.9	8.5 8.5	8.5	11.3 11.5	11.4	105.7 104.0	104.9	7.5 7.4	7.5	7.4	4.5 4.5	4.5	4.6	6.1 5.8	6.0	6.4
					Middle	3.2	29.6 29.6	29.6	8.5 8.5	8.5	12.3 12.4	12.4	103.1 101.9	102.5	7.3 7.2	7.3		4.7 4.5	4.6		5.8 6.4	6.1	
					Bottom	5.4	29.5 29.7	29.6	8.4 8.5	8.4	12.9 13.3	13.1	101.9 104.4	103.2	7.2 7.4	7.3	7.3	4.7 4.8	4.8		6.8 7.3	7.1	
8-Jul-13	Sunny	Moderate	12:10	6.4	Surface	1.0	28.7 28.7	28.7	8.4 8.4	8.4	16.9 17.1	17.0	94.0 96.2	95.1	6.6 6.8	6.7	6.6	3.6 3.5	3.6	3.7	6.0 5.2	5.6	5.8
					Middle	3.2	28.4 28.4	28.4	8.4 8.4	8.4	17.9 18.1	18.0	92.7 92.4	92.6	6.5 6.5	6.5		3.8 3.7	3.8		5.6 5.5	5.6	
					Bottom	5.4	28.4 28.4	28.4	8.4 8.4	8.4	18.1 18.3	18.2	93.2 93.1	93.2	6.6 6.5	6.6	6.6	3.8 3.8	3.8		5.9 6.6	6.3	
10-Jul-13	Sunny	Moderate	14:55	6.7	Surface	1.0	29.3 29.2	29.3	8.2 8.2	8.2	17.8 17.8	17.8	95.4 95.3	95.4	6.6 6.6	6.6	6.6	2.6 2.5	2.6	2.7	2.5 2.0	2.3	2.6
					Middle	3.4	29.2 29.2	29.2	8.2 8.2	8.2	18.2 18.0	18.1	94.5 94.4	94.5	6.6 6.6	6.6		2.7 2.6	2.7		2.1 3.2	2.7	
					Bottom	5.7	29.1 29.2	29.1	8.2 8.2	8.2	18.4 18.3	18.3	95.1 94.8	95.0	6.6 6.6	6.6	6.6	2.7 2.6	2.7		2.1 3.5	2.8	
12-Jul-13	Sunny	Moderate	16:07	6.6	Surface	1.0	29.7 29.7	29.7	8.2 8.2	8.2	19.5 19.4	19.5	98.1 98.7	98.4	6.7 6.7	6.7	6.7	2.4 2.4	2.4	2.4	2.0 2.1	2.1	2.7
					Middle	3.3	29.5 29.5	29.5	8.2 8.2	8.2	20.0 20.0	20.0	96.9 96.8	96.9	6.6 6.6	6.6		2.3 2.5	2.4		2.4 2.0	2.2	
					Bottom	5.6	29.4 29.3	29.4	8.2 8.2	8.2	20.9 20.5	20.7	97.9 96.4	97.2	6.7 6.6	6.6	6.6	2.4 2.3	2.4		3.8 3.8	3.8	
15-Jul-13	Rainy	Moderate	17:29	6.7	Surface	1.0	28.8 28.8	28.8	8.2 8.2	8.2	20.0 20.0	20.0	94.3 95.0	94.7	6.5 6.6	6.5	6.5	1.6 1.7	1.7	1.8	2.9 2.8	2.9	3.2
					Middle	3.4	28.6 28.7	28.6	8.2 8.2	8.2	20.6 20.6	20.6	93.4 94.6	94.0	6.5 6.5	6.5		1.7 1.8	1.8		2.9 3.3	3.1	
					Bottom	5.7	28.6 28.6	28.6	8.2 8.2	8.2	20.8 20.8	20.8	93.5 96.1	94.8	6.5 6.6	6.6	6.6	1.7 1.8	1.8		3.7 3.7	3.7	
17-Jul-13	Fine	Moderate	06:41	6.4	Surface	1.0	27.0 27.0	27.0	8.3 8.3	8.3	24.1 24.1	24.1	73.9 74.3	74.1	5.2 5.2	5.2	5.2	2.3 2.3	2.3	2.4	3.8 4.7	4.3	4.8
					Middle	3.2	26.7 26.7	26.7	8.2 8.3	8.3	25.7 25.5	25.6	73.6 72.1	72.9	5.1 5.0	5.1		2.3 2.4	2.4		4.5 4.6	4.6	
					Bottom	5.4	26.6 26.5	26.5	8.2 8.2	8.2	26.2 26.6	26.4	71.8 72.2	72.0	5.0 5.0	5.0	5.0	2.4 2.3	2.4		6.1 5.0	5.6	
19-Jul-13	Sunny	Moderate	08:55	6.4	Surface	1.0	26.4 26.4	26.4	8.3 8.3	8.3	27.4 27.4	27.4	75.6 73.6	74.6	5.3 5.2	5.2	5.2	2.1 2.2	2.2	2.2	2.1 2.2	2.2	2.9
					Middle	3.2	26.3 26.3	26.3	8.3 8.3	8.3	27.5 27.5	27.5	73.6 74.0	73.8	5.2 5.2	5.2		2.2 2.1	2.2		2.7 3.4	3.1	
					Bottom	5.4	26.3 26.2	26.3	8.3 8.3	8.3	27.5 27.9	27.7	73.8 73.7	73.8	5.2 5.2	5.2	5.2	2.2 2.2	2.2		3.3 3.2	3.3	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR10A - -Tide

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-Jul-13	Sunny	Moderate	11:04	6.1	Surface	1.0	27.3 26.8	27.0	8.2 8.2	8.2	26.5 27.6	27.0	80.7 77.8	79.3	5.5 5.3	5.4	5.4	3.1 3.1	3.1	3.2	3.6 2.8	3.2	3.9
					Middle	3.1	26.6 26.7	26.6	8.2 8.2	8.2	28.1 27.9	28.0	76.6 79.4	78.0	5.3 5.4	5.3		3.1 3.2	3.2		2.8 3.6	3.2	
					Bottom	5.1	26.6 26.7	26.7	8.2 8.2	8.2	28.0 27.8	27.9	76.2 76.0	76.1	5.2 5.2	5.2	5.2	3.2 3.2	3.2		4.9 5.5	5.2	
24-Jul-13	Cloudy	Moderate	14:38	6.4	Surface	1.0	27.5 27.5	27.5	8.2 8.2	8.2	25.0 25.0	25.0	77.1 77.4	77.3	5.3 5.3	5.3	5.3	4.0 4.0	4.0	4.3	4.6 4.8	4.7	5.9
					Middle	3.2	27.5 27.5	27.5	8.2 8.2	8.2	25.1 25.1	25.1	76.4 76.9	76.7	5.2 5.3	5.3		4.2 4.3	4.3		4.7 6.1	5.4	
					Bottom	5.4	27.5 27.5	27.5	8.1 8.2	8.1	25.6 25.6	25.6	77.1 77.3	77.2	5.3 5.3	5.3	5.3	4.6 4.5	4.6		7.8 7.2	7.5	
26-Jul-13	Cloudy	Moderate	15:43	6.2	Surface	1.0	27.6 27.6	27.6	8.2 8.2	8.2	23.7 23.9	23.8	82.8 81.4	82.1	5.7 5.6	5.7	5.7	4.8 5.1	5.0	5.4	6.8 6.0	6.4	6.7
					Middle	3.1	27.4 27.5	27.5	8.2 8.2	8.2	24.8 24.0	24.4	79.9 81.8	80.9	5.5 5.7	5.6		5.8 5.6	5.7		6.9 6.2	6.6	
					Bottom	5.2	27.4 27.4	27.4	8.2 8.2	8.2	24.7 24.8	24.8	80.4 82.1	81.3	5.5 5.7	5.6	5.6	5.6 5.2	5.4		6.6 7.5	7.1	
29-Jul-13	Sunny	Moderate	17:39	6.5	Surface	1.0	28.9 28.9	28.9	8.2 8.2	8.2	21.4 21.2	21.3	85.6 85.4	85.5	5.9 5.9	5.9	5.7	2.3 2.3	2.3	2.5	1.8 1.7	1.8	2.6
					Middle	3.3	28.2 28.0	28.1	8.2 8.2	8.2	22.4 23.8	23.1	80.0 79.0	79.5	5.5 5.4	5.5		2.5 2.4	2.5		2.4 2.2	2.3	
					Bottom	5.5	27.5 27.7	27.6	8.2 8.2	8.2	25.3 25.1	25.2	76.5 76.7	76.6	5.2 5.3	5.3	5.3	2.7 2.7	2.7		3.0 4.2	3.6	
31-Jul-13	Fine	Moderate	07:20	6.5	Surface	1.0	28.6 28.6	28.6	8.3 8.3	8.3	20.1 20.3	20.2	87.1 87.7	87.4	6.0 6.1	6.1	6.0	2.1 2.1	2.1	2.1	2.9 2.1	2.5	2.7
					Middle	3.3	28.4 28.3	28.3	8.2 8.2	8.2	21.7 21.7	21.7	84.5 85.4	85.0	5.8 5.9	5.9		2.1 2.1	2.1		1.7 1.8	1.8	
					Bottom	5.5	28.2 28.3	28.3	8.2 8.2	8.2	22.5 22.6	22.5	84.5 86.6	85.6	5.8 5.9	5.9	5.9	2.1 2.2	2.2		3.4 4.1	3.8	

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
*** Cancelled due to adverse weather condition and safety concern.

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 (^{o}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-Jul-13	Rainy	Rough	-	-	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
3-Jul-13	Sunny	Moderate	17:12	7.1	Surface	1.0	29.5 29.2	29.4	8.4 8.4	8.4	15.5 18.2	16.8	109.6 107.0	108.3	7.7 7.4	7.5	7.5	3.4 3.5	3.5	3.6	4.1 3.8	4.0	4.0
					Middle	3.6	29.0 29.0	29.0	8.5 8.4	8.5	18.7 18.9	18.8	107.4 108.1	107.8	7.5 7.5	7.5		3.4 3.5	3.5		4.9 3.2	4.1	
					Bottom	6.1	28.9 29.0	28.9	8.4 8.5	8.4	19.7 19.6	19.7	107.2 106.2	106.7	7.4 7.3	7.4	7.4	3.6 3.8	3.7		3.8 4.0	3.9	
5-Jul-13	Sunny	Moderate	19:20	6.4	Surface	1.0	28.4 28.4	28.4	8.5 8.4	8.5	21.9 21.8	21.9	85.8 82.6	84.2	5.9 5.7	5.8	5.6	4.5 4.5	4.5	4.5	4.2 4.8	4.5	4.1
					Middle	3.2	27.9 28.0	27.9	8.4 8.4	8.4	22.9 22.8	22.9	75.2 77.1	76.2	5.2 5.3	5.3		4.5 4.4	4.5		4.5 4.0	4.3	
					Bottom	5.4	27.4 27.4	27.4	8.4 8.4	8.4	24.5 24.5	24.5	77.2 78.5	77.9	5.3 5.4	5.4	5.4	4.5 4.5	4.5		3.8 3.3	3.6	
8-Jul-13	Fine	Moderate	20:44	6.2	Surface	1.0	28.2 28.1	28.2	8.4 8.4	8.4	18.8 19.0	18.9	78.3 78.6	78.5	5.5 5.5	5.5	5.4	5.2 5.5	5.4	5.5	4.2 4.5	4.4	4.5
					Middle	3.1	27.7 27.7	27.7	8.4 8.4	8.4	21.7 21.7	21.7	77.6 75.1	76.4	5.4 5.2	5.3		5.5 5.5	5.5		4.7 4.9	4.8	
					Bottom	5.2	27.5 27.6	27.5	8.4 8.4	8.4	22.8 23.1	23.0	78.4 76.5	77.5	5.5 5.3	5.4	5.4	5.6 5.5	5.6		3.9 4.7	4.3	
10-Jul-13	Sunny	Moderate	06:24	6.3	Surface	1.0	28.6 28.6	28.6	8.1 8.1	8.1	17.4 17.3	17.3	81.2 83.2	82.2	5.7 5.9	5.8	5.6	3.5 3.3	3.4	3.0	2.4 1.9	2.2	4.0
					Middle	3.2	27.9 28.0	27.9	8.1 8.1	8.1	19.9 20.5	20.2	76.8 76.9	76.9	5.4 5.4	5.4		2.7 3.0	2.9		4.4 4.7	4.6	
					Bottom	5.3	27.5 27.9	27.7	8.0 8.0	8.0	22.9 21.6	22.2	77.5 78.8	78.2	5.4 5.5	5.4	5.4	2.7 2.9	2.8		5.4 5.1	5.3	
12-Jul-13	Sunny	Moderate	07:54	6.3	Surface	1.0	28.7 28.6	28.7	8.1 8.1	8.1	19.3 19.7	19.5	80.3 78.9	79.6	5.6 5.5	5.5	5.5	1.6 1.5	1.6	1.6	3.1 2.6	2.9	3.4
					Middle	3.2	28.4 28.5	28.5	8.1 8.1	8.1	20.1 20.0	20.0	77.3 79.1	78.2	5.4 5.5	5.4		1.6 1.6	1.6		3.3 3.0	3.2	
					Bottom	5.3	28.5 28.0	28.2	8.1 8.1	8.1	21.0 22.4	21.7	79.4 77.0	78.2	5.5 5.3	5.4	5.4	1.6 1.7	1.7		4.9 3.2	4.1	
15-Jul-13	Rainy	Moderate	09:44	6.8	Surface	1.0	28.8 28.7	28.8	8.2 8.2	8.2	19.6 20.0	19.8	89.8 89.1	89.5	6.2 6.2	6.2	6.1	1.7 1.8	1.8	1.9	2.2 2.8	2.5	3.0
					Middle	3.4	28.0 28.4	28.2	8.1 8.1	8.1	22.4 20.6	21.5	86.1 84.8	85.5	5.9 5.9	5.9		1.8 2.0	1.9		3.3 3.1	3.2	
					Bottom	5.8	28.0 27.7	27.8	8.1 8.1	8.1	22.7 23.4	23.0	80.8 81.2	81.0	5.6 5.6	5.6	5.6	1.8 1.9	1.9		3.2 3.3	3.3	
17-Jul-13	Sunny	Moderate	15:23	6.4	Surface	1.0	26.4 26.6	26.5	8.3 8.3	8.3	27.3 27.2	27.2	81.1 74.9	78.0	5.6 5.2	5.4	5.3	1.8 1.8	1.8	1.8	2.3 2.2	2.3	2.8
					Middle	3.2	26.3 26.3	26.3	8.3 8.3	8.3	27.6 27.6	27.6	77.0 74.8	75.9	5.3 5.2	5.2		1.7 1.8	1.8		3.0 2.2	2.6	
					Bottom	5.4	26.4 26.3	26.4	8.3 8.3	8.3	27.6 27.7	27.6	75.0 75.6	75.3	5.2 5.2	5.2	5.2	1.8 1.8	1.8		3.8 2.9	3.4	
19-Jul-13	Fine	Moderate	17:56	6.3	Surface	1.0	26.3 26.3	26.3	8.3 8.3	8.3	28.0 28.0	28.0	74.9 73.6	74.3	5.2 5.1	5.1	5.1	2.5 2.6	2.6	2.5	2.1 2.7	2.4	2.7
					Middle	3.2	26.1 26.2	26.2	8.3 8.3	8.3	28.5 28.4	28.4	73.0 74.5	73.8	5.0 5.1	5.1		2.5 2.5	2.5		3.0 2.8	2.9	
					Bottom	5.3	26.2 26.2	26.2	8.3 8.3	8.3	28.4 28.4	28.4	73.6 71.7	72.7	5.1 4.9	5.0	5.0	2.3 2.4	2.4		2.7 2.8	2.8	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

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-Jul-13	Sunny	Moderate	20:19	6.3	Surface	1.0	26.9 26.9	26.9	8.2 8.2	8.2	27.6 27.5	27.5	79.3 84.3	81.8	5.4 5.8	5.6	5.4	4.9 5.1	5.0	5.3	4.7 5.9	5.3	6.1
					Middle	3.2	26.6 26.5	26.5	8.2 8.2	8.2	28.3 28.3	28.3	73.2 79.0	76.1	5.0 5.4	5.2		5.1 5.3	5.2		6.4 5.9	6.2	
					Bottom	5.3	26.5 26.7	26.6	8.2 8.2	8.2	28.5 28.2	28.4	75.9 72.2	74.1	5.2 4.9	5.1	5.1	5.6 5.5	5.6		6.9 6.5	6.7	
24-Jul-13	Rainy	Moderate	05:59	6.6	Surface	1.0	27.5 27.5	27.5	8.2 8.2	8.2	25.2 25.2	25.2	77.9 78.5	78.2	5.3 5.4	5.4	5.3	3.8 3.6	3.7	4.4	4.2 3.9	4.1	4.8
					Middle	3.3	27.2 27.2	27.2	8.2 8.2	8.2	26.5 26.5	26.5	74.8 73.9	74.4	5.1 5.1	5.1		4.5 4.6	4.6		4.0 4.8	4.4	
					Bottom	5.6	27.0 27.0	27.0	8.2 8.2	8.2	27.3 27.2	27.3	73.7 75.3	74.5	5.0 5.1	5.1	5.1	5.0 4.9	5.0		6.0 5.5	5.8	
26-Jul-13	Cloudy	Moderate	07:45	6.4	Surface	1.0	27.5 27.4	27.4	8.2 8.2	8.2	23.9 23.9	23.9	77.1 76.1	76.6	5.3 5.3	5.3	5.2	5.7 5.7	5.7	7.5	3.0 3.9	3.5	4.5
					Middle	3.2	27.2 27.2	27.2	8.2 8.2	8.2	26.0 26.1	26.1	74.7 73.6	74.2	5.1 5.1	5.1		7.0 7.6	7.3		4.6 4.5	4.6	
					Bottom	5.4	27.2 27.2	27.2	8.2 8.2	8.2	26.3 26.5	26.4	76.8 73.9	75.4	5.3 5.1	5.2	5.2	9.6 9.4	9.5		5.2 5.8	5.5	
29-Jul-13	Sunny	Moderate	10:30	6.5	Surface	1.0	28.1 28.2	28.2	8.1 8.1	8.1	19.6 19.6	19.6	80.0 80.1	80.1	5.6 5.6	5.6	5.5	3.2 3.1	3.2	3.3	4.2 3.9	4.1	4.0
					Middle	3.3	27.8 27.8	27.8	8.1 8.1	8.1	21.1 21.1	21.1	77.2 76.5	76.9	5.4 5.3	5.4		3.2 3.4	3.3		3.4 4.8	4.1	
					Bottom	5.5	27.7 27.7	27.7	8.1 8.1	8.1	22.0 22.4	22.2	77.3 76.2	76.8	5.4 5.3	5.3	5.3	3.4 3.5	3.5		3.5 3.9	3.7	
31-Jul-13	Sunny	Moderate	15:38	6.6	Surface	1.0	28.4 28.9	28.6	8.4 8.4	8.4	22.2 21.0	21.6	91.7 92.8	92.3	6.3 6.3	6.3	6.2	2.1 2.2	2.2	2.4	3.3 2.4	2.9	2.8
					Middle	3.3	27.8 27.8	27.8	8.3 8.3	8.3	24.5 24.8	24.7	89.4 86.6	88.0	6.1 5.9	6.0		2.4 2.5	2.5		2.4 2.2	2.3	
					Bottom	5.6	27.7 27.7	27.7	8.3 8.3	8.3	25.0 25.1	25.1	87.4 86.7	87.1	6.0 5.9	6.0	6.0	2.5 2.4	2.5		3.5 2.9	3.2	

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
*** Cancelled due to adverse weather condition and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR10B(N) - -Tide

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-Jul-13	Rainy	Rough	06:52	4.9	Surface	1.0	28.2 28.2	28.2	8.3 8.3	8.3	20.9 20.9	20.9	87.4 87.6	87.5	6.1 6.1	6.1	6.1	2.8 2.7	2.8	2.8	5.3 6.3	5.8	6.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.9	28.2 28.2	28.2	8.3 8.3	8.3	21.1 21.3	21.2	87.4 87.7	87.6	6.1 6.1	6.1	6.1	2.8 2.8	2.8		5.8 6.9	6.4	
3-Jul-13	Sunny	Moderate	08:38	5.6	Surface	1.0	28.5 28.5	28.5	8.3 8.3	8.3	17.6 17.2	17.4	98.4 98.9	98.7	6.9 7.0	7.0	7.0	2.5 2.6	2.6	2.5	4.7 5.3	5.0	5.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.6	28.4 28.4	28.4	8.3 8.4	8.4	18.7 18.9	18.8	99.0 100.1	99.6	6.9 7.0	7.0	7.0	2.2 2.3	2.3		5.7 6.1	5.9	
5-Jul-13	Sunny	Moderate	10:22	4.7	Surface	1.0	28.7 28.7	28.7	8.4 8.4	8.4	15.2 15.8	15.5	85.0 86.6	85.8	6.1 6.1	6.1	6.1	4.2 4.2	4.2	4.2	4.4 5.3	4.9	4.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.7	27.7 27.8	27.7	8.4 8.4	8.4	21.5 20.5	21.0	82.9 82.5	82.7	5.8 5.8	5.8	5.8	4.0 4.1	4.1		2.3 3.9	3.1	
8-Jul-13	Sunny	Moderate	12:05	4.8	Surface	1.0	28.1 28.2	28.2	8.4 8.4	8.4	20.0 19.8	19.9	89.9 90.1	90.0	6.3 6.3	6.3	6.3	3.6 3.4	3.5	3.6	4.5 4.7	4.6	4.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.8	28.1 28.1	28.1	8.4 8.4	8.4	20.4 20.2	20.3	89.1 90.1	89.6	6.2 6.3	6.3	6.3	3.6 3.7	3.7		5.2 4.9	5.1	
10-Jul-13	Sunny	Moderate	15:03	5.8	Surface	1.0	29.2 29.2	29.2	8.2 8.2	8.2	17.9 18.0	17.9	94.7 94.3	94.5	6.6 6.5	6.6	6.6	2.7 2.5	2.6	2.6	2.9 2.3	2.6	2.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.8	29.2 29.2	29.2	8.2 8.2	8.2	18.0 18.2	18.1	94.5 94.1	94.3	6.6 6.5	6.5	6.5	2.6 2.5	2.6		3.0 3.2	3.1	
12-Jul-13	Sunny	Moderate	16:12	4.9	Surface	1.0	29.2 29.1	29.1	8.2 8.1	8.2	20.7 20.8	20.8	92.7 91.4	92.1	6.3 6.3	6.3	6.3	2.4 2.3	2.4	2.5	3.4 3.1	3.3	3.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.9	28.9 29.1	29.0	8.1 8.1	8.1	22.1 21.2	21.6	91.6 92.9	92.3	6.2 6.4	6.3	6.3	2.5 2.5	2.5		3.4 3.3	3.4	
15-Jul-13	Rainy	Moderate	17:36	5.6	Surface	1.0	28.8 28.8	28.8	8.2 8.2	8.2	20.0 20.0	20.0	94.1 94.6	94.4	6.5 6.5	6.5	6.5	1.6 1.6	1.6	1.6	3.1 3.7	3.4	3.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.6	28.7 28.7	28.7	8.2 8.2	8.2	20.4 20.5	20.4	94.3 93.5	93.9	6.5 6.5	6.5	6.5	1.5 1.6	1.6		3.8 3.6	3.7	
17-Jul-13	Fine	Moderate	06:32	4.7	Surface	1.0	26.5 26.6	26.6	8.2 8.2	8.2	25.9 25.6	25.8	72.2 72.5	72.4	5.0 5.0	5.0	5.0	2.1 2.1	2.1	2.2	2.8 3.5	3.2	3.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.7	26.4 26.3	26.4	8.2 8.2	8.2	26.4 26.9	26.6	69.3 69.8	69.6	4.8 4.9	4.8	4.8	2.2 2.2	2.2		3.2 3.4	3.3	
19-Jul-13	Sunny	Moderate	08:49	4.8	Surface	1.0	26.2 26.2	26.2	8.3 8.3	8.3	27.8 27.8	27.8	74.7 73.4	74.1	5.2 5.1	5.2	5.2	1.9 1.8	1.9	1.9	4.0 3.5	3.8	5.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.8	26.2 26.2	26.2	8.3 8.2	8.3	27.9 27.9	27.9	73.8 76.5	75.2	5.2 5.4	5.3	5.3	1.8 1.8	1.8		6.5 5.6	6.1	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR10B(N) - -Tide

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-Jul-13	Sunny	Moderate	10:58	4.9	Surface	1.0	26.6 26.6	26.6	8.2 8.2	8.2	28.1 28.1	28.1	83.7 77.9	80.8	5.7 5.3	5.5	5.5	5.4 5.5	5.5	5.6	8.6 8.7	8.7	9.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.9	26.6 26.6	26.6	8.2 8.2	8.2	28.2 28.1	28.1	77.8 79.7	78.8	5.3 5.5	5.4	5.4	5.8 5.6	5.7		8.9 9.4	9.2	
24-Jul-13	Cloudy	Moderate	14:49	5.3	Surface	1.0	27.3 27.3	27.3	8.2 8.2	8.2	25.9 25.9	25.9	75.8 76.2	76.0	5.2 5.2	5.2	5.2	6.2 6.3	6.3	6.6	8.0 9.2	8.6	9.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.3	27.3 27.3	27.3	8.2 8.2	8.2	26.0 26.0	26.0	76.3 76.4	76.4	5.2 5.2	5.2	5.2	6.9 6.7	6.8		9.9 9.0	9.5	
26-Jul-13	Cloudy	Moderate	15:52	5.5	Surface	1.0	27.6 27.6	27.6	8.2 8.2	8.2	24.0 24.0	24.0	80.7 81.2	81.0	5.6 5.6	5.6	5.6	4.9 4.9	4.9	4.7	7.8 7.2	7.5	6.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	27.4 27.5	27.5	8.2 8.2	8.2	24.7 24.6	24.7	79.8 80.0	79.9	5.5 5.5	5.5	5.5	4.6 4.4	4.5		6.2 6.1	6.2	
29-Jul-13	Sunny	Moderate	17:54	5.4	Surface	1.0	28.9 28.9	28.9	8.2 8.2	8.2	21.6 21.5	21.6	88.6 89.3	89.0	6.1 6.1	6.1	6.1	2.1 2.2	2.2	2.3	5.3 4.1	4.7	4.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.4	28.5 28.4	28.5	8.2 8.2	8.2	22.5 22.7	22.6	87.3 86.8	87.1	6.0 6.0	6.0	6.0	2.3 2.3	2.3		5.5 4.1	4.8	
31-Jul-13	Fine	Moderate	07:15	5.1	Surface	1.0	27.9 28.1	28.0	8.2 8.2	8.2	22.3 22.2	22.3	76.1 77.8	77.0	5.3 5.4	5.3	5.3	2.3 2.2	2.3	2.3	2.9 4.3	3.6	3.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	27.6 27.4	27.5	8.2 8.2	8.2	25.7 25.4	25.6	76.8 75.1	76.0	5.2 5.2	5.2	5.2	2.2 2.3	2.3		3.6 4.1	3.9	

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
*** Cancelled due to adverse weather condition and safety concern.

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 (^{o}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-Jul-13	Rainy	Rough	-	-	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
3-Jul-13	Sunny	Moderate	17:20	5.8	Surface	1.0	29.2 29.1	29.2	8.4 8.4	8.4	16.0 16.5	16.2	106.5 107.6	107.1	7.5 7.6	7.5	7.5	3.2 3.0	3.1	3.2	4.6 3.5	4.1	4.1
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	
					Bottom	4.8	29.1 29.1	29.1	8.4 8.4	8.4	19.0 19.1	19.1	107.2 107.8	107.5	7.4 7.5	7.4	7.4	3.2 3.3	3.3		4.0 4.2	4.1	
5-Jul-13	Sunny	Moderate	19:31	5.0	Surface	1.0	28.3 28.3	28.3	8.4 8.4	8.4	21.9 22.1	22.0	84.0 84.1	84.1	5.8 5.8	5.8	5.8	3.7 3.7	3.7	3.8	6.0 6.0	6.0	6.3
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	
					Bottom	4.0	28.1 28.1	28.1	8.4 8.4	8.4	22.8 22.9	22.9	83.5 82.6	83.1	5.8 5.7	5.7	5.7	3.9 3.8	3.9		6.5 6.6	6.6	
8-Jul-13	Fine	Moderate	20:53	4.9	Surface	1.0	28.0 27.9	27.9	8.4 8.4	8.4	19.7 20.7	20.2	77.8 77.5	77.7	5.5 5.4	5.4	5.4	4.8 4.8	4.8	4.9	3.0 4.0	3.5	3.6
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	
					Bottom	3.9	27.7 27.7	27.7	8.4 8.4	8.4	22.0 22.0	22.0	78.1 76.1	77.1	5.4 5.3	5.4	5.4	5.0 4.7	4.9		3.4 3.9	3.7	
10-Jul-13	Sunny	Moderate	06:17	5.4	Surface	1.0	27.4 27.0	27.2	8.0 7.9	8.0	21.6 23.6	22.6	75.7 74.4	75.1	5.3 5.2	5.2	5.2	3.0 3.3	3.2	3.3	5.1 4.5	4.8	4.8
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	
					Bottom	4.4	26.7 26.7	26.7	7.9 7.7	7.8	26.2 26.2	26.2	69.8 69.5	69.7	4.8 4.9	4.9	4.9	3.2 3.5	3.4		4.3 5.3	4.8	
12-Jul-13	Sunny	Moderate	07:49	5.0	Surface	1.0	26.9 26.6	26.7	8.0 8.0	8.0	24.8 23.8	24.3	75.9 75.8	75.9	5.3 5.3	5.3	5.3	2.5 2.4	2.5	2.5	3.0 3.1	3.1	4.5
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	
					Bottom	4.0	26.2 26.5	26.4	8.0 8.0	8.0	28.3 28.5	28.4	77.4 75.7	76.6	5.4 5.2	5.3	5.3	2.6 2.4	2.5		5.5 6.2	5.9	
15-Jul-13	Rainy	Moderate	09:36	5.7	Surface	1.0	28.0 27.8	27.9	8.2 8.1	8.1	21.3 23.0	22.2	82.1 82.2	82.2	5.7 5.7	5.7	5.7	2.1 2.1	2.1	2.5	3.0 2.9	3.0	2.9
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	
					Bottom	4.7	27.0 26.1	26.5	8.1 8.1	8.1	25.9 28.5	27.2	74.2 74.0	74.1	5.1 5.1	5.1	5.1	2.8 3.0	2.9		2.6 2.7	2.7	
17-Jul-13	Sunny	Moderate	15:31	4.7	Surface	1.0	26.6 26.4	26.5	8.3 8.3	8.3	27.2 27.5	27.3	79.0 76.5	77.8	5.4 5.3	5.4	5.4	1.8 1.9	1.9	1.9	4.8 4.4	4.6	5.1
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	
					Bottom	3.7	26.3 26.2	26.3	8.3 8.3	8.3	28.2 28.7	28.5	75.0 75.0	75.0	5.2 5.2	5.2	5.2	1.9 1.8	1.9		4.9 6.1	5.5	
19-Jul-13	Fine	Moderate	18:06	5.2	Surface	1.0	26.2 26.3	26.3	8.3 8.3	8.3	28.2 28.0	28.1	73.0 73.1	73.1	5.0 5.0	5.0	5.0	2.4 2.4	2.4	2.5	2.6 2.3	2.5	3.2
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	
					Bottom	4.2	26.2 26.2	26.2	8.3 8.3	8.3	28.3 28.4	28.4	72.9 73.1	73.0	5.0 5.0	5.0	5.0	2.5 2.4	2.5		4.1 3.5	3.8	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

Appendix J - Marine Water Quality Monitoring Results

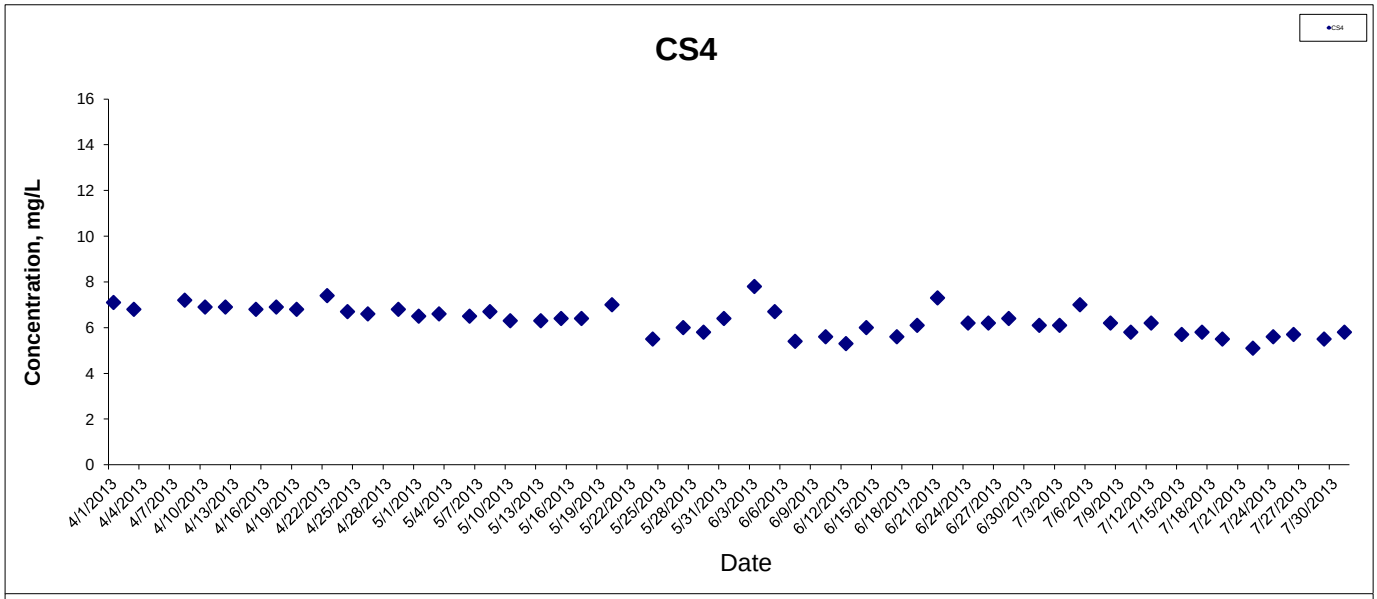
Water Quality Monitoring Results at SR10B(N) - Mid-EbbTide

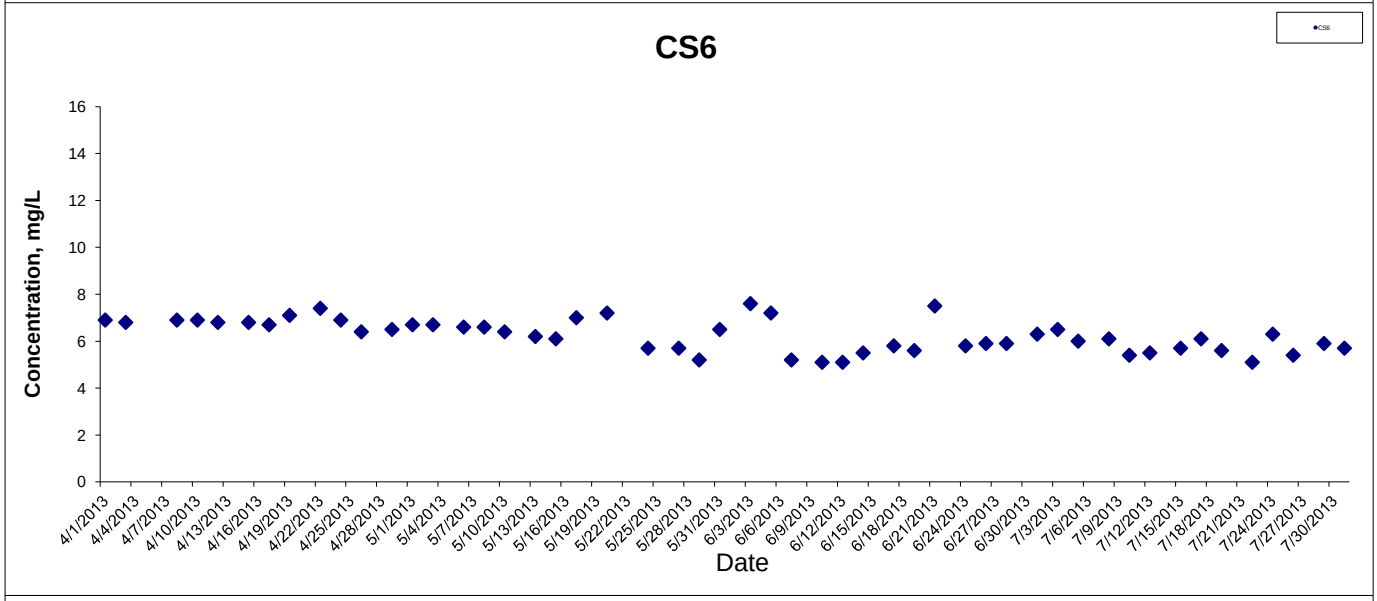
Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jul-13	Sunny	Moderate	20:26	4.8	Surface	1.0	26.8 26.8	26.8	8.2 8.2	8.2	27.7 27.7	27.7	81.6 73.2	77.4	5.6 5.0	5.3	5.3	5.2 5.5	5.4	5.5	7.2 6.8	7.0	7.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.8	26.8 26.6	26.7	8.2 8.2	8.2	27.9 28.3	28.1	72.0 75.3	73.7	4.9 5.2	5.0	5.0	5.6 5.6	5.6		8.2 9.1	8.7	
24-Jul-13	Rainy	Moderate	05:46	5.5	Surface	1.0	26.5 26.5	26.5	8.2 8.2	8.2	29.3 29.3	29.3	78.9 80.1	79.5	5.4 5.5	5.4	5.4	8.5 8.4	8.5	8.6	12.6 12.9	12.8	12.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	26.5 26.5	26.5	8.2 8.2	8.2	29.3 29.3	29.3	79.3 80.5	79.9	5.4 5.5	5.5	5.5	8.6 8.6	8.6		12.6 12.5	12.6	
26-Jul-13	Cloudy	Moderate	07:40	5.6	Surface	1.0	26.9 26.9	26.9	8.2 8.2	8.2	27.8 27.8	27.8	79.5 78.2	78.9	5.4 5.3	5.4	5.4	11.7 11.8	11.8	11.8	12.7 12.2	12.5	12.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.6	26.9 26.9	26.9	8.1 8.2	8.2	27.8 27.8	27.8	74.8 73.0	73.9	5.1 5.0	5.0	5.0	11.5 11.9	11.7		13.5 12.2	12.9	
29-Jul-13	Sunny	Moderate	10:24	5.4	Surface	1.0	27.3 27.4	27.4	8.2 8.2	8.2	24.9 24.7	24.8	73.0 72.9	73.0	5.1 5.0	5.1	5.1	3.4 3.2	3.3	3.5	2.5 3.1	2.8	4.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.4	27.3 27.2	27.3	8.2 8.2	8.2	25.1 25.8	25.5	71.2 69.7	70.5	4.9 4.8	4.8	4.8	3.7 3.6	3.7		5.4 4.7	5.1	
31-Jul-13	Sunny	Moderate	15:49	5.1	Surface	1.0	28.5 28.3	28.4	8.4 8.4	8.4	21.8 22.1	22.0	95.4 94.0	94.7	6.6 6.5	6.5	6.5	2.0 2.1	2.1	2.1	3.4 3.9	3.7	3.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	28.0 27.9	27.9	8.3 8.3	8.3	24.2 24.1	24.2	93.5 92.8	93.2	6.4 6.4	6.4	6.4	2.0 2.1	2.1		3.0 3.1	3.1	

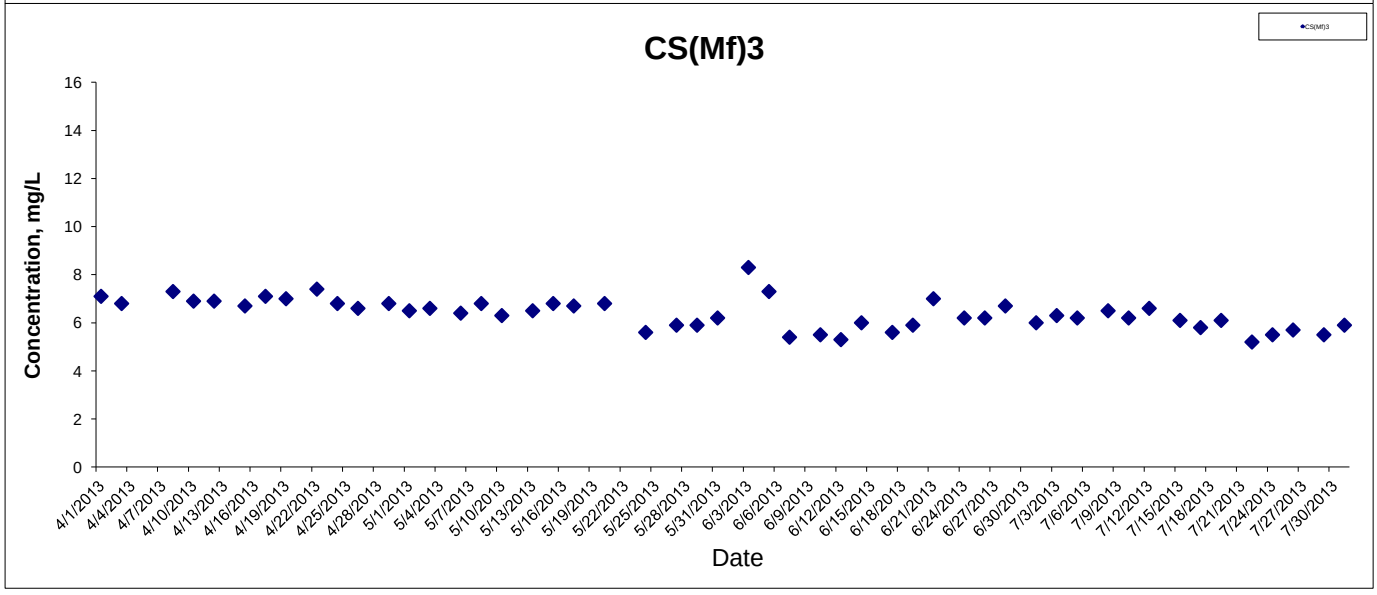
Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to adverse weather condition and safety concern.

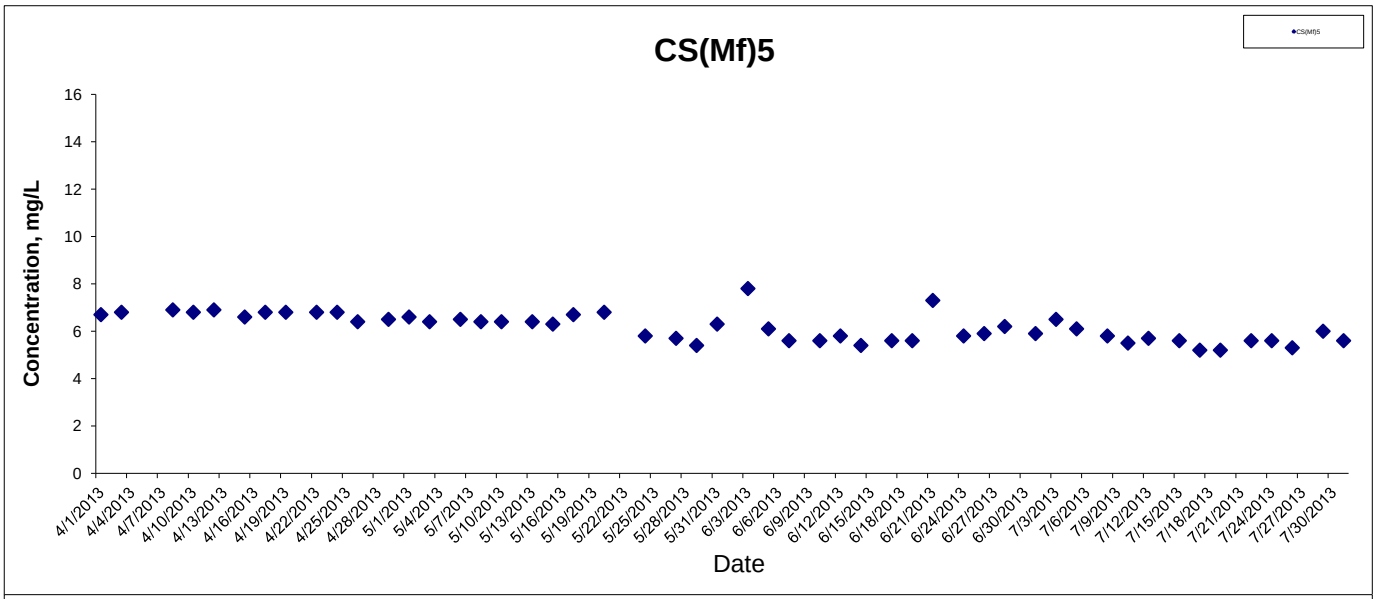
Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide

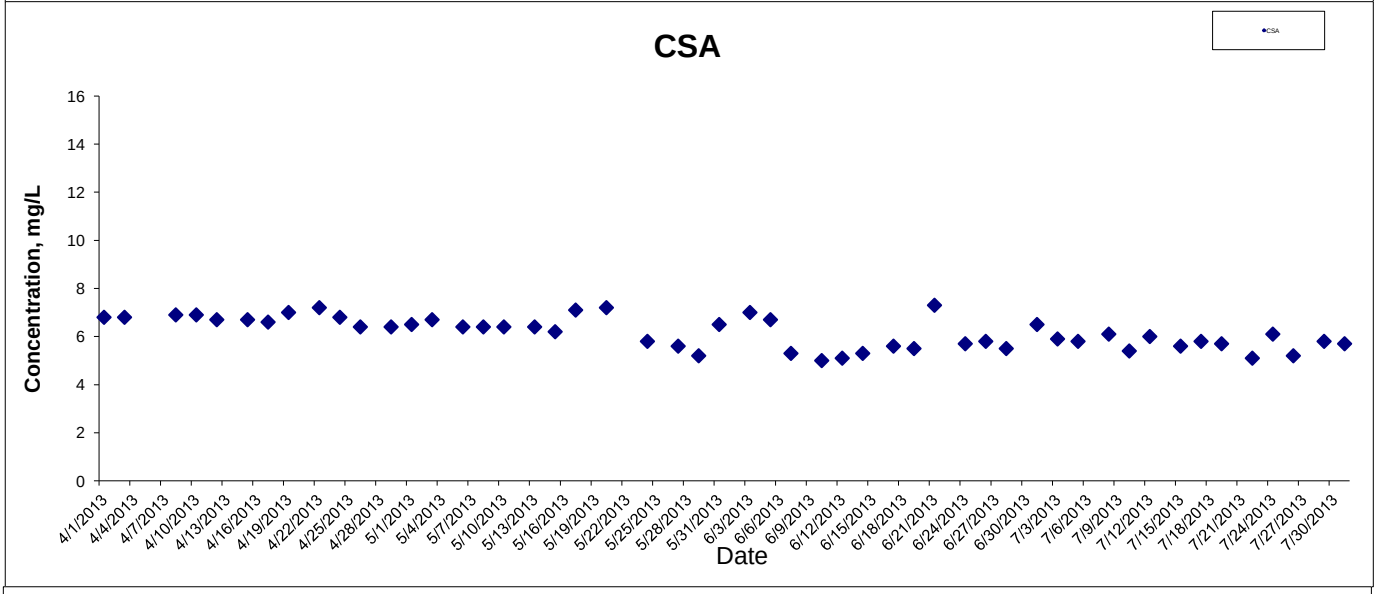


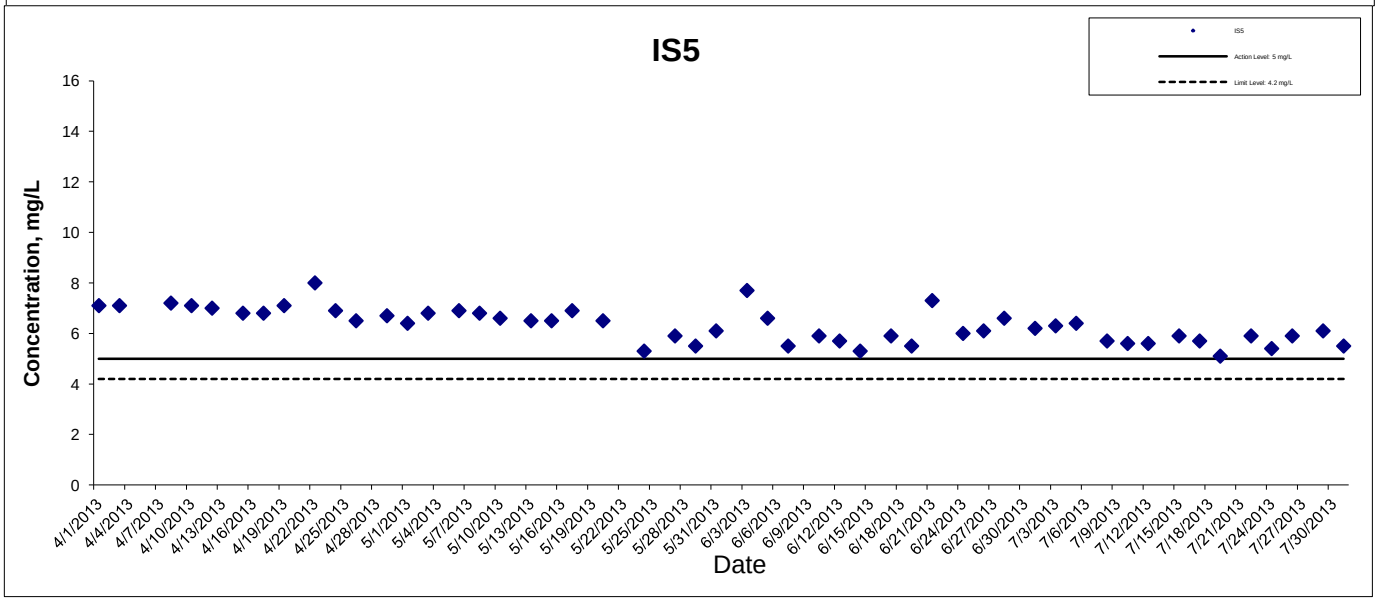




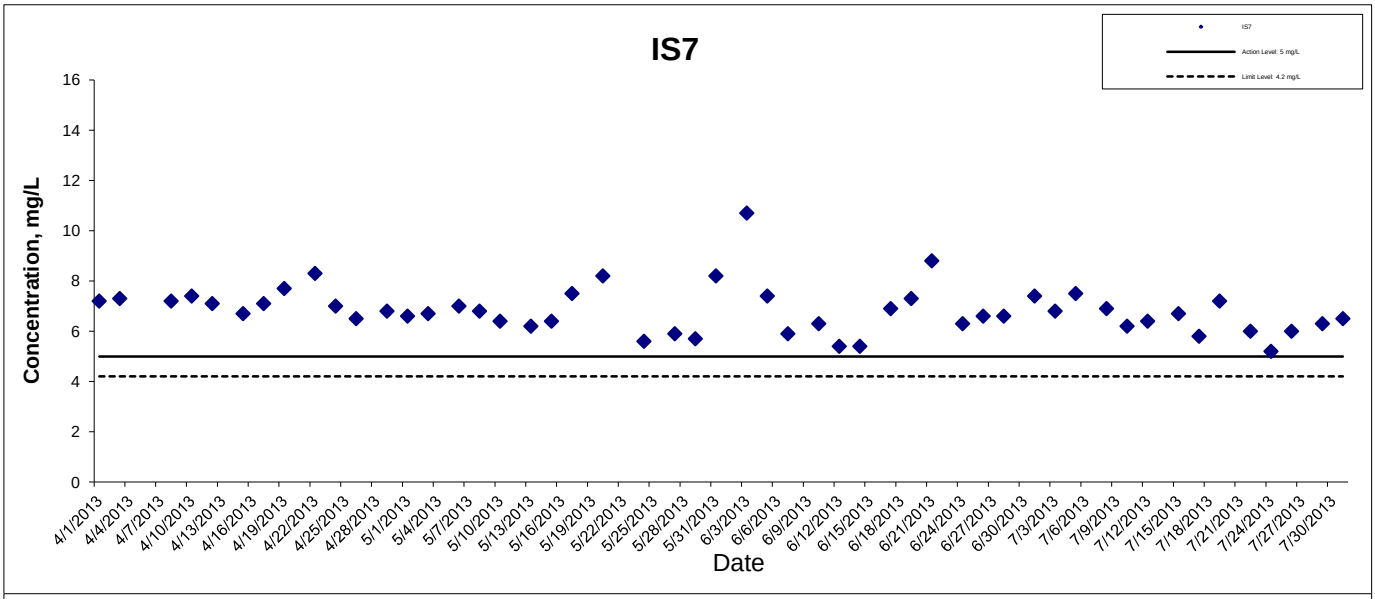
Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide

