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 June 2016

[07/2016]

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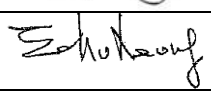
Reviewed, Approved and Certified:	Echo Leong (ETL)	

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RAMBOLL ENVIRON

Ref.: HYDHZMBEEM00_0_4371L.16

15 July 2016

By Fax (3698 5999) and By Post

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

Attention: Mr. Paul Appleton

Dear Sir,

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

Contract No. HY/2010/02 – HZMB HKBCF – Reclamation Works
Monthly Environmental Monitoring & Audit Report for June 2016

Reference is made to the Environmental Team's submission of the Monthly Environmental Monitoring & Audit Report for June 2016 certified by the ET Leader (ET's ref.: "60249820/C/RMKY16071501" dated 15 July 2016) and provided to us via e-mail on 15 July 2016.

We are pleased to inform you that we have no adverse comment on the captioned submission. We write to verify the captioned submission in accordance with Condition 5.4 of EP-353/2009/K and Condition 4.4 of EP-354/2009/D (for TM-CLKL Southern Landfall Reclamation only).

As per Condition 1.7 of EPs, please be reminded to keep in view on the site condition, in particular on the integrity of the perimeter silt curtain and the effectiveness of perimeter drainage facilities with your on-going surveillance and monitoring and to further update/notify ENPO and EPD, from time to time and prior to each further removal of other section(s) of the perimeter silt curtains.

Thank you very much for your attention and please feel free to contact the undersigned should you require further information.

Yours faithfully,
For and on behalf of
Ramboll Environ Hong Kong Limited

Raymond Dai
Independent Environmental Checker

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

Internal: DY, YH, ENPO Site

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EXECUTIVE SUMMARY

Contract No. HY/2010/02 – Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Reclamation Works (here below, known as "the Contract") 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 11 April 2016 (EP-353/2009/K) and 13 March 2015 (EP-354/2009/D) (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 Contract).

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

Ramboll Environ Hong Kong Limited 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 Contract 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 2017. 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 30 June 2016. As informed by the Contractor, major activities in the reporting period were:-

Marine-base

- Sloping Seawalls
- Rubble Mound Seawall
- Maintenance of silt curtain

Land-base

- Surcharge removal & laying
- Deep Cement Mixing
- Installations of Precast Culverts except sloping outfalls
- Construction of Permanent Seawall
- Maintenance works of Site Office at Works Area WA2
- Maintenance works of Public Works Regional Laboratory at Works Area WA3
- 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	6 sessions
1-hour TSP monitoring	6 sessions
Noise monitoring	4 sessions
Impact water quality monitoring	13 sessions
Impact dolphin monitoring	2 surveys
Joint Environmental site inspection	5 sessions

Breaches of Action and Limit Levels for Air Quality

For impact air quality monitoring, no exceedance of 1-Hour TSP or 24-Hour TSP was recorded at all monitoring stations in the reporting month.

Breaches of Action and Limit Levels for Noise

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

Breaches of Action and Limit Levels for Water Quality

For impact water quality monitoring, no exceedance was recorded at all monitoring stations in the reporting month.

Breaches of Action and Limit Levels for Impact Dolphin Monitoring

For dolphin monitoring, a total of 4 sightings were made, two “on effort” and two “opportunistic”. One sighting was recorded on the 6 June 2016 and three on the 21 June 2016. The group sighted on the 6 June 2016 contained 5 individuals that were engaged in multiple behaviours including socializing and feeding. The three groups sighted on the 21 June contained one, three and one individuals, respectively. Two groups of these groups were travelling and one dolphin group’s behavior was unknown.

Complaint, Notification of Summons and Successful Prosecution

No complaint, notification of summons or prosecution was received in the reporting period.

Reporting Change

No reporting change in the reporting month.

Future Key Issues

Key issues to be considered in the coming month included:

- Site runoff should be properly collected and treated prior to discharge;
- 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.
- Control night-time lighting and glare by hooding all lights.
- Regular review and provide maintenance to dust control measures such as sprinkler system.

1 INTRODUCTION

1.1 Background

1.1.1 Contract No. HY/2010/02 – Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Reclamation Works (here below, known as "the Contract") 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), August 2013 (EP-353/2009/G), January 2015 (EP-353/2009/H), July 2015 (EP-353/2009/I), February 2016 (EP-353/2009/J) and April 2016 (EP-353/2009/K). 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), January 2014 (EP-354/2009/B), December 2014 (EP-354/2009/C) and March 2015 (EP-354/2009/D).

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 11 April 2016 (EP-353/2009/K) and 13 March 2015 (EP-354/2009/D) (for TMCLKL Southern Landfall Reclamation only).

1.1.5 A Contract Specific EM&A Manual, which included all Contract -relation contents from the original EM&A Manuals for the Contract, 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 Contract).

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

1.1.8 Ramboll Environ Hong Kong Limited. 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 Contract 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 2017.

1.1.11 According to the Contract 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 Contract commenced on 12 March 2012.

1.2 Scope of Report

1.2.1 This is the fifty second 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 Contract in June 2016.

1.3 Contract Organization

1.3.1 The Contract 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	Paul Appleton	3698 5889	2698 5999
IEC / ENPO (Ramboll Environ Hong Kong Limited)	Independent Environmental Checker	Raymond Dai	3465 2888	3465 2899
	Environmental Project Office Leader	Y. H. Hui	3547 2133	3465 2899
Contractor (China Harbour Engineering Company Limited)	Environmental Officer	Louie Chan	3693 2254	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-base
- Sloping Seawalls
- Rubble Mound Seawall
- Maintenance of silt curtain

Land-base
- Surcharge removal & laying
- Deep Cement Mixing
- Installations of Precast Culverts except sloping outfalls
- Construction of Permanent Seawall
- Maintenance works of Site Office at Works Area WA2
- Maintenance works of Public Works Regional Laboratory at Works Area WA3
- Maintenance of Temporary Marine Access at Works Area WA2

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

1.4.4 The general layout plan of the Contract 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 Contract 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 Contract 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 Contract 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 Contract 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 (AMS3B) 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 It was observed that a tree near AMS3B may affect the wind flow around the HVS located at AMS3B. With no further comment received from IEC, the HVS at AMS3B has been relocated on 8 September 2014 to slightly more than 2 meters separation from it, measured horizontally. 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.

2.3.3 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.

2.3.4 The impact air quality monitoring station AMS7A (Chu Kong Air-Sea Union Transportation Company Limited) has been relocated to AMS7 (Hong Kong SkyCity Marriott Hotel) on 30 December 2015. The impact air quality monitoring was conducted at AMS7 (Hong Kong SkyCity Marriott Hotel) since January 2016, action Level for air quality, as derived from the baseline monitoring data recorded at Hong Kong SkyCity Marriott Hotel has been adopted for this air quality monitoring location.

2.3.5 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
AMS3B	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 Contract. 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 June 2016 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 (μg/m^3)	Range (μg/m^3)	Action Level (μg/m^3)	Limit Level (μg/m^3)
AMS2	75	72-79	374	500
AMS3B	74	71-77	368	500
AMS7	74	72-77	370	500

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

	Average (μg/m^3)	Range (μg/m^3)	Action Level (μg/m^3)	Limit Level (μg/m^3)
AMS2	19	14-26	176	260
AMS3B	17	12-23	167	260
AMS7	30	18-38	183	260

2.7.2 The event action plan is annexed in Appendix L.

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

3.2 Monitoring Equipment

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

Table 3.1 Noise Monitoring Equipment

Equipment	Brand and Model
Integrated Sound Level Meter	Rion NL-31 & B&K2238
Acoustic Calibrator	Rion NC-73 & B&K 4231

3.3 Monitoring Locations

3.3.1 Monitoring locations NMS2 was set up at the proposed locations in accordance with Contract Specific EM&A Manual. However, for monitoring location NMS3 (Ho Yu College), as proposed in the Contract 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 (NMS3B) respectively. Same baseline noise level (as derived from the baseline monitoring data recorded at Ho Yu College) and Limit Level were adopted for this alternative noise monitoring location.

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

Table 3.2 Locations of Impact Noise Monitoring Stations

Monitoring Station	Location	Description
NMS2	Seaview Crescent Tower 1	Free-field on the rooftop of the premise
NMS3B	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 NMS3B were free field measurements in the reporting month at NMS3B. 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 June 2016 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	66	64-67*	75
NMS3B	67	65-69*	70/65^

*+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 Other major noise sources during the noise monitoring included construction activities of the Contract, construction activities by other contracts and nearby traffic noise. However, for major noise sources during the noise monitoring at NMS3B on 20 June 2016, the works of the private property development/construction project which do not belongs to Contract No.HY/2010/02 (HKBCF Reclamation Works) is likely to have more contribution to the measured noise level recorded at NMS3B on 20 June 2016 because it is located relatively closer to the monitoring station - NMS3B than the works from Contract No.HY/2010/02. Nonetheless, the Contractor of Contract No.HY/2010/02 was reminded to continue to properly implement all noise mitigation measures.

3.7.4 Since the measured noise level at NMS3B on 20 June 2016 is 66 dB(A) and is below the baseline level, therefore it is considered that the measured noise level is lower than the background, therefore it is not considered as an exceedance. As such the EAP was not triggered.

3.7.5 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 Contract 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 Turbidity Meter	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 and Lowrance x-4
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 Contract 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 Contract 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 June 2016 is provided in Appendix F.

4.7 Results and Observations

4.7.1 Impact water quality monitoring results and graphical presentations are provided in Appendix J.

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	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
IS(Mf)11	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
IS(Mf)16	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
IS17	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
SR3	Action	0	0	0	0	0	0	0	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
	Limit	0	0	0	0	0	0	0	0	0	0
SR5	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
SR6	Action	0	0	0	0	0	0	0	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

Station	Exceedance Level	DO (S&M)		DO (Bottom)		Turbidity		SS		Total	
		Ebb	Flood	Ebb	Flood	Ebb	Flood	Ebb	Flood	Ebb	Flood
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	0	
	Limit	0	0	0	0	0	0	0	0	0	

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

4.7.2 No exceedance was recorded at all monitoring stations in the reporting month.

4.7.3 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

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 76C
Computers (T7000 Tablet, Intel Atom)	Windows 7/MSO 13 Logger
Camera	Nikon D7100 300m 2.8D fixed focus Nikon D90 80-400mm zoom lens
Laser Rangefinder	Range Finder Bushnell 1000m
Marine Binocular x3	Nexus 7 x 50 marine binocular with compass and reticules Fujinon 7 x 50 marine binocular with compass and reticules

5.3 Monitoring Frequency and Conditions

5.3.1 Dolphin monitoring is conducted twice per month in each survey area.

5.3.2 Dolphin monitoring is conducted only when visibility is good (e.g., over 1km) and the sea condition is at a Beaufort Sea State of 4 or better.

5.3.3 When thunder storm, black rain or typhoon warnings are in force, all survey effort is stopped.

5.4 Monitoring Methodology and Location

5.4.1 The impact dolphin monitoring is vessel-based and combines line-transect and photo-ID methodology. The survey follows pre-set and fixed transect lines in the two areas defined by AFCD as:

5.4.2 Northeast Lantau survey area; and

5.4.3 Northwest Lantau survey area.

5.4.4 The co-ordinates for the transect lines and layout map have been provided by AFCD and are shown in Table 5.2 and Figure 4.

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

	HK Grid System		Long Lat in WGS84	
ID	X	Y	Long	Lat
1	804671	815456	113.870287	22.277678
1	804671	831404	113.869975	22.421696
2	805475	815913	113.878079	22.281820
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	820880	113.926749	22.326757
7	810499	824613	113.926688	22.360464
8	811508	821123	113.936539	22.328966
8	811508	824254	113.936486	22.357241
9	812516	821303	113.946320	22.330606
9	812516	824254	113.946279	22.357255
10*	813525	820827	113.956112	22.326321
10*	813525	824657	113.956066	22.360908
11	814556	818853	113.966155	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

Remarks:

(a) *Due to the presence of deployed silt curtain systems at the site boundaries of the Contract, 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 108km.

(b) Coordinates for transect lines 1, 2, 7, 8, 9 and 11 have been updated in respect to the Proposal for Alteration of Transect Line for Dolphin Monitoring approved by EPD on 19 August 2015.

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 June 2016 is provided in Appendix F.

5.6.2 Two surveys covering both study areas were completed.

5.7 Results and Observations

5.7.1 Dolphin surveys were conducted on 6, 7, 20 and 21 June 2016. A total of 221.5km of transect line was conducted, all 221.5km was conducted during Beaufort Sea State 3 or better (favourable water conditions).

The effort summary and sightings data are shown in Tables 5.3 and 5.4, respectively. The survey efforts conducted in June 2016 are plotted in Figure 5a-b. 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	06/06/2016	NWL	1	57.2	110.9
	06/06/2016	NWL	2	6.4	
	06/07/2016	NWL	1	10.2	
	06/07/2016	NEL	1	34.4	
	06/07/2016	NEL	2	2.7	
2	06/20/2016	NWL	1	3.3	110.6
	06/20/2016	NEL	1	37	
	06/21/2016	NWL	1	37.5	
	06/21/2016	NWL	2	8.9	
	06/21/2016	NWL	3	23.9	
TOTAL in June 2016					**221.5**

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

Table 5.4 Impact Dolphin Monitoring Survey Details June 2016

Date	Location	No. Sightings "on effort"	No. Sightings "opportunistic"
06/06/2016	NWL\WL	**1***	0
	NEL	0	0
06/07/2016	NWL	0	0
	NEL	0	0
06/20/2016	NWL	0	0
	NEL	0	0
06/21/2016	NWL	2	1
	NEL	0	0
TOTAL in JUNE 2016		**3**	**1**

* Group of dolphin was sighted at WL area while vessel based dolphin monitoring was conducted in NWL

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 (km)**	**NWL Track (km)**	**NEL Sightings**	**NWL Sightings**	**NEL Encounter Rate**	**NWL Encounter Rate**
6 and 7 June 16	37.1	73.8	0	0	0.0	0.0
20 and 21 June 16	37.0	73.6	0	2	0.0	2.7
Encounter Rate of Total Number of Dolphins (ANI)**						
Date	**NEL Track (km)**	**NWL Track (km)**	**NEL Dolphins**	**NWL Dolphins**	**NEL Encounter Rate**	**NWL Encounter Rate**
6 and 7 June 16	37.1	73.8	0	0	0.0	0.0
20 and 21 June 16	37.0	73.6	0	4	0.0	5.4

* 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.

5.7.2 A total of 4 sightings were made, two “on effort” and two “opportunistic”. One sighting was recorded on the 6 June 2016 and three on the 21 June 2016. The group sighted on the 6 June 2016 contained 5 individuals that were engaged in multiple behaviours including socialising and feeding. The three groups sighted on the 21 June contained one, three and one individuals, respectively. Two groups of these groups were travelling and one dolphin group’s behavior was unknown. Sighting details are summarised and plotted in Appendix K and Figure 5c, respectively. The locations of sighting with different behaviour are mapped in Figure 5d.

5.7.3 One calf was sighted on 6 June 2016. No attempt was made to approach the mother and calf pair to avoid disturbance.

5.7.4 Six individuals were resighted and three individuals were added to the catalogue in May 2016. The new individuals are HZMB 132; HZMB 133 and HZMB 134. HZMB 132 and HZMB 134 are adults and HZMB 133 is a sub-adult. HZMB 001 [WL46] was first identified in 2012 and has now been recorded on seven different days in total and always in NWL. It was last sighted in August 2014. HZMB 038 has only been sighted once previously, in November 2012. HZMB 044 [NL98] is a frequently sighted individual and has been recorded during baseline monitoring and a total of 12 times on different days during construction monitoring. It was last sighted in January 2016. HZMB 045 has been sighted a total of five times, the last sighting in February 2014. HZMB 054 [CH34] is a regularly sighted individual and was recorded during baseline monitoring for this project. During construction monitoring, it has now been sighted a total of 13 times and was last sighted in December 2015. HZMB 126 has been sighted a total of three times. This individual was identified in January 2015 and was last sighted in February 2015. Images and re-sightings data are included in Appendix K.

5.7.5 Noteworthy Observation[1]:

5.7.5.1 When impact monitoring was conducted at the southern parts of transect lines 1 & 2, the view of the area was partially blocked by the working vessels and fixed structures which do not belong to HKBCF Reclamation Works. The number of fixed structures has increased and in many areas, it is no longer possible to pass between them by ship. And the number of working vessels appears to have decreased, it is considered that they will temporarily affect survey protocol, survey data collection, dolphin movement, dolphin habitat use and dolphin behaviour, whereas the fixed structures will

[1] A noteworthy observation is to show that either the conduct of the surveys themselves is affected, i.e., the noted vessel or works impedes the progress or view of the survey platform. In addition, the vessel or construction works may be different or additional to that observed previously and further, are of such a nature that they are a likely to create an impact on the movement or behaviour of the subject of the impact survey, in this case, the dolphins.

continuously affect survey protocol, survey data collection, dolphin movement, dolphin habitat use and dolphin behaviour.

5.7.5.2 The HKBCF and adjoining "Southern Landfall" Projects effected lines 11 and 12. The view of the area was partially blocked by the working vessels and in water structures. As the working vessels will move as construction progresses, they will cause temporary effects to survey protocol and survey data collection. In time, the fixed structures will affect all survey protocols and dolphin ecology in the long term. As construction is ongoing, it is not yet known if these fixed structures will affect the transect lines passage. It is noted that fewer vessels occupy this area compared to previous months

5.7.5.3 Travel to the northern end of line was slightly impeded by anchorages. After checking with the Contractor, there are no construction vessels of this Contract that are required to anchor at northern end of line 10 during this reporting period, as such they are unlikely to be related to this Contract. As there are variable numbers of ships in this anchorage through time, it is considered that this could temporarily affect survey protocol, survey data collection and dolphin habitat use.

5.7.5.4 Anchored fishing vessels were noted on lines 1 and 21. In previous encounters, dolphins were seen feeding in association with these vessels despite them not being active. This may influence both dolphin behaviour and the view of the area.

5.7.5.5 A new project was noted on southern part of transect line 8 on 7 June 2016 and 21 June 2016 respectively, which blocked the transect area view. After checking with the Contractor, these new project do not belongs to this Contract and it is unknown what activities occur under this project or how long it may occur for and, as such, it is considered that this new project may affect survey protocol, survey data collection and dolphin habitat use.

5.7.5.6 Several single anchored vessels were noted on lines 5, 18 and 22 which caused the monitoring vessel to divert slightly from the trackline or blocked the transect area view. It is unknown who these vessels belong to or even if they were Project related. After checking with the Contractor, there are no transboundary vessels that are required to anchor on lines 5, 18 and 22 during this reporting period, as such they are unlikely to be related to this Contract. As there are variable numbers of ships in anchor on lines 2 and 4 through time, it is considered that this could temporarily affect survey protocol, survey data collection and dolphin habitat use.

5.7.5.7 The survey effort log notes the areas in which the visibility is limited or the survey is affected so that these can be accounted for in any subsequent analyses. Some of these obstructions will become permanent and some will be temporary as the HZMB is built and other projects progress. It is advised that the impact monitoring surveys should be completed as close to the predefined lines as possible (as per Figure 4 of this report).

5.7.5.8 The above noteworthy observations are largely a result of multiple and on-going infrastructure projects within the Lantau area. No amendment to EM&A protocols can negate the effects of these projects, e.g., it is a highly dynamic environment and viewing conditions may alter every survey (sometimes within surveys) and most of the survey area is affected, to some degree, by marine construction works. Instead, survey data analyses should incorporate any noteworthy observations which may affect either data collection or dolphin distribution and behavioural changes. The above mentioned activities recorded during boat survey will not affect implementation of the EM&A Programme provided appropriate data analyses are conducted.

5.7.6 The event action plan is annexed in Appendix L.

6 ENVIRONMENTAL SITE INSPECTION AND AUDIT

6.1 Site Inspection

6.1.1 Site Inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for the Contract. In the reporting month, 5 site inspections were carried out on 2, 10, 16, 23 and 30 June 2016.

6.1.2 Particular observations during the site inspections are described below:

Air Quality

6.1.3 The Contractor was reminded to affix a proper exception/approval label to the power pack at Portion E2 under NRMM regulation last reporting month. The Contractor subsequently rectified the situation in the reporting month. (Closed)

6.1.4 An excavator was observed without NNRM label. The Contractor was reminded to properly affix NNRM label to the excavator. The Contractor subsequently affix NRMM label onto the excavator. (Closed)

6.1.5 Idle ground breaking works area was observed, the Contractor was reminded to provide mitigation measures when there are active ground breaking activities last reporting month. The Contractor subsequently watering to the concerned area when there were active ground breaking activities. (Closed)

6.1.6 Fugitive dust was observed when vehicle passed through roads on site. The Contractor was reminded to provide mitigation measures such as dust suppression measures to effectively prevent generation of fugitive dust. (Reminder)

Noise

6.1.7 No relevant adverse impact was observed in the reporting month.

Water Quality

6.1.8 No relevant adverse impact was observed in the reporting month.

Chemical and Waste Management

6.1.9 The Contractor was reminded to dispose of general refuse regularly at Portion E2 properly. The Contractor subsequently cleared the generation refuse at Portion E2 in the reporting month. (Closed)

6.1.10 The Contractor was reminded to provide drip tray for the moveable light generator at Portion E2 last reporting month. The Contractor subsequently provided drip tray to the moveable light generator in the reporting month. (Closed)

6.1.11 Oil drums were observed without drip tray at workshop area, the Contractor was advised to provide drip tray to all oil drums. (Follow up)

Landscape and Visual Impact

6.1.12 No relevant adverse impact was observed in the reporting month.

Others

6.1.13 No relevant adverse impact was observed in the reporting month.

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, 156m^3 of Hard Rock and Large Broken Concrete was generated for recycling into aggregates, 29,193.8m^3 of inert C&D material was reused in other projects. 27,882m^3 of fill material were imported for the Contract use in the reporting period. 65m^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.

6.2.5 The treated marine sediment and/or treated excavated filling material specified by Contract no. HY/2013/01 has been received as public fill for Contract no. HY/2010/02's reclamation filling works since January 2015. As informed by the Contractor in the reporting month, such site arrangement has been discontinued since 24 February 2016.

6.2.6 After checking with the Contractor, surcharge material was removed off site to Macau from 27 April 2016 and it is continued in the reporting month. Surplus surcharge was exported to Macau during the reporting month. The Contractor was reminded to ensure consistency in quantities in case of any C&D material disposed off-site and/or no surcharge material removed off site.

6.2.7 As advised by the Contractor, 96,183m^3 of surplus surcharge was exported to Macau during the reporting month.

6.3 Environmental Licenses and Permits

6.3.1 The environmental licenses and permits for the Contract 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/K	11/04/2016	N/A	HyD	Hong Kong – Zhuhai – Macao Bridge Hong Kong Boundary Crossing Facilities
		EP-354/2009/D	13/03/2015	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	--	25/07/2014	--	CHEC	Works Area WA1
WDO	Chemical Waste Producer Registration	5213-951-C1186-30	28/10/2015	N/A	CHEC	Chemical waste produced in Contract HY/2010/02 (WA1)
WDO	Chemical Waste Producer Registration	5213-951-C1186-21	30/3/2012	N/A	CHEC	Chemical waste produced in Contract HY/2010/02 (WA2)
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-RE0385-16	19/04/2016	14/10/2016	CHEC	Section of TKO Fill Bank under Contract HY/2010/02
NCO	Construction Noise Permit	GW-RS0095-16	05/02/2016	03/08/2016	CHEC	Reclamation Works in Contract HY/2010/02

6.4 Implementation Status of Environmental Mitigation Measures

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

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

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

6.4.4 Regarding the implementation of dolphin monitoring and protection measures (i.e. implementation of Dolphin Watching Plan, Dolphin Exclusion Zone and Silt Curtain integrity Check), regular checking were conducted by the experienced MMOs within the works area to ensure no dolphin was trapped by the enclosed silt curtain systems. Any dolphin spotted within the enclosed silt curtain systems was reported and recorded. Relevant procedures were followed and measures were well implemented. Silt curtain systems were also inspected timely in accordance to the submitted plan. All inspection records were kept properly.

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

6.4.6 Frequency of watering per day on exposed soil was checked; with reference to the record provided by the Contract, watering was conducted at least 8 times per day on reclaimed land. The frequency of watering is the mainly refer to water truck. Sprinklers are only served to strengthen dust control measure for busy traffic at the entrance of Portion D. As informed by the Contractor, during the mal-function period of sprinkler, water truck will enhance watering at such area. The Contractor was reminded to ensure provision of watering of at least 8 times per day on all exposed soil within the Contract site and associated works areas throughout the construction phase.

6.4.7 After review, 1 floating grout production was in operation at any time in June 2016 for Contract No.HY/2010/02. Condition 3.26A of EP-353/2009/K for Contract No.HY/2010/02 is complied with during the reporting month.

6.4.8 As informed by the Contractor, the perimeter silt curtain near Portion B of HKBCF has been arranged on 3 February 2016. A notification on the concerned site arrangement of the perimeter silt curtain of Contract HY/2010/02 was sent to IEC/ENPO by the ET for their review on 8 March 2016, IEC/ENPO issued comments on 10 March 2016 and the notification of realignment of perimeter silt curtain is under ET's further review in the reporting in the reporting month. The concerned notification on the concerned site arrangement of the perimeter silt curtain of Contract HY/2010/02 will be sent to the Authority once the review is completed.

6.4.9 Further to our letter (ET's letter's ref.: 60249820/rmky16033001) dated 30/3/2016 regarding the notification of silt curtain removal programme and arrangement, as informed by RSS on 18 May 2016, the Contractor provided an updated programme on 17 May 2016 to indicate the current site situation. According to CHEC's latest removal programme during the reporting month, stage 1 (southern section of Portion B) removal work was rescheduled and therefore not carried out in June 2016. Tentative completion for stage 1 removal work and dates for the subsequent stages have also been updated in the reporting month, while the overall phasing arrangement has not changed. A notification letter was prepared in the reporting month and sent to IEC/ENPO on 1 June 2016 via email to inform them that the removal of perimeter silt curtain of Stages 1, 2, 3 and 4 has been rescheduled. IEC/ENPO expressed on 7 June 2016 that the update on the proposal is mainly on time schedule and as such, they have no objection in principle. However prior to IEC/ENPO's reply to confirm ET's updated proposal, ET was requested to provide site photos to show ET's checking of the current site condition with respect to the reminders given in their previous letter (Our Ref.: HYDHZMBEEM00_0_4102L.16 dated 22 April 2016). The situation was currently under ET's review during the reporting month.

6.5 Summary of Exceedances of the Environmental Quality Performance Limit

6.5.1 For impact air quality monitoring, no exceedance was recorded at all monitoring stations in the reporting month.

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

6.5.3 For impact water quality monitoring, no exceedance was recorded at all monitoring stations in the reporting month.

6.5.4 For dolphin monitoring, a total of 4 sightings were made, two “on effort” and two “opportunistic”. One sighting was recorded on the 6 June 2016 and three on the 21 June 2016. The group sighted on the 6 June 2016 contained 5 individuals that were engaged in multiple behaviours including socialising and feeding. The three groups sighted on the 21 June contained one, three and one individuals, respectively. Two groups of these groups were travelling and one dolphin’s groups behavior was unknown.

6.5.5 Environmental site inspection was carried out 5 times in June 2016. Recommendations on remedial actions were given to the Contractors for the deficiencies identified during the site audits.

6.5.6 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 complaint, notification of summons or 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 Contract in July and August 2016 will be*:-

Marine-base

- Sloping Seawalls
- Rubble Mound Seawall
- Maintenance of silt curtain

Land-base

- Surcharge removal & laying
- Deep Cement Mixing
- Installations of Precast Culverts except sloping outfalls
- Construction of Permanent Seawall
- Maintenance works of Site Office at Works Area WA2
- Maintenance works of Public Works Regional Laboratory at Works Area WA3
- Maintenance of Temporary Marine Access at Works Area WA2

*Construction activities in July and August 2016 will be changed subject to works progress.

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;
- 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.
- Control night-time lighting and glare by hooding all lights.
- Regular review and provide maintenance to dust control measures such as sprinkler system.

7.3 Monitoring Schedule for the Coming Month

7.3.1 The tentative schedule for environmental monitoring in July 2016 is provided in Appendix F.

8 CONCLUSIONS AND RECOMMENDATIONS

8.1 Conclusions

8.1.1 For impact air quality monitoring, no exceedance was recorded at all monitoring stations in the reporting month.

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

8.1.3 For impact water quality monitoring, no exceedance was recorded at all monitoring stations in the reporting month.

8.1.4 For dolphin monitoring, a total of 4 sightings were made, two “on effort” and two “opportunistic”. One sighting was recorded on the 6 June 2016 and three on the 21 June 2016. The group sighted on the 6 June 2016 contained 5 individuals that were engaged in multiple behaviours including socialising and feeding. The three groups sighted on the 21 June contained one, three and one individuals, respectively. Two groups of these groups were travelling and one dolphin group’s behavior was unknown.

8.1.5 No complaint, notification of summons or prosecution was received in the reporting period.

8.1.6 Environmental site inspection was carried out 5 times in June 2016. Recommendations on remedial actions were given to the Contractors for the deficiencies identified during the site audits.

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.
- Regular review and provide maintenance to dust control measures such as sprinkler system.

Construction Noise Impact

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

Water Quality Impact

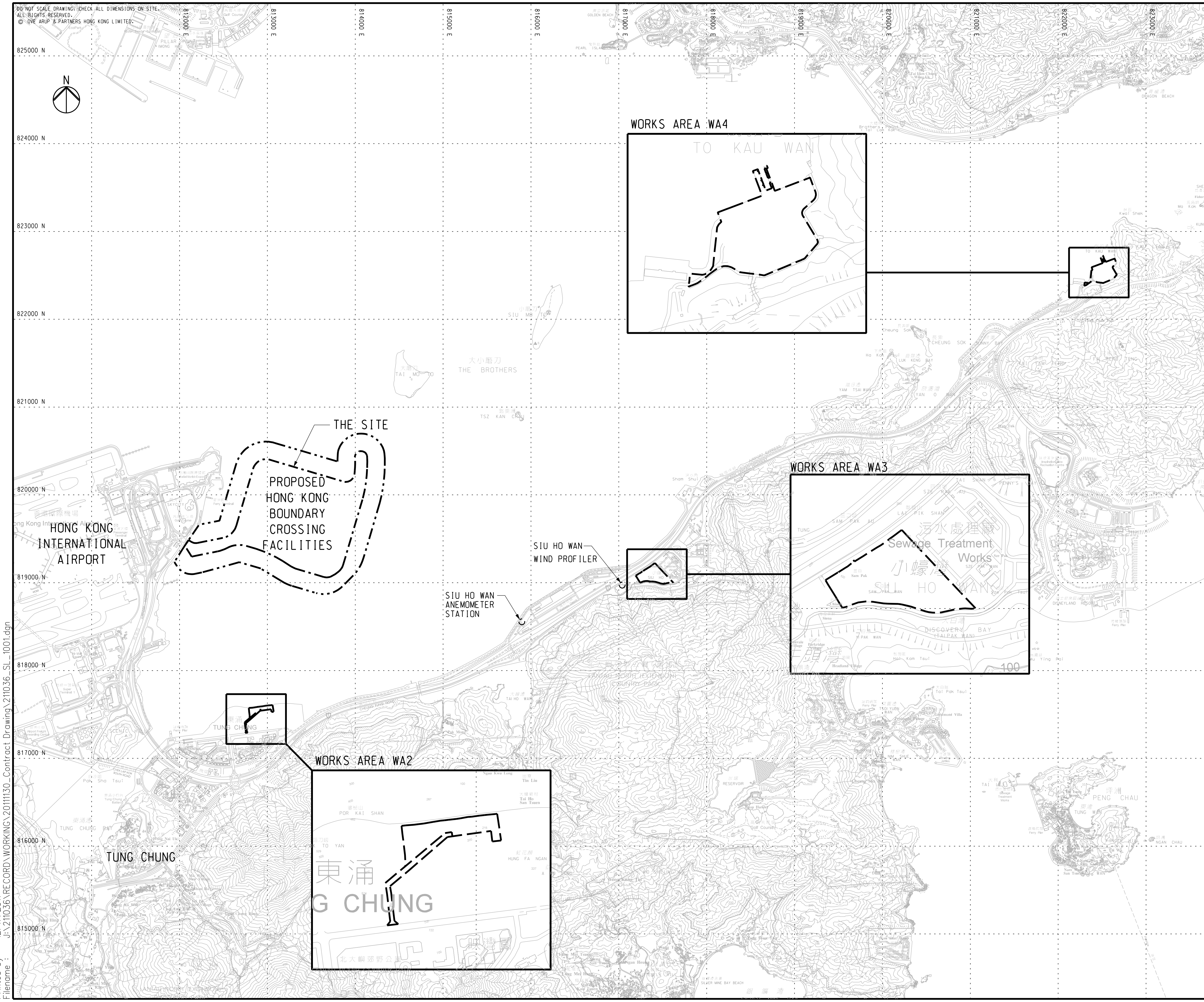
- Regular review and maintenance of silt curtain systems, drainage systems and desilting facilities in order to make sure they are functioning effectively.
- Construction of seawall should be completed as early as possible.
- Regular inspect and review the loading process from barges to avoid splashing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

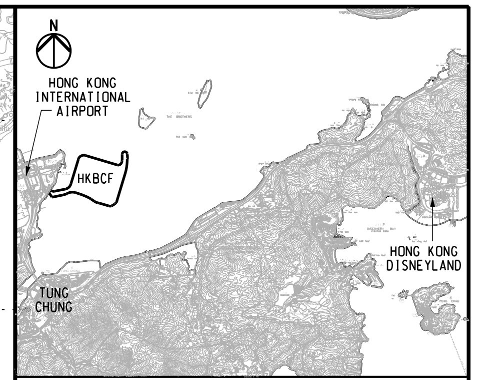
Chemical and Waste Management

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

Landscape and Visual Impact

- All existing, retained/transplanted trees at the works areas should be properly fenced off and regularly inspected.
- Control night-time lighting and glare by hooding all lights.





KEY PLAN

NOTES

1. ALL COORDINATES ARE RELATED TO HONG KONG 1980 GRID.
2. ALL LEVELS ARE IN METRES ABOVE HONG KONG PRINCIPAL DATUM (mPD).
3. REFER TO DRG NO. 211036/SL/1002 FOR THE DEFINITION OF SETTING OUT LINE (SOL) FOR THE HONG KONG BOUNDARY CROSSING FACILITIES (HKBCF) RECLAMATION SITE.
4. REFER TO DRG NO. 211036/SL/1004 FOR DETAILS OF SITE BOUNDARY.
5. FOR EXTENT OF SORTING FACILITIES AT FILL BANK AT TSEUNG KWAN O AREA 137 REFER TO DRG NO. 211036/SL/1015.

LEGEND

- SITE BOUNDARY
- SETTING OUT LINE (SOL)
- WORKS AREA BOUNDARY

Rev	Description	By	Date
-	FOR CONSTRUCTION	HYJL	11/11

Consultant

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

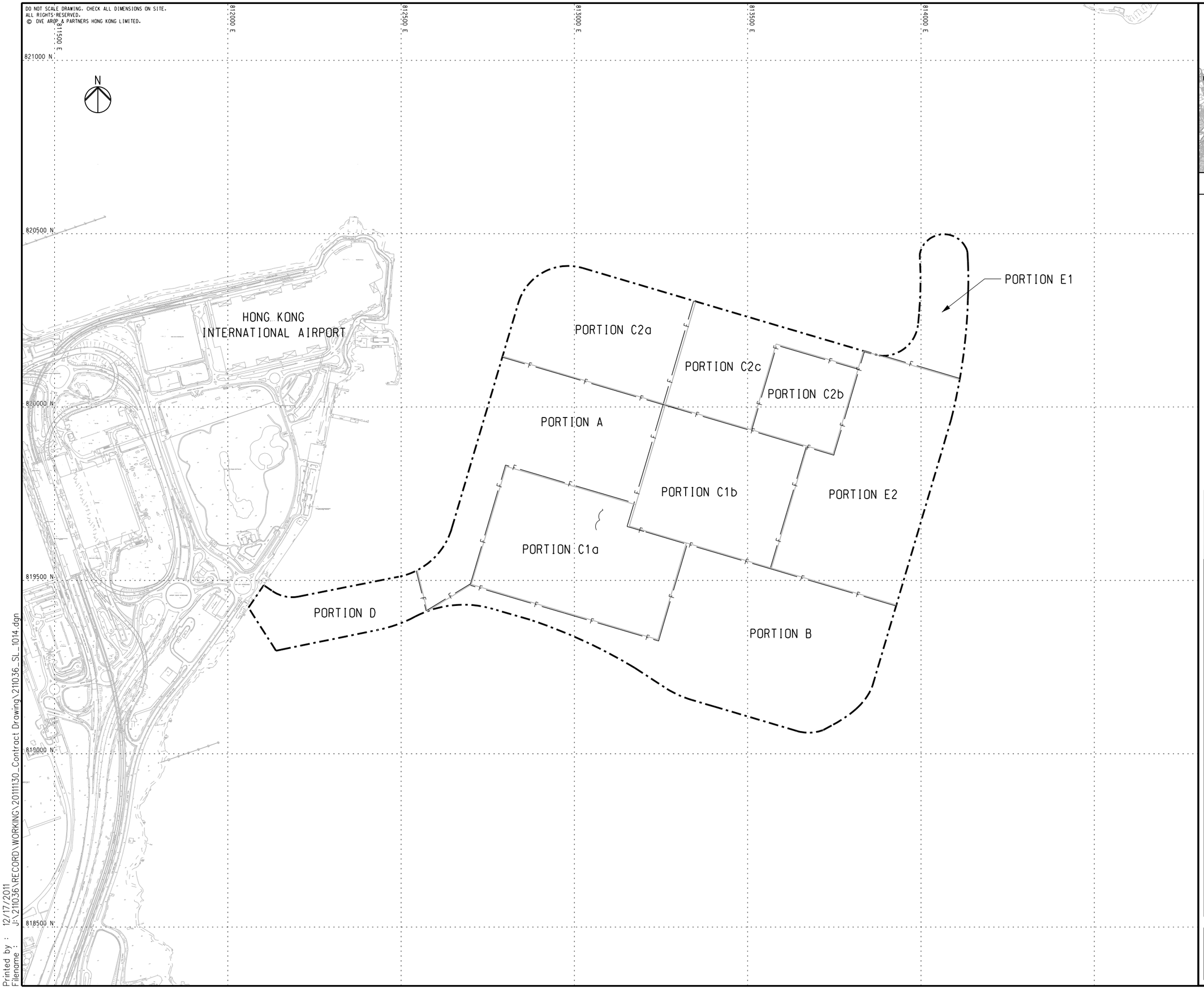
Supported By :
- Ecosystems Ltd.
- EDA Marine Ltd.
- Geotechnical Consulting Group (Asia) Ltd.
- Hong Kong Cetacean Research Project
- InteliBuild Technyx Asia Limited
- Tony Gee and Partners LLP

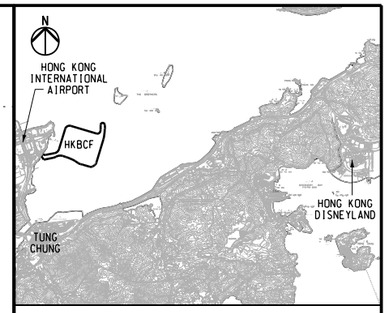
Contract No. and Title:
Contract No. HY/2010/02
Hong Kong-Zhuhai-Macao Bridge
Hong Kong Boundary Crossing Facilities
- Reclamation Works

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





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

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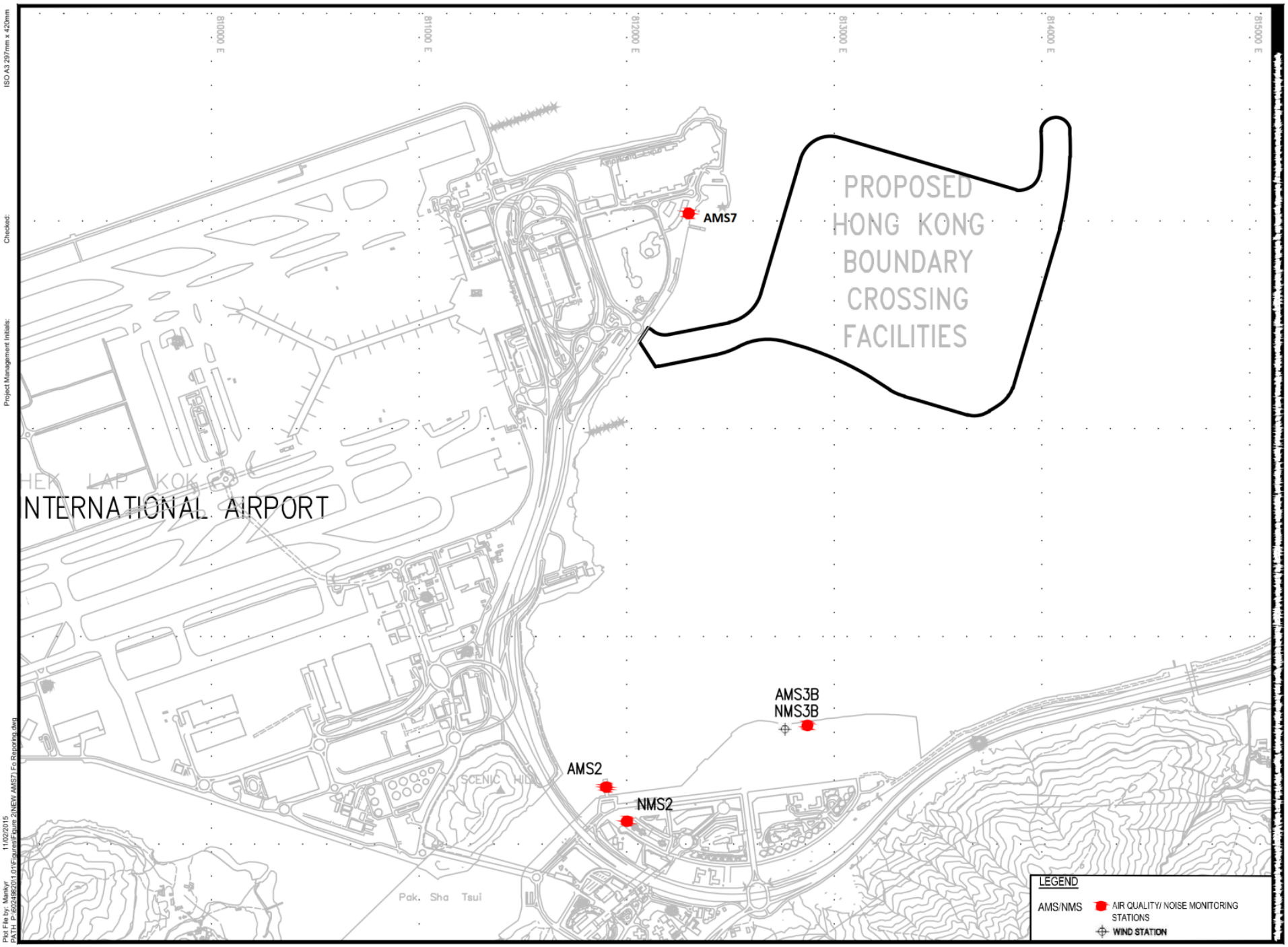

AIR QUALITY AND NOISE MONITORING STATIONS FOR HKBCF

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

Project No.: -

Date: JANUARY 2015

Figure 2

ISO A3 297mm x 420mm

Checked:

Project Management Initials:

Plot File by: Marilyn 11/02/2015
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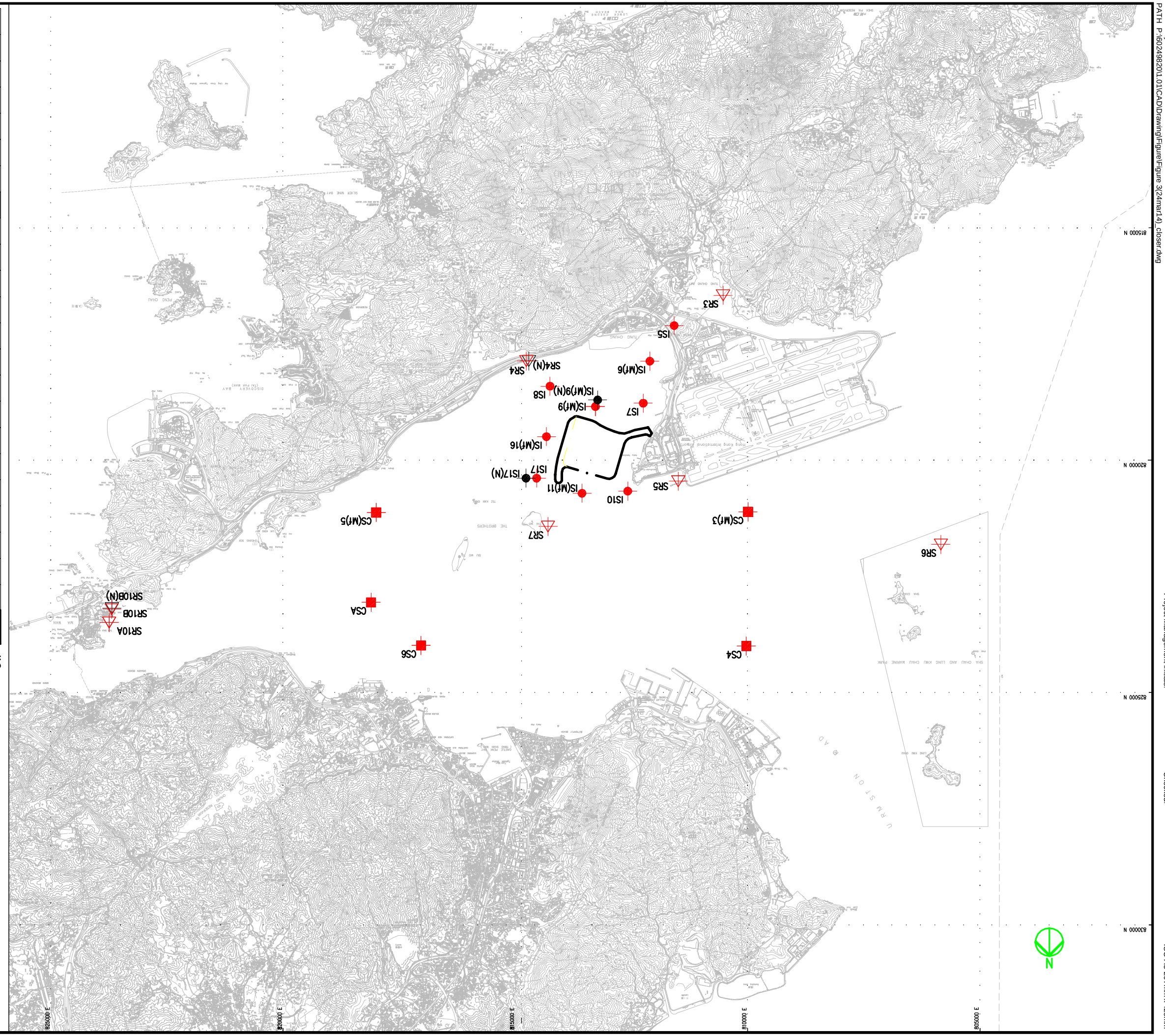
Plot File by: Kwokhc
PATH P:\60249820\1.01CAD\Drawing\Figure\Figure 3(24mar14)_closer.dwg
25/03/2014

Project Management Initials:

Checked:

ISO A3 297mm x 420mm



MONITORING STATIONS	CO-ORDINATES	
	EASTING	NORTHING
IS5	811579	817106
IS(M)6	812101	817873
IS7	812244	818777
IS8	814251	818412
IS(M)9	813273	818850
IS(M)9(N)	813226	818708
IS10	812577	820670
IS(M)11	813562	820716
IS(M)16	814328	819497
IS17	814539	820391
IS17(N)	814767	820391
SR3	810525	816456
SR4(N)	814705	817859
SR5	811489	820455
SR6	805837	821818
SR7	814293	821431
SR10A	823741	823495
SR10B(N)	823683	823187
CS(M)3	809989	821117
CS(M)5	817990	821129
CS4	810025	824004
CS6	817028	823992
CSA	818103	823064

SETTING OUT SCHEDULE

LEGEND

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

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

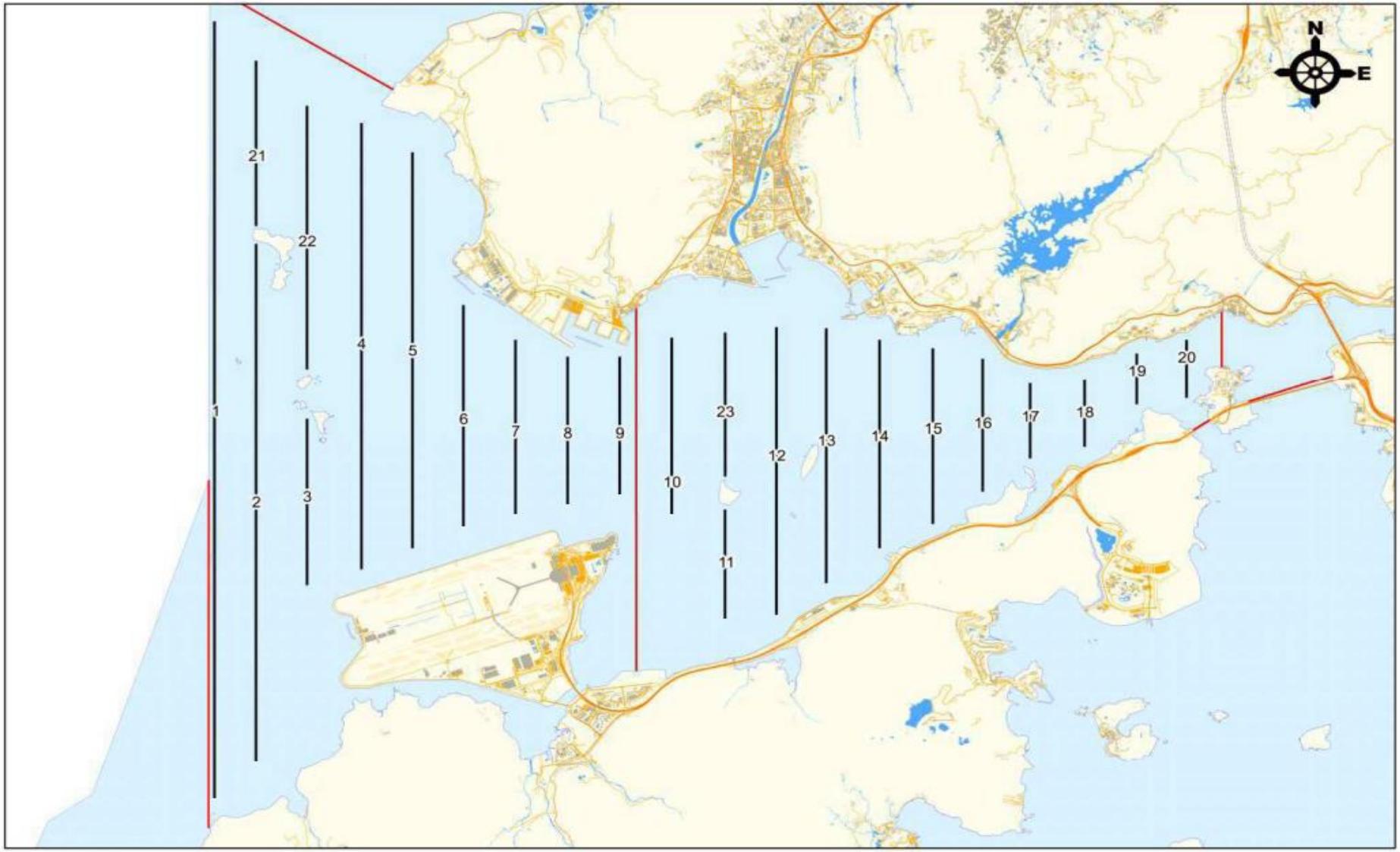
Project No.: -

Date: MAR 2014

WATER QUALITY MONITORING STATION

AECOM

Figure 3



Remarks:

***Transect 10 is now 3.6km in length due to the HKBCF construction site.**

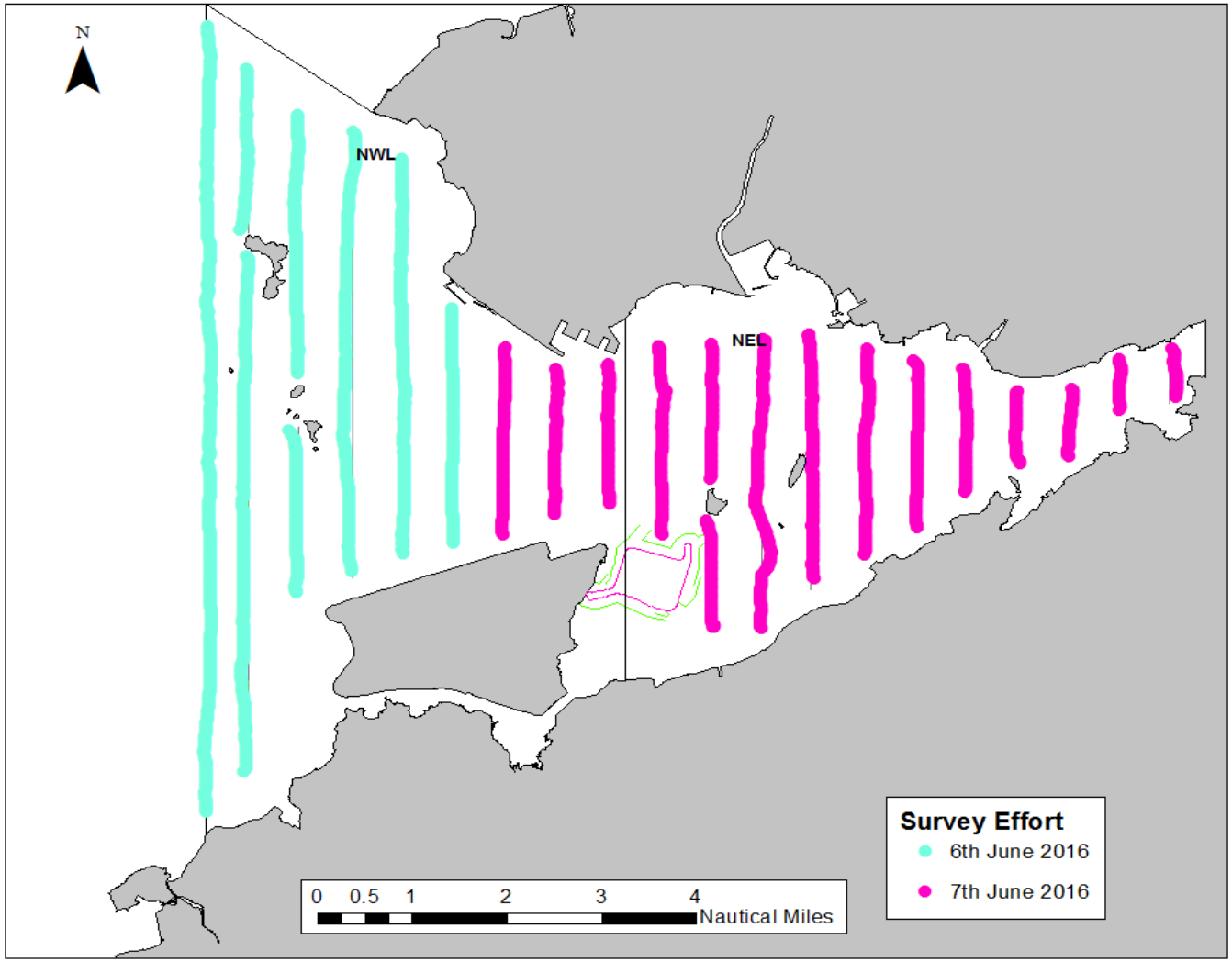
^Coordinates for transect lines 1, 2, 7, 8, 9 and 11 have been updated in respect to the Proposal for Alteration of Transect Line for Dolphin Monitoring approved by EPD on 19 August 2015. The total transect length for both NEL and NWL combined is 108km.

HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS
Project No.: 60249820 Date: November 2015

Impact Dolphin Monitoring
Line Transect Layout Map

AECOM

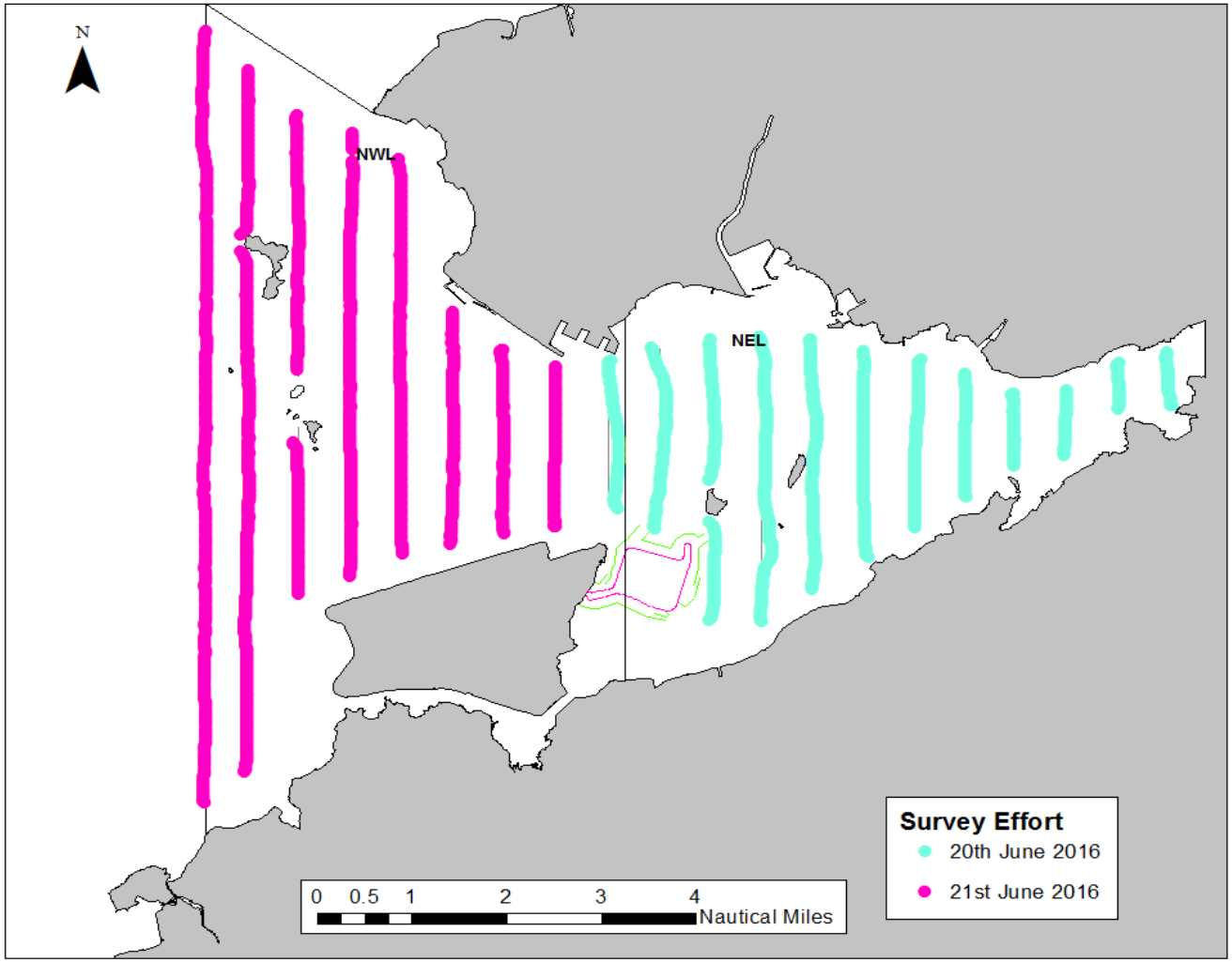
Figure 4



HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS
Project No.: 60249820 **Date: July 2016**

Impact Dolphin Monitoring Survey Efforts
on 6 and 7 June 2016

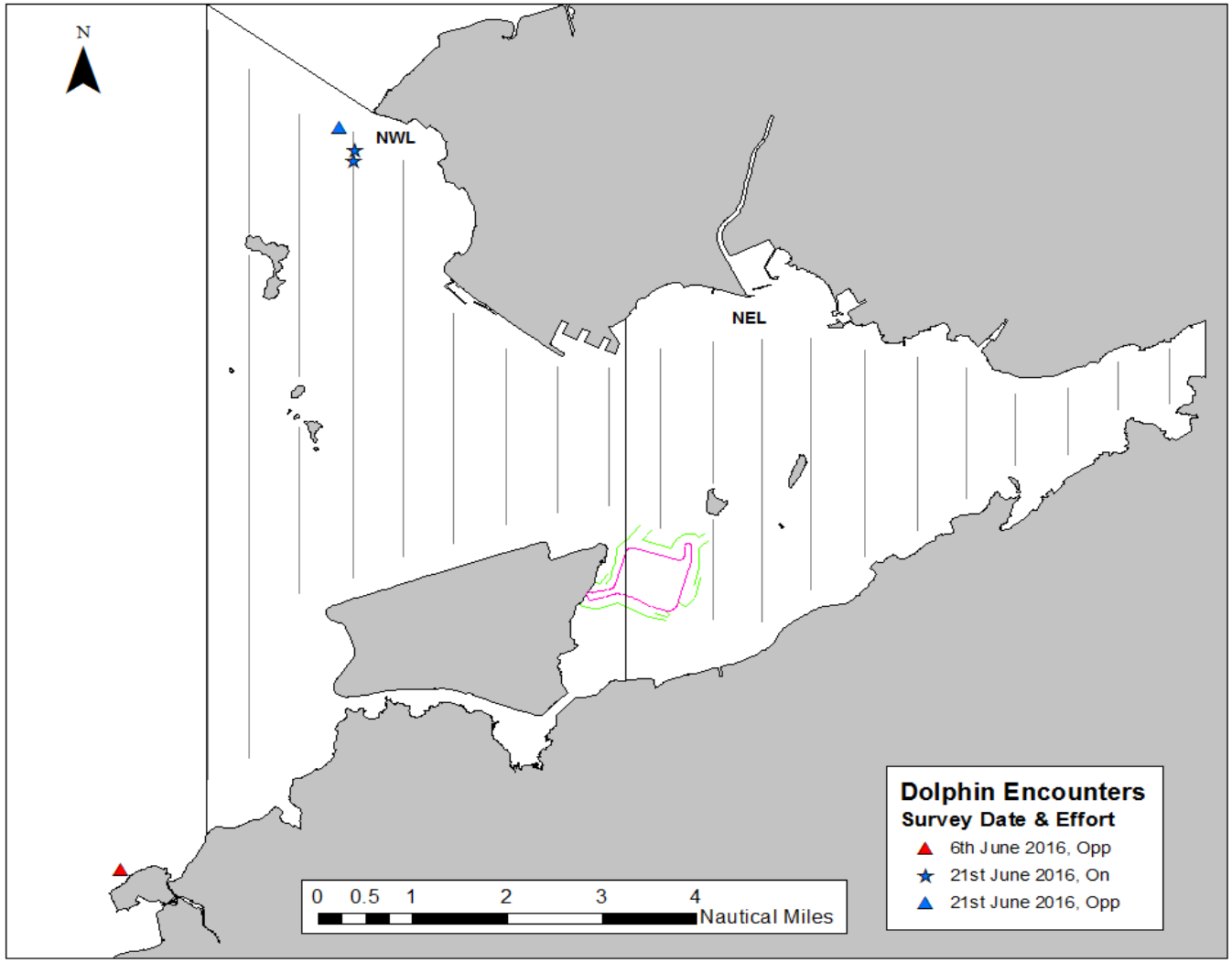
Figure 5a



HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS
Project No.: 60249820 **Date: July 2016**

Impact Dolphin Monitoring Survey Efforts on 20 and 21 June 2016

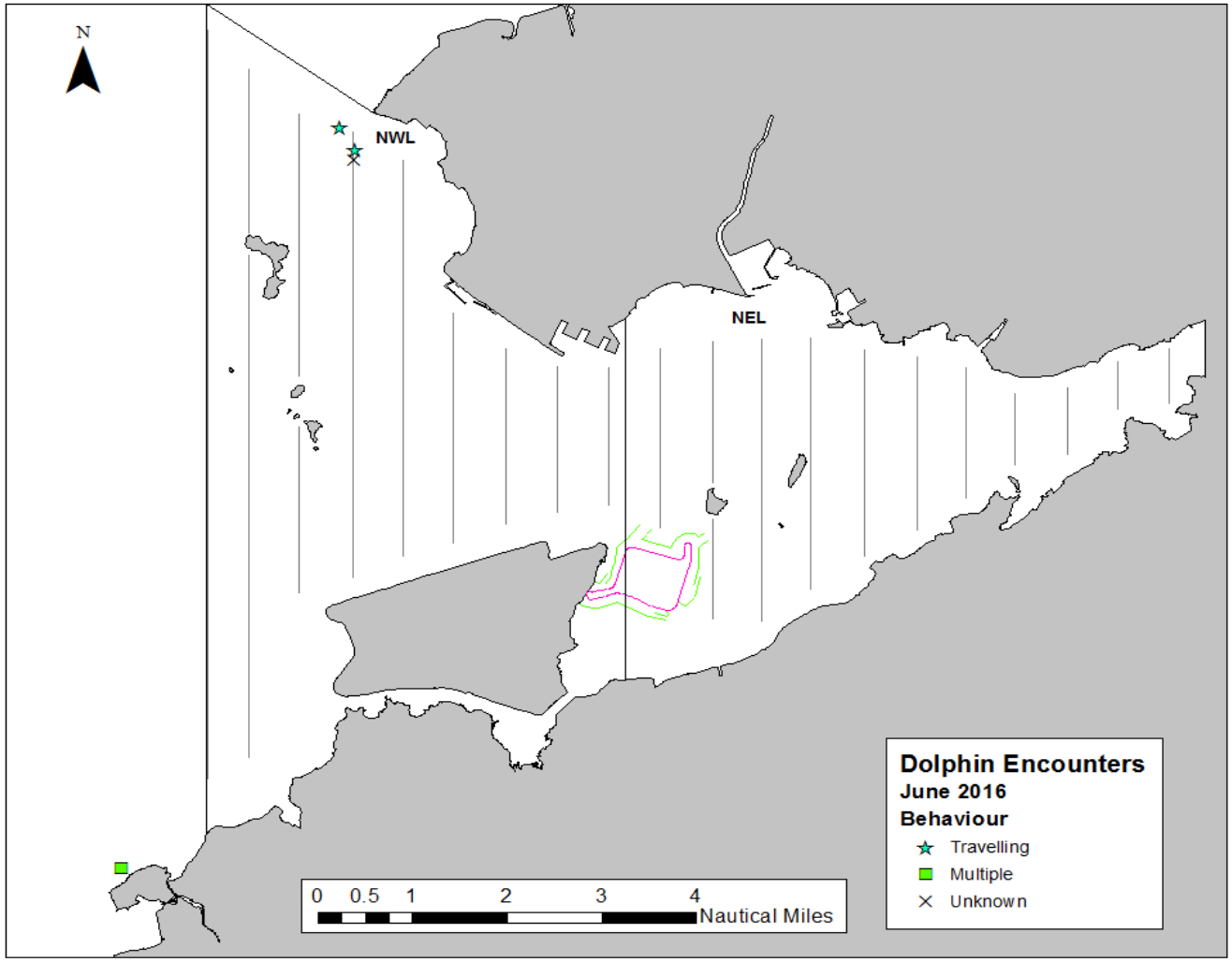
Figure 5b



HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS
Project No.: 60249820 **Date: July 2016**

Impact Dolphin Monitoring Survey
Sightings in June 2016

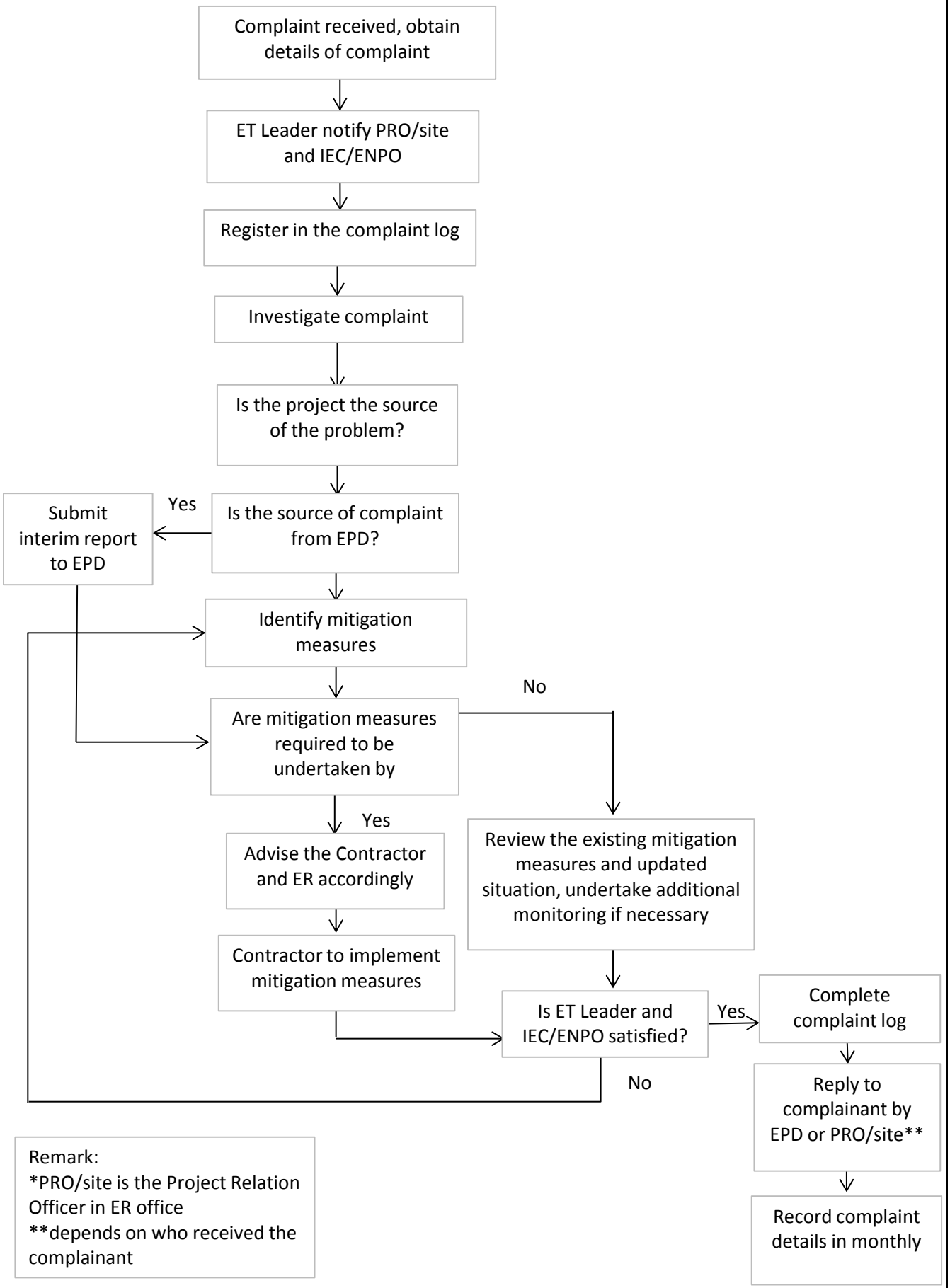
Figure 5c



HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS
Project No.: 60249820 **Date: July 2016**

Impact Dolphin Monitoring Survey
Behaviour Map in June 2016

Figure 5d

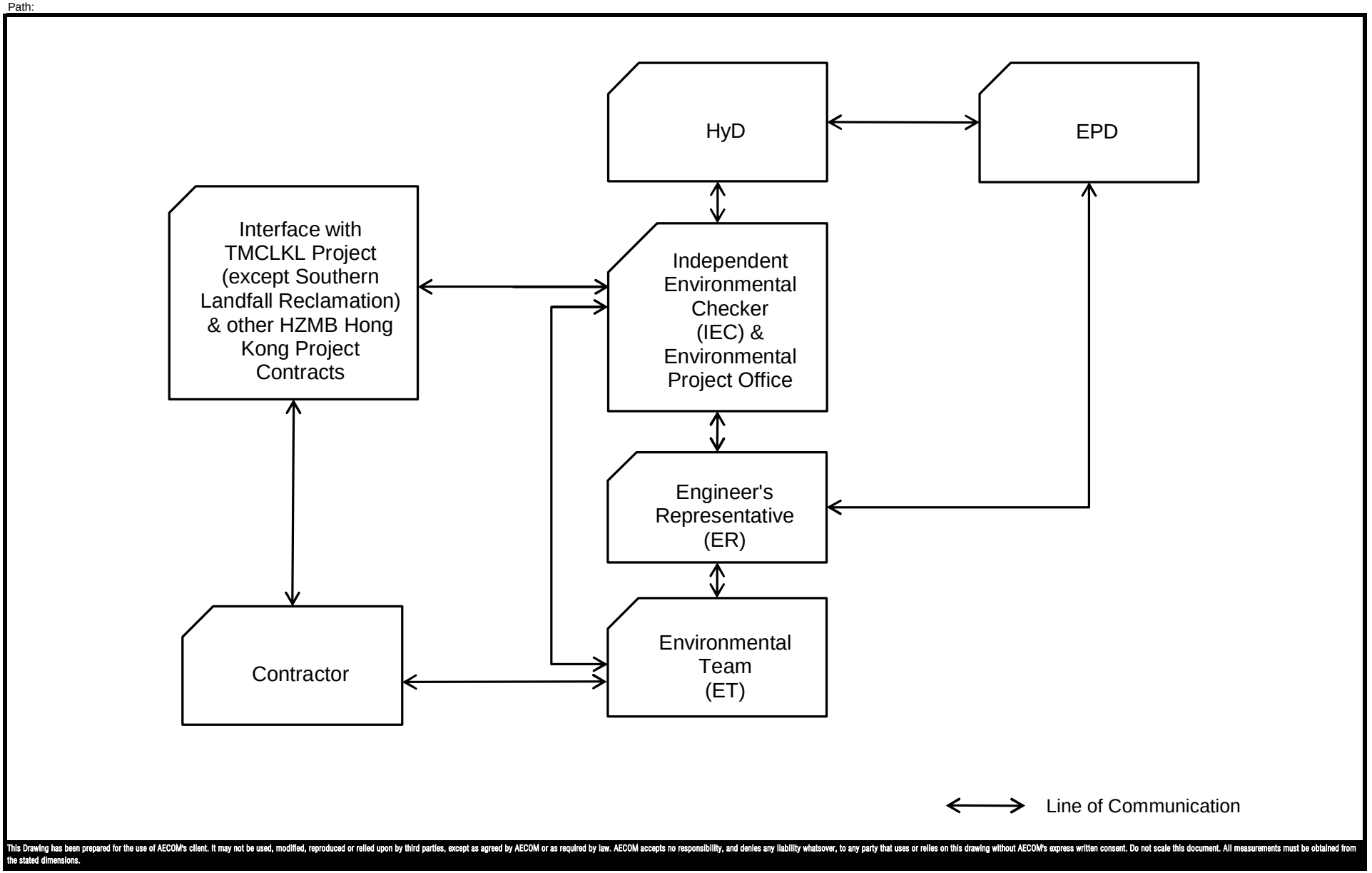


HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS

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

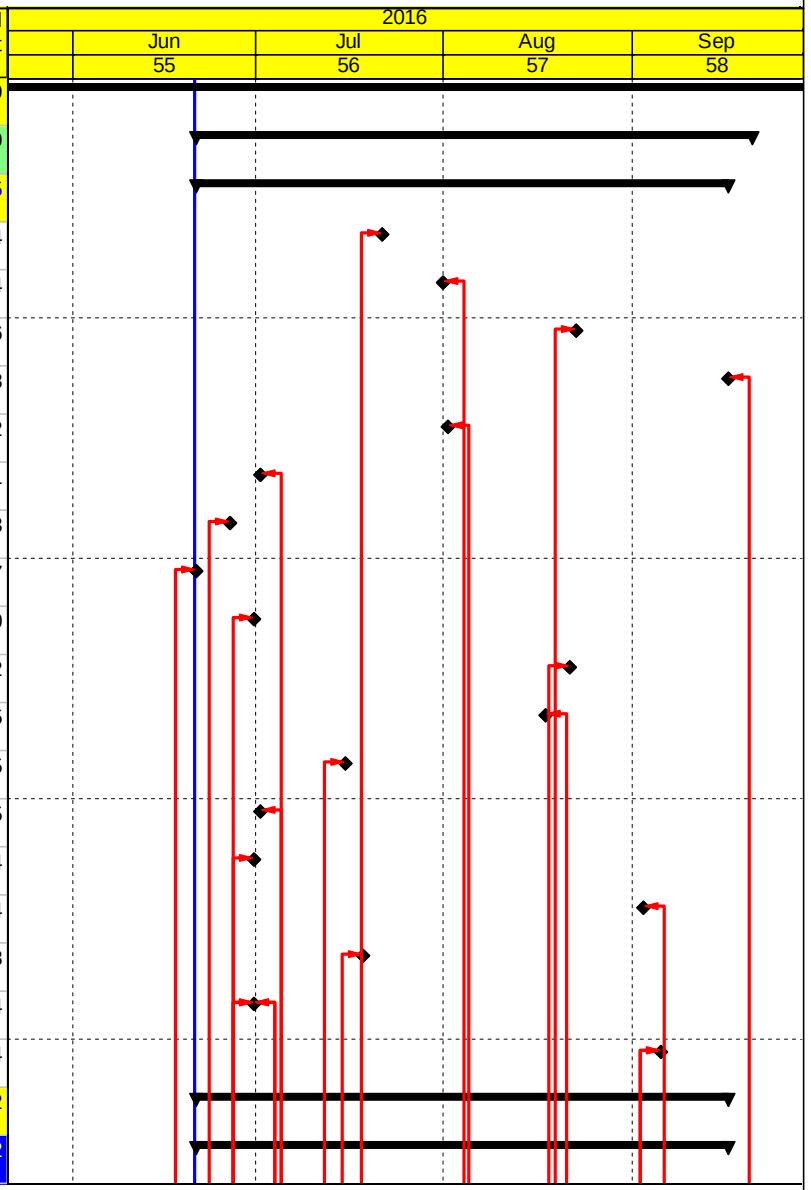
Contract Organisation for

Environmental Works

AECOM

Appendix A

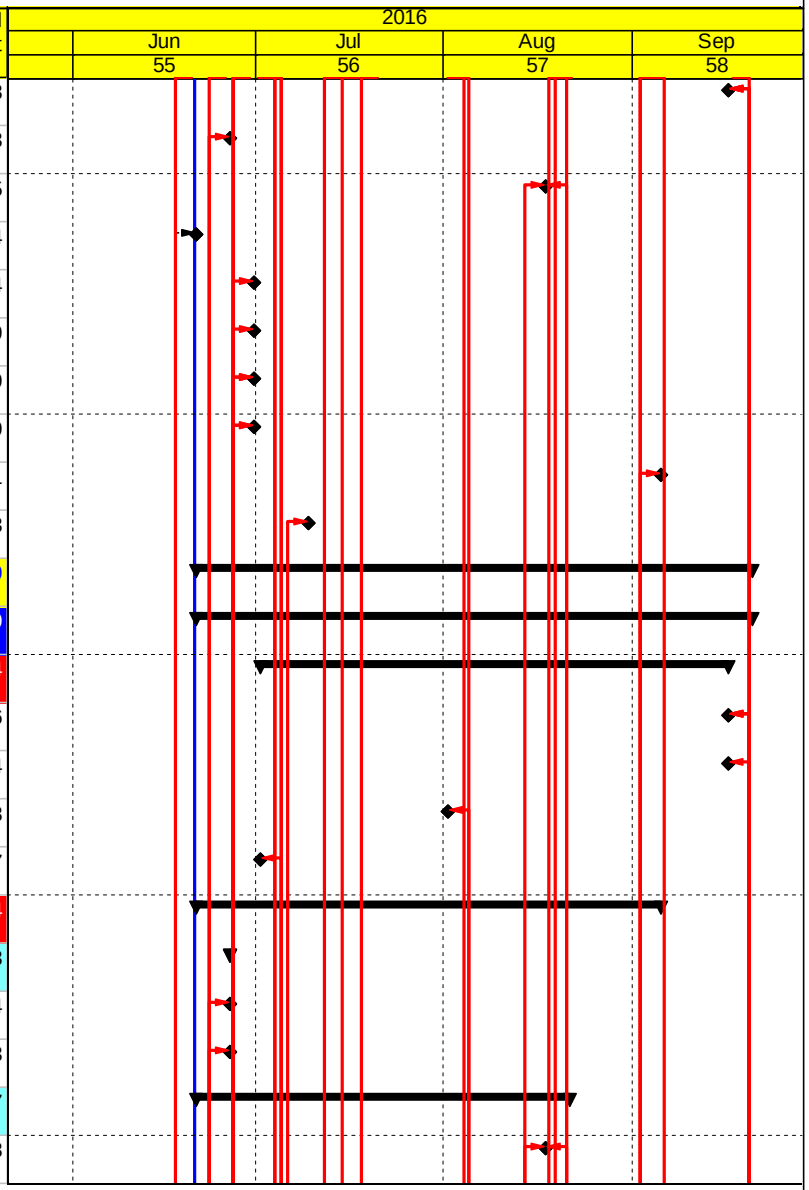
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
55th Monthly Progress Report Status as on 21J		1745	21-May-12 A	28-Feb-17	259
Contract Key Dates		92	21-Jun-16	20-Sep-16	-29
Key Dates for achievement of Stages and completion		88	21-Jun-16	16-Sep-16	-25
G1072	KD-05, Completion of Section D EC1-1 to EC1-6 12Aug2015 SA3	0		21-Jul-16*	-344
G1073	KD-05, Completion of Section D EC1-7 to EC1-8 12Aug2015 SA3	0		31-Jul-16*	-354
G1074	KD-05, Completion of Section D Vertical Seawall 12Aug2015 SA3	0		22-Aug-16*	-376
G1082	KD-06C4TM, Completion of Section BC4TM Edge Area K013 - K027 Noon 29Dec2014 SA4	0		16-Sep-16*	-628
G1084	KD-06C4TM, Completion of Section BC4TM Edge Area K028 - K039 Noon 29Dec2014 SA4	0		01-Aug-16*	-582
G1088	KD-06C4TM, Completion of Section BC4TM Edge Area K047 - K052 Noon 29Dec2014 w DCM SA4	0		01-Jul-16*	-551
G1092	KD-07C4, Completion of Section C1aC4 Noon 23Sep2014 SA4	0		26-Jun-16*	-643
G1109	KD-09C1, Completion of Section C2aC1 Main Area South 02Oct2014 SA4	0		21-Jun-16*	-627
G1110	KD-09C2, Completion of Section C2aC2 Main Area North 03Dec2015 SA4	0		30-Jun-16*	-210
G1113	KD-09C2, Completion of Section C2aC2 Edge Area C113 - C117 03Dec2015 SA3 0-73m	0		21-Aug-16*	-262
G1114	KD-09C1C1, Completion of Section C2aC1C1 Edge Area C101 - C103 02Oct2014 SA4 43-73M	0		17-Aug-16*	-685
G1115	KD-09C2, Completion of Section C2aC2 Edge Area C113 - C117 03Dec2015 SA3 73-120m	0		15-Jul-16*	-225
G1130	KD-11TM, Completion of Section E2TM Main Area North Noon 05Mar2015 SA4	0		01-Jul-16*	-485
G1131	KD-11TM, Completion of Section E2TM Main Area South Noon 05Mar2015 SA4	0		30-Jun-16*	-484
G1132	KD-11C3, Completion of Section E2C3 Main Area North Noon 11Jun2016 SA4	0		02-Sep-16*	-84
G1133	KD-11C3, Completion of Section E2C3 Main Area South Noon 11Jun2016 SA4	0		18-Jul-16*	-38
G1140	KD-12C3, Completion of Section C2bC3 Main Area Noon 19Mar2016 SA4	0		30-Jun-16*	-104
G1150	KD-13C3, Completion of Section C2cC3 Main Area Noon 23Aug2016 SA4	0		05-Sep-16*	-14
Supplementary Agreement		88	21-Jun-16	16-Sep-16	-152
SA4		88	21-Jun-16	16-Sep-16	-152



Remaining Level of Effort
Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

TASK filter: Three Month Rolling.

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
SA4-KD06-050	KD-06C4TM Completion of Section BC4TM Noon 29Dec2014	0		16-Sep-16*	-628
SA4-KD07-020	KD-07C4 Completion of Section C1aC4 Noon 23Sep2014	0		26-Jun-16*	-643
SA4-KD09-010	KD-09C1C1 Completion of Section C2aC1C1 02Oct2014	0		17-Aug-16*	-685
SA4-KD09-020	KD-09C1C3 Completion of Section C2aC1C3 Noon 20Dec2015	0		21-Jun-16*	-184
SA4-KD11-020	KD-11C8N Completion of Section E2C8N Noon 19Jan2016	0		30-Jun-16*	-164
SA4-KD11-030	KD-11C8S Completion of Section E2C8S Noon 23Feb2016	0		30-Jun-16*	-129
SA4-KD12-020	KD-12C8N Completion of Section C2bC8N Noon 14Jan2016	0		30-Jun-16*	-169
SA4-KD12-030	KD-12C8S Completion of Section C2bC8S Noon 14Jan2016	0		30-Jun-16*	-169
SA4-KD13-020	KD-13C8E Completion of Section C2cC8E Noon 18Apr2016	0		05-Sep-16*	-141
SA4-KD13-030	KD-13C8W Completion of Section C2cC8W Noon 18Apr2016	0		09-Jul-16*	-83
Summary Programme		92	21-Jun-16	20-Sep-16	-29
Portion Summary		92	21-Jun-16	20-Sep-16	-29
Portion B		77	01-Jul-16	16-Sep-16	-724
SSA4-KD06-050	KD-06C4TM Completion of Section BC4TM 12Sept2014	0		16-Sep-16*	-736
SSB-1082	KD-06C4TM, Completion of Section BC4TM Edge Area K013 - K027 23Sep2014 SA4	0		16-Sep-16*	-724
SSB-1084	KD-06C4TM, Completion of Section BC4TM Edge Area K028 - K039 23Sep2014 SA4	0		01-Aug-16*	-678
SSB-1088	KD-06C4TM, Completion of Section BC4TM Edge Area K047 - K052 23Sep2014 w DCM SA4	0		01-Jul-16*	-647
Portion C		77	21-Jun-16	05-Sep-16	-14
Portion C1a		0	26-Jun-16	26-Jun-16	-643
SSA4-KD07-020	KD-07C4 Completion of Section C1aC4 22Sep2014	0		26-Jun-16*	-644
SSC1a-1092	KD-07C4, Completion of Section C1aC4 22Sep2014 SA4	0		26-Jun-16*	-643
Portion C2a		62	21-Jun-16	21-Aug-16	-247
SSA4-KD09-010	KD-09C1C1 Completion of Section C2aC1C1 30Sep2014	0		17-Aug-16*	-688

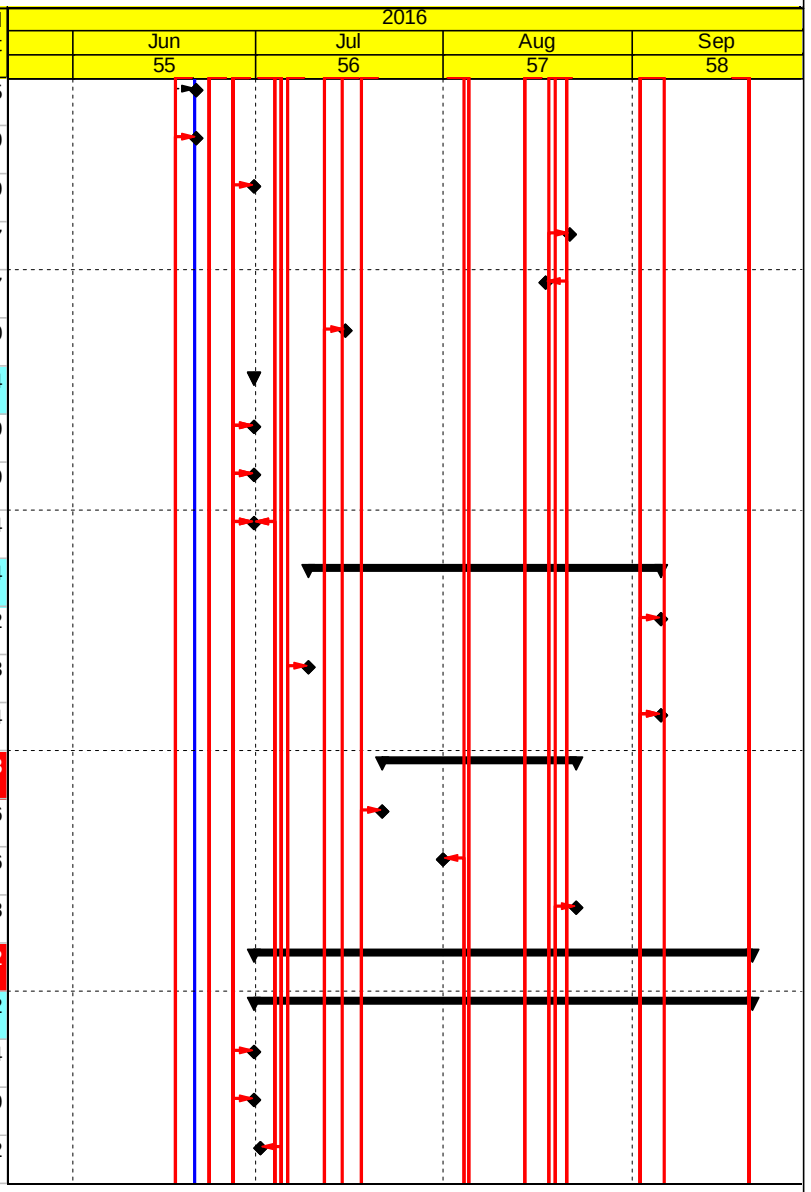


Remaining Level of Effort ◆ Milestone
Actual Level of Effort Summary
Actual Work
Remaining Work
Critical Remaining Work

TASK filter: Three Month Rolling.

Primavera Systems, Inc.

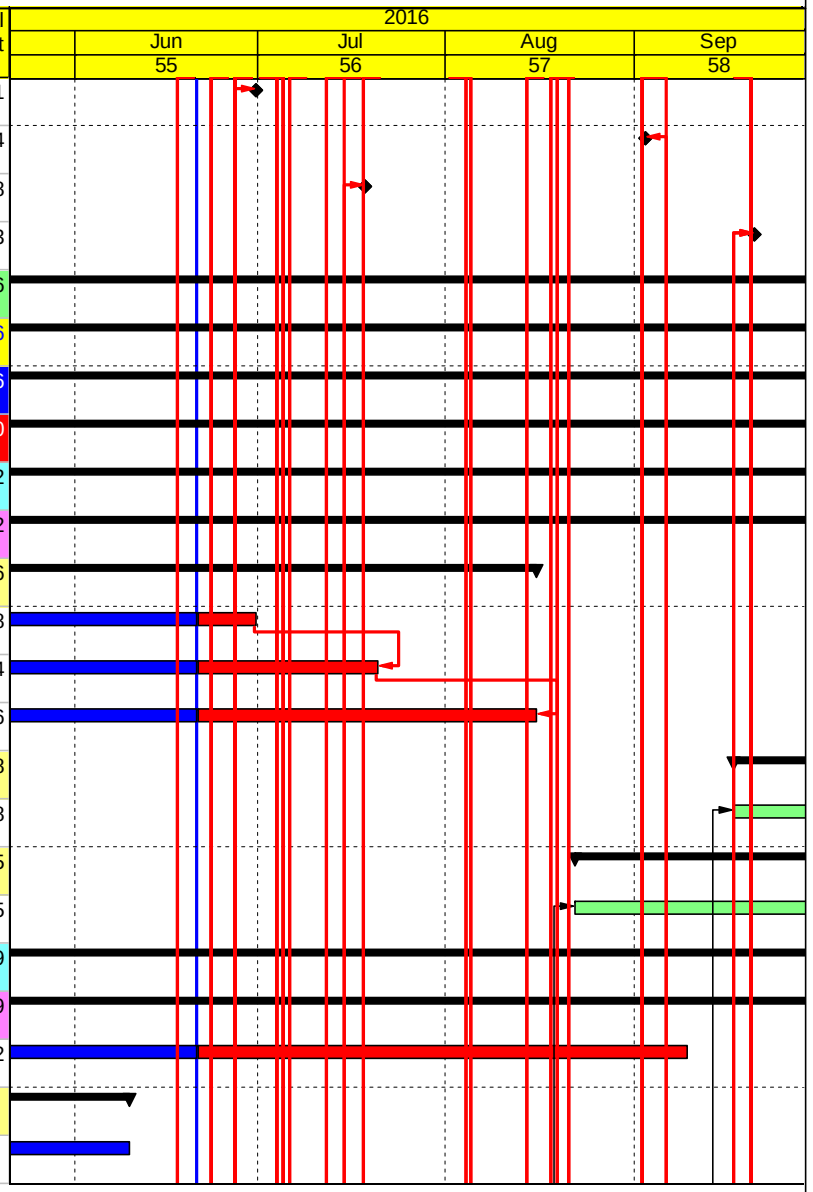
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
SSA4-KD09-020	KD-09C1C3 Completion of Section C2aC1C3 19Dec2015	0		21-Jun-16*	-185
SSC2a-1109	KD-09C1, Completion of Section C2aC1 Main Area South 30Sep2014 SA4	0		21-Jun-16*	-629
SSC2a-1110	KD-09C2, Completion of Section C2aC2 Main Area North 30Sep2014 SA4	0		30-Jun-16*	-639
SSC2a-1113	KD-09C2, Completion of Section C2aC2 Edge Area C113 - C117 28Nov2015 SA3 0-73m	0		21-Aug-16*	-267
SSC2a-1114	KD-09C1C1, Completion of Section C2aC1C1 Edge Area C101 - C103 30Sep2014 SA4 43-73M	0		17-Aug-16*	-687
SSC2a-1115	KD-09C2, Completion of Section C2aC2 Edge Area C113 - C117 28Nov2015 SA3 73-120m	0		15-Jul-16*	-230
Portion C2b		0	30-Jun-16	30-Jun-16	-104
SSA4-KD12-020	KD-12C8N Completion of Section C2bC8N 13Jan2016	0		30-Jun-16*	-169
SSA4-KD12-030	KD-12C8S Completion of Section C2bC8S 13Jan2016	0		30-Jun-16*	-169
SSC2b-1140	KD-12C3, Completion of Section C2bC3 Main Area 18Mar2016 SA4	0		30-Jun-16*	-104
Portion C2c		58	09-Jul-16	05-Sep-16	-14
SSA4-KD13-020	KD-13C8E Completion of Section C2cC8E 17Apr2016	0		05-Sep-16*	-142
SSA4-KD13-030	KD-13C8W Completion of Section C2cC8W 17Apr2016	0		09-Jul-16*	-83
SSC2c-1150	KD-13C3, Completion of Section C2cC3 Main Area 22Aug2016 SA4	0		05-Sep-16*	-14
Portion D		32	21-Jul-16	22-Aug-16	-378
SSD-1072	KD-05, Completion of Section D EC1-1 to EC1-6 10Aug2015 SA3	0		21-Jul-16*	-346
SSD-1073	KD-05, Completion of Section D EC1-7 to EC1-8 10Aug2015 SA3	0		31-Jul-16*	-356
SSD-1074	KD-05, Completion of Section D Vertical Seawall 10Aug2015 SA3	0		22-Aug-16*	-378
Portion E		82	30-Jun-16	20-Sep-16	-102
Portion E2		82	30-Jun-16	20-Sep-16	-102
SSA4-KD11-020	KD-11C8N Completion of Section E2C8N 18Jan2016	0		30-Jun-16*	-164
SSA4-KD11-030	KD-11C8S Completion of Section E2C8S 22Feb2016	0		30-Jun-16*	-129
SSE2-1130	KD-11TM, Completion of Section E2TM Main Area North 05Feb2015 SA4	0		01-Jul-16*	-512



Remaining Level of Effort
Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

TASK filter: Three Month Rolling.

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
SSE2-1131	KD-11TM, Completion of Section E2TM Main Area South 05Feb2015 SA4	0		30-Jun-16*	-511
SSE2-1132	KD-11C3, Completion of Section E2C3 Main Area North 10Jun2016 SA4	0		02-Sep-16*	-84
SSE2-1133	KD-11C3, Completion of Section E2C3 Main Area South 10Jun2016 SA4	0		18-Jul-16*	-38
SSE2-1136	KD-11TM, Completion of Section E2TM Edge C064-C067 05Feb2015 SA4	0		20-Sep-16*	-593
Work Zone, as defined in PS Clause 1.03(6)		462	25-Oct-15 A	22-Jan-17	296
Portion A, B, C & E		462	25-Oct-15 A	22-Jan-17	296
Portion A, B, C & E		462	25-Oct-15 A	22-Jan-17	296
Seawall		427	09-Nov-15 A	08-Jan-17	310
Optimizing Rubble Mound Seawalls		423	09-Nov-15 A	08-Jan-17	282
Rock Armour		423	09-Nov-15 A	08-Jan-17	282
Seawall Portion A C120-C134 Ch5+050 - Ch5+650		201	09-Nov-15 A	15-Aug-16	-76
RFA0-010	PA at C118 - C134 Removal of Temporary Rockfill (170,000m3, 1,500m3/day)	170	09-Nov-15 A	30-Jun-16	-58
RFA0-020	PA at C118 - C134 Underlayer (21,600m3 1,000m3/day)	179	15-Nov-15 A	20-Jul-16	-64
RFA0-030	PA at C118 - C134 Rock Armour (1-3ton 30,840m3 & 0.3-1ton 14,466m3 244m3/day)	179	01-Dec-15 A	15-Aug-16*	-76
Seawall Portion B K013-K027 Ch0+450 - Ch1+100		114	17-Sep-16	08-Jan-17	268
RFB0-010	PB at K013 - K027 Removal of Temporary Rockfill (170,000m3, 1,500m3/day)	114	17-Sep-16	08-Jan-17	268
Seawall Portion C2a C113-C119 Ch4+710 - Ch5+050		127	22-Aug-16	26-Dec-16	295
RFC2a010	PC2a at C113 - C117 Removal of Temporary Rockfill (190,000m3, 1,500m3/day)	127	22-Aug-16	26-Dec-16	295
Conforming Sloping Seawalls		321	16-Nov-15 A	01-Oct-16	409
Rock Armour - Before Surcharge Period		321	16-Nov-15 A	01-Oct-16	409
ACP1-00030	Precasting Accropode (18,092nos), 90nos/day	265	16-Nov-15 A	09-Sep-16	-572
Portion B At K028 - K039 (Ch1+102 - Ch1+600)		152	01-Dec-15 A	10-Jun-16 A	
BF-RFB1-060	PB at K028 - K039 in front of cells Rock Armour 0.3-1ton 11,244m3 244m3/day	152	01-Dec-15 A	10-Jun-16 A	

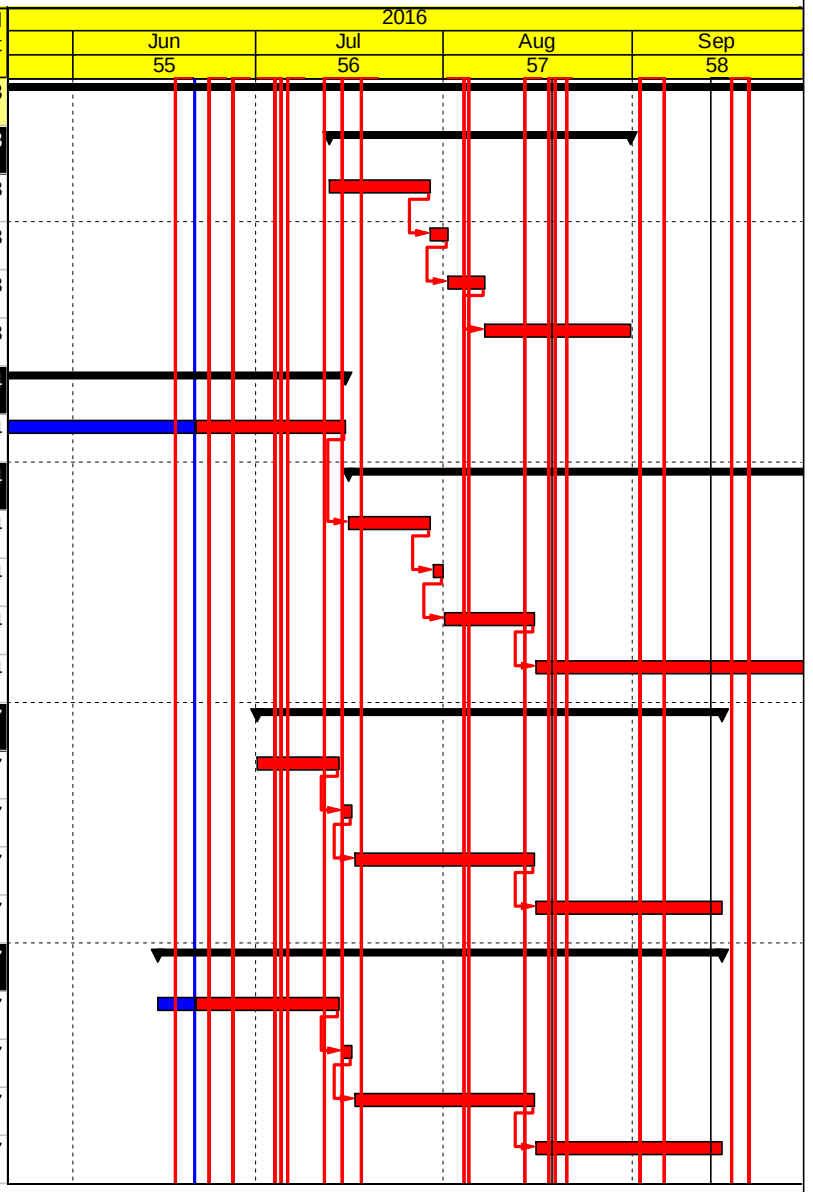


Remaining Level of Effort
Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

TASK filter: Three Month Rolling.

Primavera Systems, Inc.

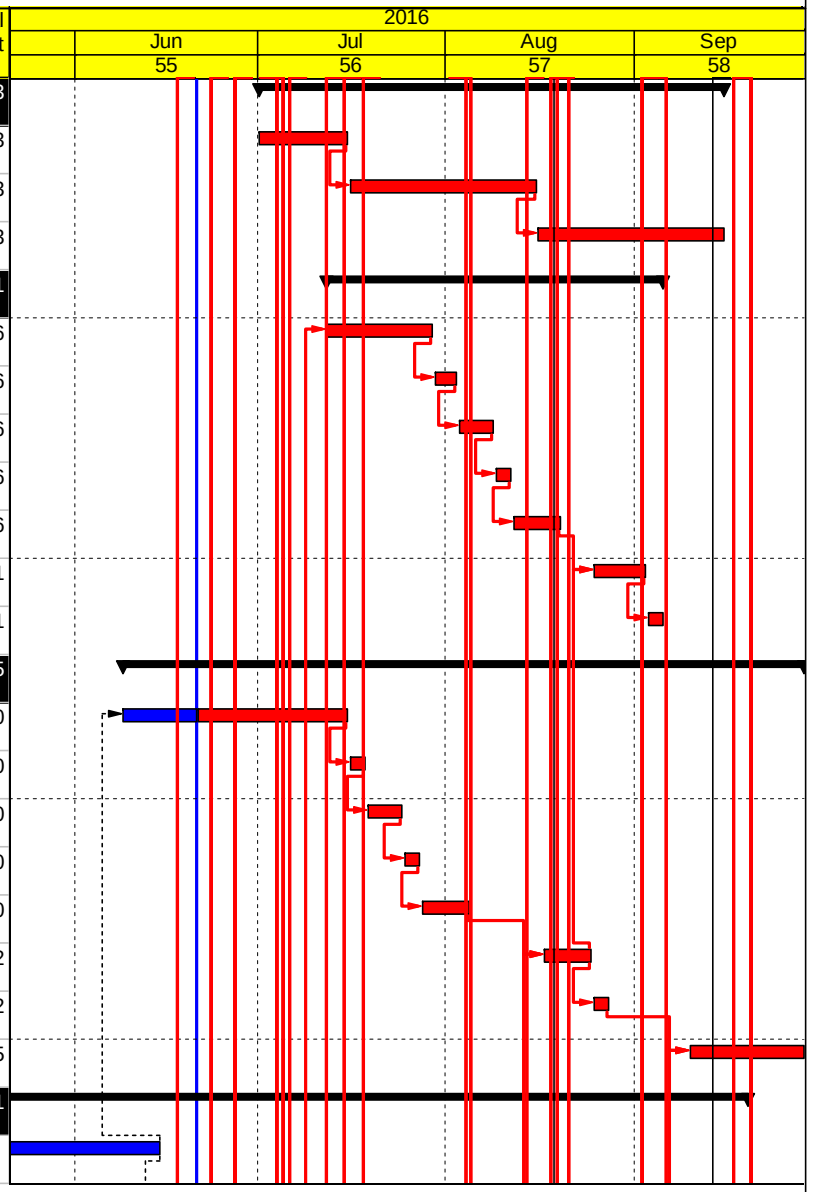
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
Portion E1 & E2 In Front of Cells Ch1+990 - 3+810		134	01-May-16 A	01-Oct-16	-583
Portion E2 Ch2+260 - Ch2+430		50	13-Jul-16	31-Aug-16	-573
RFE2-110	PE2 Ch2+260 - Ch2+430 Trimming at the toe (170m)	17	13-Jul-16*	29-Jul-16	-573
RFE2-120	PE2 Ch2+260 - Ch2+430 Geotextile	3	29-Jul-16	01-Aug-16	-573
RFE2-130	PE2 Ch2+260 - Ch2+430 10-60kg Underlayer	6	01-Aug-16	07-Aug-16	-573
RFE2-140	PE2 Ch2+260 - Ch2+430 1-3ton Armour	24	07-Aug-16	31-Aug-16	-573
Portion E2 Ch2+430 - Ch2+630		9	01-May-16 A	15-Jul-16	-604
RFE2-240	PE2 Ch2+430 - Ch2+630 1-3ton Armour	9	01-May-16 A	15-Jul-16	-604
Portion E2 Ch2+630 - Ch2+750		78	16-Jul-16	01-Oct-16	-604
RFE2-310	PE2 Ch2+630 - Ch2+750 Trimming at the toe (120m)	14	16-Jul-16*	29-Jul-16	-604
RFE2-320	PE2 Ch2+630 - Ch2+750 Geotextile	2	30-Jul-16	31-Jul-16	-604
RFE2-330	PE2 Ch2+630 - Ch2+750 10-60kg Underlayer	15	01-Aug-16	15-Aug-16	-604
RFE2-340	PE2 Ch2+630 - Ch2+750 1-3ton Armour	47	16-Aug-16	01-Oct-16	-604
Portion E2 Ch2+750 - Ch2+870		77	01-Jul-16	15-Sep-16	-567
RFE2-410	PE2 Ch2+750 - Ch2+870 Trimming at the toe (120m)	14	01-Jul-16*	14-Jul-16	-567
RFE2-420	PE2 Ch2+750 - Ch2+870 Geotextile	2	15-Jul-16	16-Jul-16	-567
RFE2-430	PE2 Ch2+750 - Ch2+870 10-60kg Underlayer	30	17-Jul-16	15-Aug-16	-567
RFE2-440	PE2 Ch2+750 - Ch2+870 1-3ton Armour	31	16-Aug-16	15-Sep-16	-567
Portion E1 Ch2+870 - Ch2+980		87	15-Jun-16 A	15-Sep-16	-567
RFE1b-010	PE1 Ch2+870 - Ch2+980 Trimming at the toe (110m)	24	15-Jun-16 A	14-Jul-16	-567
RFE1b-020	PE1 Ch2+870 - Ch2+980 Geotextile	2	15-Jul-16	16-Jul-16	-567
RFE1b-030	PE1 Ch2+870 - Ch2+980 10-60kg Underlayer	30	17-Jul-16	15-Aug-16	-567
RFE1b-040	PE1 Ch2+870 - Ch2+980 1-3ton Armour	31	16-Aug-16	15-Sep-16	-567



Remaining Level of Effort ◆ Milestone
Actual Level of Effort Summary
Actual Work
Remaining Work
Critical Remaining Work

TASK filter: Three Month Rolling.