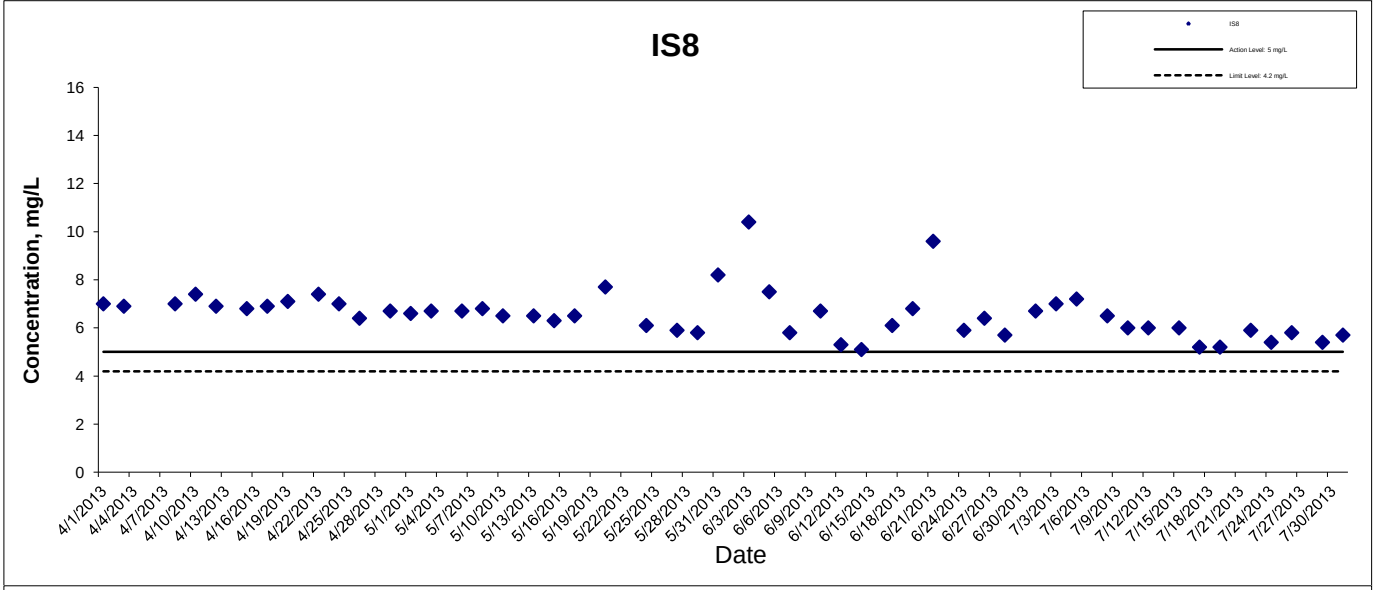


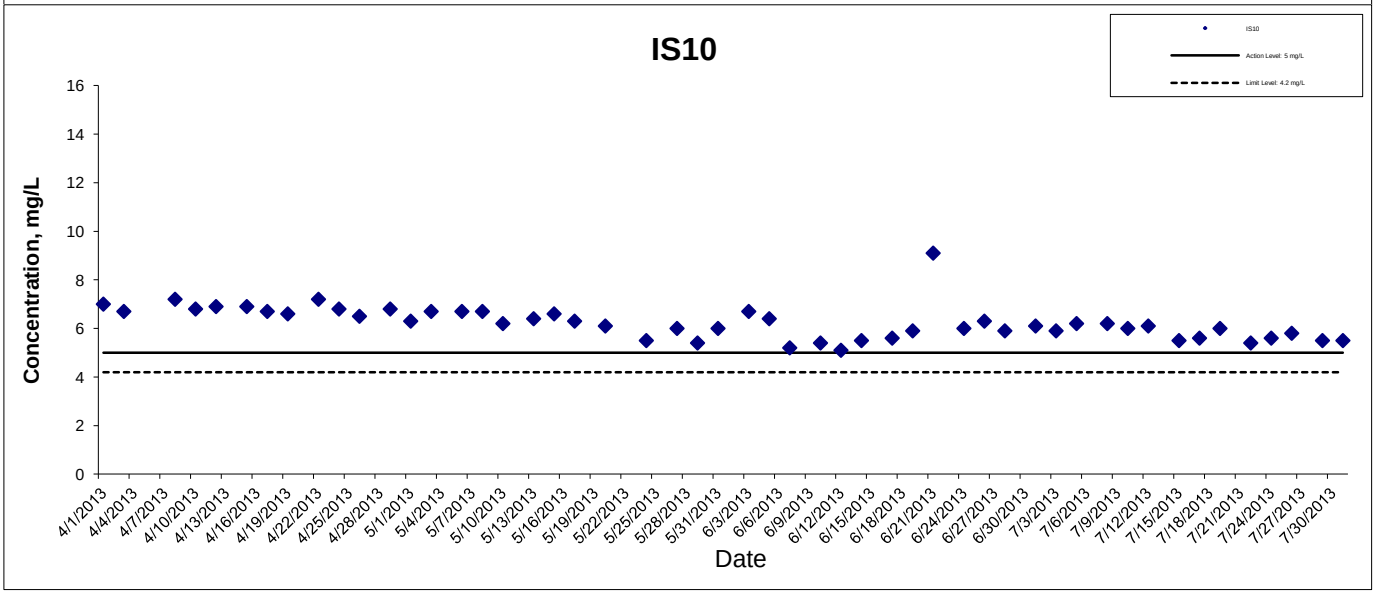




Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide







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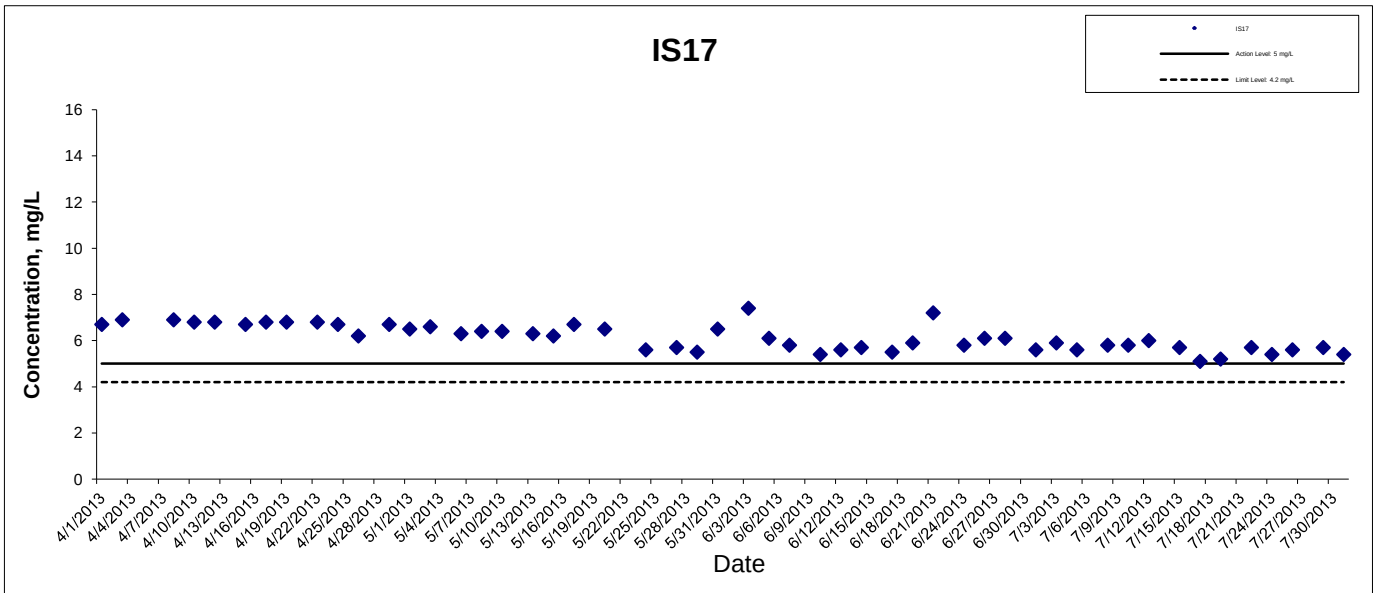
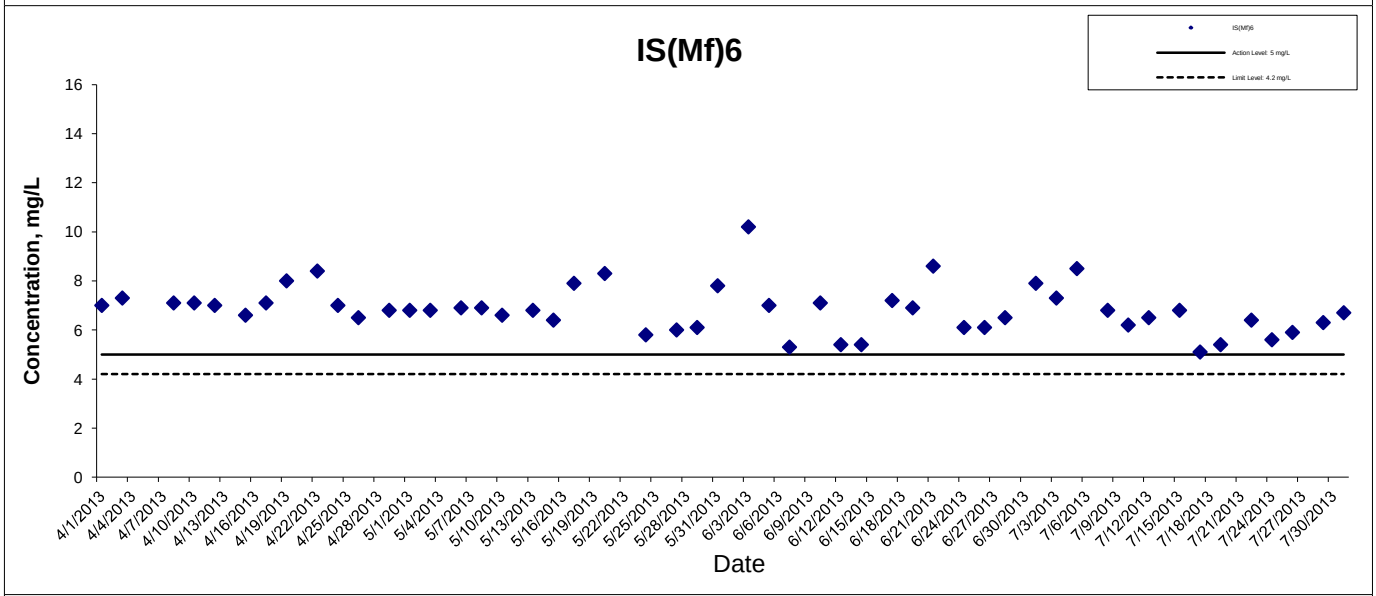
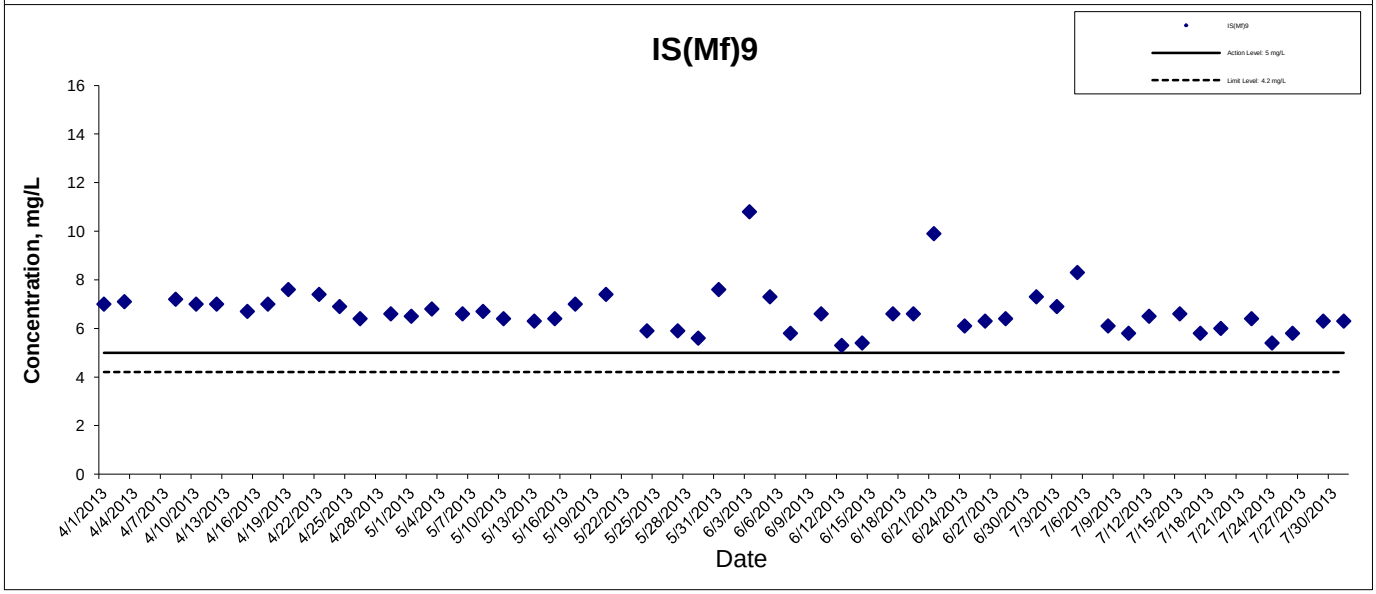
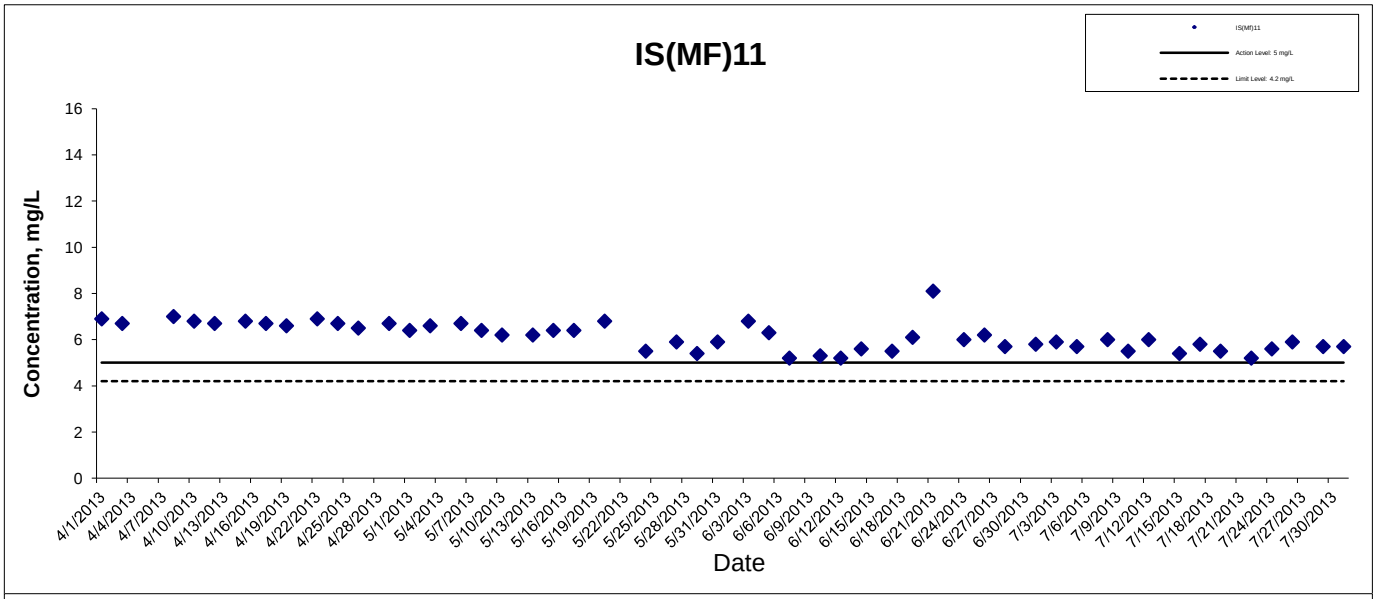
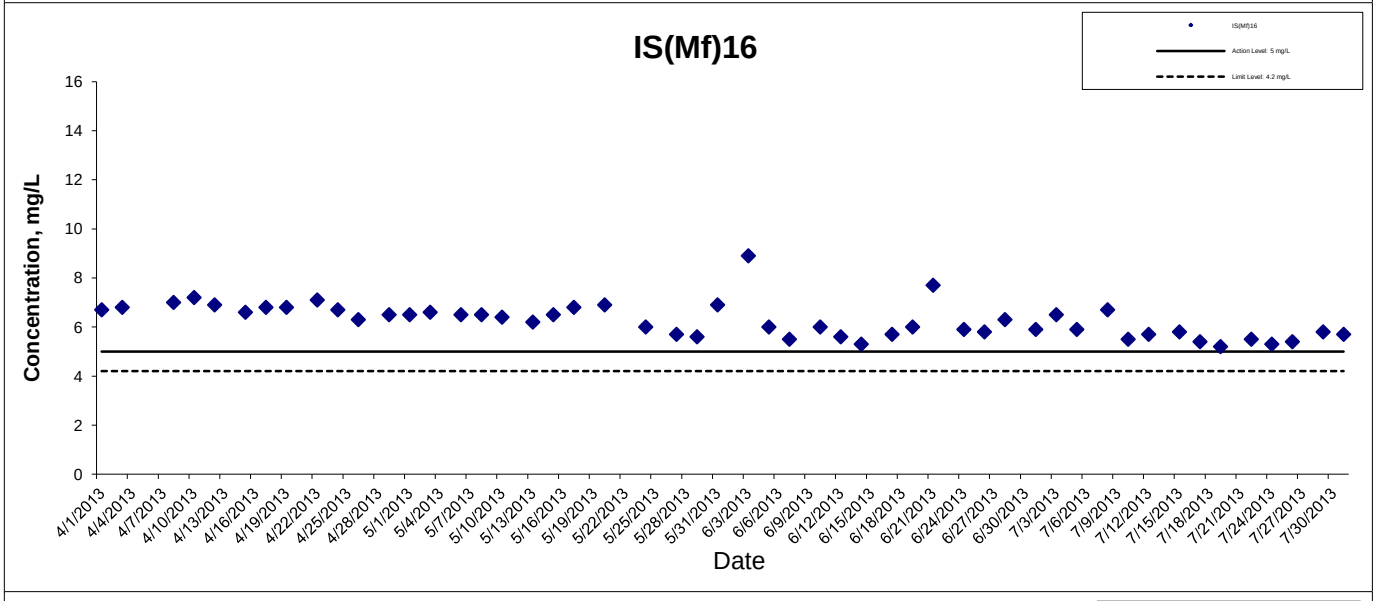


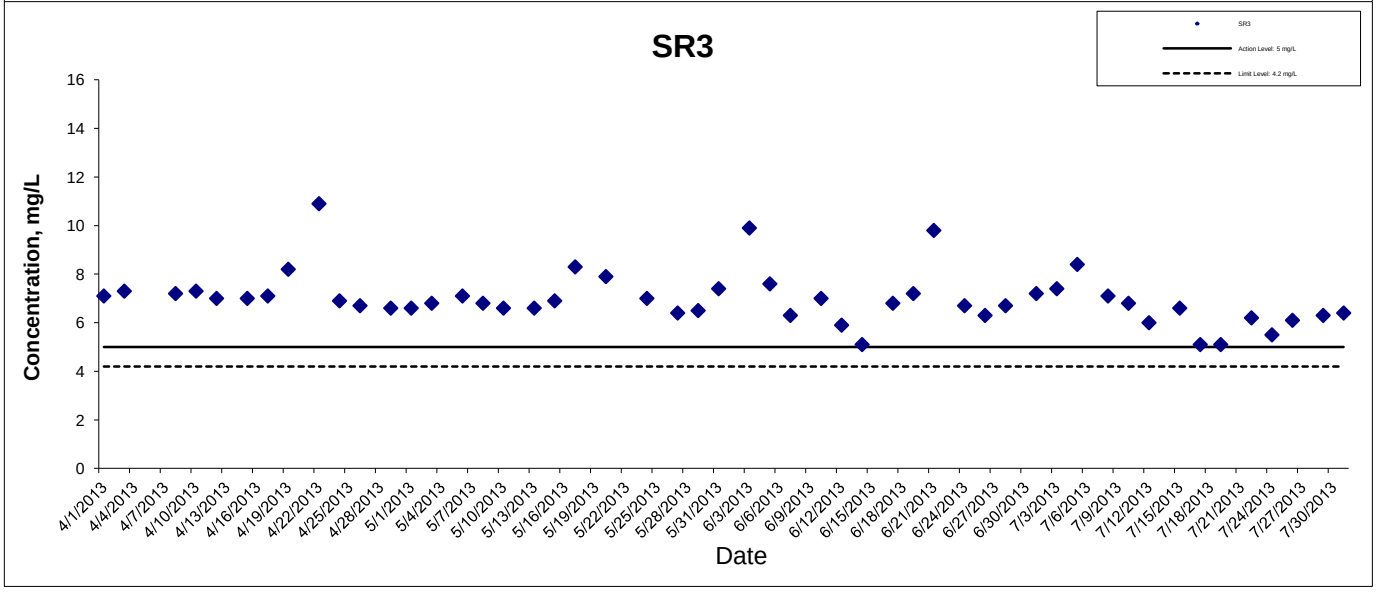




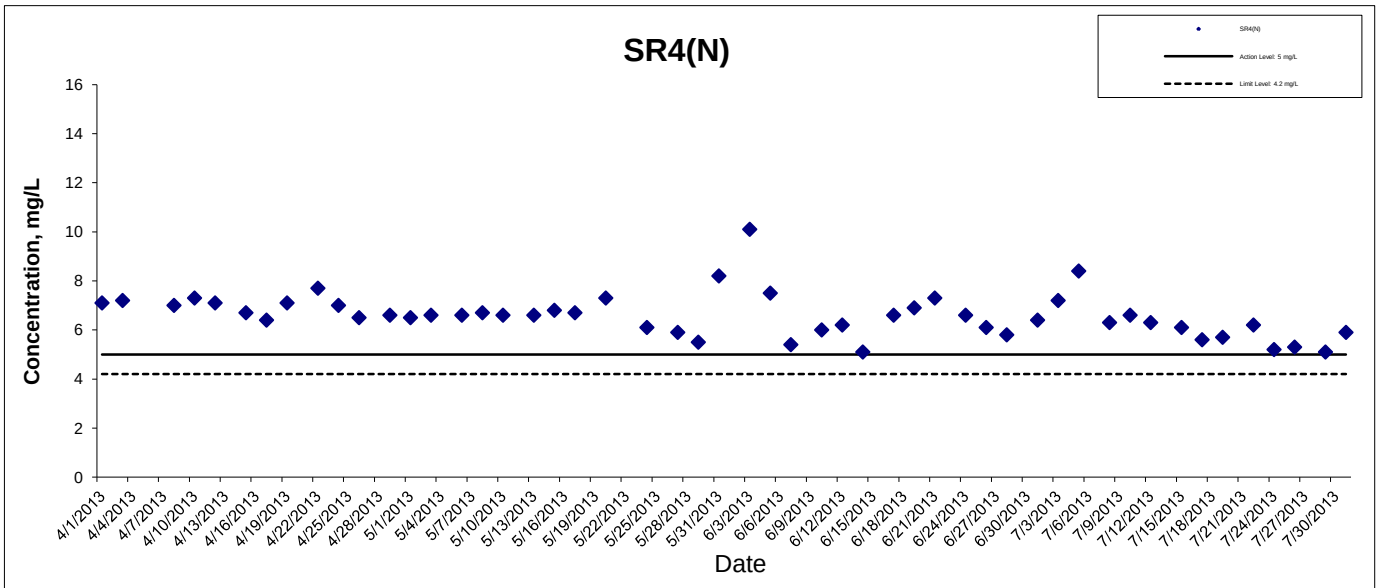
Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide

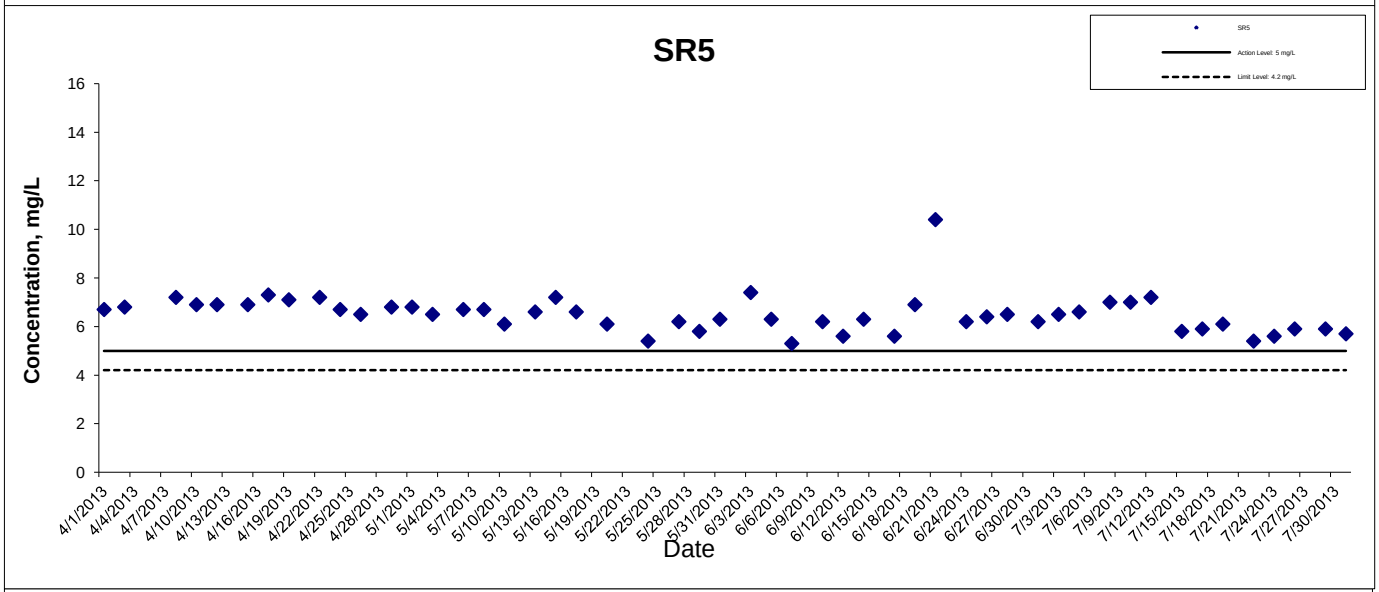


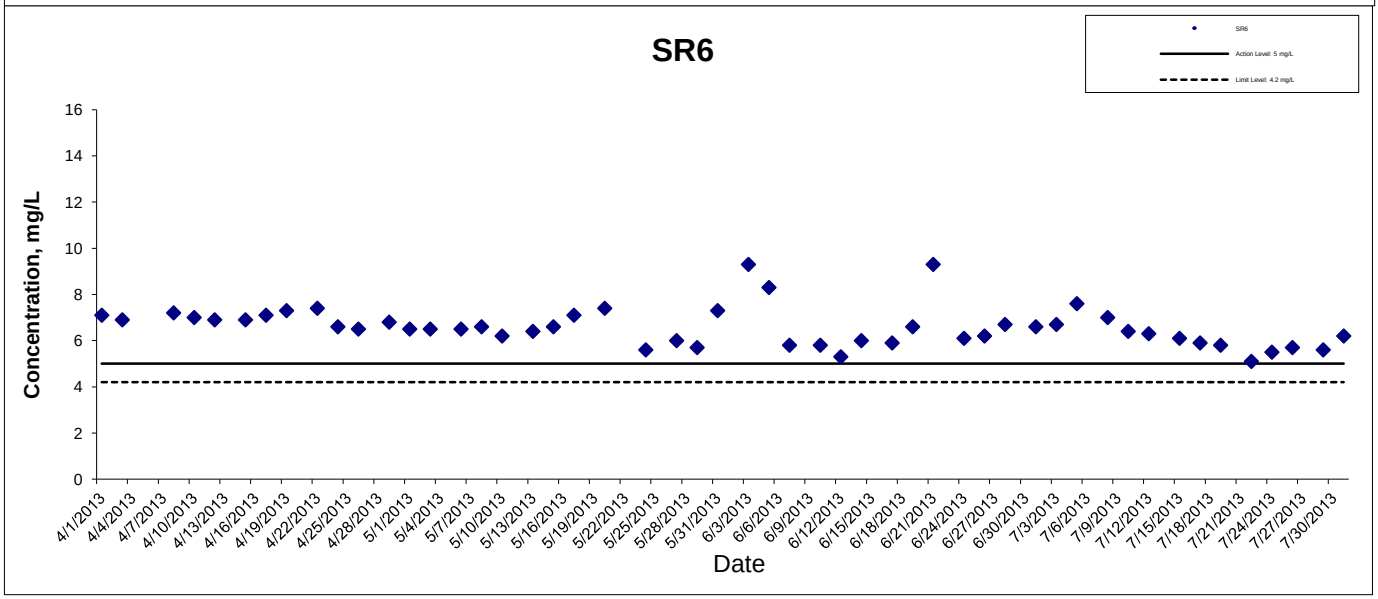




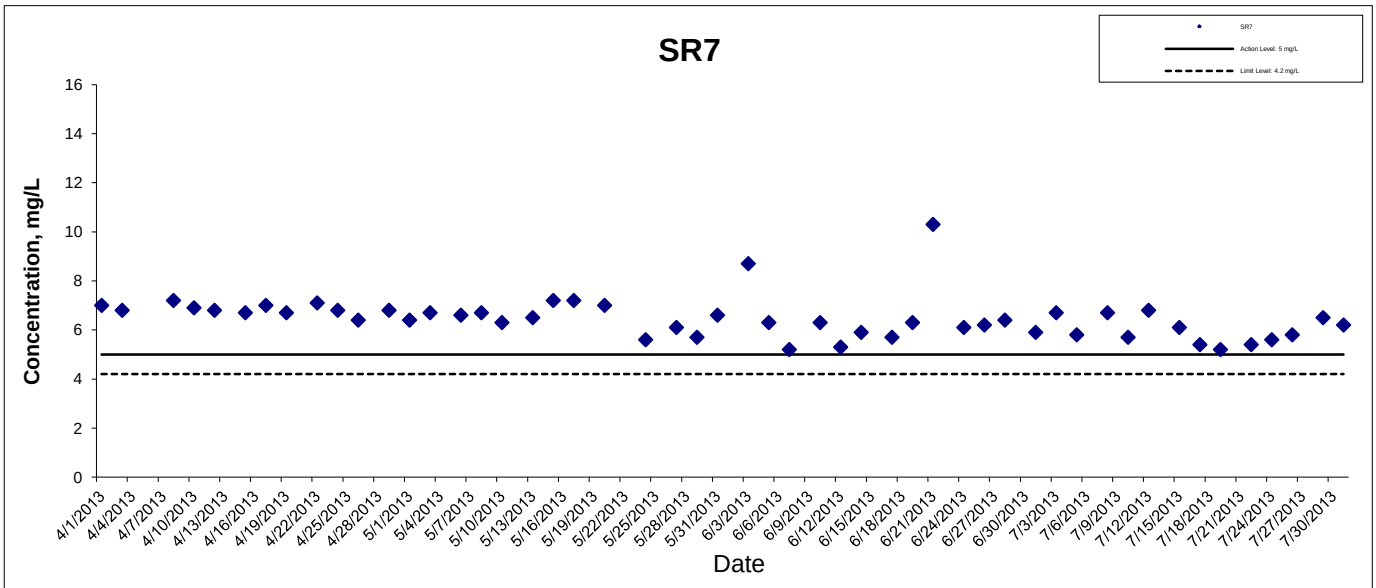
Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide

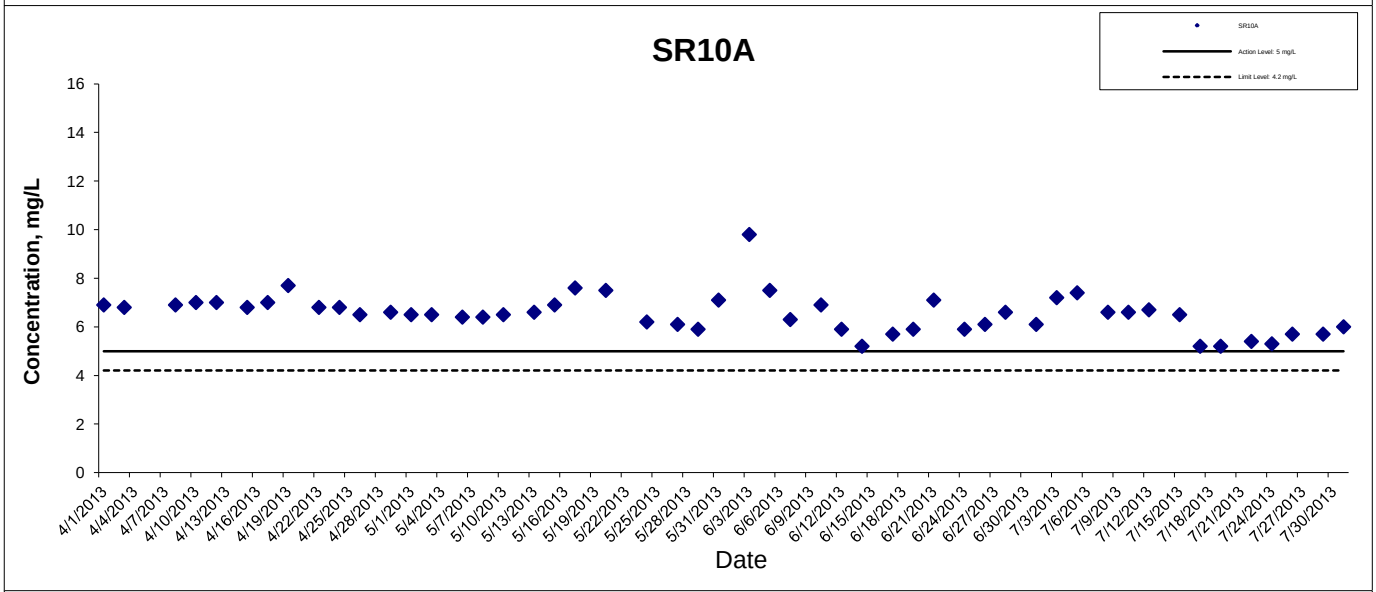


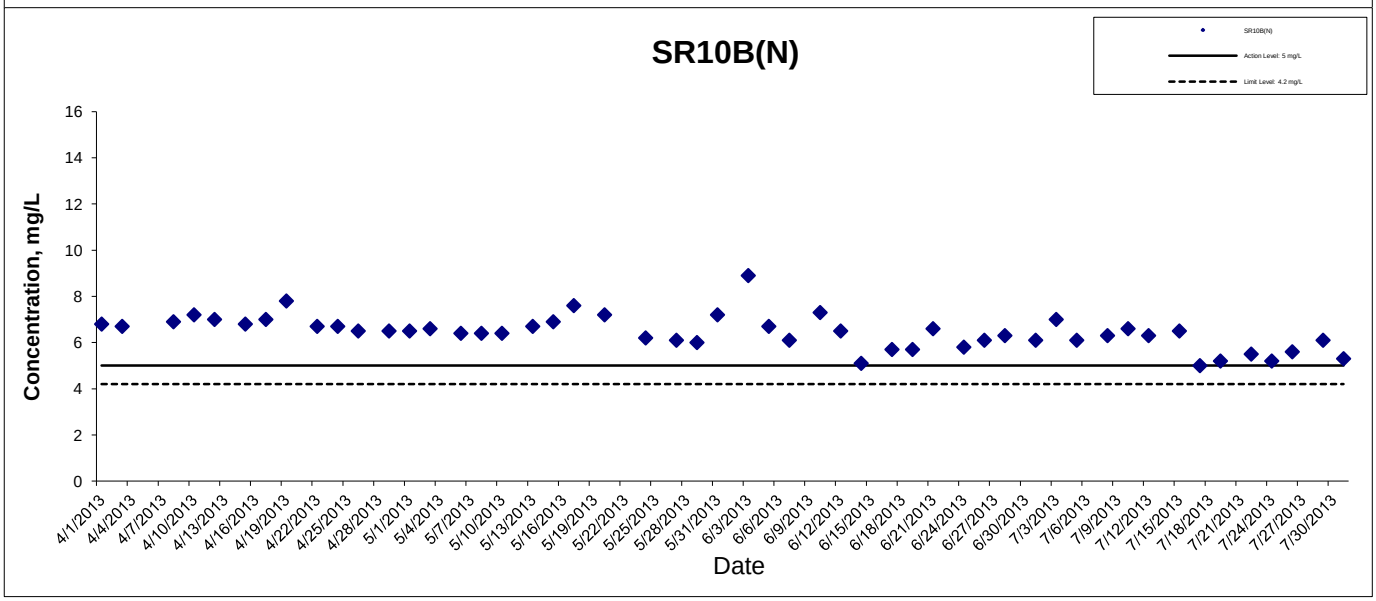




Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide





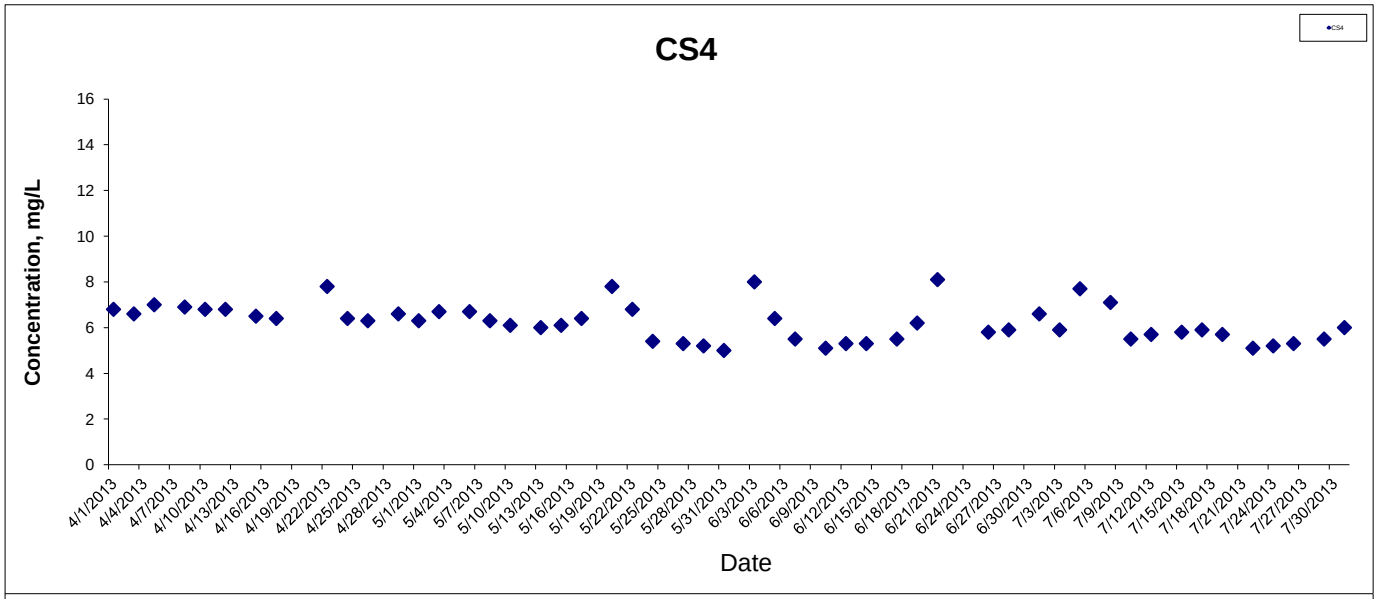


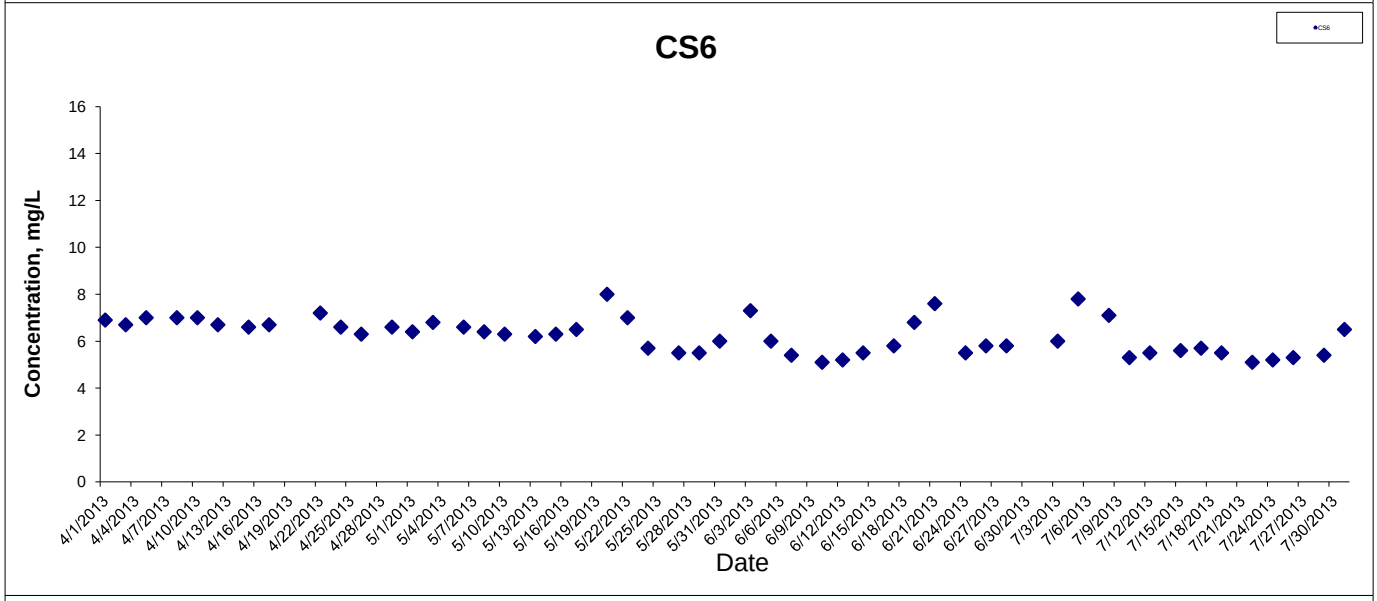
HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS

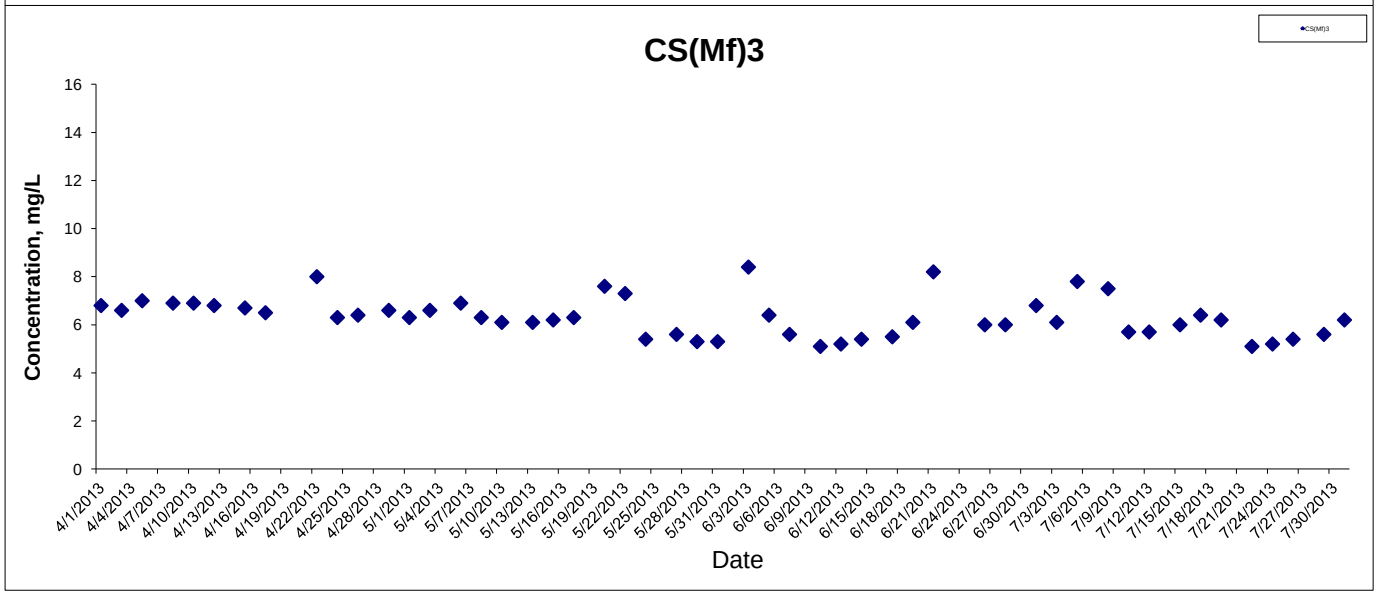
Graphical Presentation of Impact Water Quality Monitoring Results

Project No.: 60249820 **Date: Aug 2013** **Appendix J**

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





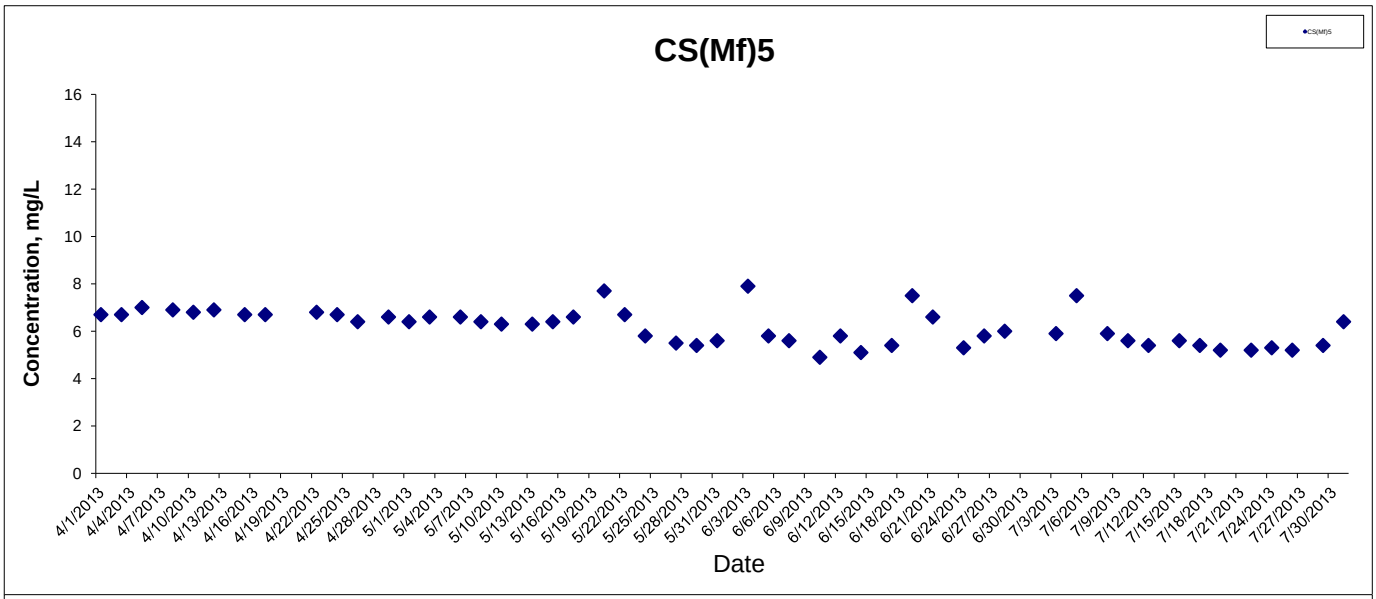


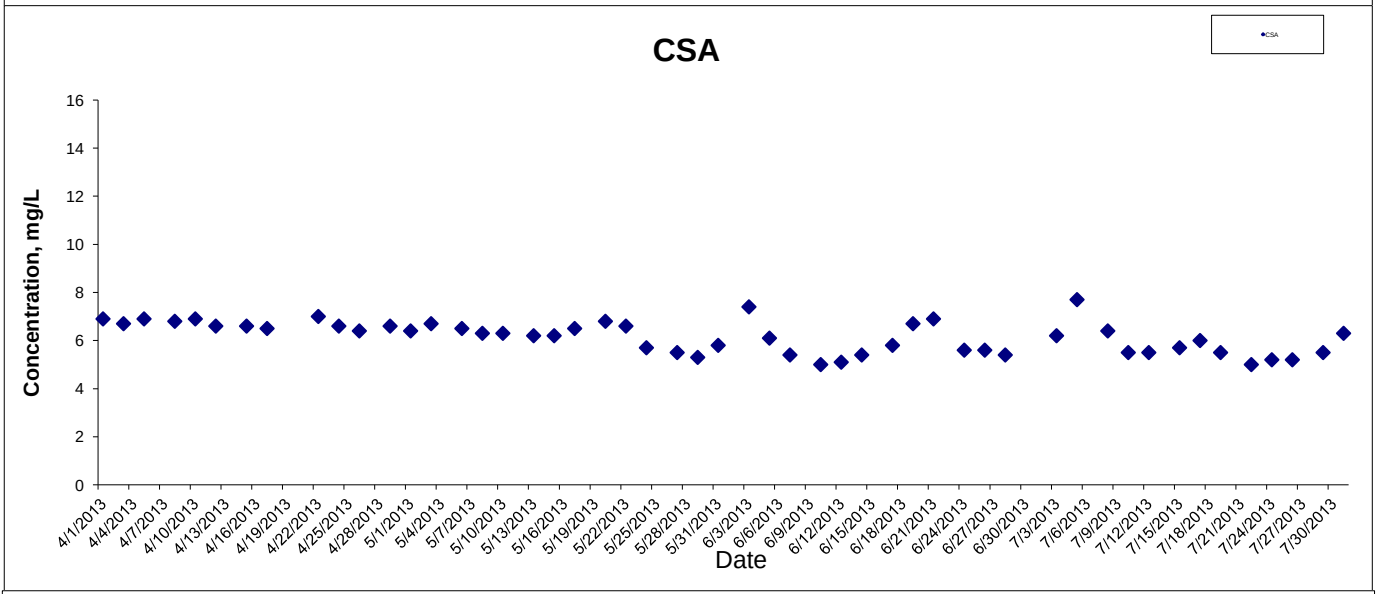
HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS

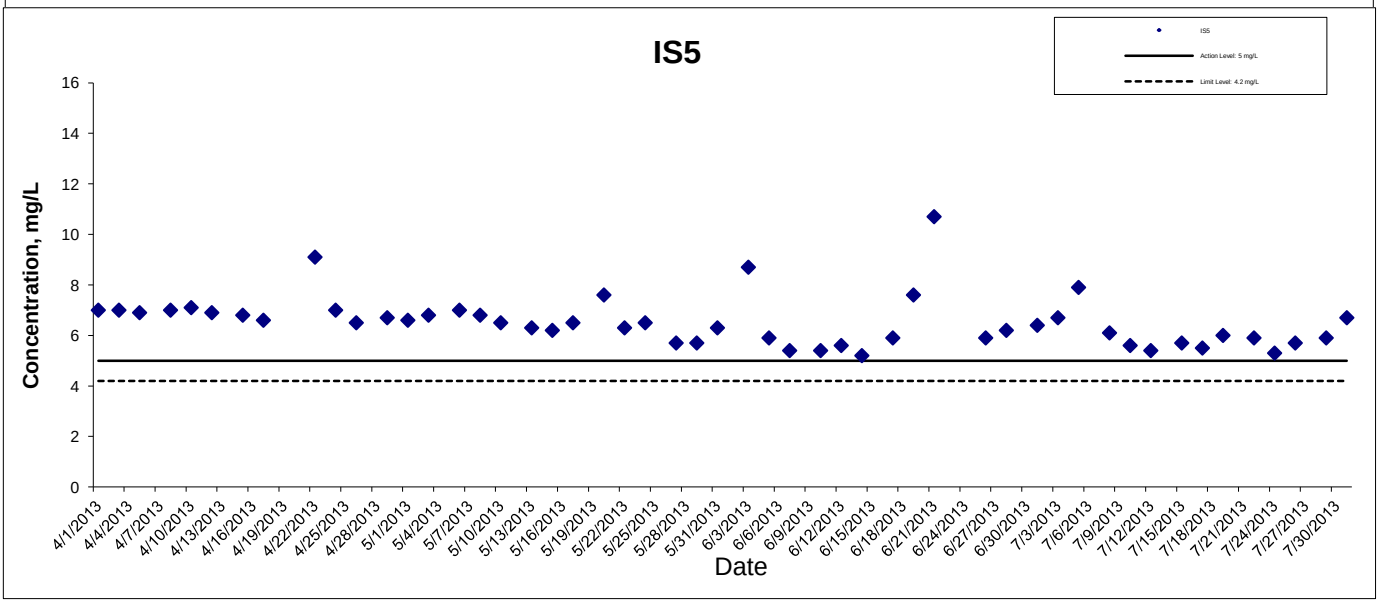
AECOM

Graphical Presentation of Impact Water Quality Monitoring Results

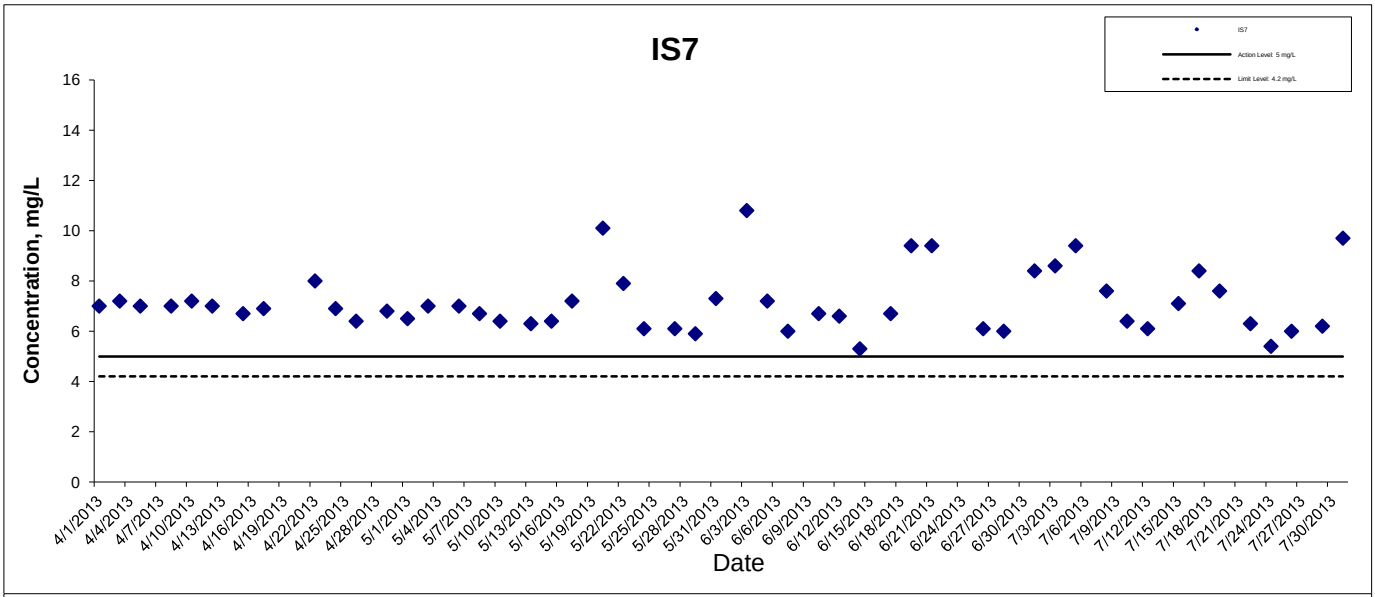
Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide

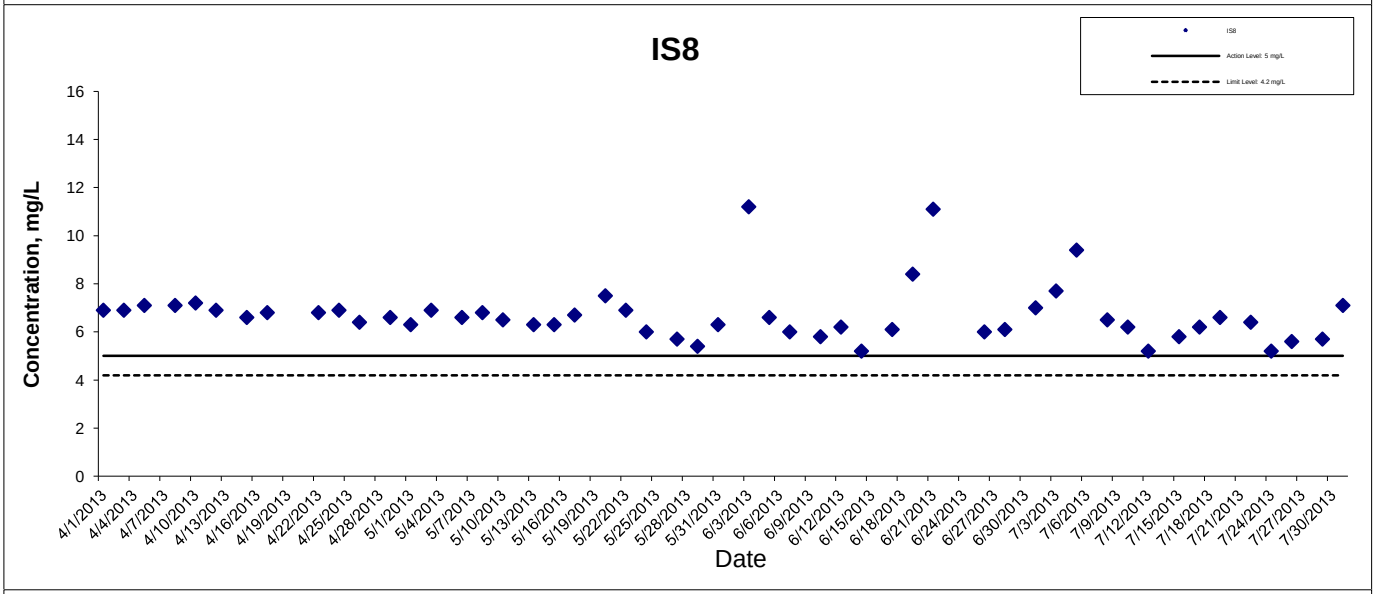


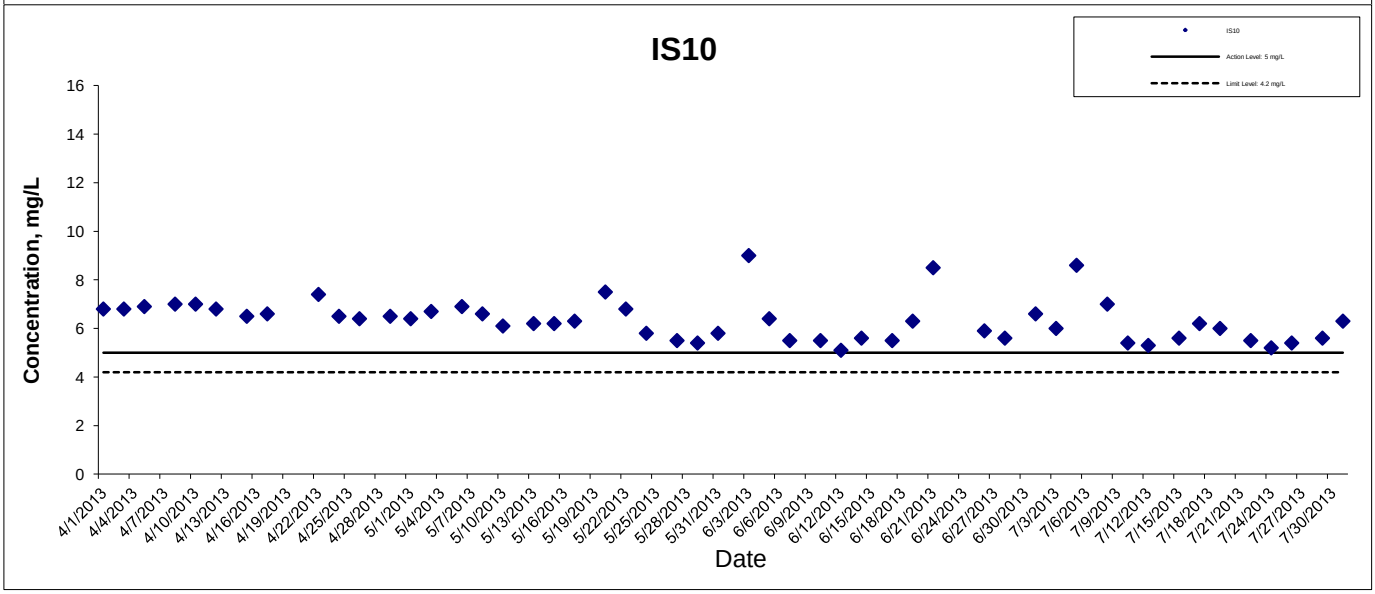




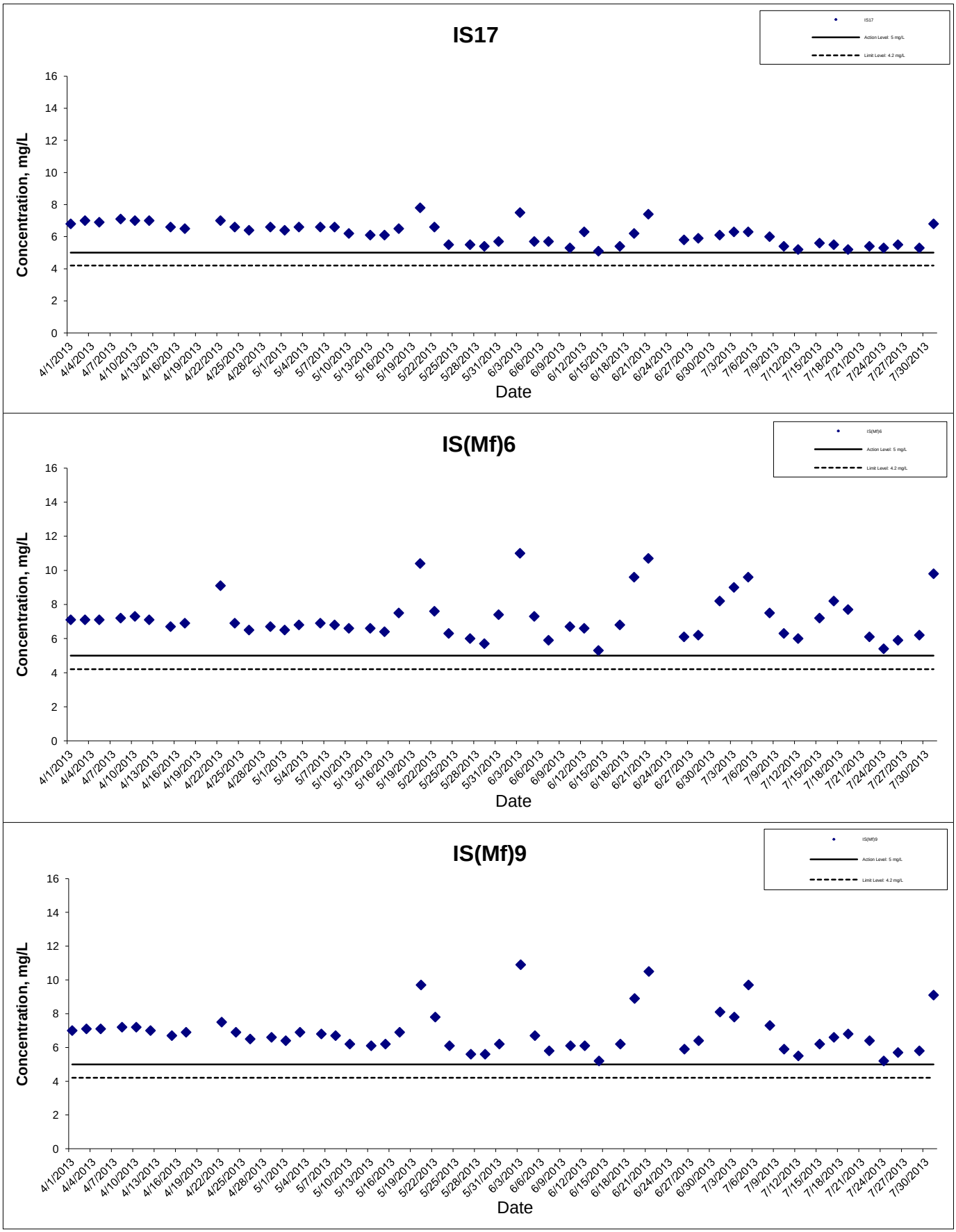
Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide







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



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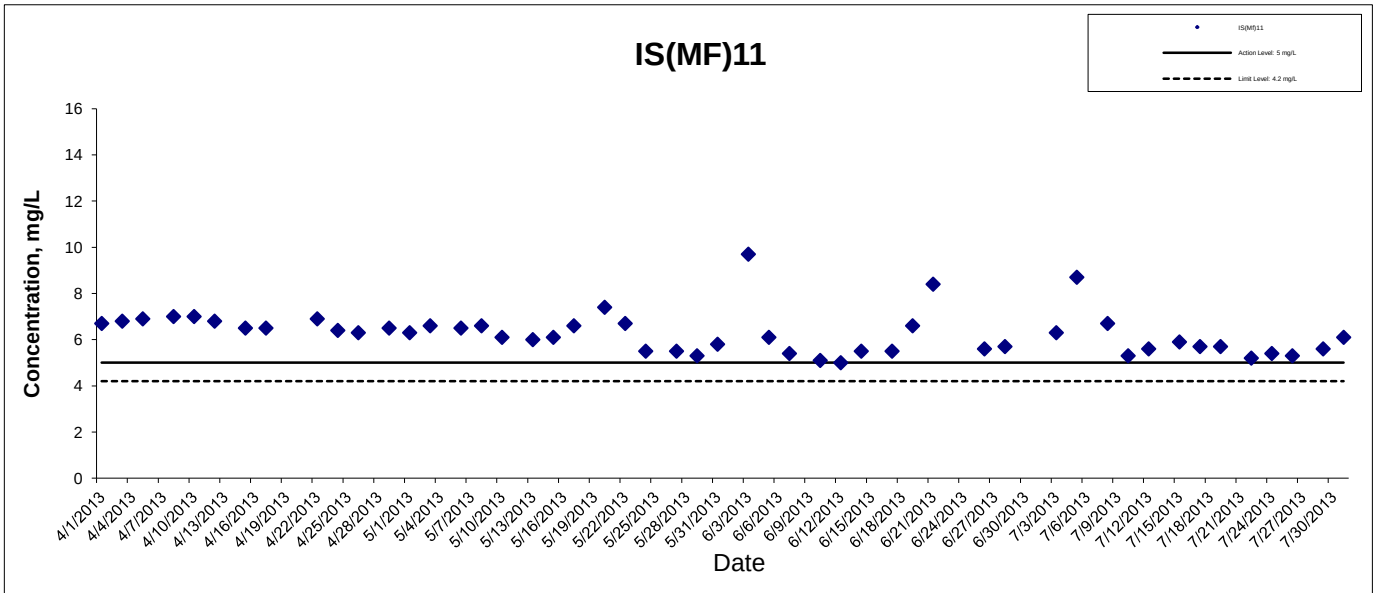
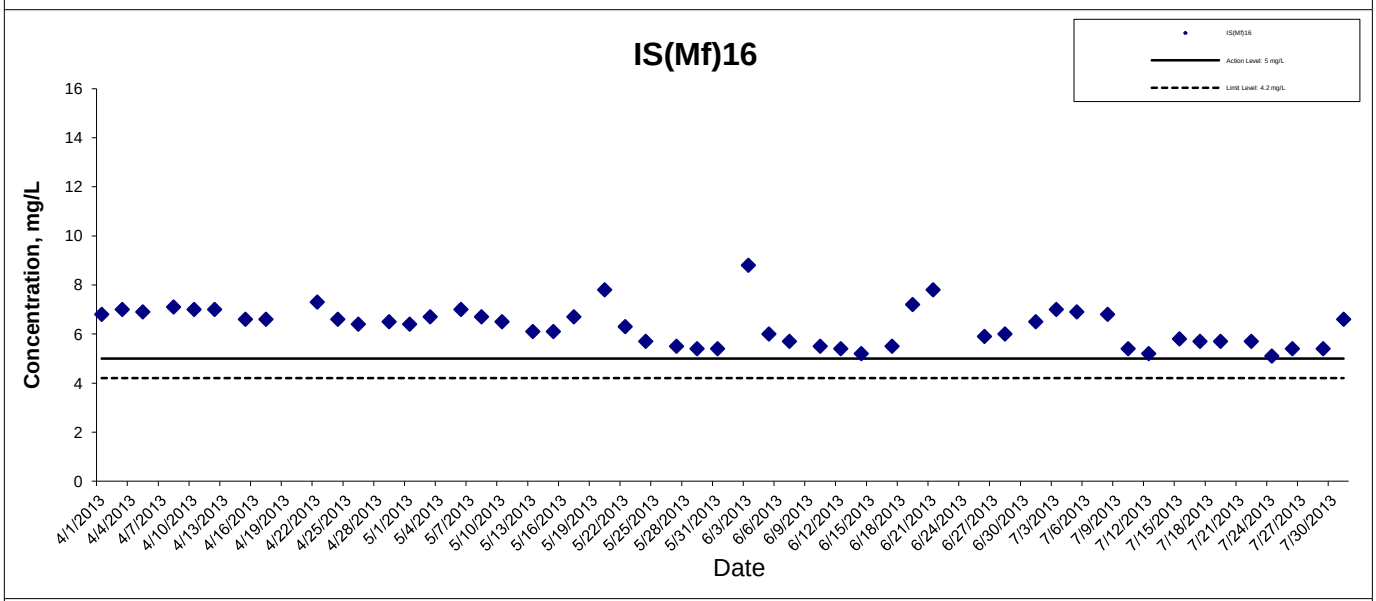
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS

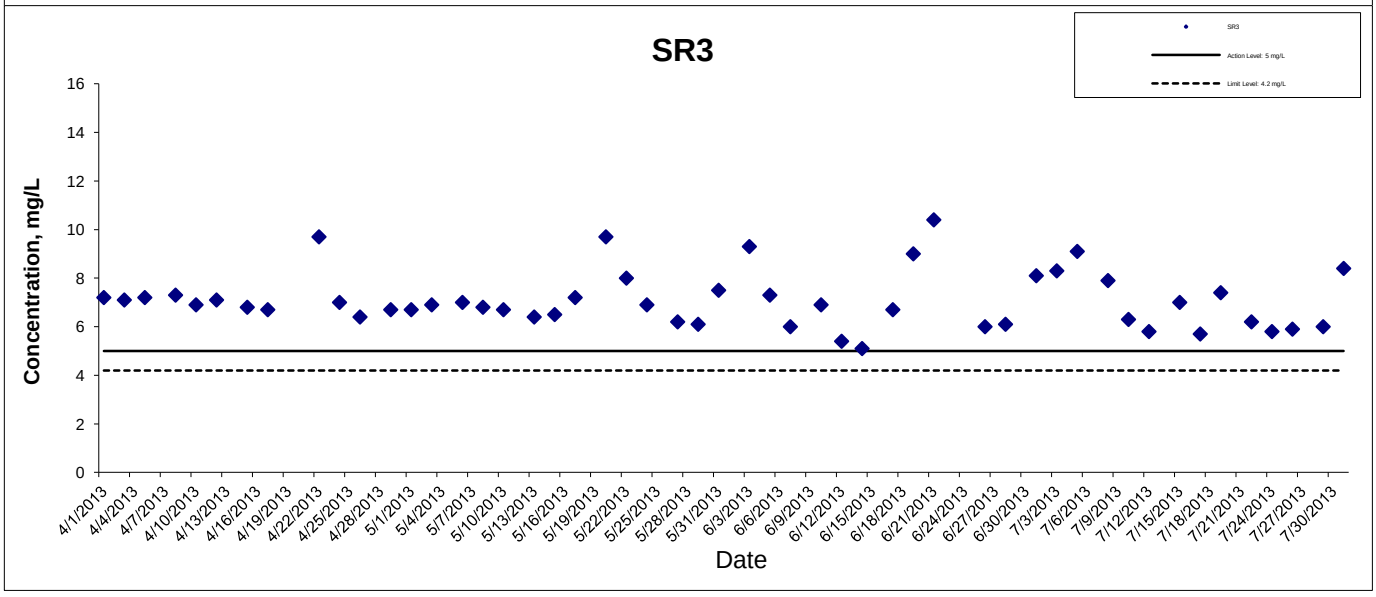
Graphical Presentation of Impact Water Quality Monitoring Results

Project No.: 60249820 **Date: Aug 2013** **Appendix J**

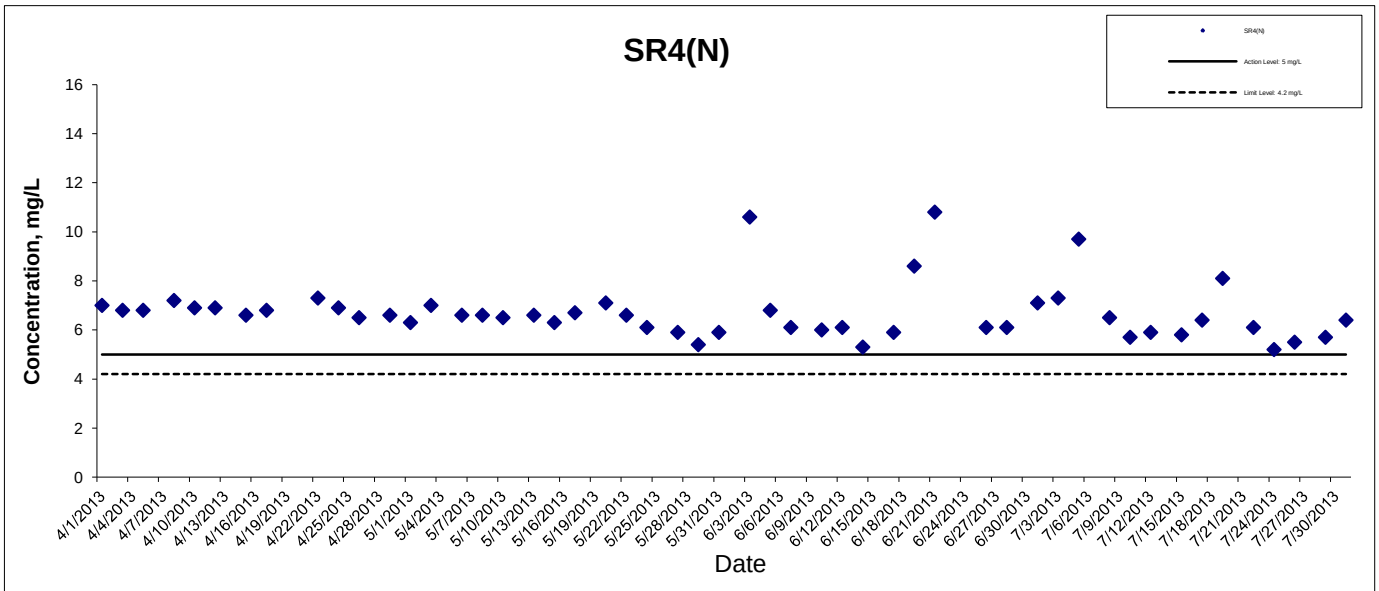
Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide

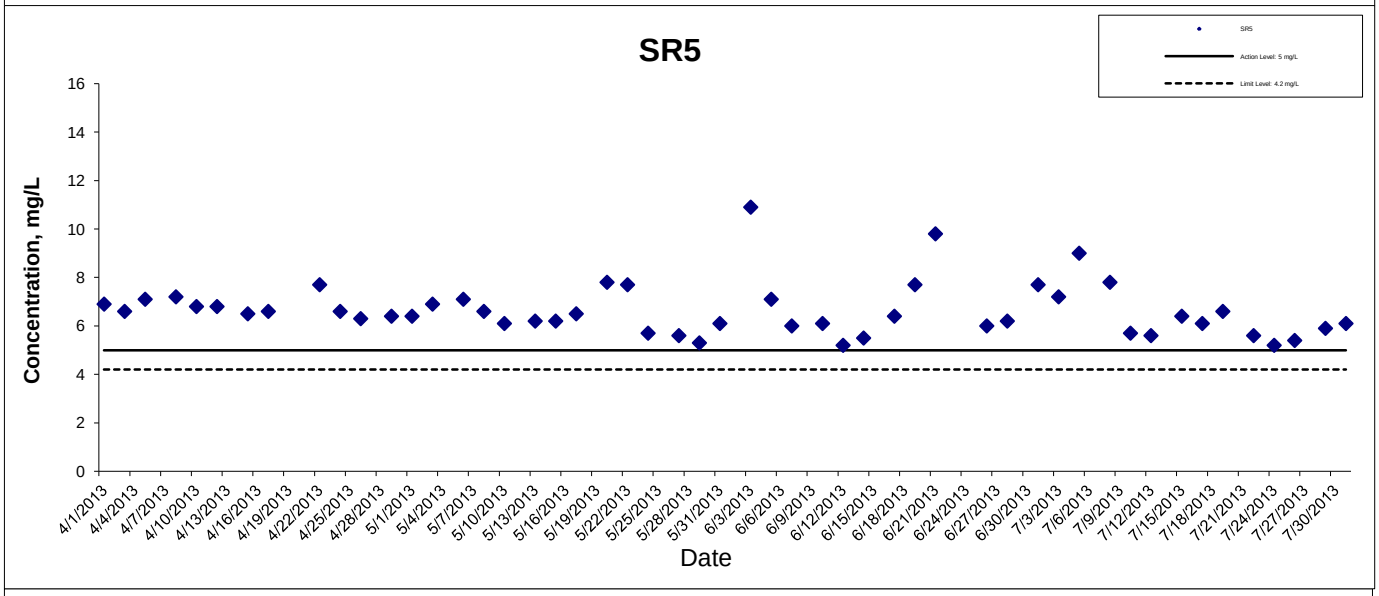


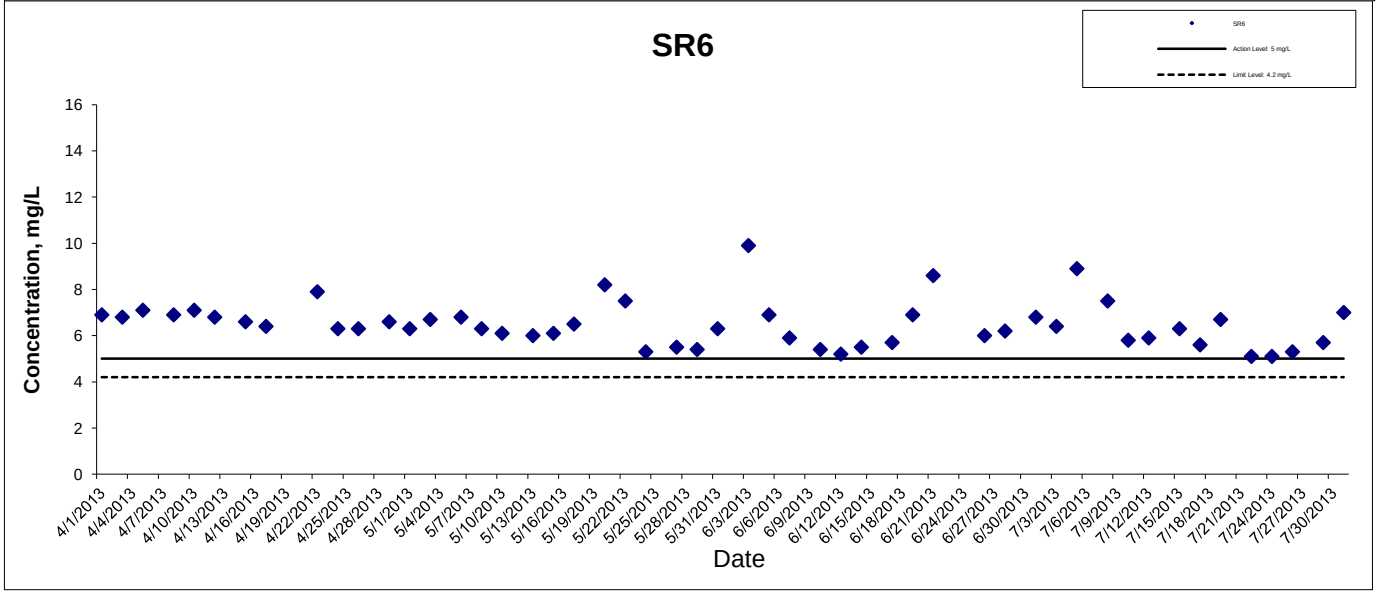




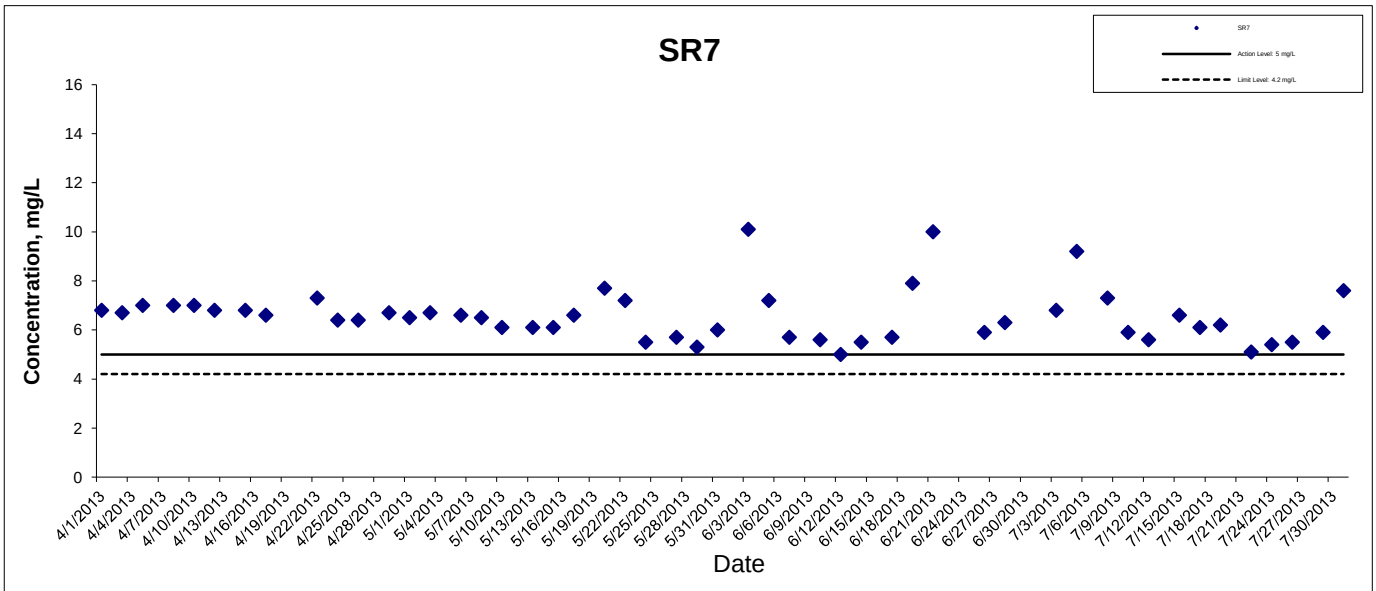
Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide

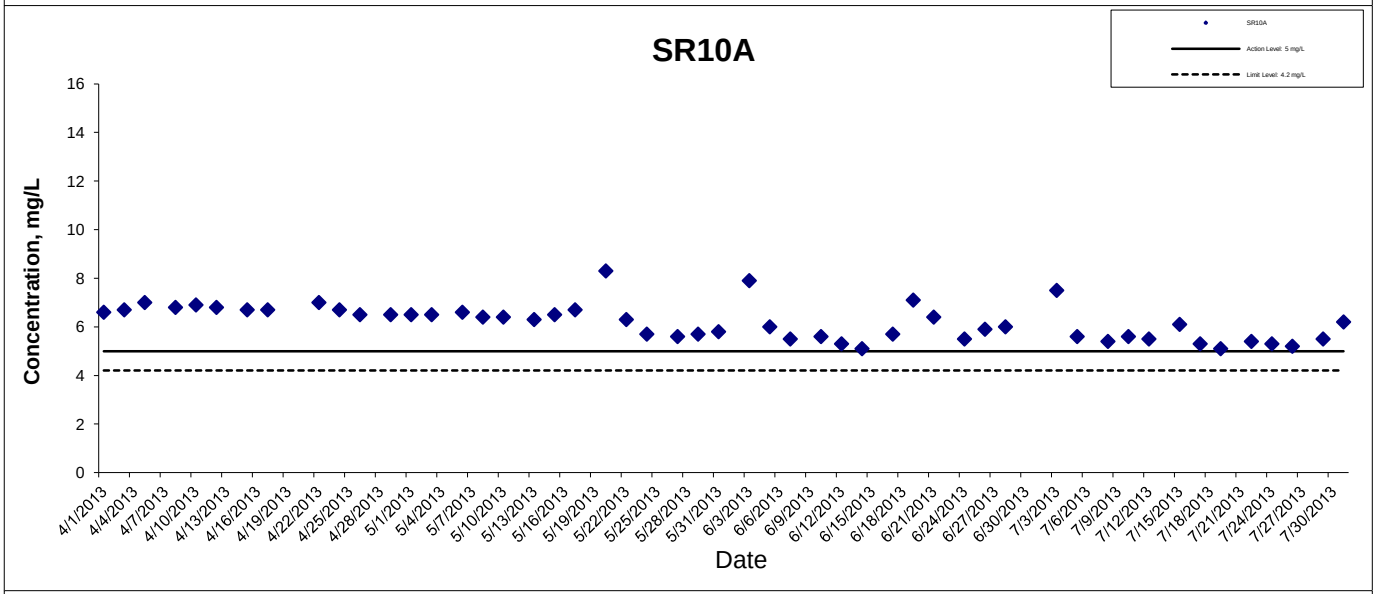


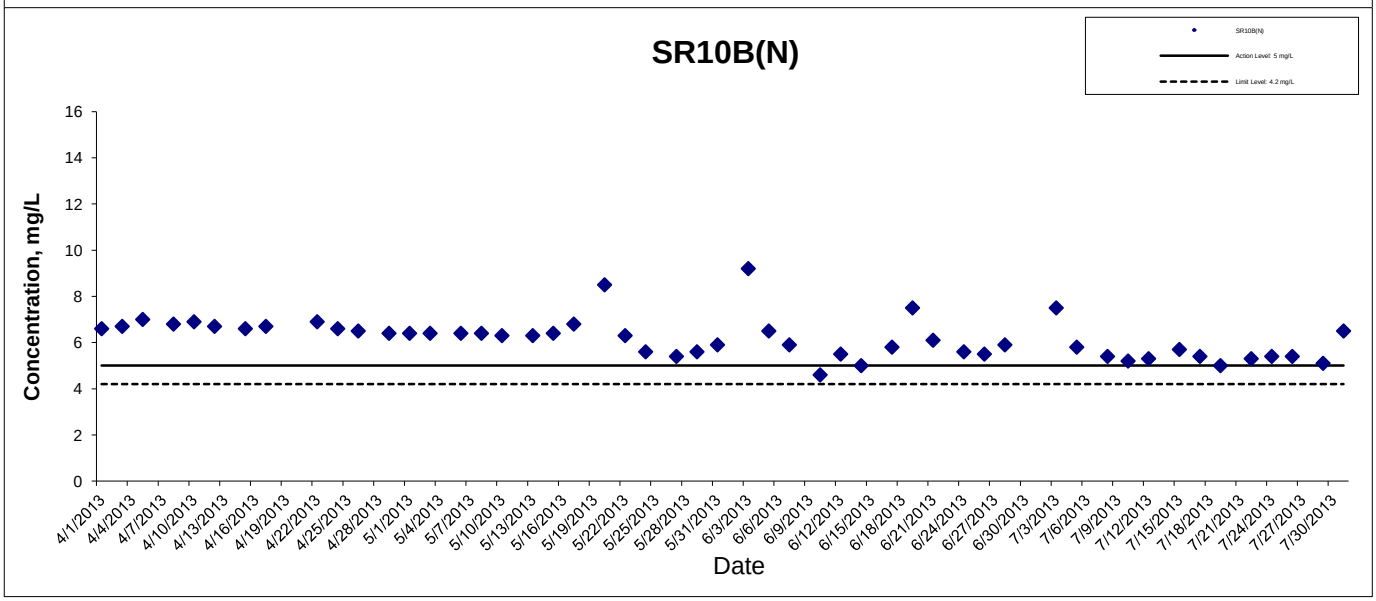




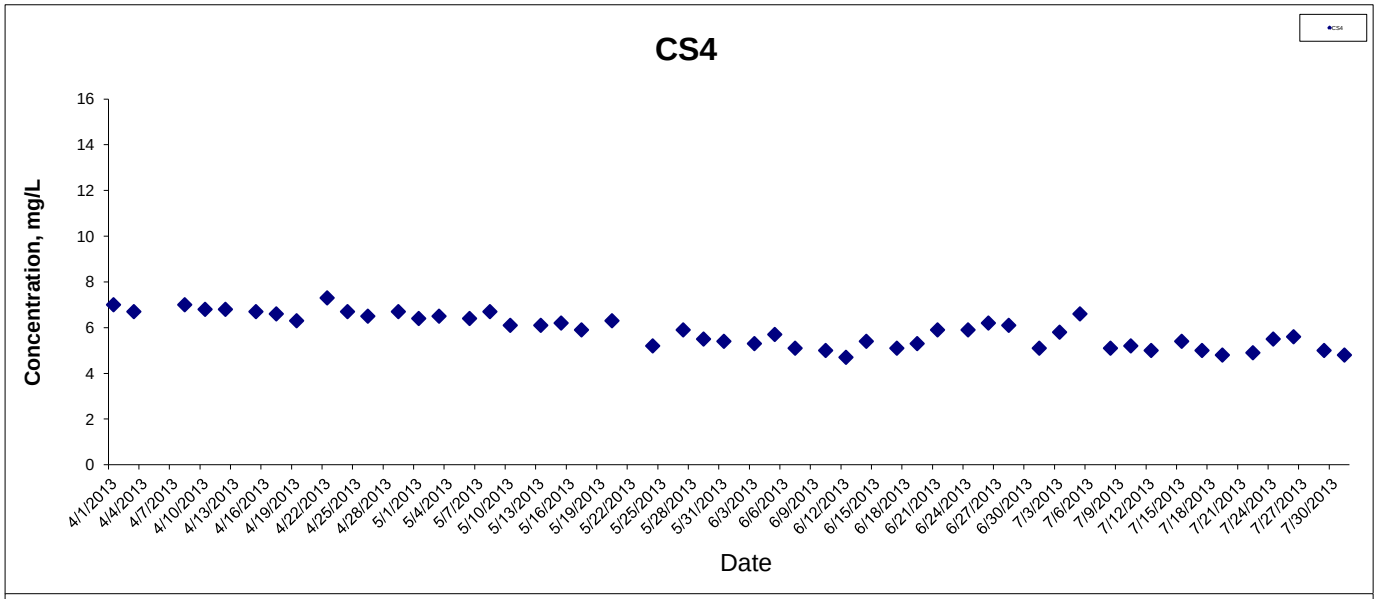
Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide

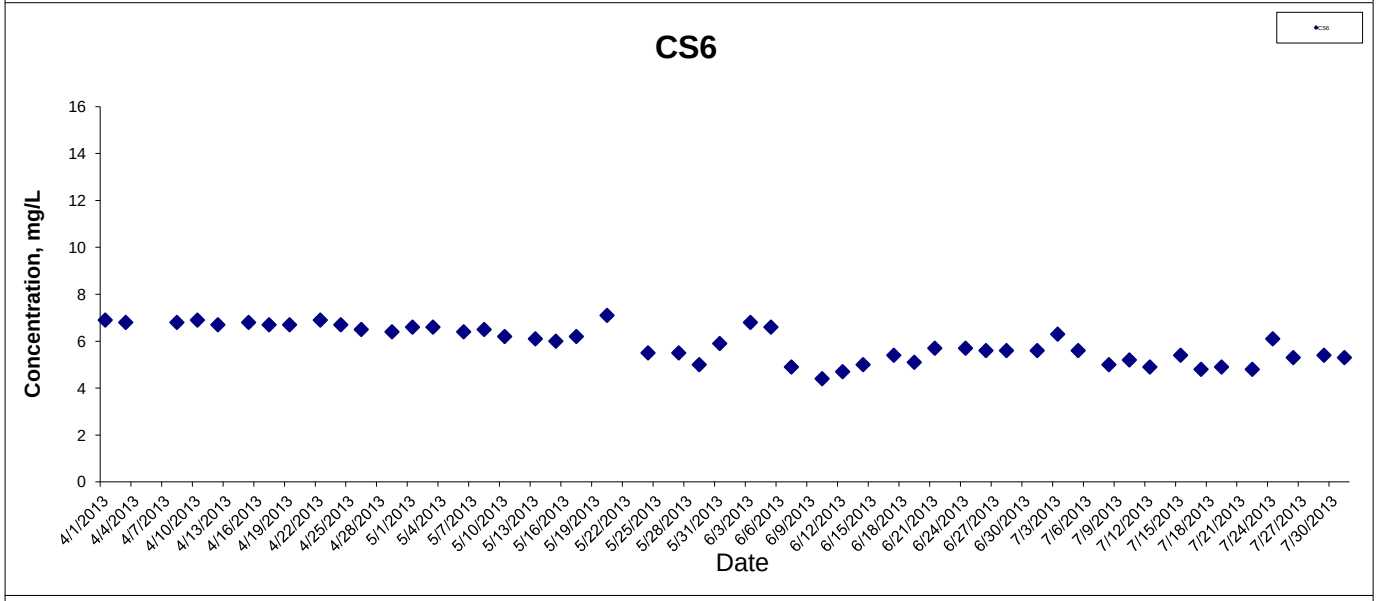


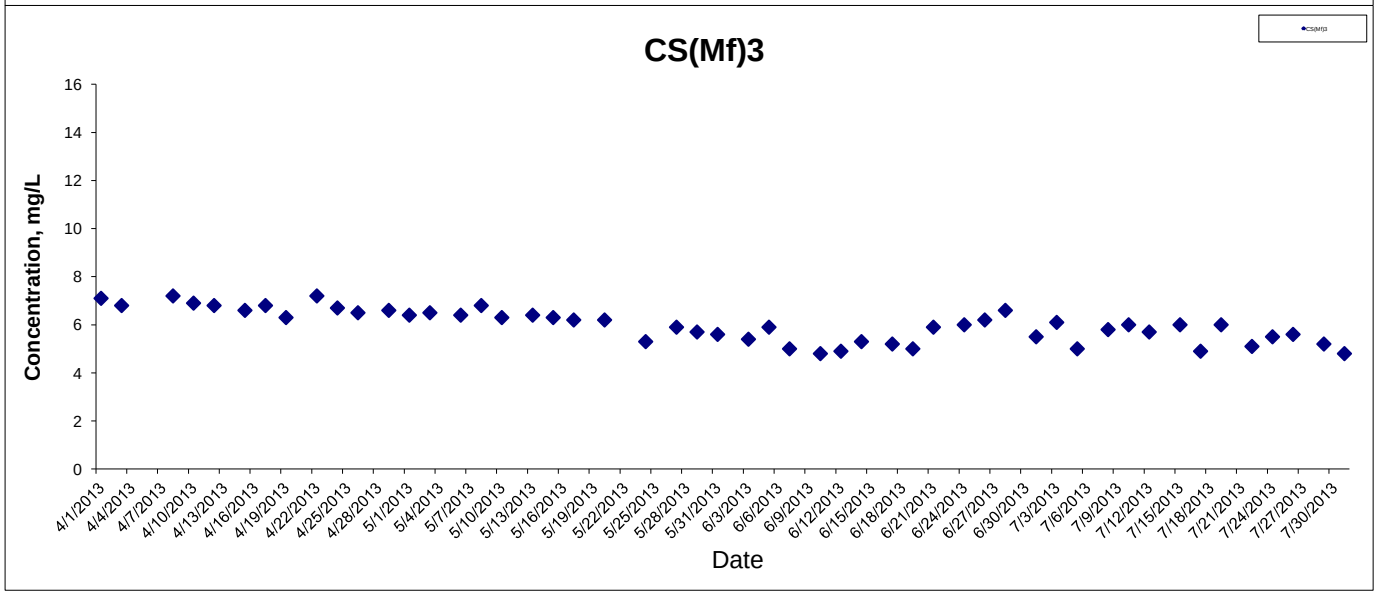




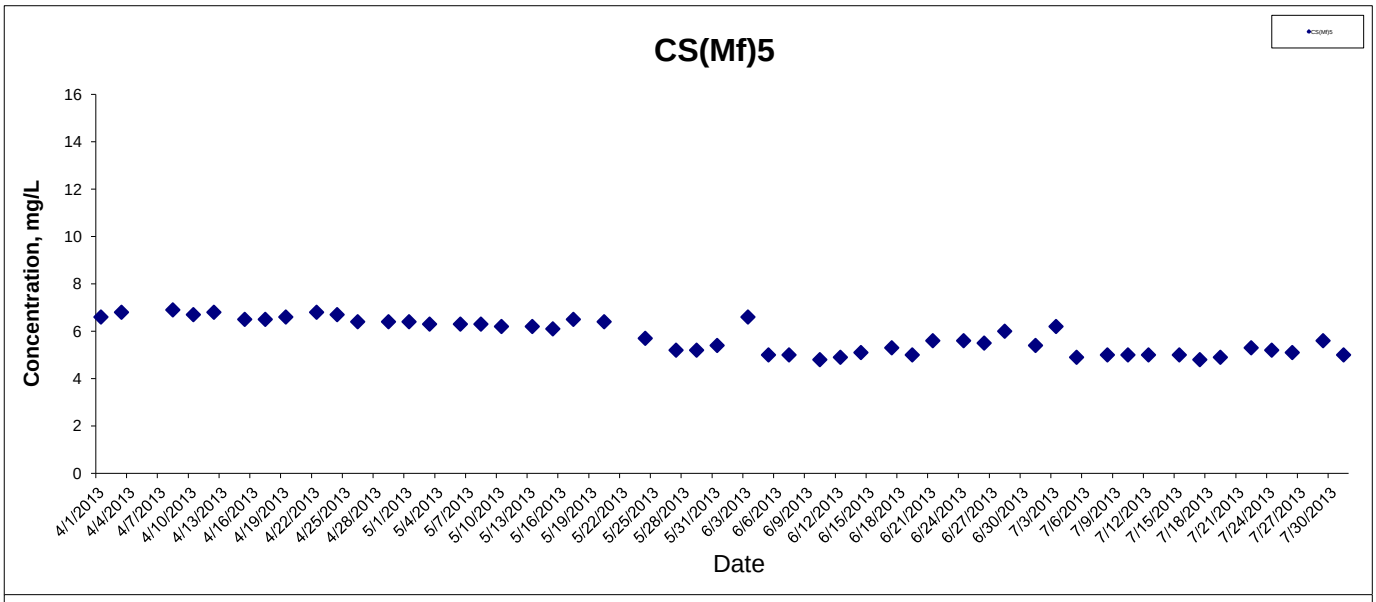
Dissolved Oxygen (Bottom) at Mid-Ebb Tide

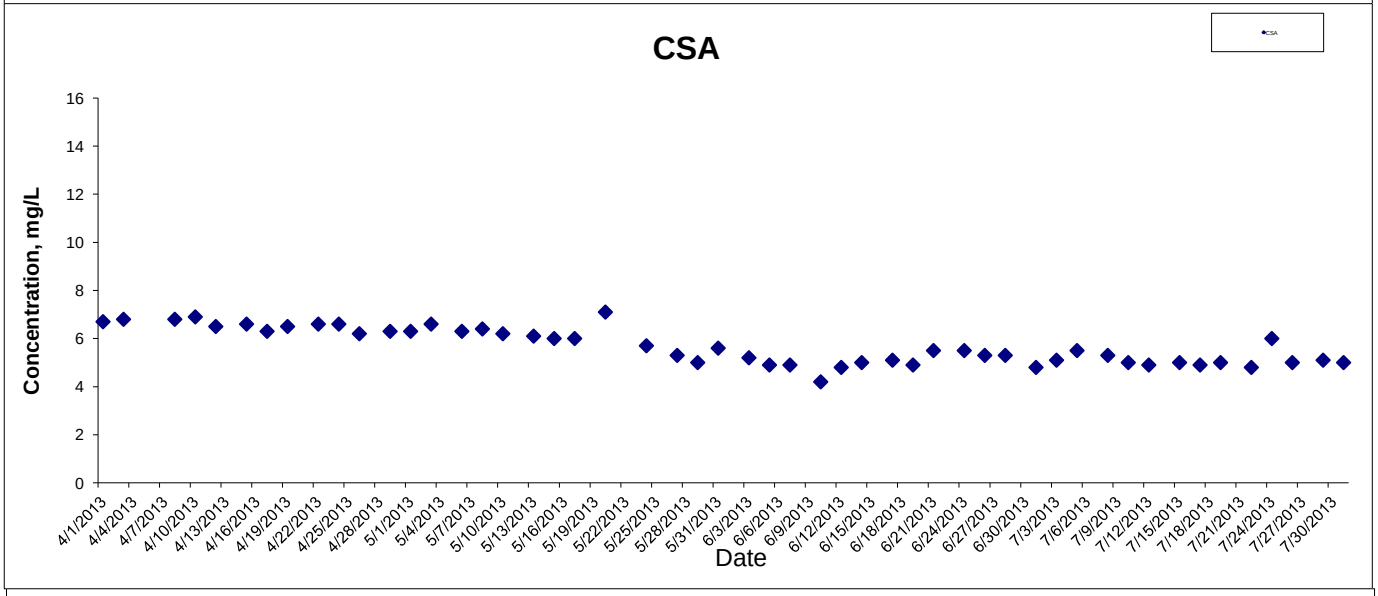


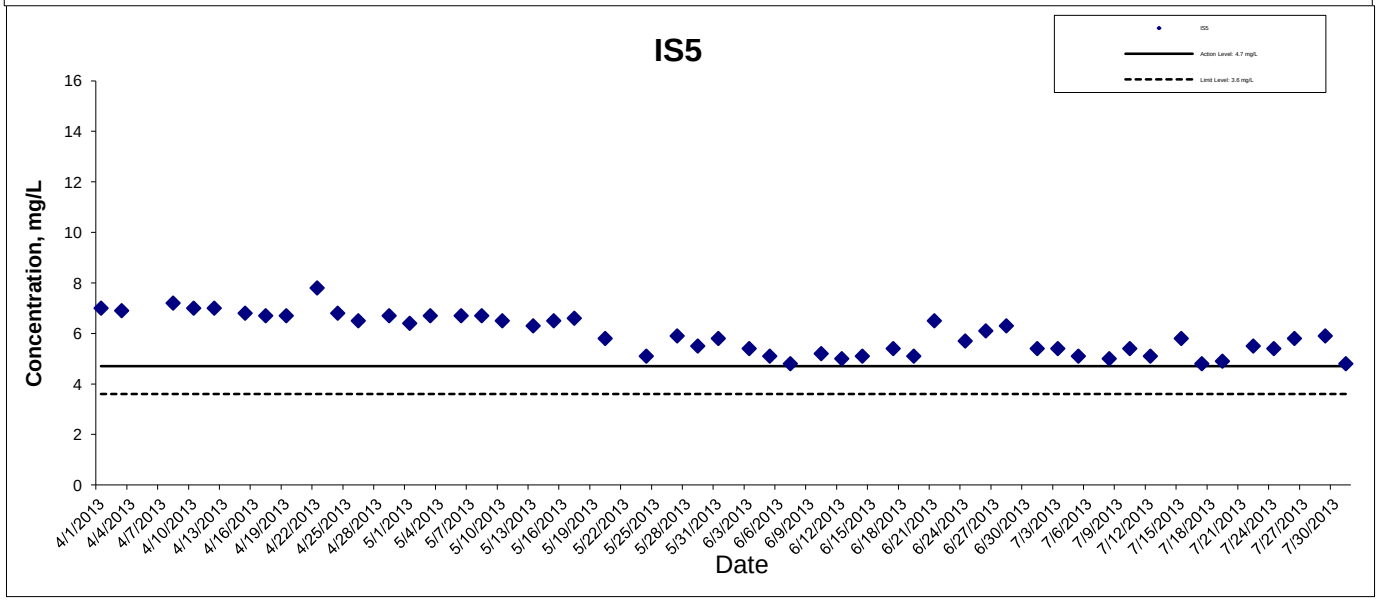




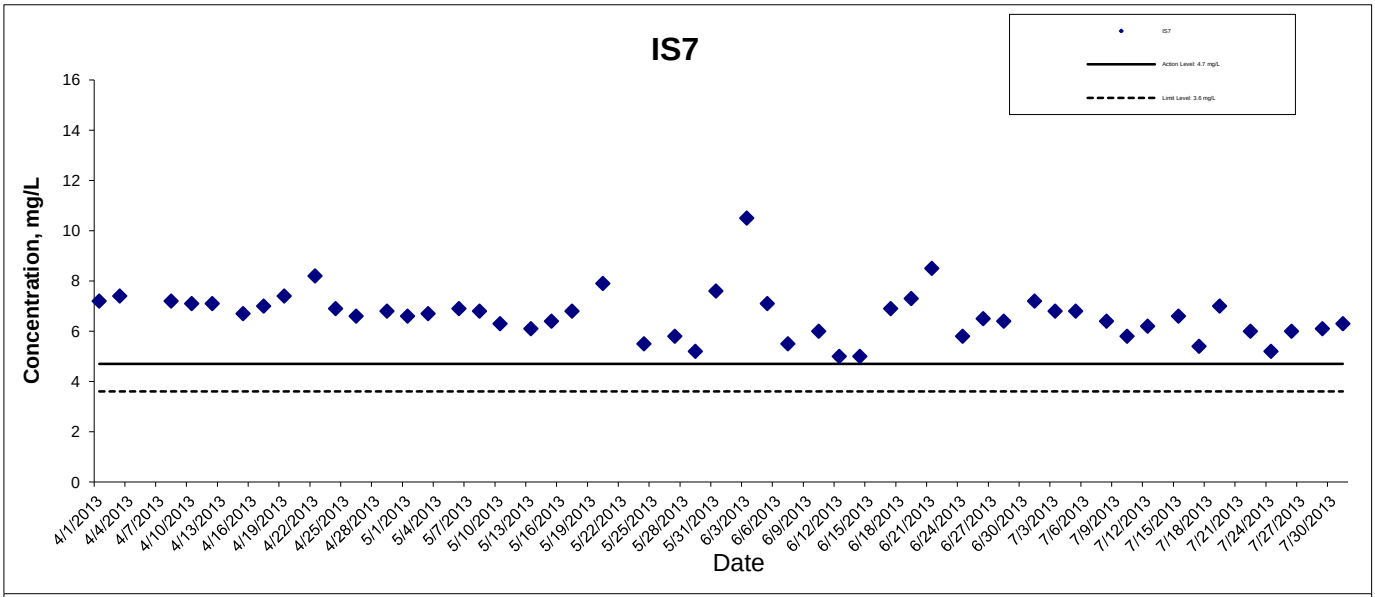
Dissolved Oxygen (Bottom) at Mid-Ebb Tide

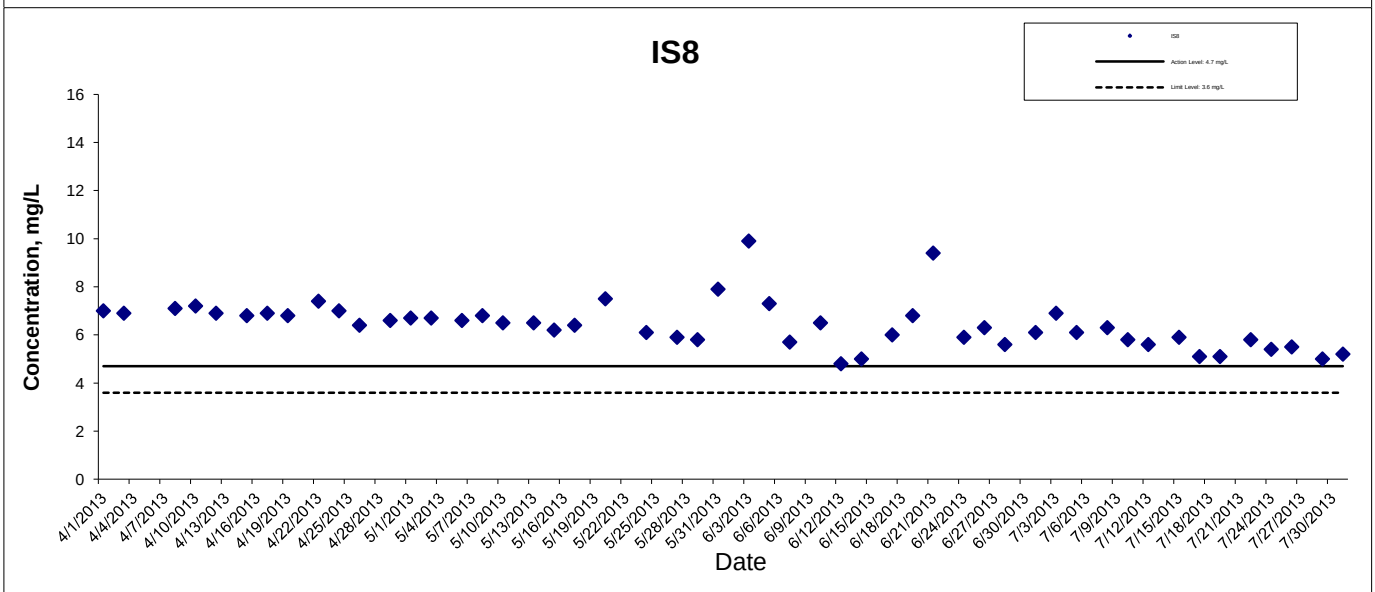


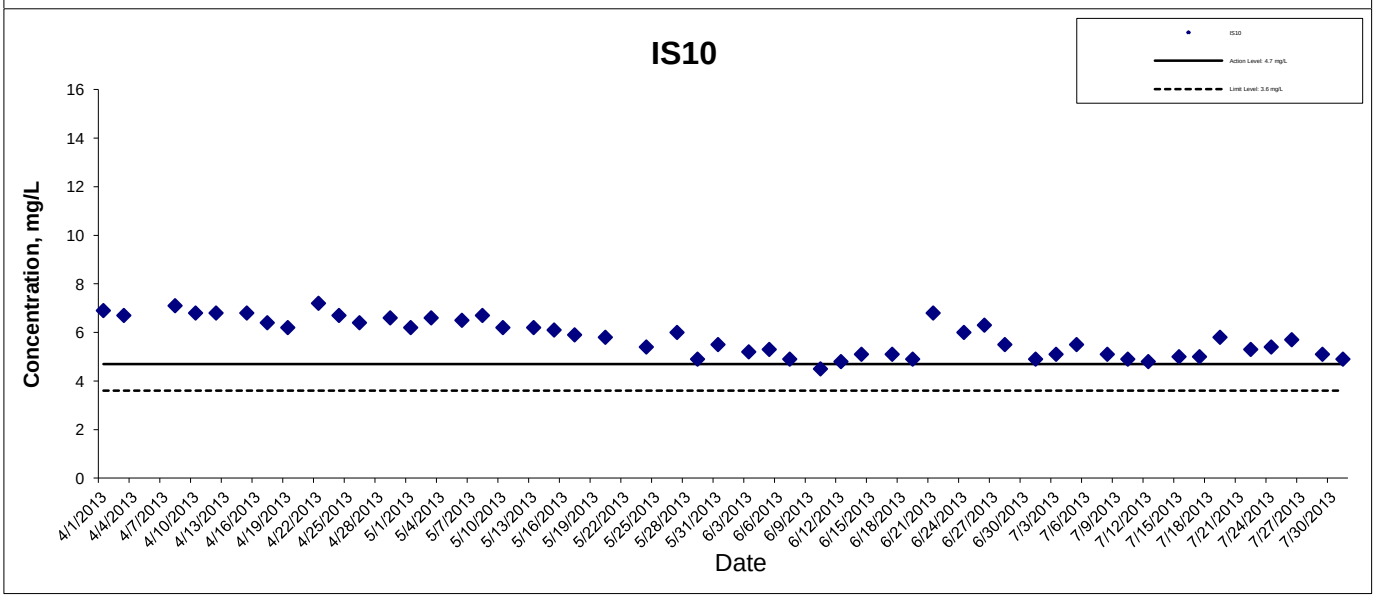




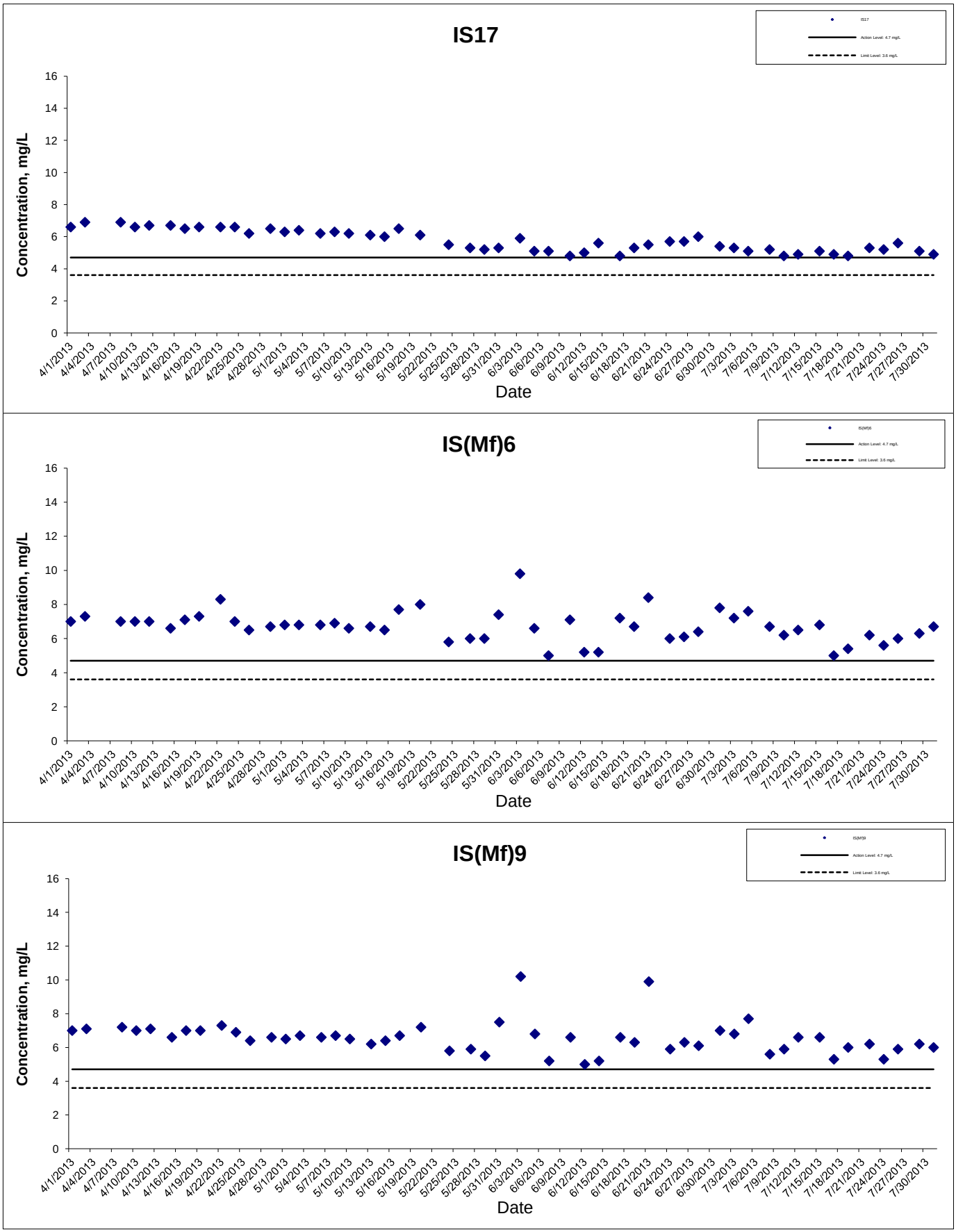
Dissolved Oxygen (Bottom) at Mid-Ebb Tide