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
Portion E1 Ch2+980 - Ch3+160		77	01-Jul-16	15-Sep-16	-563
RFE1b-050	PE1 Ch2+980 - Ch3+160 Removal of temporary rockfill	15	01-Jul-16*	15-Jul-16	-563
RFE1b-060	PE1 Ch2+980- Ch3+160 Geotextile & Underlayer 10-60kg 15m/day	31	16-Jul-16	15-Aug-16	-563
RFE1b-070	PE1 Ch2+980 - Ch3+160 Rock Armour 1-3ton	31	16-Aug-16	15-Sep-16	-563
Portion E1 Ch3+160 - Ch3+250		56	12-Jul-16	05-Sep-16	-581
RFE1b-110	PE1 Ch3+160-Ch3+250 Trimming at the toe (180m)	18	12-Jul-16	29-Jul-16	-576
RFE1b-120	PE1 Ch3+160-Ch3+250 Geotextile	4	30-Jul-16	02-Aug-16	-576
RFE1b-130	PE1 Ch3+160-Ch3+250 10-60kg Underlayer	6	03-Aug-16	08-Aug-16	-576
RFE1b-140	PE1 Ch3+160-Ch3+250 1st layer 2-5ton Rock Armour	3	09-Aug-16	11-Aug-16	-576
RFE1b-150	PE1 Ch3+160-Ch3+250 100-200kg Underlayer	8	12-Aug-16	19-Aug-16	-576
RFE1b-160	PE1 Ch3+160-Ch3+250 1st 6 rows Accropode (684nrs)	9	25-Aug-16	02-Sep-16	-581
RFE1b-170	PE1 Ch3+160-Ch3+250 2nd lyaer 2-5ton Rock Armour	3	03-Sep-16	05-Sep-16	-581
Portion E1 Ch3+250 - Ch3+340		82	09-Jun-16 A	28-Sep-16	-625
RFE1b-210	PE1 Ch3+250-Ch3+340 Trimming at the toe (160m)	16	09-Jun-16 A	15-Jul-16	-600
RFE1b-220	PE1 Ch3+250-Ch3+340 Geotextile	3	16-Jul-16	18-Jul-16	-600
RFE1b-230	PE1 Ch3+250-Ch3+340 10-60kg Underlayer	6	19-Jul-16	24-Jul-16	-600
RFE1b-240	PE1 Ch3+250-Ch3+340 1st layer 2-5ton Rock Armour	3	25-Jul-16	27-Jul-16	-600
RFE1b-250	PE1 Ch3+250-Ch3+340 100-200kg Underlayer	8	28-Jul-16	04-Aug-16	-600
RFE1b-260	PE1 Ch3+250-Ch3+340 1st 6 rows Accropode (608nrs)	8	17-Aug-16	24-Aug-16	-612
RFE1b-270	PE1 Ch3+250-Ch3+340 2nd lyaer 2-5ton Rock Armour	3	25-Aug-16	27-Aug-16	-612
RFE1b-280	PE1 Ch3+250-Ch3+340 2nd Accropode (992nrs)	19	10-Sep-16	28-Sep-16	-625
Portion E1 Ch3+340 - Ch3+510		122	01-May-16 A	19-Sep-16	-571
RFE1b-310	PE1 Ch3+340-Ch3+510 Trimming at the toe (170m)	18	01-May-16 A	15-Jun-16 A	

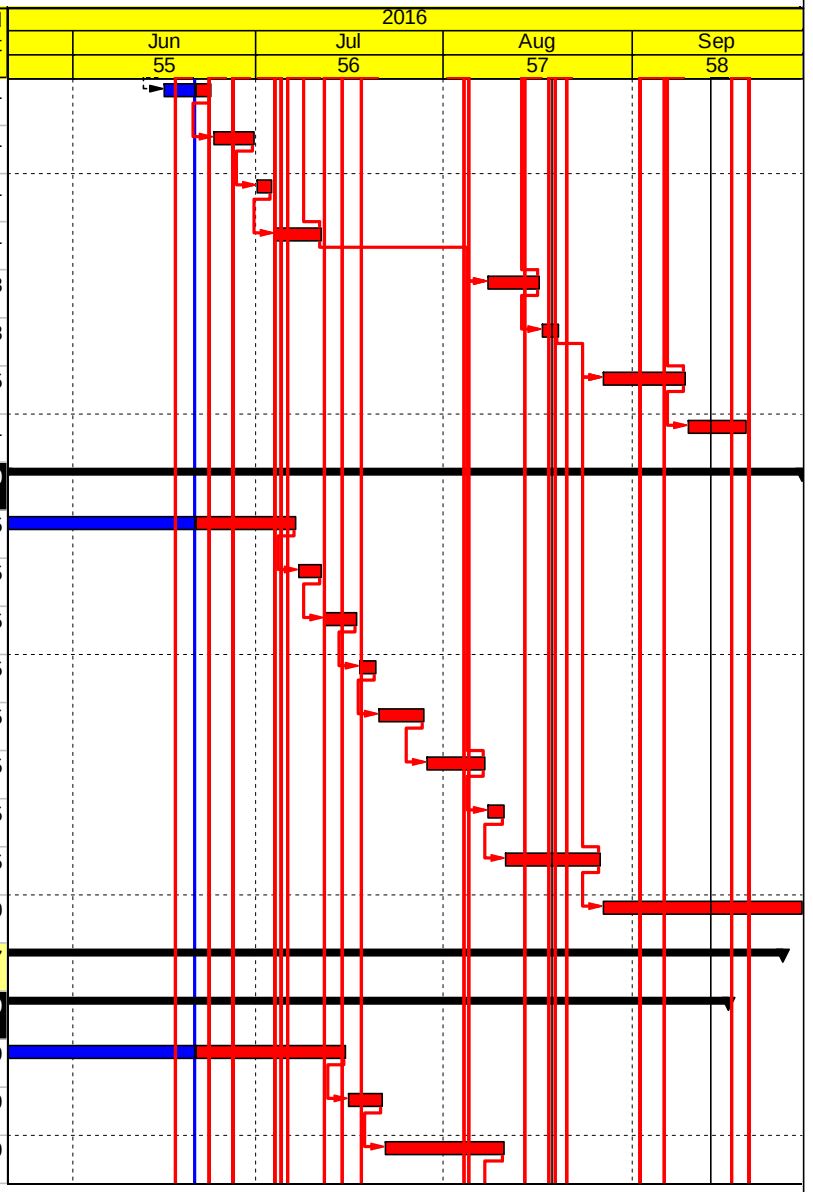


Remaining Level of Effort
Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

TASK filter: Three Month Rolling.

Primavera Systems, Inc.

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
RFE1b-320	PE1 Ch3+340-Ch3+510 Geotextile	4	16-Jun-16 A	23-Jun-16	-591
RFE1b-330	PE1 Ch3+340-Ch3+510 10-60kg Underlayer	7	24-Jun-16	30-Jun-16	-591
RFE1b-340	PE1 Ch3+340-Ch3+510 1st layer 2-5ton Rock Armour	3	01-Jul-16	03-Jul-16	-591
RFE1b-350	PE1 Ch3+340-Ch3+510 100-200kg Underlayer	8	04-Jul-16	11-Jul-16	-591
RFE1b-360	PE1 Ch3+340-Ch3+510 1st 6 rows Accropode (684nrs)	9	08-Aug-16	16-Aug-16	-618
RFE1b-370	PE1 Ch3+340-Ch3+510 2nd lyaer 2-5ton Rock Armour	3	17-Aug-16	19-Aug-16	-618
RFE1b-380	PE1 Ch3+340-Ch3+510 2nd Accropode (1116nrs)	14	27-Aug-16	09-Sep-16	-625
RFE1b-390	PE1 Ch3+340-Ch3+510 3rd 2-5ton Rock Armour	10	10-Sep-16	19-Sep-16	-571
Portion E1 Ch3+510 - Ch3+810		100	21-May-16 A	28-Sep-16	-580
RFE1b-410	PE1 Ch3+510-Ch3+810 Trimming at the toe (200m)	20	21-May-16 A	07-Jul-16	-625
RFE1b-420	PE1 Ch3+510-Ch3+810 Geotextile	4	08-Jul-16	11-Jul-16	-625
RFE1b-430	PE1 Ch3+510-Ch3+810 10-60kg Underlayer	6	12-Jul-16	17-Jul-16	-625
RFE1b-440	PE1 Ch3+510-Ch3+810 1st layer 2-5ton Rock Armour	3	18-Jul-16	20-Jul-16	-625
RFE1b-450	PE1 Ch3+510-3+810 100-200kg Underlayer	8	21-Jul-16	28-Jul-16	-625
RFE1b-460	PE1 Ch3+510-3+810 1st 6 rows Accropode (760nrs)	10	29-Jul-16	07-Aug-16	-625
RFE1b-470	PE1 Ch3+510-3+810 2nd lyaer 2-5ton Rock Armour	3	08-Aug-16	10-Aug-16	-625
RFE1b-480	PE1 Ch3+510-3+810 2nd Accropode (1240nrs)	16	11-Aug-16	26-Aug-16	-625
RFE1b-490	PE1 Ch3+510-3+810 3rd 2-5ton Rock Armour	33	27-Aug-16	28-Sep-16	-580
Portion E1 & E2 on Cells C049 - C091		128	01-May-16 A	25-Sep-16	-577
Portion E2 C049-C059		71	01-May-16 A	16-Sep-16	-589
PFE2a-110	PE2 C049-C059 Trimming	24	01-May-16 A	15-Jul-16	-589
PFE2a-120	PE2 C049-C059 Geotextile	6	16-Jul-16	21-Jul-16	-589
PFE2a-130	PE2 C049-C059 10-60kg Underlayer	20	22-Jul-16	10-Aug-16	-589



Remaining Level of Effort ◆ Milestone
Actual Level of Effort Summary
Actual Work
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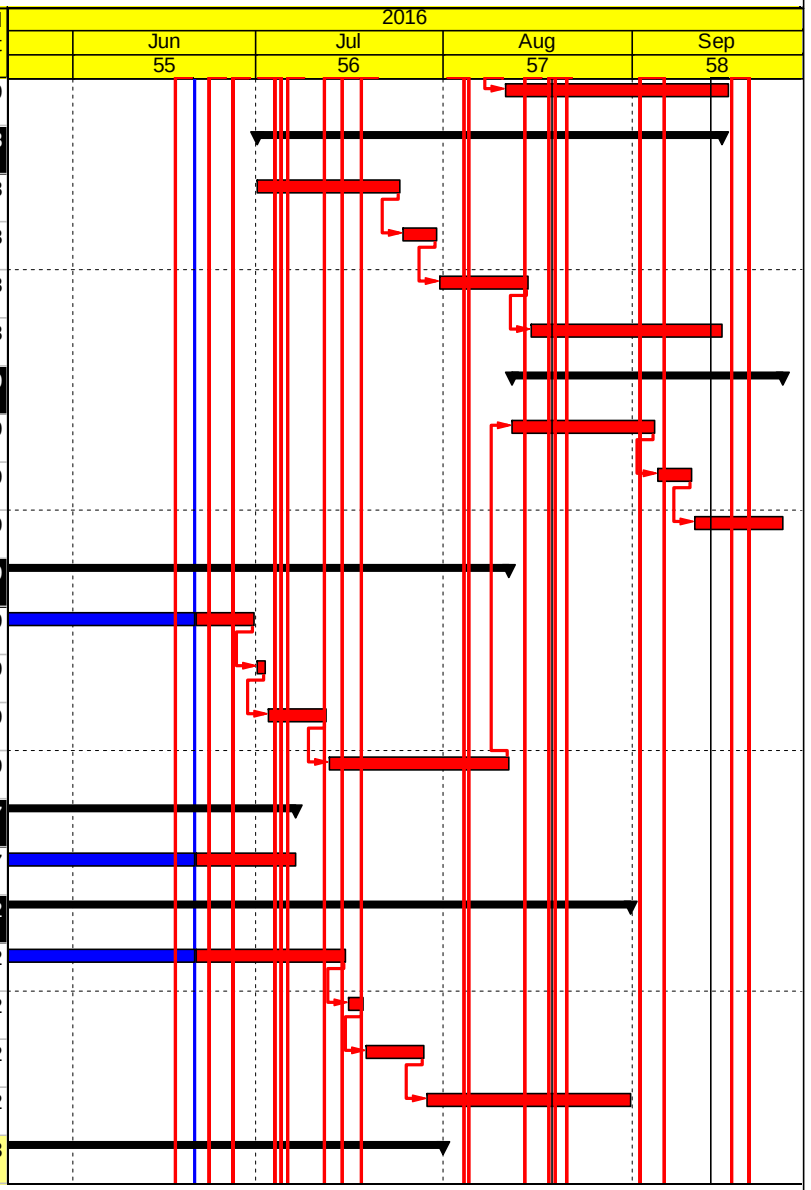
Critical Remaining Work

TASK filter: Three Month Rolling.

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
PFE2a-140	PE2 C049-C059 2-5ton Rock Armour	37	11-Aug-16	16-Sep-16	-589
Portion E2 C060-C067 & E1 C068-C070		77	01-Jul-16	15-Sep-16	-588
RFE2a-210	PE2 C060-C067 & PE1 C068-C070 Trimming	24	01-Jul-16*	24-Jul-16	-588
RFE2a-220	PE2 C060-C067 & PE1 C068-C070 Geotextile	6	25-Jul-16	30-Jul-16	-588
RFE2a-230	PE2 C060-C067 & PE1 C068-C070 10-60kg Underlayer	15	31-Jul-16	14-Aug-16	-588
RFE2a-240	PE2 C060-C067 & PE1 C068-C070 2-5ton Rock Armour	32	15-Aug-16	15-Sep-16	-588
Portion E1 C071-C076		45	12-Aug-16	25-Sep-16	-609
RFE1a-110	PE1 C071-C076 Trimming	24	12-Aug-16*	04-Sep-16	-609
RFE1a-120	PE1 C071-C076 Geotextile	6	05-Sep-16	10-Sep-16	-609
RFE1a-130	PE1 C071-C076 10-60kg Underlayer	15	11-Sep-16	25-Sep-16	-609
Portion E1 C077-C079		65	01-May-16 A	11-Aug-16	-609
RFE1a-210	PE1 C077-C079 Trimming	6	01-May-16 A	30-Jun-16	-609
RFE1a-220	PE1 C077-C079 Geotextile	2	01-Jul-16	02-Jul-16	-609
RFE1a-230	PE1 C077-C079 10-60kg Underlayer	10	03-Jul-16	12-Jul-16	-609
RFE1a-240	PE1 C077-C079 2-5ton Rock Armour	30	13-Jul-16	11-Aug-16	-609
Portion E1 C080-C085		20	19-May-16 A	07-Jul-16	-497
RFE1a-340	PE1 C080-C085 2-5ton Rock Armour	20	19-May-16 A	07-Jul-16	-497
Portion E1 C086-C091		103	01-May-16 A	31-Aug-16	-552
RFE1a-410	PE1 C086-C091 Trimming	12	01-May-16 A	15-Jul-16	-552
RFE1a-420	PE1 C086-C091 Geotextile	3	16-Jul-16	18-Jul-16	-552
RFE1a-430	PE1 C086-C091 10-60kg Underlayer	10	19-Jul-16	28-Jul-16	-552
RFE1a-440	PE1 C086-C091 2-5ton Rock Armour	34	29-Jul-16	31-Aug-16	-552
Portion C2c & C2b At C090 - C101 (Ch3+810 - Ch4+262)		202	28-Jan-16 A	31-Jul-16	23



Remaining Level of Effort
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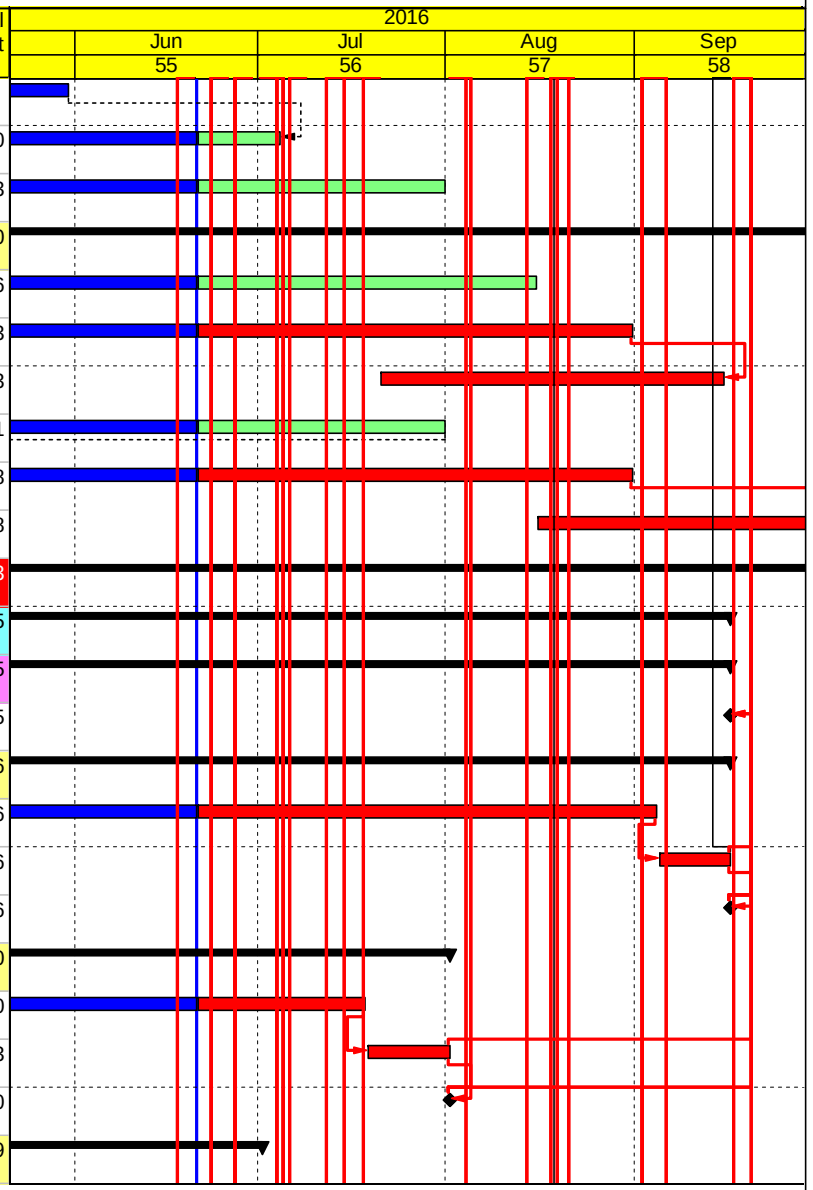
TASK filter: Three Month Rolling.

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
BF-RFC2c-020	PC2c at C091 - C101 on cells Geotextile & Underlayer 10-60kg 12,393m3 200m3/day	121	28-Jan-16 A	31-May-16 A	
BF-RFC2c-030	PC2c at C091 - C101 on cells Rock Armour 2-5ton m3 25771m3 221m3/day	148	04-Feb-16 A	04-Jul-16	50
BF-RFC2c-060	PC2c at C091 - C101 in front of cells Rock Armour 2-5ton 20,296m3 221m3/day	92	21-Apr-16 A	31-Jul-16	23
Portion C2a At C102 - C112 (Ch4+262 - Ch4+710)		194	21-Mar-16 A	30-Sep-16	410
BF-RFC2a-010	PC2a at C102 - C112 on cells Removal of temporary rockfill	41	21-Mar-16 A	15-Aug-16	456
BF-RFC2a-020	PC2a at C102 - C112 on cells Geotextile & Underlayer 10-60kg 10907m3 200m3/day	55	21-Apr-16 A	31-Aug-16	-283
BF-RFC2a-030	PC2a at C102 - C112 on cells Rock Armour 2-5ton m3 25,210m3 221m3/day	57	21-Jul-16	15-Sep-16	-283
BF-RFC2a-040	PC2a at C102 - C112 in front of cells Removal of temporary rockfill 31,987m3	32	21-Apr-16 A	31-Jul-16	471
BF-RFC2a-050	PC2a at C102 - C112 Accropode 5,226nrs 60nrs/day	87	17-May-16 A	31-Aug-16	-298
BF-RFC2a-060	PC2c at C102 - C112 in front of cells Rock Armour 2-5ton 19,855m3 221m3/day	46	16-Aug-16	30-Sep-16	-298
Surcharge		462	25-Oct-15 A	22-Jan-17	-153
Land Portion B		326	27-Oct-15 A	16-Sep-16	-625
Edge Areas		326	27-Oct-15 A	16-Sep-16	-625
SURB0-090	Completion of Section B in Edge Areas	0		16-Sep-16*	-625
at K013 - K027		252	09-Jan-16 A	16-Sep-16	-736
SUEB0-040	PB Edge Area K013-K027 Sand Surcharge Period at +11.5mPD 8mths (4Sep2016)	240	09-Jan-16 A	04-Sep-16	-736
SUEB0-050	PB Edge Area K013-K027 Sand Surcharge Removal 84,258m3 + 20,880m3(C1a) 10,000m3/day	11	05-Sep-16	16-Sep-16	-676
SUEB0-120	PB Edge Area K013-K027 Completion (Target Date = 31Dec2014)	0		16-Sep-16*	-736
at K028 - K035		164	20-Feb-16 A	01-Aug-16	-690
SUEB0-090	PB Edge Area K028-K035 Sand Surcharge Period +11.5mPD 5mths	150	20-Feb-16 A	18-Jul-16	-690
SUEB0-100	PB Edge Area K028-K035 Sand Surcharge Removal 49,985m3 + 14,904m3 5,000m3/day	13	19-Jul-16	01-Aug-16	-633
SUEB0-110	PB Edge Area K028-K035 Completion (Target Date = 31Dec2014)	0		01-Aug-16*	-690
at K047 - K052 (w Deep Cement Mixing)		249	27-Oct-15 A	01-Jul-16	-659



Remaining Level of Effort
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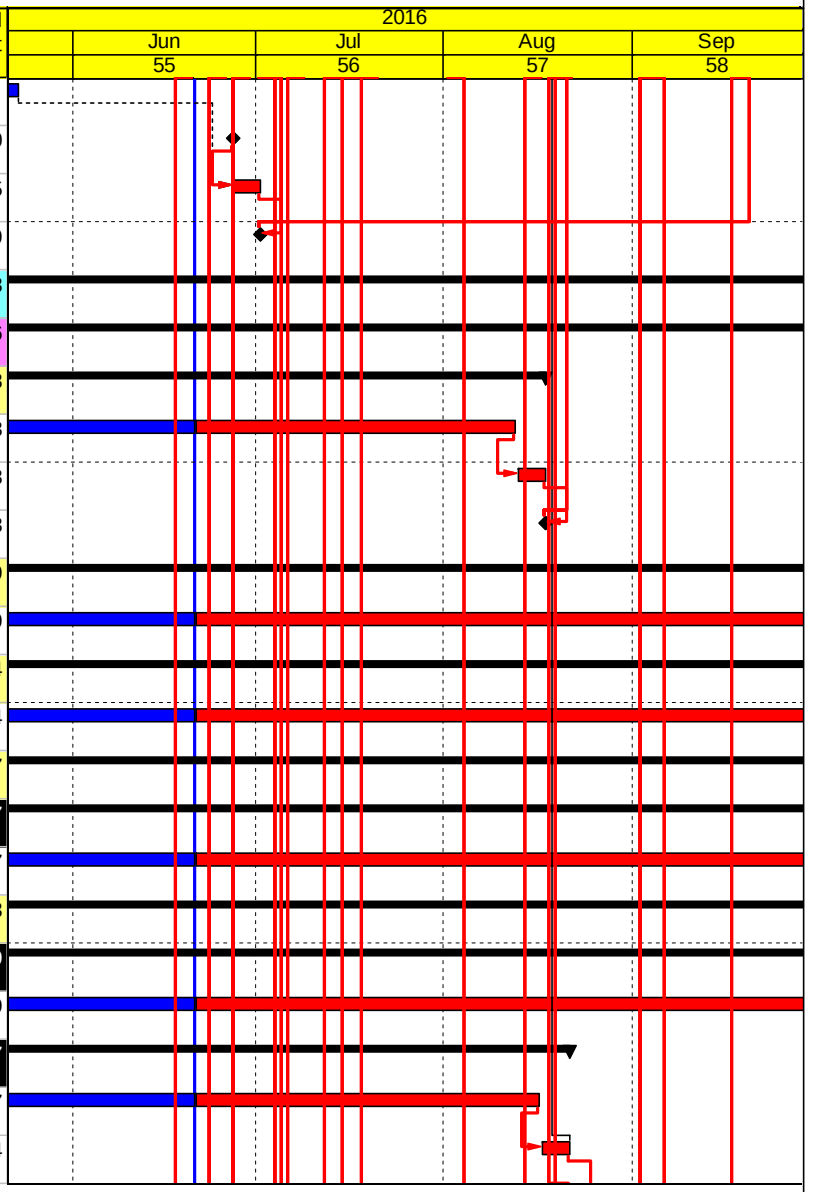
Primavera Systems, Inc.

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
DCM-2070	PB Edge Area K047-K052 36-73m Surcharge Period 7mths (23May2016)	210	27-Oct-15 A	23-May-16 A	
DCM-2072	PB Edge Area K047-K052 36-73m Surcharge Removal instructed by the Engineer	0		27-Jun-16*	-660
DCM-2080	PB Edge Area K047-K052 36-73m Surcharge Removal 20,000m3	5	27-Jun-16	01-Jul-16	-605
DCM-2090	PB Edge Area K047-K052 Completion (Target Date = 31Dec2014)	0		01-Jul-16*	-659
Land Portion C2a		462	25-Oct-15 A	28-Dec-16	-128
Edge Areas		442	14-Nov-15 A	28-Dec-16	-396
Deep Cement Mixing Works at C101 - C103		245	17-Dec-15 A	17-Aug-16	-688
DCM-3070	PC2a Edge Area C101-C103 Surcharge Period 8mths (Land Side) (12Aug2016)	240	17-Dec-15 A	12-Aug-16	-688
DCM-3080	PC2a Edge Area C101-C103 Surcharge Removal 36,000m3	5	13-Aug-16	17-Aug-16	-688
DCM-3090	PC2a Edge Area C101-C103 Completion at 43-73m	0		17-Aug-16*	-688
VO - Deep Cement Mixing Works at C104 - C107		240	13-Mar-16 A	07-Nov-16	-599
DCM-4180	PC2a Edge Area C104-C107 Surcharge Period 8mths (Land Side)(07Nov2016)	240	13-Mar-16 A	07-Nov-16	-599
VO - Deep Cement Mixing Works at C108 - C109		240	21-Mar-16 A	15-Nov-16	-604
DCM-5180	PC2a Edge Area C108-C109 Surcharge Period 8mths (Land Side) 15Nov2016	240	21-Mar-16 A	15-Nov-16	-604
at C110 - C112 Cellular Seawall		240	03-May-16 A	28-Dec-16	-647
VO - Deep Cement Mixing Works at C110 - C112		240	03-May-16 A	28-Dec-16	-647
DCM-4280	PC2a Edge Area C110-C112 Surcharge Period 8mths (Land Side) 29Dec2016	240	03-May-16 A	28-Dec-16	-647
CH4+710 - CH5+110 Rubble Mound Seawall		438	14-Nov-15 A	25-Dec-16	-393
Deep Cement Mixing at CH4+710 - CH4+880		240	30-Apr-16 A	25-Dec-16	-399
DCM-5070	PC2a Ch4+710 - Ch4+880 Surcharge Monitoring 8mths (25Dec2016)	240	30-Apr-16 A	25-Dec-16	-399
10-73m Ch4+880 - Ch5+010		245	21-Dec-15 A	21-Aug-16	-267
SUEC2a-1120	PC2a Ch4+880 - Ch5+010 Surcharge Sand Period 8mths (16Aug2016)	240	21-Dec-15 A	16-Aug-16	-267
SUEC2a-1130	PC2a Ch4+880 - Ch5+010 Surcharge Sand Removal 24,000m3 5,000m3/day	5	17-Aug-16	21-Aug-16	-244



Remaining Level of Effort
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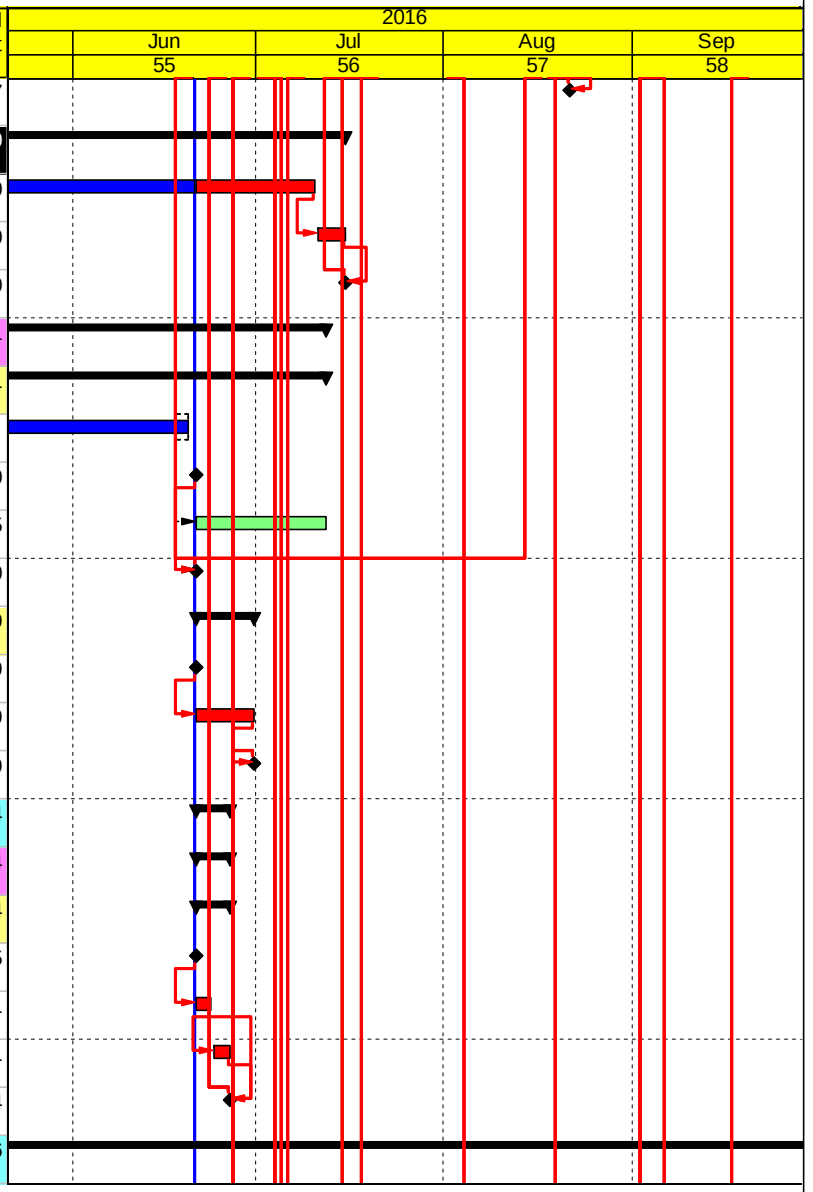
Primavera Systems, Inc.

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
SUEC2a-1140	Completion of Section PC2aC2 at Ch4+880 - Ch5+010	0		21-Aug-16	-267
73-120m		245	14-Nov-15 A	15-Jul-16	-230
SUEC2a-2090	PC2a C113-C117 73m-120m Surcharge Sand Period 8mths (10Jul2016)	240	14-Nov-15 A	10-Jul-16	-230
SUEC2a-2100	PC2a C113-C117 73m-120m Sand Surcharge Removal 54,000m3 10,000m3/day	5	11-Jul-16	15-Jul-16	-210
SUEC2a-2110	Completion of Section PC2aC2 at C113 - C117 73m-120m	0		15-Jul-16	-230
Reclamation Areas		262	25-Oct-15 A	12-Jul-16	41
C2aC1		262	25-Oct-15 A	12-Jul-16	41
SURC2aC1-070	PC2a C2aC1 Sand Surcharge Period 8mths (20Jun2016)	240	25-Oct-15 A	20-Jun-16 A	
SURC2aC1-072	PC2a C2aC1 Sand Surcharge Completed by the instruction from the Engineer	0		21-Jun-16	-630
SURC2aC1-080	PC2a C2aC1 Top up to +11.5mPD 193,082m3 10,000m3/day for completion	19	21-Jun-16	12-Jul-16	35
SURC2aC1-090	Completion of Section PC2a in C2aC1 Main Areas	0		21-Jun-16	-630
C2aC2		10	21-Jun-16	30-Jun-16	-639
SURC2aC2-072	PC2a C2aC2 Sand Surcharge Removal instruction by the Engineer	0	21-Jun-16		-639
SURC2aC2-080	PC2a C2aC2 Sand Surcharge Removal	10	21-Jun-16	30-Jun-16	-639
SURC2aC2-090	Completion of Section PC2a in C2aC2 Main Areas	0		30-Jun-16	-639
Land Portion C1a		6	21-Jun-16	26-Jun-16	-644
Reclamation Areas		6	21-Jun-16	26-Jun-16	-644
C4		6	21-Jun-16	26-Jun-16	-644
SURC1a-152	PC1a South Sand Surcharge Removal instruction by the Engineer	0	21-Jun-16		-645
SURC1a-160	PC1a South East Land Area Sand Surcharge Removal	3	21-Jun-16	23-Jun-16	-591
SURC1a-170	PC1a South West Land Area Sand Surcharge Removal	3	24-Jun-16	26-Jun-16	-591
SURC1a-180	Completion of Section C1aC4	0		26-Jun-16	-644
Land Portion E2		368	21-Jan-16 A	22-Jan-17	-226



Remaining Level of Effort ◆ Milestone
Actual Level of Effort Summary
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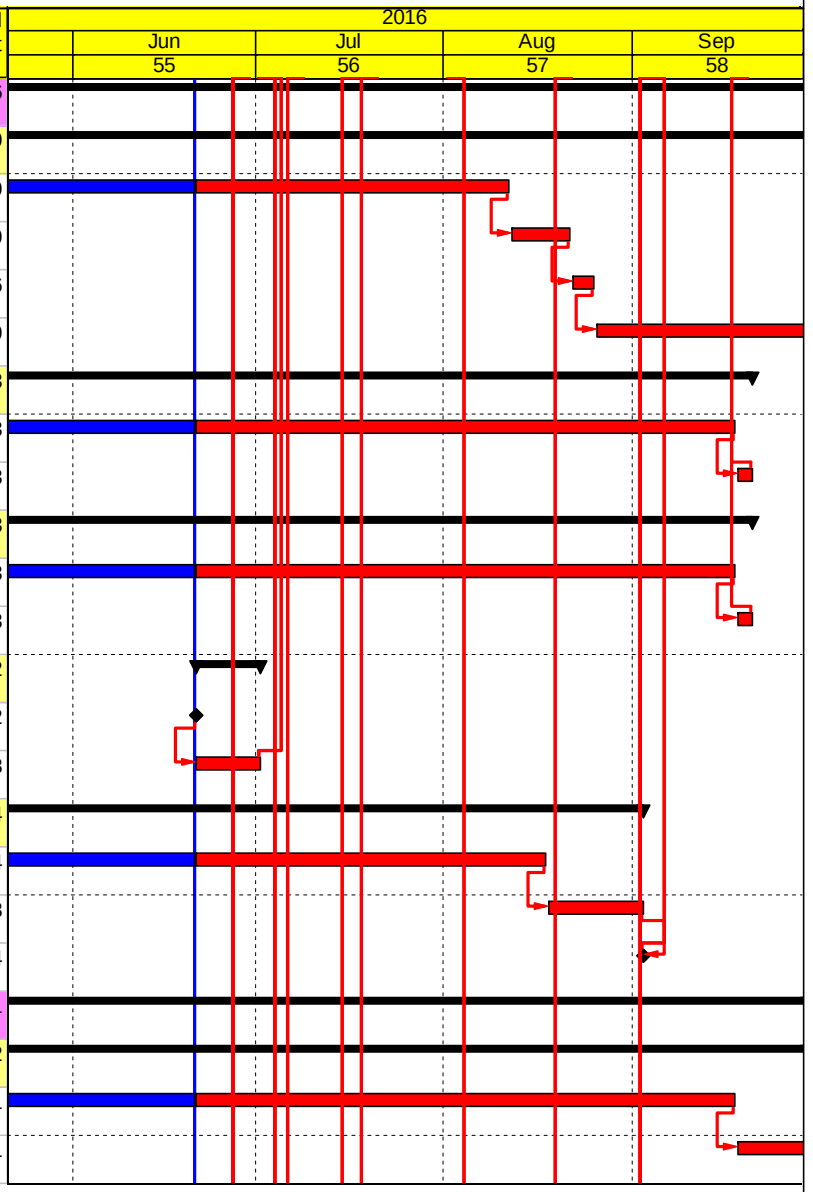
TASK filter: Three Month Rolling.

Primavera Systems, Inc.

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
North Part		368	21-Jan-16 A	22-Jan-17	-226
Edge Areas - North (C3)		299	30-Mar-16 A	22-Jan-17	-229
SUEE2-350	PE2 North Edge C3 Sand Surcharge Period as +8.5mPD 4.5mths (11Aug2016)	135	30-Mar-16 A	11-Aug-16	-229
SUEE2-360	PE2 North Edge C3 Sand Surcharge CPT Test	10	12-Aug-16	21-Aug-16	-229
SUEE2-370	PE2 North Edge C3 Sand Surcharge Laying up to +11.5mPD 18,248m3 5,000m3/day	4	22-Aug-16	25-Aug-16	-196
SUEE2-380	PE2 North Edge C3 Sand Surcharge Period as +11.5mPD 5mths	150	26-Aug-16	22-Jan-17	-229
Edge Areas - North (TM)		150	21-Apr-16 A	20-Sep-16	-593
SUEE2-480	PE2 North Edge TM Sand Surcharge Period as +11.5mPD 5mths (17Sep2016)	150	21-Apr-16 A	17-Sep-16	-593
SUEE2-490	PE2 North Edge TM Sand Surcharge Removal 14,600m3 5,000m3/day	3	18-Sep-16	20-Sep-16	-543
Edge Areas - East (TM) C064-C067		150	21-Apr-16 A	20-Sep-16	-593
SUEE2-150	PE2 East Edge C064-C067 Sand Surcharge Period as +11.5mPD 5mths (17Sep2016)	150	21-Apr-16 A	17-Sep-16	-593
SUEE2-160	PE2 East Edge C064-C067 Sand Surcharge Removal 14,600m3 5,000m3/day	3	18-Sep-16	20-Sep-16	-543
Land Areas - East (TM) C057 - C063 Ch2+300 to Ch2+600		11	21-Jun-16	01-Jul-16	-512
SURE2-055	PE2 Land C057-C063 Removal of Surcharge instructed by the Engineer	0	21-Jun-16*		-512
SURE2-060	PE2 Land C057-C063 Tunnel Sand Surcharge Removal at tunnel area 107,437m3 10,000m3/day	11	21-Jun-16	01-Jul-16	-468
Land Areas - West (C3)		226	21-Jan-16 A	02-Sep-16	-84
SURE2-180	PE2 Land C061-C064 Non-Tunnel Sand Surcharge Period as +11.5mPD non tunnel area 7mths 17Aug2016	210	21-Jan-16 A	17-Aug-16	-84
SURE2-190	PE2 Land C061-C064 Non-Tunnel Sand Surcharge Removal non tunnel Area 147,437m3 10,000m3/day	15	18-Aug-16	02-Sep-16	-78
SURE2-299	Completion of Section PE2 in Land C061-C064 Non-tunnel Reclamation Area	0		02-Sep-16	-84
South Part		186	15-Apr-16 A	29-Sep-16	-111
Edge Areas East C058 to C063		150	21-Apr-16 A	29-Sep-16	-602
SUEE2-040	PE2 Edge C058-C063 Sand Surcharge Period as +11.5mPD 5mths (17Sep2016)	150	21-Apr-16 A	17-Sep-16	-601
SUEE2-050	PE2 Edge C058-C063 Sand Surcharge Removal 100,481m3 10,000m3/day	11	18-Sep-16	29-Sep-16	-551



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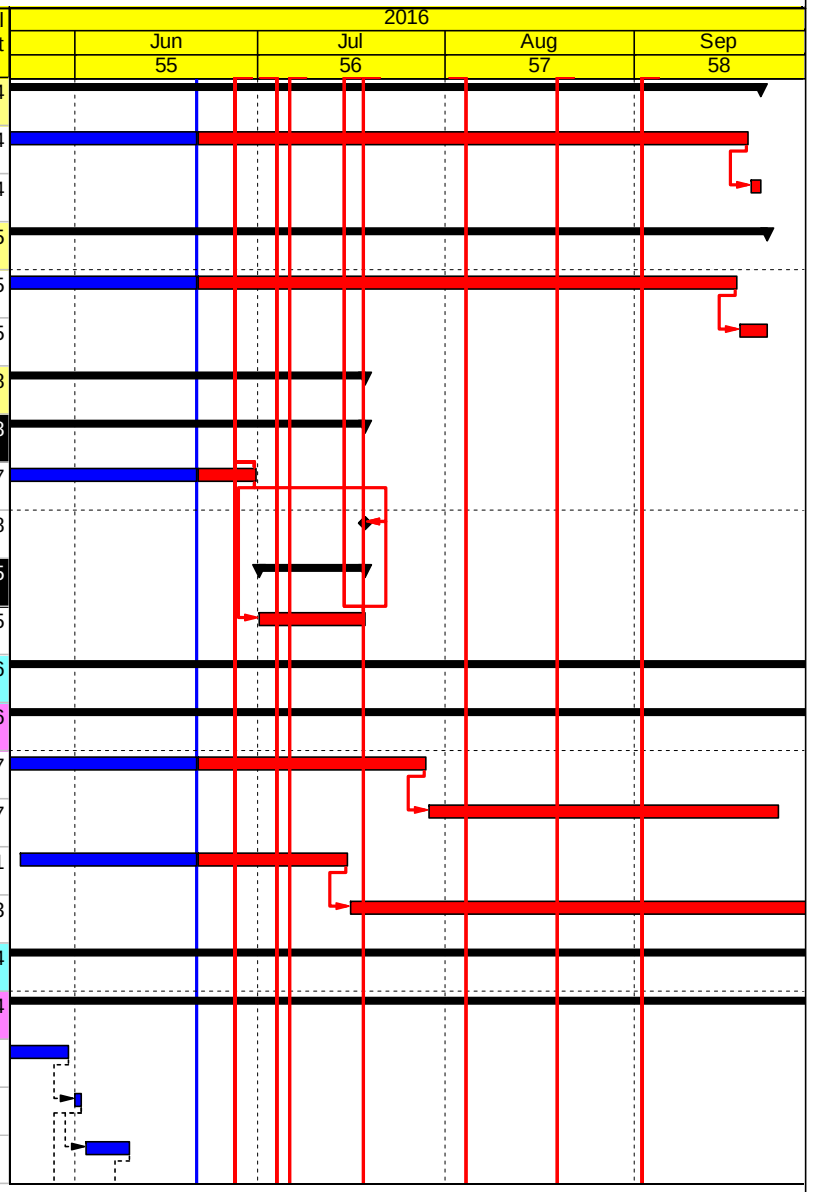
Primavera Systems, Inc.

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
VO DCM Edge Areas East C056 to C057		150	21-Apr-16 A	21-Sep-16	-594
DCM-4380	PE2 Edge C056-C057 Surcharge Period 7mths (Land Side) (17Sep2016)	150	21-Apr-16 A	19-Sep-16	-594
DCM-4390	PE2 Edge C056-C057 Surcharge Removal 5,000m3	2	20-Sep-16	21-Sep-16	-594
Edge Areas East C052 to C055		150	21-Apr-16 A	22-Sep-16	-595
SURE2-440	PE2 Edge C052-C055 300m Zone Sand Surcharge Period as +11.5mPD 5mths	150	21-Apr-16 A	17-Sep-16	-595
SURE2-450	PE2 Edge C052-C055 300m Zone Sand Surcharge Removal 52,891m3 10,000m3/day	5	18-Sep-16	22-Sep-16	-545
Land Areas		95	15-Apr-16 A	18-Jul-16	-38
300m to 100m Zone		95	15-Apr-16 A	18-Jul-16	-38
SURE2-540	PE2 Land C052-C056 300m Zone Sand Surcharge Removal 105,782m3 10,000m3/day	17	15-Apr-16 A	30-Jun-16	-467
SURE2-550	Completion of Section PE2 in Land C052-C056 300m Zone Reclamation Area	0		18-Jul-16	-38
Out of K052 300m		16	01-Jul-16	18-Jul-16	-35
SURE2-030	PE2 Land C052-C060 Non-Tunnel Sand Surcharge Removal 158,673m3 + 28,116m3(C1b) 10,000m3/day	16	01-Jul-16	18-Jul-16	-35
Land Portion E1		206	04-May-16 A	12-Dec-16	-676
Edge Areas Southern Part		206	04-May-16 A	12-Dec-16	-676
DCM-4450	PE1 Edge Area East Zone Additional DCM Works 1,029nrs by 3 plant	86	04-May-16 A	28-Jul-16	-597
DCM-4460	PE1 Edge Area West Zone Additional DCM Works 927nrs by 3 plant	58	29-Jul-16	24-Sep-16	-597
SUEE1-030	PE1 Edge Area at South of C071 Surcharge Laying up to +11.5mPD 50,000m3 4,200m3/day	12	23-May-16 A	15-Jul-16	-591
SUEE1-040	PE1 Edge Area at South of C071 Surcharge Period as +11.5mPD 5mths	150	16-Jul-16	12-Dec-16	-693
Land Portion C2b		390	01-Nov-15 A	24-Nov-16	-254
Edge Areas		159	20-May-16 A	24-Nov-16	-254
SUEC2b-070-07	PC2b Edge Area Sand Surcharge at 10.0mPD Observational Approach	6	20-May-16 A	31-May-16 A	
SUEC2b-070-08	PC2b Edge Area Sand Surcharge Laying 10.0mPD to 10.5mPD 2,009m3	1	01-Jun-16 A	02-Jun-16 A	
SUEC2b-070-09	PC2b Edge Area Sand Surcharge at 10.5mPD Observational Approach	6	03-Jun-16 A	10-Jun-16 A	



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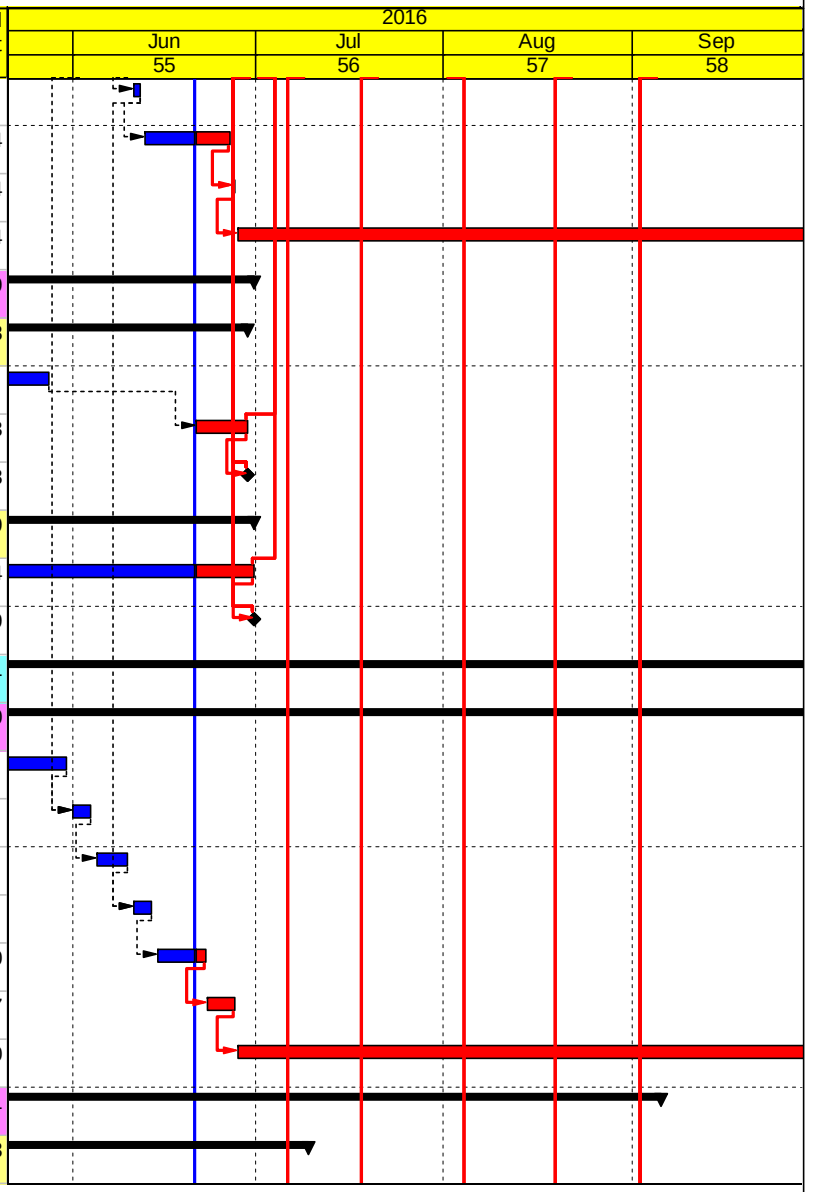
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
SUEC2b-070-10	PC2b Edge Area Sand Surcharge Laying 10.5mPD to 11.0mPD 2,009m3	1	11-Jun-16 A	12-Jun-16 A	
SUEC2b-070-11	PC2b Edge Area Sand Surcharge at 11.0mPD Observational Approach	6	13-Jun-16 A	26-Jun-16	-254
SUEC2b-070-12	PC2b Edge Area Sand Surcharge Laying 11.0mPD to 11.5mPD 2,009m3	1	27-Jun-16	27-Jun-16	-254
SUEC2b-080	PC2b Edge Area Sand Surcharge Period as +11.5mPD 5mths	150	28-Jun-16	24-Nov-16	-254
Reclamation Areas		243	01-Nov-15 A	30-Jun-16	-169
North		242	01-Nov-15 A	29-Jun-16	-168
SURC2b-020	PC2b Main Area North Public Surcharge Period as +11.5mPD 7mths (28May2016)	210	01-Nov-15 A	28-May-16 A	
SURC2b-030	PC2b Main Area North Public Surcharge Removal 42,609m3 5,000m3/day	9	21-Jun-16	29-Jun-16	-153
SURC2b-040	Completion of Section PC2b at Reclamation Area North	0		29-Jun-16	-168
South		101	22-Mar-16 A	30-Jun-16	-169
SURC2b-036	PC2b Main Area South PBF Surcharge Removal 137,244m3 5,000m3/day	46	22-Mar-16 A	30-Jun-16	-154
SURC2b-050	Completion of Section PC2b at Reclamation Area South	0		30-Jun-16	-169
Land Portion C2c		395	27-Oct-15 A	24-Nov-16	-221
Edge Areas		159	20-May-16 A	24-Nov-16	-230
SUEC2c-030-07	PC2c Edge Area Sand Surcharge at 10.0mPD Observational Approach	6	20-May-16 A	31-May-16 A	
SUEC2c-030-08	PC2c Edge Area Sand Surcharge Laying 10.0mPD to 10.5mPD 7,232m3	4	01-Jun-16 A	04-Jun-16 A	
SUEC2c-030-09	PC2c Edge Area Sand Surcharge at 10.5mPD Observational Approach	6	05-Jun-16 A	10-Jun-16 A	
SUEC2c-030-10	PC2c Edge Area Sand Surcharge Laying 10.5mPD to 11.0mPD 7,232m3	4	11-Jun-16 A	14-Jun-16 A	
SUEC2c-030-11	PC2c Edge Area Sand Surcharge at 11.0mPD Observational Approach	6	15-Jun-16 A	22-Jun-16	-230
SUEC2c-030-12	PC2c Edge Area Sand Surcharge Laying 11.0mPD to 11.5mPD 7,232m3	4	23-Jun-16	27-Jun-16	-197
SUEC2c-040	PC2c Edge Area Sand Surcharge Period 2nd stage 5mths	150	28-Jun-16	24-Nov-16	-230
Reclamation Areas		315	27-Oct-15 A	05-Sep-16	-141
West		257	27-Oct-15 A	09-Jul-16	-83

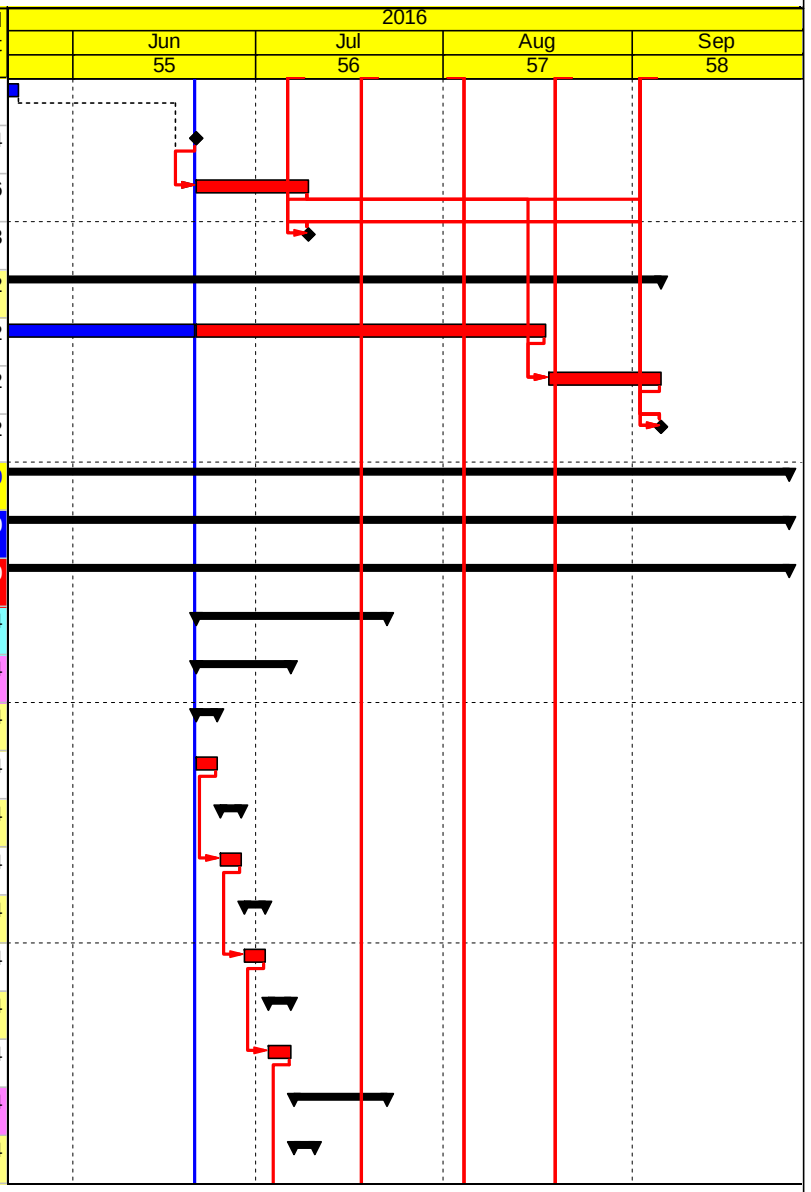


Remaining Level of Effort
Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

TASK filter: Three Month Rolling.