Dissolved Oxygen (Bottom) at Mid-Ebb Tide



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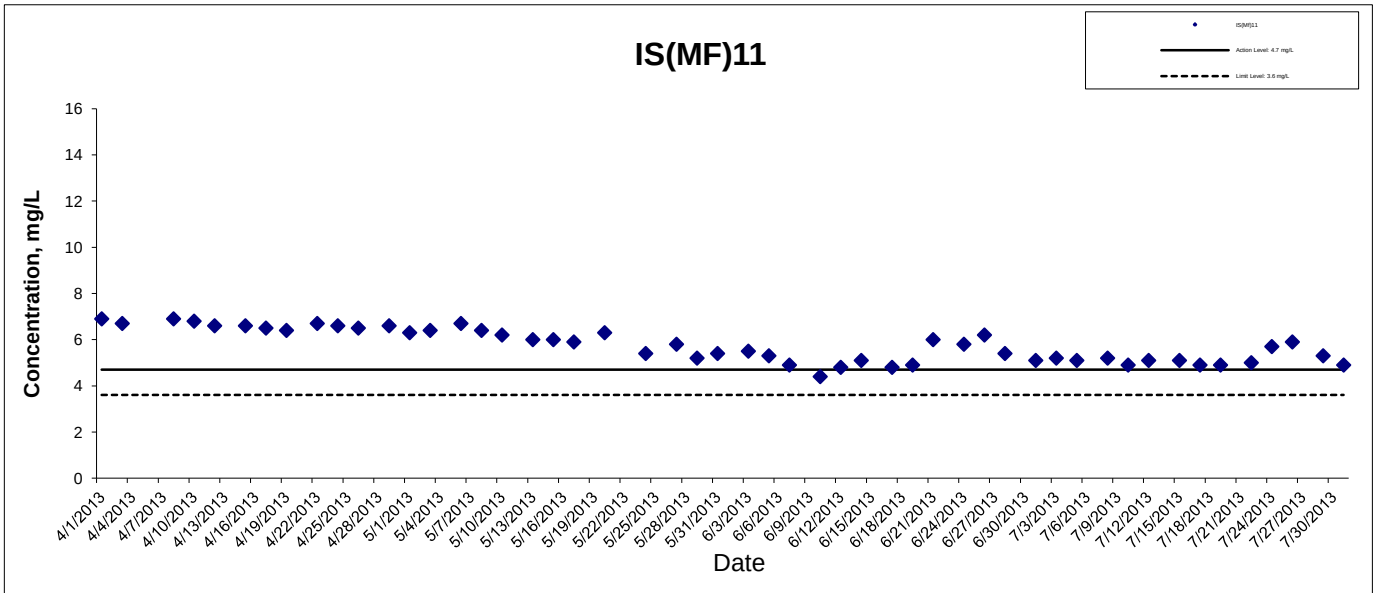
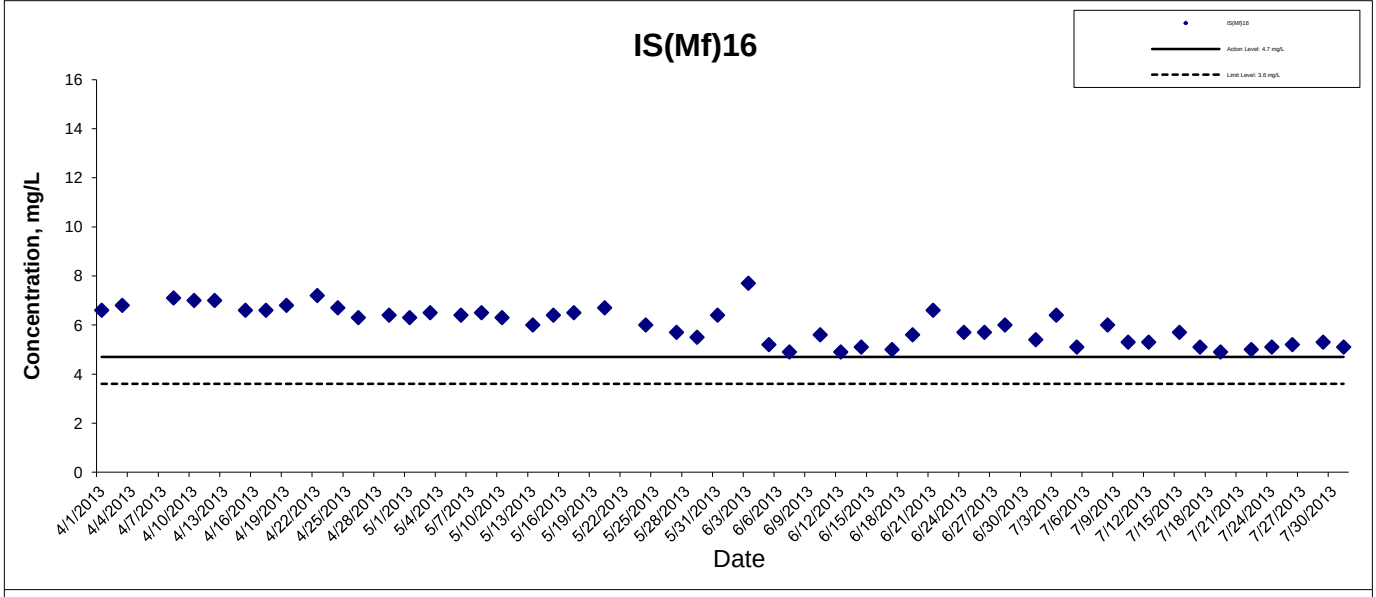
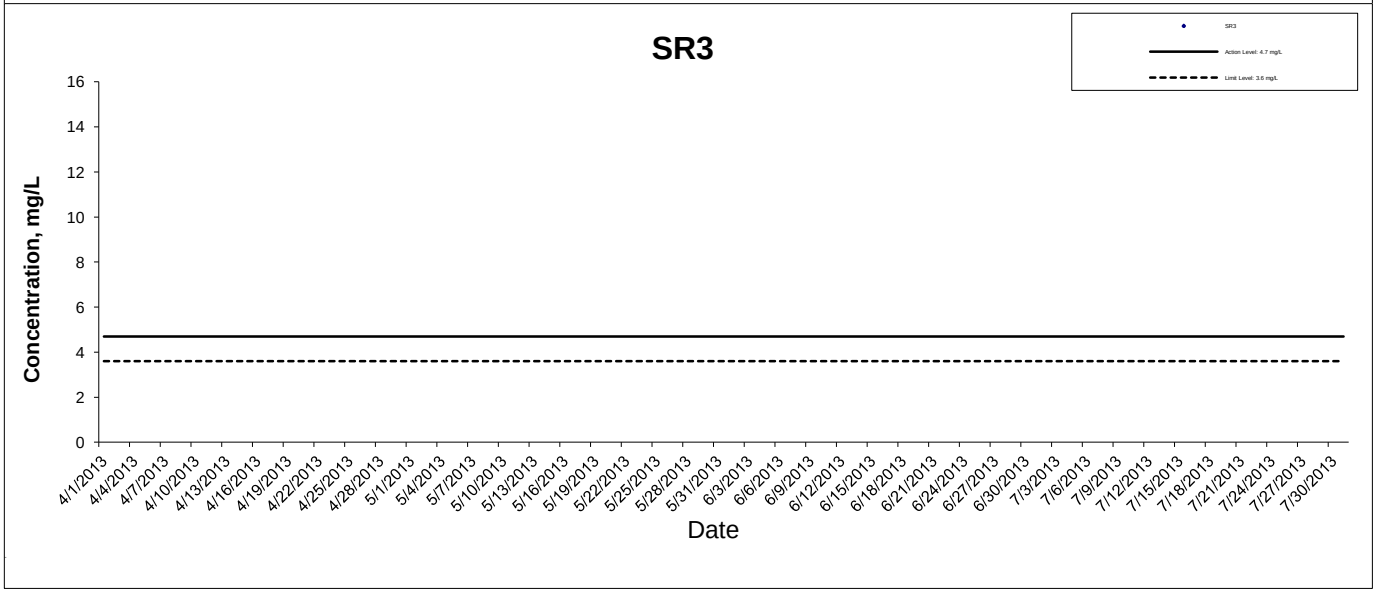
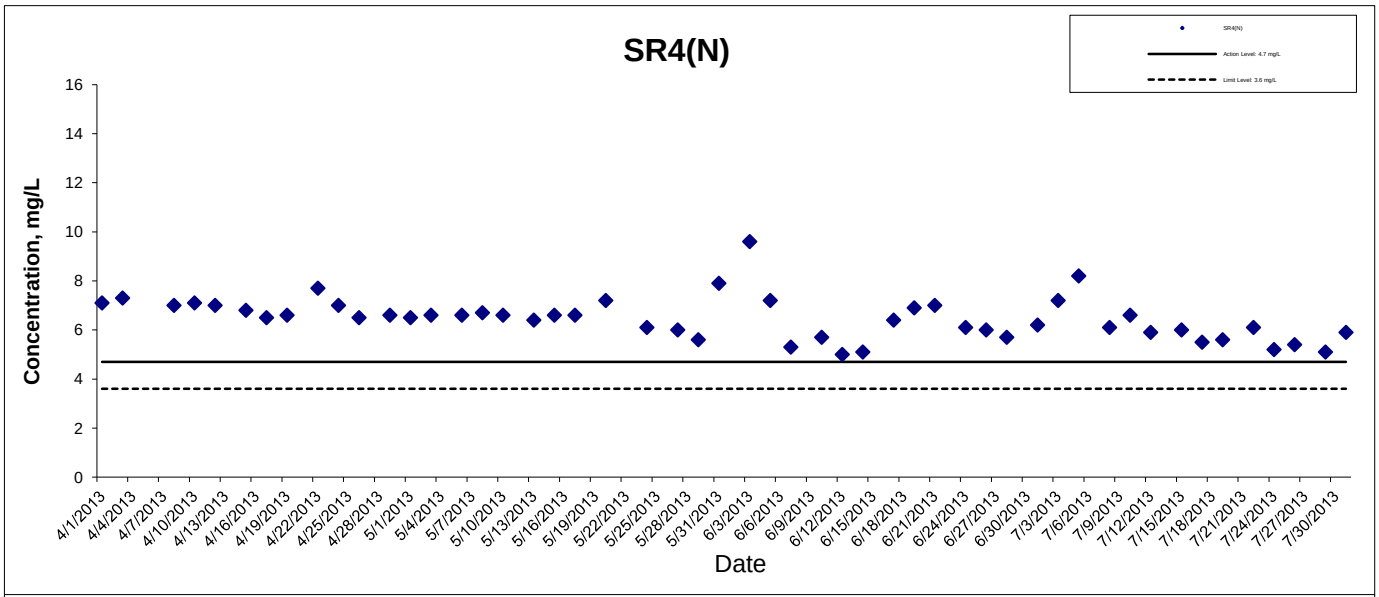
Dissolved Oxygen (Bottom) at Mid-Ebb Tide

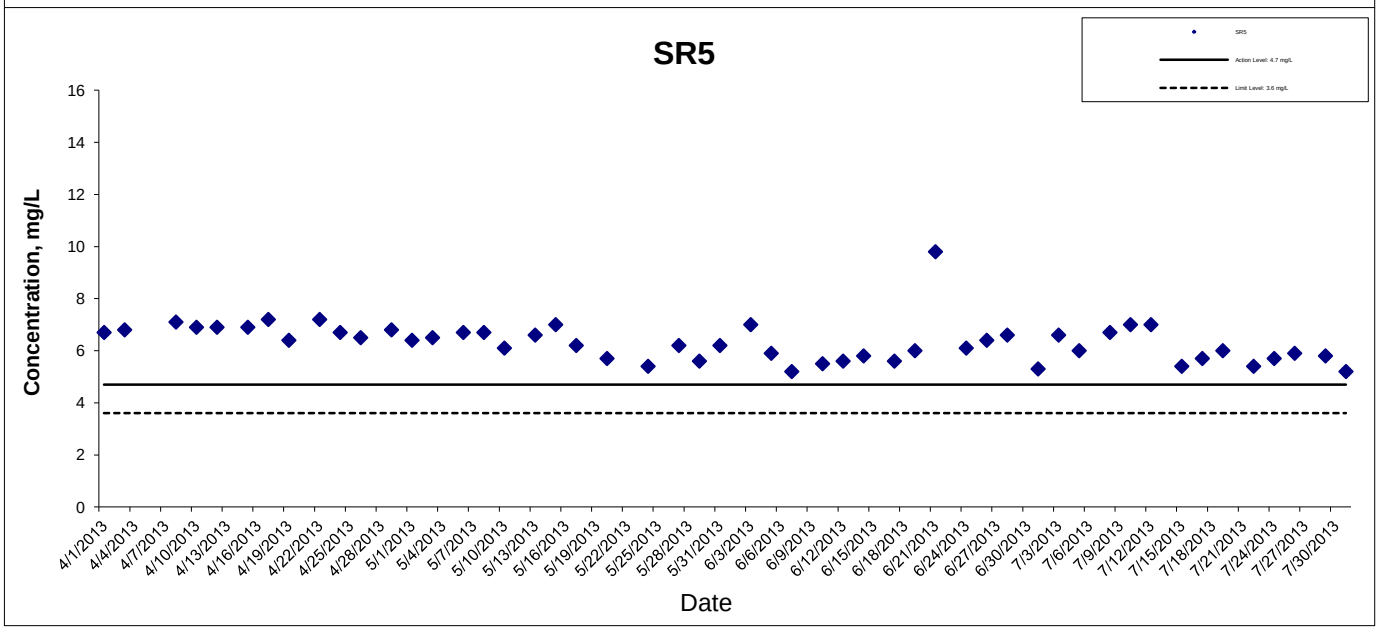


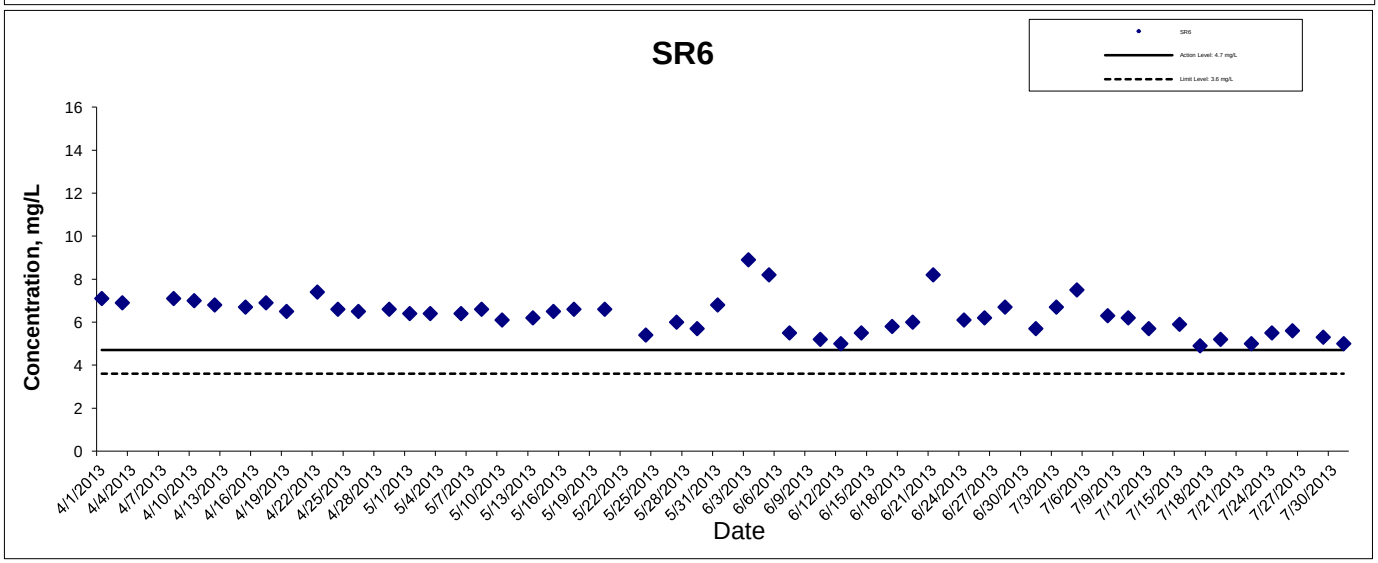




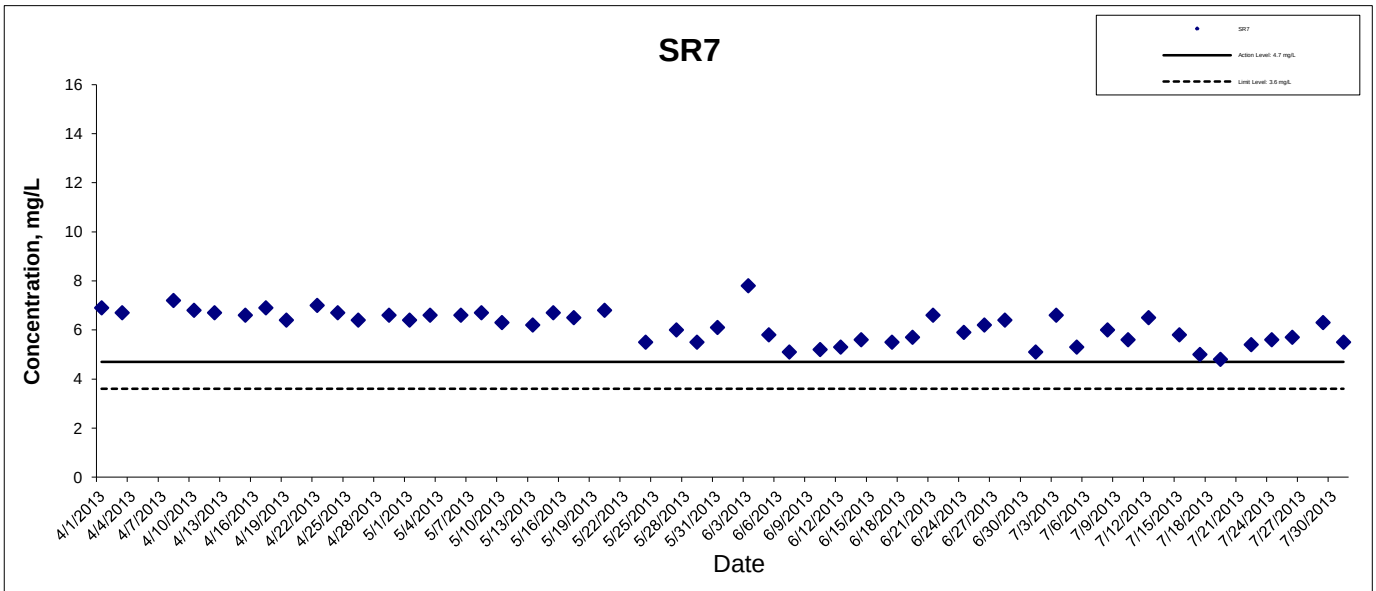
Dissolved Oxygen (Bottom) at Mid-Ebb Tide

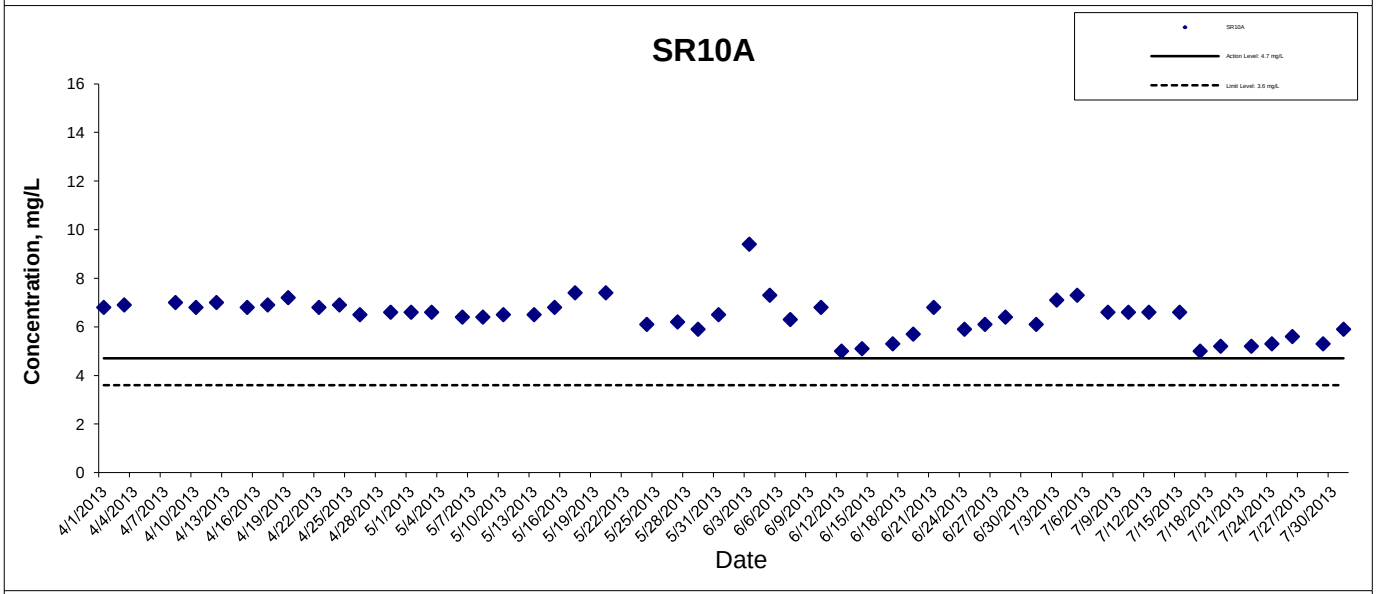


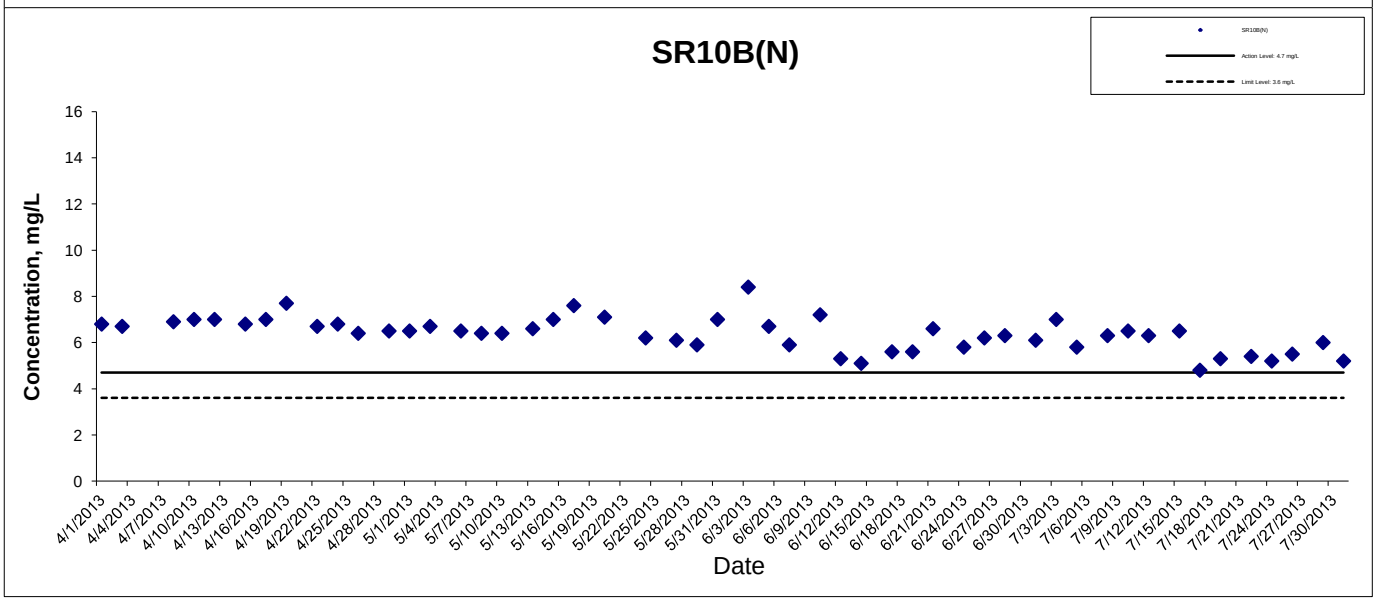




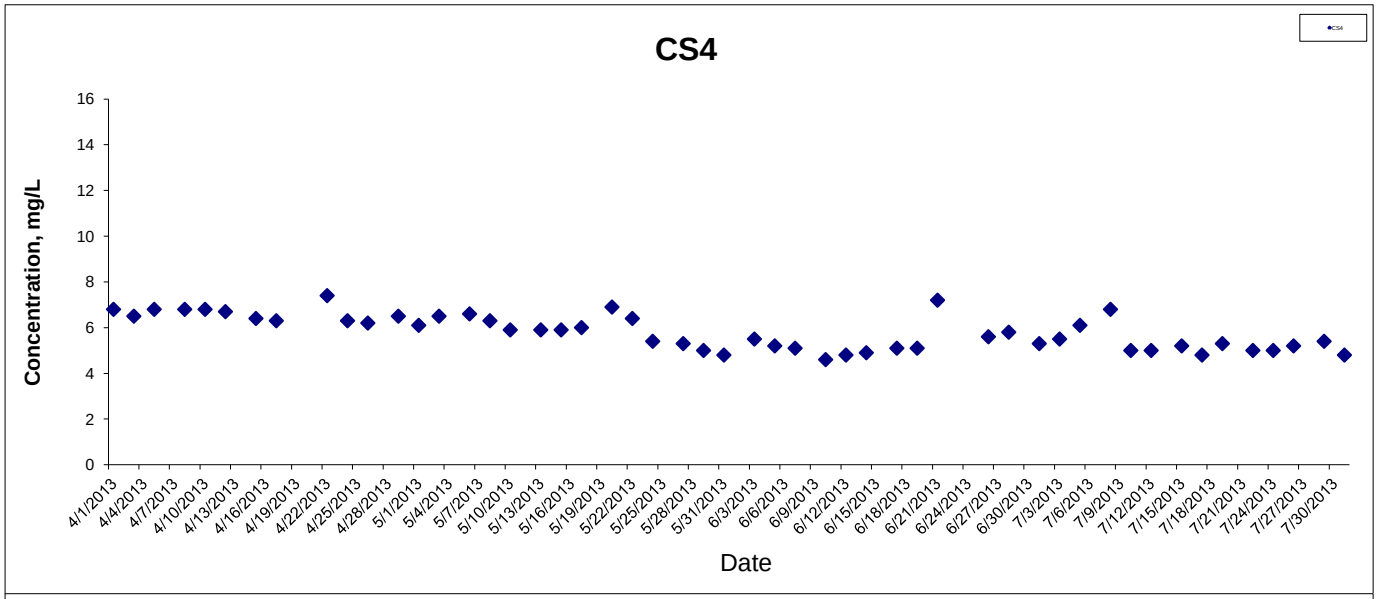
Dissolved Oxygen (Bottom) at Mid-Ebb Tide

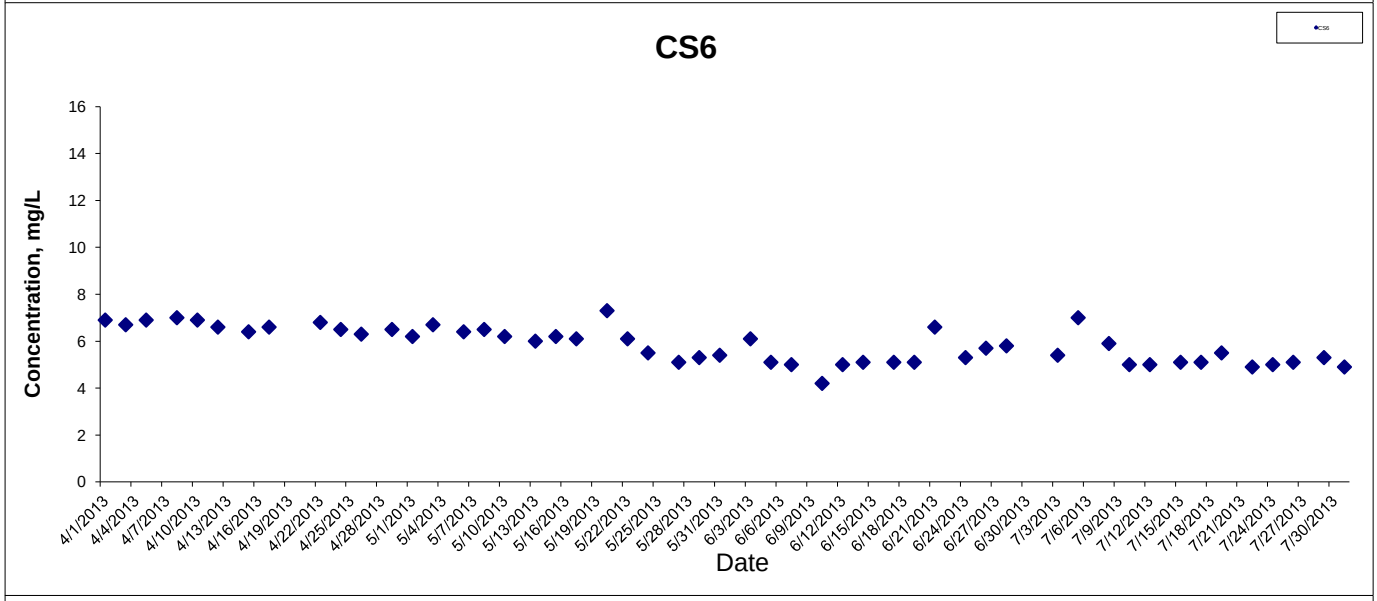


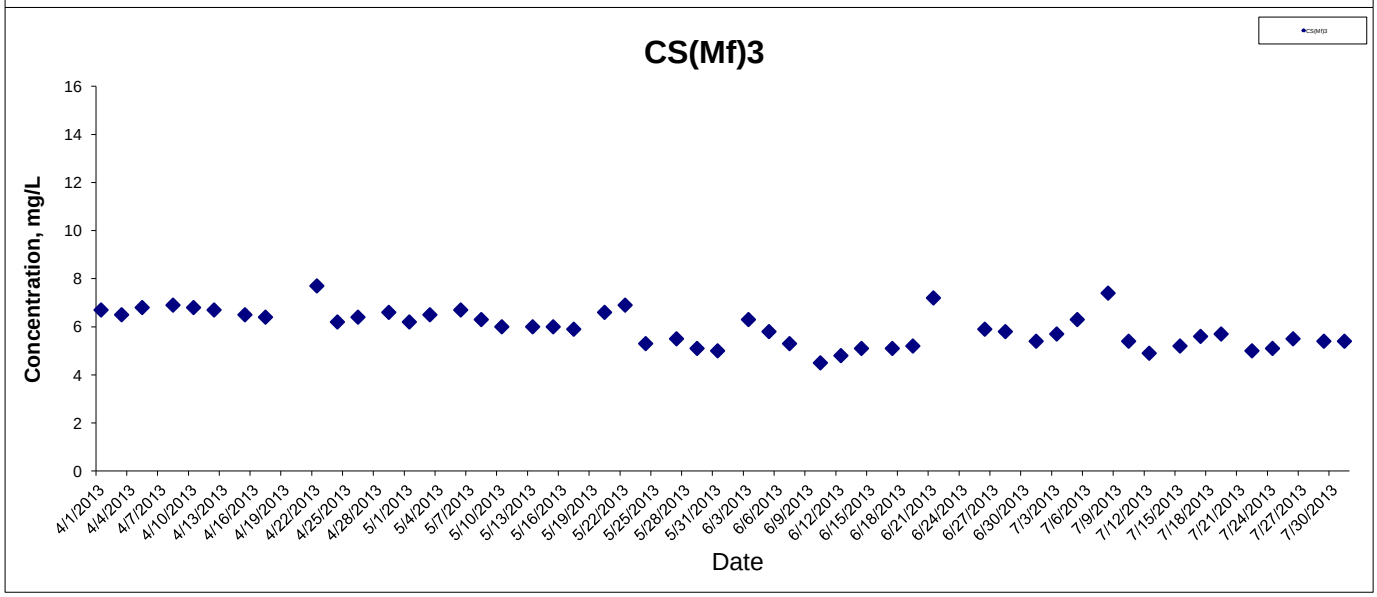




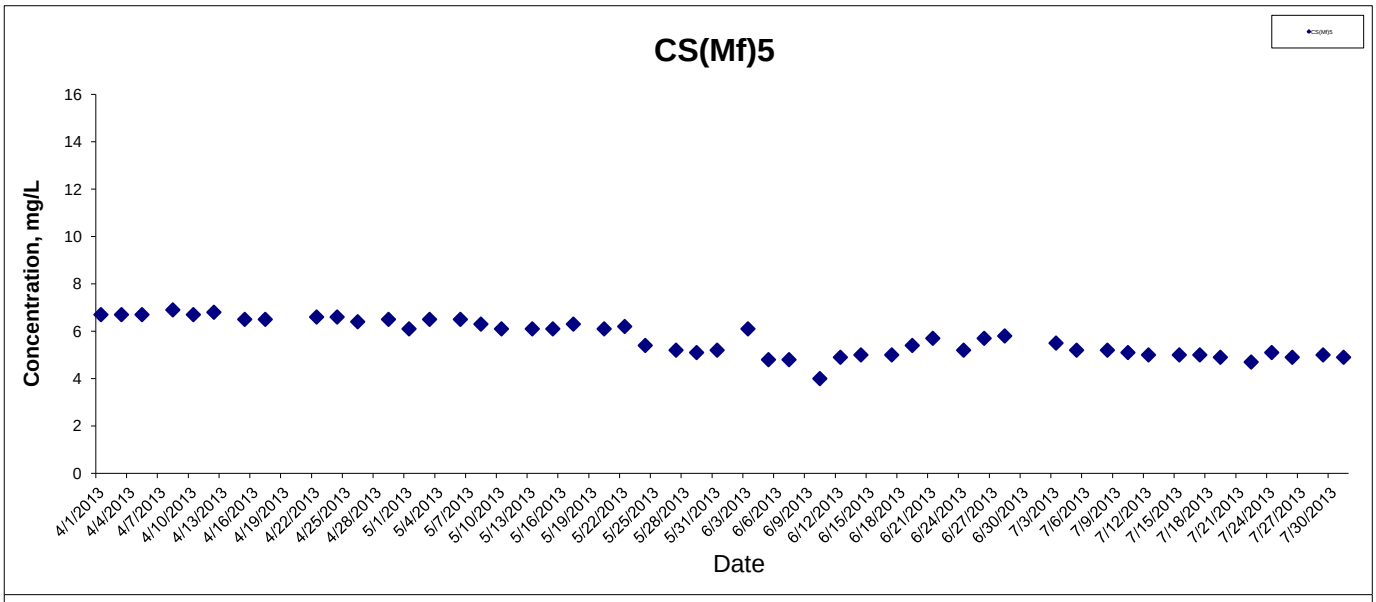
Dissolved Oxygen (Bottom) at Mid-Flood Tide

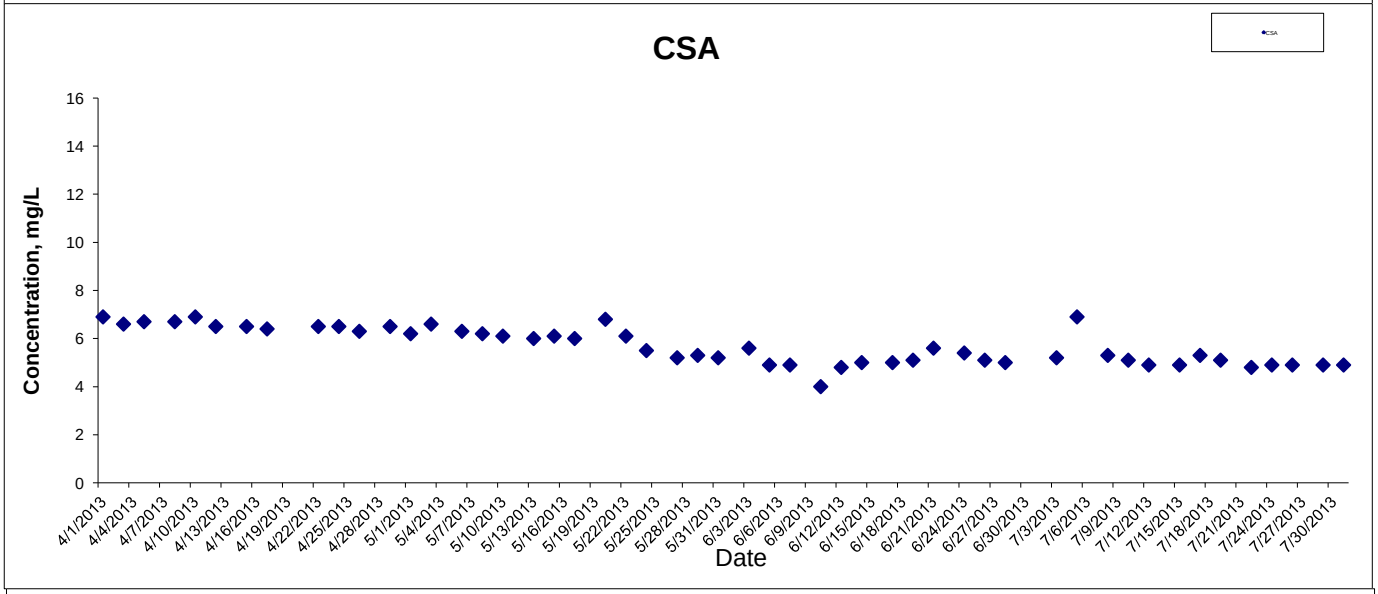


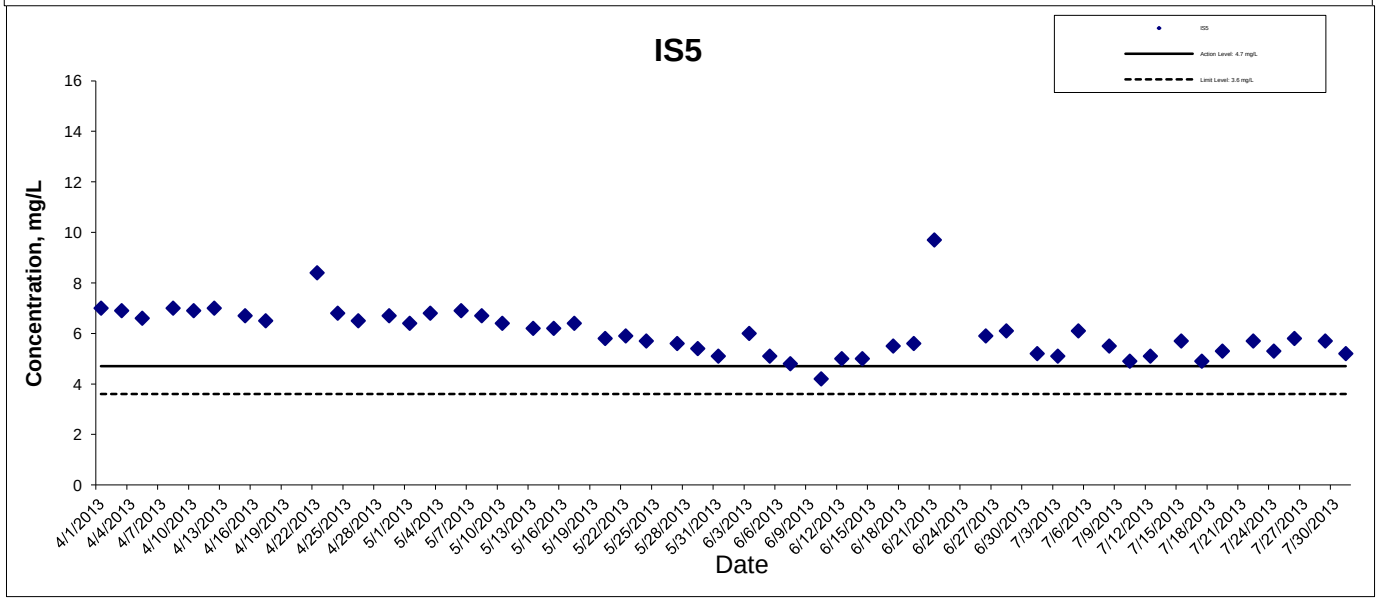




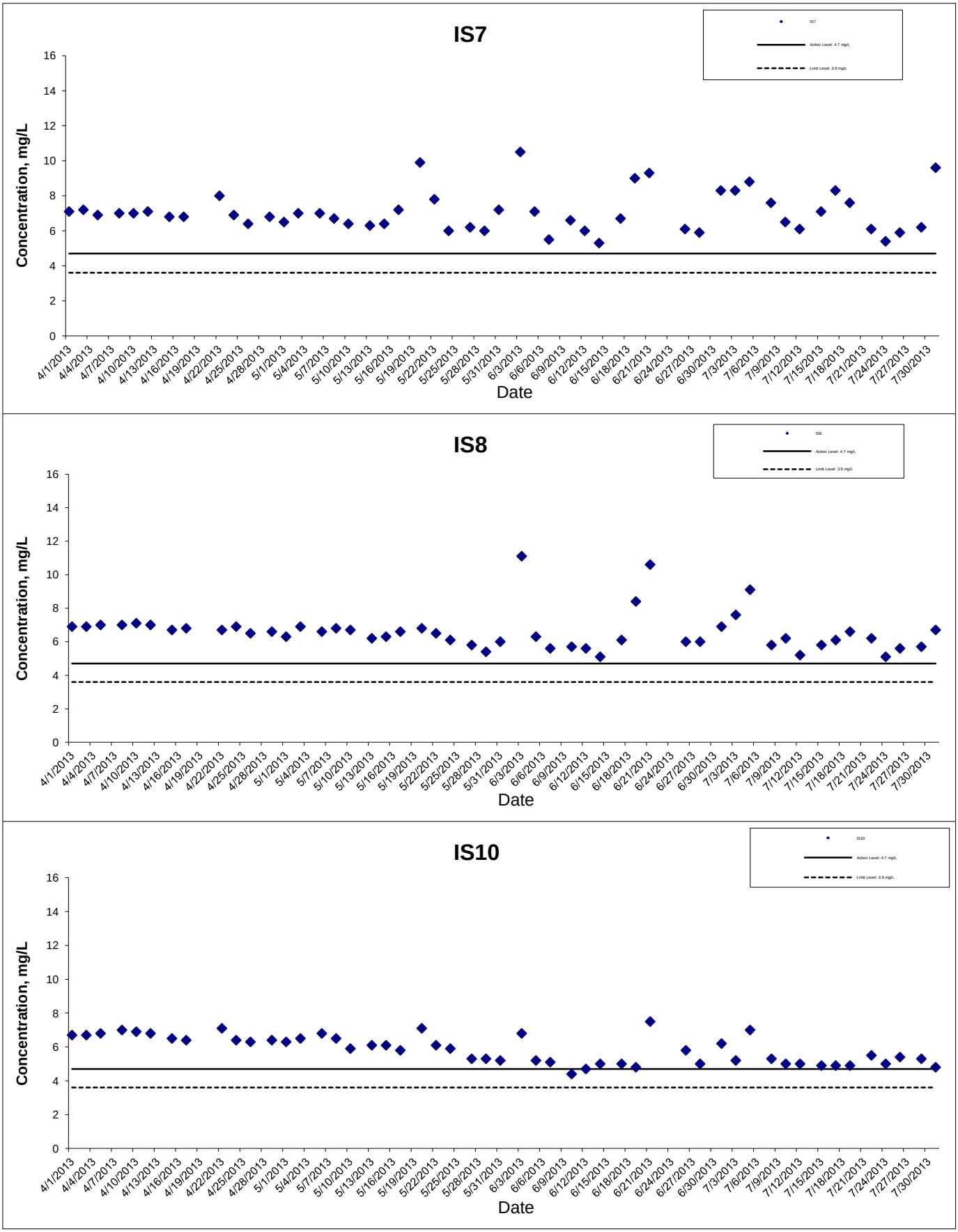
Dissolved Oxygen (Bottom) at Mid-Flood Tide



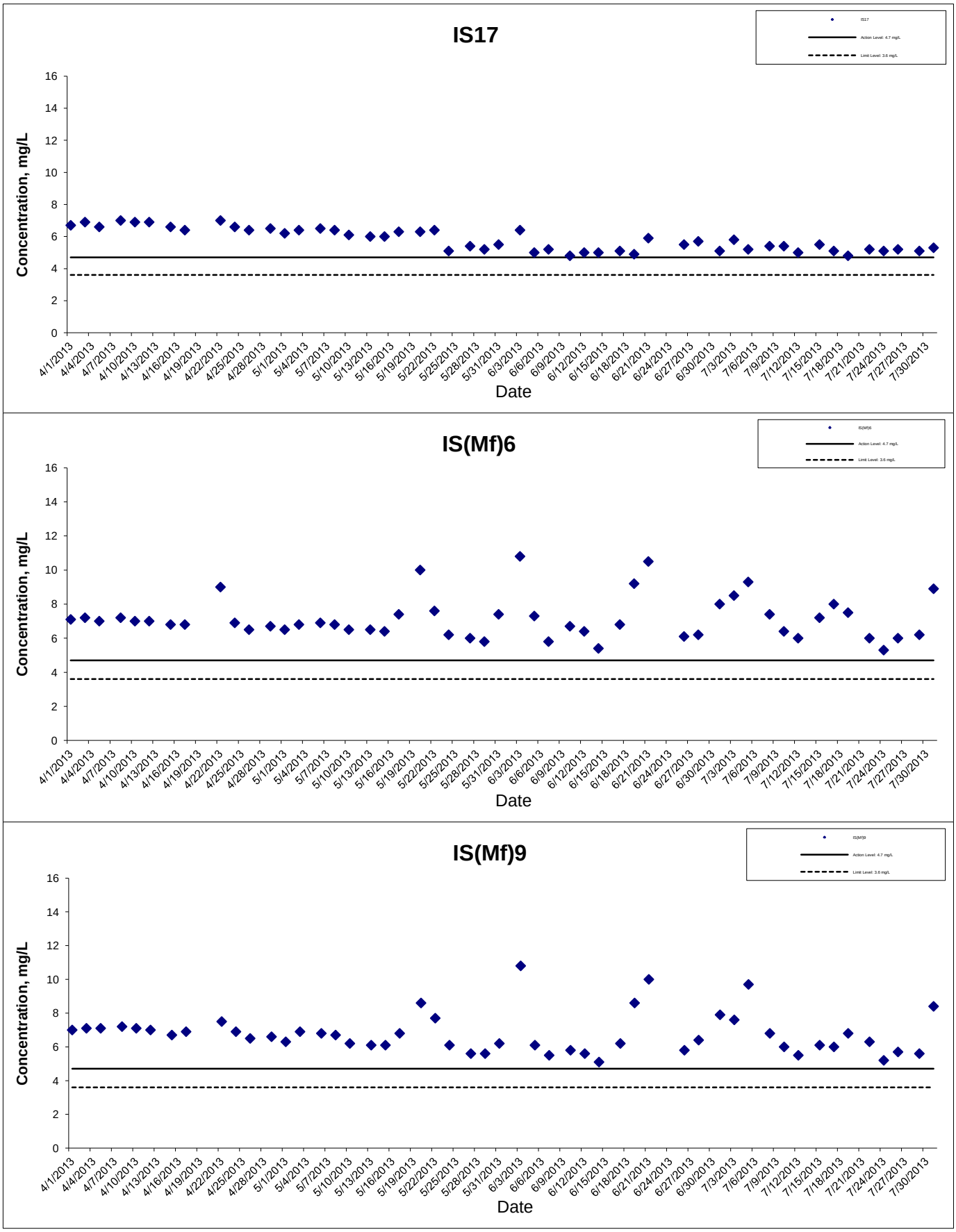




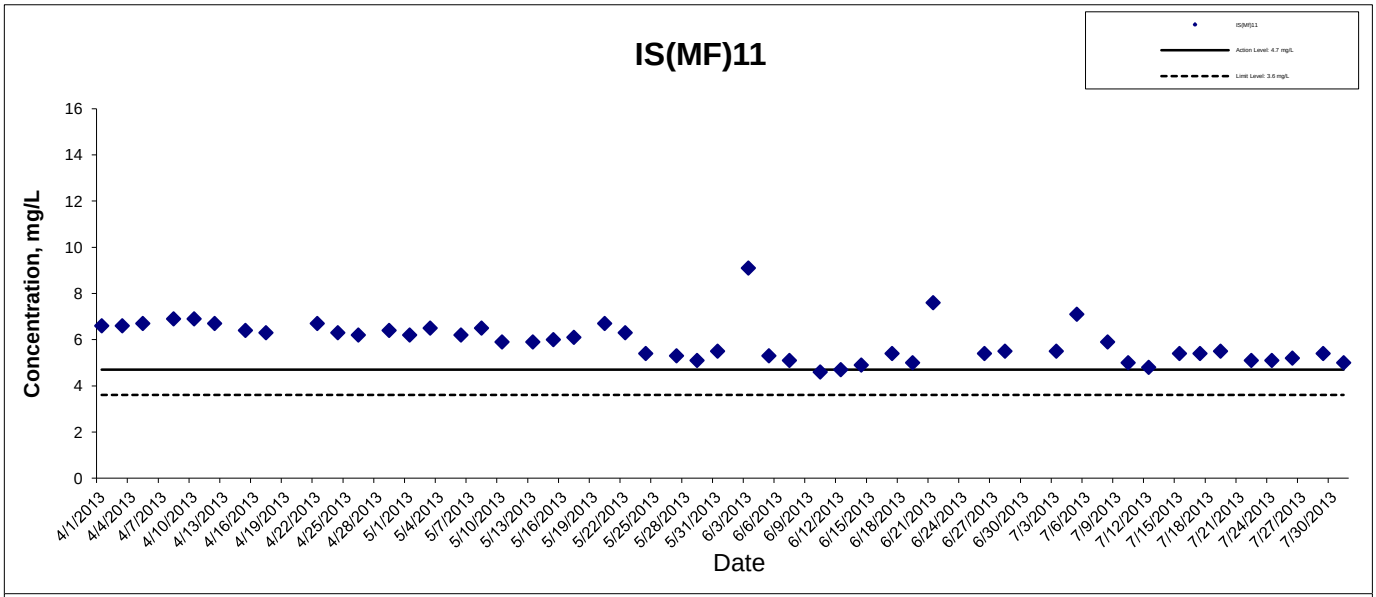
Dissolved Oxygen (Bottom) at Mid-Flood Tide

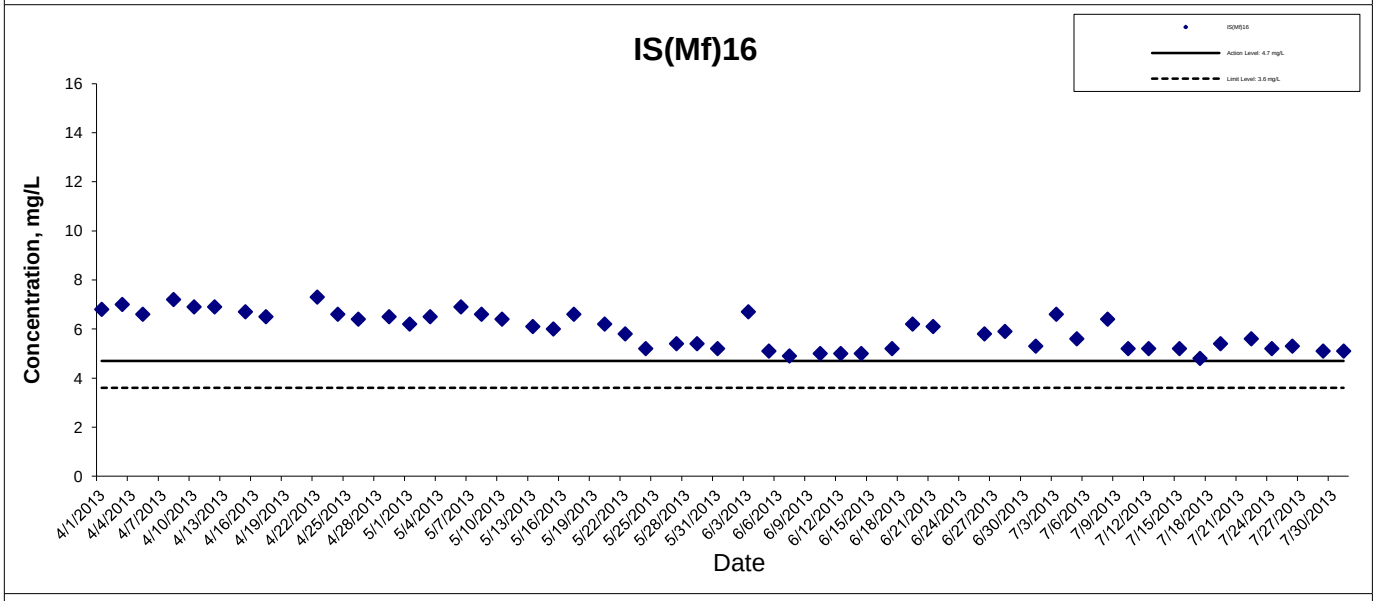


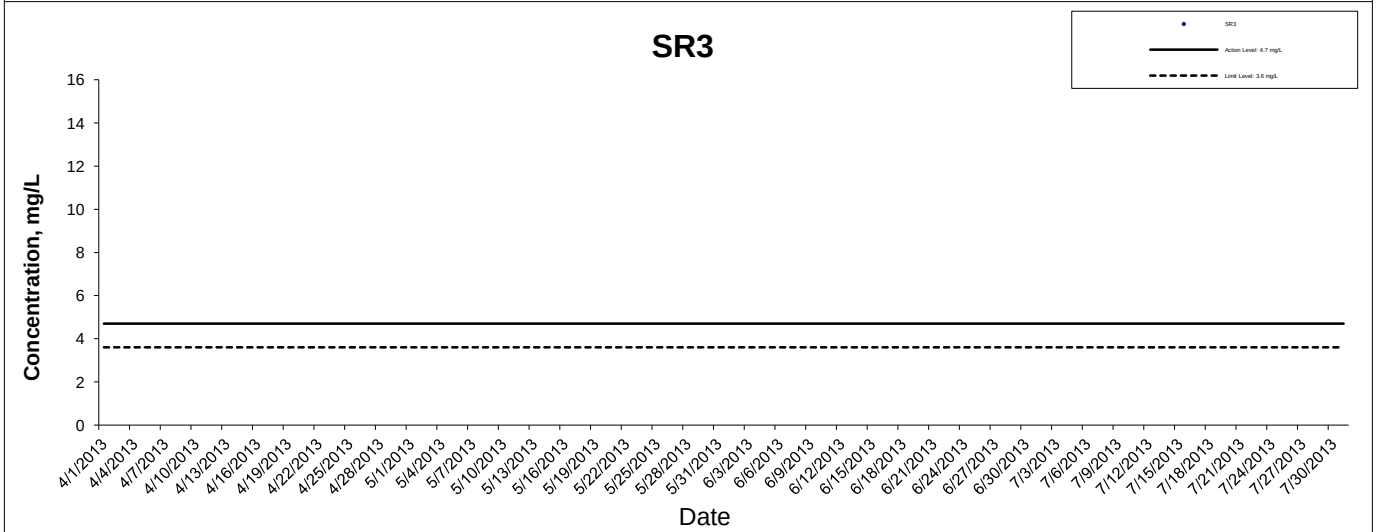
Dissolved Oxygen (Bottom) at Mid-Flood Tide



Dissolved Oxygen (Bottom) at Mid-Flood Tide

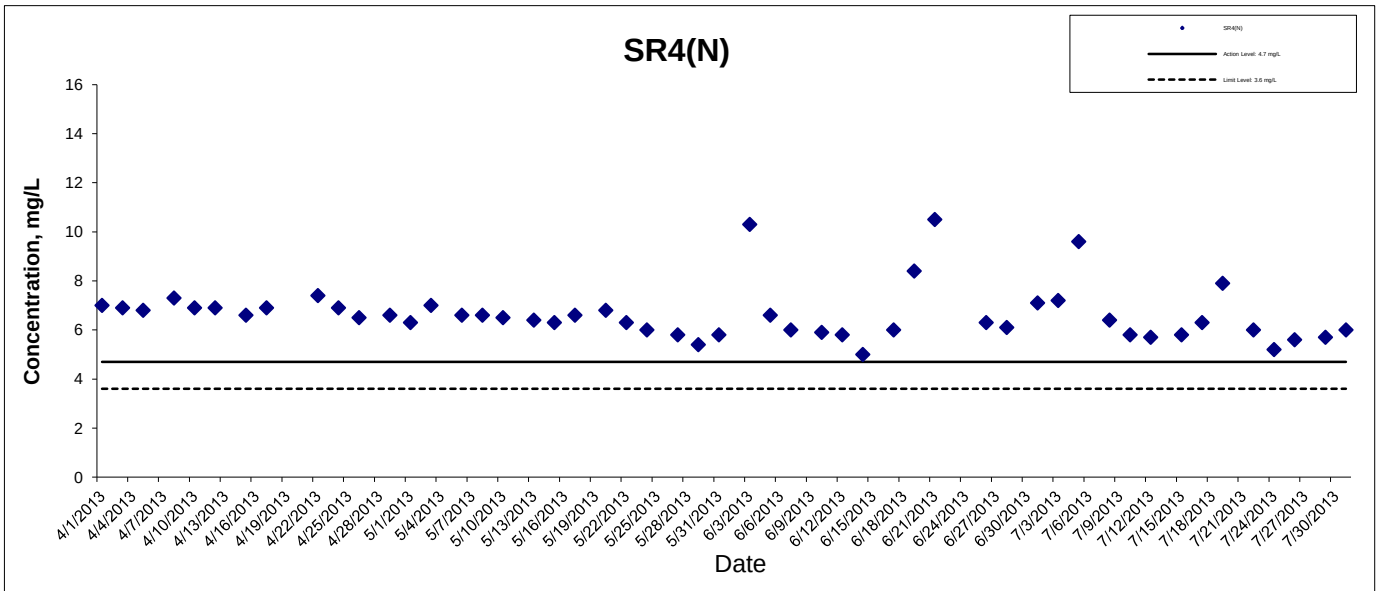


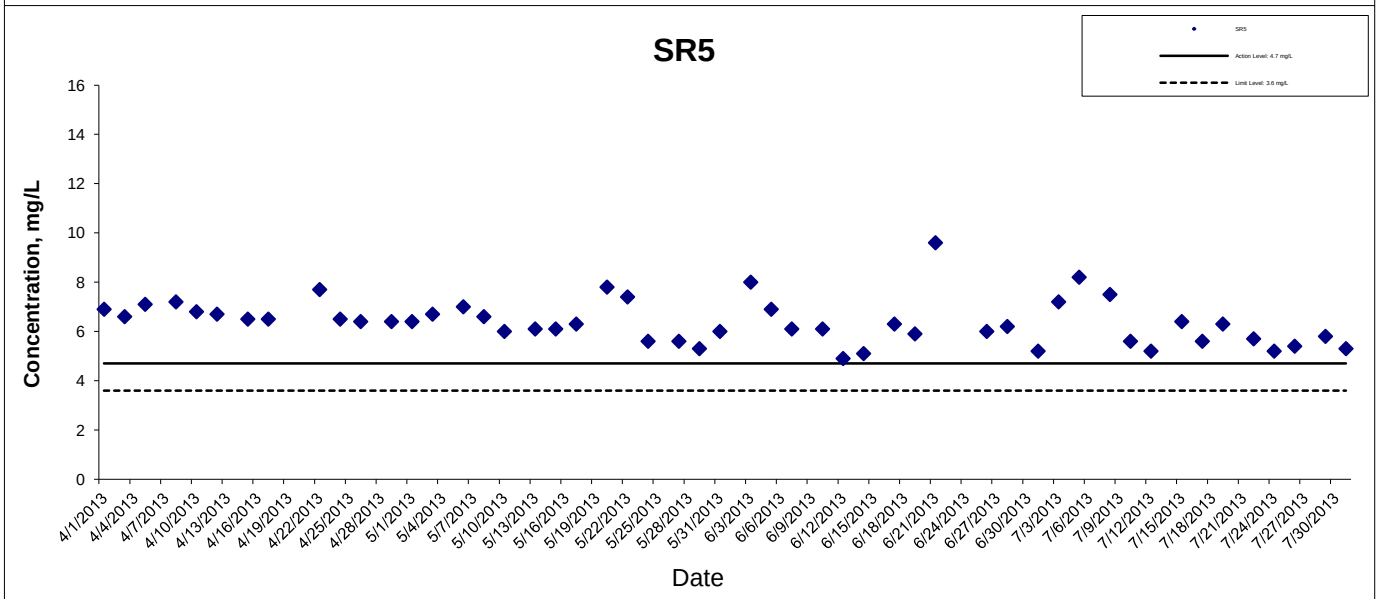


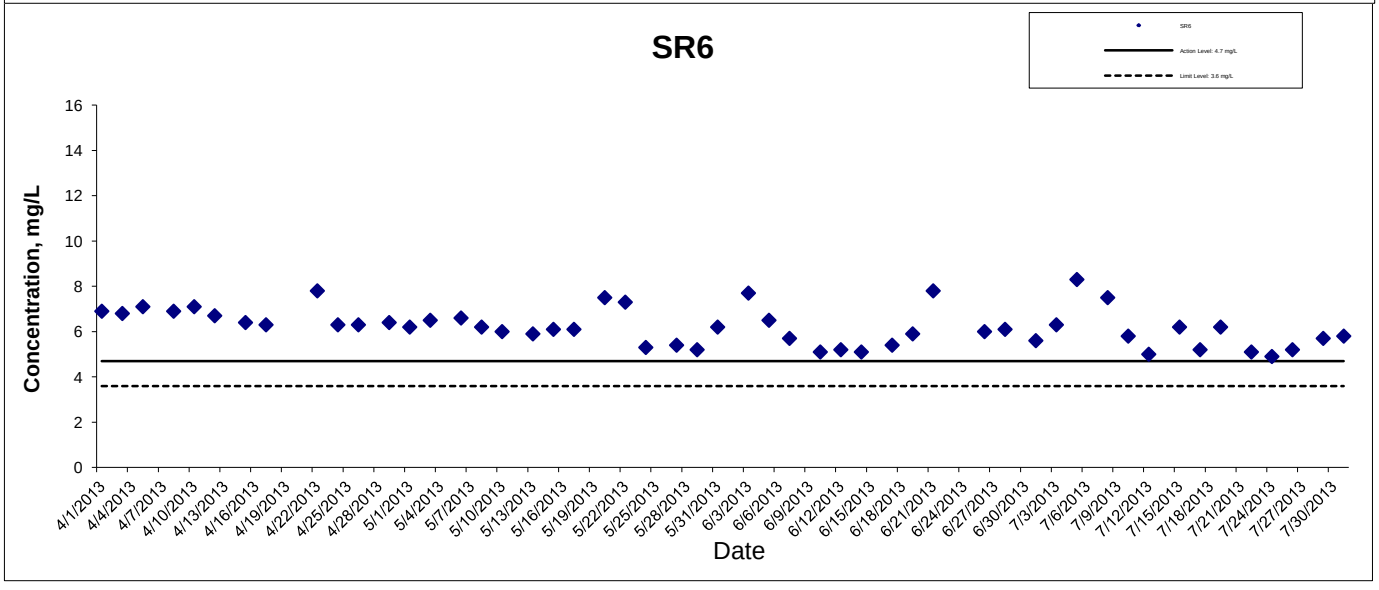


As the measured water depths were less than 3 m during all monitoring days, water samples are collected at mid-depth only .