Primavera Systems, Inc.

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
SURC2c-W030	PC2c Main Area PBF Surcharge Period 7mths (23May2016)	210	27-Oct-15 A	23-May-16 A	
SURC2c-W032	PC2c Main Area PBF Surcharge Removal instructed by the Engineer	0		21-Jun-16	-104
SURC2c-W040	PC2c Main Area PBF Surcharge Removal 90162m3 10,000m3/day	18	21-Jun-16	09-Jul-16	-96
SURC2c-W050	Completion of Section PC2c at Reclamation Area	0		09-Jul-16	-83
East		229	21-Jan-16 A	05-Sep-16	-142
SURC2c-E030	PC2c Main Area PBF Surcharge Period 7mths (17Aug2016)	210	21-Jan-16 A	17-Aug-16	-142
SURC2c-E040	PC2c Main Area PBF Surcharge Removal 90163m3 10,000m3/day	18	18-Aug-16	05-Sep-16	-132
SURC2c-E050	Completion of Section PC2c at Reclamation Area	0		05-Sep-16	-142
Portion D		129	07-May-16 A	26-Sep-16	-270
Site Construction		129	07-May-16 A	26-Sep-16	-270
C1 to C4		129	07-May-16 A	26-Sep-16	-270
Installations of Precast Culverts except sloping outfalls		32	21-Jun-16	22-Jul-16	-204
Culvert C3		16	21-Jun-16	06-Jul-16	-204
C3-2		4	21-Jun-16	24-Jun-16	-204
PD-C3-2-120	PD C3-2 Backfill Manhole upto +5.5mPD	4	21-Jun-16	24-Jun-16	-204
C3-3		4	25-Jun-16	28-Jun-16	-204
PD-C3-3-120	PD C3-3 Backfill Manhole upto +5.5mPD	4	25-Jun-16	28-Jun-16	-204
C3-4		4	29-Jun-16	02-Jul-16	-204
PD-C3-4-120	PD C3-4 Backfill Manhole upto +5.5mPD	4	29-Jun-16	02-Jul-16	-204
C3-5		4	03-Jul-16	06-Jul-16	-204
PD-C3-5-120	PD C3-5 Backfill Manhole upto +5.5mPD	4	03-Jul-16	06-Jul-16	-204
Culvert C4		16	07-Jul-16	22-Jul-16	-204
C4-2		4	07-Jul-16	10-Jul-16	-204



Remaining Level of Effort
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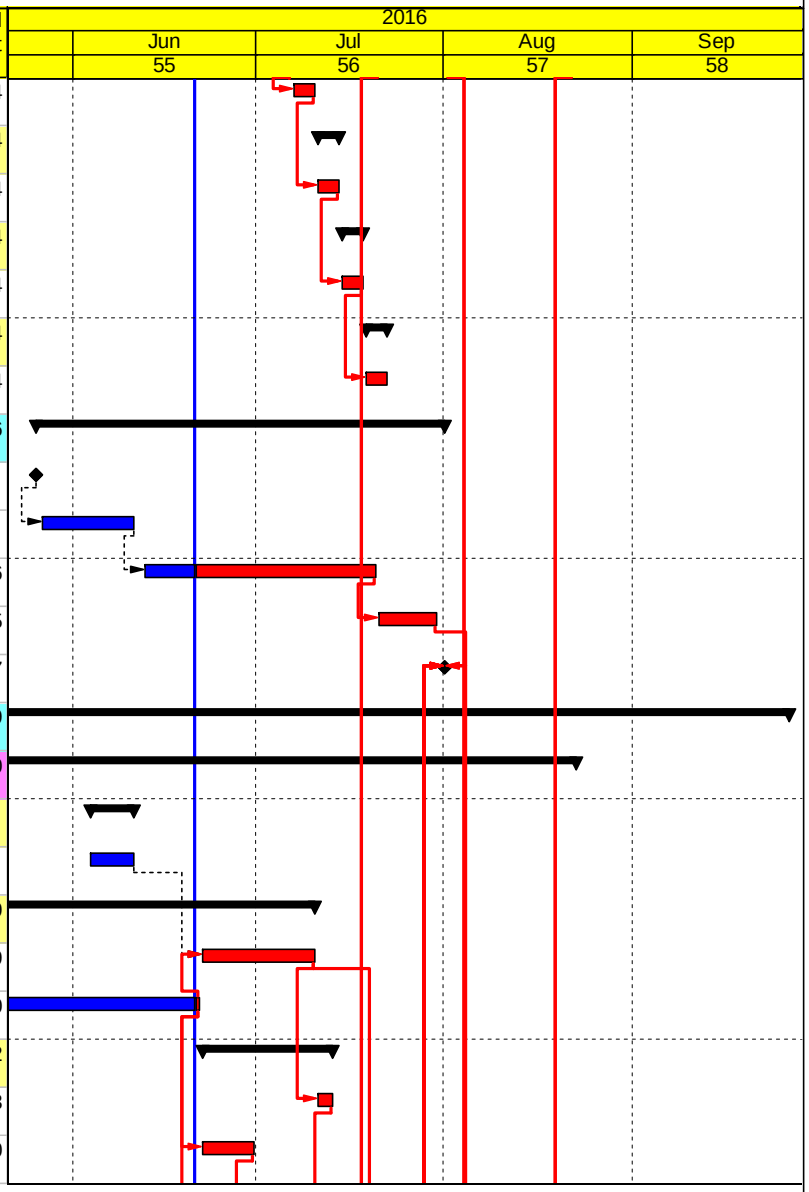
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
PD-C4-2-120	PD C4-2 Backfill Manhole upto +5.5mPD	4	07-Jul-16	10-Jul-16	-204
C4-3		4	11-Jul-16	14-Jul-16	-204
PD-C4-3-120	PD C4-3 Backfill Manhole upto +5.5mPD	4	11-Jul-16	14-Jul-16	-204
C4-4		4	15-Jul-16	18-Jul-16	-204
PD-C4-4-120	PD C4-4 Backfill Manhole upto +5.5mPD	4	15-Jul-16	18-Jul-16	-204
C4-5		4	19-Jul-16	22-Jul-16	-204
PD-C4-5-120	PD C4-5 Backfill Manhole upto +5.5mPD	4	19-Jul-16	22-Jul-16*	-204
Removal of Temporary Bridge and Channel Beside Existing Seawall		54	26-May-16 A	01-Aug-16	-356
PD-TD1-0030	PD EC1 Beside Existing Seawall - Diversion Access advised by other project C2	0		26-May-16 A	
PD-TD1-0040	PD EC1 Beside Existing Seawall - Removal of Temporary bridge, concrete blocks & Ramp	21	27-May-16 A	11-Jun-16 A	
PD-TD1-0050	PD EC1 Beside Existing Seawall - Reinstatement	30	13-Jun-16 A	20-Jul-16	-326
PD-TD1-0060	PD EC1 Existing Seawall Type 2 & Backfill	10	21-Jul-16	30-Jul-16	-355
PD-TD1-0999	Completion of PD EC1	0		01-Aug-16	-327
Construction of Permanent Seawall		129	07-May-16 A	26-Sep-16	-569
Vertical Seawall Type V2 6+136 to 5+650		94	07-May-16 A	22-Aug-16	-600
Foundation Leveling		7	04-Jun-16 A	11-Jun-16 A	
PD-V2-0050	PD C1 West - Vertical Seawall V2 VSOP22-20 Foundation Leveling 3,000m2 and Geotextile	7	04-Jun-16 A	11-Jun-16 A	
Seawall Blocks Installation		47	07-May-16 A	10-Jul-16	-539
PD-V2-0070	PD C1 West - Vertical Seawall Blocks V2 VSPD22-20 Type 2E & 2A 352nrs (20nrs/day)	18	22-Jun-16	10-Jul-16	-539
PD-V2-0150	PD C4 East - Vertical Seawall Blocks V2 VSOP04-01 Type 2A2, 2A1 & 2B 548nrs (20nrs/day)	28	07-May-16 A	21-Jun-16	-550
Rockfill Type 2 behind seawall		21	22-Jun-16	13-Jul-16	-522
PD-V2-0180	PD C1 West - Vertical Seawall V2 Rockf ill Type 2 VSOP22-20 1,400m3	3	11-Jul-16	13-Jul-16	-523
PD-V2-0220	PD C4 East - Vertical Seawall V2 Rockf ill Type 2 VSOP04-01 2,500m3	9	22-Jun-16	30-Jun-16	-510



Remaining Level of Effort
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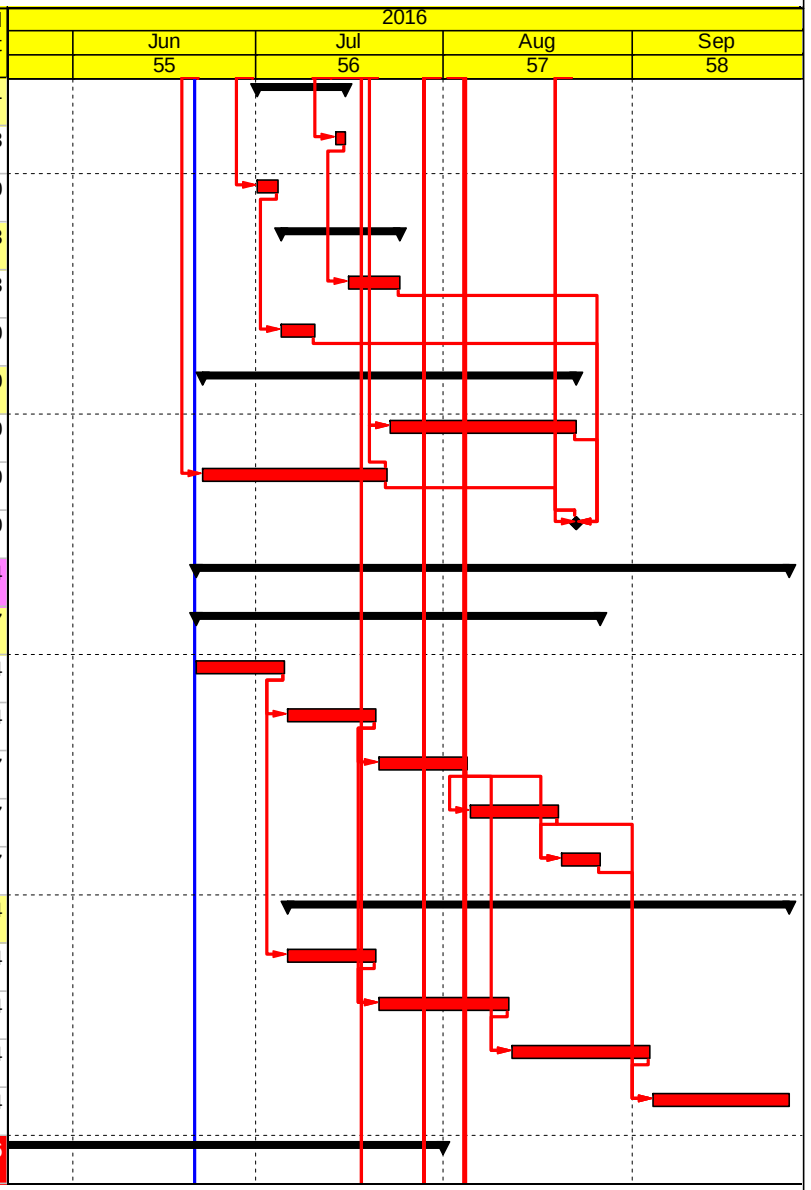
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
Geotextile Type 1		14	01-Jul-16	15-Jul-16	-521
PD-V2-0230	PD C1 West - Vertical Seawall V2 Geotextile Type 1 VSOP22-20 1,000m2	2	14-Jul-16	15-Jul-16	-523
PD-V2-0270	PD C4 East - Vertical Seawall V2 Geotextile Type 1 VSOP04-01 1,700m2	3	01-Jul-16	04-Jul-16	-510
Reclamation upto +3.25mPD		19	05-Jul-16	24-Jul-16	-523
PD-V2-0280	PD C1 West - Vertical Seawall V2 backfill with compaction upto +3.25mPD VSOP22-20	8	16-Jul-16	24-Jul-16	-523
PD-V2-0320	PD C4 East - Vertical Seawall V2 backfill with compaction upto +3.25mPD VSOP05-01	6	05-Jul-16	10-Jul-16	-510
Rock Armour		62	22-Jun-16	22-Aug-16	-600
PD-V2-0910	PD C1 West - Vertical Seawall V2 Armour VSOP22-20	29	23-Jul-16	22-Aug-16	-550
PD-V2-0950	PD C4 East - Vertical Seawall V2 Armour VSOP05-01	29	22-Jun-16	22-Jul-16	-550
PD-V2-0990	Completion of North Vertical Seawall	0		22-Aug-16*	-600
Sloping Seawall Type S1 0+000 to 0+420		91	21-Jun-16	26-Sep-16	-524
Removal of South Temporary Seawall S1		63	21-Jun-16	26-Aug-16	-517
PD-S1-0010	PD C1 West - Removal of S1 Temporary seawall	14	21-Jun-16*	05-Jul-16	-524
PD-S1-0015	PD C1/2 - Removal of S1 Temporary seawall	14	06-Jul-16	20-Jul-16	-524
PD-S1-0020	PD C2/3 - Removal of S1 Temporary Seawall	14	21-Jul-16	04-Aug-16	-517
PD-S1-0025	PD C3/4 - Removal of S1 Temporary Seawall	14	05-Aug-16	19-Aug-16	-517
PD-S1-0030	PD C4 East - Removal of S1 Temporary Seawall	7	20-Aug-16	26-Aug-16	-517
S1 Rockfill Type 1		77	06-Jul-16	26-Sep-16	-524
PD-S1-1010	PD C1 West - Sloping Seawall Type S1 Reconstruction	14	06-Jul-16	20-Jul-16	-524
PD-S1-1020	PD C1/2 - Sloping Seawall Type S1 Reconstruction	21	21-Jul-16	11-Aug-16	-524
PD-S1-1030	PD C2/3 - Sloping Seawall Type S1 Reconstruction	21	12-Aug-16	03-Sep-16	-524
PD-S1-1040	PD C3/4 - Sloping Seawall Type S1 Reconstruction	21	04-Sep-16	26-Sep-16	-524
Extension Culvert EC1		72	10-May-16 A	31-Jul-16	-356



Remaining Level of Effort ◆ Milestone
Actual Level of Effort Summary
Actual Work
Remaining Work
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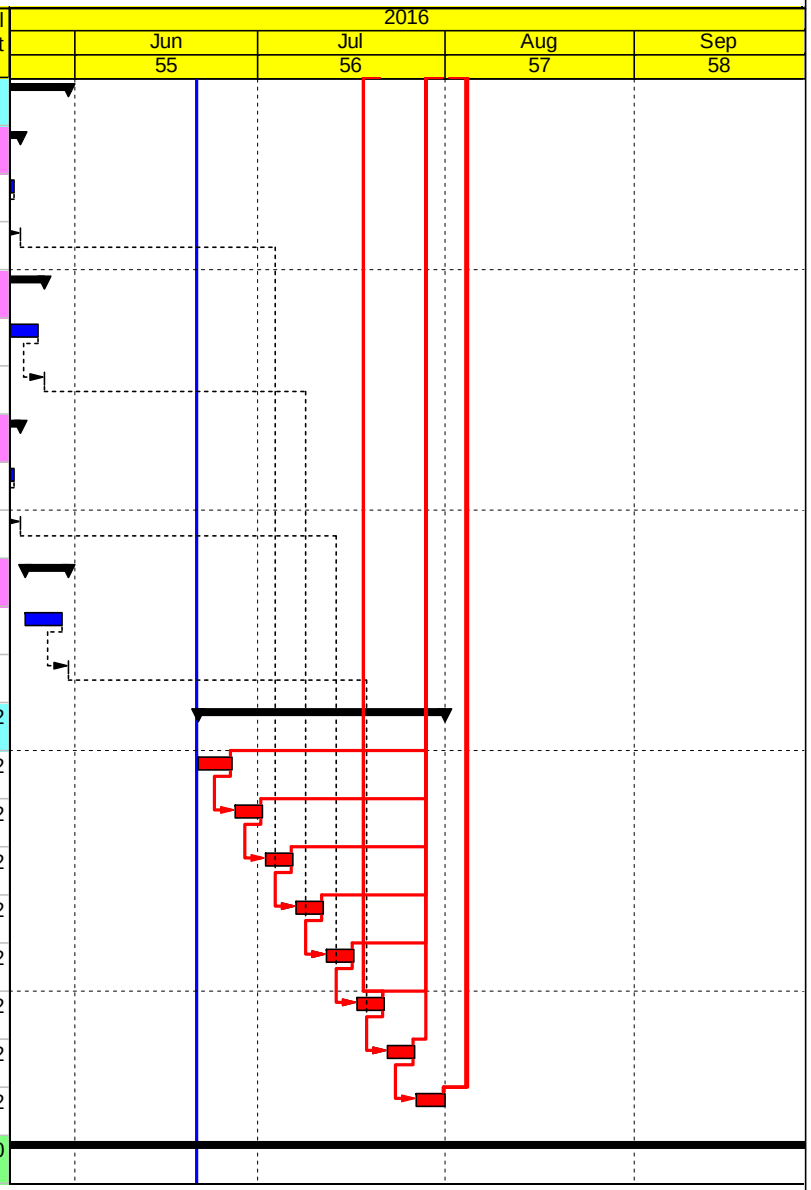
TASK filter: Three Month Rolling.

Primavera Systems, Inc.

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
Insitu Concrete		36	10-May-16 A	31-May-16 A	
EC1-4		23	10-May-16 A	23-May-16 A	
PD-EC1-4-290	PD EC1-3/4 MJ Preparation	4	10-May-16 A	22-May-16 A	
PD-EC1-4-300	PD EC1-3/4 MJ concrete	1	23-May-16 A	23-May-16 A	
EC1-5		36	13-May-16 A	27-May-16 A	
PD-EC1-5-290	PD EC1-4/5 MJ Preparation	4	13-May-16 A	26-May-16 A	
PD-EC1-5-300	PD EC1-4/5 MJ concrete	1	27-May-16 A	27-May-16 A	
EC1-6		20	16-May-16 A	23-May-16 A	
PD-EC1-6-290	PD EC1-5/6 MJ Preparation	4	16-May-16 A	22-May-16 A	
PD-EC1-6-300	PD EC1-5/6 MJ concrete	1	23-May-16 A	23-May-16 A	
EC1-7		5	24-May-16 A	31-May-16 A	
PD-EC1-7-290	PD EC1-6/7 MJ Preparation	4	24-May-16 A	30-May-16 A	
PD-EC1-7-300	PD EC1-6/7 MJ concrete	1	31-May-16 A	31-May-16 A	
Backfilling & Reclamation		41	21-Jun-16	31-Jul-16	-352
PD-EC1-0100-02	PD EC1-1 Backfill and Compaction	6	21-Jun-16	26-Jun-16	-352
PD-EC1-0100-03	PD EC1-2 Backfill and Compaction	5	27-Jun-16	01-Jul-16	-352
PD-EC1-0100-04	PD EC1-3 Backfill and Compaction	5	02-Jul-16	06-Jul-16	-352
PD-EC1-0100-05	PD EC1-4 Backfill and Compaction	5	07-Jul-16	11-Jul-16	-352
PD-EC1-0100-06	PD EC1-5 Backfill and Compaction	5	12-Jul-16	16-Jul-16	-352
PD-EC1-0100-07	PD EC1-6 Backfill and Compaction	5	17-Jul-16	21-Jul-16	-352
PD-EC1-0100-08	PD EC1-7 Backfill and Compaction	5	22-Jul-16	26-Jul-16	-352
PD-EC1-0100-09	PD EC1-8 Outfall Backfill and Compaction	5	27-Jul-16	31-Jul-16	-352
Works Area WA2 (Tung Chung)		1434	21-May-12 A	28-Feb-17	0



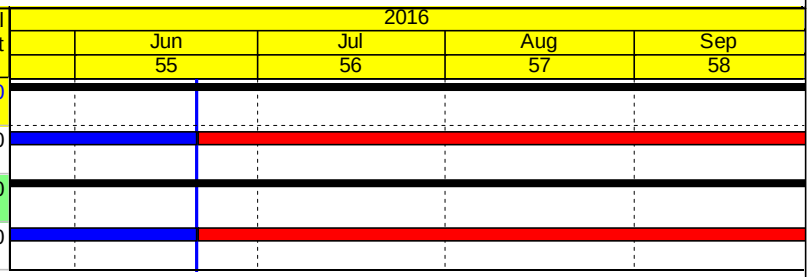
Remaining Level of Effort ◆ Milestone
Actual Level of Effort Summary
Actual Work
Remaining Work
Critical Remaining Work

TASK filter: Three Month Rolling.

Primavera Systems, Inc.

Contract No. **Hong Kong - Zhuhai - Macao Bridge** Hong Kong Boundary Crossing Facilities - Reclamation Works

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
Zone A		1434	21-May-12 A	28-Feb-17	0
A1880	Maintenance of Engineer's Accommodation	1434	21-May-12 A	28-Feb-17	0
Works Area TKO Fill Bank		1254	25-Sep-12 A	30-Nov-16	0
WA-TKO-1040	Operate and Maintain Public Fill Sorting Facilities in Zone A, B1 & B2	1254	25-Sep-12 A	30-Nov-16	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 than 2.4m high should be provided as far as practicable along the site boundary	All construction sites	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; • Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an		

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		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 system; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable		

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.		
S5.5.6.3 of HKBCFEIA and S4.8.1 of TKCLKLEIA	A3	The Contractor should undertake proper watering on all exposed spoil and associated work areas (with at least 8 times per day) throughout the construction phase.	All construction sites	V
S5.5.6.4 of HKBCFEIA and S4.11 of TKCLKLEIA	A4	Implement regular dust monitoring under EM&A programme during the construction stage.	Selected representative dust monitoring station	V
S5.5.7.1 of HKBCFEIA	A5	The following mitigation measures should be adopted to prevent fugitive dust emissions for concrete batching plant: • 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; • 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 construction sites	N/A

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		• 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 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	All construction sites	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		so that the noise is directed away from nearby NSRs; • 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 EIA report at all construction sites	V
S6.4.14 of HKBCFEIA	N5	Sequencing operation of construction plants where practicable.	All construction sites where practicable	V
S5.1 of	N6	Implement a noise monitoring under EM&A programme.	Selected	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
TMCLKLEIA			representative noise monitoring station	
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; • 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;	All construction sites	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		• 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 TMCLKLEIA	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 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	All construction sites	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		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 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	All construction sites	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		which also offers a chemical waste collection service and can supply the necessary storage containers; or be to a reuser of the waste, under approval from the EPD.		
S8.3.16 of HKBCFEIA and S12.6 of TMCLKLEIA	WM7	*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 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	All construction sites	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		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.		
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:	During filling	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		• 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 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		

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		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 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	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:	All land-based construction sites	V

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

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		should be covered with tarpaulin or similar fabric during rainstorms; • manholes (including any newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers; • discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system; • all vehicles and plant should be cleaned before they leave the construction site to ensure that no earth, mud or debris is deposited by them on roads. A wheel washing bay should be provided at every site exit; • wheel wash overflow shall be directed to silt removal facilities before being discharged to the storm drain; • the section of construction road between the wheel washing bay and the public road should be surfaced with crushed stone or coarse gravel; • 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;		

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		• 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 and S6.10 of TMCLKLEIA	W3	Implement a water quality monitoring programme	At identified monitoring location	V
S6.10 of TMCLKLEIA	W4	All construction works shall be subject to routine audit to ensure implementation of all EIA recommendations and good working practice.	All construction site areas	V
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	Seawall, reclamation area	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		• Good site practices • Strict enforcement of no marine dumping • Site runoff control • Spill response plan		
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
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	E6	• Control vessel speed	Marine traffic	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
HKBCFEIA and S8.14 of TMCLKLEIA		• Skipper training • Predefined and regular routes for working vessels; avoid Brothers Islands		
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 • Strict enforcement of no marine dumping • Spill response plan	Seawall, reclamation area	V
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	All construction site areas	N/A

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		rock materials and planting strip area accommodating screen buffer to enhance "natural-look" of new coastline.		
S10.9 of TMCLKLEIA	LV2	*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				
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 μg/m^3	500 μg/m^3
AMS3B*	368 μg/m^3	500 μg/m^3
AMS6	360 μg/m^3	500 μg/m^3
AMS7	370 μg/m^3	500 μg/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 μg/m^3	260 μg/m^3
AMS3B*	167 μg/m^3	260 μg/m^3
AMS6	173 μg/m^3	260 μg/m^3
AMS7	183 μg/m^3	260 μg/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)
NMS3B		*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	Tung Chung Development Pier (AMS2)	Operator:	Leung Yiu Ting
Cal. Date:	18-May-16	Next Due Date:	18-Jul-16
Equipment No.:	A-001-78T	Serial No.	3383

Ambient Condition			
Temperature, Ta (K)	299	Pressure, Pa (mmHg)	757.8

Orifice Transfer Standard Information					
Serial No:	988	Slope, mc	1.97831	Intercept, bc	0.01264
Last Calibration Date:	29-May-15	**mc x Qstd + bc = [DH x (Pa/760) x (298/Ta)]$^{1/2}$**			
Next Calibration Date:	29-May-16	**Qstd = {[DH x (Pa/760) x (298/Ta)]$^{1/2}$ -bc} / mc**			

Calibration of TSP Sampler

Resistance Plate No.	Orfice			HVS Flow Recorder	
	DH (orifice), in. of water	[DH x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (m^3/min) **X - axis**	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) **Y-axis**
18	7.9	2.80	1.41	48.0	47.85
13	6.7	2.58	1.30	42.0	41.87
10	4.9	2.21	1.11	34.0	33.89
7	3.8	1.94	0.98	28.0	27.91
5	2.5	1.58	0.79	22.0	21.93

By Linear Regression of Y on X

Slope , mw = **41.9392** **Intercept, bw =** **-12.1393**

Correlation Coefficient* = **0.9936**

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

Therefore, Set Point; IC = (mw x Qstd + bw) x [(760 / Pa) x (Ta / 298)]$^{1/2}$= **42.51**

Remarks: _____

QC Reviewer: KY Sham Signature: _____ Date: 18/5/16

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station	Site Boundary of Site Office (WA2) (AMS3B)	Operator:	Leung Yiu Ting
Cal. Date:	29-Apr-16	Next Due Date:	29-Jun-16
Equipment No.:	A-001-79T	Serial No.	3384

Ambient Condition			
Temperature, Ta (K)	303.0	Pressure, Pa (mmHg)	756.9

Orifice Transfer Standard Information					
Serial No:	988	Slope, mc	1.97831	Intercept, bc	0.01264
Last Calibration Date:	29-May-15	$mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	29-May-16	$Qstd = \{[DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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	7.2	2.66	1.34	48.0	47.51
13	6.2	2.46	1.24	42.0	41.57
10	4.7	2.15	1.08	34.0	33.65
7	3.2	1.77	0.89	24.0	23.75
5	2.0	1.40	0.70	14.0	13.86

By Linear Regression of Y on X

Slope , mw = **52.4202** **Intercept, bw =** **-22.9024**

Correlation Coefficient* = **0.9995**

*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; $IC = (mw \times Qstd + bw) \times [(760 / Pa) \times (Ta / 298)]^{1/2} =$ **45.72**

Remarks:

QC Reviewer: YT Leung Signature: Date: 29-Apr-16

D:\HVS Calibration Certificate (Existing)\

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station	Site Boundary of Site Office (WA2) (AMS3B)	Operator:	Leung Yiu Ting
Cal. Date:	29-Jun-16	Next Due Date:	29-Aug-16
Equipment No.:	A-001-79T	Serial No.	3384

Ambient Condition			
Temperature, Ta (K)	302.0	Pressure, Pa (mmHg)	756.3

Orifice Transfer Standard Information					
Serial No:	988	Slope, mc	1.99349	Intercept, bc	-0.02737
Last Calibration Date:	31-May-16	$mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	31-May-17	$Qstd = \{[DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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	7.3	2.68	1.36	49.0	48.56
13	6.1	2.45	1.24	43.0	42.61
10	4.9	2.19	1.11	35.0	34.68
7	3.2	1.77	0.90	25.0	24.77
5	2.0	1.40	0.72	15.0	14.86

By Linear Regression of Y on X

Slope , mw = **52.4586** **Intercept, bw =** **-22.8441**

Correlation Coefficient* = **0.9985**

*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; $IC = (mw \times Qstd + bw) \times [(760 / Pa) \times (Ta / 298)]^{1/2} =$ **45.77**

Remarks:

QC Reviewer: WS CHAN Signature: Date: 29/06/16

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station	Hong Kong SkyCity Marriott Hotel (AMS7)	Operator:	Leung yiu ting
Cal. Date:	29-Apr-16	Next Due Date:	29-Jun-16
Equipment No.:	A-001-80T	Serial No.	3385

Ambient Condition			
Temperature, Ta (K)	303.0	Pressure, Pa (mmHg)	756.9

Orifice Transfer Standard Information					
Serial No:	988	Slope, mc	1.97831	Intercept, bc	0.01264
Last Calibration Date:	29-May-15	$mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	29-May-16	$Qstd = \{[DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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	7.4	2.69	1.35	48.0	47.51
13	6.6	2.54	1.28	44.0	43.55
10	5.5	2.32	1.17	38.0	37.61
7	3.2	1.77	0.89	23.0	22.76
5	2.3	1.50	0.75	15.0	14.85

By Linear Regression of Y on X

Slope , mw = **54.0244** **Intercept, bw =** **-25.5358**

Correlation Coefficient* = **0.9998**

*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; $IC = (mw \times Qstd + bw) \times [(760 / Pa) \times (Ta / 298)]^{1/2} =$ **45.16**

Remarks:

QC Reviewer: YT Leung Signature: Date: 29-Apr-16

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station	Hong Kong SkyCity Marriott Hotel (AMS7)	Operator:	Leung yiu ting
Cal. Date:	29-Jun-16	Next Due Date:	29-Aug-16
Equipment No.:	A-001-80T	Serial No.	3385

Ambient Condition			
Temperature, Ta (K)	302.0	Pressure, Pa (mmHg)	756.3

Orifice Transfer Standard Information					
Serial No:	988	Slope, mc	1.99349	Intercept, bc	-0.02737
Last Calibration Date:	31-May-16	**mc x Qstd + bc = [DH x (Pa/760) x (298/Ta)]$^{1/2}$**			
Next Calibration Date:	31-May-17	**Qstd = {[DH x (Pa/760) x (298/Ta)]$^{1/2}$ -bc} / mc**			

Calibration of TSP Sampler

Resistance Plate No.	Orfice			HVS Flow Recorder	
	DH (orifice), in. of water	[DH x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (m^3/min) **X - axis**	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) **Y-axis**
18	7.3	2.68	1.36	50.0	49.55
13	6.4	2.51	1.27	44.0	43.60
10	5.0	2.22	1.13	37.0	36.66
7	3.4	1.83	0.93	24.0	23.78
5	2.3	1.50	0.77	16.0	15.85

By Linear Regression of Y on X

Slope , mw = **57.3614** **Intercept, bw =** **-28.6477**

Correlation Coefficient* = **0.9971**

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

Therefore, Set Point; IC = (mw x Qstd + bw) x [(760 / Pa) x (Ta / 298)]$^{1/2}$= **46.34**

Remarks: _____

QC Reviewer: WS CHAN Signature: _____ Date: 29/06/16

TISCH Environmental

TISCH ENVIRONMENTAL, INC.
145 SOUTH MIAMI AVE
VILLAGE OF CLEVES, OH
45002
513.467.9000
877.263.7610 TOLL FREE
513.467.9009 FAX

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - May 29, 2015 Rootsmeter S/N 0438320 Ta (K) - 297
Operator Tisch Orifice I.D. - 0988 Pa (mm) - 755.65

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	1.3980	3.2	2.00
2	NA	NA	1.00	0.9910	6.3	4.00
3	NA	NA	1.00	0.8790	7.8	5.00
4	NA	NA	1.00	0.8380	8.6	5.50
5	NA	NA	1.00	0.6890	12.6	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)
0.9934	0.7106	1.4125
0.9893	0.9983	1.9976
0.9872	1.1231	2.2334
0.9862	1.1769	2.3424
0.9809	1.4237	2.8251

Qstd slope (m) = 1.97831
intercept (b) = 0.01264
coefficient (r) = 0.99985

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

Va	(x axis) Qa	(y axis)
0.9957	0.7123	0.8866
0.9917	1.0007	1.2539
0.9896	1.1258	1.4019
0.9886	1.1797	1.4703
0.9833	1.4271	1.7732

Qa slope (m) = 1.23878
intercept (b) = 0.00793
coefficient (r) = 0.99985

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*:	*7 May 2016*		

*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	*07-05-16*	*12:15 - 13:15*	*28.1*	*77*	*0.04530*	*1812*	*30.20*
2	*07-05-16*	*13:15 - 14:15*	*28.2*	*76*	*0.04659*	*1863*	*31.05*
3	*07-05-16*	*14:15 - 15:15*	*28.4*	*78*	*0.04560*	*1824*	*30.40*
4	*07-05-16*	*15:15 - 16:15*	*28.5*	*77*	*0.04434*	*1774*	*29.57*

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: *0.9969*

Validity of Calibration Record: *7 May 2017*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 09 May 2016

EQUIPMENT CALIBRATION RECORD

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

Standard Equipment

Equipment:	*Rupprecht & Patashnick TEOM®*		
Venue:	*Cyberport (Pui Ying Secondary School)*		
Model No.:	*Series 1400AB*		
Serial No:	Control: *140AB219899803*		
	Sensor: *1200C143659803*	K_o: *12500*	
Last Calibration Date*:	*7 May 2016*		

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

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

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration[1] (mg/m^3) **Y-axis**	Total Count[2]	Count/ Minute[3] **X-axis**
			Temp (°C)	R.H. (%)			
1	*07-05-16*	*12:30 - 13:30*	*28.2*	*77*	*0.04611*	*1727*	*28.78*
2	*07-05-16*	*13:30 - 14:30*	*28.2*	*77*	*0.04678*	*1758*	*29.30*
3	*07-05-16*	*14:30 - 15:30*	*28.4*	*78*	*0.04574*	*1717*	*28.62*
4	*07-05-16*	*15:30 - 16:30*	*28.5*	*77*	*0.04353*	*1634*	*27.23*

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

By Linear Regression of Y or X
Slope (K-factor): *0.0016*
Correlation coefficient: *0.9977*

Validity of Calibration Record: *7 May 2017*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 09 May 2016

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*:	*7 May 2016*		

*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	*07-05-16*	*11:45 - 12:45*	*28.2*	*77*	*0.04623*	*1847*	*30.78*
2	*07-05-16*	*12:45 - 13:45*	*28.2*	*78*	*0.04708*	*1885*	*31.42*
3	*07-05-16*	*13:45 - 14:45*	*28.3*	*76*	*0.04591*	*1836*	*30.60*
4	*07-05-16*	*14:45 - 15:45*	*28.4*	*77*	*0.04333*	*1726*	*28.77*

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: *0.9964*

Validity of Calibration Record: *7 May 2017*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 09 May 2016

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*:	*7 May 2016*		

*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	*08-05-16*	*10:00 - 11:00*	*28.3*	*76*	*0.04945*	*1975*	*32.92*
2	*08-05-16*	*11:00 - 12:00*	*28.3*	*77*	*0.05116*	*2049*	*34.15*
3	*08-05-16*	*12:00 - 13:00*	*28.4*	*76*	*0.04767*	*1912*	*31.87*
4	*08-05-16*	*13:00 - 14:00*	*28.3*	*76*	*0.04593*	*1833*	*30.55*

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: *0.9975*

Validity of Calibration Record: *8 May 2017*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 09 May 2016

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*:	*7 May 2016*		

*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	*08-05-16*	*09:30 - 10:30*	*28.3*	*77*	*0.04959*	*1893*	*33.05*
2	*08-05-16*	*10:30 - 11:30*	*28.4*	*77*	*0.05173*	*2071*	*34.52*
3	*08-05-16*	*11:30 - 12:30*	*28.3*	*76*	*0.04817*	*1922*	*32.03*
4	*08-05-16*	*12:30 - 13:30*	*28.3*	*77*	*0.04562*	*1828*	*30.47*

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: *0.9987*

Validity of Calibration Record: *8 May 2017*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 09 May 2016

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*:	*7 May 2016*		

*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	*08-05-16*	*09:45 - 10:45*	*28.3*	*76*	*0.04923*	*1977*	*32.95*
2	*08-05-16*	*10:45 - 11:45*	*28.3*	*77*	*0.05086*	*2034*	*33.90*
3	*08-05-16*	*11:45 - 12:45*	*28.4*	*77*	*0.04834*	*1936*	*32.27*
4	*08-05-16*	*12:45 - 13:45*	*28.4*	*76*	*0.04617*	*1850*	*30.83*

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: *0.9981*

Validity of Calibration Record: *8 May 2017*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 09 May 2016

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*:	*7 May 2016*		

*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	*08-05-16*	*13:45 - 14:45*	*28.4*	*77*	*0.04652*	*1994*	*33.23*
2	*08-05-16*	*14:45 - 15:45*	*28.5*	*77*	*0.04837*	*2071*	*34.52*
3	*08-05-16*	*15:45 - 16:45*	*28.4*	*77*	*0.05162*	*2205*	*36.75*
4	*08-05-16*	*16:45 - 17:45*	*28.4*	*77*	*0.04983*	*2135*	*35.59*

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: *8 May 2017*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 09 May 2016

EQUIPMENT CALIBRATION RECORD

Type:	***Laser Dust Monitor***
Manufacturer/Brand:	***SIBATA***
Model No.:	***LD-3B***
Equipment No.:	***A.005.16a***
Sensitivity Adjustment Scale Setting:	***521 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*:	*7 May 2015*		

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): *521* CPM
Sensitivity Adjustment Scale Setting (After Calibration): *521* 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	*18-07-15*	*09:30 - 10:30*	*29.8*	*75*	*0.05032*	*2014*	*33.57*
2	*18-07-15*	*10:45 - 11:45*	*30.1*	*76*	*0.05117*	*2047*	*34.12*
3	*18-07-15*	*12:15 - 13:15*	*30.4*	*77*	*0.05363*	*2141*	*35.68*
4	*18-07-15*	*13:40 - 14:40*	*30.5*	*78*	*0.05465*	*2179*	*36.32*

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: *18 July 2016*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 20 July 2015

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.: 15CA1203 03 **Page:** 1 **of** 2

Item tested

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

Item submitted by

Curstomer:	AECOM ASIA CO., LTD.
Address of Customer:	-
Request No.:	-
Date of receipt:	03-Dec-2015

Date of test: 03-Dec-2015

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2341427	15-Apr-2016	SCL
Preamplifier	B&K 2673	2239857	22-Apr-2016	CEPREI
Measuring amplifier	B&K 2610	2346941	22-Apr-2016	CEPREI
Signal generator	DS 360	61227	16-Apr-2016	CEPREI
Digital multi-meter	34401A	US36087050	17-Apr-2016	CEPREI
Audio analyzer	8903B	GB41300350	17-Apr-2016	CEPREI
Universal counter	53132A	MY40003662	16-Apr-2016	CEPREI

Ambient conditions

Temperature:	22 ± 1 °C
Relative humidity:	50 ± 10 %
Air pressure:	1010 ± 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

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

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

Approved Signatory: Huang Jian Min/Feng Jun Qi **Date:** 04-Dec-2015 **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 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.
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.: 16CA0408 02 Page 1 of 2

Item tested

Description:	Sound Level Meter (Type 1)	,	Microphone
Manufacturer:	B & K	,	B & K
Type/Model No.:	2238	,	4188
Serial/Equipment No.:	2285692	,	2791211
Adaptors used:	-	,	-

Item submitted by

Customer Name:	AECOM ASIA CO., LTD.
Address of Customer:	-
Request No.:	-
Date of receipt:	08-Apr-2016

Date of test: 11-Apr-2016

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	19-Jun-2016	CIGISMEC
Signal generator	DS 360	33873	16-Apr-2016	CEPREI
Signal generator	DS 360	61227	16-Apr-2016	CEPREI

Ambient conditions

Temperature:	21 ± 1 °C
Relative humidity:	50 ± 10 %
Air pressure:	1010 ± 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:** 12-Apr-2016 **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. Tel : (852) 2873 6860
香港黃竹坑道37號利達中心地下，9樓，12樓，13樓及20樓 Fax : (852) 2555 7533
E-mail: smec@cigismec.com Website: www.cigismec.com

HOKLAS 028 CAL

CERTIFICATE OF CALIBRATION

Certificate No.: 15CA0703 02-02 **Page** 1 **of** 2

Item tested

Description:	Sound Level Meter (Type 1)	,	Microphone
Manufacturer:	B & K	,	B & K
Type/Model No.:	2238	,	4188
Serial/Equipment No.:	2800927	,	2791214
Adaptors used:	-	,	-

Item submitted by

N-009-06

Customer Name:	AECOM ASIA CO., LTD.
Address of Customer:	-
Request No.:	-
Date of receipt:	03-Jul-2015

Date of test: 04-Jul-2015

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	19-Jun-2016	CIGISMEC
Signal generator	DS 360	33873	16-Apr-2016	CEPREI
Signal generator	DS 360	61227	16-Apr-2016	CEPREI

Ambient conditions

Temperature:	21 ± 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:** 06-Jul-2015 **Company Chop:** SOILS & 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.: 16CA0304 02

Item tested

Description:	Sound Level Meter (Type 1)	Microphone	Preamp
Manufacturer:	B & K	B & K	B & K
Type/Model No.:	2250-L	4950	ZC0032
Serial/Equipment No.:	2681366	2879980	19428
Adaptors used:	- (N-0411.01)	-	-

Item submitted by

Customer Name:	AECOM ASIA CO LIMITED
Address of Customer:	-
Request No.:	-
Date of receipt:	04-Mar-2016

Date of test: 05-Mar-2016

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	19-Jun-2016	CIGISMEC
Signal generator	DS 360	33873	16-Apr-2016	CEPREI
Signal generator	DS 360	61227	16-Apr-2016	CEPREI

Ambient conditions

Temperature:	21 ± 1 °C
Relative humidity:	60 ± 10 %
Air pressure:	1010 ± 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-Mar-2016 **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.

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

Work Order: HK1616643
Sub-batch: 0
Client: AECOM ASIA COMPANY LIMITED
Date of Issue: 29/04/2016

Description: Multifunctional Meter
Brand Name: YSI
Model No.: 6820 V2
Serial No.: 12A101545
Equipment No.: W.026.35
Date of Calibration: 28 April, 2016 Date of next Calibration: 28 July, 2016

Parameters:

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

Expected Reading (uS/cm)	Displayed Reading (uS/cm)	Tolerance (%)
146.9	140.5	-4.4
6667	6750	+1.2
12890	12680	-1.6
58670	58320	-0.6
	Tolerance Limit (%)	±10.0

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

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
3.43	3.40	-0.03
5.50	5.46	-0.04
7.75	7.73	-0.02
	Tolerance Limit (mg/L)	±0.20

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

Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)
11.0	10.94	-0.1
22.0	21.97	-0.0
37.5	37.44	-0.1
	Tolerance Limit (°C)	±2.0

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: HK1616643
Sub-Batch: 0
Client: AECOM ASIA COMPANY LIMITED
Date of Issue: 29/04/2016

Description: Multifunctional Meter
Brand Name: YSI
Model No.: 6820 V2
Serial No.: 12A101545
Equipment No.: W.026.35
Date of Calibration: 28 April, 2016 Date of next Calibration: 28 July, 2016

Parameters:

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

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)
0	0.00	--
10	10.05	+0.5
20	19.94	-0.3
30	29.90	-0.3
	Tolerance Limit (%)	±10.0

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

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.0	--
4	4.1	+2.5
10	9.9	-1.0
20	20.2	+1.0
50	50.2	+0.4
100	100.4	+0.4
	Tolerance Limit (%)	±10.0

pH Value **Method Ref: APHA (21st edition), 4500H:B**

Expected Reading (pH Unit)	Displayed Reading (pH Unit)	Tolerance (pH unit)
4.0	4.02	+0.02
7.0	6.99	-0.01
10.0	10.03	+0.03
	Tolerance Limit (pH Unit)	±0.20

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: HK1616644
Sub-batch: 0
Client: AECOM ASIA COMPANY LIMITED
Date of Issue: 29/04/2016

Description: Multifunctional Meter
Brand Name: YSI
Model No.: 6820 V2
Serial No.: 12D100972
Equipment No.: W.026.36
Date of Calibration: 28 April, 2016 Date of next Calibration: 28 July, 2016

Parameters:

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

Expected Reading (uS/cm)	Displayed Reading (uS/cm)	Tolerance (%)
146.9	142.0	-3.3
6667	6780	+1.7
12890	12640	-1.9
58670	58790	+0.2
	Tolerance Limit (%)	±10.0

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

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
3.43	3.45	+0.02
5.50	5.51	+0.01
7.75	7.76	+0.01
	Tolerance Limit (mg/L)	±0.20

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

Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)
11.0	10.95	-0.1
22.0	22.02	+0.0
37.5	37.53	+0.0
	Tolerance Limit (°C)	±2.0

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: HK1616644
Sub-Batch: 0
Client: AECOM ASIA COMPANY LIMITED
Date of Issue: 29/04/2016

Description: Multifunctional Meter
Brand Name: YSI
Model No.: 6820 V2
Serial No.: 12D100972
Equipment No.: W.026.36
Date of Calibration: 28 April, 2016 Date of next Calibration: 28 July, 2016

Parameters:

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

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)
0	0.00	--
10	10.05	+0.5
20	20.02	+0.1
30	29.94	-0.2
	Tolerance Limit (%)	±10.0

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

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.0	--
4	3.9	-2.5
10	9.8	-2.0
20	19.7	-1.5
50	50.5	+1.0
100	99.7	-0.3
	Tolerance Limit (%)	±10.0

pH Value **Method Ref: APHA (21st edition), 4500H:B**

Expected Reading (pH Unit)	Displayed Reading (pH Unit)	Tolerance (pH unit)
4.0	4.01	+0.01
7.0	7.03	+0.03
10.0	10.01	+0.01
	Tolerance Limit (pH Unit)	±0.20

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
Tentative Impact Monitoring Schedule for June 2016

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1-Jun	2-Jun	3-Jun	4-Jun
			Mid-Ebb 10:05 Mid-Flood 15:56		Mid-Ebb 11:35 Mid-Flood 18:04	24-hour TSP 1-hour TSP
5-Jun	6-Jun	7-Jun	8-Jun	9-Jun	10-Jun	11-Jun
	Mid-Flood 6:58 Mid-Ebb 13:51 Dolphin monitoring	Dolphin monitoring	Mid-Flood 8:21 Mid-Ebb 15:21 24-hour TSP 1-hour TSP Noise		Mid-Flood 9:50 Mid-Ebb 16:51	
12-Jun	13-Jun	14-Jun	15-Jun	16-Jun	17-Jun	18-Jun
	Mid-Ebb 8:12 Mid-Flood 13:31	24-hour TSP 1-hour TSP Noise	Mid-Ebb 10:08 Mid-Flood 16:19		Mid-Ebb 11:22 Mid-Flood 18:03	
19-Jun	20-Jun	21-Jun	22-Jun	23-Jun	24-Jun	25-Jun
	Mid-Flood 6:10 Mid-Ebb 13:03 Dolphin monitoring 24-hour TSP 1-hour TSP Noise	Dolphin monitoring	Mid-Flood 7:22 Mid-Ebb 14:15		Mid-Flood 8:44 Mid-Ebb 15:33	24-hour TSP 1-hour TSP
26-Jun	27-Jun	28-Jun	29-Jun	30-Jun		
	Mid-Flood 11:34 Mid-Ebb 17:58		Mid-Ebb 8:36 Mid-Flood 14:26	24-hour TSP 1-hour TSP Noise		

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

Hong Kong Boundary Crossing Facilities – Reclamation Works
Impact Monitoring Schedule for July 2016

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1-Jul	2-Jul
					Mid-Ebb 10:30 Mid-Flood 17:04	
3-Jul	4-Jul	5-Jul	6-Jul	7-Jul	8-Jul	9-Jul
	Mid-Flood 5:56 Mid-Ebb 12:53 Dolphin monitoring	Dolphin monitoring	Mid-Flood 7:24 Mid-Ebb 14:21 24-hour TSP 1-hour TSP Noise		Mid-Flood 8:50 Mid-Ebb 15:43	
10-Jul	11-Jul	12-Jul	13-Jul	14-Jul	15-Jul	16-Jul
	Mid-Flood 11:15 Mid-Ebb 17:40	24-hour TSP 1-hour TSP Noise	Mid-Ebb 8:14 Mid-Flood 14:10		Mid-Ebb 10:10 Mid-Flood 17:00	24-hour TSP 1-hour TSP
17-Jul	18-Jul	19-Jul	20-Jul	21-Jul	22-Jul	23-Jul
	Mid-Ebb 12:06 Mid-Flood 19:12 Dolphin monitoring	Dolphin monitoring	Mid-Flood 6:27 Mid-Ebb 13:21		Mid-Flood 7:52 Mid-Ebb 14:36 24-hour TSP 1-hour TSP Noise	
24-Jul	25-Jul	26-Jul	27-Jul	28-Jul	29-Jul	30-Jul
	Mid-Flood 10:20 Mid-Ebb 16:42		Mid-Flood 12:50 Mid-Ebb 18:41	24-hour TSP 1-hour TSP Noise	Mid-Ebb 9:13 Mid-Flood 15:58	
31-Jul						

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)	Action Level (μg/m^3)	Limit Level (μg/m^3)
04-Jun-16	1st Hour	Sunny	0.00	10:28	73	374	500
04-Jun-16	2nd Hour	Sunny	2.50	11:28	73	374	500
04-Jun-16	3rd Hour	Sunny	1.29	12:28	73	374	500
08-Jun-16	1st Hour	Fine	0.00	10:15	78	374	500
08-Jun-16	2nd Hour	Fine	0.42	11:15	74	374	500
08-Jun-16	3rd Hour	Fine	0.31	12:15	76	374	500
14-Jun-16	1st Hour	Sunny	0.67	10:21	75	374	500
14-Jun-16	2nd Hour	Sunny	1.37	11:21	74	374	500
14-Jun-16	3rd Hour	Sunny	4.73	12:21	74	374	500
20-Jun-16	1st Hour	Sunny	0.81	10:10	72	374	500
20-Jun-16	2nd Hour	Sunny	0.06	11:10	75	374	500
20-Jun-16	3rd Hour	Sunny	0.04	12:10	73	374	500
25-Jun-16	1st Hour	Sunny	0.13	13:20	78	374	500
25-Jun-16	2nd Hour	Sunny	0.08	14:20	79	374	500
25-Jun-16	3rd Hour	Sunny	1.40	15:20	78	374	500
30-Jun-16	1st Hour	Sunny	0.32	09:40	74	374	500
30-Jun-16	2nd Hour	Sunny	0.62	10:40	74	374	500
30-Jun-16	3rd Hour	Sunny	1.72	11:40	75	374	500
				Average	75		
				Min	72		
				Max	79		

1-hour TSP Monitoring Results at Station AMS3B - Site Boundary of Site Office (WA2)

Date	Session	Weather Condition	averaged Wind Speed (m/s)*	Time (hh:mm)	Conc. (μg/m^3)	Action Level (μg/m^3) ^	Limit Level (μg/m^3)
04-Jun-16	1st Hour	Sunny	0.00	10:40	73	368	500
04-Jun-16	2nd Hour	Sunny	2.50	11:40	73	368	500
04-Jun-16	3rd Hour	Sunny	1.29	12:40	72	368	500
08-Jun-16	1st Hour	Fine	0.07	10:00	72	368	500
08-Jun-16	2nd Hour	Fine	0.00	11:00	74	368	500
08-Jun-16	3rd Hour	Fine	0.42	12:00	71	368	500
14-Jun-16	1st Hour	Sunny	1.37	11:33	74	368	500
14-Jun-16	2nd Hour	Sunny	4.73	12:33	75	368	500
14-Jun-16	3rd Hour	Sunny	2.83	13:33	75	368	500
20-Jun-16	1st Hour	Sunny	0.06	10:20	71	368	500
20-Jun-16	2nd Hour	Sunny	0.04	11:20	74	368	500
20-Jun-16	3rd Hour	Sunny	0.00	12:20	76	368	500
25-Jun-16	1st Hour	Sunny	0.00	10:21	76	368	500
25-Jun-16	2nd Hour	Sunny	0.08	11:21	77	368	500
25-Jun-16	3rd Hour	Sunny	0.43	12:21	76	368	500
30-Jun-16	1st Hour	Sunny	0.32	10:06	74	368	500
30-Jun-16	2nd Hour	Sunny	0.62	11:06	74	368	500
30-Jun-16	3rd Hour	Sunny	1.72	12:06	73	368	500
				Average	74		
				Min	71		
				Max	77		

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)	Action Level (μg/m^3)	Limit Level (μg/m^3)
04-Jun-16	1st Hour	Sunny	0.21	10:07	74	370	500
04-Jun-16	2nd Hour	Sunny	0.00	11:07	74	370	500
04-Jun-16	3rd Hour	Sunny	2.50	12:07	72	370	500
08-Jun-16	1st Hour	Fine	0.00	10:25	74	370	500
08-Jun-16	2nd Hour	Fine	0.42	11:25	75	370	500
08-Jun-16	3rd Hour	Fine	0.31	12:25	73	370	500
14-Jun-16	1st Hour	Sunny	0.67	10:02	73	370	500
14-Jun-16	2nd Hour	Sunny	1.37	11:02	75	370	500
14-Jun-16	3rd Hour	Sunny	2.76	12:02	75	370	500
20-Jun-16	1st Hour	Sunny	0.06	10:30	73	370	500
20-Jun-16	2nd Hour	Sunny	0.04	11:30	75	370	500
20-Jun-16	3rd Hour	Sunny	0.00	12:30	73	370	500
25-Jun-16	1st Hour	Sunny	0.00	10:05	77	370	500
25-Jun-16	2nd Hour	Sunny	0.08	11:05	76	370	500
25-Jun-16	3rd Hour	Sunny	0.43	12:05	77	370	500
30-Jun-16	1st Hour	Sunny	1.72	12:09	73	370	500
30-Jun-16	2nd Hour	Sunny	N.A.	13:09	73	370	500
30-Jun-16	3rd Hour	Sunny	N.A.	14:09	74	370	500
				Average	74		
				Min	72		
				Max	77		

Remarks: Due to malfunction of the wind station monitoring equipment, wind data was not able to be obtained for monitoring event(s) conducted between 11:46:36 30 June 2016 – 16:00:00 30 June 2016. Wind speed and direction data set between 11:46:36 30 June 2016 – 16:00:00 30 June 2016 from the Hong Kong Observatory is not available at time this monthly report is submitted.