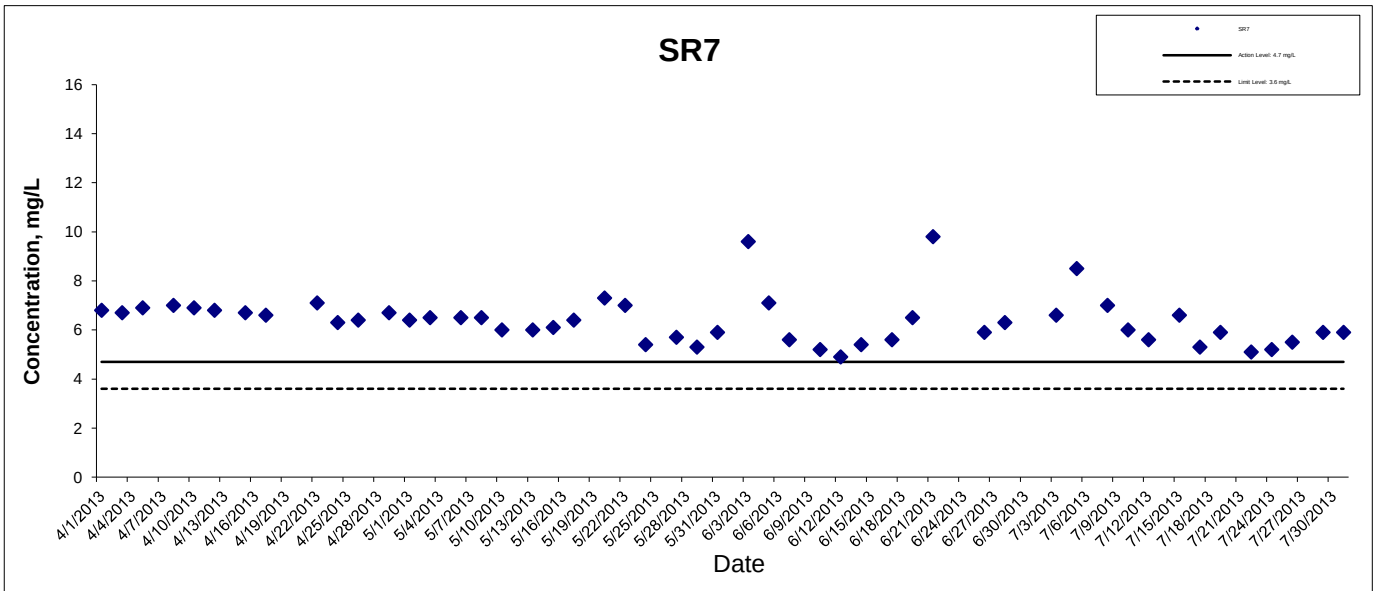
Dissolved Oxygen (Bottom) at Mid-Flood Tide

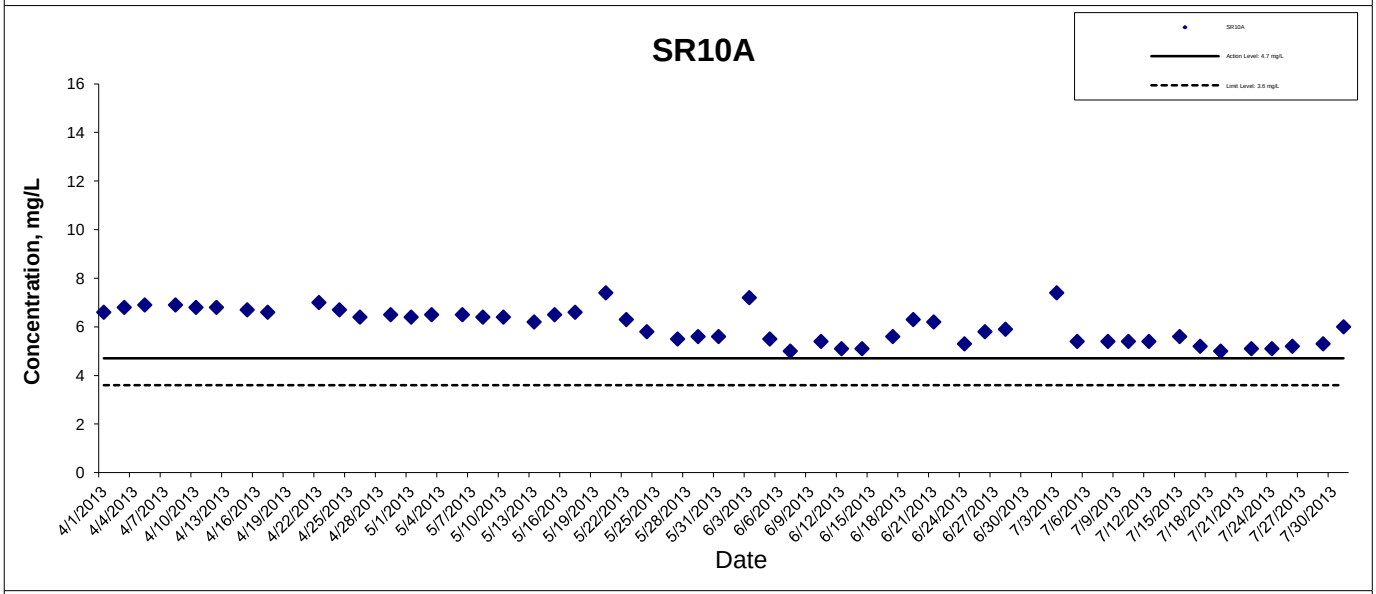


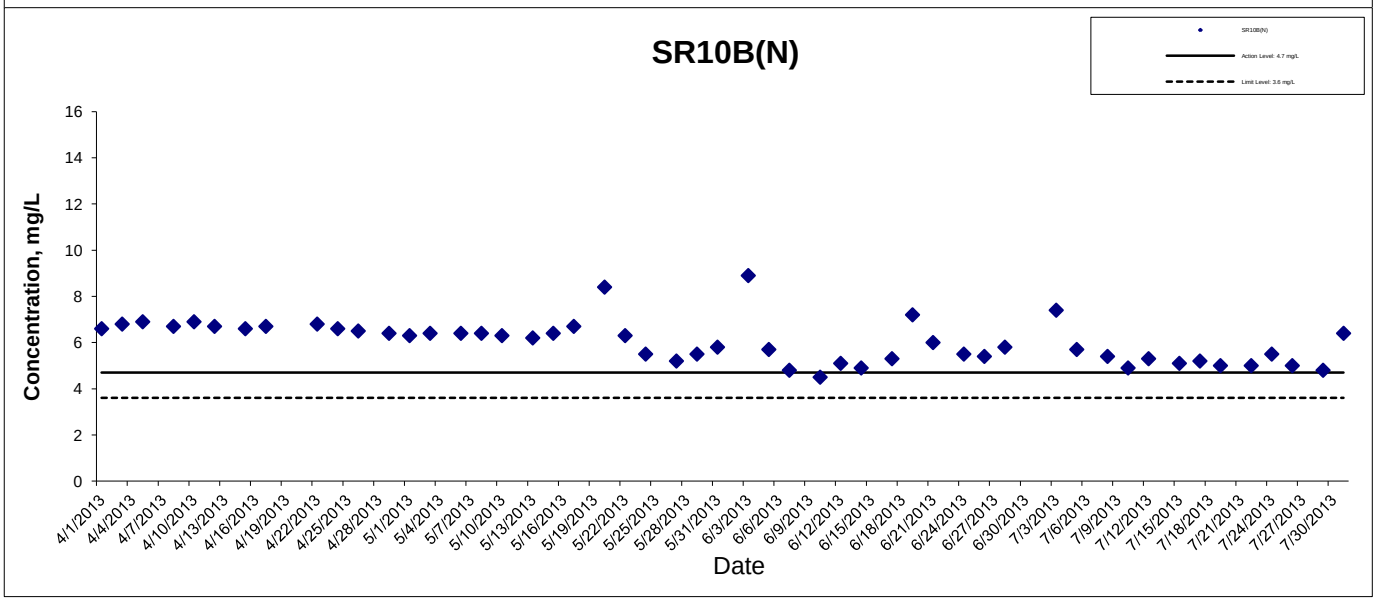




Dissolved Oxygen (Bottom) at Mid-Flood Tide







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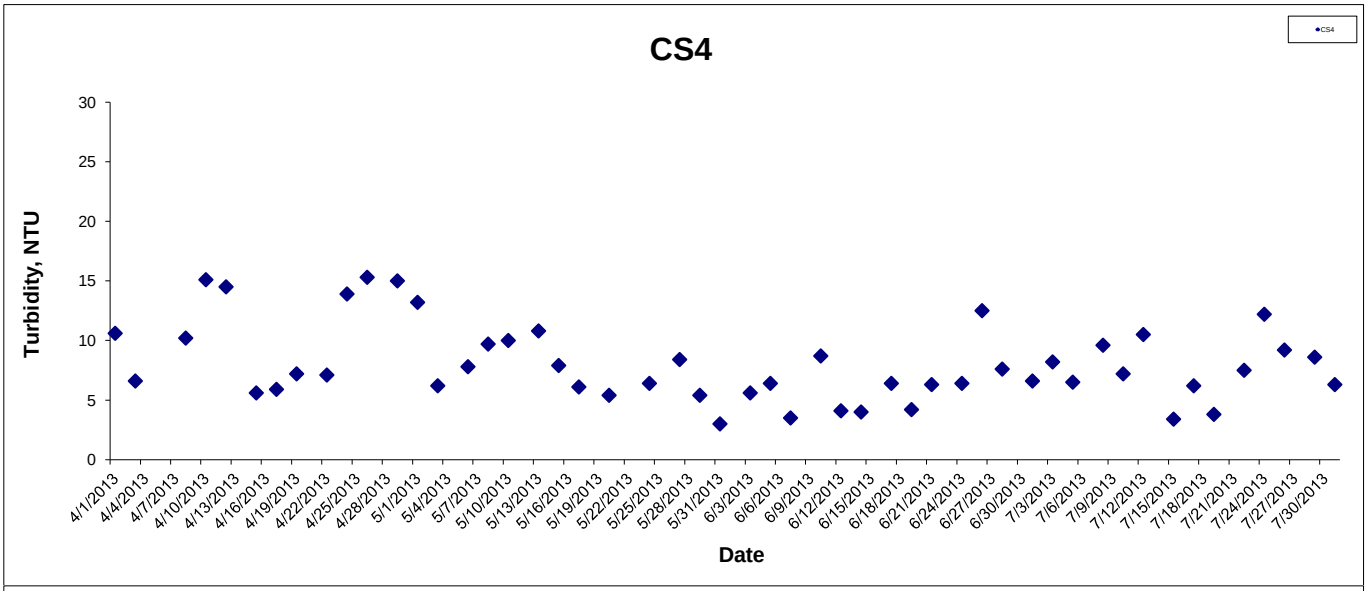
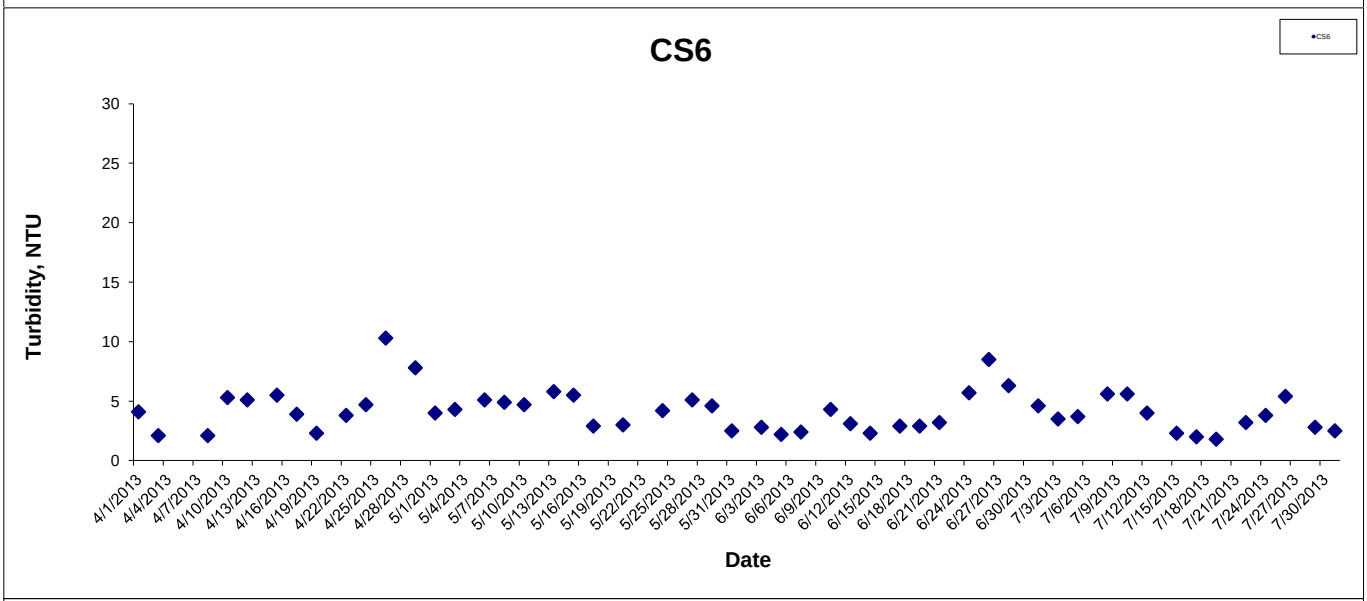
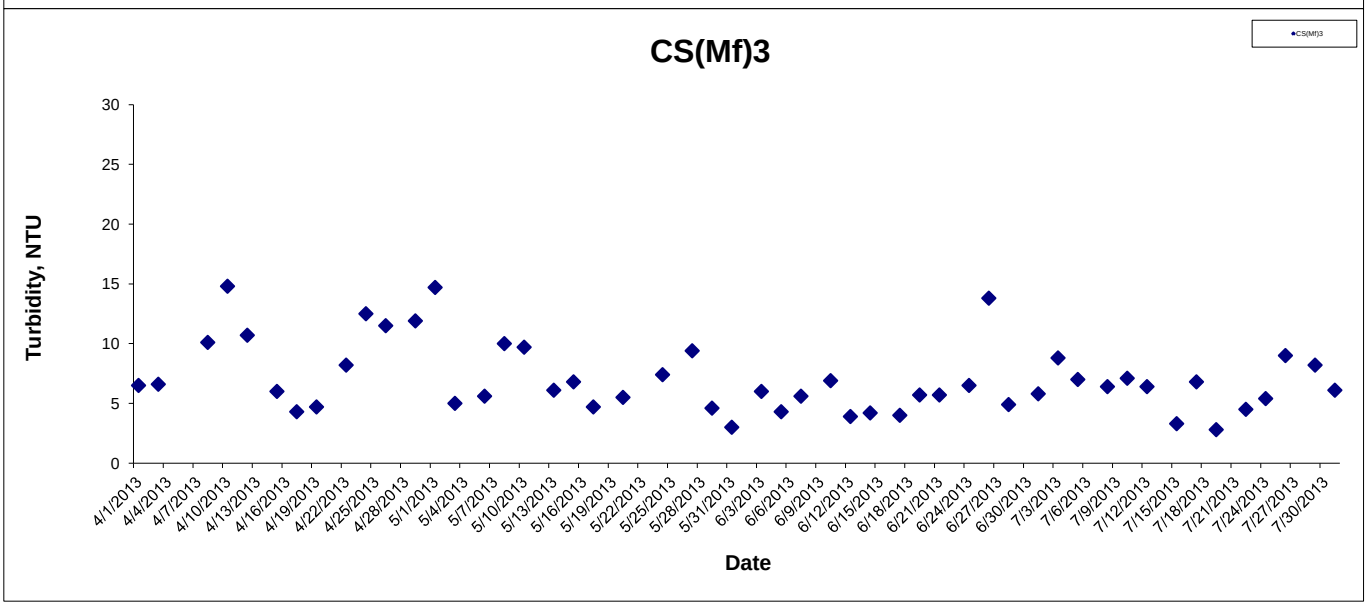
Turbidity at Mid-Ebb Tide







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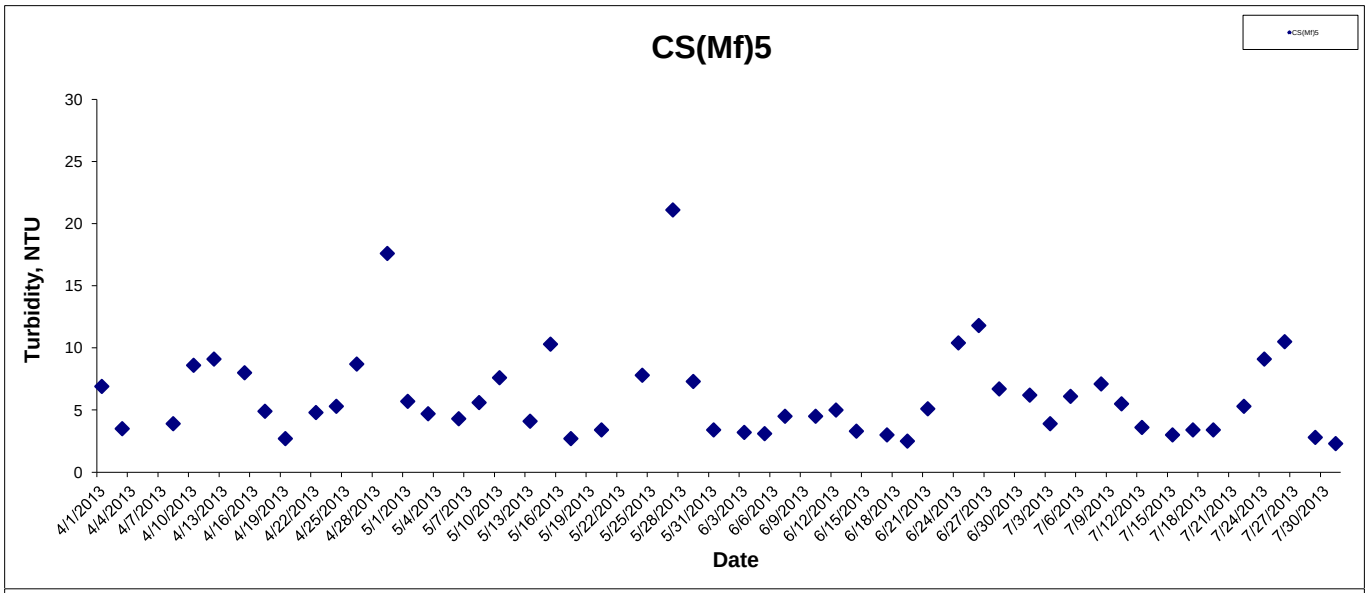
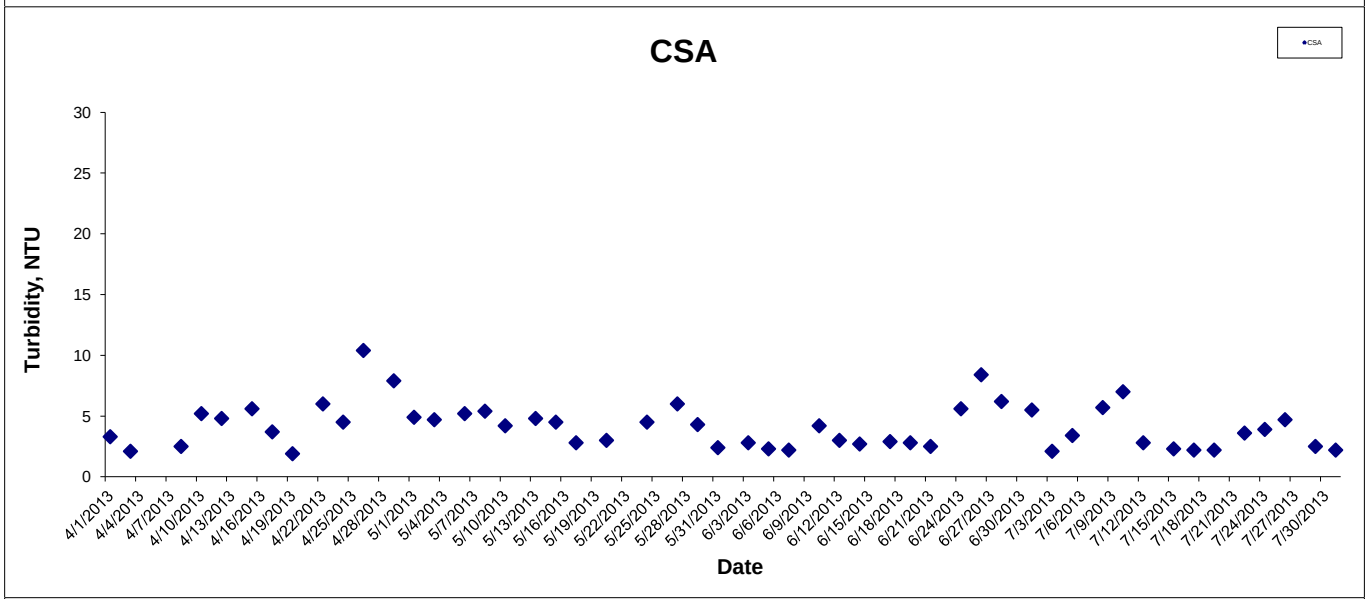
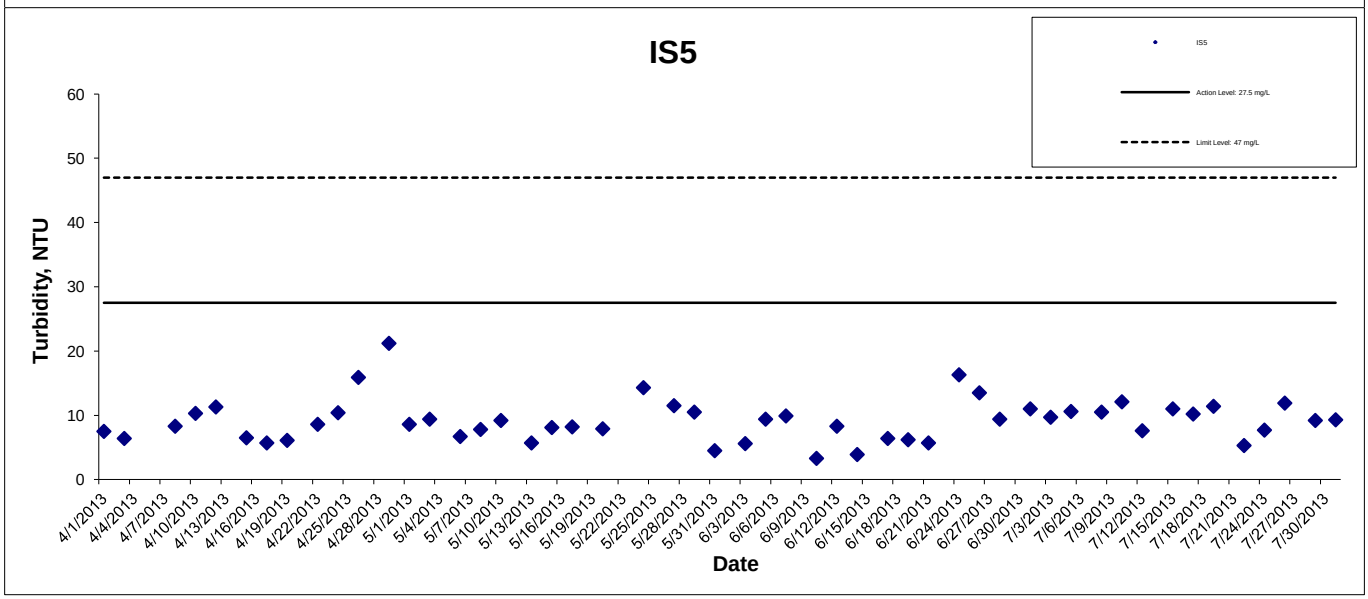
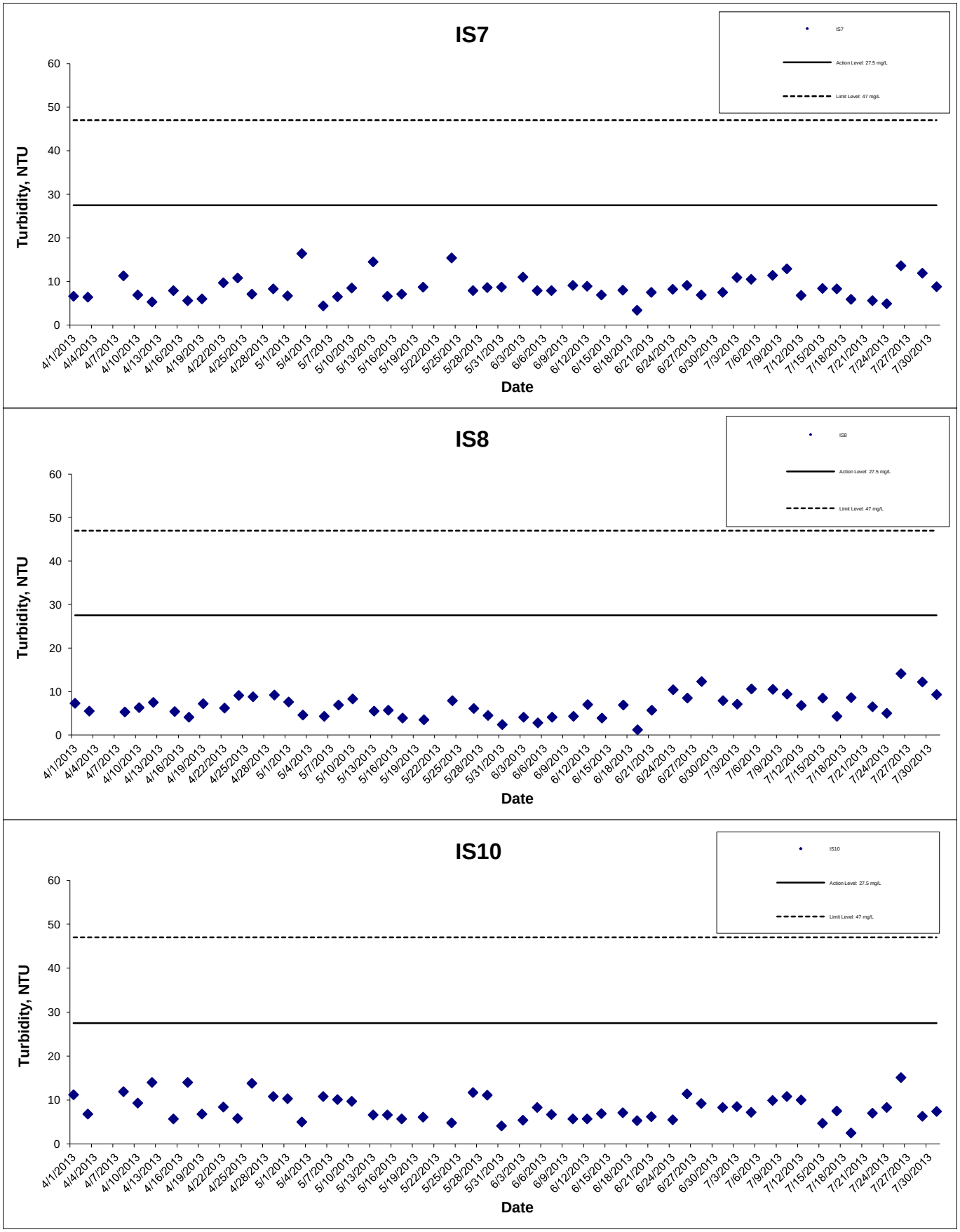






Turbidity at Mid-Ebb Tide



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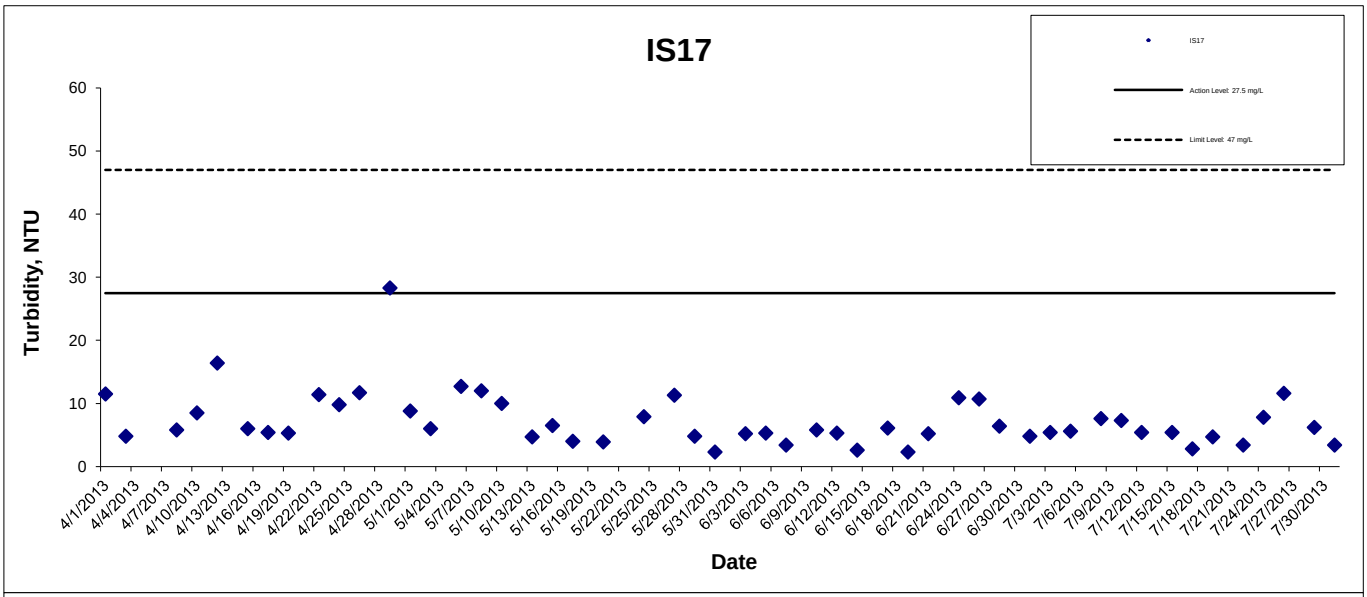

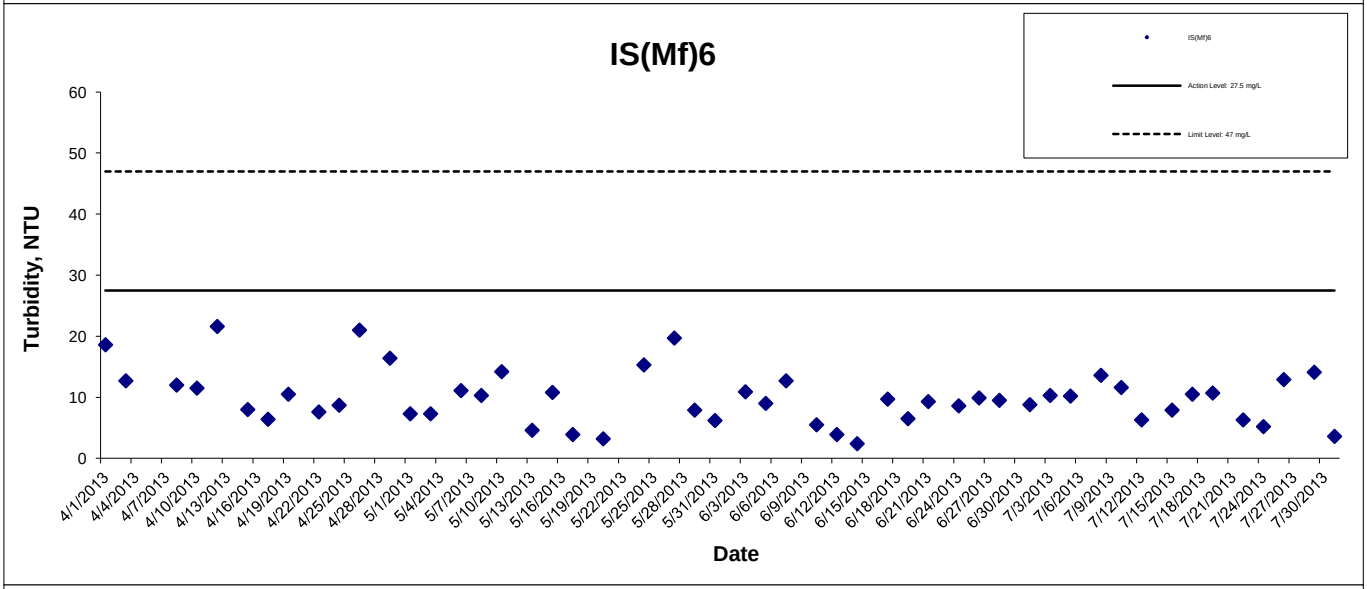

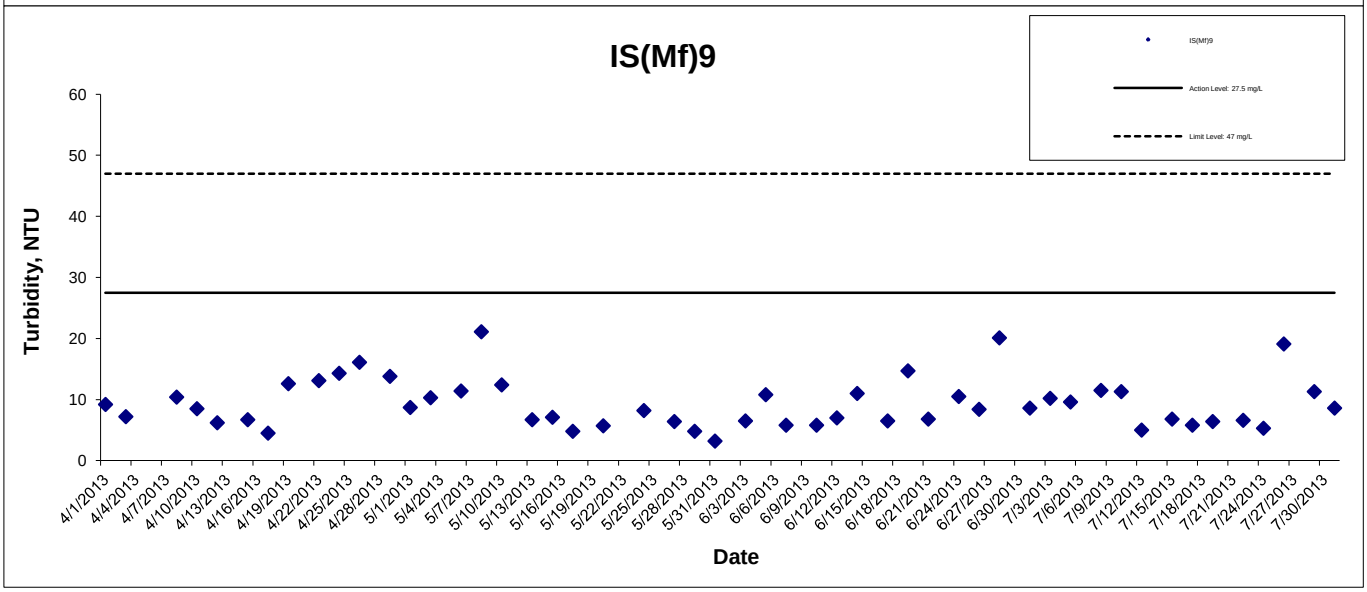

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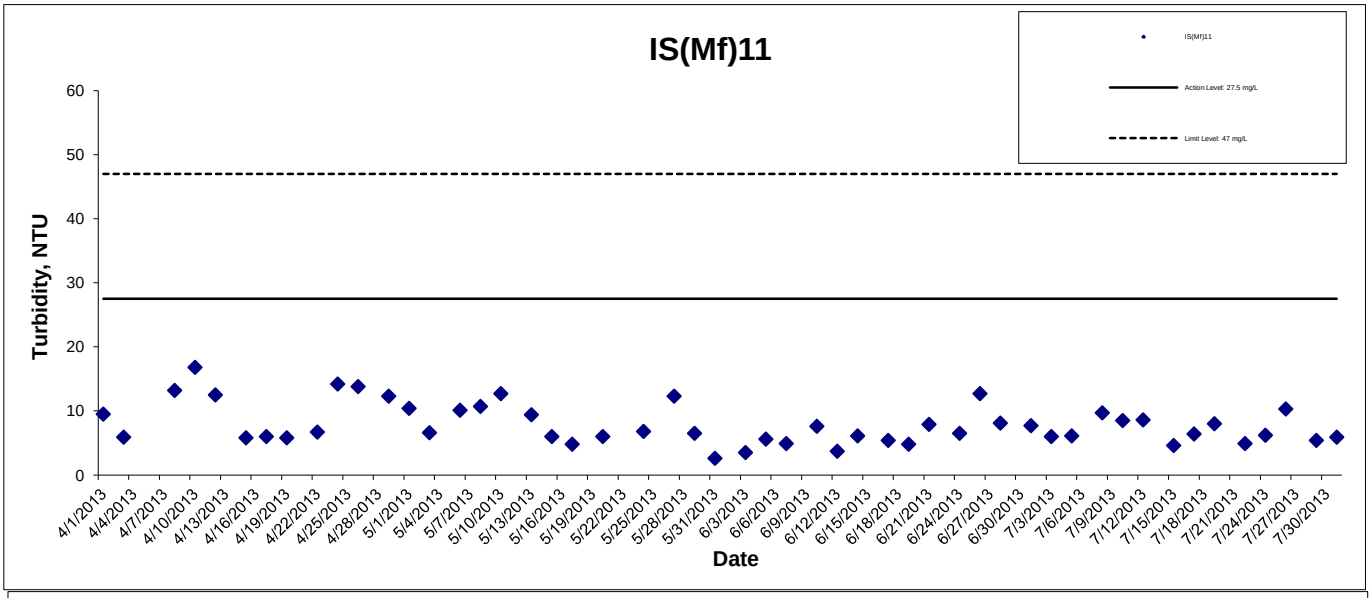
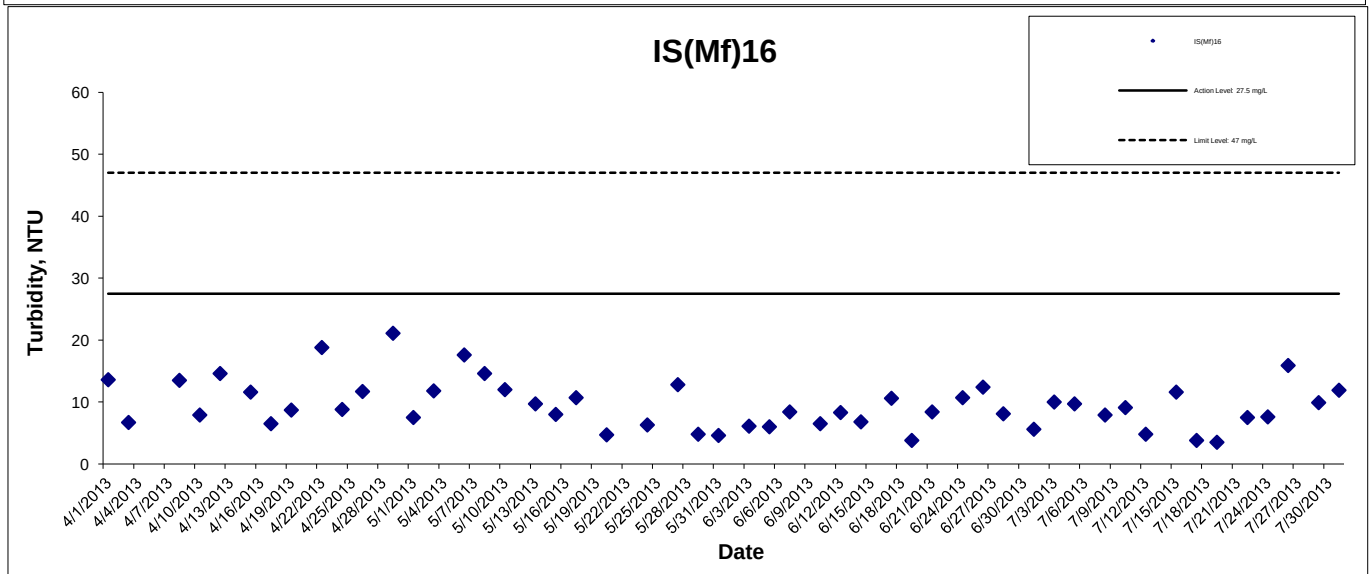
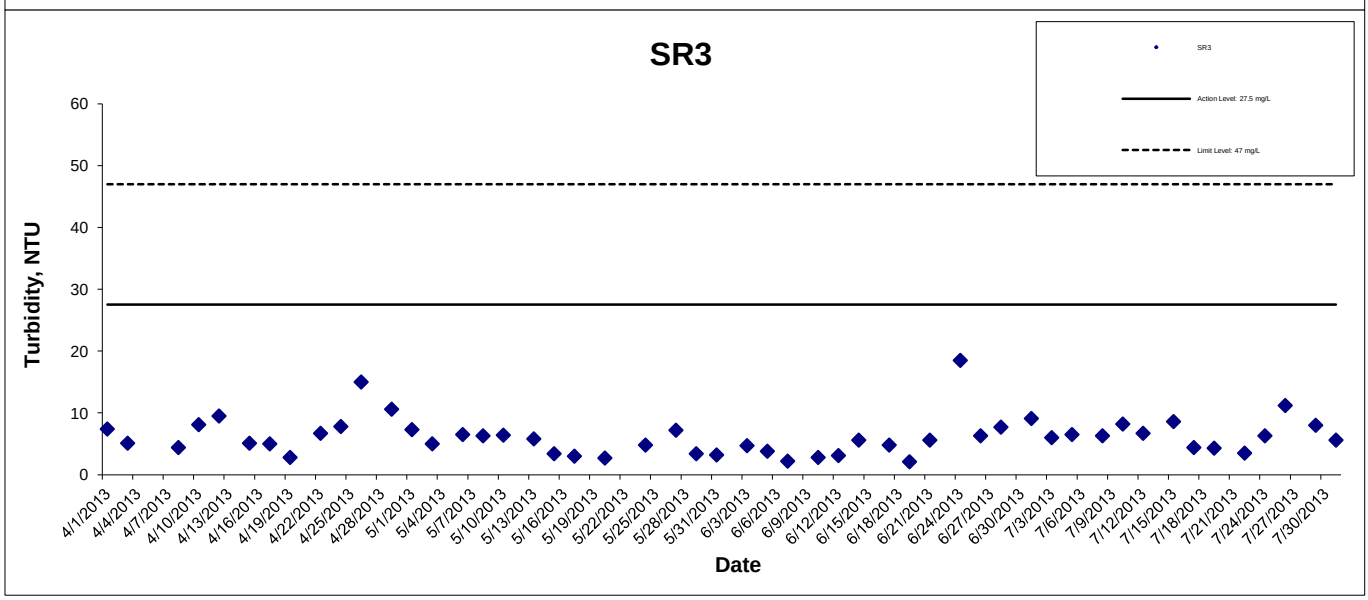
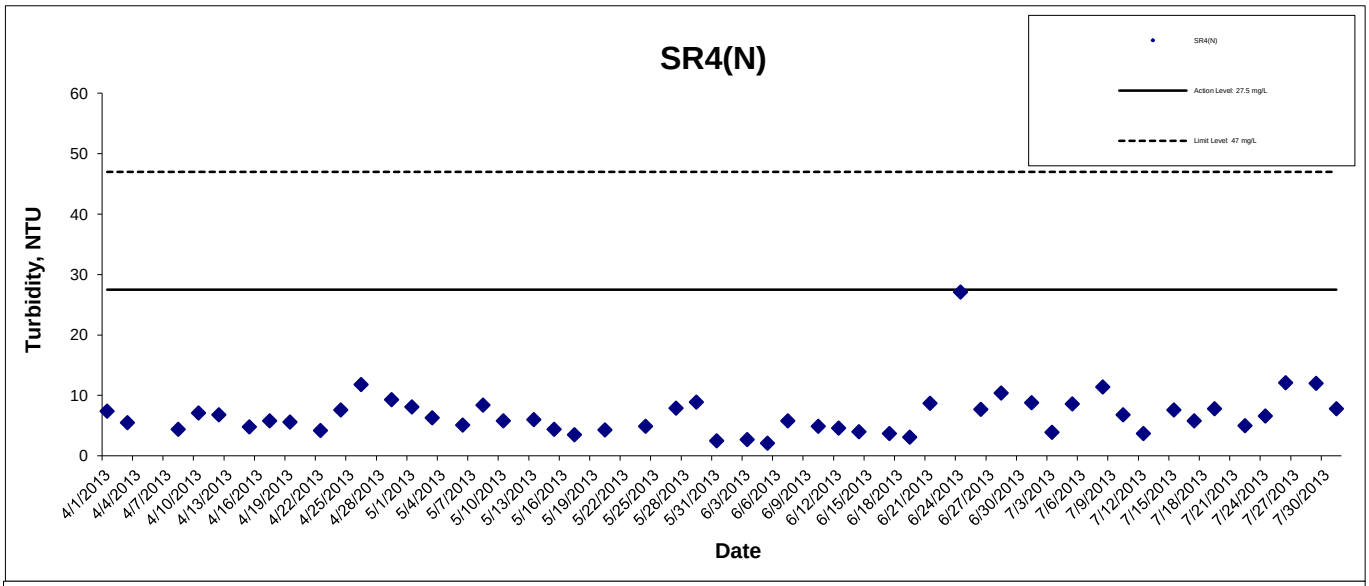
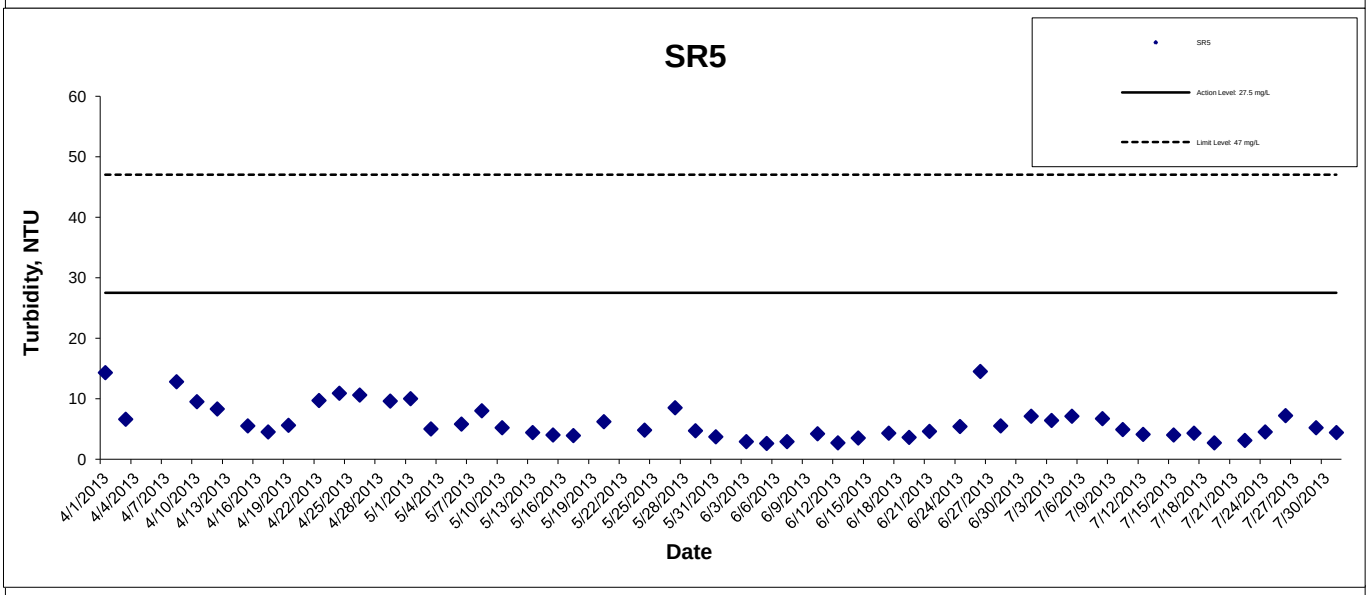