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 ($\mu g/m^3$)
03-Jun-16	16:00	04-Jun-16	16:00	Sunny	28.7	1007.9	1.33	1.33	1.33	1909.4	2.8048	2.8497	0.0449	6480.04	6504.04	24.00	24	176	260
07-Jun-16	16:00	08-Jun-16	16:00	Cloudy	27.1	1006.3	1.33	1.33	1.33	1909.4	2.8043	2.8323	0.0280	6504.04	6528.04	24.00	15	176	260
13-Jun-16	16:00	14-Jun-16	16:00	Cloudy	30.2	1004.2	1.33	1.33	1.33	1909.4	2.8024	2.8523	0.0499	6528.04	6552.04	24.00	26	176	260
20-Jun-16	09:00	21-Jun-16	09:00	Sunny	25.2	1006.9	1.33	1.33	1.33	1909.4	2.8100	2.8460	0.0360	6552.04	6576.04	24.00	19	176	260
24-Jun-16	16:00	25-Jun-16	16:00	Sunny	31.4	1008.9	1.33	1.33	1.33	1909.4	2.7854	2.8124	0.0270	6576.04	6600.04	24.00	14	176	260
29-Jun-16	16:00	30-Jun-16	16:00	Sunny	30.0	1010.3	1.33	1.33	1.33	1909.4	2.7831	2.8144	0.0313	6600.04	6624.04	24.00	16	176	260
																Average	19		
																Min	14		
																Max	26		

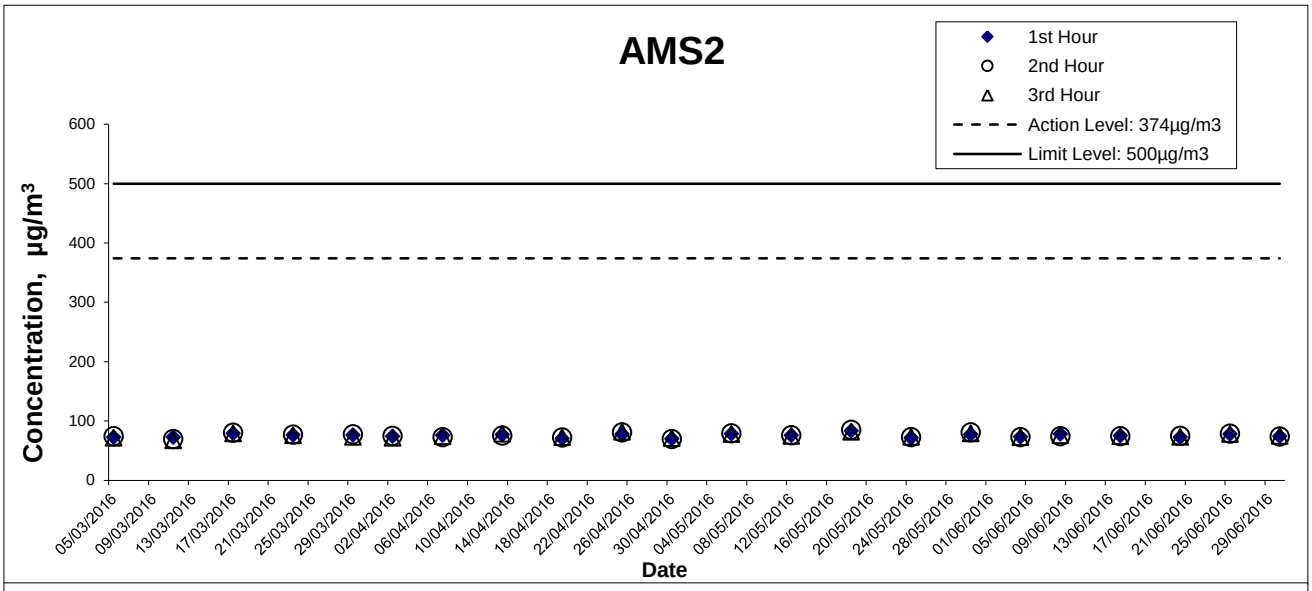
24-hour TSP Monitoring Results at Station AMS3B - Site Boundary of Site Office (WA2)

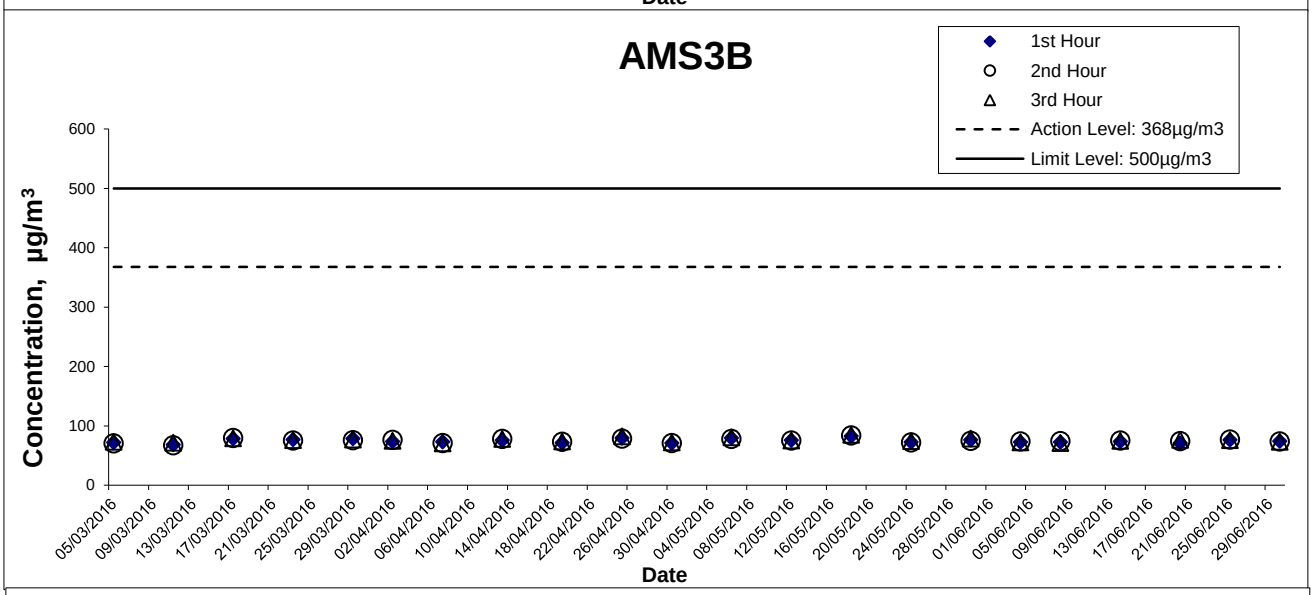
Start Date	Start Time	End Date	End Time	Weather Condition	Air Temp. (^oC)	Atmospheric Pressure(hPa)	Flow Rate (m^3/min.) Initial	Flow Rate (m^3/min.) Final	Av. flow (m^3/min)	Total vol. (m^3)	Filter Weight (g) Initial	Filter Weight (g) Final	Particulate weight(g)	Elapse Time Initial	Elapse Time Final	Sampling Time(hrs.)	Conc. ($\mu g/m^3$)	Actino Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
03-Jun-16	16:00	04-Jun-16	16:00	Sunny	28.7	1007.9	1.34	1.34	1.34	1923.8	2.8071	2.8404	0.0333	7255.38	7279.38	24.00	17	167	260
07-Jun-16	16:00	08-Jun-16	16:00	Cloudy	27.1	1006.3	1.34	1.34	1.34	1923.8	2.7997	2.8274	0.0277	7279.38	7303.38	24.00	14	167	260
13-Jun-16	16:00	14-Jun-16	16:00	Cloudy	30.2	1004.2	1.34	1.34	1.34	1923.8	2.7801	2.8235	0.0434	7303.38	7327.38	24.00	23	167	260
20-Jun-16	09:00	21-Jun-16	09:00	Sunny	15.5	1019.6	1.34	1.34	1.34	1923.8	2.8163	2.8493	0.0330	7327.38	7351.38	24.00	17	167	260
24-Jun-16	16:00	25-Jun-16	16:00	Sunny	31.4	1008.9	1.34	1.34	1.34	1923.8	2.7969	2.8194	0.0225	7351.38	7375.38	24.00	12	167	260
29-Jun-16	16:00	30-Jun-16	16:00	Sunny	30.0	1010.3	1.32	1.32	1.32	1895.0	2.7735	2.8057	0.0322	7375.38	7399.38	24.00	17	167	260
																Average	17		
																Min	12		
																Max	23		

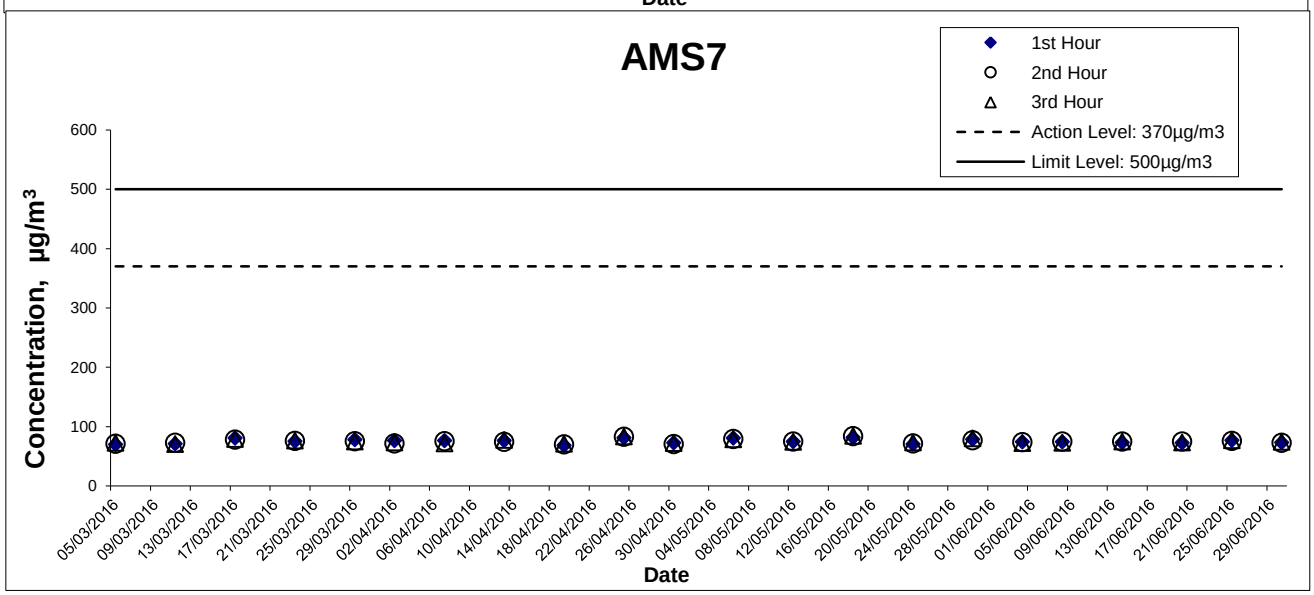
^ Action Level set out at AMS3 Ho Yu College is adopted.

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 ($\mu g/m^3$)
03-Jun-16	16:00	04-Jun-16	16:00	Sunny	28.7	1007.9	1.30	1.30	1.30	1869.1	2.8030	2.8712	0.0682	6195.91	6219.91	24.00	36	183	260
07-Jun-16	16:00	08-Jun-16	16:00	Cloudy	27.1	1006.3	1.30	1.30	1.30	1869.1	2.7920	2.8262	0.0342	6219.91	6243.91	24.00	18	183	260
13-Jun-16	16:00	14-Jun-16	16:00	Cloudy	30.2	1004.2	1.30	1.30	1.30	1869.1	2.7942	2.8651	0.0709	6243.91	6267.91	24.00	38	183	260
20-Jun-16	09:00	21-Jun-16	09:00	Sunny	15.5	1019.6	1.30	1.30	1.30	1869.1	2.8086	2.8689	0.0603	6267.91	6291.91	24.00	32	183	260
24-Jun-16	16:00	25-Jun-16	16:00	Sunny	31.4	1008.9	1.30	1.30	1.30	1869.1	2.8063	2.8571	0.0508	6291.91	6315.91	24.00	27	183	260
29-Jun-16	16:00	30-Jun-16	16:00	Sunny	30.0	1010.3	1.30	1.30	1.30	1869.1	2.7657	2.8168	0.0511	6291.91	6315.91	24.00	27	183	260
																Average	30		
																Min	18		
																Max	38		







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

AECOM

Graphical Presentation of Impact 1-hour TSP Monitoring Results

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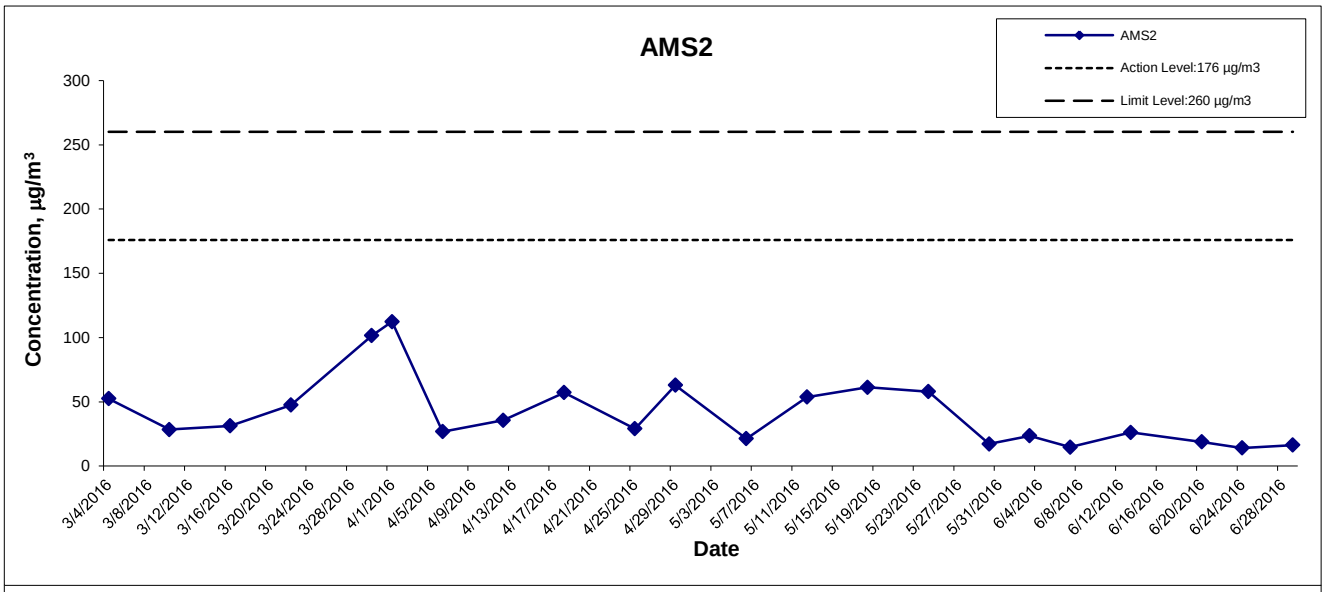
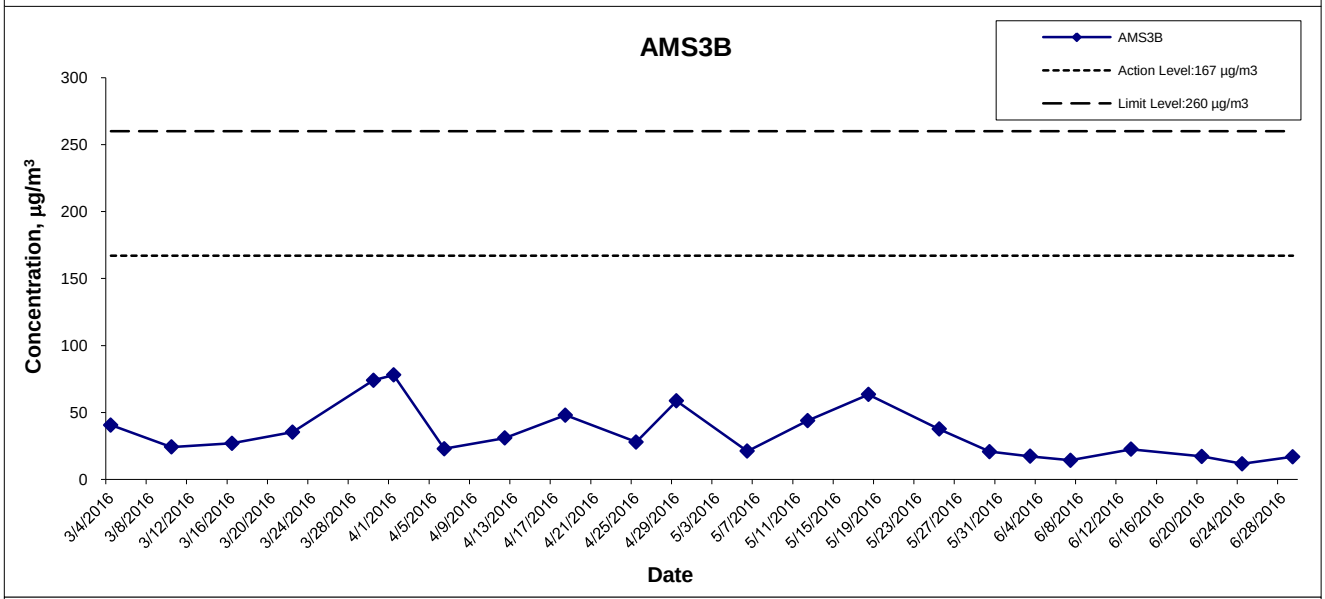
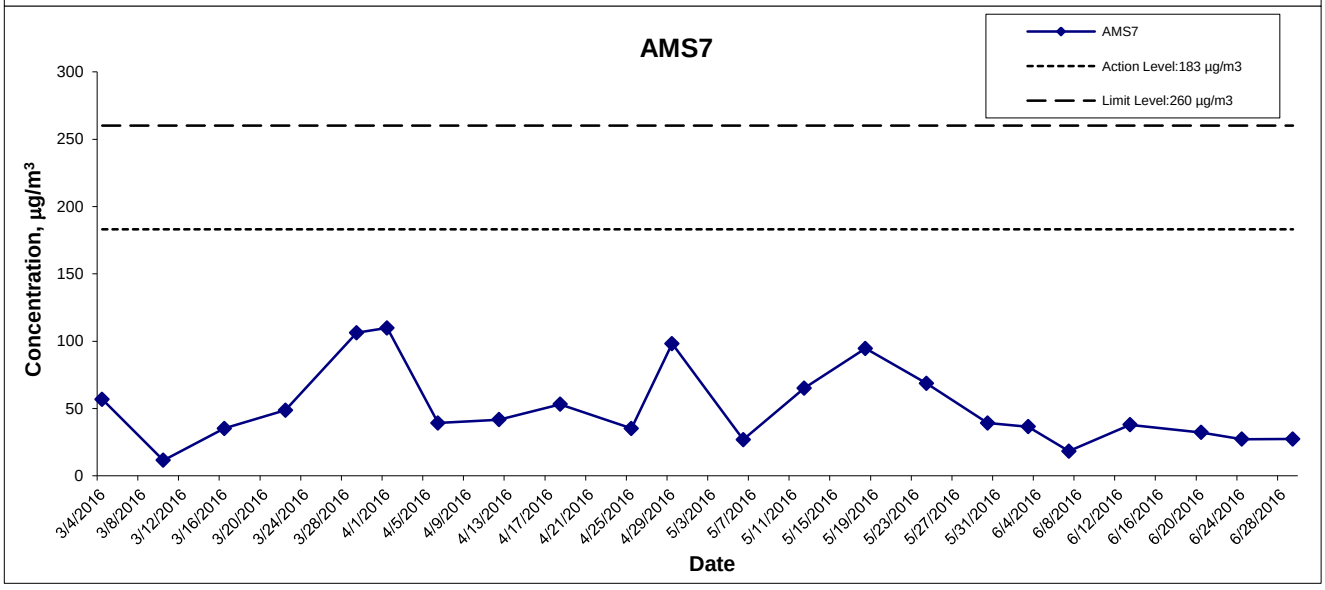
Appendix G







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: July 2016**

Appendix G

APPENDIX H Meteorological Data for Monitoring Periods on Monitoring Dates in June 2016

WIND DATA

Date	Time	Averaged Wind Speed (m/s)	Averaged Wind Direction (degrees)
03/06/2016	15:44:56	3.80	329
03/06/2016	16:44:56	2.60	316
03/06/2016	17:44:56	1.85	336
03/06/2016	18:44:56	1.54	283
03/06/2016	19:44:56	0.78	75
03/06/2016	20:44:56	0.45	321
03/06/2016	21:44:56	0.43	308
03/06/2016	22:44:56	1.19	335
03/06/2016	23:44:56	0.10	334
04/06/2016	00:44:56	0.69	329
04/06/2016	01:44:56	1.41	20
04/06/2016	02:44:56	0.50	28
04/06/2016	03:44:56	1.06	317
04/06/2016	04:44:56	0.15	113
04/06/2016	05:44:56	0.43	328
04/06/2016	06:44:56	0.06	310
04/06/2016	07:44:56	0.07	268
04/06/2016	08:44:56	0.66	144
04/06/2016	09:44:56	0.21	136
04/06/2016	10:44:56	0.00	106
04/06/2016	11:44:56	2.50	140
04/06/2016	12:44:56	1.29	9
04/06/2016	13:44:56	1.99	10
04/06/2016	14:44:56	1.34	303
04/06/2016	15:44:56	1.24	290
04/06/2016	16:44:56	0.24	285
04/06/2016	17:44:56	0.06	280
07/06/2016	15:44:56	0.08	149
07/06/2016	16:44:56	-0.01	346
07/06/2016	17:44:56	0.00	142
07/06/2016	18:44:56	0.07	125
07/06/2016	19:44:56	0.07	130
07/06/2016	20:44:56	0.04	281
07/06/2016	21:44:56	0.04	122
07/06/2016	22:44:56	0.04	312
07/06/2016	23:44:56	0.06	152
08/06/2016	00:44:56	0.01	328
08/06/2016	01:44:56	0.27	156
08/06/2016	02:44:56	0.35	-51
08/06/2016	03:44:56	0.32	133
08/06/2016	04:44:56	0.00	300
08/06/2016	05:44:56	0.00	277
08/06/2016	06:44:56	0.08	151
08/06/2016	07:44:56	0.03	79
08/06/2016	08:44:56	0.98	131
08/06/2016	09:44:56	0.07	139
08/06/2016	10:44:56	0.00	130
08/06/2016	11:29:30	0.42	104
08/06/2016	12:29:30	0.31	149
08/06/2016	13:29:30	0.88	129
08/06/2016	14:29:30	0.52	109
08/06/2016	15:29:30	0.69	128
08/06/2016	16:29:30	0.77	49
08/06/2016	17:29:30	0.03	132
13/06/2016	15:29:30	0.87	39
13/06/2016	16:29:30	0.01	119
13/06/2016	17:29:30	0.66	170
13/06/2016	18:29:30	0.04	80
13/06/2016	19:29:30	0.49	12
13/06/2016	20:29:30	0.63	337
13/06/2016	21:29:30	0.94	328
13/06/2016	22:29:30	0.11	9
13/06/2016	23:29:30	0.06	74
14/06/2016	00:29:30	1.44	147
14/06/2016	01:29:30	0.32	75
14/06/2016	02:29:30	0.73	64
14/06/2016	03:29:30	0.90	26
14/06/2016	04:29:30	2.03	326
14/06/2016	05:29:30	0.21	323
14/06/2016	06:29:30	0.34	147
14/06/2016	07:29:30	0.06	105
14/06/2016	08:29:30	0.03	133
14/06/2016	09:29:30	0.73	8
14/06/2016	10:29:30	0.67	328
14/06/2016	11:29:30	1.37	334
14/06/2016	11:53:29	2.76	304
14/06/2016	12:53:29	4.73	310
14/06/2016	13:53:29	2.83	281
14/06/2016	14:53:29	2.07	330
14/06/2016	15:53:29	0.87	337
14/06/2016	16:53:29	3.05	342
14/06/2016	17:53:29	0.03	31
20/06/2016	08:53:29	0.00	127
20/06/2016	09:53:29	0.81	344
20/06/2016	10:53:29	0.06	78
20/06/2016	11:16:35	0.04	68
20/06/2016	12:16:35	0.00	67
20/06/2016	13:16:35	0.48	68
20/06/2016	14:16:35	0.78	297
20/06/2016	15:16:35	1.68	341

APPENDIX H Meteorological Data for Monitoring Periods on Monitoring Dates in June 2016

WIND DATA

Date	Time	Averaged Wind Speed (m/s)	Averaged Wind Direction (degrees)
20/06/2016	16:16:35	0.01	21
20/06/2016	17:16:35	2.41	-54
20/06/2016	18:16:35	0.17	334
20/06/2016	19:16:35	0.10	77
20/06/2016	20:16:35	0.88	89
20/06/2016	21:16:35	0.46	305
20/06/2016	22:16:35	0.14	278
20/06/2016	23:16:35	1.54	334
21/06/2016	00:16:35	0.01	25
21/06/2016	01:16:35	0.00	28
21/06/2016	02:16:35	0.57	133
21/06/2016	03:16:35	0.13	248
21/06/2016	04:16:35	0.00	294
21/06/2016	05:16:35	0.01	94
21/06/2016	06:16:35	0.00	131
21/06/2016	07:16:35	0.04	44
21/06/2016	08:16:35	0.00	110
21/06/2016	09:16:35	0.48	117
21/06/2016	10:16:35	0.00	262
24/06/2016	15:16:35	0.27	119
24/06/2016	16:16:35	0.50	349
24/06/2016	17:16:35	1.13	348
24/06/2016	18:16:35	1.27	291
24/06/2016	19:16:35	0.04	90
24/06/2016	20:16:35	0.11	145
24/06/2016	21:16:35	0.06	312
24/06/2016	22:16:35	0.03	330
24/06/2016	23:16:35	0.04	316
25/06/2016	00:16:35	0.06	118
25/06/2016	01:16:35	0.03	353
25/06/2016	02:16:35	0.29	140
25/06/2016	03:16:35	0.01	162
25/06/2016	04:16:35	0.01	81
25/06/2016	05:16:35	0.01	324
25/06/2016	06:16:35	0.01	130
25/06/2016	07:16:35	0.03	109
25/06/2016	08:16:35	0.20	144
25/06/2016	09:16:35	0.00	128
25/06/2016	10:16:35	0.00	12
25/06/2016	11:16:35	0.08	61
25/06/2016	12:46:36	0.43	127
25/06/2016	13:46:36	0.13	116
25/06/2016	14:46:36	0.08	87
25/06/2016	15:46:36	1.40	21
25/06/2016	16:46:36	0.53	344
25/06/2016	17:46:36	0.01	92
29/06/2016	15:46:36	0.91	20
29/06/2016	16:46:36	0.01	142
29/06/2016	17:46:36	4.21	153
29/06/2016	18:46:36	0.60	156
29/06/2016	19:46:36	0.95	154
29/06/2016	20:46:36	0.83	146
29/06/2016	21:46:36	0.10	79
29/06/2016	22:46:36	1.09	159
29/06/2016	23:46:36	2.04	149
30/06/2016	00:46:36	0.01	110
30/06/2016	01:46:36	0.73	126
30/06/2016	02:46:36	0.17	21
30/06/2016	03:46:36	7.60	346
30/06/2016	04:46:36	1.96	329
30/06/2016	05:46:36	0.28	64
30/06/2016	06:46:36	0.04	54
30/06/2016	07:46:36	0.28	67
30/06/2016	08:46:36	0.11	323
30/06/2016	09:46:36	0.32	341
30/06/2016	10:46:36	0.62	183
30/06/2016	11:46:36	1.72	66

Remarks: Due to malfunction of the wind station monitoring equipment, wind data was not able to be obtained for monitoring event(s) conducted between 11:46:36 30 June 2016 – 16:00:00 30 June 2016. Wind speed and direction data set between 11:46:36 30 June 2016 – 16:00:00 30 June 2016 from the Hong Kong Observatory is not available at time this monthly report is submitted.

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				
8-Jun-16	Fine	10:30	61	68	65	<5m/s	62.9	75	N
14-Jun-16	Sunny	10:44	63	67	65	<5m/s	62.9	75	N
20-Jun-16	Sunny	10:30	60	68	65	<5m/s	62.9	75	N
30-Jun-16	Sunny	10:38	65	69	67	<5m/s	62.9	75	N
		Min	61	66	64				
		Max	64	70	67				
		Average	--	--	66				

Daytime Noise Monitoring Results at Station NMS3B - 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				
8-Jun-16	Fine	11:15	61	68	65	<5m/s	66.3	70	N
14-Jun-16	Sunny	11:33	59	64	62	<5m/s	66.3	65	N
20-Jun-16	Sunny	11:15	61	69	***66*** [V]	<5m/s	66.3	65	N
30-Jun-16	Sunny	11:17	62	70	68	<5m/s	66.3	70	N
		Min	61	67	65				
		Max	66	72	69				
		Average	--	--	67				

Remark:

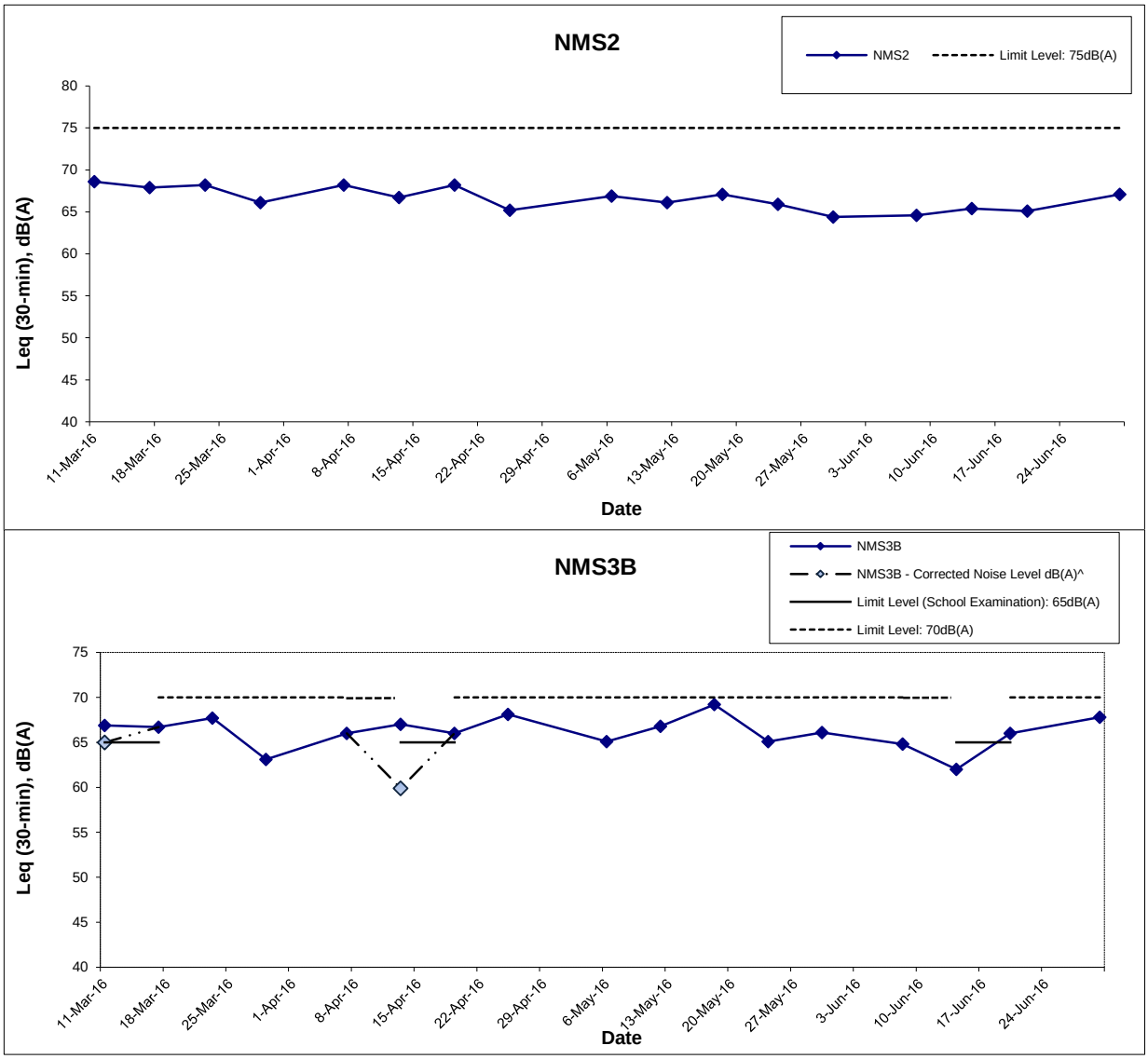
[#] A correction of +3dB(A) was made to the free field measurement.

* 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.

[V] The measured noise level on 20 Jun 2016 exceeded the noise level of 65dB(A) during examination period on 20 Jun 2016 but it is below the baseline level. Therefore, it is not considered as an exceedance. As such the EAP was not triggered.



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.

> The measured noise level on 11 March 2016 exceeded the noise level of 65dB(A) during examination period on 11 March 2016 and it is higher than the baseline level. Therefore, baseline correction was carried out and the corrected noise level which solely represent the noise level of Constrcution works is 65 dB(A), no exceedance after correction. As such the EAP was not triggered.

< Since the measured noise level on 13 April 2016 is 66.3dB(A) and is equal to the baseline level, therefore it is considered that the measured noise level is same as the background, therefore it is not considered as an exceedance. As such the EAP was not triggered.

V The measured noise level on 20 Jun 2016 exceeded the noise level of 65dB(A) during examination period on 20 Jun 2016 but it is below the baseline level. Therefore, it is not considered as an exceedance. As such the EAP was not triggered.

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

Graphical Presentation of Impact Daytime Construction Noise Monitoring Results

Project No.: 60249820 **Date: July 2016**

Appendix I

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-Jun-16	Sunny	Moderate	10:25	6.4	Surface	1.0	28.7 28.7	28.7	8.4 8.4	8.4	10.7 10.7	10.7	99.9 93.3	96.6	7.3 6.8	7.0	6.8	7.6 7.0	7.3	8.7	3.1 3.8	3.5	3.4
					Middle	3.2	28.4 28.1	28.3	8.4 8.4	8.4	11.1 11.0	11.1	92.6 88.1	90.4	6.8 6.5	6.6		8.8 8.5	8.7		3.3 3.6	3.5	
					Bottom	5.4	27.7 27.9	27.8	8.2 8.2	8.2	19.8 19.9	19.9	88.4 93.5	91.0	6.2 6.6	6.4	6.4	10.3 9.9	10.1		2.9 3.6	3.3	
3-Jun-16	Sunny	Moderate	12:08	6.2	Surface	1.0	28.8 28.6	28.7	8.5 8.5	8.5	14.7 14.7	14.7	97.0 95.7	96.4	6.9 6.8	6.9	6.7	3.7 3.8	3.8	3.8	2.9 3.0	3.0	3.6
					Middle	3.1	28.2 28.2	28.2	8.4 8.4	8.4	18.2 18.1	18.2	93.8 95.3	94.6	6.5 6.6	6.5		3.8 3.7	3.8		3.3 2.9	3.1	
					Bottom	5.2	27.8 27.8	27.8	8.3 8.3	8.3	23.5 23.8	23.7	92.6 92.1	92.4	6.5 6.5	6.5	6.5	3.8 3.7	3.8		4.6 4.5	4.6	
6-Jun-16	Cloudy	Moderate	13:11	6.7	Surface	1.0	27.7 27.8	27.8	8.2 8.2	8.2	17.8 17.4	17.6	79.2 80.8	80.0	5.7 5.8	5.7	5.7	4.7 4.8	4.8	4.9	2.1 2.6	2.4	2.5
					Middle	3.4	27.7 27.6	27.7	8.2 8.2	8.2	17.7 19.3	18.5	79.2 77.6	78.4	5.6 5.5	5.6		4.9 4.7	4.8		2.6 2.2	2.4	
					Bottom	5.7	27.7 27.6	27.7	8.2 8.2	8.2	19.5 20.6	20.1	76.4 77.0	76.7	5.4 5.4	5.4	5.4	5.0 5.2	5.1		2.7 2.5	2.6	
8-Jun-16	Sunny	Moderate	14:37	6.8	Surface	1.0	28.7 28.5	28.6	8.3 8.3	8.3	13.4 13.9	13.6	80.4 78.2	79.3	5.9 5.7	5.8	5.7	5.2 5.1	5.2	7.1	3.5 2.7	3.1	3.4
					Middle	3.4	27.8 28.1	27.9	8.2 8.2	8.2	15.9 14.4	15.2	74.8 74.6	74.7	5.5 5.5	5.5		7.7 7.9	7.8		3.8 2.0	2.9	
					Bottom	5.8	27.7 28.0	27.9	8.1 8.1	8.1	21.3 21.2	21.2	77.3 79.3	78.3	5.5 5.6	5.6	5.6	8.2 8.3	8.3		3.9 4.5	4.2	
10-Jun-16	Rainy	Moderate	16:12	6.2	Surface	1.0	28.8 28.6	28.7	8.4 8.4	8.4	14.5 14.5	14.5	70.6 72.1	71.4	5.5 5.6	5.5	5.4	2.1 2.2	2.2	2.2	2.8 2.8	2.8	3.2
					Middle	3.1	27.7 27.8	27.8	8.2 8.3	8.3	19.0 19.0	19.0	69.8 68.6	69.2	5.4 5.3	5.3		2.1 2.2	2.2		3.9 3.5	3.7	
					Bottom	5.2	27.8 27.8	27.8	8.2 8.2	8.2	21.0 21.2	21.1	69.9 69.4	69.7	5.4 5.3	5.3	5.3	2.1 2.1	2.1		3.1 2.8	3.0	
13-Jun-16	Cloudy	Moderate	08:10	6.4	Surface	1.0	27.8 27.8	27.8	8.2 8.1	8.2	17.4 17.4	17.4	81.9 80.3	81.1	6.0 6.0	6.0	5.9	3.5 3.6	3.6	3.7	3.2 2.7	3.0	3.8
					Middle	3.2	27.7 27.6	27.7	8.1 8.0	8.1	19.7 20.5	20.1	79.5 77.6	78.6	5.9 5.7	5.8		3.7 3.7	3.7		4.3 3.3	3.8	
					Bottom	5.4	27.6 27.6	27.6	8.0 8.0	8.0	21.6 20.6	21.1	77.0 77.0	77.0	5.7 5.7	5.7	5.7	3.8 3.9	3.9		5.3 4.1	4.7	
15-Jun-16	Sunny	Moderate	11:11	6.4	Surface	1.0	28.9 28.9	28.9	8.1 8.2	8.2	6.7 6.6	6.7	89.0 89.4	89.2	6.6 6.6	6.6	6.1	5.8 6.0	5.9	6.5	5.4 5.7	5.6	5.9
					Middle	3.2	28.3 28.3	28.3	8.1 8.1	8.1	10.2 10.2	10.2	76.4 76.8	76.6	5.6 5.7	5.6		6.5 6.3	6.4		5.8 6.9	6.4	
					Bottom	5.4	27.1 27.1	27.1	7.8 7.8	7.8	22.9 22.8	22.8	74.2 74.6	74.4	5.2 5.2	5.2	5.2	7.1 7.4	7.3		5.6 5.6	5.6	
17-Jun-16	Sunny	Moderate	11:46	6.6	Surface	1.0	28.5 28.6	28.6	8.1 8.1	8.1	9.4 8.9	9.1	78.6 79.9	79.3	5.8 5.9	5.8	5.7	6.8 6.6	6.7	6.7	6.2 6.3	6.3	6.2
					Middle	3.3	28.3 28.0	28.1	8.1 8.1	8.1	10.0 10.1	10.1	75.8 78.8	77.3	5.6 5.6	5.6		6.8 6.4	6.6		5.2 6.4	5.8	
					Bottom	5.6	28.2 27.0	27.6	7.9 7.8	7.9	17.3 17.9	17.6	72.2 71.2	71.7	5.3 5.3	5.3	5.3	6.8 7.0	6.9		5.8 7.2	6.5	
20-Jun-16	Sunny	Moderate	12:26	6.7	Surface	1.0	28.3 28.3	28.3	8.1 8.1	8.1	18.5 17.3	17.9	74.3 74.8	74.6	5.5 5.4	5.4	5.4	4.3 4.2	4.3	4.4	4.5 4.8	4.7	4.6
					Middle	3.4	27.7 27.8	27.7	8.0 8.0	8.0	19.7 20.6	20.1	73.4 73.9	73.7	5.4 5.4	5.4		4.4 4.4	4.4		4.5 4.9	4.7	
					Bottom	5.7	27.6 27.1	27.3	7.8 7.8	7.8	26.5 28.5	27.5	72.1 71.9	72.0	5.3 5.3	5.3	5.3	4.6 4.5	4.6		4.7 3.8	4.3	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	14:40	6.6	Surface	1.0	29.3 29.2	29.2	8.3 8.3	8.3	9.4 9.3	9.4	72.3 72.6	72.5	5.5 5.5	5.5	5.5	8.6 8.2	8.4	8.7	3.6 3.9	3.8	3.6
					Middle	3.3	27.6 27.4	27.5	8.1 8.1	8.1	16.2 16.5	16.4	72.2 71.8	72.0	5.5 5.5	5.5		9.1 8.5	8.8		4.0 3.9	4.0	
					Bottom	5.6	27.2 27.1	27.1	8.0 7.9	8.0	20.6 20.9	20.8	72.2 71.8	72.0	5.5 5.4	5.4	5.4	9.2 8.8	9.0		2.9 3.2	3.1	
24-Jun-16	Sunny	Moderate	14:53	6.7	Surface	1.0	28.7 28.0	28.4	8.2 8.1	8.2	18.5 19.2	18.8	74.1 75.3	74.7	5.3 5.3	5.3	5.3	4.2 4.2	4.2	4.3	4.3 4.7	4.5	5.3
					Middle	3.4	28.7 27.3	28.0	8.1 8.1	8.1	19.6 18.7	19.2	73.2 74.6	73.9	5.2 5.3	5.2		4.3 4.2	4.3		6.3 5.9	6.1	
					Bottom	5.7	27.5 27.1	27.3	8.0 8.0	8.0	19.8 21.7	20.8	71.9 73.0	72.5	5.1 5.1	5.1	5.1	4.4 4.4	4.4		5.1 5.4	5.3	
27-Jun-16	Sunny	Moderate	17:20	6.5	Surface	1.0	30.2 30.1	30.2	8.4 8.4	8.4	14.9 14.9	14.9	104.1 105.2	104.7	7.2 7.3	7.3	6.7	3.6 3.9	3.8	3.8	4.1 4.5	4.3	4.0
					Middle	3.3	27.8 27.7	27.8	8.3 8.3	8.3	19.5 19.6	19.6	82.7 86.2	84.5	5.8 6.1	6.0		3.6 3.7	3.7		4.6 4.2	4.4	
					Bottom	5.5	27.6 27.6	27.6	8.3 8.3	8.3	21.4 21.4	21.4	91.1 92.8	92.0	6.4 6.5	6.4	6.4	4.0 3.9	4.0		3.5 3.3	3.4	
29-Jun-16	Sunny	Moderate	08:30	7.1	Surface	1.0	28.3 28.4	28.3	8.3 8.3	8.3	17.1 16.9	17.0	76.3 82.6	79.5	5.4 5.9	5.6	5.5	3.0 3.0	3.0	3.1	4.3 4.8	4.6	4.8
					Middle	3.6	26.9 26.8	26.8	8.2 8.2	8.2	23.2 23.2	23.2	74.6 78.4	76.5	5.3 5.5	5.4		3.1 3.0	3.1		4.9 5.4	5.2	
					Bottom	6.1	26.8 26.9	26.8	8.2 8.2	8.2	23.3 23.3	23.3	71.9 77.1	74.5	5.1 5.4	5.2	5.2	3.2 3.1	3.2		4.8 4.6	4.7	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	15:27	6.5	Surface	1.0	29.2 29.2	29.2	8.5 8.5	8.5	11.5 11.3	11.4	99.4 101.8	100.6	7.2 7.3	7.3	7.0	7.6 7.6	7.6	7.8	3.9 2.4	3.2	4.0
					Middle	3.3	28.1 28.0	28.0	8.3 8.3	8.3	15.8 16.0	15.9	88.8 96.7	92.8	6.4 6.9	6.6		7.4 7.2	7.3		3.7 3.3	3.5	
					Bottom	5.5	27.8 27.9	27.9	8.3 8.3	8.3	19.4 19.9	19.6	90.4 102.1	96.3	6.4 7.2	6.8	6.8	8.5 8.2	8.4		5.4 5.1	5.3	
3-Jun-16	Sunny	Moderate	17:31	6.5	Surface	1.0	29.3 29.6	29.5	8.5 8.5	8.5	10.8 11.1	11.0	101.3 104.2	102.8	7.2 7.5	7.3	7.2	2.4 2.5	2.5	2.7	4.2 3.7	4.0	3.9
					Middle	3.3	28.8 28.7	28.7	8.4 8.4	8.4	14.6 14.5	14.5	100.1 97.7	98.9	7.1 6.9	7.0		2.8 2.8	2.8		3.9 2.5	3.2	
					Bottom	5.5	28.8 28.6	28.7	8.4 8.3	8.4	16.5 15.6	16.0	98.3 96.1	97.2	7.0 6.9	6.9	6.9	2.9 2.9	2.9		3.9 4.8	4.4	
6-Jun-16	Cloudy	Moderate	07:39	6.8	Surface	1.0	27.7 27.8	27.8	8.3 8.4	8.4	18.8 18.6	18.7	80.7 83.4	82.1	5.9 5.8	5.8	5.7	3.1 3.2	3.2	3.3	2.6 2.6	2.6	2.6
					Middle	3.4	27.7 27.6	27.6	8.3 8.3	8.3	22.0 22.4	22.2	78.4 80.5	79.5	5.6 5.6	5.6		3.3 3.3	3.3		2.3 2.4	2.4	
					Bottom	5.8	27.5 27.5	27.5	8.2 8.2	8.2	24.4 24.1	24.3	78.0 79.4	78.7	5.4 5.5	5.5	5.5	3.5 3.4	3.5		3.0 2.3	2.7	
8-Jun-16	Sunny	Moderate	07:45	6.7	Surface	1.0	27.7 27.7	27.7	8.2 8.2	8.2	17.1 16.5	16.8	73.5 76.1	74.8	5.4 5.6	5.5	5.5	4.2 4.1	4.2	5.5	2.9 3.5	3.2	3.2
					Middle	3.4	27.5 27.6	27.5	8.2 8.2	8.2	20.4 20.0	20.2	77.0 73.0	75.0	5.5 5.3	5.4		6.0 5.6	5.8		2.9 3.5	3.2	
					Bottom	5.7	27.4 27.4	27.4	8.1 8.1	8.1	22.7 22.6	22.7	74.3 74.7	74.5	5.3 5.3	5.3	5.3	6.7 6.3	6.5		2.8 3.3	3.1	
10-Jun-16	Sunny	Moderate	10:18	6.4	Surface	1.0	28.5 28.4	28.4	8.3 8.3	8.3	13.8 14.0	13.9	71.6 71.0	71.3	5.4 5.4	5.4	5.4	2.4 2.6	2.5	2.9	3.4 2.8	3.1	3.8
					Middle	3.2	28.1 28.1	28.1	8.2 8.3	8.2	15.7 15.2	15.5	70.7 70.5	70.6	5.3 5.3	5.3		2.8 2.7	2.8		2.8 3.1	3.0	
					Bottom	5.4	27.4 28.2	27.8	8.1 8.2	8.2	22.7 18.8	20.8	70.6 70.3	70.5	5.3 5.3	5.3	5.3	3.4 3.3	3.4		5.1 5.5	5.3	
13-Jun-16	Cloudy	Moderate	13:33	6.6	Surface	1.0	28.1 28.1	28.1	8.2 8.1	8.1	17.8 17.9	17.9	83.0 82.0	82.5	6.2 6.0	6.1	6.0	3.9 3.8	3.9	4.1	3.7 4.2	4.0	3.7
					Middle	3.3	28.0 27.8	27.9	8.1 8.1	8.1	17.9 18.7	18.3	78.9 80.8	79.9	5.8 6.0	5.9		4.0 4.1	4.1		2.9 3.0	3.0	
					Bottom	5.6	27.4 27.7	27.6	7.9 8.0	7.9	20.6 20.8	20.7	78.2 73.6	75.9	5.6 5.5	5.5	5.5	4.2 4.2	4.2		3.9 4.5	4.2	
15-Jun-16	Sunny	Moderate	16:10	6.2	Surface	1.0	28.6 28.7	28.7	8.3 8.3	8.3	5.2 5.2	5.2	82.3 82.7	82.5	6.2 6.2	6.2	5.9	7.4 7.4	7.4	7.0	7.6 7.7	7.7	7.9
					Middle	3.1	28.1 28.1	28.1	8.0 8.0	8.0	12.0 11.9	12.0	77.5 76.0	76.8	5.6 5.6	5.6		6.3 6.3	6.3		7.9 8.0	8.0	
					Bottom	5.2	26.5 26.4	26.5	7.6 7.6	7.6	24.7 24.7	24.7	76.0 75.1	75.6	5.3 5.3	5.3	5.3	7.0 7.4	7.2		8.8 7.4	8.1	
17-Jun-16	Sunny	Moderate	17:27	6.5	Surface	1.0	29.2 29.2	29.2	8.2 8.2	8.2	6.7 6.8	6.7	74.3 75.1	74.7	5.5 5.5	5.5	5.4	8.4 8.6	8.5	8.2	5.6 5.8	5.7	6.4
					Middle	3.3	27.4 28.1	27.8	7.9 7.9	7.9	12.7 13.3	13.0	76.1 73.1	74.6	5.3 5.3	5.3		7.3 7.7	7.5		7.3 6.8	7.1	
					Bottom	5.5	26.6 26.7	26.6	7.7 7.5	7.6	24.6 26.5	25.6	71.0 74.2	72.6	5.0 5.1	5.1	5.1	8.6 8.3	8.5		6.3 6.7	6.5	
20-Jun-16	Sunny	Moderate	06:47	6.8	Surface	1.0	28.4 28.2	28.3	8.3 8.2	8.2	18.7 17.6	18.2	78.2 78.6	78.4	5.8 5.8	5.8	5.8	3.7 3.6	3.7	3.8	3.8 5.1	4.5	4.6
					Middle	3.4	28.1 28.1	28.1	8.1 8.2	8.2	18.3 18.2	18.3	78.0 78.8	78.4	5.7 5.7	5.7		3.8 3.8	3.8		4.6 4.8	4.7	
					Bottom	5.8	28.2 27.3	27.7	8.1 8.0	8.1	26.8 26.1	26.5	76.8 77.6	77.2	5.7 5.7	5.7	5.7	3.9 4.0	4.0		5.1 4.1	4.6	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	07:45	6.7	Surface	1.0	27.6 27.7	27.7	8.2 8.2	8.2	15.3 15.5	15.4	72.7 73.1	72.9	5.7 5.6	5.7	5.7	8.5 8.4	8.5	10.1	5.8 5.5	5.7	6.4
					Middle	3.4	26.8 26.7	26.8	8.1 8.1	8.1	21.2 21.4	21.3	72.1 73.3	72.7	5.6 5.6	5.6		10.9 11.0	11.0		6.6 6.6	6.6	
					Bottom	5.7	26.9 26.6	26.8	8.1 8.1	8.1	22.5 22.8	22.6	72.2 74.5	73.4	5.6 5.6	5.6	5.6	10.5 10.8	10.7		6.7 6.8	6.8	
24-Jun-16	Sunny	Moderate	09:02	6.9	Surface	1.0	27.9 27.6	27.8	8.2 8.2	8.2	17.8 18.2	18.0	74.1 73.2	73.7	5.2 5.2	5.2	5.2	7.1 7.2	7.2	7.4	4.3 5.2	4.8	4.8
					Middle	3.5	27.1 27.1	27.1	8.1 8.1	8.1	20.3 20.3	20.3	73.3 72.8	73.1	5.2 5.2	5.2		7.3 7.3	7.3		4.4 4.4	4.4	
					Bottom	5.9	26.7 27.3	27.0	8.1 8.1	8.1	22.8 22.3	22.5	71.8 72.2	72.0	5.1 5.1	5.1	5.1	7.6 7.5	7.6		5.1 5.0	5.1	
27-Jun-16	Sunny	Moderate	11:46	6.3	Surface	1.0	28.6 28.3	28.4	8.3 8.3	8.3	16.0 16.4	16.2	87.6 88.5	88.1	6.2 6.3	6.2	5.9	3.9 4.1	4.0	6.7	3.3 3.4	3.4	3.7
					Middle	3.2	27.2 27.7	27.4	8.2 8.3	8.2	22.3 20.4	21.3	76.2 79.2	77.7	5.4 5.6	5.5		7.2 6.9	7.1		3.6 3.7	3.7	
					Bottom	5.3	27.0 27.0	27.0	8.2 8.2	8.2	23.9 23.5	23.7	79.3 80.8	80.1	5.5 5.6	5.6	5.6	8.8 9.0	8.9		4.3 3.8	4.1	
29-Jun-16	Sunny	Moderate	13:48	7.0	Surface	1.0	27.3 27.4	27.4	8.2 8.2	8.2	20.7 20.1	20.4	75.0 76.3	75.7	5.3 5.4	5.3	5.3	3.1 3.0	3.1	3.1	4.3 3.8	4.1	3.9
					Middle	3.5	27.3 27.3	27.3	8.2 8.2	8.2	21.8 21.8	21.8	75.2 72.5	73.9	5.3 5.1	5.2		3.1 3.1	3.1		3.0 4.9	4.0	
					Bottom	6.0	27.4 27.2	27.3	8.2 8.2	8.2	21.8 22.6	22.2	75.0 72.5	73.8	5.3 5.1	5.2	5.2	3.3 3.1	3.2		3.9 3.3	3.6	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	10:47	16.1	Surface	1.0	28.8 28.8	28.8	8.4 8.4	8.4	10.7 10.7	10.7	99.5 97.0	98.3	7.2 7.1	7.2	6.5	8.0 8.0	8.0	8.1	3.9 2.5	3.2	3.3
					Middle	8.1	27.6 27.6	27.6	8.2 8.2	8.2	20.6 20.6	20.6	82.9 81.5	82.2	5.8 5.7	5.8		7.8 8.0	7.9		2.9 2.3	2.6	
					Bottom	15.1	27.6 27.7	27.7	8.2 8.1	8.1	20.6 20.6	20.6	85.4 91.5	88.5	6.0 6.4	6.2	6.2	8.3 8.5	8.4		4.7 3.3	4.0	
3-Jun-16	Sunny	Moderate	12:30	16.0	Surface	1.0	28.9 28.9	28.9	8.5 8.5	8.5	14.6 14.6	14.6	98.2 97.7	98.0	7.0 7.0	7.0	6.7	3.5 3.4	3.5	4.3	3.5 3.6	3.6	3.6
					Middle	8.0	27.6 27.6	27.6	8.3 8.3	8.3	24.1 24.3	24.2	91.8 93.1	92.5	6.3 6.4	6.4		4.6 4.8	4.7		2.2 3.7	3.0	
					Bottom	15.0	27.5 27.6	27.5	8.3 8.3	8.3	24.9 24.8	24.8	86.4 85.8	86.1	6.0 5.9	5.9	5.9	4.7 4.8	4.8		4.3 4.1	4.2	
6-Jun-16	Cloudy	Moderate	12:49	16.2	Surface	1.0	27.6 27.6	27.6	8.1 8.1	8.1	20.1 20.2	20.1	76.4 76.7	76.6	5.4 5.4	5.4	5.4	4.5 4.4	4.5	4.6	2.1 2.3	2.2	2.5
					Middle	8.1	27.5 27.5	27.5	8.0 8.1	8.1	20.7 21.9	21.3	75.1 75.2	75.2	5.3 5.3	5.3		4.6 4.6	4.6		2.2 2.3	2.3	
					Bottom	15.2	27.5 27.5	27.5	8.0 8.1	8.1	22.4 22.4	22.4	74.8 74.0	74.4	5.3 5.2	5.2	5.2	4.8 4.8	4.8		3.0 3.2	3.1	
8-Jun-16	Sunny	Moderate	14:17	16.5	Surface	1.0	28.6 28.6	28.6	8.3 8.3	8.3	13.8 13.8	13.8	79.6 77.7	78.7	5.8 5.7	5.7	5.5	5.1 5.8	5.5	6.9	4.1 3.0	3.6	3.3
					Middle	8.3	27.6 27.7	27.7	8.1 8.1	8.1	21.4 21.4	21.4	70.8 73.6	72.2	5.1 5.3	5.2		6.6 6.5	6.6		3.1 3.2	3.2	
					Bottom	15.5	27.6 27.7	27.7	8.1 8.1	8.1	21.6 21.4	21.5	71.9 72.0	72.0	5.1 5.1	5.1	5.1	8.3 8.8	8.6		2.7 3.2	3.0	
10-Jun-16	Rainy	Moderate	15:53	16.3	Surface	1.0	28.6 28.9	28.8	8.4 8.4	8.4	14.7 14.5	14.6	70.6 70.5	70.6	5.4 5.4	5.4	5.3	2.4 2.2	2.3	2.5	2.8 3.0	2.9	3.0
					Middle	8.2	27.6 27.6	27.6	8.2 8.2	8.2	21.2 21.4	21.3	68.7 68.9	68.8	5.2 5.3	5.2		3.0 2.8	2.9		3.1 3.5	3.3	
					Bottom	15.3	28.0 27.7	27.9	8.2 8.2	8.2	21.5 21.4	21.5	69.5 69.6	69.6	5.3 5.3	5.3	5.3	2.3 2.3	2.3		3.3 2.5	2.9	
13-Jun-16	Cloudy	Moderate	08:32	16.8	Surface	1.0	27.7 27.8	27.8	8.1 8.1	8.1	17.4 17.4	17.4	81.6 81.7	81.7	6.1 6.0	6.0	5.9	3.6 3.6	3.6	3.7	3.7 4.4	4.1	4.2
					Middle	8.4	27.6 27.7	27.6	8.0 8.0	8.0	19.7 19.3	19.5	76.2 79.3	77.8	5.7 5.9	5.8		3.7 3.7	3.7		5.1 3.2	4.2	
					Bottom	15.8	27.6 27.5	27.6	8.0 8.0	8.0	20.7 21.6	21.1	73.7 73.6	73.7	5.4 5.4	5.4	5.4	3.9 3.8	3.9		3.2 5.4	4.3	
15-Jun-16	Sunny	Moderate	11:25	16.2	Surface	1.0	28.9 28.9	28.9	8.2 8.2	8.2	6.7 6.7	6.7	81.3 81.8	81.6	6.0 6.1	6.1	6.0	5.7 5.7	5.7	6.4	6.9 6.4	6.7	7.1
					Middle	8.1	27.2 27.2	27.2	8.1 8.0	8.0	21.4 21.2	21.3	78.5 79.5	79.0	5.8 5.8	5.8		6.3 6.2	6.3		6.7 6.6	6.7	
					Bottom	15.2	25.8 25.9	25.8	7.7 7.7	7.7	27.6 27.8	27.7	76.2 75.3	75.8	5.3 5.3	5.3	5.3	7.3 7.1	7.2		8.1 7.7	7.9	
17-Jun-16	Sunny	Moderate	12:05	16.0	Surface	1.0	28.6 28.4	28.5	8.1 8.1	8.1	9.4 9.6	9.5	78.7 78.8	78.8	5.8 5.8	5.8	5.6	6.7 6.6	6.7	6.1	7.6 7.0	7.3	7.0
					Middle	8.0	26.8 26.7	26.7	7.7 7.7	7.7	24.5 23.7	24.1	75.5 74.0	74.8	5.4 5.2	5.3		5.6 5.5	5.6		7.7 7.0	7.4	
					Bottom	15.0	26.5 26.6	26.6	7.7 7.7	7.7	25.9 25.6	25.7	68.5 73.7	71.1	5.1 5.1	5.1	5.1	6.0 5.9	6.0		6.1 6.4	6.3	
20-Jun-16	Sunny	Moderate	12:04	16.2	Surface	1.0	28.1 28.2	28.1	8.1 8.1	8.1	16.5 17.4	17.0	75.7 76.2	76.0	5.4 5.4	5.4	5.4	4.5 4.4	4.5	4.5	4.2 2.8	3.5	3.5
					Middle	8.1	27.6 27.7	27.7	7.9 8.0	8.0	22.3 20.9	21.6	75.5 75.8	75.7	5.3 5.4	5.3		4.5 4.5	4.5		3.1 3.0	3.1	
					Bottom	15.2	27.5 27.2	27.4	7.9 7.8	7.8	25.8 28.2	27.0	74.8 74.4	74.6	5.2 5.3	5.3	5.3	4.6 4.6	4.6		4.1 3.9	4.0	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CS4 - Mid-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-Jun-16	Sunny	Moderate	14:19	16.4	Surface	1.0	29.2 29.2	29.2	8.3 8.3	8.3	9.4 9.5	9.5	72.4 72.9	72.7	5.5 5.5	5.5	5.5	10.1 10.3	10.2	11.3	5.2 4.9	5.1	5.6
					Middle	8.2	27.0 27.0	27.0	8.0 8.0	8.0	20.8 20.8	20.8	72.2 71.9	72.1	5.4 5.4	5.4		12.1 12.4	12.3		5.4 6.3	5.9	
					Bottom	15.4	27.1 27.0	27.1	8.0 7.9	8.0	21.0 20.9	21.0	72.1 72.4	72.3	5.4 5.4	5.4	5.4	11.5 11.3	11.4		6.0 5.6	5.8	
24-Jun-16	Sunny	Moderate	14:33	16.1	Surface	1.0	28.9 28.9	28.9	8.2 8.2	8.2	18.2 18.2	18.2	75.2 75.0	75.1	5.4 5.4	5.4	5.4	5.5 5.4	5.5	5.6	5.3 5.0	5.2	5.7
					Middle	8.1	27.9 28.8	28.4	8.2 8.2	8.2	19.5 19.4	19.4	74.2 74.6	74.4	5.3 5.3	5.3		5.5 5.6	5.6		6.3 5.7	6.0	
					Bottom	15.1	27.5 27.4	27.4	8.1 8.0	8.1	20.6 21.3	21.0	73.7 73.7	73.7	5.2 5.3	5.2	5.2	5.7 5.8	5.8		5.3 6.5	5.9	
27-Jun-16	Sunny	Moderate	17:01	16.6	Surface	1.0	30.1 30.2	30.2	8.4 8.4	8.4	14.9 15.0	14.9	98.9 102.6	100.8	6.9 7.1	7.0	6.3	3.9 3.7	3.8	4.6	4.3 5.3	4.8	4.3
					Middle	8.3	27.4 27.5	27.5	8.2 8.2	8.2	21.4 21.4	21.4	79.7 80.7	80.2	5.6 5.7	5.6		4.9 4.6	4.8		4.4 4.0	4.2	
					Bottom	15.6	27.3 27.3	27.3	8.2 8.2	8.2	22.7 22.7	22.7	84.0 87.8	85.9	5.9 6.1	6.0	6.0	5.3 5.0	5.2		4.1 3.7	3.9	
29-Jun-16	Sunny	Moderate	08:41	18.1	Surface	1.0	28.5 28.6	28.6	8.3 8.3	8.3	16.6 16.4	16.5	85.4 86.1	85.8	6.0 6.0	6.0	5.8	3.0 3.0	3.0	3.1	4.2 4.5	4.4	4.6
					Middle	9.1	26.9 27.3	27.1	8.2 8.2	8.2	22.9 22.3	22.6	79.4 78.1	78.8	5.6 5.5	5.6		3.1 3.0	3.1		5.5 4.3	4.9	
					Bottom	17.1	26.9 27.0	26.9	8.2 8.2	8.2	23.2 23.2	23.2	73.8 77.7	75.8	5.2 5.5	5.3	5.3	3.2 3.1	3.2		5.1 4.0	4.6	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	15:07	16.1	Surface	1.0	29.3 29.3	29.3	8.5 8.5	8.5	11.2 11.3	11.3	90.6 105.0	97.8	6.5 7.6	7.0	6.6	7.0 7.1	7.1	8.1	2.5 3.2	2.9	2.8
					Middle	8.1	27.8 28.1	27.9	8.2 8.3	8.3	20.0 16.9	18.5	84.9 90.9	87.9	6.0 6.5	6.2		8.5 7.9	8.2		3.8 2.8	3.3	
					Bottom	15.1	27.9 27.7	27.8	8.3 8.2	8.3	19.5 20.2	19.9	91.1 93.7	92.4	6.4 6.6	6.5	6.5	8.7 9.2	9.0		2.6 2.0	2.3	
3-Jun-16	Sunny	Moderate	17:06	17.4	Surface	1.0	29.5 29.4	29.5	8.5 8.5	8.5	12.2 11.2	11.7	100.9 100.8	100.9	7.2 7.1	7.1	7.1	2.1 2.1	2.1	2.2	6.1 5.9	6.0	5.8
					Middle	8.7	28.6 28.6	28.6	8.4 8.3	8.4	15.9 16.7	16.3	100.2 100.3	100.3	7.1 7.1	7.1		2.3 2.2	2.3		5.6 6.0	5.8	
					Bottom	16.4	28.9 28.7	28.8	8.4 8.4	8.4	16.4 16.9	16.7	96.3 94.8	95.6	6.8 6.7	6.8	6.8	2.2 2.2	2.2		5.6 5.5	5.6	
6-Jun-16	Cloudy	Moderate	08:01	16.3	Surface	1.0	27.8 27.8	27.8	8.3 8.4	8.4	19.2 19.2	19.2	78.7 78.8	78.8	5.6 5.7	5.6	5.5	2.4 2.5	2.5	2.7	2.6 2.7	2.7	2.6
					Middle	8.2	27.6 27.7	27.6	8.3 8.3	8.3	19.9 21.5	20.7	77.5 77.2	77.4	5.5 5.4	5.4		2.6 2.7	2.7		2.9 2.5	2.7	
					Bottom	15.3	27.4 27.5	27.5	8.2 8.2	8.2	24.3 24.5	24.4	77.3 78.2	77.8	5.3 5.4	5.4	5.4	2.9 2.8	2.9		2.6 2.3	2.5	
8-Jun-16	Sunny	Moderate	08:03	16.4	Surface	1.0	27.8 27.8	27.8	8.2 8.2	8.2	17.0 17.2	17.1	72.7 74.3	73.5	5.3 5.4	5.3	5.2	5.1 5.5	5.3	6.8	2.3 2.0	2.2	2.7
					Middle	8.2	27.3 27.3	27.3	8.1 8.1	8.1	22.7 22.8	22.8	70.4 71.0	70.7	5.0 5.1	5.0		6.8 7.2	7.0		3.1 2.9	3.0	
					Bottom	15.4	27.3 27.4	27.4	8.1 8.1	8.1	22.7 22.7	22.7	71.2 71.6	71.4	5.1 5.1	5.1	5.1	8.2 7.7	8.0		2.8 2.8	2.8	
10-Jun-16	Sunny	Moderate	10:38	16.3	Surface	1.0	28.2 28.2	28.2	8.3 8.2	8.2	14.5 16.2	15.3	70.9 70.4	70.7	5.4 5.4	5.4	5.3	2.7 3.0	2.9	3.3	3.5 3.8	3.7	3.7
					Middle	8.2	27.4 27.2	27.3	8.1 8.1	8.1	22.5 23.3	22.9	69.4 69.5	69.5	5.2 5.3	5.2		3.3 3.5	3.4		3.6 3.1	3.4	
					Bottom	15.3	27.3 27.5	27.4	8.0 8.1	8.1	23.3 23.1	23.2	68.9 69.7	69.3	5.2 5.2	5.2	5.2	3.8 3.6	3.7		3.6 4.3	4.0	
13-Jun-16	Cloudy	Moderate	13:11	16.0	Surface	1.0	28.1 28.1	28.1	8.2 8.2	8.2	17.8 17.8	17.8	89.1 96.5	92.8	6.6 7.1	6.8	6.6	3.8 3.7	3.8	3.8	4.0 3.5	3.8	4.1
					Middle	8.0	27.9 27.9	27.9	8.2 8.1	8.1	17.9 17.9	17.9	83.0 87.8	85.4	6.1 6.5	6.3		3.8 3.8	3.8		3.9 3.7	3.8	
					Bottom	15.0	28.0 27.7	27.9	8.1 8.0	8.1	20.1 21.3	20.7	80.3 82.2	81.3	6.0 6.1	6.0	6.0	3.9 3.9	3.9		4.3 4.9	4.6	
15-Jun-16	Sunny	Moderate	15:55	16.4	Surface	1.0	29.0 28.9	29.0	8.3 8.3	8.3	5.3 5.2	5.2	79.5 79.5	79.5	5.9 6.0	5.9	5.8	8.4 8.3	8.4	6.6	5.9 5.8	5.9	6.6
					Middle	8.2	26.6 26.6	26.6	7.9 7.9	7.9	22.1 22.2	22.1	76.6 76.4	76.5	5.6 5.6	5.6		6.1 5.9	6.0		6.8 6.0	6.4	
					Bottom	15.4	25.3 25.3	25.3	7.5 7.5	7.5	28.8 28.7	28.7	73.1 73.5	73.3	5.1 5.1	5.1	5.1	5.2 5.5	5.4		7.5 7.3	7.4	
17-Jun-16	Sunny	Moderate	17:07	16.2	Surface	1.0	29.2 29.2	29.2	8.2 8.2	8.2	6.8 6.7	6.8	75.5 78.6	77.1	5.5 5.7	5.6	5.5	8.5 8.8	8.7	8.6	3.0 3.8	3.4	4.8
					Middle	8.1	26.6 26.6	26.6	7.7 7.7	7.7	24.5 23.4	23.9	72.6 73.9	73.3	5.4 5.5	5.4		8.3 7.8	8.1		3.9 4.0	4.0	
					Bottom	15.2	26.7 26.4	26.6	7.7 7.7	7.7	23.8 25.8	24.8	72.9 71.5	72.2	5.2 5.1	5.1	5.1	8.8 9.0	8.9		6.4 7.5	7.0	
20-Jun-16	Sunny	Moderate	07:08	16.3	Surface	1.0	28.3 28.2	28.3	8.2 8.1	8.1	18.6 18.1	18.3	76.0 76.6	76.3	5.6 5.6	5.6	5.5	3.8 3.8	3.8	4.0	4.1 6.3	5.2	5.2
					Middle	8.2	28.1 28.1	28.1	8.1 8.1	8.1	18.3 19.0	18.6	74.1 74.2	74.2	5.4 5.4	5.4		4.2 3.8	4.0		5.6 5.9	5.8	
					Bottom	15.3	27.6 27.8	27.7	7.9 7.9	7.9	26.8 25.9	26.3	73.9 75.4	74.7	5.2 5.3	5.3	5.3	4.2 4.0	4.1		4.0 4.9	4.5	

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

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-Jun-16	Sunny	Moderate	08:03	16.8	Surface	1.0	27.7 27.4	27.6	8.2 8.2	8.2	15.9 15.7	15.8	72.6 72.2	72.4	5.7 5.7	5.7	5.7	7.6 8.2	7.9	9.5	6.0 5.8	5.9	5.9
					Middle	8.4	26.6 26.6	26.6	8.1 8.1	8.1	22.6 22.7	22.7	72.6 71.2	71.9	5.7 5.6	5.6		10.4 10.8	10.6		5.7 5.7	5.7	
					Bottom	15.8	26.6 26.7	26.7	8.1 8.1	8.1	22.8 22.8	22.8	72.0 72.6	72.3	5.6 5.7	5.6	5.6	10.4 9.8	10.1		5.0 7.0	6.0	
24-Jun-16	Sunny	Moderate	09:21	16.3	Surface	1.0	27.7 27.8	27.8	8.2 8.2	8.2	18.1 17.9	18.0	73.7 74.1	73.9	5.3 5.3	5.3	5.3	6.4 6.4	6.4	6.6	4.1 4.5	4.3	5.2
					Middle	8.2	27.4 27.2	27.3	8.1 8.1	8.1	19.7 20.1	19.9	73.4 72.8	73.1	5.2 5.2	5.2		6.6 6.5	6.6		5.3 5.4	5.4	
					Bottom	15.3	27.6 27.3	27.5	8.1 8.1	8.1	20.5 21.2	20.9	73.2 72.0	72.6	5.2 5.1	5.1	5.1	6.8 6.7	6.8		5.9 5.9	5.9	
27-Jun-16	Sunny	Moderate	12:05	16.4	Surface	1.0	28.9 28.1	28.5	8.3 8.2	8.3	16.7 18.4	17.5	85.2 86.3	85.8	6.0 6.1	6.0	5.6	5.0 4.7	4.9	6.3	3.8 4.0	3.9	4.4
					Middle	8.2	27.0 27.0	27.0	8.2 8.2	8.2	23.3 23.5	23.4	72.1 72.6	72.4	5.0 5.1	5.1		6.6 6.3	6.5		4.8 4.9	4.9	
					Bottom	15.4	26.9 27.0	27.0	8.1 8.1	8.1	24.0 23.7	23.9	78.6 75.9	77.3	5.5 5.3	5.4	5.4	7.8 7.2	7.5		4.4 4.3	4.4	
29-Jun-16	Sunny	Moderate	13:26	18.1	Surface	1.0	27.8 28.0	27.9	8.2 8.2	8.2	18.6 18.6	18.6	77.1 77.3	77.2	5.4 5.4	5.4	5.3	3.1 3.0	3.1	3.2	3.0 2.6	2.8	3.5
					Middle	9.1	27.2 27.4	27.3	8.2 8.2	8.2	21.7 21.5	21.6	75.3 72.3	73.8	5.3 5.1	5.2		3.1 3.2	3.2		4.4 4.4	4.4	
					Bottom	17.1	27.7 26.8	27.3	8.2 8.1	8.2	22.2 23.1	22.6	72.1 72.9	72.5	5.0 5.1	5.1	5.1	3.2 3.4	3.3		3.2 3.4	3.3	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	10:03	12.8	Surface	1.0	28.3 28.1	28.2	8.4 8.4	8.4	13.5 14.0	13.8	92.0 90.9	91.5	6.6 6.6	6.6	6.4	2.2 2.0	2.1	2.2	2.4 2.0	2.2	3.0
					Middle	6.4	27.5 27.6	27.5	8.3 8.3	8.3	22.6 21.3	21.9	91.7 89.7	90.7	6.2 6.3	6.2		2.3 2.2	2.3		3.6 3.6	3.6	
					Bottom	11.8	27.1 27.8	27.5	8.1 8.2	8.1	29.9 29.2	29.6	88.8 91.8	90.3	6.2 6.1	6.2	6.2	2.3 2.3	2.3		3.6 2.8	3.2	
3-Jun-16	Sunny	Moderate	10:46	13.7	Surface	1.0	28.6 28.7	28.7	8.4 8.5	8.5	16.8 16.8	16.8	99.7 99.4	99.6	7.0 7.0	7.0	6.9	2.6 2.5	2.6	2.8	5.9 6.3	6.1	6.6
					Middle	6.9	28.4 28.3	28.3	8.4 8.4	8.4	19.4 20.0	19.7	98.7 96.6	97.7	6.9 6.7	6.8		2.8 3.0	2.9		5.2 6.4	5.8	
					Bottom	12.7	28.2 28.5	28.4	8.4 8.4	8.4	20.8 20.6	20.7	96.4 99.5	98.0	6.7 6.9	6.8	6.8	2.9 2.9	2.9		7.2 8.5	7.9	
6-Jun-16	Cloudy	Moderate	14:02	11.9	Surface	1.0	27.8 27.8	27.8	8.4 8.3	8.4	20.6 20.7	20.6	79.3 79.2	79.3	5.6 5.6	5.6	5.5	3.4 3.5	3.5	3.6	3.0 2.3	2.7	2.6
					Middle	6.0	27.4 27.6	27.5	8.3 8.3	8.3	24.0 23.4	23.7	76.9 77.8	77.4	5.4 5.3	5.4		3.6 3.5	3.6		2.6 2.2	2.4	
					Bottom	10.9	26.8 27.5	27.1	8.2 8.3	8.2	29.4 27.6	28.5	77.0 79.3	78.2	5.3 5.3	5.3	5.3	3.5 3.6	3.6		3.1 2.3	2.7	
8-Jun-16	Sunny	Moderate	15:22	12.5	Surface	1.0	28.7 29.3	29.0	8.4 8.4	8.4	17.7 17.2	17.5	74.9 75.6	75.3	5.2 5.3	5.2	5.2	2.1 2.1	2.1	2.2	3.7 2.7	3.2	3.4
					Middle	6.3	27.0 26.7	26.8	8.3 8.3	8.3	26.0 26.3	26.1	72.3 72.5	72.4	5.1 5.1	5.1		2.1 2.2	2.2		3.9 3.2	3.6	
					Bottom	11.5	26.3 26.6	26.5	8.2 8.2	8.2	30.4 30.3	30.3	71.8 73.5	72.7	4.9 5.0	4.9	4.9	2.2 2.2	2.2		3.6 2.9	3.3	
10-Jun-16	Rainy	Moderate	17:03	11.8	Surface	1.0	28.7 28.5	28.6	8.4 8.4	8.4	17.7 18.6	18.1	82.8 79.7	81.3	5.8 5.6	5.7	5.6	1.6 1.6	1.6	1.7	3.9 3.2	3.6	3.3
					Middle	5.9	27.4 27.4	27.4	8.3 8.3	8.3	23.5 21.5	22.5	80.2 79.0	79.6	5.5 5.4	5.5		1.8 1.8	1.8		2.9 3.1	3.0	
					Bottom	10.8	27.0 26.8	26.9	8.2 8.3	8.2	26.8 26.8	26.8	73.5 75.0	74.3	5.2 5.2	5.2	5.2	1.8 1.8	1.8		3.3 3.5	3.4	
13-Jun-16	Cloudy	Moderate	08:04	13.5	Surface	1.0	27.6 27.4	27.5	8.2 8.2	8.2	13.0 13.0	13.0	83.5 81.7	82.6	6.1 5.8	6.0	5.8	2.7 2.8	2.8	2.9	3.0 3.8	3.4	3.4
					Middle	6.8	26.7 26.9	26.8	8.0 8.1	8.0	21.0 21.2	21.1	82.1 79.4	80.8	5.6 5.6	5.6		2.9 2.9	2.9		4.0 3.5	3.8	
					Bottom	12.5	26.6 26.9	26.7	7.9 7.9	7.9	29.8 29.5	29.6	76.0 77.0	76.5	5.4 5.5	5.4	5.4	3.0 2.9	3.0		3.4 2.8	3.1	
15-Jun-16	Sunny	Moderate	10:07	12.3	Surface	1.0	28.7 28.7	28.7	8.3 8.3	8.3	10.4 10.4	10.4	77.7 80.1	78.9	5.7 5.8	5.8	5.4	5.6 5.5	5.6	5.6	4.0 4.4	4.2	5.0
					Middle	6.2	27.1 27.0	27.1	8.0 8.0	8.0	23.3 23.9	23.6	74.7 74.9	74.8	5.0 5.0	5.0		5.3 5.6	5.5		6.2 5.7	6.0	
					Bottom	11.3	25.5 26.0	25.8	7.8 7.8	7.8	34.5 34.4	34.5	72.5 71.3	71.9	4.9 4.8	4.8	4.8	5.6 5.8	5.7		4.6 4.8	4.7	
17-Jun-16	Sunny	Moderate	11:16	12.3	Surface	1.0	28.0 28.0	28.0	8.3 8.2	8.3	14.2 14.2	14.2	79.3 79.4	79.4	5.8 5.8	5.8	5.7	4.6 4.6	4.6	4.6	4.7 4.5	4.6	4.4
					Middle	6.2	25.8 26.2	26.0	8.0 8.1	8.0	27.7 24.1	25.9	78.0 80.1	79.1	5.4 5.6	5.5		4.6 4.6	4.6		4.6 4.5	4.6	
					Bottom	11.3	25.5 25.8	25.7	7.9 8.0	7.9	32.9 30.7	31.8	72.0 75.8	73.9	5.1 5.4	5.2	5.2	4.6 4.7	4.7		4.4 3.6	4.0	
20-Jun-16	Sunny	Moderate	12:59	13.6	Surface	1.0	28.7 28.1	28.4	8.3 8.3	8.3	14.2 15.4	14.8	78.1 79.3	78.7	5.6 5.7	5.6	5.4	5.2 5.2	5.2	5.7	4.3 4.5	4.4	4.6
					Middle	6.8	25.9 25.9	25.9	8.1 8.1	8.1	26.0 26.8	26.4	76.1 72.5	74.3	5.3 5.1	5.2		6.0 6.2	6.1		4.0 4.1	4.1	
					Bottom	12.6	25.7 25.7	25.7	8.1 8.1	8.1	28.3 26.9	27.6	76.3 80.8	78.6	5.3 5.7	5.5	5.5	5.8 5.5	5.7		4.6 6.1	5.4	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	13:52	12.7	Surface	1.0	28.4 28.5	28.4	8.4 8.4	8.4	17.1 16.9	17.0	77.2 74.6	75.9	5.3 5.2	5.3	5.3	5.1 5.0	5.1	5.2	5.3 5.5	5.4	7.1
					Middle	6.4	26.6 26.7	26.7	8.3 8.3	8.3	24.5 24.7	24.6	75.3 73.9	74.6	5.3 5.2	5.3		5.3 5.1	5.2		6.7 7.3	7.0	
					Bottom	11.7	25.2 25.1	25.2	8.2 8.2	8.2	31.6 31.9	31.7	72.6 73.4	73.0	5.0 5.1	5.1	5.1	5.4 5.3	5.4		9.8 8.2	9.0	
24-Jun-16	Sunny	Moderate	15:35	12.7	Surface	1.0	28.8 28.8	28.8	8.3 8.4	8.4	19.5 19.6	19.6	79.9 81.0	80.5	5.5 5.6	5.6	5.5	4.5 4.4	4.5	5.5	6.3 5.6	6.0	6.0
					Middle	6.4	26.0 25.9	25.9	8.2 8.3	8.3	27.9 28.2	28.1	77.9 78.8	78.4	5.3 5.4	5.3		6.3 6.0	6.2		5.6 5.8	5.7	
					Bottom	11.7	26.1 25.7	25.9	8.2 8.3	8.3	29.1 29.9	29.5	75.4 76.2	75.8	5.2 5.3	5.2	5.2	5.9 5.7	5.8		5.8 6.5	6.2	
27-Jun-16	Sunny	Moderate	18:04	12.5	Surface	1.0	29.3 29.2	29.3	8.5 8.5	8.5	19.8 19.8	19.8	93.8 87.8	90.8	6.4 6.0	6.2	5.9	4.5 4.4	4.5	4.7	4.6 4.5	4.6	4.4
					Middle	6.3	26.8 27.1	26.9	8.4 8.4	8.4	26.9 25.8	26.4	79.1 84.6	81.9	5.5 5.8	5.6		4.8 4.7	4.8		4.4 4.2	4.3	
					Bottom	11.5	25.6 25.9	25.8	8.4 8.4	8.4	30.4 31.1	30.7	77.9 80.8	79.4	5.4 5.6	5.5	5.5	4.8 4.8	4.8		4.2 4.2	4.2	
29-Jun-16	Sunny	Moderate	08:26	12.2	Surface	1.0	28.1 27.8	27.9	8.3 8.3	8.3	19.9 19.2	19.5	82.3 80.2	81.3	5.8 5.6	5.7	5.6	2.6 2.6	2.6	3.0	3.4 3.7	3.6	3.6
					Middle	6.1	27.0 27.0	27.0	8.2 8.2	8.2	25.1 25.2	25.2	79.7 78.2	79.0	5.5 5.3	5.4		3.1 3.3	3.2		3.6 3.9	3.8	
					Bottom	11.2	25.8 26.2	26.0	8.2 8.2	8.2	30.6 30.3	30.5	77.0 75.5	76.3	5.3 5.2	5.3	5.3	3.1 3.2	3.2		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