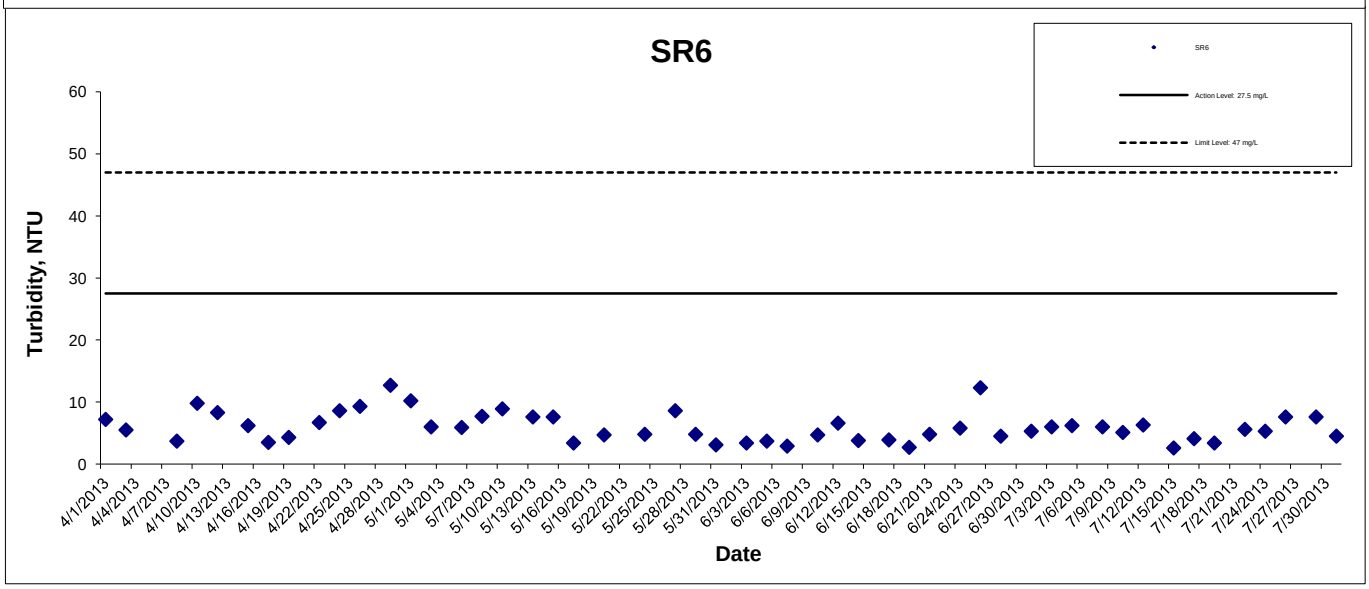




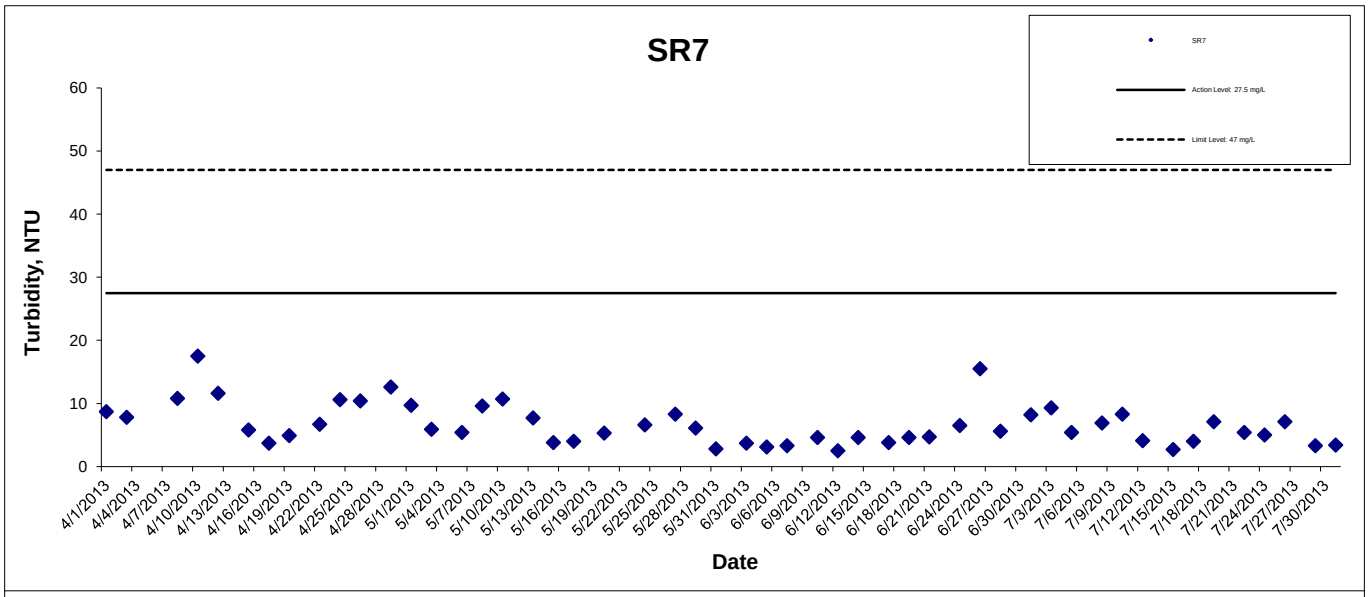
Turbidity at Mid-Ebb Tide

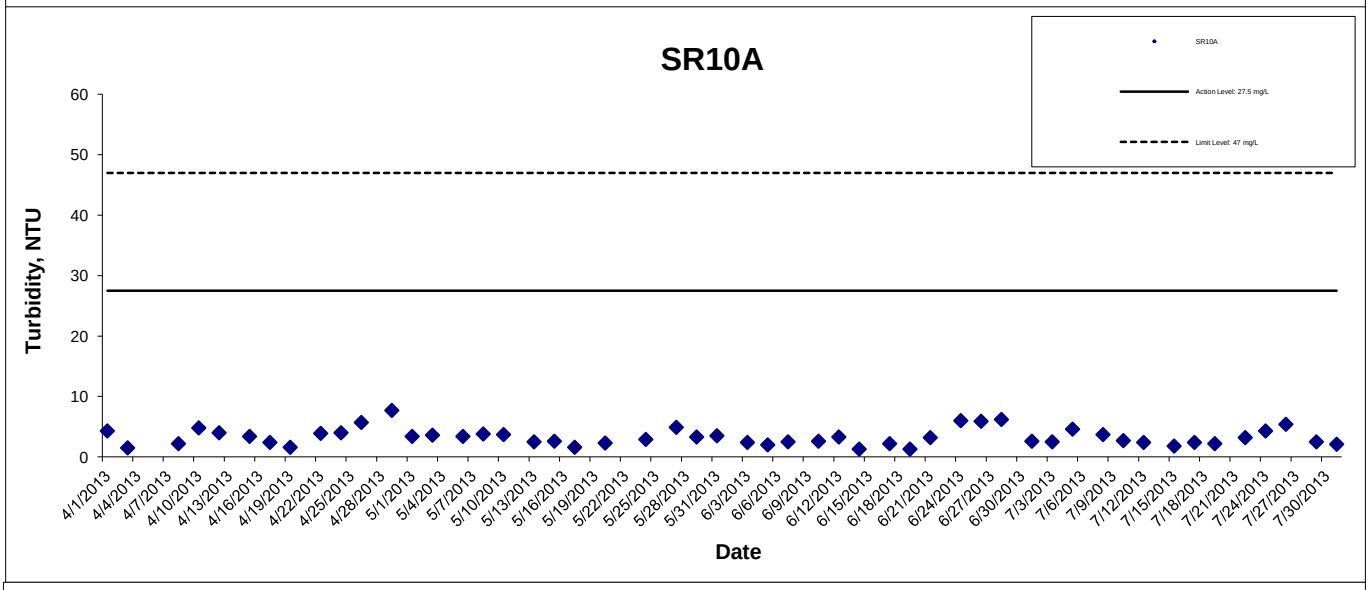


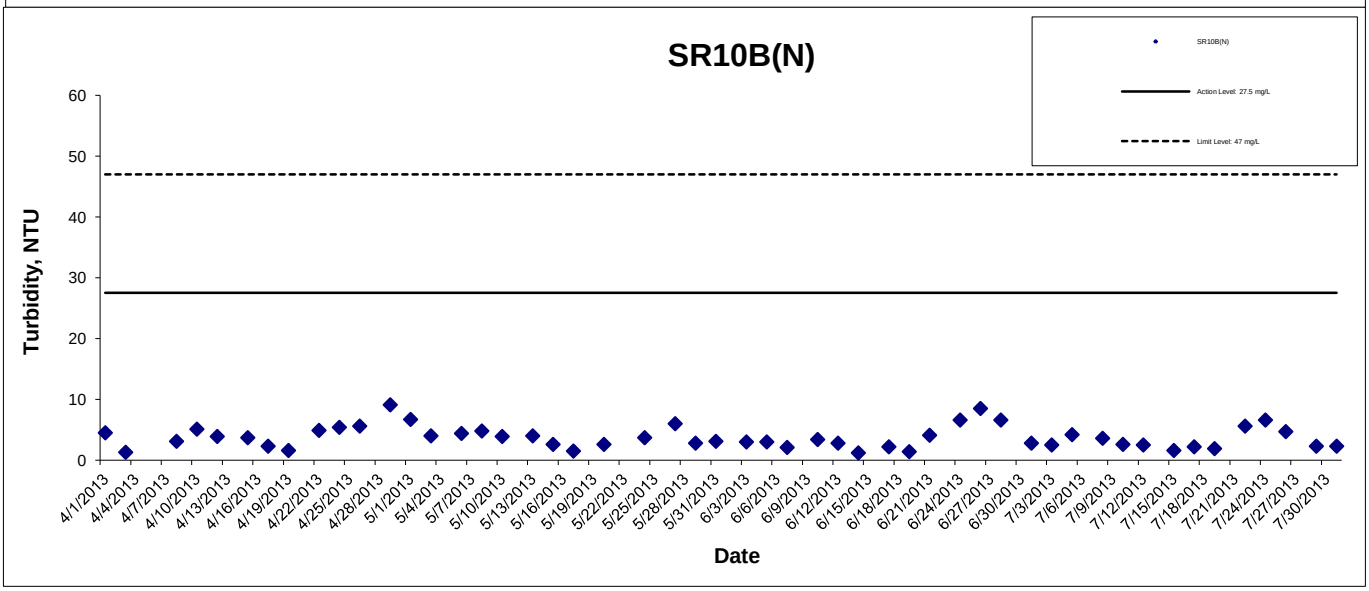




Turbidity at Mid-Ebb Tide







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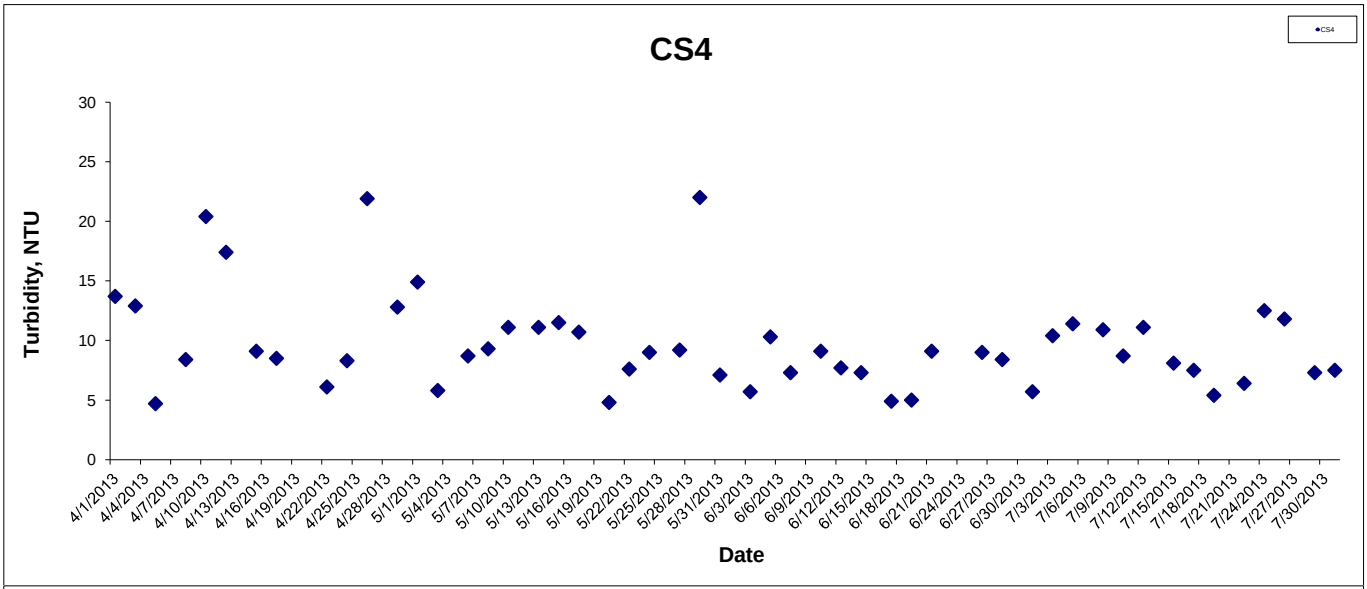
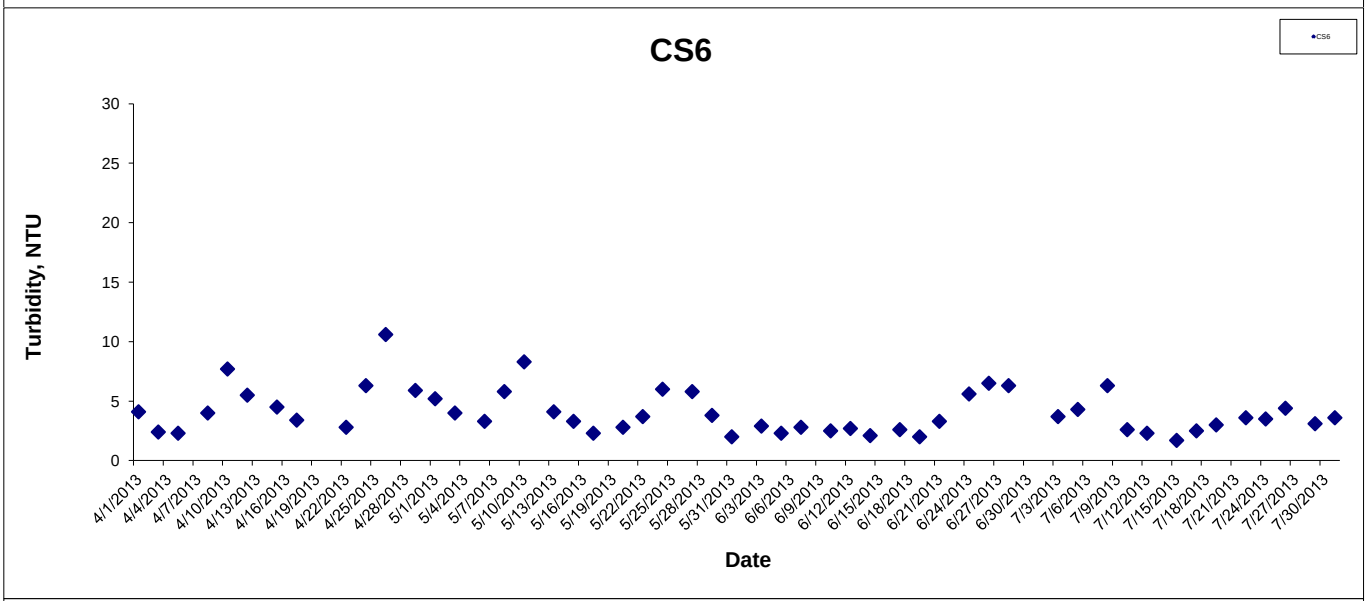
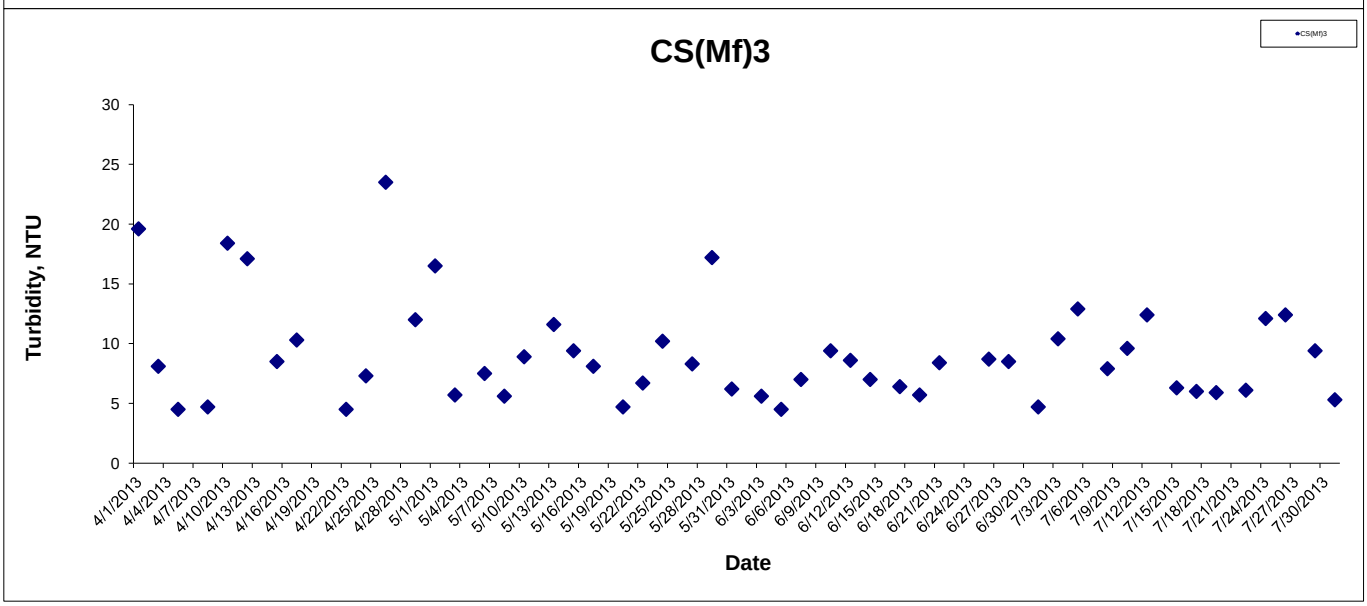
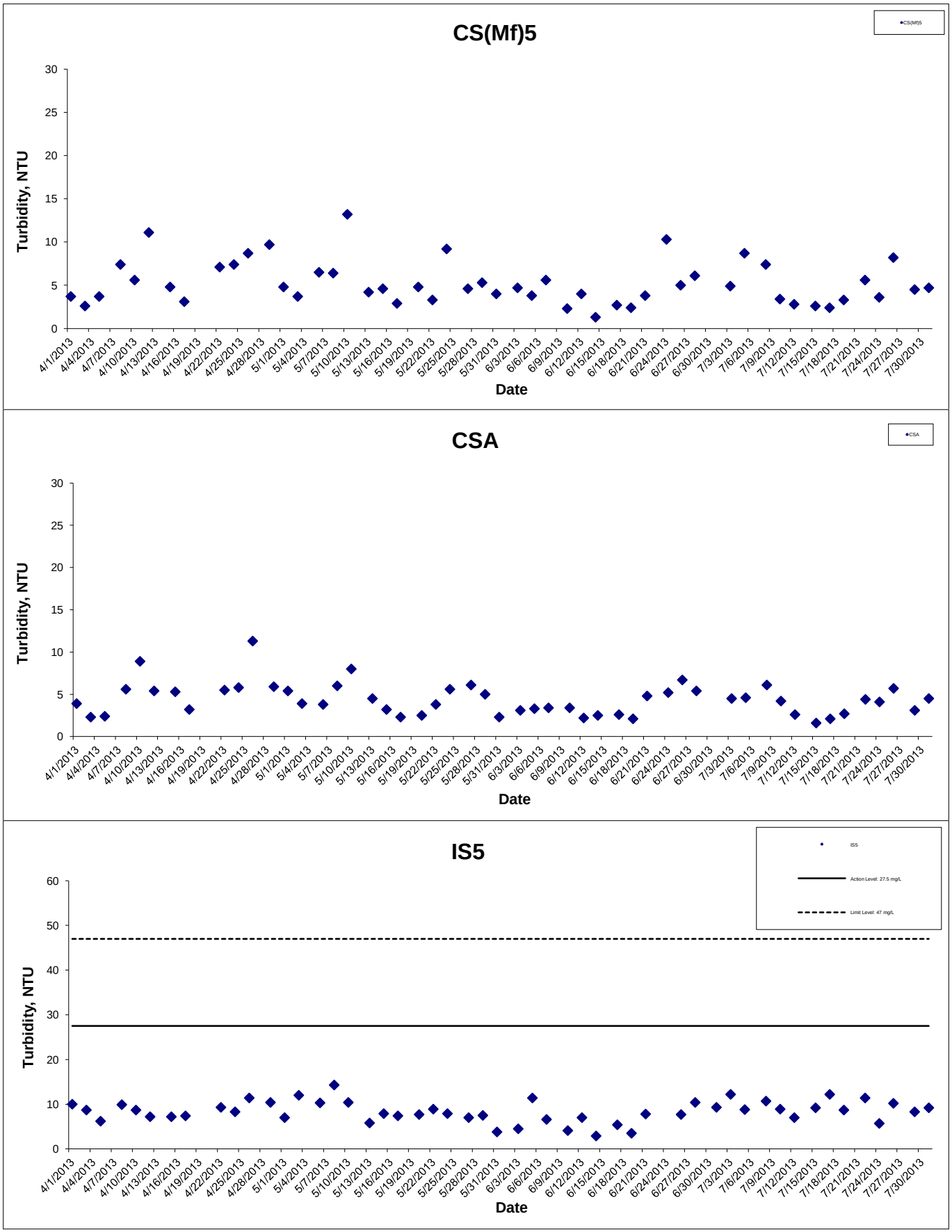
Turbidity at Mid-Flood Tide



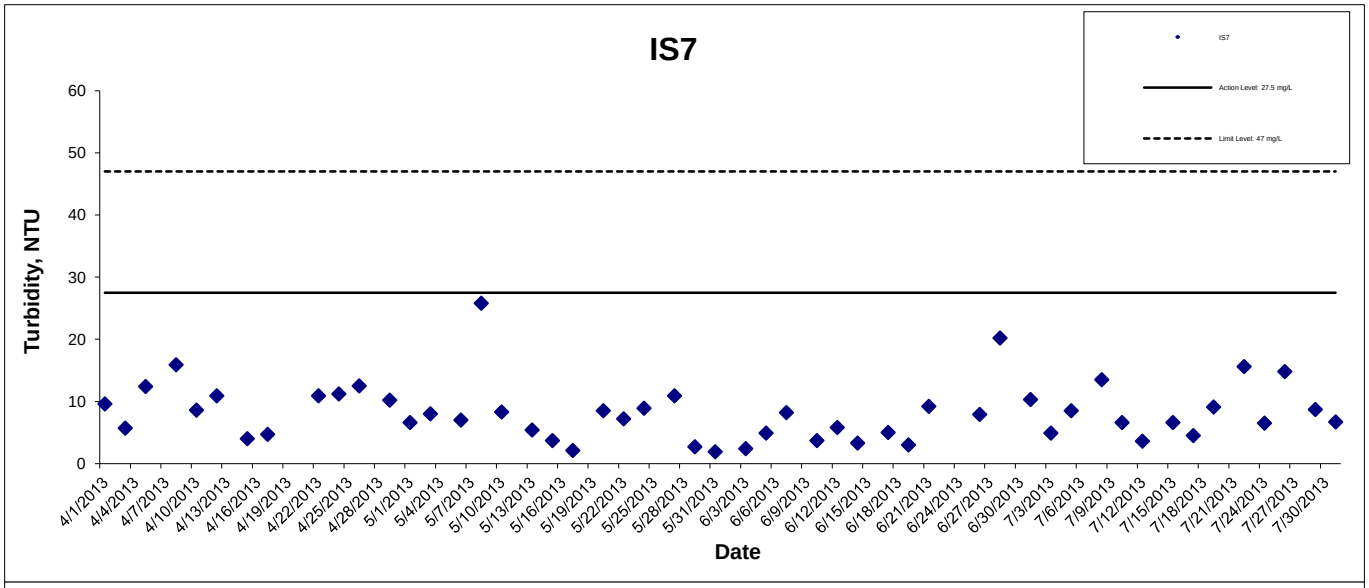


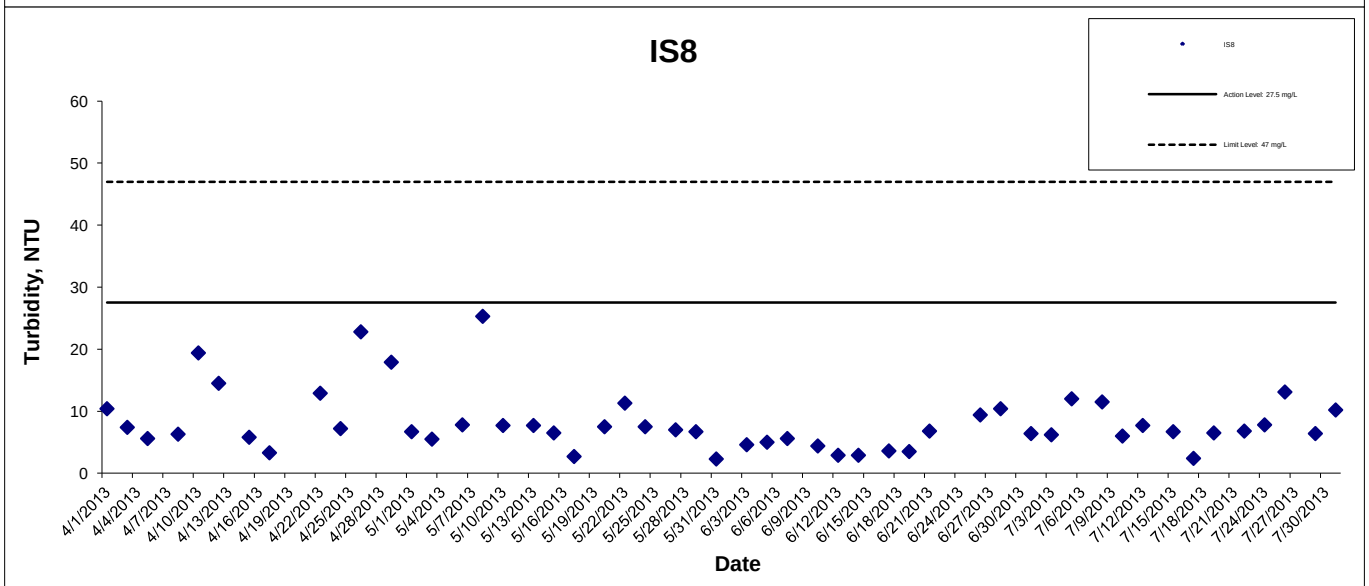


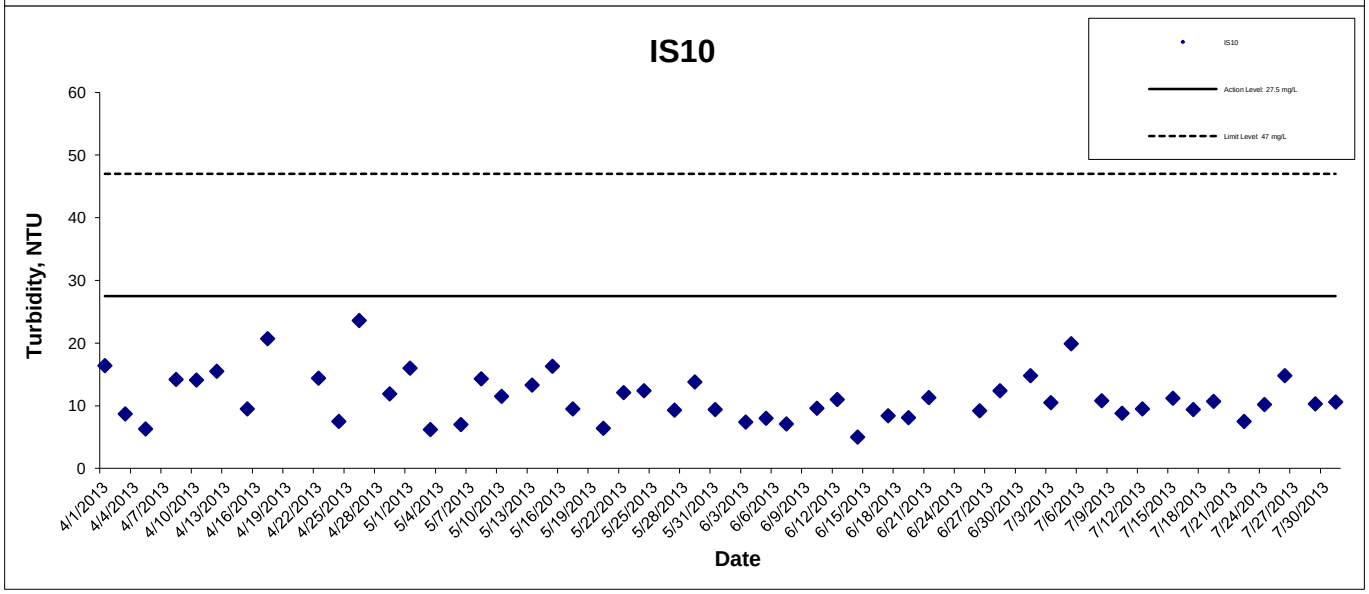
Turbidity at Mid-Flood Tide



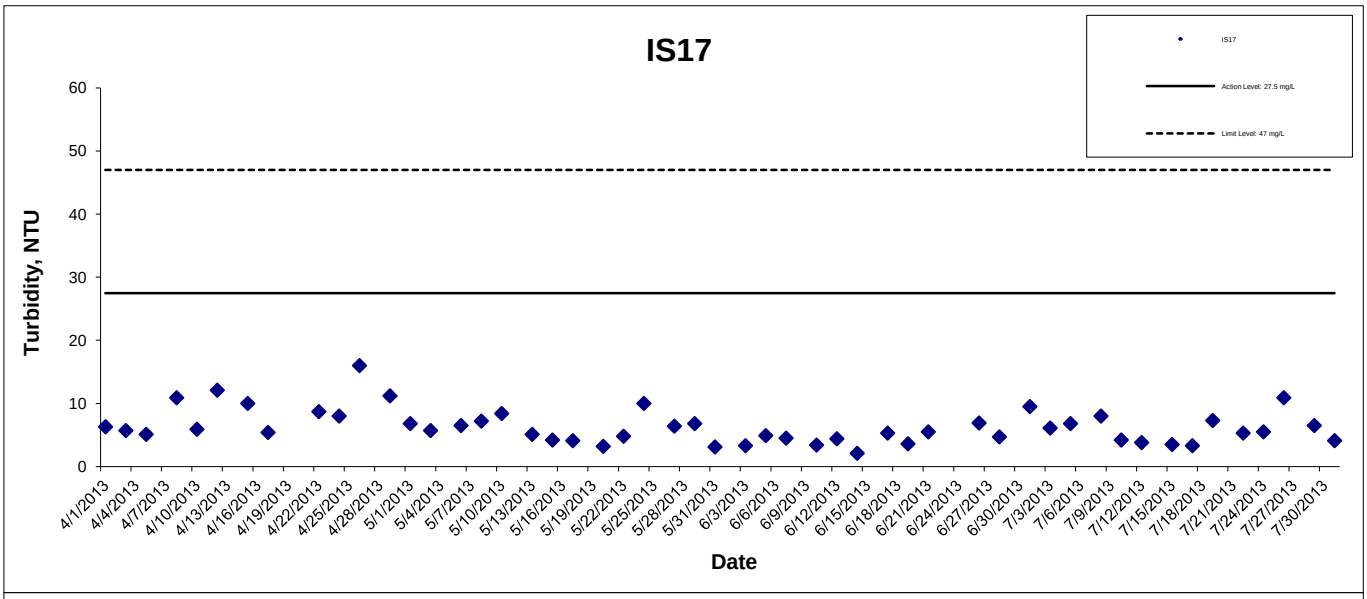
Turbidity at Mid-Flood Tide

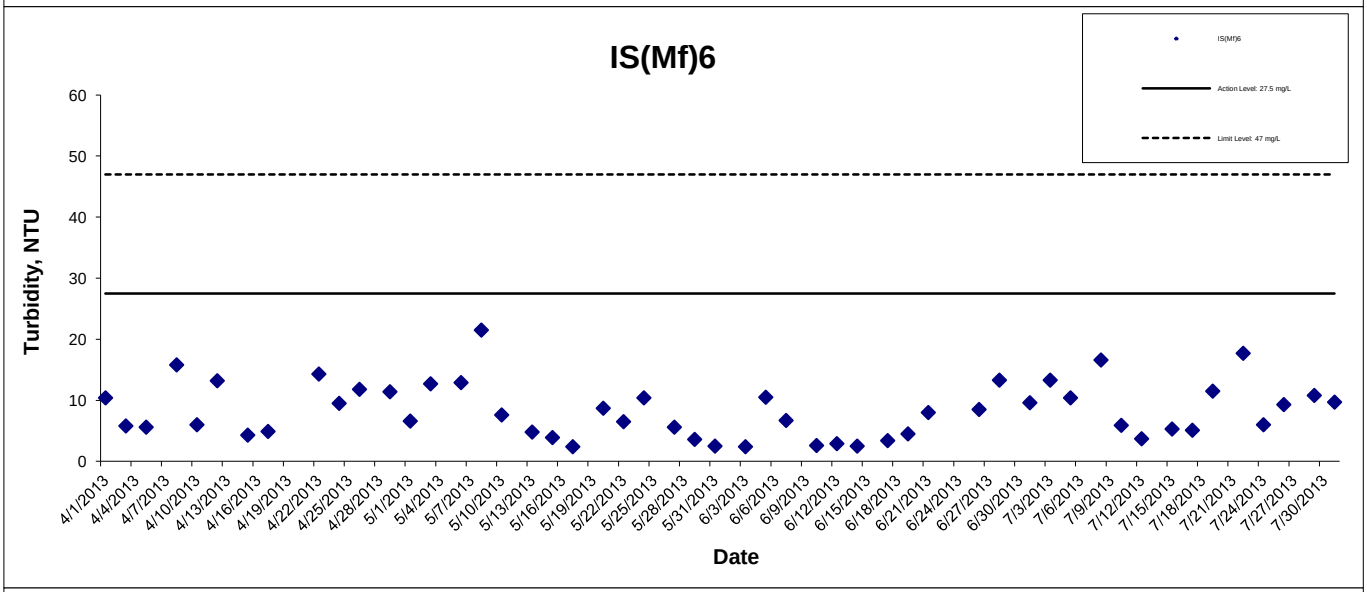


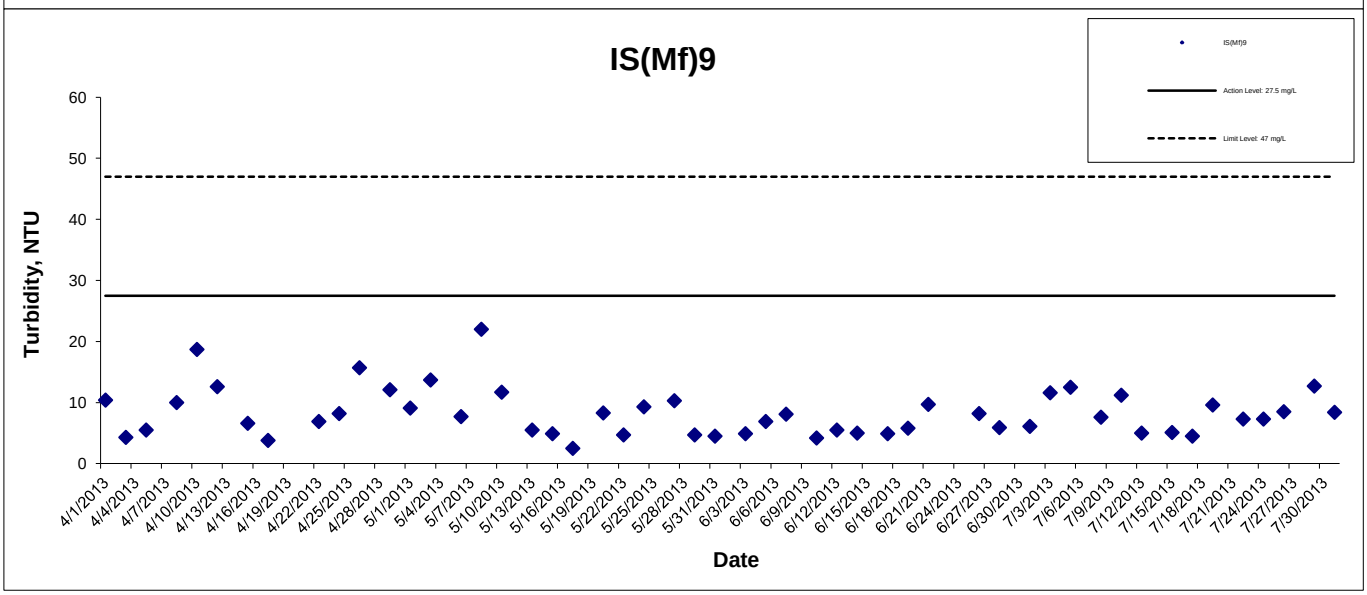




Turbidity at Mid-Flood Tide







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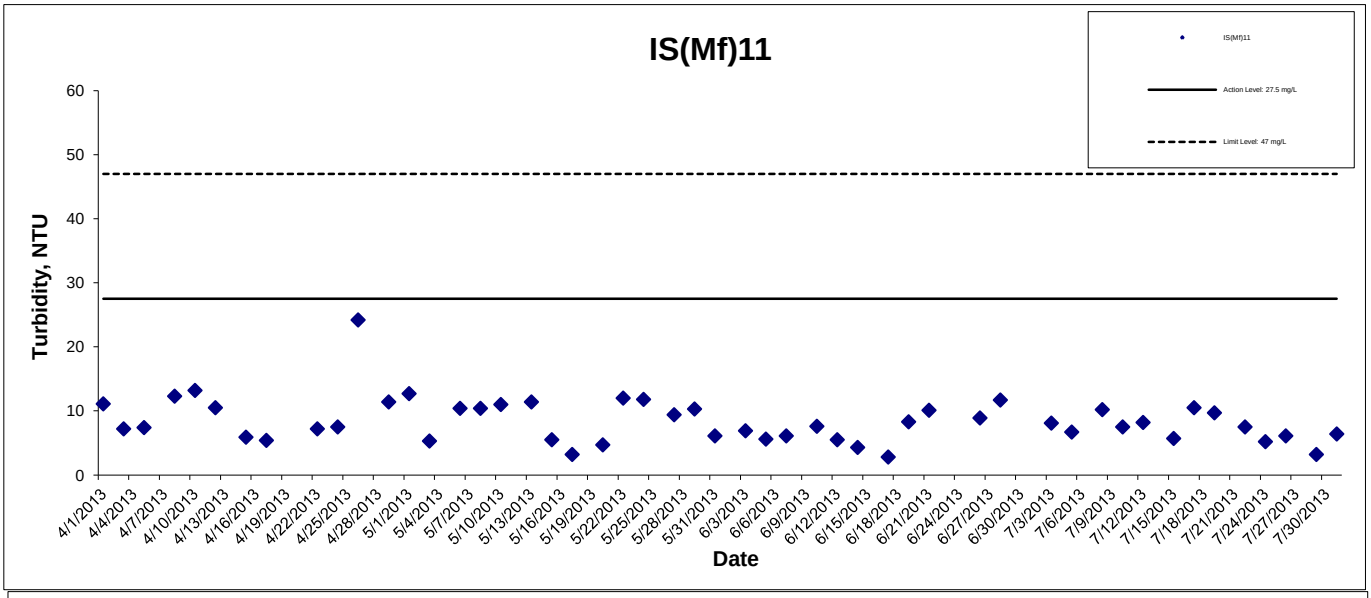
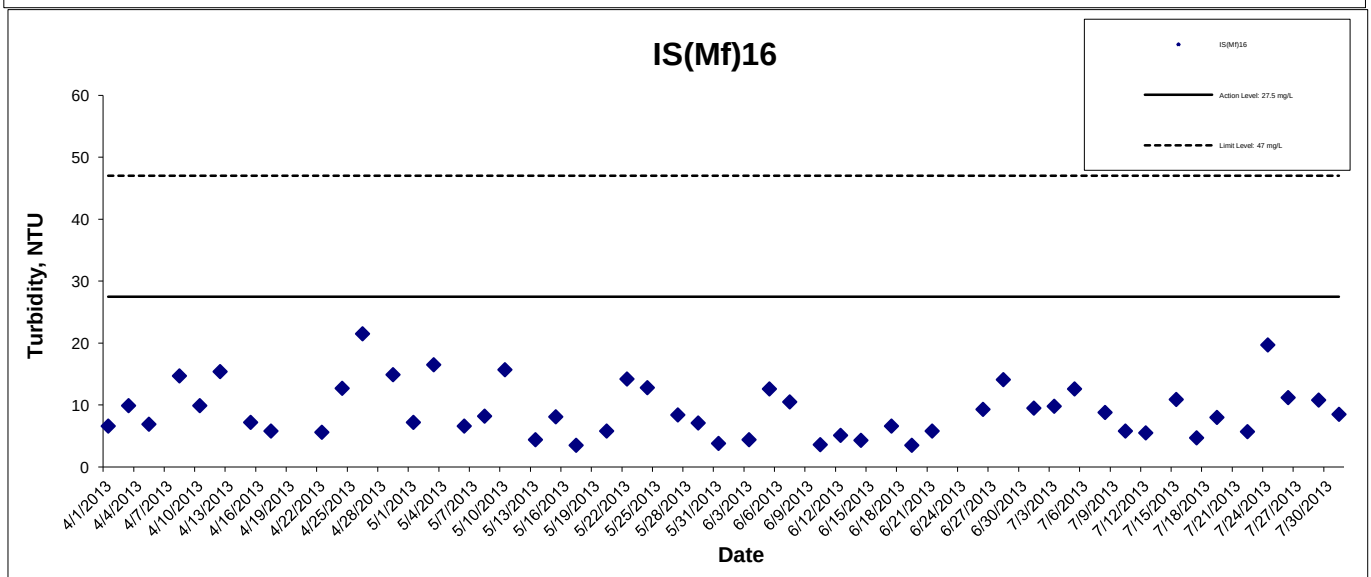
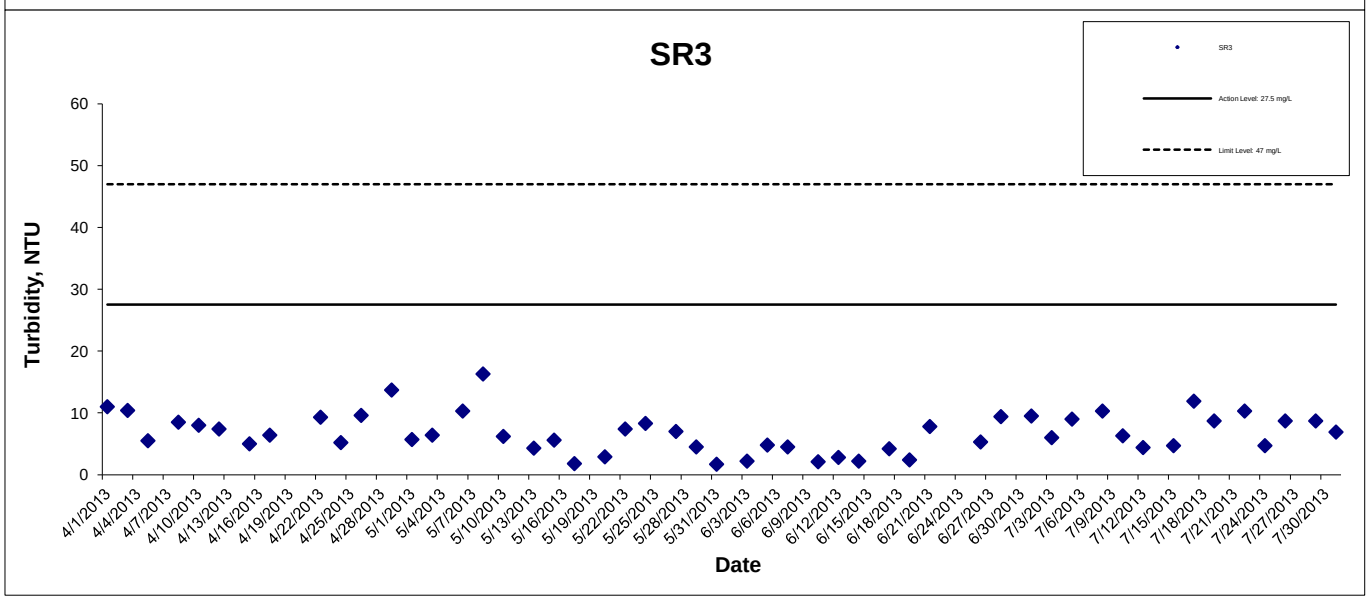
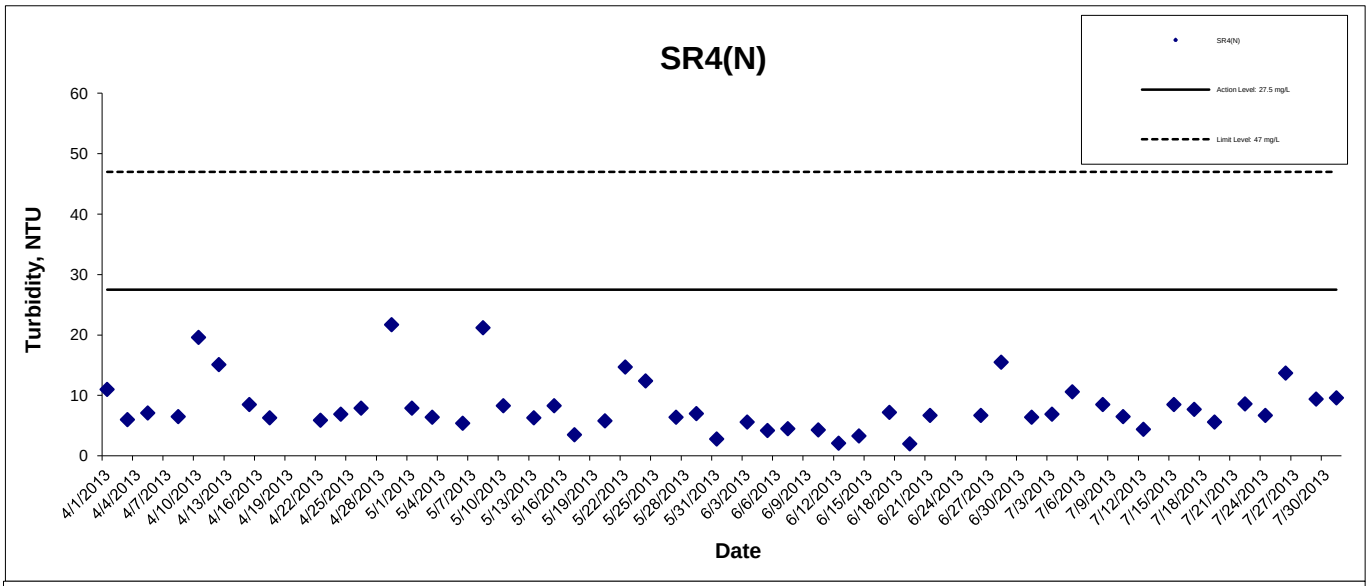
Turbidity at Mid-Flood Tide

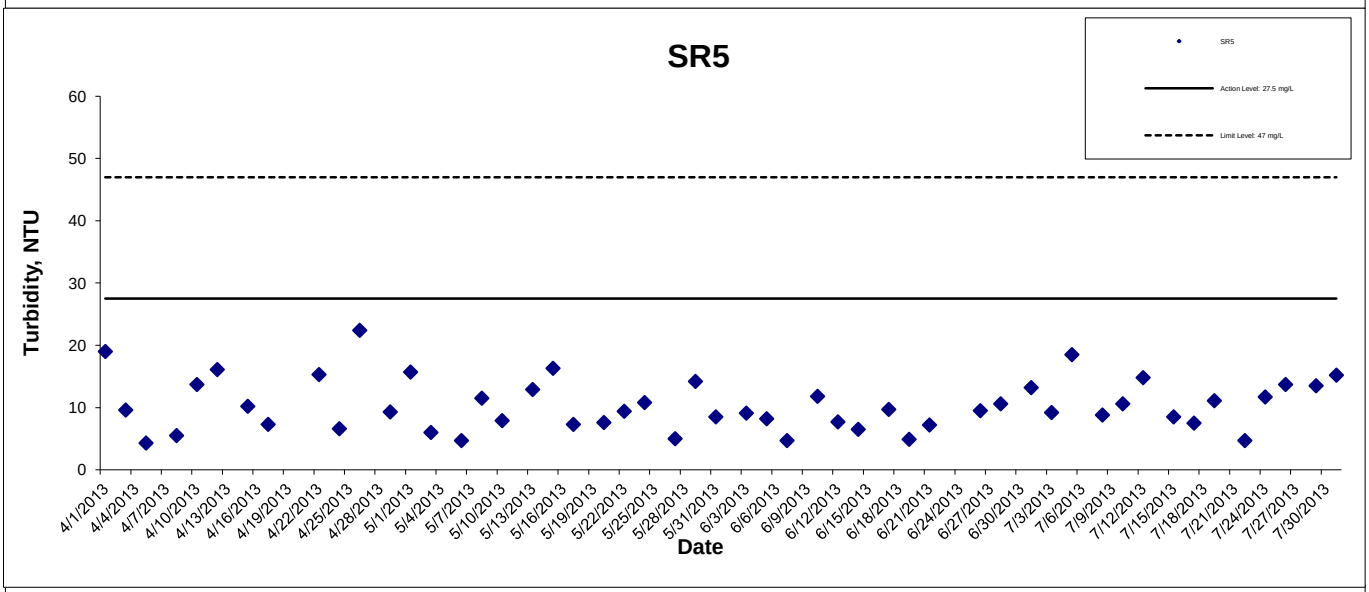


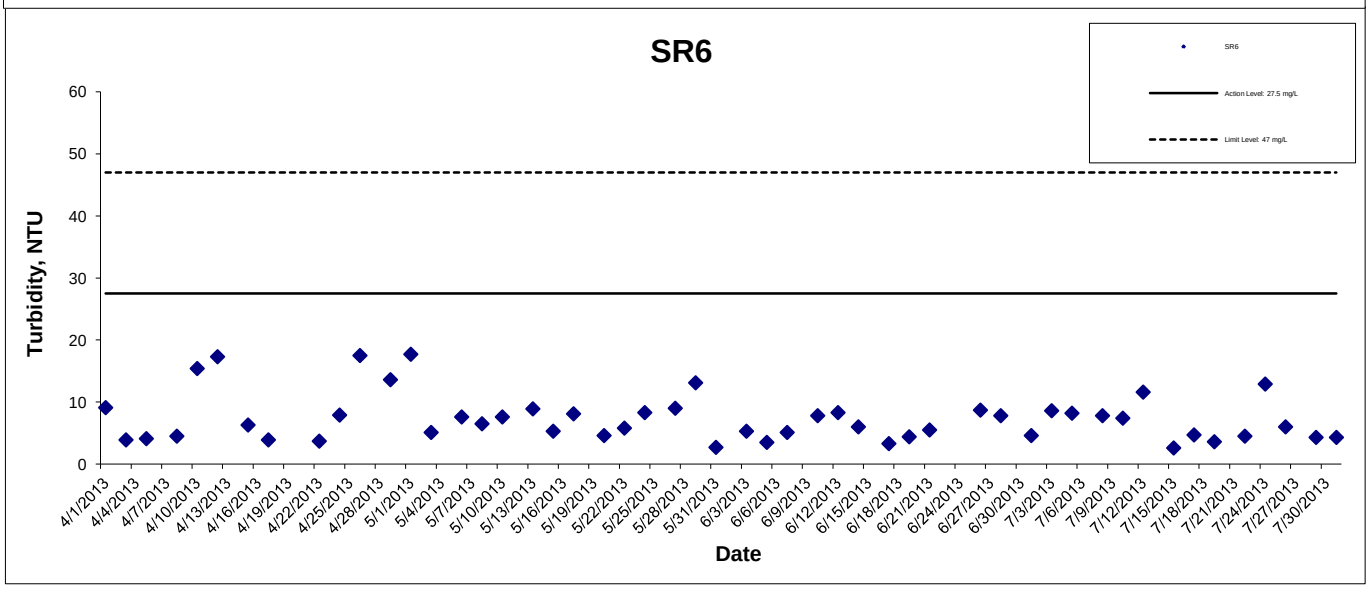




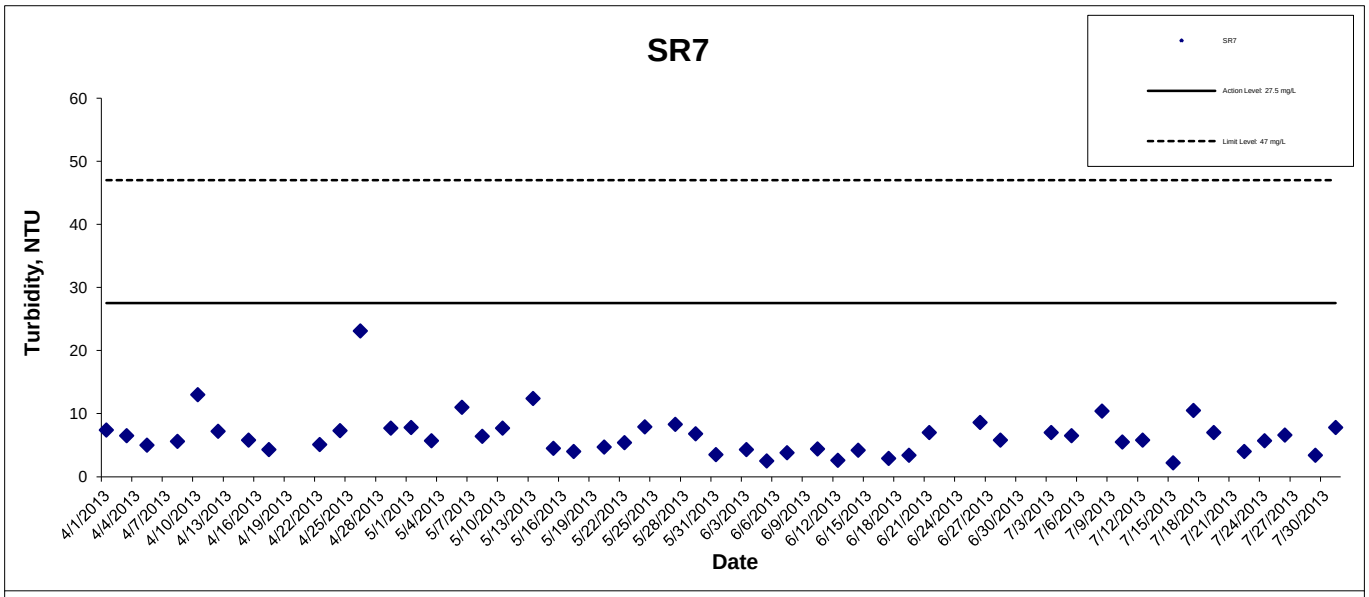
Turbidity at Mid-Flood Tide

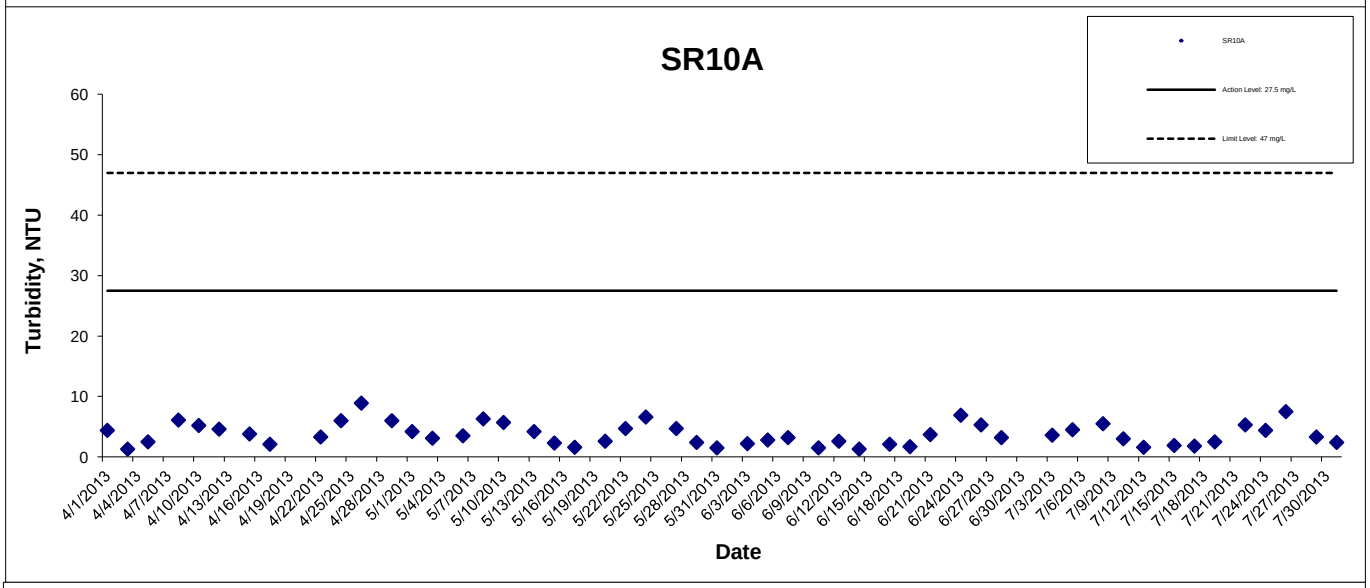


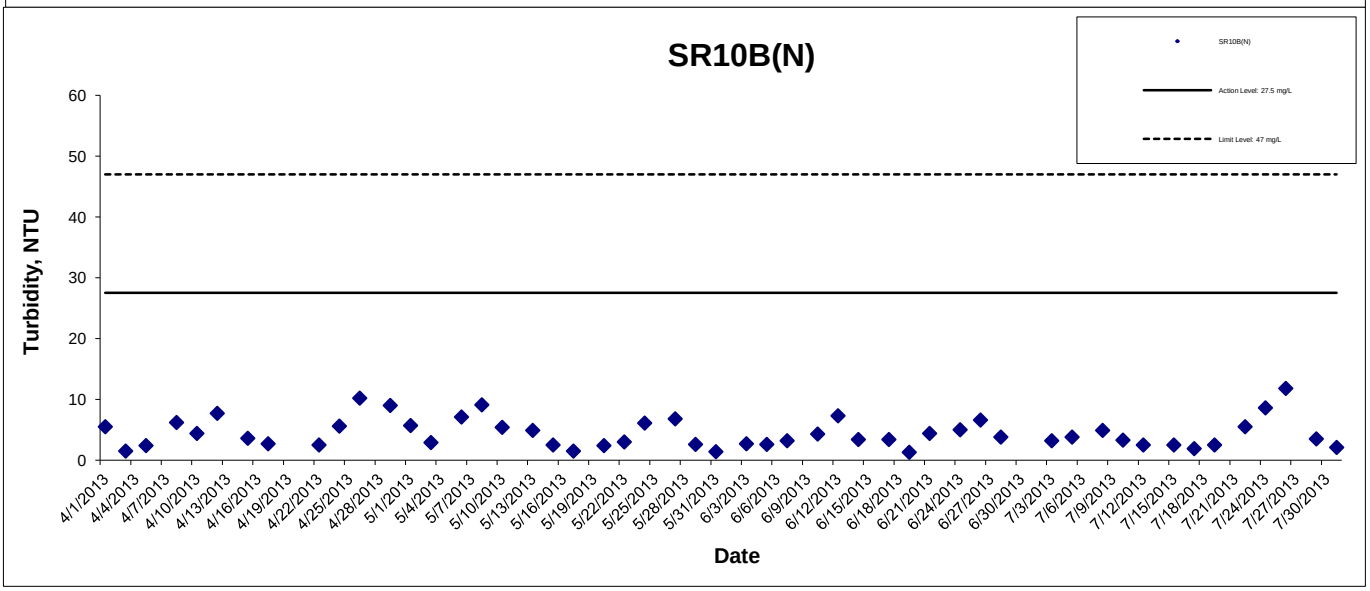




Turbidity at Mid-Flood Tide







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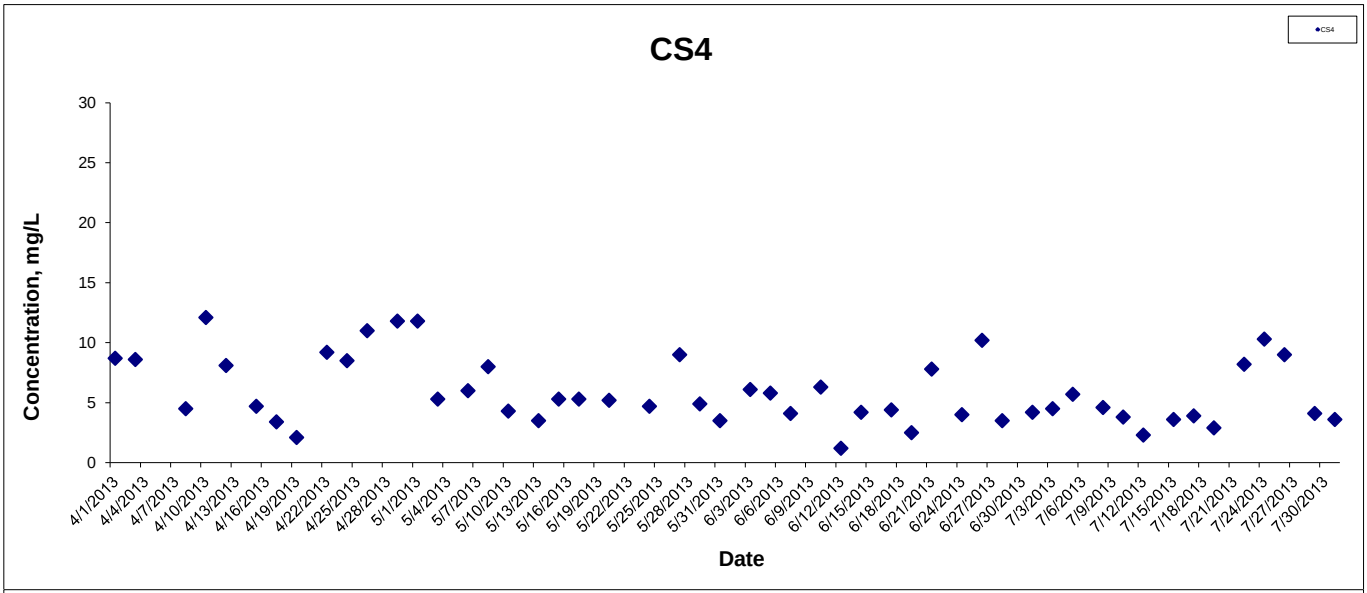
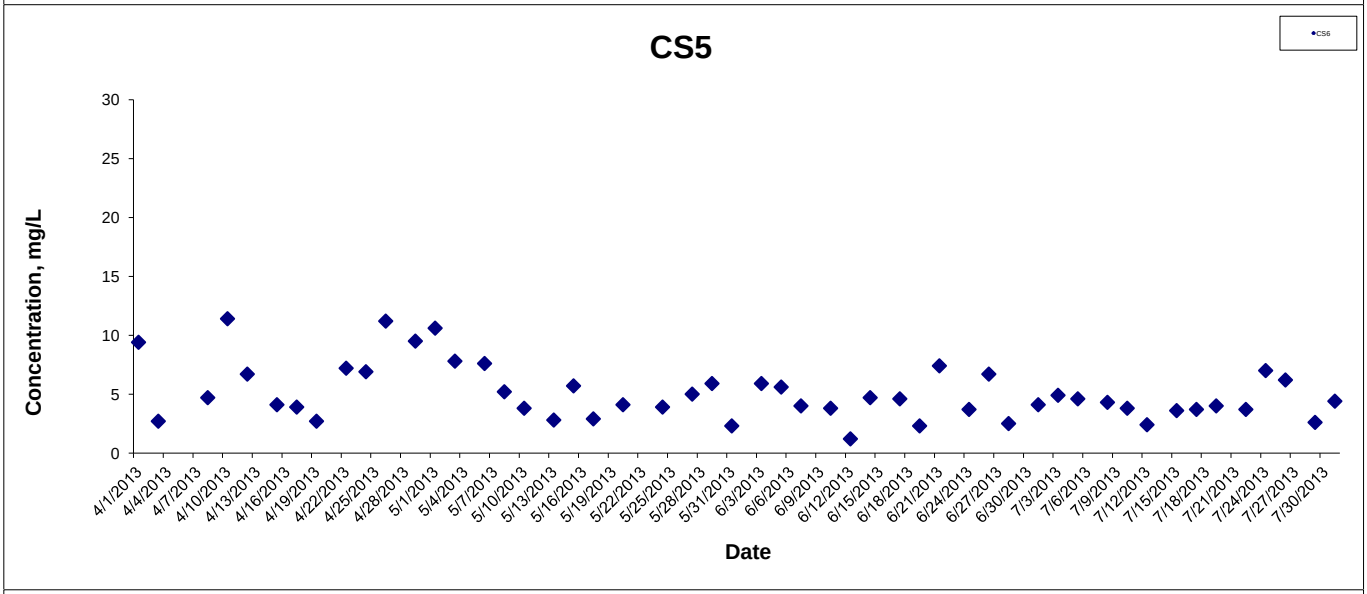
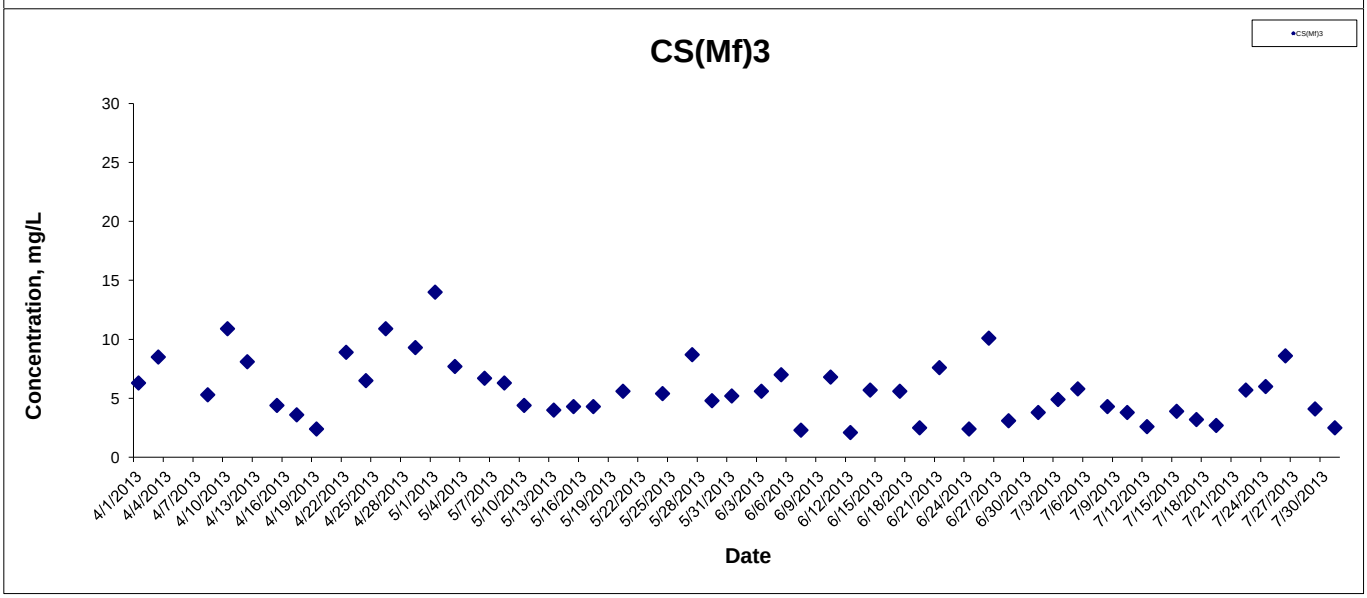
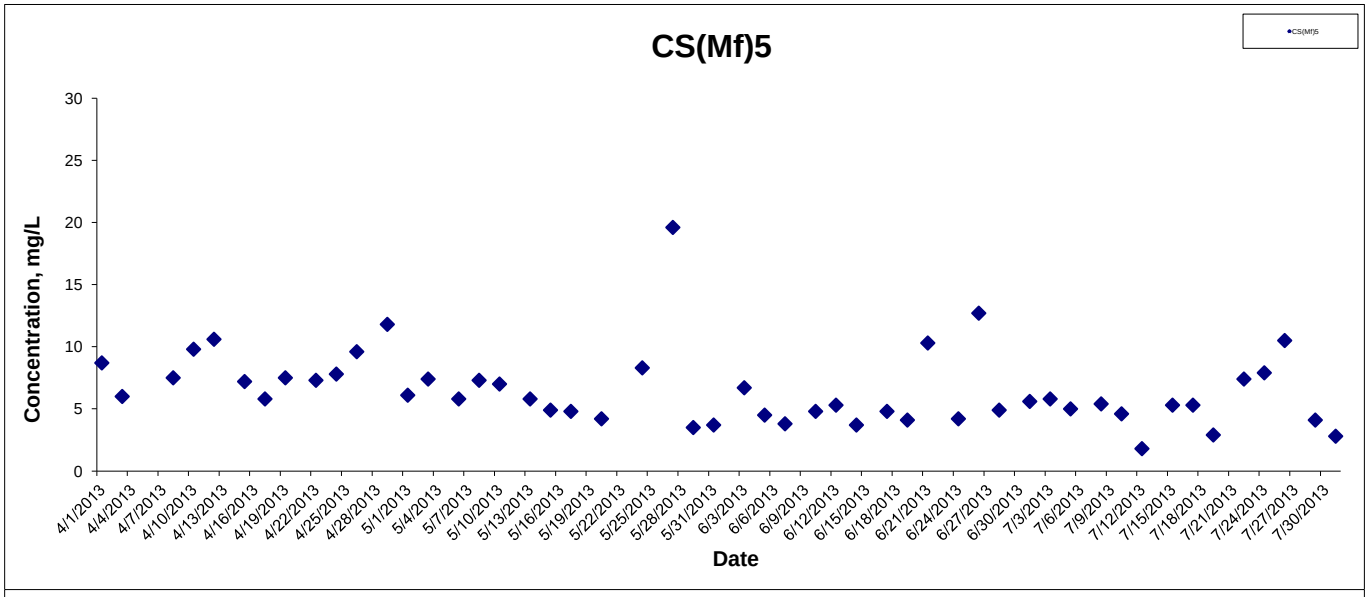
Suspended Solids at Mid-Ebb Tide

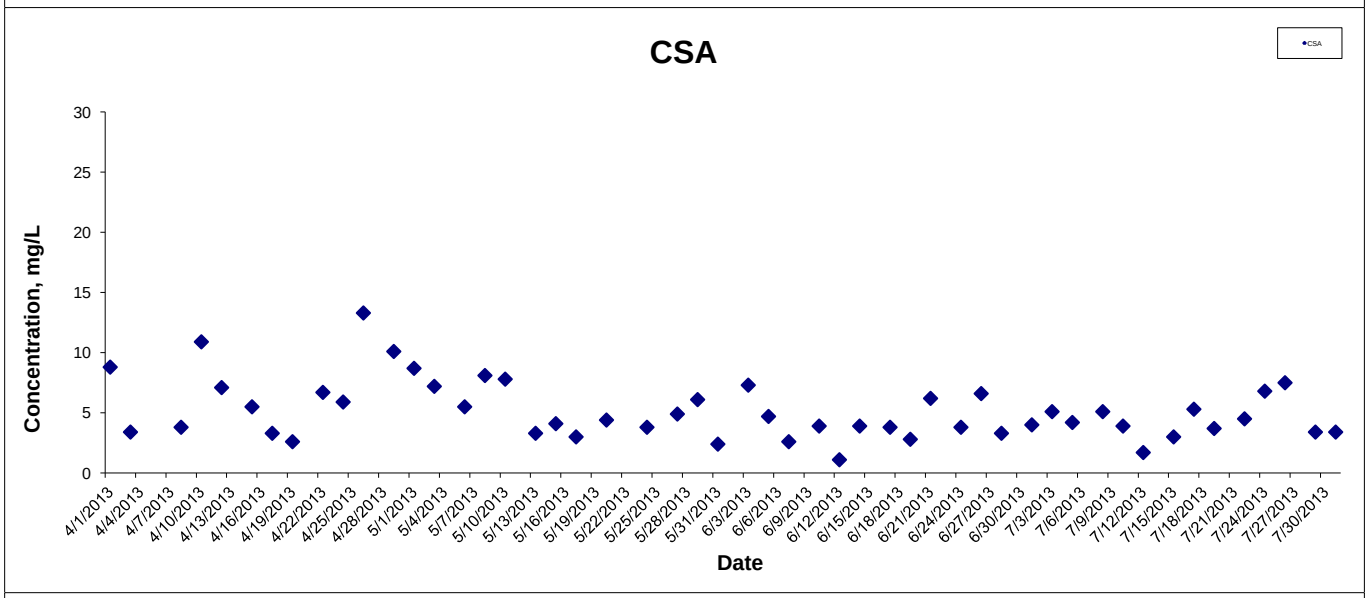


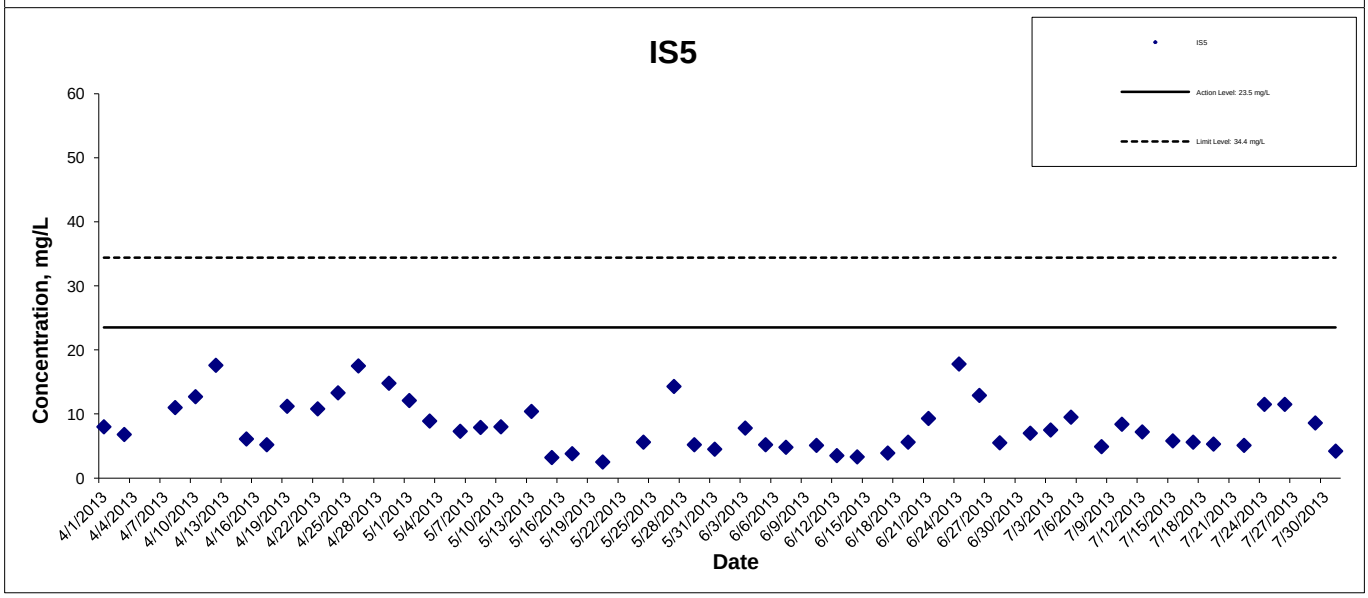




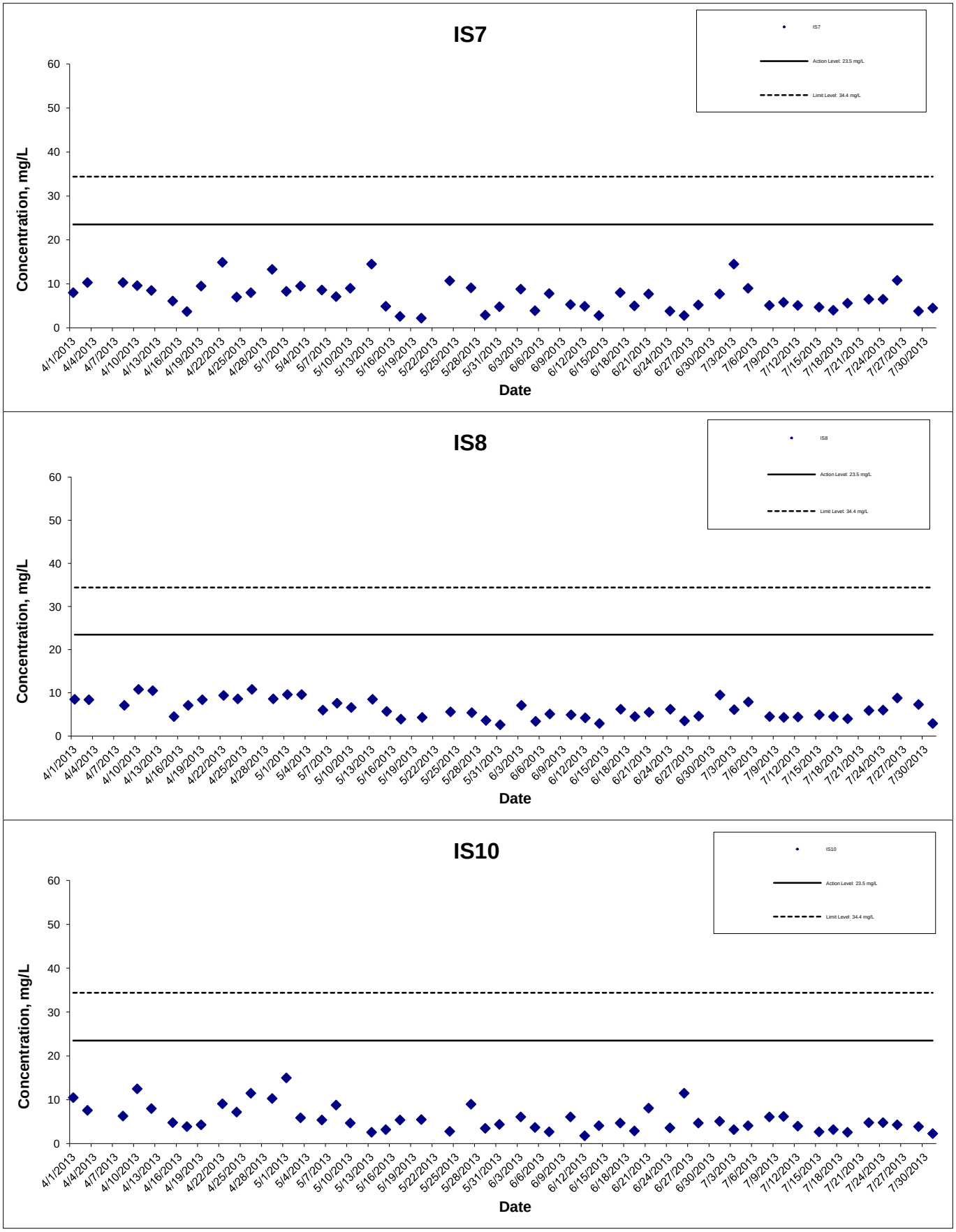
Suspended Solids at Mid-Ebb Tide







Suspended Solids at Mid-Ebb Tide



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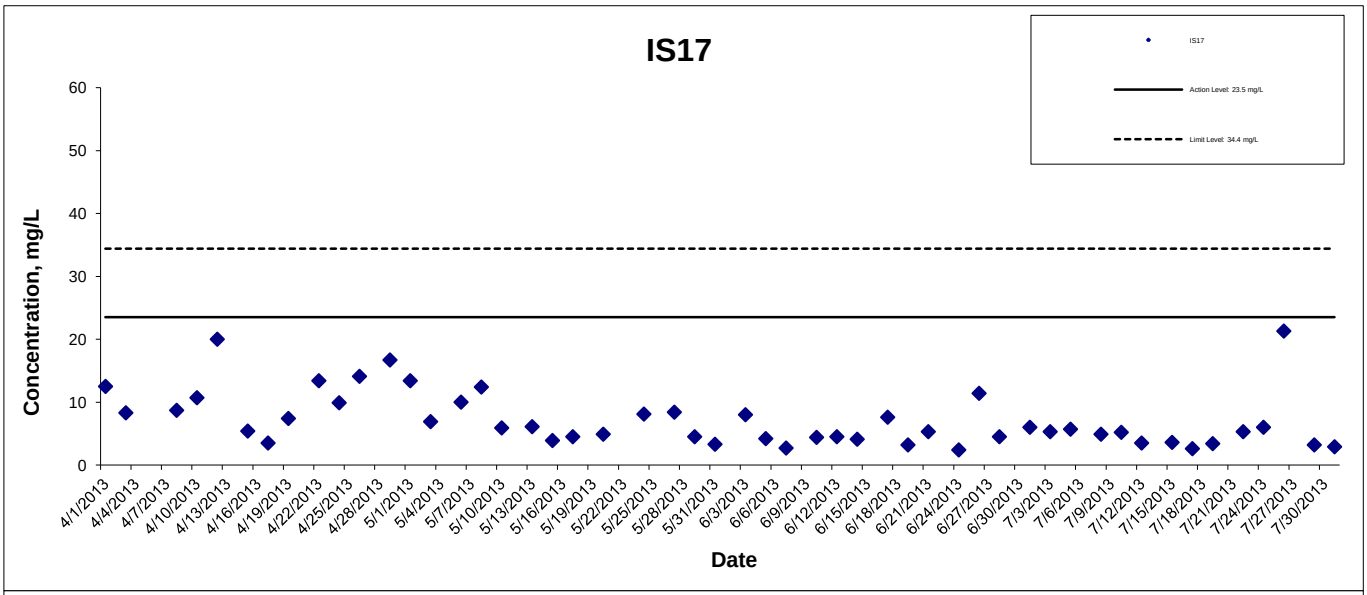

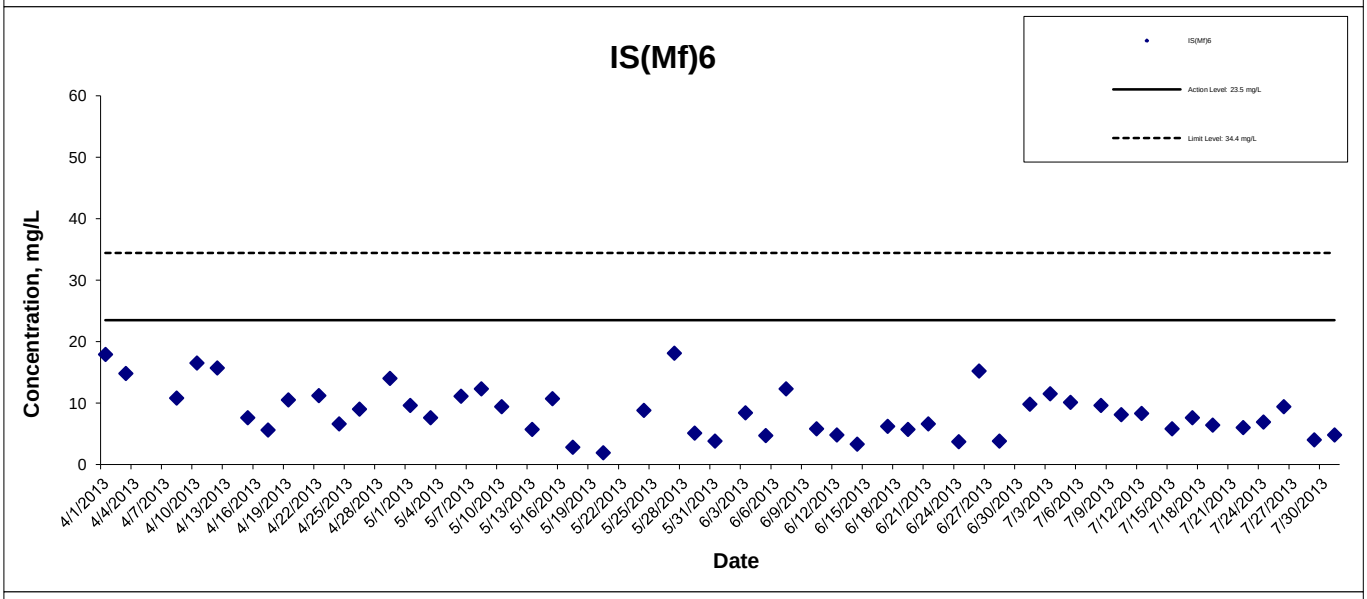

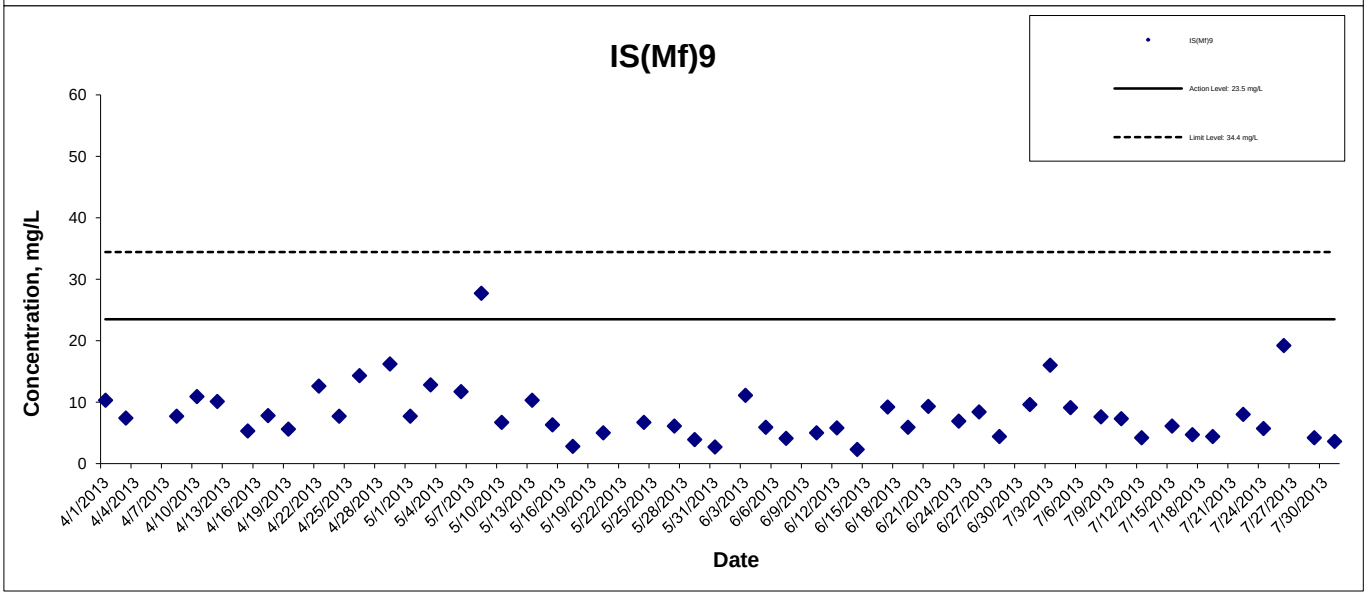

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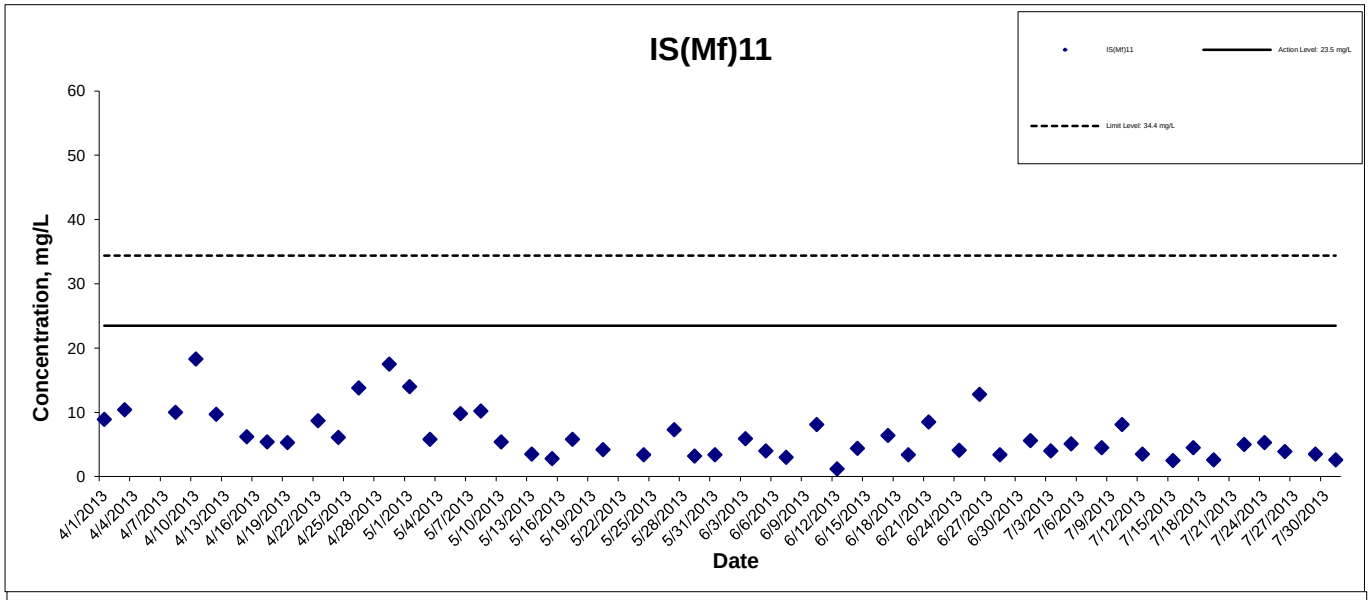

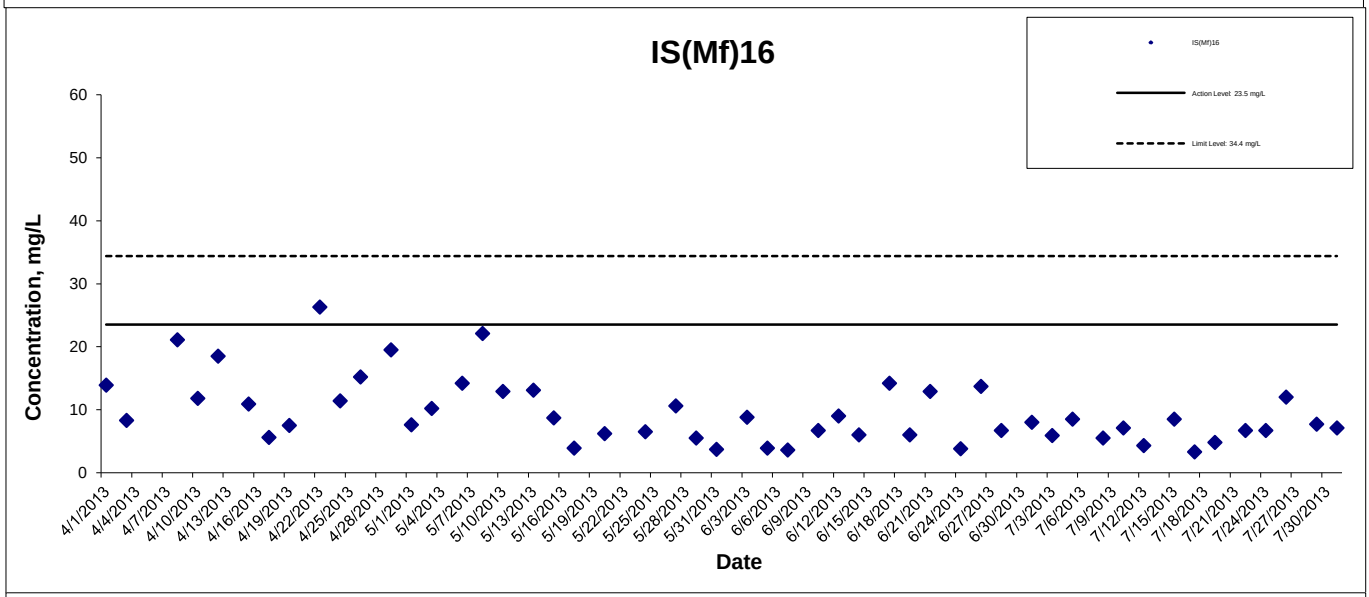

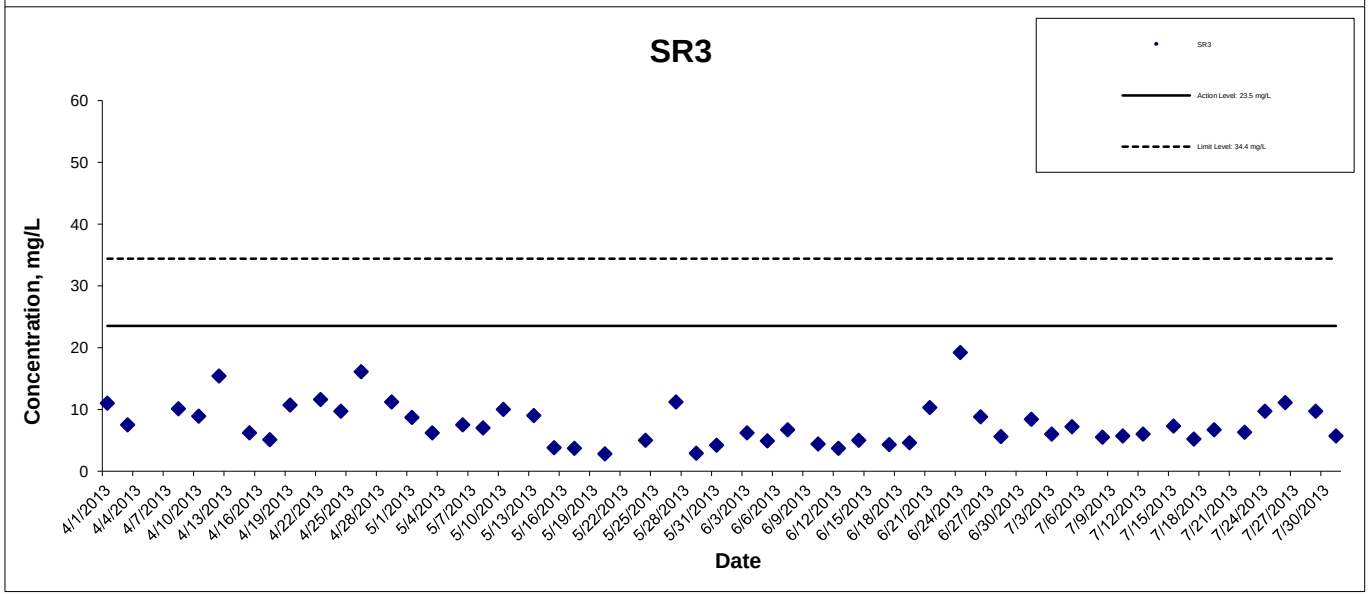

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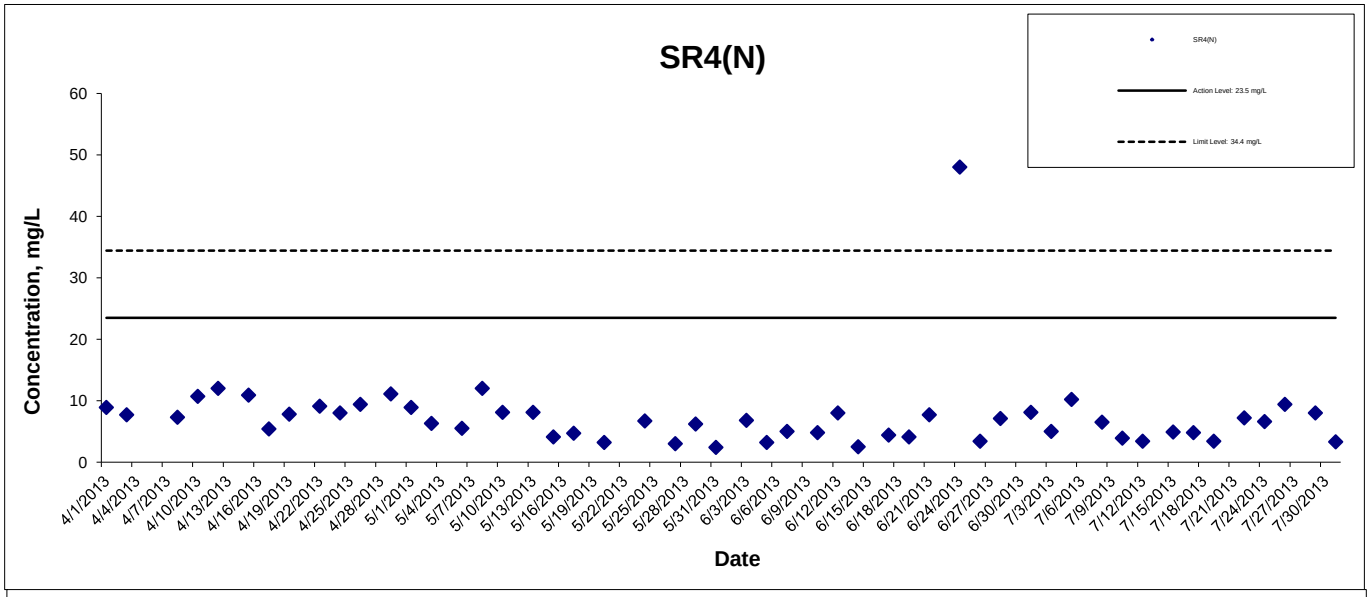

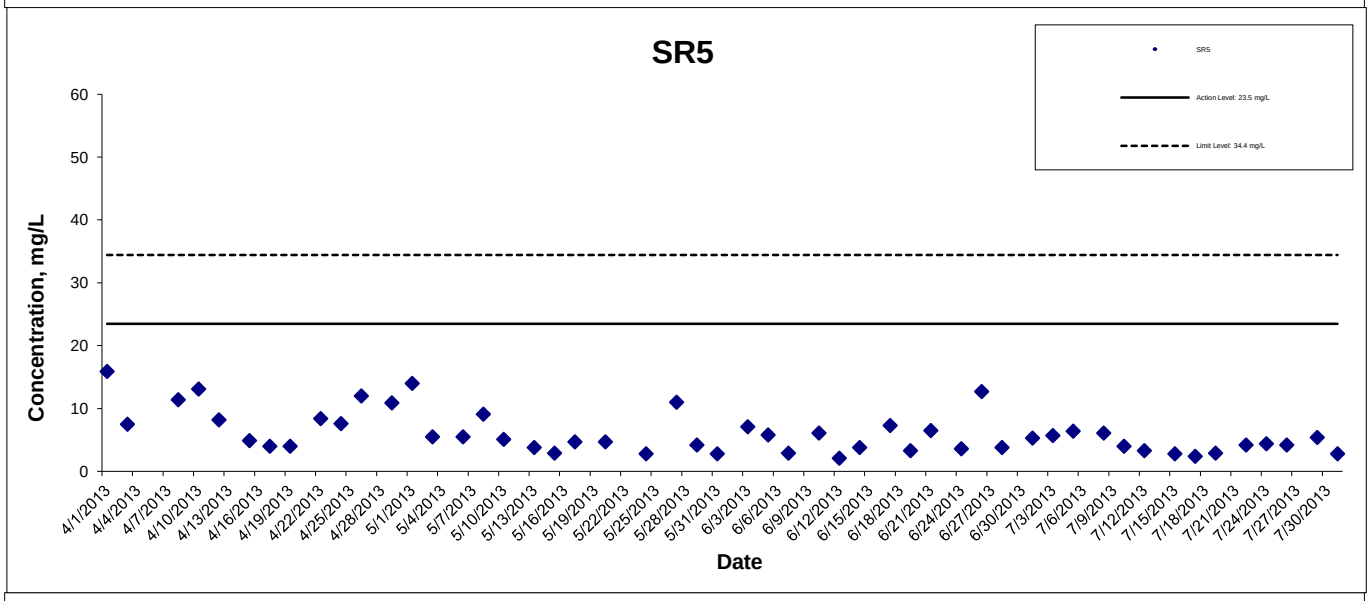

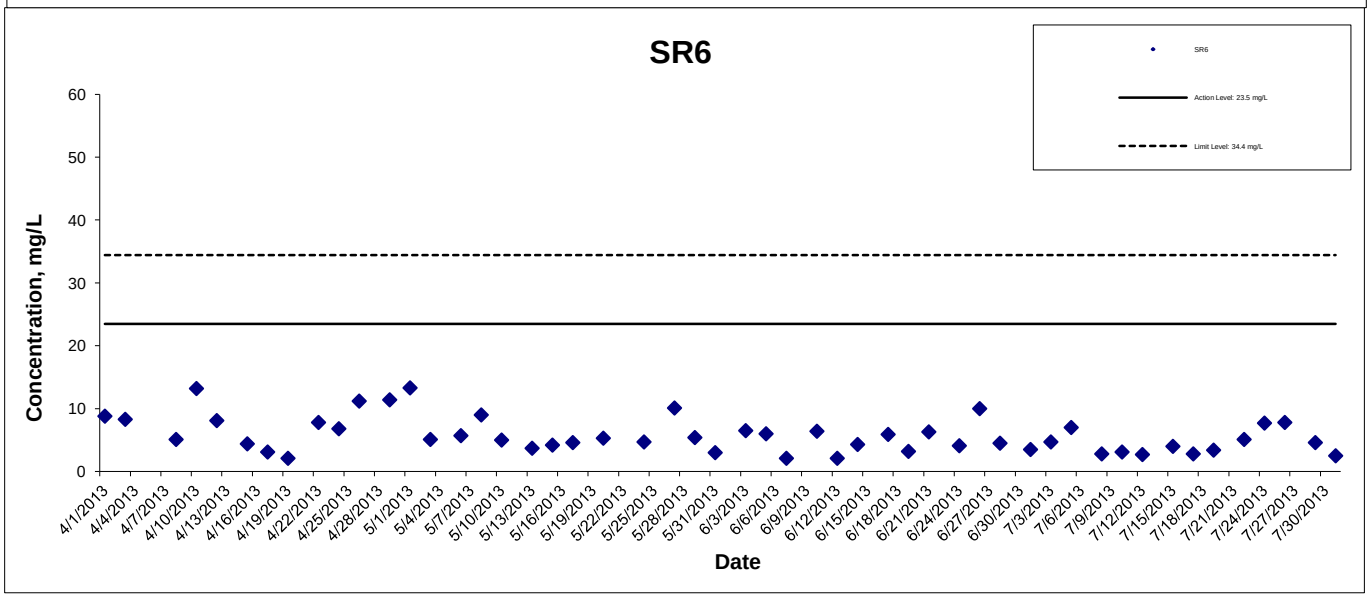

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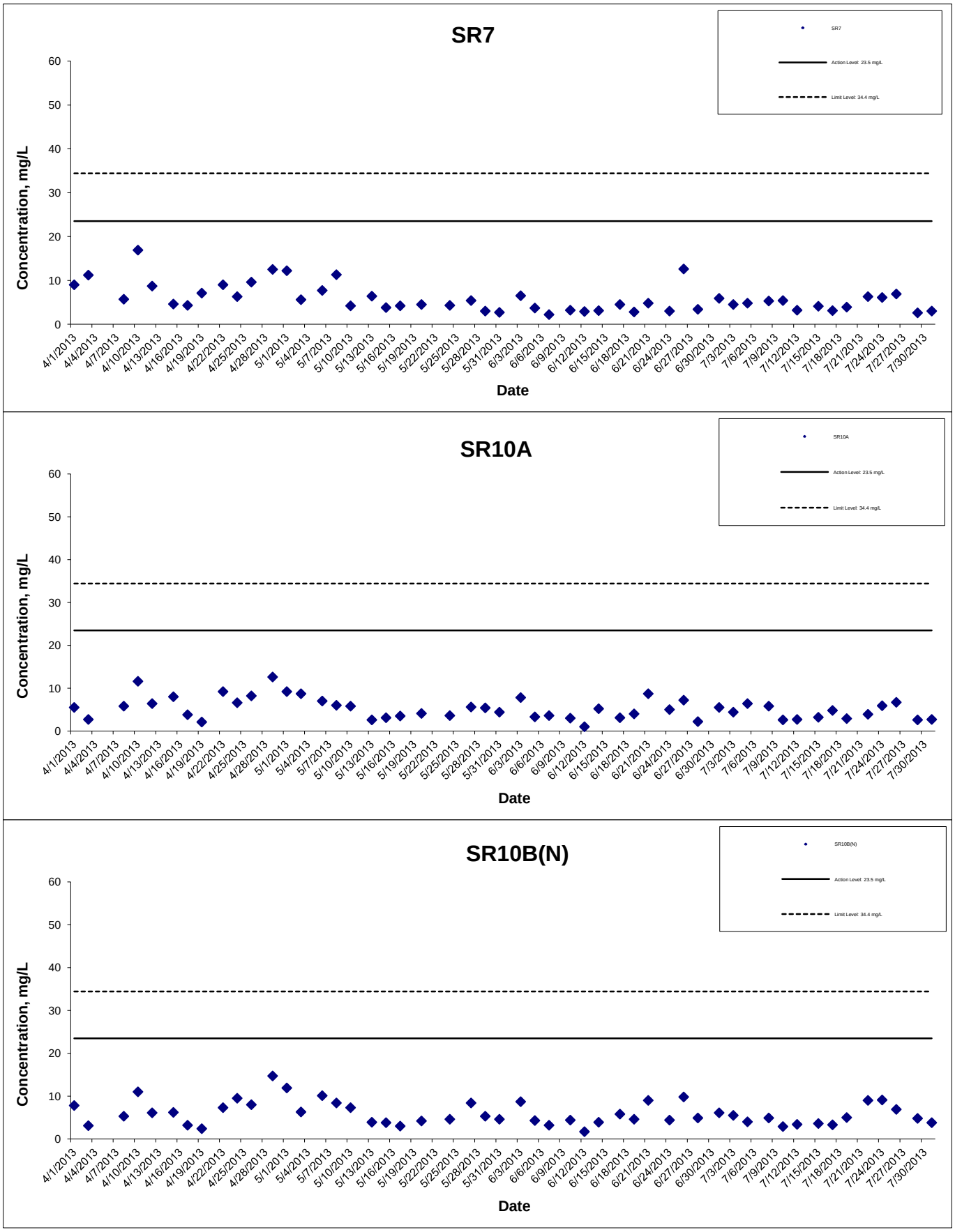
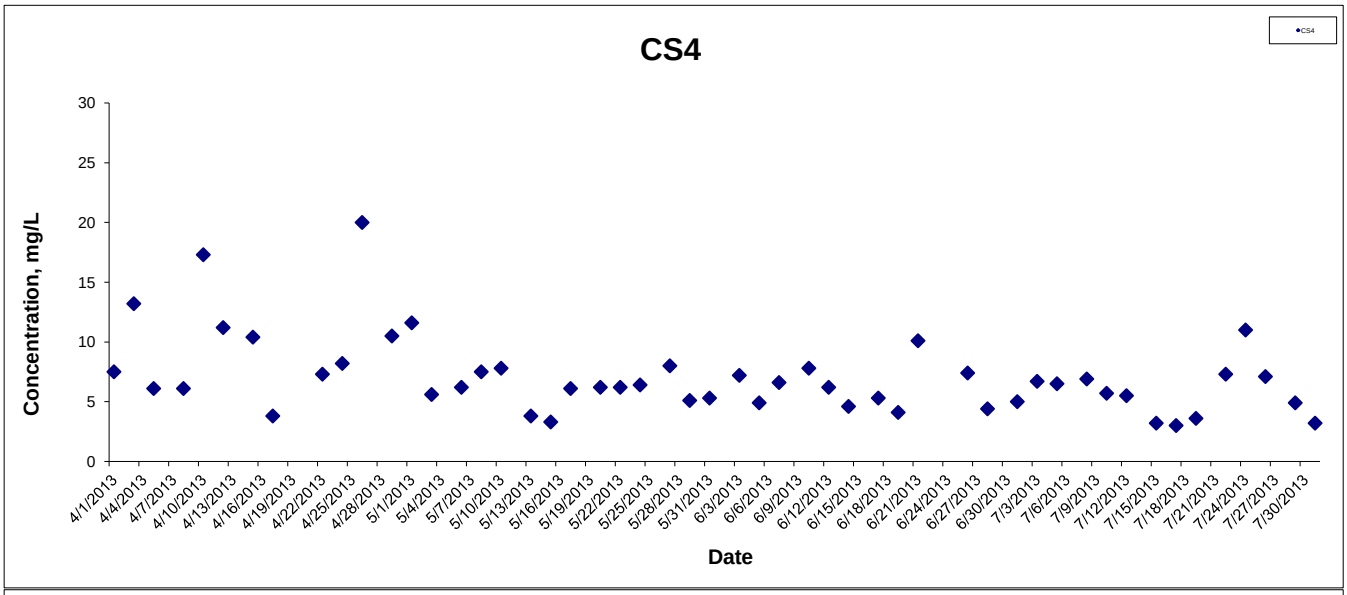
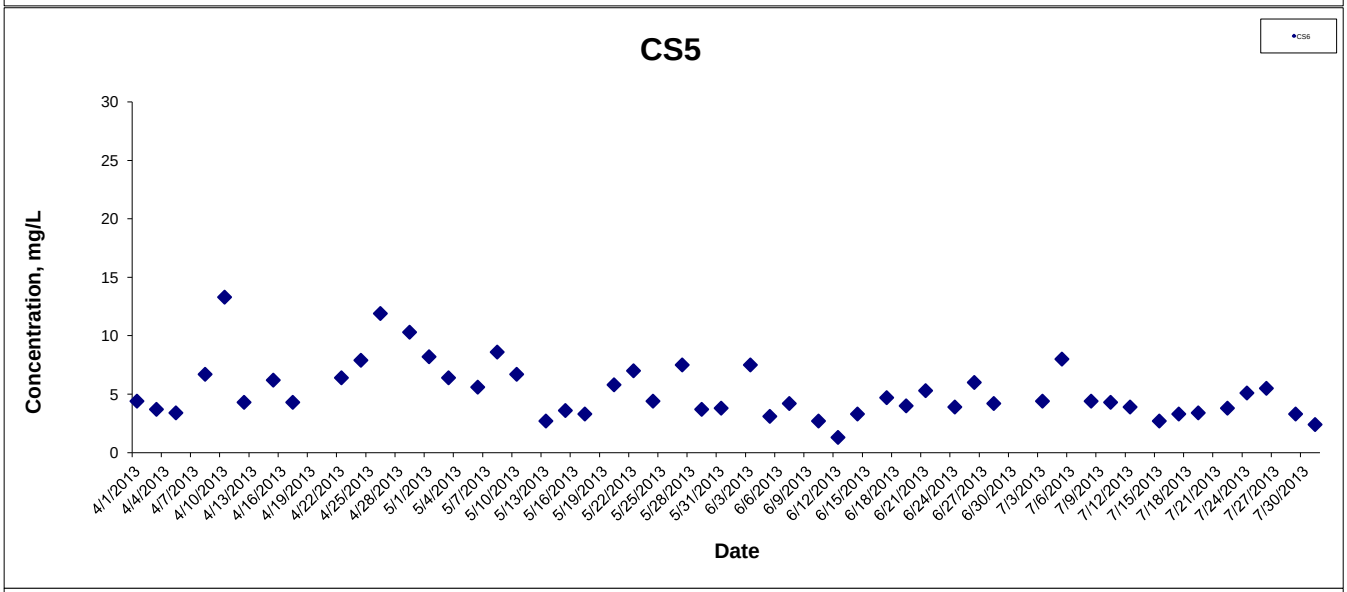
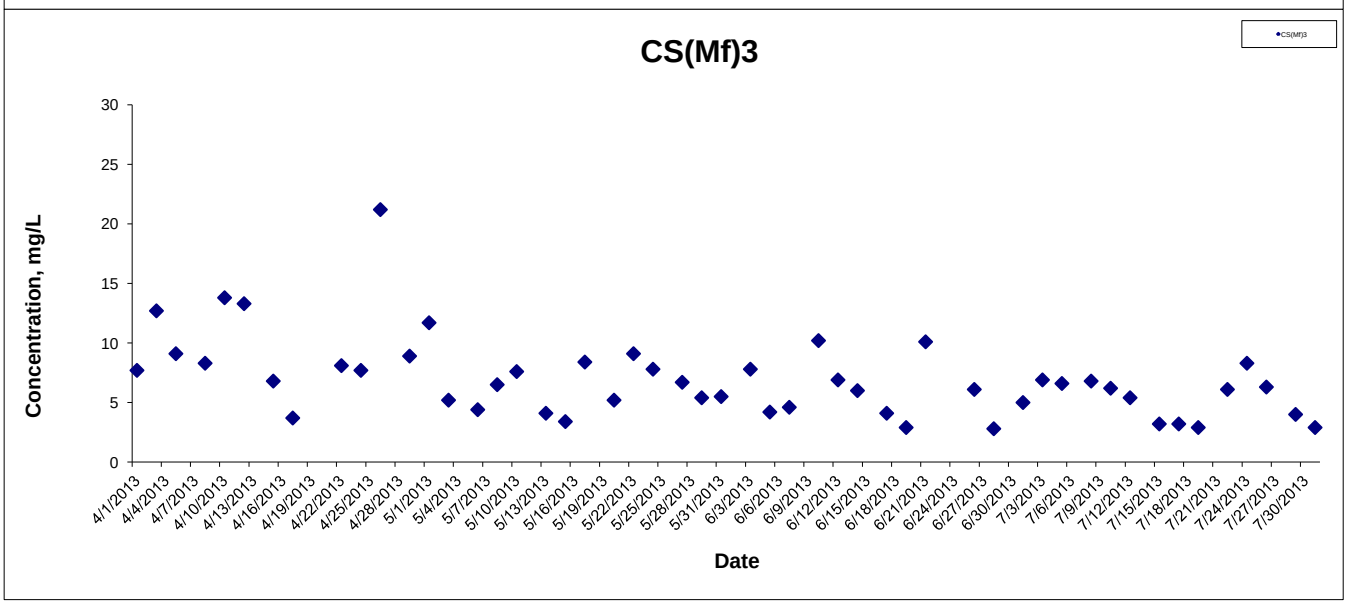


Suspended Solids at Mid-Flood Tide







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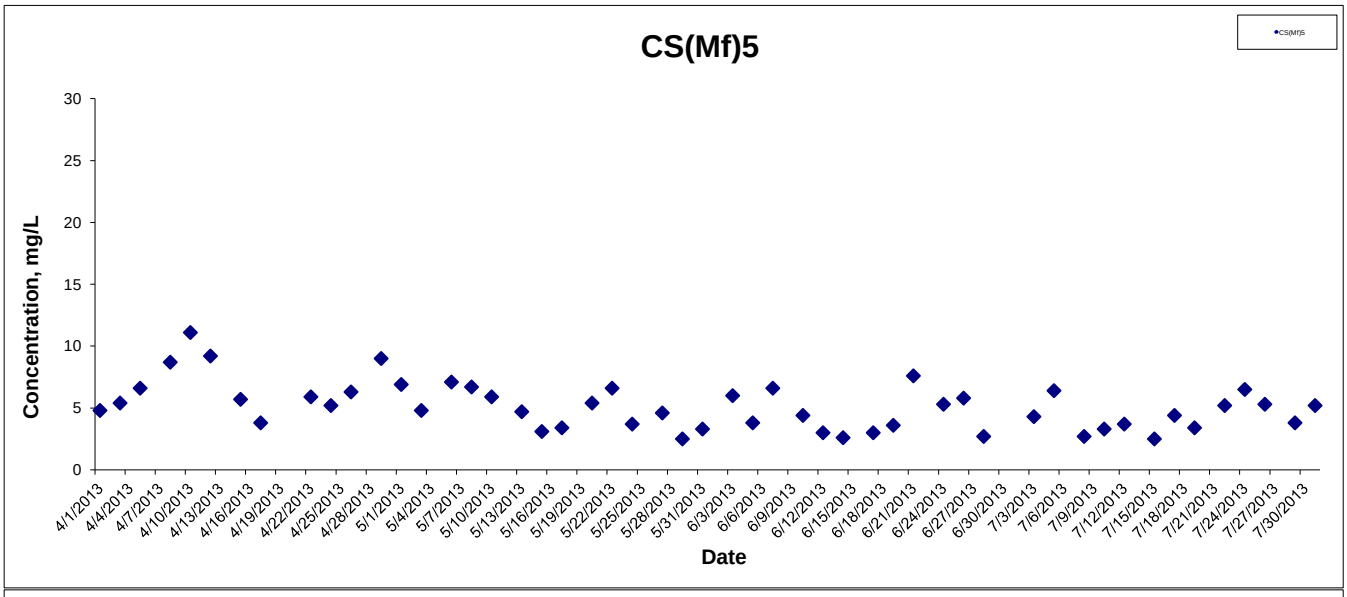

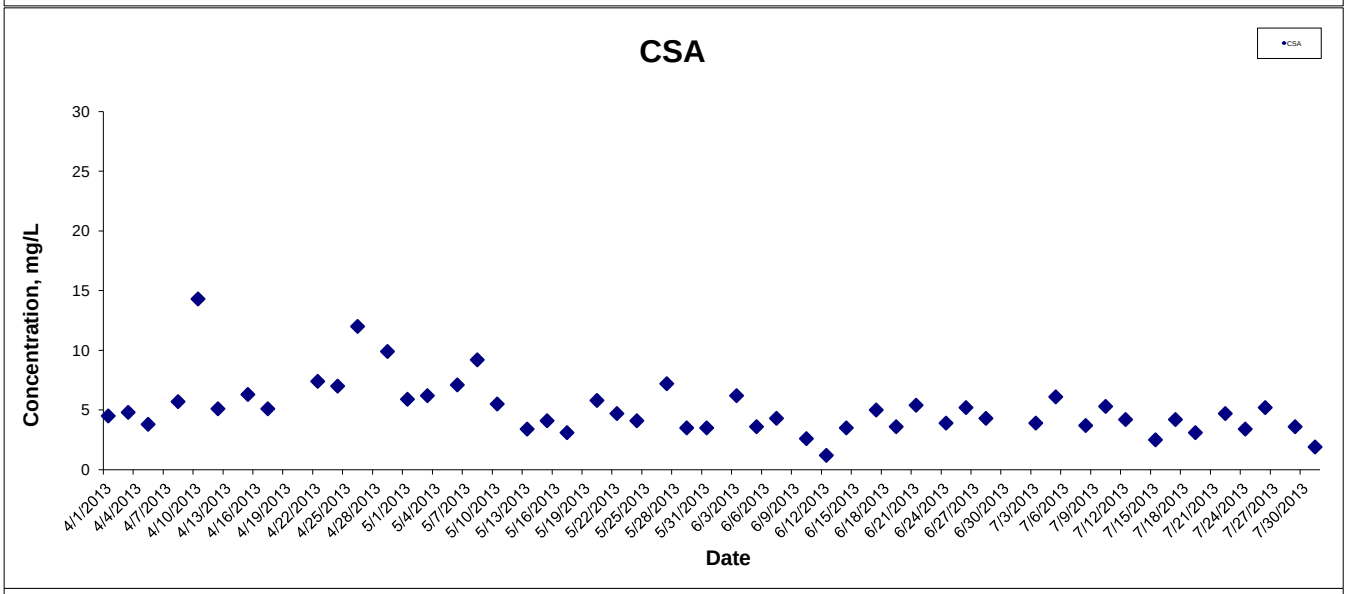

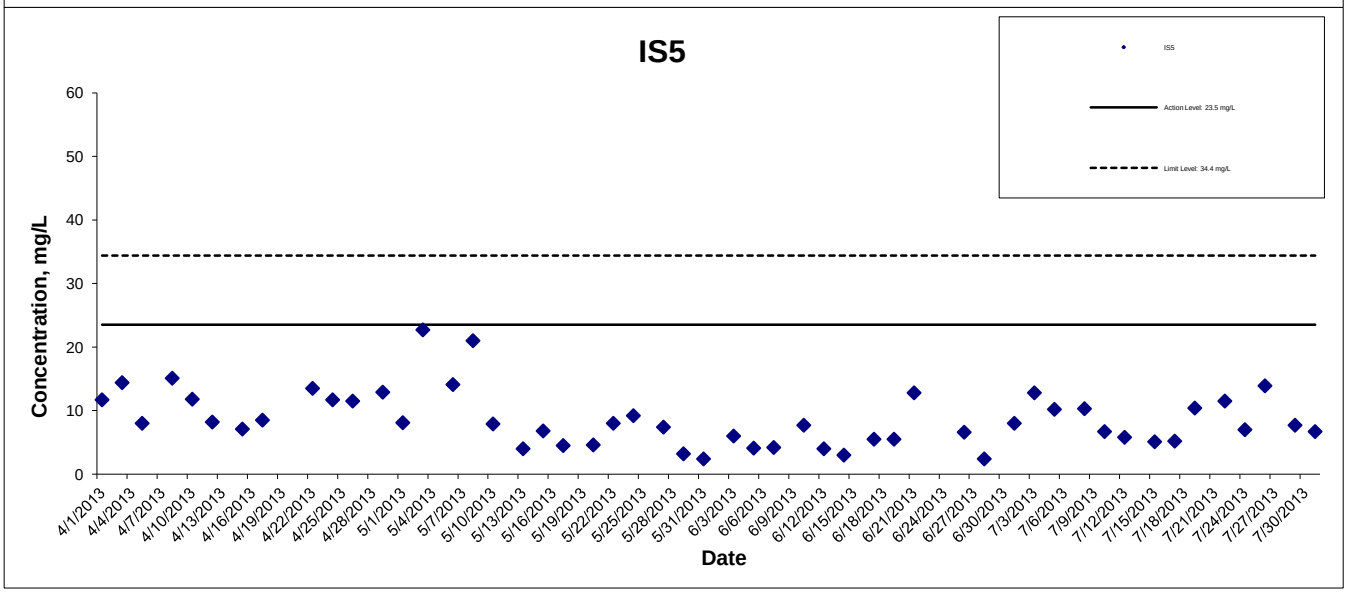

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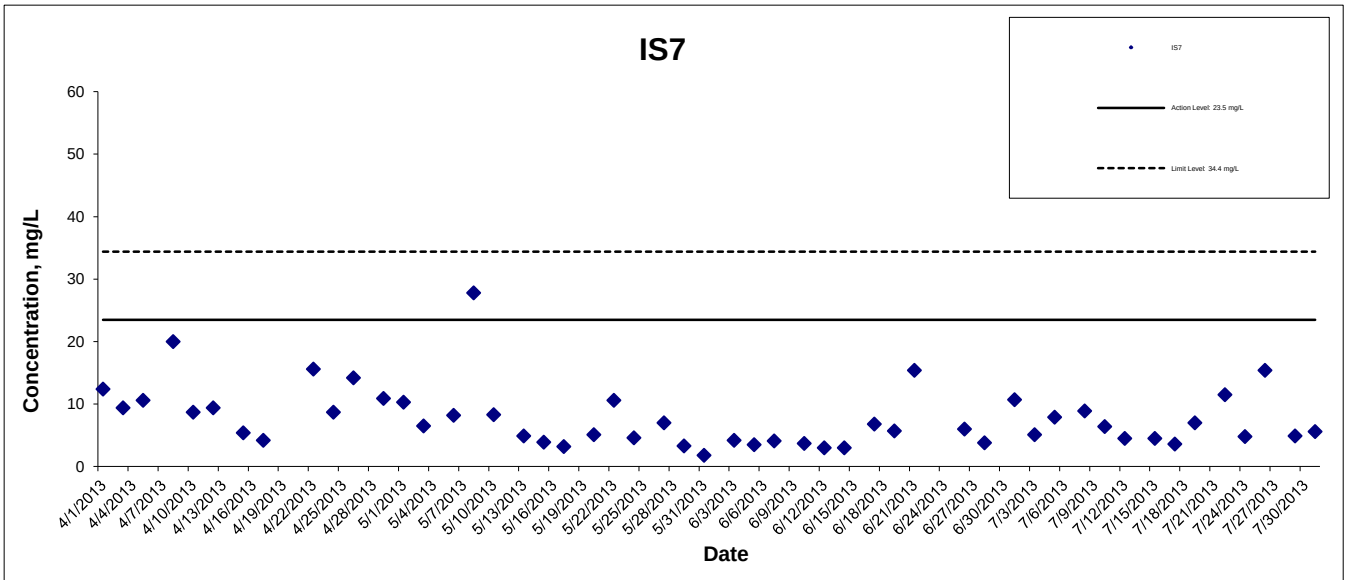