Appendix J - Marine Water Quality Monitoring Results

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

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jun-16	Sunny	Moderate	15:36	11.9	Surface	1.0	29.3 29.3	29.3	8.7 8.7	8.7	12.6 12.5	12.5	113.2 107.1	110.2	8.1 7.2	7.7	7.2	1.8 1.9	1.9	2.0	4.0 2.0	3.0	2.7
					Middle	6.0	26.9 27.4	27.1	8.4 8.5	8.5	24.6 23.3	23.9	98.7 95.1	96.9	7.1 6.4	6.7		2.0 2.0	2.0		3.2 2.0	2.6	
					Bottom	10.9	27.0 26.9	26.9	8.5 8.4	8.4	29.7 30.3	30.0	89.0 92.5	90.8	6.2 6.4	6.3	6.3	2.0 2.0	2.0		2.0 3.0	2.5	
3-Jun-16	Sunny	Moderate	18:13	13.8	Surface	1.0	29.5 29.5	29.5	8.6 8.6	8.6	15.5 15.3	15.4	108.3 106.5	107.4	7.6 7.5	7.5	6.8	2.7 2.8	2.8	3.7	4.1 3.9	4.0	6.1
					Middle	6.9	27.3 27.4	27.3	8.3 8.4	8.4	27.1 26.2	26.7	92.7 84.2	88.5	6.3 5.8	6.0		4.2 4.4	4.3		5.0 5.2	5.1	
					Bottom	12.8	27.3 27.3	27.3	8.4 8.4	8.4	27.4 27.4	27.4	101.9 103.3	102.6	6.9 7.0	7.0	7.0	3.8 4.0	3.9		9.6 8.6	9.1	
6-Jun-16	Cloudy	Moderate	06:41	12.6	Surface	1.0	27.5 27.3	27.4	8.4 8.4	8.4	26.0 25.9	25.9	78.8 77.7	78.3	5.4 5.3	5.3	5.3	2.2 2.2	2.2	2.3	2.6 2.2	2.4	2.4
					Middle	6.3	26.4 26.5	26.5	8.3 8.3	8.3	31.9 31.8	31.8	76.1 76.8	76.5	5.1 5.2	5.2		2.4 2.3	2.4		2.2 2.3	2.3	
					Bottom	11.6	26.4 26.7	26.6	8.3 8.3	8.3	32.2 32.0	32.1	74.2 75.1	74.7	5.0 5.1	5.0	5.0	2.3 2.3	2.3		2.3 2.6	2.5	
8-Jun-16	Sunny	Moderate	08:07	12.8	Surface	1.0	27.6 27.4	27.5	8.3 8.3	8.3	18.7 19.2	18.9	73.1 72.3	72.7	5.3 5.3	5.3	5.2	3.7 3.9	3.8	3.8	3.7 3.6	3.7	3.6
					Middle	6.4	26.6 26.6	26.6	8.2 8.1	8.2	28.3 28.2	28.3	72.1 71.9	72.0	5.1 5.1	5.1		3.7 3.8	3.8		3.7 3.0	3.4	
					Bottom	11.8	26.7 26.3	26.5	8.1 8.1	8.1	29.9 30.2	30.1	70.8 70.7	70.8	5.0 5.0	5.0	5.0	3.9 3.7	3.8		3.5 3.7	3.6	
10-Jun-16	Sunny	Moderate	09:35	12.9	Surface	1.0	28.0 28.0	28.0	8.3 8.2	8.3	18.3 18.4	18.3	73.5 73.2	73.4	5.2 5.2	5.2	5.1	2.2 2.2	2.2	2.2	2.8 2.6	2.7	2.9
					Middle	6.5	26.1 26.1	26.1	8.1 8.1	8.1	29.9 29.4	29.7	72.3 72.6	72.5	5.0 5.1	5.0		2.3 2.1	2.2		2.8 2.8	2.8	
					Bottom	11.9	26.0 26.0	26.0	8.1 8.0	8.0	32.1 32.1	32.1	70.3 70.1	70.2	4.8 4.8	4.8	4.8	2.2 2.2	2.2		2.8 3.4	3.1	
13-Jun-16	Cloudy	Moderate	13:15	13.2	Surface	1.0	27.9 28.2	28.1	8.3 8.4	8.4	12.0 12.0	12.0	81.3 85.7	83.5	5.6 6.2	5.9	5.6	2.5 2.4	2.5	2.5	2.6 3.0	2.8	2.5
					Middle	6.6	26.8 26.4	26.6	8.3 8.1	8.2	24.1 24.8	24.4	75.2 73.6	74.4	5.2 5.4	5.3		2.4 2.5	2.5		2.4 2.4	2.4	
					Bottom	12.2	25.6 25.8	25.7	8.1 8.1	8.1	30.7 30.9	30.8	72.1 73.5	72.8	5.2 5.2	5.2	5.2	2.6 2.6	2.6		2.2 2.2	2.2	
15-Jun-16	Sunny	Moderate	16:22	11.8	Surface	1.0	29.0 28.9	29.0	8.5 8.5	8.5	11.1 11.1	11.1	81.7 78.4	80.1	6.0 5.7	5.8	5.5	4.8 5.1	5.0	5.5	5.9 5.6	5.8	5.8
					Middle	5.9	26.2 26.0	26.1	8.1 8.2	8.2	26.2 26.9	26.6	75.6 78.1	76.9	5.1 5.3	5.2		5.8 5.7	5.8		5.6 5.7	5.7	
					Bottom	10.8	24.9 24.9	24.9	8.1 8.1	8.1	34.8 35.0	34.9	74.1 74.7	74.4	5.0 5.1	5.0	5.0	5.6 5.7	5.7		5.6 6.4	6.0	
17-Jun-16	Sunny	Moderate	18:01	12.6	Surface	1.0	28.8 28.8	28.8	8.5 8.5	8.5	11.8 11.7	11.8	80.7 80.8	80.8	5.9 5.9	5.9	5.7	4.6 4.6	4.6	5.2	4.6 5.0	4.8	4.0
					Middle	6.3	26.3 25.5	25.9	8.2 8.2	8.2	26.5 27.2	26.8	79.1 74.9	77.0	5.5 5.2	5.4		5.5 5.5	5.5		4.3 3.8	4.1	
					Bottom	11.6	24.8 24.8	24.8	8.1 8.2	8.1	33.1 33.1	33.1	72.2 66.6	69.4	5.1 4.7	4.9	4.9	5.6 5.6	5.6		3.2 3.2	3.2	
20-Jun-16	Sunny	Moderate	05:53	13.5	Surface	1.0	27.3 27.6	27.4	8.2 8.2	8.2	21.6 21.1	21.4	76.1 74.6	75.4	5.4 5.2	5.3	5.2	2.6 2.8	2.7	3.5	3.9 5.3	4.6	5.1
					Middle	6.8	24.7 24.5	24.6	8.1 8.0	8.1	34.2 34.4	34.3	73.2 72.0	72.6	5.1 5.1	5.1		3.9 4.0	4.0		4.6 4.6	4.6	
					Bottom	12.5	24.5 24.6	24.5	8.1 8.0	8.1	34.7 34.6	34.6	71.1 70.8	71.0	5.0 5.0	5.0	5.0	3.9 3.8	3.9		5.8 6.1	6.0	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CS(Mf)5 - Mid-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-Jun-16	Sunny	Moderate	07:22	13.3	Surface	1.0	27.2 26.9	27.1	8.3 8.3	8.3	22.2 23.1	22.7	78.6 74.7	76.7	5.4 5.2	5.3	5.3	3.1 3.2	3.2	3.3	3.6 4.4	4.0	3.9
					Middle	6.7	25.0 25.2	25.1	8.2 8.2	8.2	30.8 31.7	31.2	75.9 74.1	75.0	5.3 5.1	5.2		3.3 3.4	3.4		3.4 4.5	4.0	
					Bottom	12.3	24.0 24.3	24.2	8.2 8.2	8.2	35.3 35.1	35.2	73.2 71.6	72.4	5.0 5.0	5.0	5.0	3.4 3.4	3.4		3.7 3.4	3.6	
24-Jun-16	Sunny	Moderate	08:29	13.3	Surface	1.0	27.9 27.8	27.9	8.2 8.2	8.2	19.9 20.0	20.0	80.8 79.1	80.0	5.7 5.7	5.7	5.6	3.0 3.1	3.1	3.1	7.0 7.2	7.1	7.1
					Middle	6.7	25.5 25.4	25.4	8.0 8.0	8.0	30.3 31.4	30.8	76.1 75.4	75.8	5.4 5.4	5.4		3.0 3.2	3.1		7.2 6.7	7.0	
					Bottom	12.3	25.8 25.3	25.5	8.0 8.0	8.0	31.2 32.0	31.6	72.8 73.3	73.1	5.2 5.2	5.2	5.2	3.3 3.1	3.2		6.9 7.5	7.2	
27-Jun-16	Sunny	Moderate	11:10	12.7	Surface	1.0	28.6 28.6	28.6	8.3 8.3	8.3	20.8 20.7	20.8	85.9 83.3	84.6	5.9 5.8	5.8	5.7	3.2 3.4	3.3	3.4	3.9 3.5	3.7	3.9
					Middle	6.4	25.9 26.3	26.1	8.2 8.2	8.2	28.9 28.3	28.6	80.9 79.1	80.0	5.5 5.4	5.5		3.4 3.5	3.5		4.0 3.8	3.9	
					Bottom	11.7	24.8 24.8	24.8	8.2 8.1	8.2	33.9 33.8	33.9	73.9 71.0	72.5	5.1 4.9	5.0	5.0	3.3 3.4	3.4		4.4 4.0	4.2	
29-Jun-16	Sunny	Moderate	14:31	12.6	Surface	1.0	27.6 27.6	27.6	8.4 8.4	8.4	23.0 22.7	22.9	81.6 80.5	81.1	5.7 5.6	5.6	5.5	3.2 3.2	3.2	3.5	6.0 6.5	6.3	5.8
					Middle	6.3	26.4 25.9	26.2	8.4 8.4	8.4	27.3 27.8	27.6	76.8 77.5	77.2	5.3 5.3	5.3		3.6 3.5	3.6		6.0 7.0	6.5	
					Bottom	11.6	24.7 24.6	24.7	8.3 8.3	8.3	33.2 33.3	33.2	69.4 68.8	69.1	4.8 4.8	4.8	4.8	3.6 3.5	3.6		4.6 4.5	4.6	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	09:04	10.1	Surface	1.0	28.5 28.4	28.4	8.3 8.3	8.3	11.4 12.4	11.9	100.3 100.3	100.3	7.3 7.3	7.3	7.2	6.7 6.5	6.6	7.2	4.3 2.6	3.5	4.1
					Middle	5.1	28.1 28.1	28.1	8.1 8.1	8.1	17.3 17.2	17.3	98.6 98.9	98.8	7.0 7.0	7.0		7.5 7.5	7.5		4.0 5.0	4.5	
					Bottom	9.1	28.2 28.1	28.1	8.1 8.1	8.1	17.3 17.4	17.4	99.5 98.7	99.1	7.1 7.0	7.0	7.0	7.3 7.6	7.5		4.6 4.1	4.4	
3-Jun-16	Sunny	Moderate	10:41	10.5	Surface	1.0	28.8 28.7	28.7	8.5 8.4	8.5	15.4 15.4	15.4	101.3 101.8	101.6	7.2 7.2	7.2	7.1	1.5 1.5	1.5	1.5	2.2 2.0	2.1	2.7
					Middle	5.3	28.2 28.1	28.1	8.3 8.3	8.3	20.2 20.5	20.4	99.7 100.4	100.1	6.9 7.0	7.0		1.5 1.5	1.5		2.7 2.4	2.6	
					Bottom	9.5	28.0 28.0	28.0	8.3 8.3	8.3	22.1 21.9	22.0	100.3 99.0	99.7	6.9 6.9	6.9	6.9	1.5 1.6	1.6		3.5 3.0	3.3	
6-Jun-16	Cloudy	Moderate	14:30	10.6	Surface	1.0	27.7 27.7	27.7	8.3 8.3	8.3	20.9 20.4	20.6	77.8 77.9	77.9	5.5 5.4	5.4	5.4	2.3 2.3	2.3	2.6	2.9 2.5	2.7	2.5
					Middle	5.3	27.5 27.5	27.5	8.3 8.2	8.2	22.7 22.7	22.7	77.3 76.7	77.0	5.4 5.4	5.4		2.5 2.6	2.6		2.5 2.6	2.6	
					Bottom	9.6	27.1 27.3	27.2	8.2 8.2	8.2	26.8 24.7	25.8	75.7 76.5	76.1	5.3 5.2	5.3	5.3	2.8 2.7	2.8		2.3 2.1	2.2	
8-Jun-16	Sunny	Moderate	15:51	10.7	Surface	1.0	27.7 28.2	28.0	8.3 8.3	8.3	17.6 17.3	17.5	76.1 80.0	78.1	5.5 5.8	5.7	5.5	1.4 1.3	1.4	1.5	4.3 4.4	4.4	4.1
					Middle	5.4	27.2 27.0	27.1	8.2 8.2	8.2	23.4 24.7	24.0	74.2 74.7	74.5	5.3 5.3	5.3		1.4 1.6	1.5		3.7 4.0	3.9	
					Bottom	9.7	27.0 26.8	26.9	8.2 8.2	8.2	25.6 25.7	25.7	78.7 75.7	77.2	5.5 5.3	5.4	5.4	1.5 1.4	1.5		3.8 3.9	3.9	
10-Jun-16	Rainy	Moderate	17:32	10.1	Surface	1.0	28.1 28.1	28.1	8.3 8.3	8.3	19.0 19.1	19.1	70.7 70.6	70.7	5.4 5.3	5.4	5.3	2.2 2.1	2.2	2.3	2.8 2.5	2.7	3.1
					Middle	5.1	26.9 26.9	26.9	8.2 8.2	8.2	24.9 24.8	24.8	69.4 69.3	69.4	5.2 5.3	5.2		2.4 2.3	2.4		3.2 2.5	2.9	
					Bottom	9.1	27.0 26.9	26.9	8.2 8.2	8.2	24.9 25.0	25.0	70.6 71.5	71.1	5.3 5.3	5.3	5.3	2.3 2.3	2.3		3.6 3.8	3.7	
13-Jun-16	Cloudy	Moderate	06:43	9.8	Surface	1.0	27.6 27.5	27.6	8.1 8.1	8.1	19.5 20.3	19.9	78.1 78.6	78.4	5.8 5.7	5.7	5.7	2.6 2.6	2.6	2.8	4.6 4.0	4.3	4.2
					Middle	4.9	27.3 27.4	27.3	8.1 8.1	8.1	21.9 21.9	21.9	76.9 76.5	76.7	5.7 5.6	5.6		2.8 2.7	2.8		4.1 4.5	4.3	
					Bottom	8.8	27.5 27.3	27.4	8.0 8.0	8.0	24.6 24.6	24.6	75.6 76.9	76.3	5.6 5.6	5.6	5.6	2.9 2.8	2.9		3.7 4.0	3.9	
15-Jun-16	Sunny	Moderate	10:02	9.8	Surface	1.0	28.4 28.4	28.4	8.1 8.1	8.1	8.7 8.8	8.7	83.3 83.4	83.4	6.2 6.2	6.2	6.1	5.7 5.5	5.6	4.5	6.3 5.6	6.0	6.0
					Middle	4.9	27.5 27.5	27.5	7.9 7.9	7.9	16.4 16.5	16.5	82.2 82.4	82.3	5.9 5.9	5.9		3.5 3.7	3.6		5.3 4.8	5.1	
					Bottom	8.8	25.6 25.6	25.6	7.6 7.6	7.6	28.6 28.5	28.5	80.5 79.9	80.2	5.6 5.6	5.6	5.6	4.5 4.2	4.4		6.8 6.7	6.8	
17-Jun-16	Sunny	Moderate	10:29	10.1	Surface	1.0	28.0 28.2	28.1	8.2 8.3	8.2	10.6 10.6	10.6	75.3 76.6	76.0	5.6 5.6	5.6	5.5	3.5 3.6	3.6	3.4	5.0 4.9	5.0	4.8
					Middle	5.1	27.4 27.2	27.3	8.1 8.0	8.1	16.6 17.0	16.8	72.4 73.5	73.0	5.2 5.3	5.3		3.2 3.3	3.3		3.7 4.1	3.9	
					Bottom	9.1	27.2 27.2	27.2	8.0 8.0	8.0	17.8 18.8	18.3	73.6 75.2	74.4	5.3 5.4	5.3	5.3	3.2 3.4	3.3		5.3 5.7	5.5	
20-Jun-16	Sunny	Moderate	13:43	10.2	Surface	1.0	27.7 27.6	27.7	8.2 8.1	8.1	22.9 23.6	23.2	75.9 75.9	75.9	5.4 5.5	5.4	5.4	3.3 3.4	3.4	3.6	2.1 2.9	2.5	3.6
					Middle	5.1	26.5 26.7	26.6	8.0 8.0	8.0	29.8 28.6	29.2	73.9 73.5	73.7	5.3 5.3	5.3		3.4 3.5	3.5		4.6 3.7	4.2	
					Bottom	9.2	26.2 26.0	26.1	7.9 8.0	7.9	32.3 32.4	32.3	71.8 71.4	71.6	5.1 5.1	5.1	5.1	3.8 3.7	3.8		3.6 4.5	4.1	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CS6 - Mid-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-Jun-16	Sunny	Moderate	15:49	9.6	Surface	1.0	27.4 27.4	27.4	8.2 8.2	8.2	16.3 14.8	15.5	73.7 75.6	74.7	5.7 5.7	5.7	5.7	5.5 5.7	5.6	6.8	4.5 5.3	4.9	5.2
					Middle	4.8	25.8 25.8	25.8	8.1 8.1	8.1	25.7 26.0	25.8	73.7 74.6	74.2	5.6 5.6	5.6		7.1 7.7	7.4		5.3 4.8	5.1	
					Bottom	8.6	25.8 25.7	25.8	8.1 8.1	8.1	25.7 26.3	26.0	74.9 75.6	75.3	5.6 5.6	5.6	5.6	7.3 7.6	7.5		6.0 5.2	5.6	
24-Jun-16	Sunny	Moderate	16:08	10.1	Surface	1.0	28.4 28.1	28.3	8.1 8.1	8.1	18.2 18.7	18.4	84.4 84.4	84.4	6.0 5.9	5.9	5.9	2.6 2.6	2.6	2.8	5.9 6.1	6.0	6.0
					Middle	5.1	27.7 27.9	27.8	8.1 8.1	8.1	19.2 19.2	19.2	83.5 83.0	83.3	5.8 5.8	5.8		2.8 2.7	2.8		6.2 5.8	6.0	
					Bottom	9.1	27.9 27.9	27.9	8.1 8.1	8.1	20.9 19.5	20.2	79.8 79.9	79.9	5.7 5.6	5.6	5.6	3.0 2.9	3.0		5.9 6.1	6.0	
27-Jun-16	Sunny	Moderate	18:31	10.0	Surface	1.0	28.9 28.6	28.7	8.4 8.4	8.4	20.0 20.5	20.2	104.1 97.2	100.7	7.2 6.7	7.0	6.6	2.4 2.4	2.4	2.5	3.5 4.5	4.0	4.2
					Middle	5.0	27.9 27.4	27.7	8.4 8.4	8.4	22.1 23.0	22.6	90.6 87.9	89.3	6.3 6.1	6.2		2.3 2.6	2.5		4.7 4.6	4.7	
					Bottom	9.0	27.3 27.7	27.5	8.4 8.4	8.4	23.4 22.6	23.0	91.5 95.9	93.7	6.4 6.7	6.5	6.5	2.6 2.4	2.5		4.5 3.4	4.0	
29-Jun-16	Sunny	Moderate	07:29	10.1	Surface	1.0	28.3 28.2	28.3	8.3 8.3	8.3	16.2 16.2	16.2	85.8 85.5	85.7	6.1 6.1	6.1	6.0	2.1 2.0	2.1	2.2	3.7 3.9	3.8	4.5
					Middle	5.1	27.6 27.6	27.6	8.2 8.2	8.2	20.0 20.3	20.1	81.5 85.4	83.5	5.7 6.0	5.9		2.1 2.0	2.1		4.9 4.7	4.8	
					Bottom	9.1	27.4 27.4	27.4	8.2 8.2	8.2	21.8 21.7	21.8	80.3 82.3	81.3	5.7 5.8	5.7	5.7	2.3 2.2	2.3		4.8 4.8	4.8	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CS6 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jun-16	Sunny	Moderate	16:44	10.3	Surface	1.0	29.0 28.9	29.0	8.5 8.5	8.5	13.1 13.1	13.1	102.6 99.1	100.9	7.3 7.1	7.2	6.9	6.3 6.4	6.4	6.3	3.4 3.1	3.3	3.5
					Middle	5.2	27.5 27.3	27.4	8.3 8.3	8.3	22.8 19.6	21.2	94.4 91.4	92.9	6.6 6.5	6.5		6.3 6.2	6.3		4.0 3.9	4.0	
					Bottom	9.3	27.2 27.1	27.1	8.3 8.2	8.3	26.1 26.8	26.5	95.2 100.3	97.8	6.5 6.9	6.7	6.7	6.3 6.3	6.3		3.3 2.9	3.1	
3-Jun-16	Sunny	Moderate	19:07	10.4	Surface	1.0	29.1 29.3	29.2	8.6 8.5	8.5	15.9 15.3	15.6	103.1 108.5	105.8	7.3 7.6	7.4	7.1	1.6 1.8	1.7	1.7	5.4 5.0	5.2	5.0
					Middle	5.2	28.1 28.0	28.1	8.4 8.4	8.4	20.6 20.8	20.7	97.2 98.4	97.8	6.8 6.8	6.8		1.6 1.6	1.6		5.1 5.0	5.1	
					Bottom	9.4	27.9 28.1	28.0	8.4 8.5	8.4	22.6 21.0	21.8	94.2 93.7	94.0	6.6 6.5	6.5	6.5	1.7 1.6	1.7		4.1 5.0	4.6	
6-Jun-16	Cloudy	Moderate	06:10	10.7	Surface	1.0	27.0 26.9	27.0	8.3 8.3	8.3	26.7 27.1	26.9	80.6 80.3	80.5	5.5 5.5	5.5	5.4	1.1 1.2	1.2	1.3	4.1 3.9	4.0	3.5
					Middle	5.4	26.9 26.8	26.9	8.3 8.3	8.3	26.9 27.8	27.3	76.9 78.7	77.8	5.3 5.4	5.3		1.2 1.3	1.3		3.0 3.0	3.0	
					Bottom	9.7	26.9 26.8	26.9	8.3 8.3	8.3	27.8 28.0	27.9	76.1 76.2	76.2	5.2 5.2	5.2	5.2	1.5 1.4	1.5		3.6 3.2	3.4	
8-Jun-16	Sunny	Moderate	06:29	10.2	Surface	1.0	27.9 27.9	27.9	8.0 8.1	8.1	16.5 16.5	16.5	79.1 79.1	79.1	5.8 5.8	5.8	5.7	1.2 1.3	1.3	1.2	2.9 2.8	2.9	3.1
					Middle	5.1	27.7 27.6	27.7	7.9 8.0	8.0	20.4 20.3	20.4	78.4 77.7	78.1	5.6 5.6	5.6		1.2 1.2	1.2		2.7 3.5	3.1	
					Bottom	9.2	27.8 27.6	27.7	7.9 7.9	7.9	20.2 21.6	20.9	79.9 78.6	79.3	5.7 5.6	5.7	5.7	1.1 1.2	1.2		2.8 3.6	3.2	
10-Jun-16	Sunny	Moderate	09:02	10.2	Surface	1.0	27.8 27.7	27.8	8.2 8.2	8.2	18.2 18.1	18.1	75.6 74.6	75.1	5.7 5.6	5.6	5.4	1.7 1.5	1.6	2.0	3.8 2.2	3.0	2.9
					Middle	5.1	27.2 27.1	27.1	8.1 8.1	8.1	23.3 24.1	23.7	69.8 70.3	70.1	5.2 5.2	5.2		2.2 2.1	2.2		2.5 2.9	2.7	
					Bottom	9.2	27.1 27.2	27.2	8.1 8.1	8.1	24.1 23.2	23.6	72.3 71.7	72.0	5.3 5.3	5.3	5.3	2.4 2.2	2.3		3.3 2.9	3.1	
13-Jun-16	Cloudy	Moderate	14:41	10.0	Surface	1.0	27.8 27.8	27.8	8.3 8.3	8.3	19.5 19.9	19.7	80.8 79.1	80.0	5.8 5.8	5.8	5.7	2.2 2.2	2.2	2.4	5.4 4.1	4.8	4.5
					Middle	5.0	27.4 26.9	27.1	8.3 8.1	8.2	27.3 27.4	27.3	73.4 75.4	74.4	5.4 5.6	5.5		2.3 2.3	2.3		5.1 3.9	4.5	
					Bottom	9.0	26.7 26.8	26.7	8.0 8.1	8.0	33.4 30.1	31.8	76.1 73.9	75.0	5.3 5.3	5.3	5.3	2.5 2.6	2.6		4.8 3.5	4.2	
15-Jun-16	Sunny	Moderate	17:13	10.0	Surface	1.0	28.6 28.6	28.6	8.2 8.2	8.2	8.7 8.8	8.7	81.9 82.5	82.2	6.1 6.1	6.1	5.9	5.3 5.2	5.3	3.9	4.7 4.9	4.8	5.7
					Middle	5.0	26.5 26.4	26.4	7.9 7.9	7.9	24.2 24.3	24.2	79.8 79.9	79.9	5.6 5.6	5.6		3.3 3.2	3.3		5.8 5.8	5.8	
					Bottom	9.0	25.1 25.0	25.0	7.7 7.7	7.7	27.6 27.7	27.7	74.8 73.7	74.3	5.2 5.1	5.2	5.2	3.2 3.1	3.2		6.5 6.5	6.5	
17-Jun-16	Sunny	Moderate	18:41	10.5	Surface	1.0	28.6 28.8	28.7	8.2 8.2	8.2	11.9 11.4	11.7	86.6 86.2	86.4	5.3 6.2	5.8	5.6	3.7 3.9	3.8	4.2	3.2 3.2	3.2	3.1
					Middle	5.3	25.8 25.8	25.8	7.9 7.9	7.9	25.2 27.4	26.3	77.3 78.0	77.7	5.4 5.4	5.4		4.4 4.2	4.3		2.7 2.7	2.7	
					Bottom	9.5	25.7 25.5	25.6	7.8 7.8	7.8	28.4 29.2	28.8	70.8 71.3	71.1	5.0 5.1	5.0	5.0	4.6 4.5	4.6		2.5 4.0	3.3	
20-Jun-16	Sunny	Moderate	05:22	10.3	Surface	1.0	26.7 26.6	26.6	8.2 8.2	8.2	21.5 21.4	21.5	72.0 72.1	72.1	5.2 5.2	5.2	5.2	2.9 2.9	2.9	3.0	6.9 6.4	6.7	7.2
					Middle	5.2	26.4 26.4	26.4	8.2 8.2	8.2	22.3 22.5	22.4	71.4 71.8	71.6	5.2 5.2	5.2		3.1 3.0	3.1		6.7 7.5	7.1	
					Bottom	9.3	25.8 25.6	25.7	8.2 8.1	8.2	25.7 27.6	26.6	70.9 70.6	70.8	5.1 5.1	5.1	5.1	3.1 3.0	3.1		8.6 7.0	7.8	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CS6 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jun-16	Sunny	Moderate	06:26	9.7	Surface	1.0	26.9 26.8	26.9	8.1 8.1	8.1	20.6 21.7	21.2	73.4 73.1	73.3	5.4 5.4	5.4	5.4	2.9 2.9	2.9	3.0	5.5 4.3	4.9	4.8
					Middle	4.9	26.6 26.2	26.4	8.1 8.1	8.1	22.0 23.9	23.0	73.0 73.0	73.0	5.4 5.4	5.4		3.0 3.0	3.0		4.2 4.8	4.5	
					Bottom	8.7	26.2 26.7	26.4	8.0 8.1	8.1	24.3 22.7	23.5	73.1 72.9	73.0	5.4 5.4	5.4	5.4	3.0 2.9	3.0		4.8 5.1	5.0	
24-Jun-16	Sunny	Moderate	07:55	10.3	Surface	1.0	27.7 27.7	27.7	8.2 8.2	8.2	16.5 16.7	16.6	73.7 72.5	73.1	5.2 5.2	5.2	5.2	2.9 2.8	2.9	2.9	4.0 3.9	4.0	4.9
					Middle	5.2	26.8 27.1	26.9	8.1 8.1	8.1	21.3 21.5	21.4	73.1 71.7	72.4	5.2 5.1	5.2		2.9 2.9	2.9		5.3 5.4	5.4	
					Bottom	9.3	26.7 26.6	26.6	8.1 8.1	8.1	26.5 25.7	26.1	71.1 72.9	72.0	5.1 5.1	5.1	5.1	2.9 2.9	2.9		5.3 5.1	5.2	
27-Jun-16	Sunny	Moderate	10:33	10.2	Surface	1.0	28.4 28.5	28.5	8.3 8.3	8.3	18.7 18.8	18.7	82.4 82.1	82.3	5.8 5.8	5.8	5.6	2.7 2.8	2.8	2.6	3.6 3.3	3.5	4.0
					Middle	5.1	26.5 26.5	26.5	8.2 8.2	8.2	25.4 25.6	25.5	76.9 76.9	76.9	5.4 5.4	5.4		2.4 2.5	2.5		3.3 4.2	3.8	
					Bottom	9.2	26.5 26.5	26.5	8.2 8.2	8.2	25.7 25.6	25.7	80.8 78.5	79.7	5.6 5.5	5.5	5.5	2.5 2.4	2.5		4.7 4.5	4.6	
29-Jun-16	Sunny	Moderate	14:55	10.1	Surface	1.0	28.1 27.8	28.0	8.4 8.4	8.4	19.5 19.3	19.4	88.6 81.3	85.0	6.2 5.7	6.0	5.8	3.3 3.3	3.3	3.4	4.0 4.4	4.2	3.8
					Middle	5.1	27.5 27.4	27.5	8.4 8.4	8.4	21.2 21.1	21.2	82.8 78.0	80.4	5.8 5.5	5.6		3.3 3.4	3.4		4.0 3.0	3.5	
					Bottom	9.1	27.2 27.2	27.2	8.3 8.4	8.4	22.6 22.7	22.7	76.9 76.5	76.7	5.4 5.4	5.4	5.4	3.5 3.5	3.5		4.1 3.3	3.7	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CSA - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jun-16	Sunny	Moderate	08:51	35.1	Surface	1.0	28.5 28.4	28.4	8.0 8.2	8.1	13.0 11.0	12.0	100.1 99.6	99.9	7.2 7.3	7.3	7.1	6.4 6.5	6.5	6.4	3.3 2.6	3.0	3.6
					Middle	17.6	28.0 28.0	28.0	8.0 7.8	7.9	17.6 17.7	17.7	97.6 97.9	97.8	6.9 6.9	6.9		6.4 6.6	6.5		3.2 3.3	3.3	
					Bottom	34.1	27.9 28.1	28.0	7.9 7.6	7.7	19.5 18.7	19.1	97.9 98.4	98.2	6.9 6.9	6.9	6.9	6.2 6.4	6.3		4.4 4.8	4.6	
3-Jun-16	Sunny	Moderate	10:34	34.3	Surface	1.0	28.9 28.9	28.9	8.5 8.4	8.4	14.4 13.7	14.1	102.1 103.1	102.6	7.3 7.4	7.3	7.1	1.4 1.5	1.5	1.7	3.2 2.5	2.9	3.0
					Middle	17.2	28.0 28.0	28.0	8.3 8.2	8.3	20.6 21.3	20.9	99.8 98.9	99.4	6.9 6.9	6.9		1.7 1.8	1.8		2.4 2.0	2.2	
					Bottom	33.3	28.0 28.0	28.0	8.2 8.2	8.2	22.4 23.4	22.9	98.9 99.1	99.0	6.8 6.9	6.8	6.8	1.8 1.7	1.8		3.9 3.6	3.8	
6-Jun-16	Cloudy	Moderate	14:44	35.4	Surface	1.0	27.8 27.9	27.8	8.3 8.3	8.3	19.4 18.9	19.1	78.5 78.4	78.5	5.6 5.6	5.6	5.5	2.3 2.2	2.3	2.4	2.7 2.8	2.8	2.7
					Middle	17.7	27.5 27.6	27.5	8.3 8.3	8.3	23.8 20.3	22.1	77.0 77.5	77.3	5.4 5.5	5.4		2.4 2.3	2.4		2.6 2.5	2.6	
					Bottom	34.4	27.2 27.8	27.5	8.3 8.3	8.3	27.2 24.8	26.0	75.7 75.4	75.6	5.2 5.3	5.3	5.3	2.4 2.4	2.4		2.8 2.6	2.7	
8-Jun-16	Sunny	Moderate	16:03	34.7	Surface	1.0	28.1 28.0	28.1	8.3 8.3	8.3	17.4 17.4	17.4	78.8 77.4	78.1	5.7 5.6	5.6	5.5	1.2 1.2	1.2	1.3	3.9 4.4	4.2	3.8
					Middle	17.4	26.9 27.0	26.9	8.2 8.2	8.2	25.3 25.2	25.2	74.4 75.4	74.9	5.3 5.3	5.3		1.2 1.3	1.3		3.4 3.8	3.6	
					Bottom	33.7	26.9 27.1	27.0	8.2 8.2	8.2	25.8 25.3	25.6	76.6 78.0	77.3	5.4 5.5	5.5	5.5	1.4 1.5	1.5		3.7 3.6	3.7	
10-Jun-16	Rainy	Moderate	17:44	34.7	Surface	1.0	28.3 28.3	28.3	8.4 8.4	8.4	18.1 18.0	18.1	72.1 73.5	72.8	5.6 5.7	5.6	5.5	2.1 2.0	2.1	2.3	3.0 3.0	3.0	3.5
					Middle	17.4	27.0 27.0	27.0	8.2 8.2	8.2	24.7 24.7	24.7	68.9 68.1	68.5	5.3 5.2	5.3		2.6 2.5	2.6		3.9 4.2	4.1	
					Bottom	33.7	27.0 27.2	27.1	8.2 8.2	8.2	24.9 24.8	24.8	67.8 69.5	68.7	5.2 5.4	5.3	5.3	2.3 2.2	2.3		3.1 3.9	3.5	
13-Jun-16	Cloudy	Moderate	06:30	34.8	Surface	1.0	27.6 27.5	27.5	8.2 8.1	8.1	20.0 19.6	19.8	78.1 78.9	78.5	5.7 5.8	5.8	5.7	2.7 2.8	2.8	2.9	4.0 4.8	4.4	4.2
					Middle	17.4	27.3 27.5	27.4	8.1 8.2	8.1	22.3 21.2	21.7	77.6 77.2	77.4	5.7 5.6	5.6		2.9 2.9	2.9		5.1 5.2	5.2	
					Bottom	33.8	27.3 27.3	27.3	8.1 8.2	8.1	24.3 22.6	23.5	75.8 76.7	76.3	5.6 5.7	5.6	5.6	3.0 3.0	3.0		3.4 2.8	3.1	
15-Jun-16	Sunny	Moderate	09:33	34.8	Surface	1.0	28.4 28.4	28.4	8.0 8.1	8.1	9.2 9.1	9.1	88.0 86.6	87.3	6.5 6.4	6.5	6.0	5.1 5.1	5.1	3.9	4.8 5.2	5.0	5.2
					Middle	17.4	25.3 25.3	25.3	7.8 7.8	7.8	16.7 16.7	16.7	75.2 75.3	75.3	5.4 5.4	5.4		3.5 3.4	3.5		3.5 4.8	4.2	
					Bottom	33.8	24.3 24.3	24.3	7.4 7.4	7.4	30.0 30.0	30.0	72.0 72.3	72.2	5.0 5.0	5.0	5.0	3.0 3.2	3.1		6.0 6.5	6.3	
17-Jun-16	Sunny	Moderate	10:16	35.4	Surface	1.0	28.0 28.1	28.0	8.3 8.3	8.3	14.0 13.0	13.5	75.8 76.7	76.3	5.5 5.6	5.5	5.4	3.5 3.5	3.5	3.3	7.1 7.3	7.2	7.4
					Middle	17.7	27.0 27.1	27.0	8.2 8.2	8.2	19.2 19.1	19.1	74.6 73.1	73.9	5.3 5.2	5.3		3.0 3.2	3.1		6.6 7.2	6.9	
					Bottom	34.4	27.3 27.0	27.2	8.2 8.2	8.2	19.4 19.5	19.5	76.0 78.1	77.1	5.4 5.6	5.5	5.5	3.3 3.0	3.2		7.8 8.3	8.1	
20-Jun-16	Sunny	Moderate	13:55	35.3	Surface	1.0	28.5 29.0	28.8	8.2 8.2	8.2	20.0 18.9	19.4	73.5 73.2	73.4	5.4 5.4	5.4	5.3	3.4 3.5	3.5	3.6	2.8 4.0	3.4	3.2
					Middle	17.7	27.0 27.0	27.0	8.1 8.1	8.1	26.3 25.1	25.7	72.7 72.8	72.8	5.2 5.2	5.2		3.6 3.6	3.6		3.7 3.1	3.4	
					Bottom	34.3	26.3 26.3	26.3	8.0 8.0	8.0	31.0 31.2	31.1	71.2 71.1	71.2	5.1 5.1	5.1	5.1	3.8 3.7	3.8		2.6 2.9	2.8	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	16:02	34.3	Surface	1.0	28.0 27.7	27.9	8.3 8.2	8.3	14.5 16.2	15.3	73.6 74.3	74.0	5.7 5.8	5.7	5.7	5.8 5.6	5.7	6.9	4.4 3.5	4.0	5.1
					Middle	17.2	26.0 25.9	26.0	8.1 8.1	8.1	25.1 25.2	25.2	72.5 72.9	72.7	5.6 5.6	5.6		7.5 7.8	7.7		4.4 4.6	4.5	
					Bottom	33.3	26.1 25.9	26.0	8.1 8.1	8.1	25.2 25.6	25.4	73.4 73.1	73.3	5.7 5.6	5.6	5.6	7.2 7.4	7.3		6.7 6.8	6.8	
24-Jun-16	Sunny	Moderate	16:20	34.8	Surface	1.0	27.7 27.8	27.8	8.1 8.2	8.1	19.2 18.9	19.1	76.5 76.1	76.3	5.4 5.4	5.4	5.4	3.4 3.5	3.5	3.6	4.3 4.3	4.3	5.4
					Middle	17.4	26.7 27.5	27.1	8.1 8.1	8.1	21.4 20.4	20.9	74.1 73.8	74.0	5.3 5.3	5.3		3.4 3.6	3.5		6.0 5.5	5.8	
					Bottom	33.8	26.3 25.9	26.1	8.0 8.0	8.0	24.6 26.3	25.5	72.2 72.7	72.5	5.1 5.2	5.1	5.1	3.6 3.7	3.7		5.9 6.2	6.1	
27-Jun-16	Sunny	Moderate	18:43	34.5	Surface	1.0	28.9 28.9	28.9	8.4 8.4	8.4	20.0 20.1	20.0	104.2 101.3	102.8	7.2 7.0	7.1	6.6	2.5 2.3	2.4	2.6	4.0 3.1	3.6	3.9
					Middle	17.3	27.3 27.2	27.2	8.4 8.4	8.4	23.3 23.2	23.2	87.0 87.5	87.3	6.1 6.1	6.1		2.8 2.5	2.7		3.7 4.6	4.2	
					Bottom	33.5	27.1 27.2	27.1	8.3 8.4	8.4	24.4 24.0	24.2	91.6 93.5	92.6	6.4 6.5	6.4	6.4	2.7 2.5	2.6		4.1 3.7	3.9	
29-Jun-16	Sunny	Moderate	07:10	36.1	Surface	1.0	28.3 28.3	28.3	8.4 8.4	8.4	16.1 16.2	16.2	88.2 87.9	88.1	6.3 6.3	6.3	6.1	1.9 1.9	1.9	2.1	3.3 2.8	3.1	3.8
					Middle	18.1	27.4 27.7	27.6	8.3 8.3	8.3	19.9 19.9	19.9	84.0 84.8	84.4	5.9 5.9	5.9		2.1 2.0	2.1		3.2 4.3	3.8	
					Bottom	35.1	27.7 27.4	27.6	8.3 8.2	8.3	22.4 22.3	22.4	81.8 82.1	82.0	5.8 5.8	5.8	5.8	2.2 2.2	2.2		5.3 3.4	4.4	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CSA - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jun-16	Sunny	Moderate	17:00	35.5	Surface	1.0	28.9 29.0	28.9	8.5 8.6	8.6	13.4 13.0	13.2	112.7 102.7	107.7	8.1 7.4	7.7	7.0	6.7 6.5	6.6	6.5	4.0 2.8	3.4	4.8
					Middle	17.8	27.0 27.0	27.0	8.3 8.3	8.3	27.1 26.9	27.0	89.3 92.5	90.9	6.1 6.3	6.2		6.4 6.3	6.4		4.4 6.2	5.3	
					Bottom	34.5	27.1 27.0	27.0	8.3 8.2	8.3	27.1 27.6	27.3	100.3 92.5	96.4	6.9 6.3	6.6	6.6	6.4 6.4	6.4		5.8 5.5	5.7	
3-Jun-16	Sunny	Moderate	19:17	34.4	Surface	1.0	29.1 29.2	29.2	8.5 8.5	8.5	15.9 15.7	15.8	107.4 110.8	109.1	7.6 7.8	7.7	7.0	2.8 2.7	2.8	2.8	6.3 5.4	5.9	6.4
					Middle	17.2	27.6 27.3	27.5	8.4 8.4	8.4	26.6 27.5	27.1	94.7 86.8	90.8	6.4 5.9	6.2		2.8 2.8	2.8		5.8 5.1	5.5	
					Bottom	33.4	27.4 27.2	27.3	8.3 8.4	8.4	27.6 27.8	27.7	86.7 83.1	84.9	5.9 5.7	5.8	5.8	2.9 2.8	2.9		7.1 8.3	7.7	
6-Jun-16	Cloudy	Moderate	05:59	35.5	Surface	1.0	27.0 26.9	27.0	8.3 8.2	8.3	26.8 26.8	26.8	76.6 77.6	77.1	5.2 5.3	5.2	5.2	1.4 1.4	1.4	1.6	3.4 3.3	3.4	3.2
					Middle	17.8	26.8 27.0	26.9	8.3 8.2	8.2	27.4 28.2	27.8	76.7 75.5	76.1	5.2 5.2	5.2		1.5 1.6	1.6		3.2 2.9	3.1	
					Bottom	34.5	26.7 26.7	26.7	8.2 8.2	8.2	29.1 28.7	28.9	75.0 75.1	75.1	5.2 5.1	5.1	5.1	1.8 1.8	1.8		3.1 3.0	3.1	
8-Jun-16	Sunny	Moderate	06:17	35.2	Surface	1.0	27.9 27.9	27.9	7.9 7.9	7.9	16.5 16.5	16.5	80.4 80.6	80.5	5.9 5.9	5.9	5.8	1.8 2.0	1.9	1.6	4.2 3.9	4.1	3.8
					Middle	17.6	27.9 27.7	27.8	7.9 7.9	7.9	18.0 19.8	18.9	80.0 77.8	78.9	5.8 5.6	5.7		1.6 1.5	1.6		3.5 3.4	3.5	
					Bottom	34.2	27.9 27.3	27.6	8.0 8.0	8.0	18.5 22.6	20.5	80.2 78.4	79.3	5.8 5.6	5.7	5.7	1.2 1.3	1.3		2.8 5.0	3.9	
10-Jun-16	Sunny	Moderate	08:50	35.2	Surface	1.0	27.9 28.0	28.0	8.2 8.2	8.2	17.8 17.1	17.5	74.9 74.6	74.8	5.6 5.6	5.6	5.4	1.8 1.7	1.8	1.6	2.7 3.3	3.0	3.2
					Middle	17.6	27.3 27.3	27.3	8.1 8.1	8.1	22.8 22.5	22.7	69.7 69.5	69.6	5.2 5.2	5.2		1.5 1.5	1.5		3.6 4.0	3.8	
					Bottom	34.2	27.3 27.3	27.3	8.0 8.0	8.0	22.6 22.7	22.7	69.6 70.8	70.2	5.2 5.2	5.2	5.2	1.7 1.5	1.6		2.9 2.5	2.7	
13-Jun-16	Cloudy	Moderate	14:56	34.9	Surface	1.0	27.9 28.0	28.0	8.2 8.3	8.3	19.3 19.3	19.3	74.6 77.5	76.1	5.5 5.7	5.6	5.5	2.3 2.4	2.4	2.5	3.3 4.5	3.9	4.2
					Middle	17.5	27.1 27.3	27.2	8.2 8.1	8.1	20.4 24.2	22.3	76.9 75.7	76.3	5.4 5.4	5.4		2.5 2.5	2.5		4.5 4.4	4.5	
					Bottom	33.9	26.8 26.7	26.8	8.0 8.0	8.0	30.2 30.5	30.4	73.0 75.1	74.1	5.4 5.4	5.4	5.4	2.6 2.7	2.7		3.3 5.0	4.2	
15-Jun-16	Sunny	Moderate	17:41	35.0	Surface	1.0	28.6 28.6	28.6	8.3 8.3	8.3	9.6 9.6	9.6	86.8 88.0	87.4	6.4 6.5	6.4	5.9	4.9 4.9	4.9	4.1	6.4 5.5	6.0	5.7
					Middle	17.5	25.1 25.2	25.2	8.0 8.0	8.0	26.2 26.1	26.2	75.7 77.1	76.4	5.3 5.4	5.4		3.4 3.2	3.3		6.1 5.9	6.0	
					Bottom	34.0	24.2 24.2	24.2	7.5 7.5	7.5	30.9 30.9	30.9	70.9 71.1	71.0	4.9 4.9	4.9	4.9	4.0 4.0	4.0		5.0 5.1	5.1	
17-Jun-16	Sunny	Moderate	18:55	35.6	Surface	1.0	28.7 28.6	28.6	8.3 8.3	8.3	11.7 11.7	11.7	81.5 81.0	81.3	5.9 5.9	5.9	5.8	3.7 3.7	3.7	3.9	2.6 2.8	2.7	3.5
					Middle	17.8	25.7 25.4	25.6	7.9 7.8	7.9	28.3 29.4	28.9	81.0 78.5	79.8	5.9 5.4	5.7		4.0 4.1	4.1		4.4 3.4	3.9	
					Bottom	34.6	25.7 25.6	25.6	7.9 7.9	7.9	28.7 29.5	29.1	72.0 70.4	71.2	5.2 5.1	5.2	5.2	3.9 3.6	3.8		3.4 4.2	3.8	
20-Jun-16	Sunny	Moderate	05:11	35.5	Surface	1.0	26.6 26.6	26.6	8.3 8.3	8.3	21.6 21.7	21.7	72.5 72.2	72.4	5.2 5.2	5.2	5.2	3.1 3.0	3.1	3.2	9.3 8.9	9.1	8.9
					Middle	17.8	26.0 26.2	26.1	8.2 8.2	8.2	24.5 24.5	24.5	71.4 71.8	71.6	5.2 5.1	5.2		3.2 3.2	3.2		9.3 8.9	9.1	
					Bottom	34.5	25.1 25.7	25.4	8.1 8.2	8.2	27.2 26.4	26.8	70.9 71.2	71.1	5.1 5.1	5.1	5.1	3.3 3.3	3.3		8.7 8.0	8.4	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CSA - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jun-16	Sunny	Moderate	06:15	34.5	Surface	1.0	27.4 27.2	27.3	8.1 8.1	8.1	18.8 19.1	18.9	73.9 73.5	73.7	5.5 5.4	5.4	5.4	3.1 3.2	3.2	3.1	3.0 3.4	3.2	4.1
					Middle	17.3	26.5 26.7	26.6	8.1 8.1	8.1	22.1 21.5	21.8	73.7 73.2	73.5	5.4 5.4	5.4		3.0 3.1	3.1		4.6 3.8	4.2	
					Bottom	33.5	26.9 26.4	26.6	8.1 8.0	8.0	21.1 23.6	22.3	73.3 73.6	73.5	5.4 5.4	5.4	5.4	3.0 3.0	3.0		4.2 5.4	4.8	
24-Jun-16	Sunny	Moderate	07:45	34.9	Surface	1.0	27.7 28.1	27.9	8.3 8.3	8.3	16.4 16.3	16.3	78.2 78.7	78.5	5.5 5.6	5.5	5.5	2.8 2.8	2.8	2.9	4.6 4.9	4.8	4.6
					Middle	17.5	26.2 26.9	26.6	8.3 8.2	8.2	23.1 21.6	22.4	76.4 77.1	76.8	5.3 5.5	5.4		2.8 2.9	2.9		4.6 5.3	5.0	
					Bottom	33.9	26.2 26.3	26.2	8.2 8.2	8.2	27.7 26.0	26.8	73.6 72.9	73.3	5.3 5.2	5.2	5.2	2.9 2.9	2.9		3.9 4.1	4.0	
27-Jun-16	Sunny	Moderate	10:21	34.7	Surface	1.0	28.7 28.4	28.6	8.4 8.3	8.3	18.5 18.8	18.6	83.8 81.0	82.4	5.9 5.7	5.8	5.5	2.7 2.7	2.7	2.6	3.7 4.2	4.0	4.0
					Middle	17.4	26.4 26.4	26.4	8.3 8.2	8.2	25.7 25.8	25.8	74.1 75.8	75.0	5.2 5.3	5.2		2.3 2.6	2.5		4.1 4.0	4.1	
					Bottom	33.7	26.2 26.4	26.3	8.3 8.2	8.2	26.2 26.0	26.1	75.5 78.8	77.2	5.3 5.5	5.4	5.4	2.4 2.5	2.5		3.2 4.5	3.9	
29-Jun-16	Sunny	Moderate	15:16	36.1	Surface	1.0	27.8 27.9	27.9	8.3 8.3	8.3	20.3 19.4	19.9	76.9 77.1	77.0	5.4 5.4	5.4	5.4	3.3 3.3	3.3	3.5	4.9 4.2	4.6	4.9
					Middle	18.1	27.4 27.5	27.5	8.3 8.3	8.3	21.0 20.9	20.9	76.4 75.3	75.9	5.4 5.3	5.3		3.4 3.5	3.5		3.4 5.2	4.3	
					Bottom	35.1	27.2 27.3	27.2	8.3 8.3	8.3	22.7 22.3	22.5	73.7 74.1	73.9	5.2 5.2	5.2	5.2	3.6 3.6	3.6		5.4 6.3	5.9	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS(Mf)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-Jun-16	Sunny	Moderate	11:31	3.4	Surface	1.0	28.6 28.4	28.5	8.6 8.6	8.6	17.2 17.3	17.3	111.0 111.1	111.1	7.8 7.8	7.8	7.8	7.4 7.2	7.3	7.3	5.4 6.5	6.0	6.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	28.3 28.7	28.5	8.5 8.6	8.5	20.0 19.6	19.8	109.9 110.3	110.1	7.7 7.7	7.7	7.7	7.2 7.4	7.3		8.4 7.1	7.8	
3-Jun-16	Sunny	Moderate	12:05	3.3	Surface	1.0	28.9 28.9	28.9	8.4 8.4	8.4	15.9 15.8	15.8	104.5 104.1	104.3	7.4 7.4	7.4	7.4	2.0 1.9	2.0	2.2	3.9 3.8	3.9	3.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	28.9 28.9	28.9	8.3 8.3	8.3	16.6 16.7	16.6	104.2 103.6	103.9	7.3 7.3	7.3	7.3	2.3 2.2	2.3		4.1 3.5	3.8	
6-Jun-16	Cloudy	Moderate	12:51	3.3	Surface	1.0	28.0 28.0	28.0	8.2 8.2	8.2	19.0 19.0	19.0	86.2 86.0	86.1	6.1 6.1	6.1	6.1	2.8 3.0	2.9	3.1	3.1 3.1	3.1	2.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	28.0 28.0	28.0	8.1 8.2	8.1	20.0 19.9	20.0	86.5 86.0	86.3	6.1 6.0	6.0	6.0	3.2 3.1	3.2		2.0 2.8	2.4	
8-Jun-16	Sunny	Moderate	14:13	3.3	Surface	1.0	28.6 28.6	28.6	8.4 8.4	8.4	18.9 19.0	19.0	86.6 86.3	86.5	6.0 6.0	6.0	6.0	2.5 2.4	2.5	2.5	5.6 5.1	5.4	6.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	28.4 28.3	28.3	8.4 8.4	8.4	19.8 19.8	19.8	86.3 85.4	85.9	6.0 6.0	6.0	6.0	2.3 2.5	2.4		7.2 8.5	7.9	
10-Jun-16	Rainy	Moderate	15:50	3.4	Surface	1.0	28.7 28.7	28.7	8.6 8.6	8.6	17.1 17.2	17.1	108.6 107.9	108.3	7.6 7.6	7.6	7.6	2.6 2.8	2.7	2.8	3.8 3.5	3.7	3.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	28.4 28.6	28.5	8.6 8.6	8.6	17.6 18.0	17.8	106.7 107.9	107.3	7.5 7.6	7.5	7.5	2.9 2.8	2.9		3.0 2.6	2.8	
13-Jun-16	Cloudy	Moderate	09:18	3.3	Surface	1.0	27.7 27.8	27.8	8.1 8.2	8.1	15.8 15.8	15.8	82.5 87.8	85.2	5.9 6.3	6.1	6.1	2.5 2.5	2.5	2.5	2.6 2.9	2.8	2.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	27.7 27.6	27.7	8.1 8.1	8.1	17.5 17.7	17.6	81.2 82.6	81.9	5.9 5.9	5.9	5.9	2.5 2.5	2.5		2.5 3.0	2.8	
15-Jun-16	Sunny	Moderate	11:15	3.2	Surface	1.0	28.8 28.9	28.8	8.2 8.3	8.3	14.9 14.9	14.9	94.8 95.7	95.3	6.7 6.8	6.8	6.8	5.0 5.0	5.0	5.1	5.2 5.1	5.2	5.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	28.8 28.8	28.8	8.2 8.3	8.3	15.1 14.9	15.0	95.2 96.6	95.9	6.8 6.9	6.8	6.8	5.1 5.1	5.1		5.3 6.4	5.9	
17-Jun-16	Sunny	Moderate	12:28	3.3	Surface	1.0	29.2 29.1	29.1	8.3 8.3	8.3	11.8 11.8	11.8	98.8 95.4	97.1	7.1 6.9	7.0	7.0	4.8 4.7	4.8	4.8	3.5 3.2	3.4	3.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	28.6 29.0	28.8	8.2 8.3	8.3	15.0 15.0	15.0	94.5 97.0	95.8	6.7 6.9	6.8	6.8	4.6 4.7	4.7		2.1 3.2	2.7	
20-Jun-16	Sunny	Moderate	11:41	3.3	Surface	1.0	28.5 28.4	28.5	8.3 8.3	8.3	18.1 18.3	18.2	99.1 97.4	98.3	7.0 6.8	6.9	6.9	7.0 7.2	7.1	7.2	6.2 6.9	6.6	6.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	28.4 28.3	28.4	8.3 8.3	8.3	18.9 19.0	19.0	98.3 96.6	97.5	6.9 6.8	6.8	6.8	7.2 7.4	7.3		6.1 6.5	6.3	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	12:52	3.3	Surface	1.0	28.6 28.5	28.5	8.4 8.4	8.4	17.6 17.7	17.7	92.7 95.9	94.3	6.5 6.7	6.6	6.6	6.6 6.7	6.7	6.9	6.9 7.5	7.2	7.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	28.5 28.6	28.6	8.4 8.4	8.4	17.7 17.6	17.6	93.5 92.0	92.8	6.6 6.5	6.5	6.5	7.0 6.9	7.0		7.4 8.9	8.2	
24-Jun-16	Sunny	Moderate	14:16	3.2	Surface	1.0	29.6 29.6	29.6	8.4 8.4	8.4	18.4 18.6	18.5	107.7 114.3	111.0	7.4 7.9	7.6	7.6	6.4 6.0	6.2	6.3	6.6 6.0	6.3	6.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	29.6 29.1	29.3	8.4 8.4	8.4	18.8 19.3	19.0	112.4 103.7	108.1	7.7 7.2	7.4	7.4	6.2 6.6	6.4		6.7 6.4	6.6	
27-Jun-16	Sunny	Moderate	16:58	3.2	Surface	1.0	30.0 30.0	30.0	8.5 8.5	8.5	20.1 20.0	20.1	151.7 150.6	151.2	10.3 10.2	10.2	10.2	5.7 5.8	5.8	5.9	7.3 7.8	7.6	7.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	29.9 30.0	29.9	8.5 8.5	8.5	20.6 20.4	20.5	133.2 134.6	133.9	9.0 9.2	9.1	9.1	5.8 5.9	5.9		8.3 7.7	8.0	
29-Jun-16	Sunny	Moderate	09:35	3.2	Surface	1.0	28.6 28.6	28.6	8.4 8.4	8.4	20.7 20.8	20.8	86.5 87.0	86.8	6.0 6.0	6.0	6.0	5.8 5.7	5.8	5.8	5.9 6.1	6.0	5.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	28.0 28.1	28.1	8.4 8.4	8.4	22.5 22.5	22.5	85.8 86.1	86.0	5.9 5.9	5.9	5.9	5.8 5.8	5.8		6.2 4.5	5.4	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS(Mf)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-Jun-16	Sunny	Moderate	14:27	3.3	Surface	1.0	30.0 30.0	30.0	8.9 8.9	8.9	16.1 16.1	16.1	143.0 152.0	147.5	9.9 10.5	10.2	10.2	4.5 4.7	4.6	4.7	8.1 9.0	8.6	8.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	29.8 30.1	29.9	8.8 8.9	8.8	16.2 16.1	16.1	132.8 147.6	140.2	9.2 10.2	9.7	9.7	4.7 4.9	4.8		8.9 8.6	8.8	
3-Jun-16	Sunny	Moderate	16:48	3.3	Surface	1.0	29.3 30.1	29.7	8.5 8.6	8.6	18.0 16.9	17.5	132.1 132.2	132.2	9.1 9.1	9.1	9.1	12.5 12.7	12.6	13.2	8.9 8.1	8.5	9.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	29.7 29.6	29.7	8.6 8.5	8.6	18.1 18.3	18.2	131.2 134.7	133.0	9.1 9.3	9.2	9.2	13.5 13.9	13.7		10.4 10.1	10.3	
6-Jun-16	Cloudy	Moderate	07:45	3.3	Surface	1.0	28.0 28.0	28.0	8.3 8.3	8.3	19.2 19.3	19.2	86.9 86.6	86.8	6.1 6.1	6.1	6.1	2.8 2.8	2.8	2.9	3.1 4.2	3.7	3.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	28.0 28.0	28.0	8.3 8.3	8.3	19.3 19.4	19.4	86.3 86.7	86.5	6.1 6.1	6.1	6.1	2.8 2.9	2.9		3.5 3.6	3.6	
8-Jun-16	Sunny	Moderate	09:08	3.4	Surface	1.0	28.0 28.0	28.0	8.2 8.2	8.2	17.0 17.0	17.0	81.3 84.3	82.8	5.8 6.0	5.9	5.9	1.8 1.8	1.8	1.8	4.1 3.7	3.9	3.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	28.0 28.0	28.0	8.2 8.2	8.2	18.0 18.0	18.0	80.7 82.3	81.5	5.7 5.9	5.8	5.8	1.8 1.8	1.8		3.8 3.0	3.4	
10-Jun-16	Sunny	Moderate	11:02	3.3	Surface	1.0	28.4 28.4	28.4	8.3 8.3	8.3	18.1 18.1	18.1	90.7 92.2	91.5	6.4 6.5	6.4	6.4	1.4 1.4	1.4	1.5	3.1 2.9	3.0	2.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	28.4 28.3	28.4	8.3 8.3	8.3	18.1 18.5	18.3	91.5 92.7	92.1	6.4 6.5	6.5	6.5	1.5 1.4	1.5		2.4 2.6	2.5	
13-Jun-16	Cloudy	Moderate	12:06	3.4	Surface	1.0	28.1 27.9	28.0	8.2 8.2	8.2	15.9 16.2	16.1	88.9 82.1	85.5	6.4 5.9	6.1	6.1	2.0 2.1	2.1	2.2	3.6 2.8	3.2	3.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	27.7 27.8	27.8	8.2 8.2	8.2	16.8 16.6	16.7	85.5 82.0	83.8	6.1 5.9	6.0	6.0	2.1 2.2	2.2		2.5 3.6	3.1	
15-Jun-16	Sunny	Moderate	15:04	3.3	Surface	1.0	29.0 29.1	29.0	8.4 8.4	8.4	13.1 13.1	13.1	94.5 97.4	96.0	6.8 7.0	6.9	6.9	7.2 7.2	7.2	7.3	3.4 4.1	3.8	4.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	28.9 28.7	28.8	8.4 8.4	8.4	13.5 13.7	13.6	96.5 93.6	95.1	6.9 6.7	6.8	6.8	7.4 7.1	7.3		3.8 5.0	4.4	
17-Jun-16	Sunny	Moderate	16:50	3.3	Surface	1.0	29.9 29.9	29.9	8.6 8.6	8.6	10.7 10.7	10.7	112.8 116.9	114.9	8.1 8.4	8.2	8.2	4.7 4.8	4.8	4.9	4.5 4.4	4.5	5.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	29.2 29.7	29.4	8.5 8.6	8.5	12.3 12.5	12.4	112.4 115.2	113.8	8.0 8.2	8.1	8.1	4.9 4.9	4.9		6.3 5.8	6.1	
20-Jun-16	Sunny	Moderate	07:14	3.2	Surface	1.0	29.0 29.0	29.0	8.5 8.5	8.5	17.2 17.1	17.2	121.2 115.0	118.1	8.5 8.1	8.3	8.3	4.7 4.6	4.7	4.8	6.2 5.9	6.1	6.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	29.0 28.9	28.9	8.4 8.4	8.4	17.8 17.8	17.8	118.3 104.2	111.3	8.3 7.3	7.8	7.8	4.8 4.9	4.9		6.4 6.7	6.6	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS(Mf)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-Jun-16	Sunny	Moderate	08:27	3.4	Surface	1.0	28.6 28.6	28.6	8.4 8.4	8.4	17.5 17.4	17.5	105.3 104.4	104.9	7.4 7.4	7.4	7.4	4.5 4.4	4.5	4.5	3.8 3.9	3.9	4.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	28.6 28.6	28.6	8.4 8.4	8.4	17.7 17.5	17.6	101.1 105.0	103.1	7.1 7.4	7.2	7.2	4.4 4.5	4.5		5.0 5.0	5.0	
24-Jun-16	Sunny	Moderate	09:46	3.3	Surface	1.0	28.3 28.2	28.3	8.2 8.2	8.2	18.2 18.5	18.3	76.7 77.3	77.0	5.4 5.4	5.4	5.4	7.7 8.0	7.9	7.7	5.1 5.6	5.4	6.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	28.2 28.0	28.1	8.2 8.2	8.2	19.2 19.1	19.2	77.2 76.4	76.8	5.4 5.4	5.4	5.4	7.7 7.3	7.5		7.2 7.1	7.2	
27-Jun-16	Sunny	Moderate	12:17	3.3	Surface	1.0	29.3 29.3	29.3	8.5 8.4	8.5	21.4 21.3	21.4	123.3 123.8	123.6	8.1 8.1	8.1	8.1	4.8 4.7	4.8	4.8	6.9 6.9	6.9	7.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	29.3 29.3	29.3	8.4 8.5	8.4	21.4 21.5	21.4	118.7 117.5	118.1	7.9 7.7	7.8	7.8	4.9 4.7	4.8		7.0 7.0	7.0	
29-Jun-16	Sunny	Moderate	13:21	3.3	Surface	1.0	29.1 29.1	29.1	8.5 8.5	8.5	19.2 19.2	19.2	112.4 111.6	112.0	7.8 7.7	7.7	7.7	3.3 3.2	3.3	3.3	3.1 5.2	4.2	4.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	29.1 29.0	29.1	8.5 8.5	8.5	19.2 19.2	19.2	108.4 103.6	106.0	7.5 7.2	7.3	7.3	3.3 3.3	3.3		4.1 4.7	4.4	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	11:16	3.5	Surface	1.0	29.0 29.0	29.0	8.6 8.6	8.6	17.2 17.1	17.2	119.6 116.1	117.9	8.4 8.1	8.3	8.3	6.3 6.2	6.3	6.3	5.8 4.7	5.3	4.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	29.0 29.0	29.0	8.6 8.6	8.6	17.2 17.1	17.1	117.9 112.1	115.0	8.3 7.9	8.1	8.1	6.3 6.3	6.3		5.2 3.1	4.2	
3-Jun-16	Sunny	Moderate	11:51	3.5	Surface	1.0	28.9 29.0	29.0	8.4 8.4	8.4	15.7 15.5	15.6	104.2 103.7	104.0	7.4 7.3	7.3	7.3	2.4 2.4	2.4	2.5	4.4 4.2	4.3	4.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	28.8 28.8	28.8	8.4 8.4	8.4	16.3 16.5	16.4	101.4 104.0	102.7	7.2 7.3	7.2	7.2	2.4 2.5	2.5		5.2 4.8	5.0	
6-Jun-16	Cloudy	Moderate	13:06	3.7	Surface	1.0	28.0 28.0	28.0	8.3 8.3	8.3	19.1 19.1	19.1	84.8 84.7	84.8	6.0 6.0	6.0	6.0	3.1 3.2	3.2	3.2	2.4 2.4	2.4	2.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	28.0 28.0	28.0	8.2 8.2	8.2	20.3 20.3	20.3	85.0 85.2	85.1	6.0 6.0	6.0	6.0	3.2 3.2	3.2		3.0 2.4	2.7	
8-Jun-16	Sunny	Moderate	14:27	3.6	Surface	1.0	28.3 28.3	28.3	8.4 8.4	8.4	18.4 18.7	18.6	81.5 85.8	83.7	5.7 6.0	5.9	5.9	2.5 2.7	2.6	2.6	4.3 4.4	4.4	4.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	28.3 27.9	28.1	8.4 8.3	8.4	18.6 21.9	20.3	83.7 82.2	83.0	5.9 5.7	5.8	5.8	2.6 2.5	2.6		4.8 4.5	4.7	
10-Jun-16	Rainy	Moderate	16:05	3.6	Surface	1.0	28.6 28.7	28.6	8.5 8.5	8.5	17.4 17.4	17.4	101.7 105.0	103.4	7.2 7.4	7.3	7.3	2.4 2.6	2.5	2.6	3.5 3.2	3.4	3.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	28.2 28.6	28.4	8.5 8.5	8.5	18.6 18.5	18.5	100.2 104.4	102.3	7.1 7.3	7.2	7.2	2.5 2.6	2.6		4.2 4.5	4.4	
13-Jun-16	Cloudy	Moderate	08:59	3.4	Surface	1.0	27.6 27.6	27.6	8.1 8.1	8.1	16.7 16.2	16.4	87.7 94.2	91.0	6.3 6.8	6.6	6.6	1.9 1.8	1.9	1.9	2.0 4.2	3.1	2.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	27.7 27.6	27.6	8.1 8.1	8.1	15.6 16.4	16.0	89.6 85.5	87.6	6.5 6.1	6.3	6.3	1.8 1.9	1.9		2.9 2.3	2.6	
15-Jun-16	Sunny	Moderate	11:02	3.7	Surface	1.0	28.5 28.8	28.7	8.2 8.2	8.2	14.8 14.1	14.4	88.0 84.3	86.2	6.1 6.0	6.1	6.1	7.9 7.6	7.8	7.7	4.2 4.7	4.5	5.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	28.4 28.7	28.5	8.1 8.2	8.2	14.7 14.2	14.4	84.6 84.0	84.3	6.1 6.0	6.0	6.0	7.5 7.5	7.5		6.6 6.9	6.8	
17-Jun-16	Sunny	Moderate	12:12	3.7	Surface	1.0	29.0 28.7	28.9	8.3 8.3	8.3	11.9 12.2	12.0	76.0 80.7	78.4	5.5 5.8	5.7	5.7	5.5 5.5	5.5	5.6	3.3 3.3	3.3	4.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	28.5 27.6	28.0	8.1 8.1	8.1	18.6 18.3	18.5	80.3 75.4	77.9	5.6 5.5	5.5	5.5	5.6 5.6	5.6		5.2 4.4	4.8	
20-Jun-16	Sunny	Moderate	11:57	3.6	Surface	1.0	28.6 28.6	28.6	8.4 8.4	8.4	17.1 17.3	17.2	110.0 110.7	110.4	7.8 7.8	7.8	7.8	6.9 7.2	7.1	7.9	5.1 5.3	5.2	5.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	28.5 28.5	28.5	8.4 8.4	8.4	19.4 19.4	19.4	114.0 111.2	112.6	7.9 7.8	7.8	7.8	8.5 8.7	8.6		5.9 6.1	6.0	