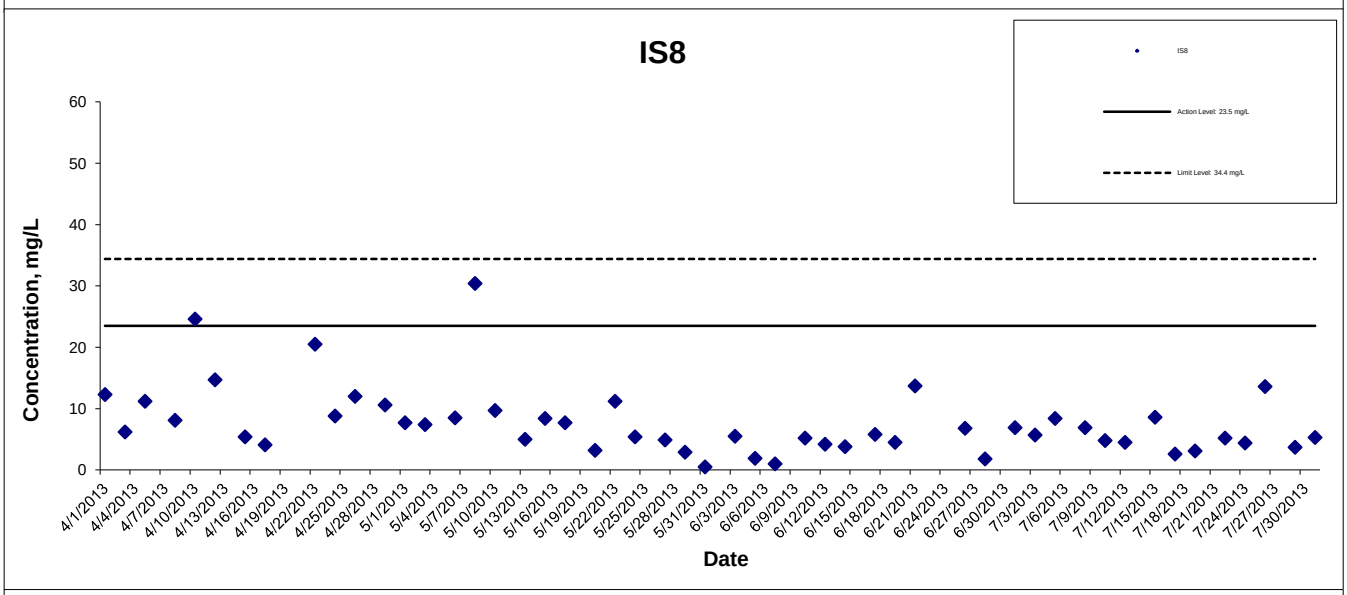

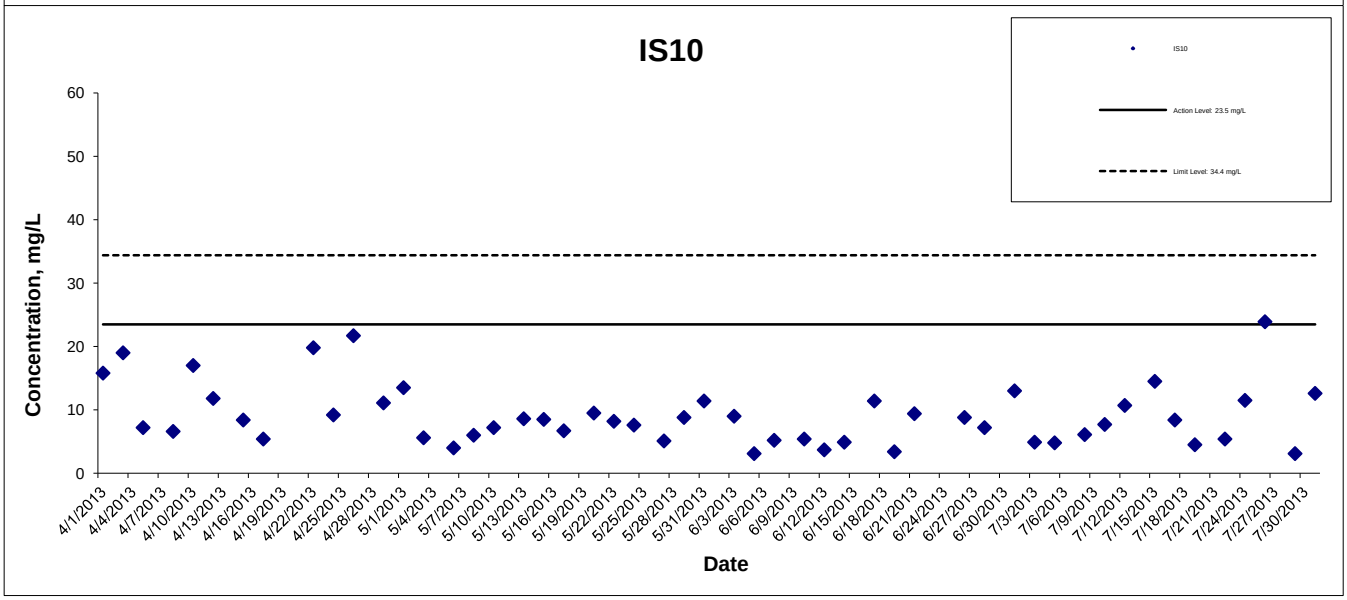

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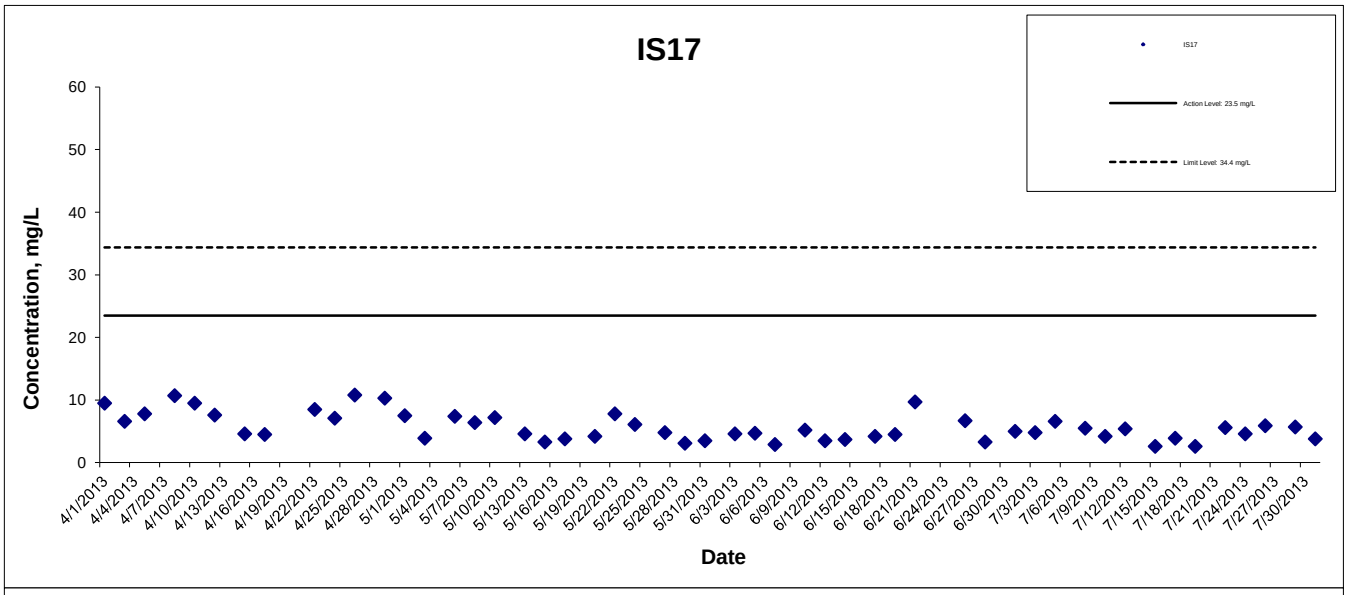

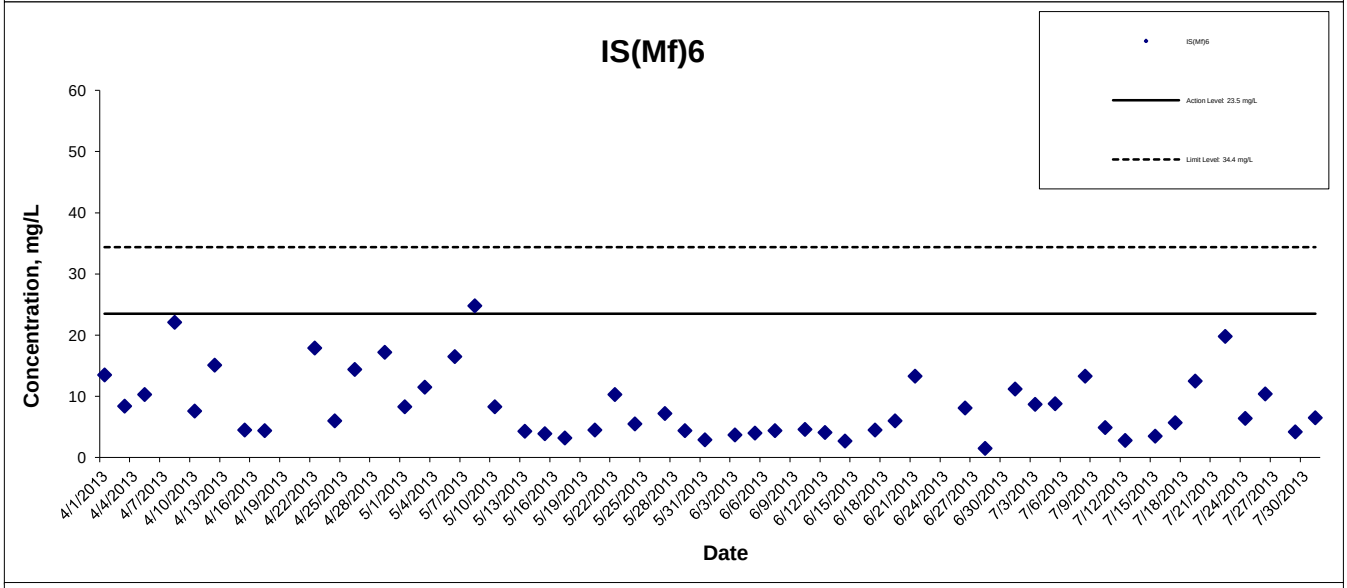

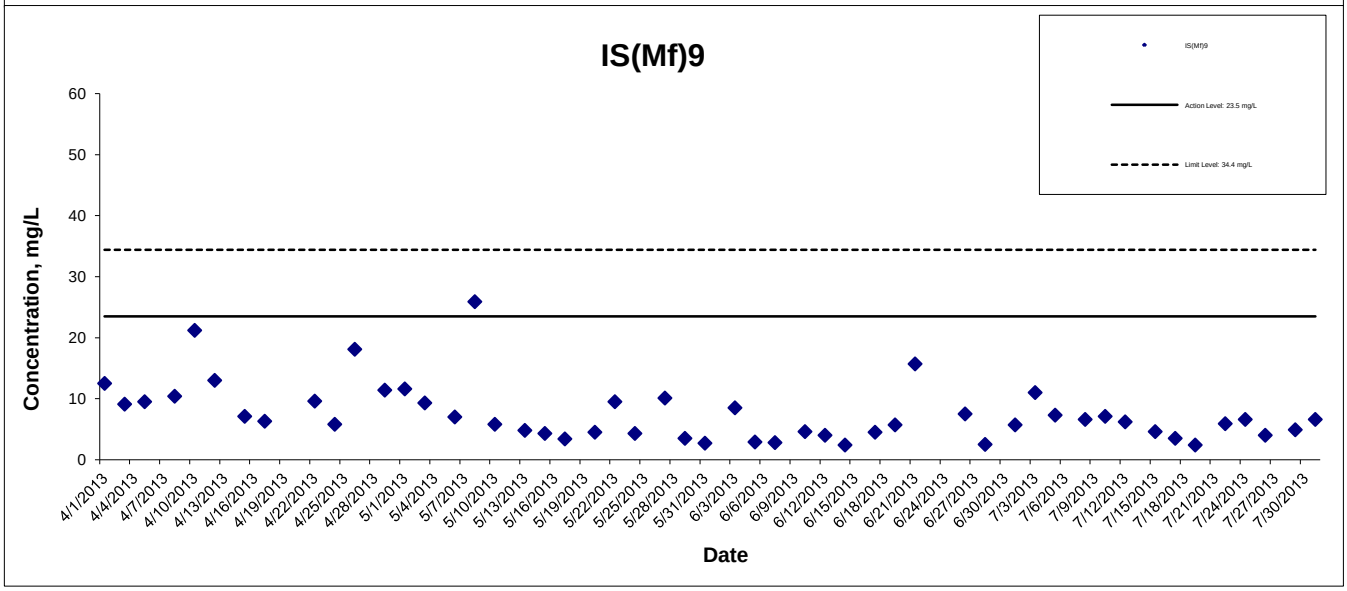

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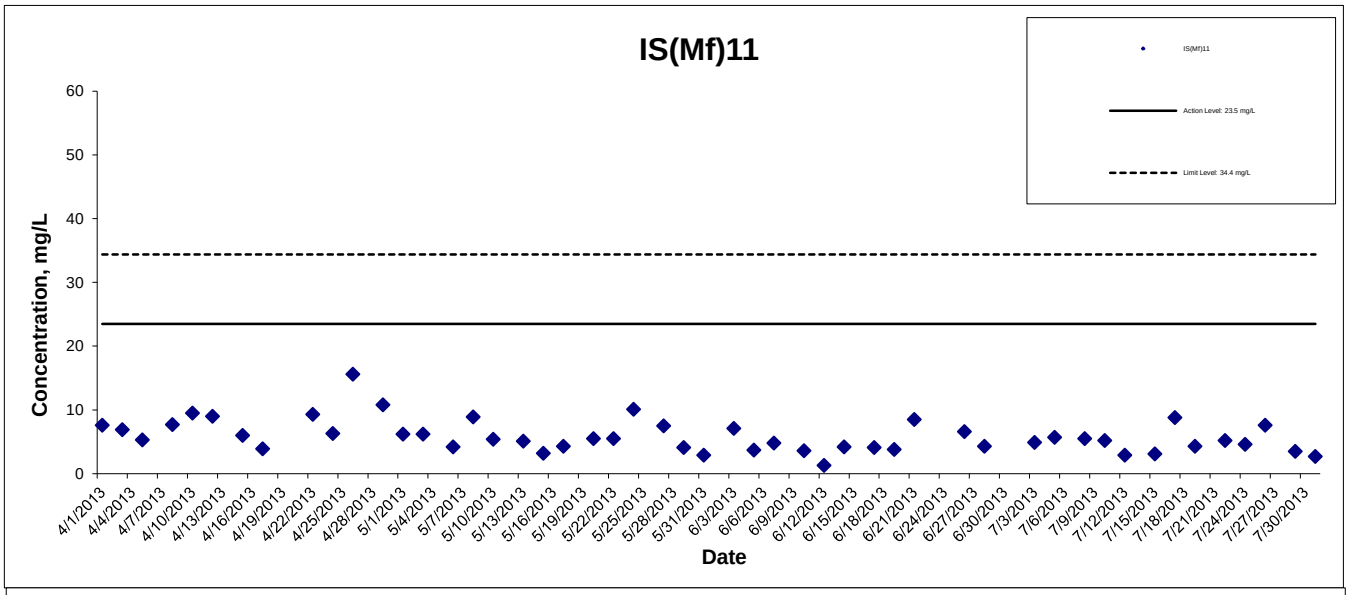

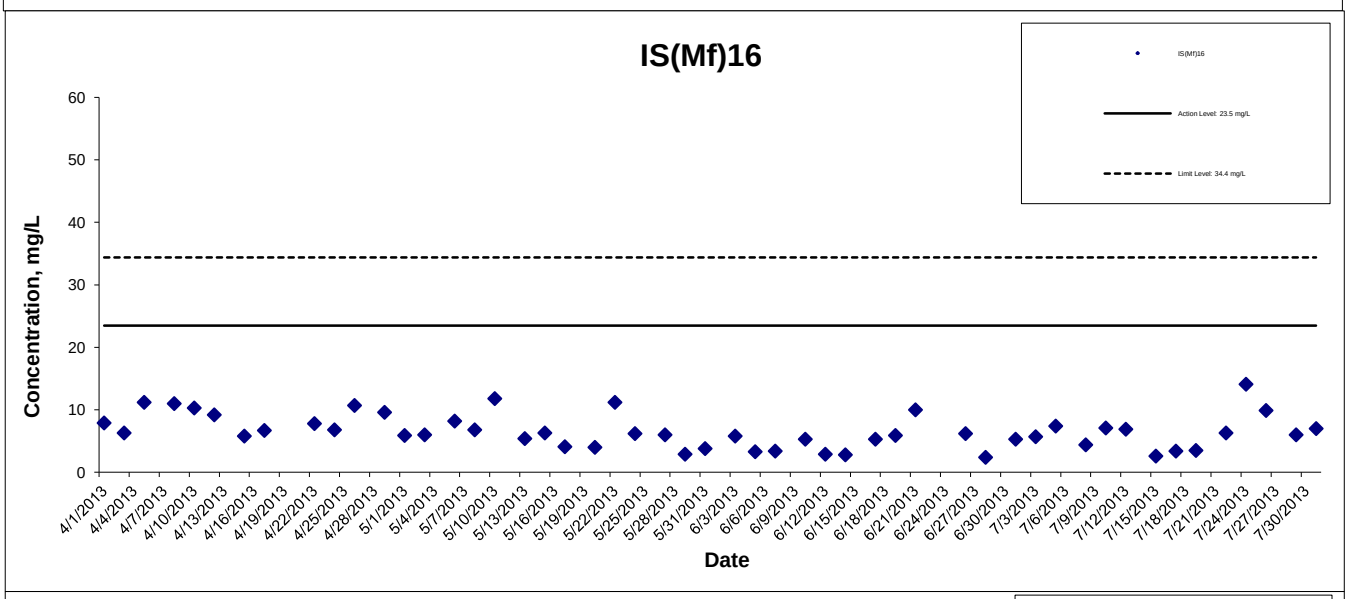

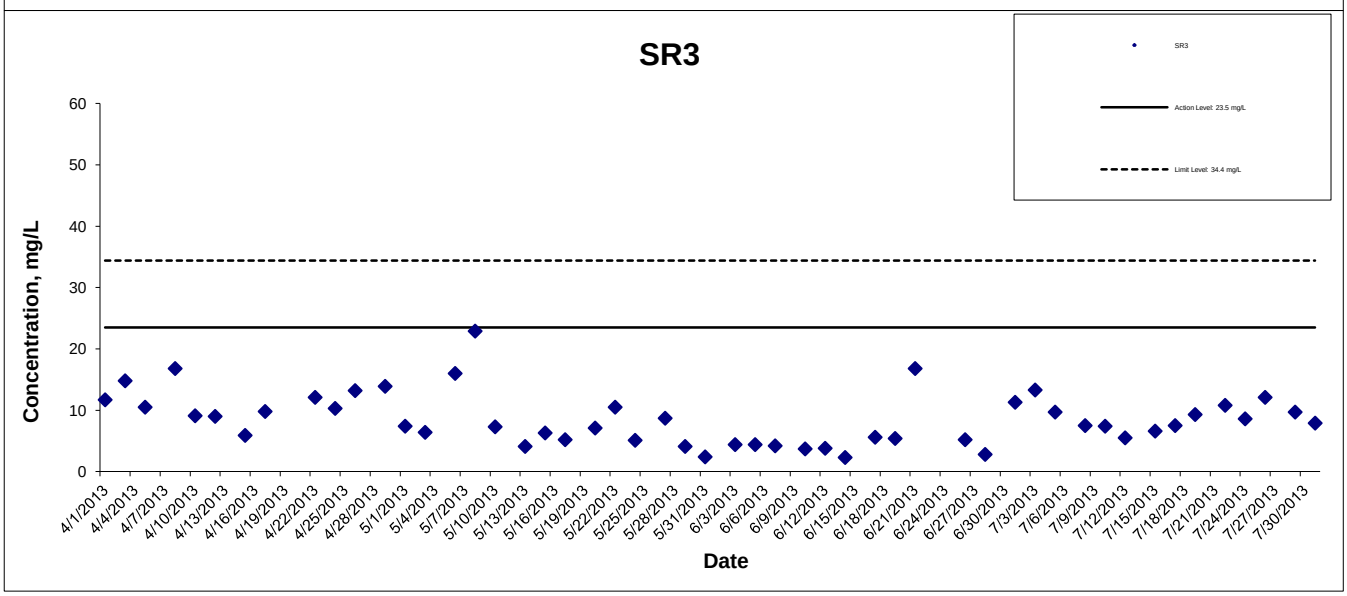

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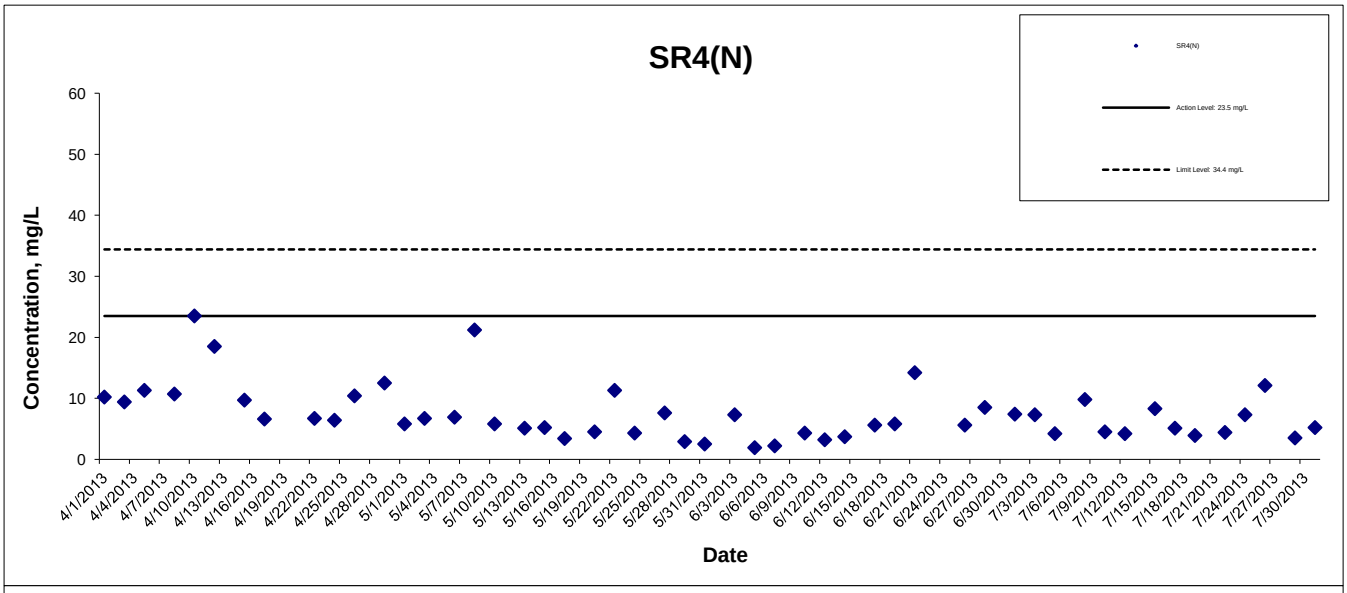
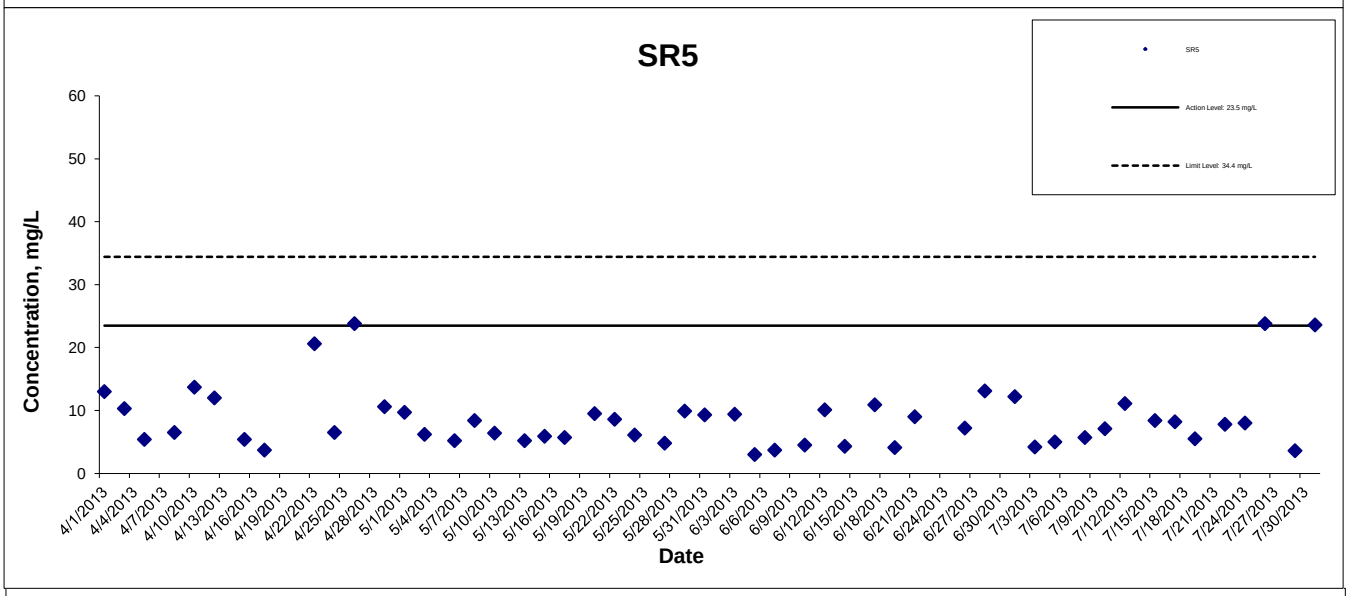
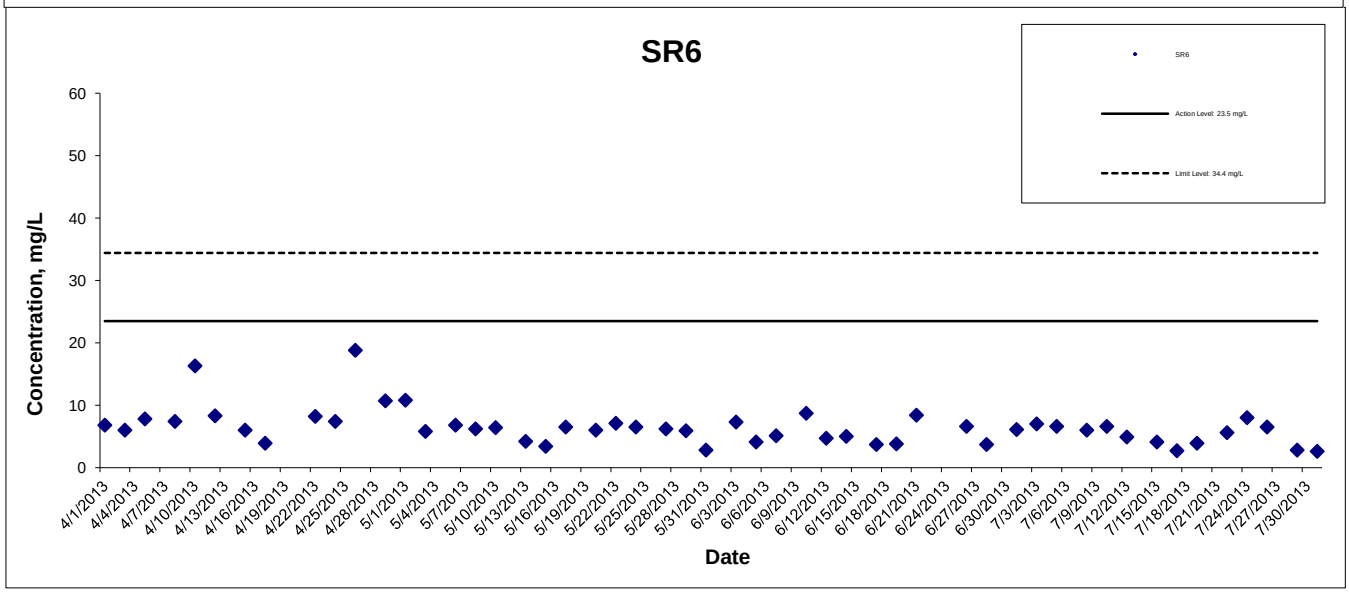
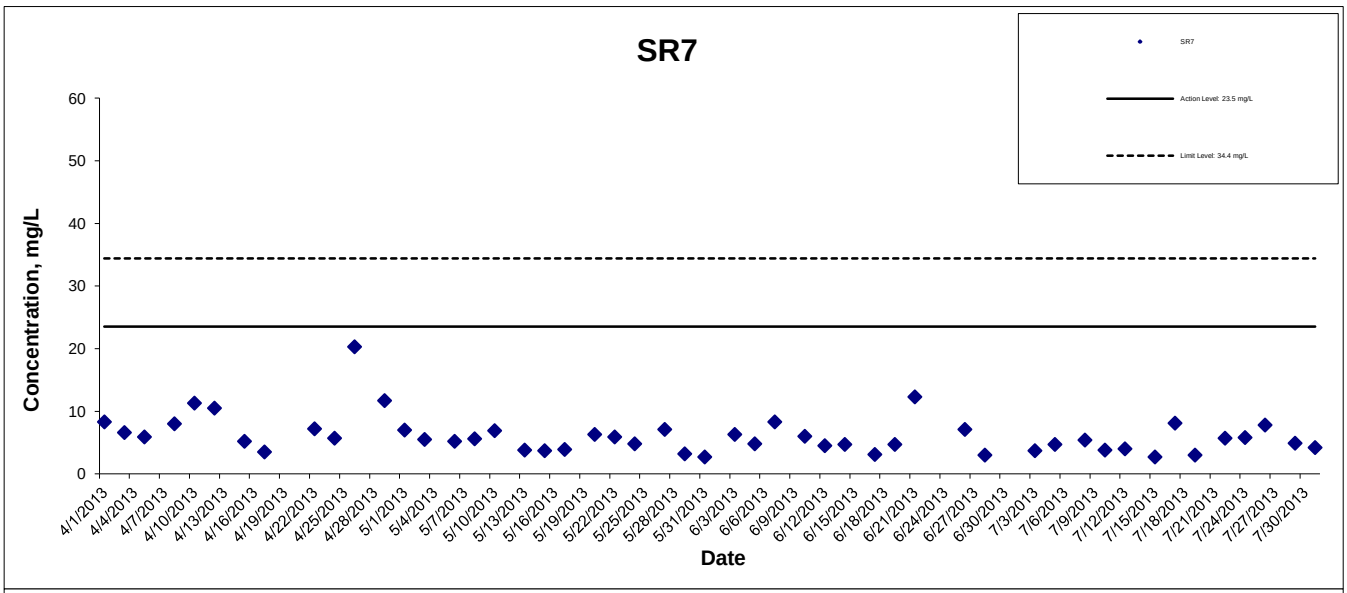
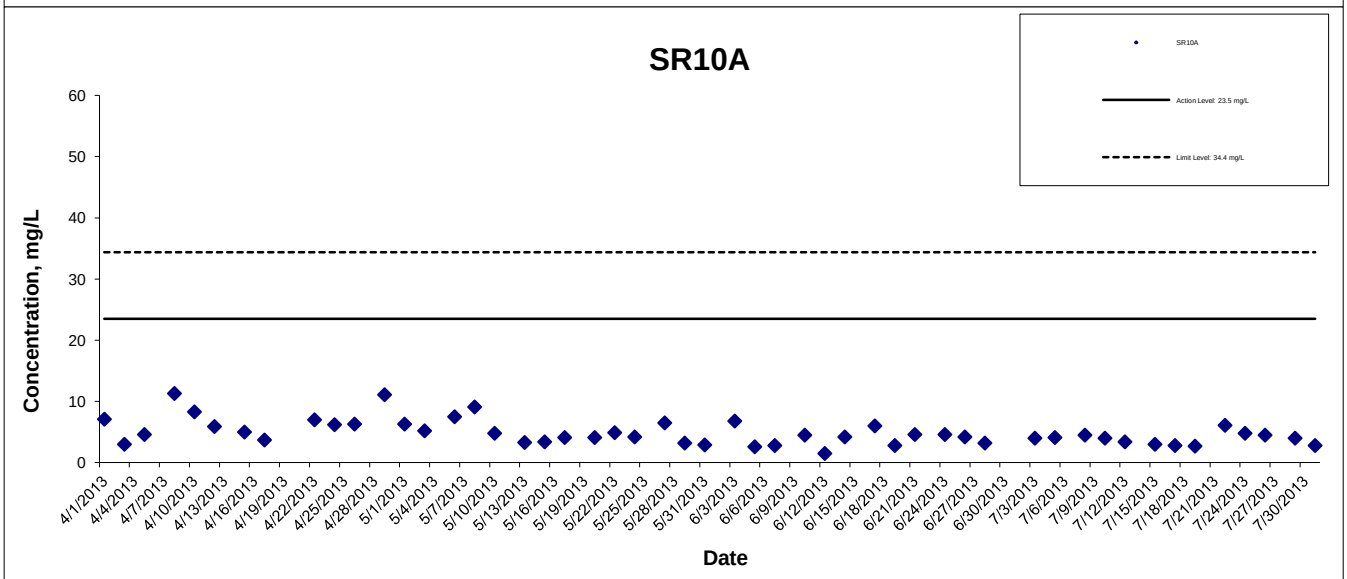


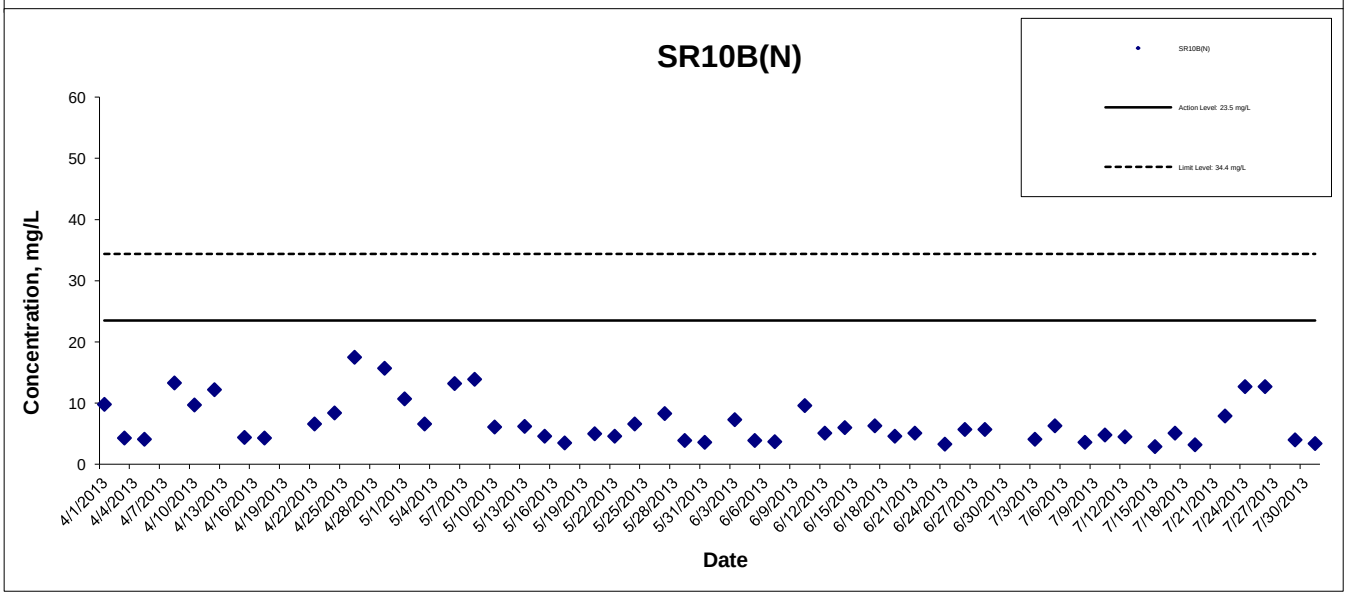




Suspended Solids at Mid-Flood Tide







Appendix K Impact Dolphin Monitoring Survey Sighting Summary

Table 1 Impact Dolphin Monitoring Survey Sighting Table

Date	Sighting Number	Time	Group Size	Area	Beaufort Sea State	PSD	Sighting	Type	Northing	Easting	Season	Boat Association
08/07/2013	705	9:13	3	NWL	1	N/A	Opp	Impact	815160	804898	Summer	No
08/07/2013	706	9:13	3	NWL	1	N/A	Opp	Impact	815044	804867	Summer	No
08/07/2013	707	9:27	1	NWL	1	N/A	Opp	Impact	814703	804733	Summer	No
08/07/2013	708	10:01	6	NWL	1	200	On	Impact	814299	803918	Summer	No
08/07/2013	709	10:04	4	NWL	1	N/A	Opp	Impact	814083	803577	Summer	No
08/07/2013	710	10:10	3	NWL	1	N/A	Opp	Impact	813804	803040	Summer	No
08/07/2013	711	13:46	12	NWL	1	28	On	Impact	828527	806460	Summer	No
08/07/2013	712	14:36	2	NWL	1	49	On	Impact	827982	806541	Summer	No
08/07/2013	713	14:48	5	NWL	1	198	On	Impact	825316	806449	Summer	No
08/07/2013	714	16:45	1	NWL	1	N/A	Opp	Impact	826300	809113	Summer	No
08/07/2013	715	17:12	2	NWL	1	72	On	Impact	822616	809621	Summer	No
23/07/2013	731	9:13	1	NWL	2	10	On	Impact	819079	804669	Summer	No
23/07/2013	732	9:36	1	NWL	1	25	On	Impact	819127	804669	Summer	No
23/07/2013	733	9:43	5	NWL	1	233	On	Impact	820719	804704	Summer	No
23/07/2013	735	10:25	2	NWL	1	241	On	Impact	821478	804664	Summer	No
23/07/2013	736	11:53	4	NWL	2	22	On	Impact	820028	805465	Summer	No
23/07/2013	737	13:40	2	NWL	2	109	On	Impact	826624	806456	Summer	No
31/07/2013	750	16:27	1	NEL	1	47	On	Impact	822635	818563	Summer	No
31/07/2013	751	16:50	1	NEL	2	218	On	Impact	822331	819603	Summer	No
31/07/2013	752	17:20	1	NEL	2	N/A	Opp	Impact	822134	820427	Summer	No
31/07/2013	753	17:56	1	NEL	2	2	On	Impact	823101	821365	Summer	No

KEY:

Sighting	Opp Opportunistic
	On On effort
PSD	Perpendicular Sighting Distance
Group Size	Represents best estimate for group encountered
NEL	North East Lantau
NWL	North West Lantau

Table 2. Sightings of Individually Identified Chinese White Dolphin (*Sousa chinensis*) July 2013

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted	Resightings
HZMB 105		2013-07-08	711	NWL	1
HZMB 104		2013-07-08	711	NWL	1
HZMB 103		2013-07-08	711	NWL	1
HZMB 102		2013-07-08	706	NWL	1
HZMB 101		2013-07-08	706	NWL	1
HZMB 100		2013-07-08	706	NWL	1
HZMB 098♀	NL104	2013-07-08	711	NWL	2
		2013-05-24	659	NWL	
HZMB 077		2013-07-08	706	NWL	2
		2012-12-11	541	NWL	
HZMB 076		2013-07-08	706	NWL	2
		2012-12-11	541	NWL	
HZMB 069		2013-07-08	711	NWL	2
		2012-10-24	476	NWL	
HZMB 054		2013-07-08	711	NWL	9
		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	
			Baseline	NEL	
		2011-10-28	Baseline	NWL	
		2011-10-06	Baseline	NWL	
HZMB 040		2013-07-08	714	NWL	4
			711	NWL	
		2012-02-21	589	NWL	
		2012-11-01	493	NWL	
HZMB 023♀		2013-07-08	715	NWL	6
			711	NWL	
		2013-04-01	619	NWL	
		2013-02-21	589	NWL	
		2013-02-15	579	NWL	
		2012-07-10	330	NWL	
HZMB 022		2013-07-08	715	NWL	6
			711	NWL	
		2013-04-01	619	NWL	
		2013-02-21	589	NWL	
		2013-02-15	579	NWL	
		2012-07-10	330	NWL	
HZMB 016		2013-07-08	706	NWL	5
		2012-12-11	539	NWL	
		2012-09-18	446	NWL	
		2012-09-04	421	NWL	
		2012-07-10	330	NWL	
HZMB 011	EL01	2013-07-31	753	NEL	9
		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	

Table 3 Breakdown of Image Analyses, July 2013

Date	Estimated Group Size	No. IDs	No. Non-IDs	No. Known Resightings	Poor Quality Images
08-07-13	42	15	21 (4 calves/juveniles)	3	3
23-07-13	15	0	7	0	8
31-07-13	4	1	0	0	3

July 2013
Photo Identification Information

HZMB 011 2013-07-31_18-05-01

HZMB 016 2013-07-08_09-35-08 _03

HZMB 022 2013-07-08_13-48-13 _02

HZMB 023 2013-07-08_17-15-23 _02

HZMB 040 2013-07-08_16-58-33 _01

HZMB 054 2013-07-08_13-49-28

HZMB 069 2013-07-08_14-12-01 _01

HZMB 076 2013-07-08_09-35-42

HZMB 077 2013-07-08_09-45-55

HZMB 098 2013-07-08_14-01-37 _01

HZMB 098 2013-07-08_14-01-46 _03

HZMB 100 2013-07-08_09-34-44 _03

HZMB 100 2013-07-08_09-43-16 _03

HZMB 101 2013-07-08_09-35-35 _01

HZMB 101 WL 2013-07-08_09-42-35 _03

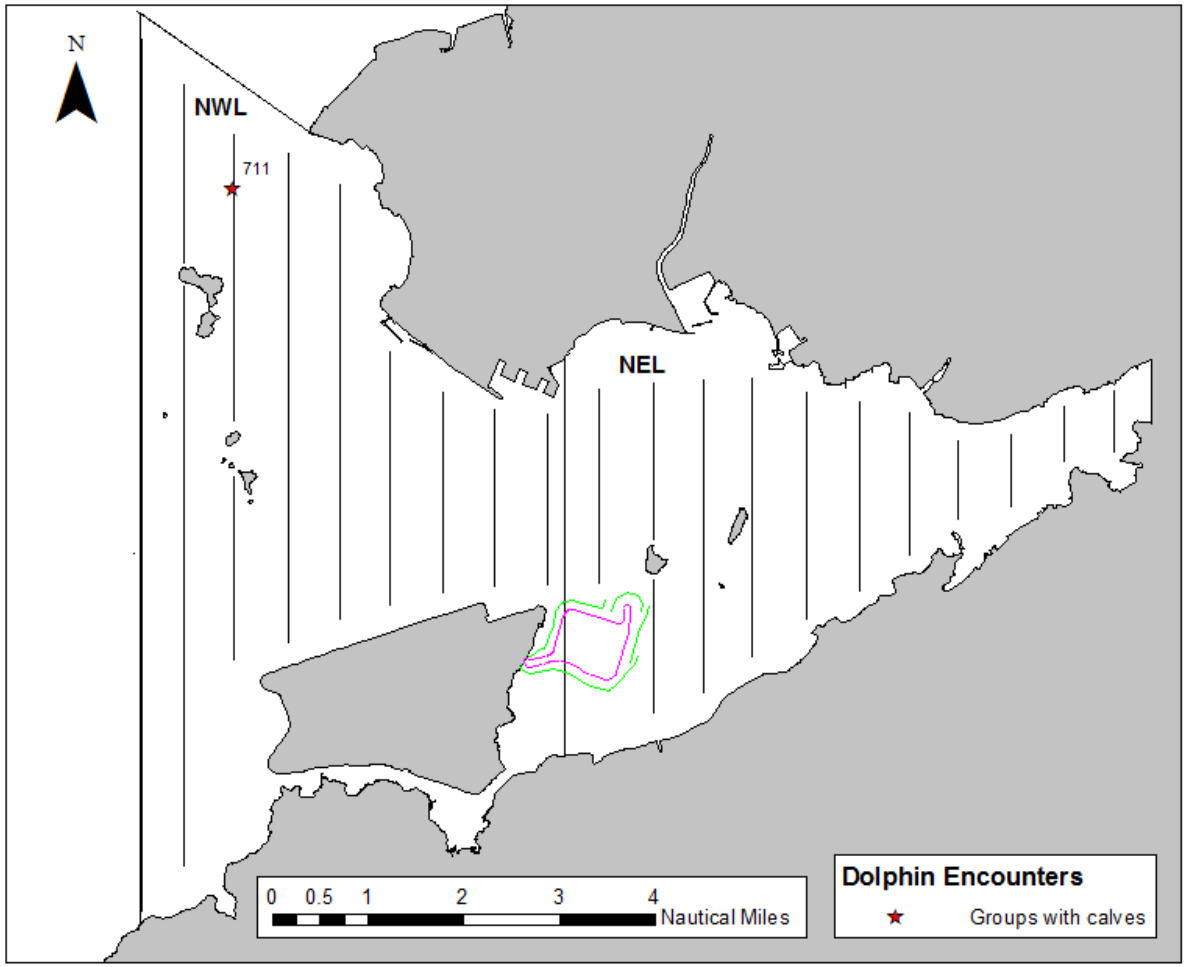
HZMB 102 2013-07-08_09-43-13

HZMB 103 2013-07-08_13-52-32 _02

HZMB 104 2013-07-08_14-00-59 _01

HZMB 104 2013-07-08_14-08-35 _02

HZMB 105 WL 2013-07-08_14-17-45



Sighting No. 711
HZMB 098

Figure K.1 The Location of Mother and Calf Pairs and Representative Images and IDs Recorded During Impact Monitoring, July 2013

Appendix L – Event Action Plan

Event / Action Plan for Air Quality

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

Event	Action			
	ET Leader	**IEC**	**ER**	**Contractor**
Limit Level				
Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform ER, Contractor and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.

Event	Action			
	ET Leader	**IEC**	**ER**	**Contractor**
Exceedance for two or more consecutive samples	1. Notify IEC, ER, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event / Action Plan for Construction Noise

Event	Action			
	ET Leader	**IEC**	**ER**	**Contractor**
Action Level	1. Notify IEC and Contractor; 2. Identify source, investigate the causes of exceedance and propose remedial measures; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the Contractor and formulate remedial measures; 5. Increase monitoring frequency to check mitigation effectiveness.	1. Review the analysed results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures are properly implemented.	1. Submit noise mitigation proposals to IEC; 2. Implement noise mitigation proposals.
Limit Level	1. Inform IEC, ER, EPD and Contractor; 2. Identify source; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Inform IEC, ER and EPD the causes and actions taken for the exceedances; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event / Action Plan for Water Quality

Event	Action			
	ET Leader	**IEC**	**ER**	**Contractor**
Action level being exceeded by one sampling day	1. Repeat *in situ* measurement to confirm findings; 2. Identify source(s) of impact; 3. Inform IEC, contractor and ER; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, ER and Contractor; 6. Ensure mitigation measures are implemented; 7. Repeat measurement on next day of exceedance to confirm findings.	1. Check monitoring data submitted by ET and Contractor's working methods; 2. Discuss with ET and Contractor on possible remedial actions; 3. Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly; 4. Assess the effectiveness of the implemented mitigation measures.	1. Confirm receipt of notification of non-compliance in writing; 2. Discuss with IEC on the proposed mitigation measures; 3. Make agreement on mitigation measures to be implemented; 4. Ensure mitigation measures are properly implemented.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment and consider changes of working methods; 4. Discuss with ET and IEC on possible remedial actions and propose mitigation measures to IEC and ER; 5. Implement the agreed mitigation measures. 6. Amend working methods if appropriate.

Event	Action			
	ET Leader	**IEC**	**ER**	**Contractor**
Action level being exceeded by two or more consecutive sampling days	1. Repeat *in situ* measurement to confirm findings; 2. Identify source(s) of impact; 3. Inform IEC, Contractor and ER; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, ER and Contractor; 6. Ensure mitigation measures are implemented; 7. Increase the monitoring frequency to daily until no exceedance of Action level; 8. Repeat measurement on next day of exceedance to confirm findings.	1. Check monitoring data submitted by ET and Contractor's working method; 2. Discuss with ET and Contractor on possible remedial actions; 3. Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly; 4. Assess the effectiveness of the implemented mitigation measures.	1. Confirm receipt of notification of non-compliance in writing; 2. Discuss with IEC on the proposed mitigation measures; 3. Make agreement on mitigation measures to be implemented; 4. Ensure mitigation measures are properly implemented; 5. Assess the effectiveness of the implemented mitigation measures.	1. Inform the Engineer and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment and consider changes of working methods; 4. Discuss with ET and IEC on possible remedial actions and propose mitigation measures to IEC and ER within 3 working days of notification; 5. Implement the agreed mitigation measures; 6. Amend working methods if appropriate.

Event	Action			
	ET Leader	**IEC**	**ER**	**Contractor**
Limit level being exceeded by one sampling day	1. Repeat *in-situ* measurement to confirm findings; 2. Identify source(s) of impact; 3. Inform IEC, Contractor, ER and EPD; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, ER and Contractor; 6. Ensure mitigation measures are implemented; 7. Increase the monitoring frequency to daily until no exceedance of Limit level.	1. Check monitoring data submitted by ET and Contractor's working method; 2. Discuss with ET and Contractor on possible remedial actions; 3. Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly; 4. Assess the effectiveness of the implemented mitigation measures.	1. Confirm receipt of notification of failure in writing; 2. Discuss with IEC, ET and Contractor on the proposed mitigation measures; 3. Request Contractor to critically review the working methods; 4. Ensure mitigation measures are properly implemented; 5. Assess the effectiveness of the implemented mitigation measures.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment and consider changes of working methods; 4. Submit proposal of mitigation measures to ER within 3 working days of notification and discuss with ET, IEC and ER; 5. Implement the agreed mitigation measures; 6. Amend working methods if appropriate.

Event	Action			
	ET Leader	**IEC**	**ER**	**Contractor**
Limit level being exceeded by two or more consecutive sampling days	1. Repeat *in-situ* measurement to confirm findings; 2. Identify source(s) of impact; 3. Inform IEC, contractor, ER and EPD; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, ER and Contractor; 6. Ensure mitigation measures are implemented; 7. Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days.	1. Check monitoring data submitted by ET and Contractor's working method; 2. Discuss with ET and Contractor on possible remedial actions; 3. Review the Contractor's mitigation measures whenever necessary to assure their effectiveness and advise the ER accordingly.	1. Confirm receipt of notification of failure in writing; 2. Discuss with IEC, ET and Contractor on the proposed mitigation measures; 3. Request Contractor to critically review the working methods; 4. Make agreement on the mitigation measures to be implemented; 5. Ensure mitigation measures are properly implemented; 6. Assess the effectiveness of the implemented mitigation measures; 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.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Take immediate action to avoid further exceedance; 3. Rectify unacceptable practice; 4. Check all plant and equipment and consider changes of working methods; 5. Submit proposal of mitigation measures to ER within 3 working days of notification and discuss with ET, IEC and ER; 6. Implement the agreed mitigation measures; 7. Resubmit proposals of mitigation measures if problem still not under control; 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.

Event / Action Plan for Dolphin Monitoring

Event	ET Leader	IEC	ER / SOR	Contractor
Action Level	1. Repeat statistical data analysis to confirm findings; 2. Review all available and relevant data, including raw data and statistical analysis results of other parameters covered in the EM&A, to ascertain if differences are as a result of natural variation or previously observed seasonal differences; 3. Identify source(s) of impact; 4. Inform the IEC, ER/SOR and Contractor; 5. Check monitoring data. 6. Review to ensure all the dolphin protective measures are fully and properly implemented and advise on additional measures if necessary.	1. Check monitoring data submitted by ET and Contractor; 2. Discuss monitoring results and finding with the ET and the Contractor.	1. Discuss monitoring with the IEC and any other measures proposed by the ET; 2. 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.	1. Inform the ER/SOR and confirm notification of the non-compliance in writing; 2. Discuss with the ET and the IEC and propose measures to the IEC and the ER/SOR; 3. Implement the agreed measures.
Limit Level	1. Repeat statistical data analysis to confirm findings; 2. Review all available and relevant data, including raw data and statistical analysis results of other parameters covered in the EM&A, to ascertain if differences are as a result of natural variation or previously observed seasonal differences; 3. Identify source(s) of impact; 4. Inform the IEC, ER/SOR and Contractor of findings; 5. Check monitoring data;	1. Check monitoring data submitted by ET and Contractor; 2. Discuss monitoring results and findings with the ET and the Contractor; 3. Attend the meeting to discuss with ET, ER/SOR and Contractor the necessity of additional dolphin monitoring and any other potential mitigation measures. 4. Review proposals for additional monitoring and any other mitigation measures submitted	1. Attend the meeting to discuss with ET, IEC and Contractor the necessity of additional dolphin monitoring and any other potential mitigation measures. 2. If ER/SOR is satisfied with the proposals for additional dolphin monitoring and/or any other mitigation measures submitted by ET and Contractor and verified by IEC, ER/SOR to signify the agreement in writing on such proposals and any other mitigation measures.	1. Inform the ER/SOR and confirm notification of the non-compliance in writing; 2. Attend the meeting to discuss with ET, IEC and ER/SOR the necessity of additional dolphin monitoring and any other potential mitigation measures. 3. Jointly submit with ET to IEC a proposal of additional dolphin monitoring and/or any other mitigation measures when necessary. 4. Implement the agreed additional dolphin monitoring

	6. Repeat review to ensure all the dolphin protective measures are fully and properly implemented and advise on additional measures if necessary. 7. If ET proves that the source of impact is caused by any of the construction activity by the works contract, ET to arrange a meeting to discuss with IEC, ER/SOR and Contractor the necessity of additional dolphin monitoring and/or any other potential mitigation measures (e.g., consider to modify the perimeter silt curtain or consider to control/temporarily stop relevant construction activity etc.) and submit to IEC a proposal of additional dolphin monitoring and/or mitigation measures where necessary.	by ET and Contractor and advise ER/SOR of the results and findings accordingly. 5. Supervise / Audit the implementation of additional monitoring and/or any other mitigation measures and advise ER/SOR the results and findings accordingly.	3. Supervise the implementation of additional monitoring and/or any other mitigation measures.	and/or any other mitigation measures.

China Harbour Engineering Company Limited

Monthly Summary Waste Flow Table for July / 2013 (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^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000 m^3)
Jan-13	0.0000	0.0000	0.0000	0.0000	0.0000	100.2272	0.0000	0.0000	0.0000	1.4000	0.0325
Feb-13	0.0000	0.0000	0.0000	0.0000	0.0000	49.3183	0.0000	0.0000	0.0000	0.2000	0.0195
Mar-13	0.0000	0.0000	0.0000	0.0000	0.0000	121.1545	0.0000	0.0000	0.0000	2.0000	0.0130
Apr-13	0.0000	0.0000	0.0000	0.0000	0.0000	197.7428	0.0000	0.0000	0.0000	0.0000	0.0260
May-13	0.0000	0.0000	0.0000	0.0000	0.0000	360.3733	0.0000	0.0000	0.0000	1.2000	0.0130
Jun-13	0.0000	0.0000	0.0000	0.0000	0.0000	415.9366	0.0000	0.0000	0.0000	0.0000	0.0130
Sub-total	0.0000	0.0000	0.0000	0.0000	0.0000	1244.7528	0.0000	0.0000	0.0000	4.8000	0.1170
Jul-13	0.0000	0.0000	0.0000	0.0000	0.0000	397.7040	0.0000	0.0000	0.5501	4.0000	0.0260
Aug-13											
Sep-13											
Oct-13											
Nov-13											
Dec-13											
Total	0.0000	0.0000	0.0000	0.0000	0.0000	1642.4568	0.0000	0.0000	0.5501	8.8000	0.1430

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^3 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
1-Hour TSP	Action	-	-
	Limit	-	-
24-Hour TSP	Action	-	-
	Limit	-	-
Noise	Action	-	-
	Limit	-	-
Water Quality	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
Environmental complaints	-	-	-	-	8
Notification of summons	-	-		-	1
Successful Prosecutions	-	-	-	-	-