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

Appendix J - Marine Water Quality Monitoring Results

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

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jun-16	Sunny	Moderate	13:05	3.5	Surface	1.0	28.3 28.2	28.3	8.3 8.3	8.3	18.2 18.3	18.2	82.6 82.8	82.7	5.8 5.8	5.8	5.8	7.0 7.1	7.1	7.2	8.0 7.7	7.9	8.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	28.3 28.1	28.2	8.3 8.3	8.3	18.2 18.6	18.4	82.5 82.3	82.4	5.8 5.8	5.8	5.8	7.2 7.2	7.2		8.4 8.4	8.4	
24-Jun-16	Sunny	Moderate	14:31	3.5	Surface	1.0	29.1 28.9	29.0	8.5 8.5	8.5	17.9 18.6	18.3	117.4 112.5	115.0	8.2 7.8	8.0	8.0	5.5 6.0	5.8	5.9	6.3 6.1	6.2	5.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	28.9 28.7	28.8	8.5 8.5	8.5	18.7 19.1	18.9	115.4 113.6	114.5	8.0 7.9	8.0	8.0	5.8 6.2	6.0		6.3 4.7	5.5	
27-Jun-16	Sunny	Moderate	17:15	3.5	Surface	1.0	29.5 29.4	29.4	8.5 8.5	8.5	20.2 20.3	20.3	143.8 144.9	144.4	9.8 9.9	9.9	9.9	8.1 8.1	8.1	8.2	8.7 8.9	8.8	8.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	29.2 29.3	29.3	8.5 8.5	8.5	20.4 20.5	20.4	132.5 135.6	134.1	9.2 9.3	9.2	9.2	8.2 8.2	8.2		8.6 8.8	8.7	
29-Jun-16	Sunny	Moderate	09:14	3.7	Surface	1.0	28.7 28.6	28.7	8.4 8.4	8.4	18.6 18.6	18.6	91.2 89.8	90.5	6.4 6.3	6.3	6.3	6.2 6.5	6.4	6.4	3.3 2.3	2.8	3.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	28.4 28.6	28.5	8.4 8.4	8.4	22.2 22.1	22.2	96.0 93.6	94.8	6.6 6.4	6.5	6.5	6.3 6.3	6.3		5.2 4.4	4.8	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	14:40	3.3	Surface	1.0	30.1 30.1	30.1	8.9 8.9	8.9	16.1 16.1	16.1	168.5 168.2	168.4	11.6 11.6	11.6	11.6	4.4 4.5	4.5	4.5	10.4 10.8	10.6	10.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	30.0 30.1	30.1	8.9 8.9	8.9	16.2 16.1	16.1	168.0 168.2	168.1	11.6 11.6	11.6	11.6	4.6 4.4	4.5		10.0 11.3	10.7	
3-Jun-16	Sunny	Moderate	17:04	3.5	Surface	1.0	30.2 30.2	30.2	8.6 8.6	8.6	17.2 17.2	17.2	143.4 140.2	141.8	9.8 9.6	9.7	9.7	16.0 16.1	16.1	16.1	22.5 22.1	22.3	22.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	30.2 29.8	30.0	8.6 8.6	8.6	17.3 17.8	17.6	141.8 138.0	139.9	9.7 9.5	9.6	9.6	16.4 15.8	16.1		22.6 22.6	22.6	
6-Jun-16	Cloudy	Moderate	07:31	3.7	Surface	1.0	27.9 28.0	27.9	8.3 8.3	8.3	19.3 19.3	19.3	87.7 89.2	88.5	6.2 6.3	6.2	6.2	3.2 3.0	3.1	3.1	2.8 3.4	3.1	3.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	27.9 27.9	27.9	8.3 8.3	8.3	20.1 19.4	19.8	88.6 91.7	90.2	6.2 6.5	6.3	6.3	3.2 3.0	3.1		3.5 2.9	3.2	
8-Jun-16	Sunny	Moderate	08:52	3.7	Surface	1.0	28.0 28.0	28.0	8.2 8.2	8.2	17.2 17.3	17.3	81.3 78.5	79.9	5.8 5.6	5.7	5.7	3.5 3.2	3.4	3.4	4.2 4.9	4.6	5.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	28.0 28.0	28.0	8.2 8.2	8.2	18.9 19.0	18.9	79.4 83.1	81.3	5.6 5.9	5.7	5.7	3.3 3.4	3.4		6.2 4.5	5.4	
10-Jun-16	Sunny	Moderate	10:43	3.8	Surface	1.0	28.1 28.1	28.1	8.3 8.3	8.3	18.7 18.7	18.7	85.1 85.3	85.2	6.0 6.0	6.0	6.0	2.8 2.8	2.8	2.8	3.4 3.9	3.7	4.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	28.0 28.1	28.0	8.2 8.2	8.2	20.0 19.7	19.9	82.0 85.0	83.5	5.7 6.0	5.9	5.9	2.8 2.8	2.8		3.6 4.8	4.2	
13-Jun-16	Cloudy	Moderate	12:26	3.3	Surface	1.0	27.9 27.9	27.9	8.3 8.3	8.3	15.1 15.2	15.2	90.8 94.4	92.6	6.5 6.8	6.7	6.7	2.1 2.0	2.1	2.1	2.7 2.9	2.8	2.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	28.2 27.9	28.1	8.3 8.3	8.3	15.2 15.1	15.1	91.9 89.5	90.7	6.6 6.5	6.5	6.5	2.1 2.1	2.1		2.7 3.0	2.9	
15-Jun-16	Sunny	Moderate	15:19	3.6	Surface	1.0	29.1 29.0	29.1	8.4 8.4	8.4	12.8 12.7	12.8	98.1 97.3	97.7	7.0 7.0	7.0	7.0	7.5 7.4	7.5	7.6	3.8 4.8	4.3	5.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	29.0 29.0	29.0	8.4 8.4	8.4	13.1 13.3	13.2	97.7 97.4	97.6	7.0 7.0	7.0	7.0	7.7 7.5	7.6		6.8 6.6	6.7	
17-Jun-16	Sunny	Moderate	17:07	3.8	Surface	1.0	29.6 29.8	29.7	8.6 8.6	8.6	11.6 11.4	11.5	115.7 115.3	115.5	8.3 8.2	8.2	8.2	8.6 8.5	8.6	8.7	4.3 3.9	4.1	4.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	29.6 29.5	29.5	8.6 8.6	8.6	12.0 13.0	12.5	111.3 116.8	114.1	7.9 8.3	8.1	8.1	8.4 8.9	8.7		4.4 4.2	4.3	
20-Jun-16	Sunny	Moderate	06:57	3.6	Surface	1.0	28.9 28.8	28.9	8.4 8.4	8.4	16.9 16.9	16.9	126.7 123.7	125.2	8.9 8.7	8.8	8.8	4.2 4.2	4.2	4.3	7.4 6.5	7.0	6.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	28.9 28.8	28.9	8.4 8.4	8.4	16.9 16.9	16.9	124.6 124.0	124.3	8.8 8.7	8.7	8.7	4.3 4.2	4.3		6.6 6.5	6.6	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS(Mf)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-Jun-16	Sunny	Moderate	08:13	3.5	Surface	1.0	28.3 28.3	28.3	8.3 8.3	8.3	17.6 17.6	17.6	89.9 88.3	89.1	6.4 6.2	6.3	6.3	5.4 5.5	5.5	5.6	4.7 4.0	4.4	4.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	28.3 28.3	28.3	8.3 8.3	8.3	17.5 17.6	17.6	87.8 88.8	88.3	6.2 6.3	6.2	6.2	5.6 5.5	5.6		3.9 4.3	4.1	
24-Jun-16	Sunny	Moderate	09:29	3.4	Surface	1.0	28.1 28.1	28.1	8.2 8.2	8.2	19.1 19.3	19.2	77.7 76.3	77.0	5.5 5.4	5.4	5.4	7.3 7.4	7.4	7.4	5.2 4.6	4.9	6.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	28.0 28.0	28.0	8.2 8.2	8.2	20.2 20.1	20.2	76.7 78.5	77.6	5.4 5.5	5.4	5.4	7.3 7.4	7.4		7.0 7.0	7.0	
27-Jun-16	Sunny	Moderate	12:03	3.6	Surface	1.0	28.7 28.8	28.7	8.4 8.4	8.4	20.7 20.5	20.6	106.8 107.5	107.2	7.4 7.4	7.4	7.4	13.3 13.5	13.4	13.3	11.9 11.8	11.9	11.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	28.5 28.6	28.5	8.4 8.4	8.4	22.2 22.2	22.2	106.4 106.8	106.6	7.3 7.3	7.3	7.3	13.2 13.2	13.2		11.6 11.8	11.7	
29-Jun-16	Sunny	Moderate	13:35	3.6	Surface	1.0	28.6 28.7	28.7	8.5 8.5	8.5	20.3 20.3	20.3	99.8 100.6	100.2	6.9 7.0	6.9	6.9	7.1 7.1	7.1	7.2	9.7 9.8	9.8	9.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	28.5 28.6	28.6	8.5 8.5	8.5	20.6 20.8	20.7	100.1 100.1	100.1	6.9 6.9	6.9	6.9	7.3 7.3	7.3		9.4 9.0	9.2	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	09:59	10.2	Surface	1.0	28.7 28.7	28.7	8.4 8.4	8.4	11.1 11.2	11.1	94.4 97.2	95.8	6.9 7.1	7.0	6.8	7.8 7.6	7.7	9.2	2.4 3.7	3.1	3.5
					Middle	5.1	27.9 27.9	27.9	8.2 8.2	8.2	16.6 16.5	16.6	91.5 89.1	90.3	6.5 6.4	6.5		10.4 9.6	10.0		3.3 3.5	3.4	
					Bottom	9.2	27.7 28.1	27.9	8.1 8.2	8.2	19.6 20.9	20.2	92.8 98.2	95.5	6.5 6.8	6.7	6.7	9.9 9.8	9.9		3.7 4.2	4.0	
3-Jun-16	Sunny	Moderate	11:45	11.0	Surface	1.0	28.8 28.9	28.8	8.5 8.5	8.5	14.5 14.4	14.4	95.9 97.8	96.9	6.8 7.0	6.9	6.7	4.8 5.0	4.9	5.5	3.9 3.5	3.7	3.8
					Middle	5.5	28.2 27.9	28.0	8.3 8.3	8.3	22.5 22.8	22.7	95.9 94.5	95.2	6.6 6.5	6.5		5.7 5.8	5.8		3.0 3.9	3.5	
					Bottom	10.0	27.6 27.8	27.7	8.2 8.3	8.3	24.8 24.2	24.5	89.3 92.3	90.8	6.2 6.4	6.3	6.3	5.8 5.9	5.9		4.4 3.7	4.1	
6-Jun-16	Cloudy	Moderate	13:33	10.7	Surface	1.0	27.8 27.8	27.8	8.3 8.2	8.3	16.3 17.3	16.8	82.6 80.4	81.5	5.8 5.7	5.8	5.7	2.3 2.3	2.3	2.6	2.6 3.0	2.8	2.7
					Middle	5.4	27.7 27.7	27.7	8.2 8.2	8.2	19.5 19.2	19.4	79.3 79.7	79.5	5.7 5.6	5.6		2.6 2.5	2.6		2.7 2.8	2.8	
					Bottom	9.7	27.7 27.7	27.7	8.2 8.2	8.2	20.0 20.1	20.0	76.8 77.6	77.2	5.4 5.5	5.5	5.5	2.9 2.7	2.8		2.4 2.5	2.5	
8-Jun-16	Sunny	Moderate	15:00	10.6	Surface	1.0	28.8 28.6	28.7	8.3 8.3	8.3	13.8 13.9	13.9	83.0 80.6	81.8	6.0 5.7	5.9	5.8	2.0 1.9	2.0	2.7	2.0 3.0	2.5	2.8
					Middle	5.3	27.8 27.8	27.8	8.1 8.1	8.1	19.2 21.1	20.1	76.5 78.9	77.7	5.5 5.8	5.6		3.5 3.5	3.5		2.4 2.3	2.4	
					Bottom	9.6	28.1 28.0	28.0	8.1 8.1	8.1	21.0 21.1	21.0	72.8 75.1	74.0	5.3 5.4	5.3	5.3	2.7 2.4	2.6		3.2 3.6	3.4	
10-Jun-16	Rainy	Moderate	16:35	10.7	Surface	1.0	29.3 29.0	29.1	8.4 8.4	8.4	14.1 14.6	14.4	75.9 74.5	75.2	6.0 5.8	5.9	5.8	2.7 2.7	2.7	3.4	2.4 2.6	2.5	2.6
					Middle	5.4	27.2 27.2	27.2	8.2 8.2	8.2	24.1 24.2	24.1	72.8 73.6	73.2	5.7 5.7	5.7		4.0 3.9	4.0		3.2 2.4	2.8	
					Bottom	9.7	27.2 27.5	27.4	8.2 8.2	8.2	24.1 24.1	24.1	74.1 74.6	74.4	5.8 5.8	5.8	5.8	3.6 3.4	3.5		2.2 2.7	2.5	
13-Jun-16	Cloudy	Moderate	07:49	10.4	Surface	1.0	27.8 27.8	27.8	8.1 8.1	8.1	19.7 19.5	19.6	82.6 81.7	82.2	6.1 6.1	6.1	6.1	3.7 3.6	3.7	3.8	4.4 3.9	4.2	4.2
					Middle	5.2	27.8 27.7	27.8	8.1 8.1	8.1	18.7 20.3	19.5	81.2 81.5	81.4	6.0 6.0	6.0		3.8 3.8	3.8		3.1 3.5	3.3	
					Bottom	9.4	27.8 27.8	27.8	8.0 8.1	8.1	18.9 19.1	19.0	80.3 81.3	80.8	6.0 6.0	6.0	6.0	3.9 4.0	4.0		4.6 5.3	5.0	
15-Jun-16	Sunny	Moderate	10:52	11.0	Surface	1.0	28.9 28.8	28.9	8.3 8.3	8.3	7.8 7.8	7.8	82.0 81.4	81.7	6.1 6.0	6.0	6.0	5.8 5.6	5.7	6.5	4.5 4.5	4.5	4.7
					Middle	5.5	27.1 27.0	27.1	7.9 7.9	7.9	24.1 24.0	24.1	83.9 84.3	84.1	5.9 5.9	5.9		6.5 6.2	6.4		4.3 4.1	4.2	
					Bottom	10.0	25.3 25.3	25.3	7.8 7.8	7.8	28.4 28.4	28.4	79.0 78.8	78.9	5.5 5.4	5.5	5.5	7.3 7.4	7.4		4.8 6.0	5.4	
17-Jun-16	Sunny	Moderate	11:21	10.3	Surface	1.0	29.1 29.1	29.1	8.2 8.2	8.2	7.4 7.7	7.6	78.6 81.3	80.0	5.8 6.0	5.9	5.7	6.6 6.4	6.5	6.6	5.5 6.4	6.0	6.0
					Middle	5.2	26.9 26.9	26.9	7.7 7.8	7.8	21.9 20.9	21.4	80.6 77.3	79.0	5.6 5.5	5.5		6.6 6.7	6.7		6.4 5.3	5.9	
					Bottom	9.3	26.7 26.8	26.7	7.6 7.7	7.7	25.8 23.6	24.7	76.6 75.0	75.8	5.4 5.3	5.3	5.3	6.7 6.3	6.5		6.5 5.9	6.2	
20-Jun-16	Sunny	Moderate	12:48	10.6	Surface	1.0	28.3 28.5	28.4	8.1 8.1	8.1	20.0 18.8	19.4	76.9 74.5	75.7	5.7 5.5	5.6	5.5	4.4 4.3	4.4	4.6	5.0 6.0	5.5	5.8
					Middle	5.3	28.2 27.8	28.0	8.0 7.9	7.9	19.2 22.6	20.9	74.0 75.5	74.8	5.3 5.4	5.3		4.5 4.6	4.6		6.1 5.9	6.0	
					Bottom	9.6	28.0 27.9	27.9	7.9 7.8	7.8	24.0 23.5	23.8	71.3 71.5	71.4	5.1 5.2	5.1	5.1	4.8 4.8	4.8		5.9 5.6	5.8	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	15:04	10.6	Surface	1.0	29.0 29.0	29.0	8.3 8.2	8.3	9.6 9.5	9.6	74.9 74.7	74.8	5.8 5.7	5.7	5.7	8.5 8.3	8.4	10.1	2.5 2.4	2.5	3.2
					Middle	5.3	27.1 27.2	27.2	8.0 8.0	8.0	19.0 18.9	18.9	74.1 74.3	74.2	5.7 5.7	5.7		10.7 11.5	11.1		3.6 3.1	3.4	
					Bottom	9.6	27.1 27.2	27.1	7.9 7.9	7.9	20.8 20.4	20.6	74.2 74.1	74.2	5.7 5.6	5.7	5.7	10.6 11.2	10.9		3.4 3.9	3.7	
24-Jun-16	Sunny	Moderate	15:14	10.7	Surface	1.0	28.5 28.7	28.6	8.1 8.1	8.1	17.2 18.2	17.7	79.7 79.5	79.6	5.6 5.7	5.7	5.7	3.3 3.4	3.4	3.6	5.8 6.3	6.1	7.0
					Middle	5.4	29.3 29.3	29.3	8.1 8.1	8.1	18.7 18.8	18.8	78.9 78.9	78.9	5.7 5.6	5.6		3.6 3.5	3.6		7.1 7.3	7.2	
					Bottom	9.7	28.4 28.5	28.4	8.1 8.1	8.1	19.6 19.7	19.7	77.4 78.1	77.8	5.6 5.5	5.5	5.5	3.7 3.7	3.7		7.8 7.3	7.6	
27-Jun-16	Sunny	Moderate	17:43	10.3	Surface	1.0	30.5 29.6	30.1	8.5 8.4	8.4	15.0 15.5	15.2	100.6 98.0	99.3	6.9 6.9	6.9	6.2	4.0 4.0	4.0	4.6	4.9 4.8	4.9	4.7
					Middle	5.2	27.4 27.3	27.3	8.2 8.2	8.2	22.5 22.7	22.6	78.8 77.6	78.2	5.5 5.4	5.5		4.8 5.1	5.0		4.5 4.4	4.5	
					Bottom	9.3	27.3 27.3	27.3	8.3 8.2	8.2	22.7 22.7	22.7	81.4 80.7	81.1	5.7 5.6	5.7	5.7	4.7 5.1	4.9		4.4 4.7	4.6	
29-Jun-16	Sunny	Moderate	08:10	11.0	Surface	1.0	28.3 28.3	28.3	8.3 8.3	8.3	17.0 16.9	17.0	81.6 82.1	81.9	5.8 5.8	5.8	5.7	2.8 2.9	2.9	3.0	4.3 4.7	4.5	4.4
					Middle	5.5	27.7 27.6	27.7	8.2 8.3	8.3	19.1 18.9	19.0	77.9 81.4	79.7	5.5 5.7	5.6		3.0 3.0	3.0		5.0 4.2	4.6	
					Bottom	10.0	27.5 27.5	27.5	8.2 8.2	8.2	20.6 20.8	20.7	77.3 75.9	76.6	5.5 5.4	5.4	5.4	3.0 3.0	3.0		4.7 3.6	4.2	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	15:50	10.5	Surface	1.0	29.0 28.7	28.9	8.5 8.5	8.5	12.2 12.3	12.3	100.8 96.6	98.7	7.3 7.0	7.1	6.8	7.4 7.7	7.6	8.1	3.2 3.9	3.6	3.6
					Middle	5.3	27.8 27.8	27.8	8.3 8.3	8.3	19.1 19.0	19.0	89.9 93.5	91.7	6.4 6.6	6.5		8.7 8.2	8.5		3.7 3.3	3.5	
					Bottom	9.5	28.0 27.6	27.8	8.3 8.2	8.2	23.3 23.6	23.4	98.4 94.1	96.3	6.8 6.5	6.6	6.6	7.9 8.3	8.1		3.8 3.6	3.7	
3-Jun-16	Sunny	Moderate	17:56	10.7	Surface	1.0	29.4 29.3	29.4	8.5 8.5	8.5	13.0 13.4	13.2	107.9 103.6	105.8	7.7 7.4	7.5	7.3	4.7 4.8	4.8	4.8	4.4 3.9	4.2	3.7
					Middle	5.4	28.6 28.4	28.5	8.4 8.4	8.4	17.5 17.1	17.3	103.8 99.7	101.8	7.1 7.0	7.1		4.8 4.8	4.8		3.5 3.1	3.3	
					Bottom	9.7	28.5 27.8	28.1	8.4 8.3	8.3	22.0 22.3	22.1	93.4 92.5	93.0	6.5 6.5	6.5	6.5	4.7 4.9	4.8		3.0 3.9	3.5	
6-Jun-16	Cloudy	Moderate	07:08	10.8	Surface	1.0	27.7 27.8	27.8	8.3 8.3	8.3	20.0 21.0	20.5	77.5 76.5	77.0	5.4 5.4	5.4	5.4	5.4 5.4	5.4	5.6	3.3 2.5	2.9	3.3
					Middle	5.4	27.6 27.6	27.6	8.2 8.2	8.2	24.5 23.1	23.8	76.7 77.3	77.0	5.3 5.3	5.3		5.6 5.6	5.6		3.7 4.0	3.9	
					Bottom	9.8	27.6 27.5	27.6	8.2 8.2	8.2	24.7 24.4	24.6	76.5 75.7	76.1	5.3 5.2	5.2	5.2	5.8 5.9	5.9		3.2 2.9	3.1	
8-Jun-16	Sunny	Moderate	07:21	10.6	Surface	1.0	27.8 27.6	27.7	8.3 8.3	8.3	16.5 17.4	16.9	73.9 72.3	73.1	5.4 5.3	5.3	5.2	3.0 3.2	3.1	4.6	3.6 3.8	3.7	3.3
					Middle	5.3	27.1 27.2	27.2	8.1 8.1	8.1	24.2 22.9	23.5	71.5 71.7	71.6	5.1 5.1	5.1		5.5 5.4	5.5		3.4 2.6	3.0	
					Bottom	9.6	27.1 27.3	27.2	8.1 8.1	8.1	24.3 24.2	24.2	73.5 73.2	73.4	5.2 5.2	5.2	5.2	5.6 5.0	5.3		2.7 3.6	3.2	
10-Jun-16	Sunny	Moderate	09:55	10.5	Surface	1.0	28.1 28.4	28.2	8.3 8.3	8.3	14.6 14.6	14.6	74.4 74.6	74.5	5.6 5.7	5.6	5.5	3.4 3.0	3.2	3.8	4.8 5.0	4.9	4.7
					Middle	5.3	27.0 27.0	27.0	8.1 8.1	8.1	24.8 24.8	24.8	72.1 70.7	71.4	5.4 5.3	5.4		4.3 4.1	4.2		4.3 4.7	4.5	
					Bottom	9.5	27.3 27.0	27.1	8.1 8.1	8.1	24.8 25.0	24.9	72.2 71.1	71.7	5.5 5.4	5.4	5.4	4.2 4.0	4.1		4.8 4.6	4.7	
13-Jun-16	Cloudy	Moderate	13:51	10.4	Surface	1.0	28.1 28.2	28.1	8.2 8.1	8.1	18.1 18.2	18.1	80.3 80.2	80.3	5.9 5.9	5.9	5.8	3.8 3.9	3.9	4.2	3.3 2.7	3.0	2.7
					Middle	5.2	28.1 27.7	27.9	8.1 8.1	8.1	18.3 18.7	18.5	76.1 77.5	76.8	5.6 5.7	5.7		4.2 4.1	4.2		2.5 2.3	2.4	
					Bottom	9.4	27.7 27.4	27.5	8.0 7.9	8.0	21.0 22.7	21.8	69.6 71.7	70.7	5.2 5.1	5.2	5.2	4.4 4.3	4.4		2.5 2.9	2.7	
15-Jun-16	Sunny	Moderate	16:29	11.0	Surface	1.0	28.9 28.9	28.9	8.3 8.3	8.3	6.1 6.0	6.1	82.0 82.6	82.3	6.1 6.2	6.1	5.8	6.5 6.9	6.7	6.3	6.9 6.0	6.5	6.9
					Middle	5.5	27.6 27.6	27.6	8.0 8.0	8.0	14.3 14.3	14.3	76.5 75.1	75.8	5.5 5.5	5.5		5.7 5.9	5.8		6.8 7.2	7.0	
					Bottom	10.0	25.6 25.5	25.5	7.7 7.7	7.7	26.2 26.3	26.3	70.8 71.4	71.1	5.0 5.0	5.0	5.0	6.2 6.3	6.3		6.9 7.4	7.2	
17-Jun-16	Sunny	Moderate	17:49	10.6	Surface	1.0	29.2 29.0	29.1	8.2 8.2	8.2	7.6 7.7	7.6	76.8 77.8	77.3	5.7 5.4	5.5	5.5	7.7 7.6	7.7	7.2	7.3 7.2	7.3	6.9
					Middle	5.3	26.6 26.6	26.6	7.8 7.7	7.8	22.5 23.0	22.8	75.3 72.3	73.8	5.6 5.3	5.4		6.4 6.5	6.5		6.5 6.4	6.5	
					Bottom	9.6	26.8 25.7	26.3	7.8 7.7	7.8	26.7 28.2	27.4	69.8 70.2	70.0	5.0 5.1	5.1	5.1	7.2 7.5	7.4		7.2 6.6	6.9	
20-Jun-16	Sunny	Moderate	06:19	10.6	Surface	1.0	27.9 27.9	27.9	8.2 8.1	8.2	19.2 20.3	19.8	74.3 75.8	75.1	5.3 5.4	5.4	5.3	3.6 3.6	3.6	3.8	4.2 4.0	4.1	4.5
					Middle	5.3	27.4 27.4	27.4	8.0 8.1	8.1	24.7 24.8	24.7	73.2 72.9	73.1	5.3 5.2	5.2		3.8 3.8	3.8		4.8 4.6	4.7	
					Bottom	9.6	27.5 27.4	27.4	8.1 8.0	8.1	25.9 25.7	25.8	71.0 71.9	71.5	5.2 5.2	5.2	5.2	3.9 3.9	3.9		4.6 4.9	4.8	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	07:21	10.6	Surface	1.0	28.0 27.7	27.9	8.3 8.3	8.3	15.2 16.3	15.8	72.8 72.7	72.8	5.7 5.7	5.7	5.7	9.4 9.2	9.3	10.7	6.7 6.3	6.5	6.0
					Middle	5.3	26.3 26.2	26.3	8.1 8.1	8.1	24.1 24.4	24.3	73.1 73.2	73.2	5.7 5.7	5.7		11.0 10.8	10.9		4.7 6.1	5.4	
					Bottom	9.6	26.4 26.2	26.3	8.1 8.1	8.1	24.4 24.5	24.5	73.3 74.0	73.7	5.7 5.8	5.8	5.8	12.2 11.3	11.8		6.3 5.6	6.0	
24-Jun-16	Sunny	Moderate	08:42	10.7	Surface	1.0	27.9 28.0	28.0	8.2 8.2	8.2	17.5 17.1	17.3	75.9 77.6	76.8	5.4 5.5	5.5	5.4	4.9 4.8	4.9	5.1	6.0 5.7	5.9	6.2
					Middle	5.4	27.5 27.3	27.4	8.1 8.1	8.1	19.6 20.0	19.8	72.8 73.2	73.0	5.1 5.2	5.2		5.0 5.1	5.1		6.0 6.6	6.3	
					Bottom	9.7	26.7 27.3	27.0	8.1 8.1	8.1	21.6 20.3	20.9	71.3 71.5	71.4	5.1 5.1	5.1	5.1	5.3 5.2	5.3		6.2 6.6	6.4	
27-Jun-16	Sunny	Moderate	11:24	10.7	Surface	1.0	28.5 28.5	28.5	8.3 8.3	8.3	19.0 19.2	19.1	92.7 96.9	94.8	6.5 6.8	6.6	6.0	4.0 3.8	3.9	6.7	4.6 5.1	4.9	4.8
					Middle	5.4	26.7 26.7	26.7	8.2 8.2	8.2	24.4 24.4	24.4	77.2 77.6	77.4	5.4 5.4	5.4		7.8 8.4	8.1		5.4 4.2	4.8	
					Bottom	9.7	26.5 26.6	26.5	8.2 8.2	8.2	25.6 25.6	25.6	81.2 80.9	81.1	5.7 5.6	5.6	5.6	7.8 8.6	8.2		4.1 5.3	4.7	
29-Jun-16	Sunny	Moderate	14:06	11.1	Surface	1.0	27.5 28.3	27.9	8.2 8.3	8.3	19.2 18.8	19.0	72.7 83.4	78.1	5.2 5.9	5.5	5.4	3.1 3.0	3.1	3.2	3.7 4.1	3.9	4.2
					Middle	5.6	27.1 27.0	27.0	8.2 8.2	8.2	22.0 22.0	22.0	72.3 74.8	73.6	5.1 5.2	5.2		3.1 3.2	3.2		5.0 5.0	5.0	
					Bottom	10.1	26.9 27.2	27.1	8.2 8.2	8.2	23.2 23.1	23.2	71.7 72.3	72.0	5.1 5.1	5.1	5.1	3.2 3.3	3.3		3.4 3.7	3.6	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	09:48	10.6	Surface	1.0	28.7 28.5	28.6	8.4 8.4	8.4	10.5 10.6	10.5	95.0 92.1	93.6	6.9 6.7	6.8	6.6	7.4 7.3	7.4	7.6	3.5 3.0	3.3	3.5
					Middle	5.3	27.9 27.8	27.9	8.2 8.1	8.2	16.8 17.5	17.1	88.8 87.8	88.3	6.3 6.3	6.3		7.6 7.8	7.7		3.6 4.0	3.8	
					Bottom	9.6	27.8 27.6	27.7	8.1 8.0	8.1	20.6 21.5	21.0	92.0 90.1	91.1	6.4 6.3	6.4	6.4	7.7 7.8	7.8		4.2 2.6	3.4	
3-Jun-16	Sunny	Moderate	11:37	10.8	Surface	1.0	28.8 28.8	28.8	8.5 8.5	8.5	14.7 14.8	14.7	95.6 95.7	95.7	6.8 6.8	6.8	6.5	5.2 5.3	5.3	6.7	3.5 3.0	3.3	4.8
					Middle	5.4	27.9 28.0	28.0	8.3 8.3	8.3	22.2 23.2	22.7	87.6 88.4	88.0	6.1 6.1	6.1		7.4 7.3	7.4		5.0 5.8	5.4	
					Bottom	9.8	27.5 27.6	27.6	8.2 8.3	8.2	25.2 24.4	24.8	87.8 87.5	87.7	6.1 6.0	6.0	6.0	7.3 7.5	7.4		4.8 6.3	5.6	
6-Jun-16	Cloudy	Moderate	13:42	10.7	Surface	1.0	27.8 27.8	27.8	8.3 8.3	8.3	18.0 16.8	17.4	86.2 85.9	86.1	6.2 6.2	6.2	6.1	2.2 2.2	2.2	2.3	2.7 2.4	2.6	2.7
					Middle	5.4	27.7 27.8	27.7	8.2 8.2	8.2	18.6 18.8	18.7	83.5 83.0	83.3	5.9 5.9	5.9		2.3 2.3	2.3		2.7 3.3	3.0	
					Bottom	9.7	27.7 27.7	27.7	8.2 8.3	8.2	19.9 19.5	19.7	81.5 81.8	81.7	5.8 5.8	5.8	5.8	2.4 2.4	2.4		2.6 2.4	2.5	
8-Jun-16	Sunny	Moderate	15:10	10.4	Surface	1.0	28.3 28.3	28.3	8.3 8.3	8.3	14.9 14.9	14.9	79.0 78.6	78.8	5.8 5.7	5.8	5.7	1.7 1.7	1.7	2.3	2.2 2.3	2.3	2.6
					Middle	5.2	27.7 27.7	27.7	8.2 8.2	8.2	19.0 19.2	19.1	75.7 77.3	76.5	5.5 5.6	5.5		2.4 2.3	2.4		2.3 2.7	2.5	
					Bottom	9.4	27.5 27.8	27.7	8.2 8.2	8.2	21.2 21.0	21.1	77.0 79.8	78.4	5.5 5.7	5.6	5.6	2.7 2.6	2.7		3.2 2.5	2.9	
10-Jun-16	Rainy	Moderate	16:45	10.6	Surface	1.0	28.5 28.6	28.6	8.4 8.4	8.4	17.0 16.9	17.0	75.4 76.8	76.1	5.9 6.0	5.9	5.7	2.0 2.2	2.1	2.5	2.6 2.8	2.7	2.9
					Middle	5.3	26.8 26.9	26.9	8.2 8.2	8.2	25.4 24.9	25.2	72.4 70.1	71.3	5.6 5.4	5.5		2.5 2.7	2.6		3.2 3.0	3.1	
					Bottom	9.6	26.8 26.8	26.8	8.2 8.2	8.2	25.6 25.4	25.5	74.1 70.2	72.2	5.7 5.4	5.6	5.6	2.7 2.6	2.7		3.1 2.8	3.0	
13-Jun-16	Cloudy	Moderate	07:34	10.2	Surface	1.0	27.8 27.8	27.8	8.1 8.1	8.1	18.7 18.9	18.8	81.9 80.9	81.4	6.1 6.0	6.0	6.0	3.1 3.2	3.2	3.3	4.2 3.9	4.1	4.5
					Middle	5.1	27.8 27.7	27.7	8.1 8.1	8.1	18.8 18.8	18.8	80.7 80.2	80.5	6.0 6.0	6.0		3.2 3.3	3.3		4.1 4.8	4.5	
					Bottom	9.2	27.6 27.6	27.6	8.1 8.0	8.1	20.0 20.1	20.1	80.1 80.7	80.4	5.9 6.0	5.9	5.9	3.4 3.5	3.5		5.1 4.8	5.0	
15-Jun-16	Sunny	Moderate	10:43	11.5	Surface	1.0	25.7 29.1	27.4	7.7 8.2	8.0	7.6 7.6	7.6	85.8 89.9	87.9	5.9 6.6	6.3	6.4	7.2 7.4	7.3	6.5	2.7 3.4	3.1	4.1
					Middle	5.8	29.0 26.8	27.9	8.2 7.9	8.1	22.3 22.3	22.3	88.6 90.3	89.5	6.6 6.4	6.5		5.3 5.9	5.6		3.8 4.5	4.2	
					Bottom	10.5	26.8 25.7	26.3	7.8 7.7	7.8	28.5 28.4	28.4	89.7 82.8	86.3	6.3 5.8	6.1	6.1	5.9 7.2	6.6		4.3 5.6	5.0	
17-Jun-16	Sunny	Moderate	11:13	10.5	Surface	1.0	28.5 28.5	28.5	8.1 8.1	8.1	9.0 8.8	8.9	77.3 76.6	77.0	5.7 5.7	5.7	6.5	4.9 5.0	5.0	4.8	4.1 3.7	3.9	4.3
					Middle	5.3	26.6 26.4	26.5	7.7 7.7	7.7	23.0 24.3	23.7	74.8 74.5	74.7	7.4 7.3	7.3		4.4 4.9	4.7		4.1 4.6	4.4	
					Bottom	9.5	26.5 26.6	26.6	7.7 7.8	7.8	24.5 24.4	24.5	73.1 75.2	74.2	5.1 5.3	5.2	5.2	4.8 4.7	4.8		4.4 4.7	4.6	
20-Jun-16	Sunny	Moderate	12:58	10.7	Surface	1.0	28.1 28.1	28.1	8.1 8.1	8.1	18.3 18.2	18.3	75.3 75.8	75.6	5.6 5.6	5.6	5.6	3.2 3.2	3.2	3.4	3.3 5.4	4.4	4.7
					Middle	5.4	27.9 28.0	28.0	8.0 8.0	8.0	19.4 19.7	19.6	74.7 74.9	74.8	5.5 5.5	5.5		3.5 3.4	3.5		5.1 5.0	5.1	
					Bottom	9.7	27.9 27.8	27.8	8.0 7.9	7.9	22.0 24.2	23.1	73.4 74.3	73.9	5.4 5.3	5.3	5.3	3.5 3.6	3.6		4.3 5.0	4.7	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	15:12	10.6	Surface	1.0	28.7 28.5	28.6	8.3 8.3	8.3	10.4 10.4	10.4	75.3 76.0	75.7	5.8 5.8	5.8	5.8	5.5 5.6	5.6	6.8	1.1 1.1	1.1	2.1
					Middle	5.3	27.0 27.1	27.0	8.0 8.0	8.0	20.7 20.2	20.5	74.9 74.0	74.5	5.6 5.7	5.7		6.8 7.2	7.0		2.7 2.7	2.7	
					Bottom	9.6	26.9 27.1	27.0	8.0 8.0	8.0	21.5 20.6	21.1	75.9 74.7	75.3	5.7 5.7	5.7	5.7	7.7 7.8	7.8		2.4 2.6	2.5	
24-Jun-16	Sunny	Moderate	15:24	10.6	Surface	1.0	29.6 29.4	29.5	8.2 8.2	8.2	19.2 17.3	18.2	81.2 81.4	81.3	5.7 5.8	5.8	5.8	3.4 3.3	3.4	3.5	6.0 5.8	5.9	6.3
					Middle	5.3	28.1 28.3	28.2	8.1 8.2	8.1	16.2 15.2	15.7	80.2 78.1	79.2	5.7 5.6	5.7		3.5 3.6	3.6		5.3 5.2	5.3	
					Bottom	9.6	28.1 28.1	28.1	8.1 8.1	8.1	17.0 17.1	17.0	77.0 78.1	77.6	5.4 5.6	5.5	5.5	3.6 3.6	3.6		7.8 7.5	7.7	
27-Jun-16	Sunny	Moderate	17:51	10.4	Surface	1.0	30.2 29.9	30.0	8.5 8.5	8.5	15.8 15.8	15.8	96.6 95.9	96.3	6.7 6.7	6.7	6.3	3.8 3.9	3.9	4.5	4.4 4.2	4.3	4.4
					Middle	5.2	27.3 27.0	27.2	8.3 8.3	8.3	22.8 23.4	23.1	82.0 88.2	85.1	5.7 6.1	5.9		4.4 4.3	4.4		4.8 4.1	4.5	
					Bottom	9.4	26.9 26.8	26.8	8.3 8.3	8.3	24.4 24.5	24.5	76.1 79.7	77.9	5.3 5.6	5.4	5.4	4.8 5.3	5.1		4.2 4.7	4.5	
29-Jun-16	Sunny	Moderate	07:58	11.1	Surface	1.0	28.3 28.2	28.3	8.3 8.3	8.3	16.4 16.5	16.5	81.8 81.6	81.7	5.7 5.7	5.7	5.7	3.0 2.8	2.9	3.0	3.5 3.7	3.6	4.2
					Middle	5.6	27.8 27.3	27.6	8.2 8.2	8.2	20.1 20.2	20.2	79.7 80.7	80.2	5.7 5.7	5.7		3.0 3.0	3.0		3.9 4.4	4.2	
					Bottom	10.1	27.4 27.7	27.6	8.2 8.2	8.2	22.1 21.7	21.9	76.1 76.6	76.4	5.4 5.4	5.4	5.4	3.2 3.1	3.2		4.1 5.2	4.7	

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

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

Appendix J - Marine Water Quality Monitoring Results

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

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jun-16	Sunny	Moderate	16:01	10.7	Surface	1.0	29.3 29.3	29.3	8.5 8.5	8.5	11.0 11.0	11.0	116.1 116.9	116.5	8.4 8.4	8.4	8.2	6.9 6.9	6.9	7.1	4.0 2.2	3.1	3.1
					Middle	5.4	29.1 28.9	29.0	8.5 8.5	8.5	12.6 11.7	12.2	109.9 113.5	111.7	7.9 8.2	8.0		7.2 7.3	7.3		2.4 3.1	2.8	
					Bottom	9.7	28.7 29.2	28.9	8.4 8.5	8.4	17.8 17.4	17.6	102.8 116.7	109.8	7.2 8.1	7.7	7.7	7.3 7.0	7.2		4.0 3.0	3.5	
3-Jun-16	Sunny	Moderate	18:08	10.8	Surface	1.0	29.5 29.5	29.5	8.5 8.5	8.5	13.7 14.0	13.8	119.7 124.2	122.0	8.4 8.8	8.6	8.5	4.1 3.9	4.0	3.8	4.4 4.8	4.6	5.3
					Middle	5.4	28.8 29.0	28.9	8.5 8.5	8.5	17.9 17.4	17.6	118.9 119.1	119.0	8.3 8.3	8.3		3.5 3.6	3.6		4.6 6.4	5.5	
					Bottom	9.8	28.7 29.0	28.9	8.5 8.5	8.5	18.3 18.1	18.2	109.1 114.4	111.8	7.6 8.0	7.8	7.8	3.6 3.7	3.7		5.2 6.2	5.7	
6-Jun-16	Cloudy	Moderate	06:54	10.9	Surface	1.0	27.9 27.9	27.9	8.2 8.2	8.2	18.9 19.4	19.1	79.8 79.5	79.7	5.6 5.6	5.6	5.6	3.1 3.3	3.2	3.5	2.6 3.4	3.0	3.0
					Middle	5.5	27.8 27.8	27.8	8.2 8.2	8.2	19.9 20.1	20.0	79.4 78.9	79.2	5.6 5.6	5.6		3.5 3.4	3.5		3.0 3.0	3.0	
					Bottom	9.9	27.8 27.8	27.8	8.2 8.2	8.2	20.2 21.4	20.8	78.4 79.2	78.8	5.5 5.5	5.5	5.5	3.7 3.6	3.7		3.1 2.9	3.0	
8-Jun-16	Sunny	Moderate	07:13	10.5	Surface	1.0	27.9 27.9	27.9	8.3 8.2	8.3	16.8 17.1	17.0	74.4 76.4	75.4	5.4 5.6	5.5	5.3	11.7 11.4	11.6	11.6	3.9 3.3	3.6	3.9
					Middle	5.3	26.9 26.9	26.9	8.1 8.1	8.1	26.2 26.4	26.3	71.6 72.7	72.2	5.1 5.1	5.1		10.1 10.4	10.3		3.7 3.5	3.6	
					Bottom	9.5	27.3 27.4	27.4	8.1 8.1	8.1	26.0 26.1	26.0	76.0 75.8	75.9	5.3 5.3	5.3	5.3	12.5 13.2	12.9		4.2 4.8	4.5	
10-Jun-16	Sunny	Moderate	09:46	10.4	Surface	1.0	28.0 28.0	28.0	8.3 8.2	8.2	16.0 16.2	16.1	72.8 73.0	72.9	5.5 5.5	5.5	5.4	3.8 3.4	3.6	4.0	4.3 3.9	4.1	3.9
					Middle	5.2	27.4 26.9	27.2	8.2 8.1	8.1	24.2 24.6	24.4	69.6 69.0	69.3	5.2 5.2	5.2		3.3 3.6	3.5		3.3 3.6	3.5	
					Bottom	9.4	27.4 27.1	27.3	8.1 8.0	8.1	24.6 24.9	24.8	70.9 69.7	70.3	5.3 5.2	5.3	5.3	5.0 4.5	4.8		4.5 3.9	4.2	
13-Jun-16	Cloudy	Moderate	14:01	10.3	Surface	1.0	27.9 28.0	27.9	8.2 8.2	8.2	18.9 18.9	18.9	85.2 85.9	85.6	6.3 6.3	6.3	6.3	2.6 2.6	2.6	2.8	2.5 2.5	2.5	2.9
					Middle	5.2	27.8 27.8	27.8	8.1 8.1	8.1	19.9 19.2	19.6	83.6 83.5	83.6	6.2 6.2	6.2		2.7 2.8	2.8		2.9 3.3	3.1	
					Bottom	9.3	27.6 27.9	27.8	8.0 8.2	8.1	21.8 19.1	20.5	81.6 80.2	80.9	6.0 5.9	5.9	5.9	2.9 2.8	2.9		3.2 2.9	3.1	
15-Jun-16	Sunny	Moderate	16:40	11.6	Surface	1.0	28.9 28.9	28.9	8.2 8.3	8.2	6.1 6.1	6.1	91.3 90.2	90.8	6.8 6.7	6.8	6.5	7.7 7.6	7.7	7.9	7.6 6.7	7.2	7.4
					Middle	5.8	27.6 27.6	27.6	8.2 8.1	8.1	14.4 14.4	14.4	83.4 82.7	83.1	6.1 6.1	6.1		7.1 7.3	7.2		7.2 6.2	6.7	
					Bottom	10.6	25.6 25.5	25.6	7.8 7.8	7.8	26.4 26.5	26.4	81.4 82.5	82.0	5.8 5.8	5.8	5.8	8.5 8.8	8.7		8.3 8.1	8.2	
17-Jun-16	Sunny	Moderate	17:56	10.5	Surface	1.0	29.2 28.9	29.0	8.2 8.1	8.2	8.1 8.6	8.3	82.6 82.8	82.7	6.1 5.9	6.0	5.9	7.3 7.1	7.2	7.9	5.4 6.7	6.1	6.7
					Middle	5.3	27.6 27.3	27.5	7.9 7.9	7.9	16.7 16.8	16.7	76.1 81.2	78.7	5.4 6.0	5.7		7.8 7.7	7.8		6.8 6.1	6.5	
					Bottom	9.5	27.1 27.1	27.1	7.8 7.9	7.8	21.3 20.9	21.1	70.1 72.7	71.4	5.1 5.2	5.1	5.1	8.8 8.7	8.8		7.6 7.5	7.6	
20-Jun-16	Sunny	Moderate	06:05	10.7	Surface	1.0	27.9 27.8	27.8	8.2 8.1	8.2	21.2 17.5	19.3	72.6 71.8	72.2	5.3 5.2	5.2	5.2	5.2 5.2	5.2	5.3	4.8 4.5	4.7	4.7
					Middle	5.4	27.4 27.7	27.6	8.1 8.1	8.1	18.1 21.7	19.9	71.2 71.5	71.4	5.2 5.2	5.2		5.3 5.3	5.3		5.3 4.2	4.8	
					Bottom	9.7	26.4 26.5	26.4	7.9 8.0	8.0	24.1 23.9	24.0	70.9 70.6	70.8	5.1 5.1	5.1	5.1	5.4 5.5	5.5		4.1 4.8	4.5	

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

Appendix J - Marine Water Quality Monitoring Results

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

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jun-16	Sunny	Moderate	07:13	10.5	Surface	1.0	27.4 27.4	27.4	8.1 8.1	8.1	18.7 18.6	18.7	72.3 72.1	72.2	5.5 5.5	5.5	5.5	5.5 5.7	5.6	6.2	5.3 6.1	5.7	5.6
					Middle	5.3	25.8 25.8	25.8	8.0 8.0	8.0	26.2 26.8	26.5	70.6 71.6	71.1	5.4 5.5	5.4		6.6 6.5	6.6		5.7 5.4	5.6	
					Bottom	9.5	26.1 26.1	26.1	8.0 8.0	8.0	26.9 26.5	26.7	72.0 71.1	71.6	5.5 5.4	5.5	5.5	6.7 6.3	6.5		5.2 5.5	5.4	
24-Jun-16	Sunny	Moderate	08:29	10.7	Surface	1.0	28.0 28.1	28.1	8.2 8.2	8.2	16.9 16.9	16.9	76.9 77.4	77.2	5.5 5.4	5.4	5.4	5.6 5.5	5.6	5.8	6.8 7.1	7.0	6.9
					Middle	5.4	27.8 27.4	27.6	8.2 8.1	8.2	17.2 18.3	17.8	74.9 74.4	74.7	5.3 5.3	5.3		5.8 5.7	5.8		7.2 7.2	7.2	
					Bottom	9.7	27.4 27.4	27.4	8.1 8.1	8.1	21.3 21.8	21.5	75.5 74.1	74.8	5.3 5.3	5.3	5.3	5.9 5.9	5.9		7.0 6.2	6.6	
27-Jun-16	Sunny	Moderate	11:16	10.5	Surface	1.0	28.8 29.1	28.9	8.3 8.3	8.3	19.0 18.5	18.7	102.9 102.5	102.7	7.2 7.1	7.1	6.7	4.6 4.5	4.6	5.7	4.9 5.0	5.0	5.4
					Middle	5.3	27.1 27.3	27.2	8.2 8.2	8.2	23.1 24.1	23.6	86.6 94.4	90.5	6.0 6.6	6.3		5.9 5.7	5.8		5.8 5.6	5.7	
					Bottom	9.5	27.2 27.0	27.1	8.2 8.2	8.2	24.7 24.4	24.6	80.8 83.7	82.3	5.6 5.9	5.7	5.7	7.0 6.6	6.8		5.0 5.7	5.4	
29-Jun-16	Sunny	Moderate	14:21	11.0	Surface	1.0	27.9 28.2	28.0	8.4 8.4	8.4	20.9 20.6	20.8	87.0 92.8	89.9	6.0 6.5	6.2	6.0	4.9 4.8	4.9	5.0	6.1 6.8	6.5	6.4
					Middle	5.5	27.3 27.3	27.3	8.3 8.3	8.3	22.5 22.4	22.4	77.0 85.1	81.1	5.4 5.9	5.7		5.0 4.9	5.0		6.9 6.8	6.9	
					Bottom	10.0	27.1 26.7	26.9	8.3 8.3	8.3	24.1 24.6	24.3	81.7 73.2	77.5	5.7 5.1	5.4	5.4	5.1 5.0	5.1		6.4 5.3	5.9	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS(Mf)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-Jun-16	Sunny	Moderate	10:39	7.1	Surface	1.0	29.1 29.1	29.1	8.5 8.5	8.5	15.7 15.9	15.8	119.7 119.1	119.4	8.4 8.4	8.4	8.2	2.8 2.7	2.8	3.0	6.8 6.6	6.7	6.0
					Middle	3.6	28.8 28.2	28.5	8.5 8.4	8.4	17.4 17.7	17.5	113.3 111.5	112.4	7.9 8.0	8.0		3.0 2.9	3.0		5.3 5.6	5.5	
					Bottom	6.1	28.0 28.4	28.2	8.3 8.4	8.3	24.1 23.6	23.9	113.2 117.9	115.6	7.9 7.9	7.9	7.9	3.0 3.1	3.1		6.4 5.1	5.8	
3-Jun-16	Sunny	Moderate	11:19	6.5	Surface	1.0	28.7 28.7	28.7	8.5 8.4	8.4	15.8 16.1	16.0	98.5 99.4	99.0	7.0 7.0	7.0	7.0	3.0 3.0	3.0	2.9	7.0 8.7	7.9	8.4
					Middle	3.3	28.5 28.5	28.5	8.4 8.4	8.4	17.3 16.9	17.1	98.3 97.7	98.0	6.9 6.9	6.9		3.0 2.9	3.0		8.0 8.3	8.2	
					Bottom	5.5	28.5 28.5	28.5	8.4 8.4	8.4	18.3 18.2	18.3	97.8 97.6	97.7	6.9 6.9	6.9	6.9	2.7 2.4	2.6		8.6 9.6	9.1	
6-Jun-16	Cloudy	Moderate	13:34	6.3	Surface	1.0	27.9 28.0	28.0	8.3 8.3	8.3	19.9 19.7	19.8	84.9 86.3	85.6	5.9 6.0	6.0	6.0	2.6 2.5	2.6	2.6	2.7 3.3	3.0	2.9
					Middle	3.2	27.9 27.9	27.9	8.3 8.3	8.3	20.3 21.2	20.7	84.0 84.8	84.4	5.9 6.0	5.9		2.6 2.6	2.6		2.8 2.2	2.5	
					Bottom	5.3	27.8 27.9	27.8	8.2 8.3	8.2	22.0 21.9	21.9	83.3 83.4	83.4	5.8 5.9	5.8	5.8	2.6 2.5	2.6		3.4 2.9	3.2	
8-Jun-16	Sunny	Moderate	14:51	6.3	Surface	1.0	28.0 28.0	28.0	8.3 8.3	8.3	20.6 20.4	20.5	76.8 75.9	76.4	5.4 5.3	5.3	5.3	1.6 1.5	1.6	1.7	4.6 4.0	4.3	4.6
					Middle	3.2	27.5 27.4	27.5	8.3 8.3	8.3	22.7 23.2	22.9	75.6 76.6	76.1	5.2 5.4	5.3		1.8 1.7	1.8		4.8 4.4	4.6	
					Bottom	5.3	27.1 27.5	27.3	8.2 8.2	8.2	26.4 25.6	26.0	75.4 75.1	75.3	5.2 5.2	5.2	5.2	1.7 1.7	1.7		4.4 5.2	4.8	
10-Jun-16	Rainy	Moderate	16:35	6.2	Surface	1.0	28.4 28.3	28.4	8.3 8.3	8.3	18.4 18.4	18.4	86.9 84.4	85.7	6.1 5.9	6.0	6.0	1.4 1.4	1.4	1.4	3.0 2.8	2.9	3.2
					Middle	3.1	28.1 27.9	28.0	8.3 8.3	8.3	20.3 21.3	20.8	85.4 83.2	84.3	5.9 5.8	5.9		1.5 1.4	1.5		2.9 4.1	3.5	
					Bottom	5.2	27.4 28.2	27.8	8.2 8.3	8.2	24.0 23.4	23.7	81.1 84.3	82.7	5.7 5.9	5.8	5.8	1.4 1.4	1.4		3.2 3.0	3.1	
13-Jun-16	Cloudy	Moderate	08:38	7.2	Surface	1.0	27.5 27.7	27.6	8.2 8.2	8.2	14.4 13.6	14.0	84.0 82.9	83.5	5.9 6.1	6.0	5.8	3.3 3.3	3.3	3.4	3.9 2.6	3.3	3.3
					Middle	3.6	27.1 27.4	27.2	8.1 8.2	8.1	15.7 15.5	15.6	77.0 78.0	77.5	5.6 5.5	5.6		3.3 3.4	3.4		2.9 3.5	3.2	
					Bottom	6.2	27.2 27.6	27.4	8.1 8.1	8.1	22.7 24.1	23.4	76.8 75.8	76.3	5.6 5.4	5.5	5.5	3.5 3.6	3.6		2.9 3.8	3.4	
15-Jun-16	Sunny	Moderate	10:39	6.3	Surface	1.0	28.7 28.8	28.8	8.3 8.3	8.3	14.2 14.0	14.1	83.8 85.9	84.9	6.0 6.1	6.1	5.9	5.2 5.1	5.2	5.3	5.5 5.5	5.5	5.9
					Middle	3.2	28.3 28.3	28.3	8.2 8.2	8.2	15.0 14.8	14.9	78.3 80.3	79.3	5.6 5.8	5.7		5.5 5.3	5.4		6.4 6.7	6.6	
					Bottom	5.3	27.3 27.8	27.5	8.1 8.1	8.1	20.6 18.2	19.4	76.7 79.6	78.2	5.4 5.7	5.5	5.5	5.3 5.3	5.3		5.6 5.5	5.6	
17-Jun-16	Sunny	Moderate	11:50	6.3	Surface	1.0	28.9 28.8	28.9	8.3 8.3	8.3	12.3 13.1	12.7	77.7 76.9	77.3	5.6 5.5	5.6	5.5	7.5 7.6	7.6	7.7	2.9 2.6	2.8	3.4
					Middle	3.2	27.8 28.1	28.0	8.1 8.2	8.2	16.9 17.1	17.0	76.3 76.1	76.2	5.3 5.3	5.3		7.8 7.6	7.7		3.3 4.1	3.7	
					Bottom	5.3	26.2 26.3	26.2	8.0 7.9	8.0	27.9 28.4	28.1	72.0 69.8	70.9	5.1 5.0	5.1	5.1	7.7 7.8	7.8		4.0 3.4	3.7	
20-Jun-16	Sunny	Moderate	12:29	6.4	Surface	1.0	28.4 28.4	28.4	8.3 8.3	8.3	16.4 16.1	16.2	85.6 84.2	84.9	6.1 6.0	6.0	5.9	3.8 3.9	3.9	3.7	3.3 4.8	4.1	5.0
					Middle	3.2	27.6 27.4	27.5	8.2 8.3	8.3	18.9 20.2	19.5	79.5 83.5	81.5	5.6 5.9	5.8		3.7 3.6	3.7		4.2 3.5	3.9	
					Bottom	5.4	27.2 26.7	26.9	8.2 8.2	8.2	24.3 24.0	24.1	86.3 81.5	83.9	6.0 5.7	5.8	5.8	3.5 3.7	3.6		7.7 6.3	7.0	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	13:31	7.1	Surface	1.0	28.9 29.0	29.0	8.5 8.5	8.5	18.2 18.0	18.1	88.2 87.4	87.8	6.2 6.0	6.1	6.0	5.1 5.0	5.1	5.2	7.5 6.6	7.1	7.2
					Middle	3.6	27.2 26.1	26.6	8.4 8.4	8.4	21.9 23.7	22.8	86.5 83.6	85.1	6.0 5.8	5.9		5.1 5.1	5.1		6.8 7.5	7.2	
					Bottom	6.1	25.9 26.0	25.9	8.4 8.3	8.4	28.6 28.9	28.7	78.7 81.0	79.9	5.6 5.7	5.6	5.6	5.3 5.2	5.3		7.0 7.8	7.4	
24-Jun-16	Sunny	Moderate	15:04	6.3	Surface	1.0	28.5 29.6	29.1	8.3 8.4	8.4	19.5 17.3	18.4	80.2 84.1	82.2	5.6 5.8	5.7	5.6	5.4 5.0	5.2	5.5	4.1 3.5	3.8	3.9
					Middle	3.2	28.0 27.7	27.9	8.4 8.4	8.4	20.7 21.5	21.1	75.9 78.0	77.0	5.3 5.5	5.4		5.9 5.5	5.7		3.6 3.8	3.7	
					Bottom	5.3	26.7 26.3	26.5	8.3 8.4	8.4	27.1 27.4	27.2	81.1 85.8	83.5	5.6 5.9	5.8	5.8	5.5 5.9	5.7		4.8 3.5	4.2	
27-Jun-16	Sunny	Moderate	17:36	6.2	Surface	1.0	28.3 28.7	28.5	8.4 8.4	8.4	22.1 22.0	22.0	95.5 94.0	94.8	6.6 6.4	6.5	6.4	4.7 4.4	4.6	4.7	8.7 7.7	8.2	8.4
					Middle	3.1	27.5 28.1	27.8	8.3 8.4	8.4	23.4 23.0	23.2	89.8 92.4	91.1	6.2 6.4	6.3		4.8 4.8	4.8		8.4 8.4	8.4	
					Bottom	5.2	26.9 27.0	27.0	8.4 8.3	8.3	25.9 25.7	25.8	84.1 84.3	84.2	5.8 5.8	5.8	5.8	4.8 4.6	4.7		9.1 7.8	8.5	
29-Jun-16	Sunny	Moderate	08:57	6.1	Surface	1.0	28.5 28.4	28.5	8.4 8.4	8.4	19.8 19.8	19.8	88.6 87.5	88.1	6.2 6.1	6.1	6.0	3.4 3.2	3.3	3.8	2.6 3.9	3.3	3.3
					Middle	3.1	28.1 28.1	28.1	8.3 8.3	8.3	22.2 22.3	22.2	82.5 87.5	85.0	5.7 6.0	5.9		3.9 3.8	3.9		2.7 3.2	3.0	
					Bottom	5.1	26.7 26.7	26.7	8.3 8.3	8.3	25.7 27.6	26.7	82.1 85.0	83.6	5.7 5.9	5.8	5.8	4.1 4.1	4.1		3.0 4.2	3.6	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	15:09	7.4	Surface	1.0	29.0 29.3	29.2	8.7 8.7	8.7	15.1 14.8	14.9	112.2 119.5	115.9	7.9 8.4	8.2	8.0	4.4 4.5	4.5	4.7	6.1 6.0	6.1	6.9
					Middle	3.7	28.5 28.3	28.4	8.6 8.6	8.6	16.3 16.2	16.2	109.6 116.3	113.0	7.5 8.0	7.8		4.5 4.7	4.6		6.8 6.7	6.8	
					Bottom	6.4	28.5 28.9	28.7	8.6 8.6	8.6	22.6 21.7	22.1	104.6 113.0	108.8	7.4 7.9	7.7	7.7	4.8 4.9	4.9		7.7 7.6	7.7	
3-Jun-16	Sunny	Moderate	17:38	6.5	Surface	1.0	29.3 29.3	29.3	8.6 8.6	8.6	17.0 17.1	17.1	112.5 108.5	110.5	7.8 7.6	7.7	7.3	4.3 4.1	4.2	3.6	4.1 5.3	4.7	6.1
					Middle	3.3	28.4 28.3	28.3	8.5 8.5	8.5	19.3 19.6	19.5	99.2 94.3	96.8	7.0 6.6	6.8		3.3 3.2	3.3		6.5 6.2	6.4	
					Bottom	5.5	28.5 28.1	28.3	8.5 8.5	8.5	21.0 21.3	21.1	98.5 95.3	96.9	6.8 6.6	6.7	6.7	3.5 3.3	3.4		6.5 8.1	7.3	
6-Jun-16	Cloudy	Moderate	07:09	6.3	Surface	1.0	27.8 27.8	27.8	8.3 8.3	8.3	21.4 22.4	21.9	76.5 79.2	77.9	5.3 5.4	5.4	5.4	1.8 1.9	1.9	1.9	3.2 3.4	3.3	2.9
					Middle	3.2	27.6 27.6	27.6	8.3 8.3	8.3	24.0 24.1	24.1	77.4 76.0	76.7	5.4 5.2	5.3		1.9 1.9	1.9		3.5 2.4	3.0	
					Bottom	5.3	27.4 27.4	27.4	8.3 8.3	8.3	26.3 26.8	26.5	77.3 75.7	76.5	5.4 5.2	5.3	5.3	1.9 1.9	1.9		2.1 2.4	2.3	
8-Jun-16	Sunny	Moderate	08:31	6.3	Surface	1.0	28.0 28.0	28.0	8.3 8.3	8.3	15.6 15.8	15.7	74.1 78.0	76.1	5.3 5.4	5.4	5.4	2.4 2.4	2.4	2.5	3.1 4.4	3.8	4.4
					Middle	3.2	27.9 27.9	27.9	8.2 8.2	8.2	18.9 17.5	18.2	73.5 74.5	74.0	5.2 5.4	5.3		2.4 2.5	2.5		3.9 4.0	4.0	
					Bottom	5.3	27.9 27.5	27.7	8.2 8.2	8.2	21.9 22.6	22.3	73.1 74.3	73.7	5.1 5.3	5.2	5.2	2.5 2.5	2.5		5.0 5.5	5.3	
10-Jun-16	Sunny	Moderate	10:20	6.6	Surface	1.0	27.8 28.0	27.9	8.2 8.2	8.2	20.2 20.1	20.2	77.7 75.6	76.7	5.4 5.2	5.3	5.2	2.1 2.2	2.2	2.2	2.8 3.8	3.3	3.5
					Middle	3.3	27.6 27.6	27.6	8.2 8.2	8.2	21.8 22.0	21.9	71.9 74.0	73.0	5.0 5.2	5.1		2.2 2.2	2.2		3.0 4.9	4.0	
					Bottom	5.6	27.5 27.6	27.5	8.2 8.2	8.2	23.2 23.1	23.2	72.3 70.9	71.6	5.1 4.9	5.0	5.0	2.3 2.3	2.3		3.0 3.5	3.3	
13-Jun-16	Cloudy	Moderate	12:48	7.0	Surface	1.0	28.1 28.1	28.1	8.3 8.3	8.3	12.2 12.7	12.4	79.1 81.2	80.2	5.8 5.9	5.8	5.6	3.1 3.2	3.2	3.3	2.4 2.7	2.6	3.1
					Middle	3.5	27.6 27.1	27.3	8.2 8.2	8.2	14.2 14.7	14.4	75.8 79.6	77.7	5.3 5.6	5.4		3.2 3.3	3.3		3.4 3.6	3.5	
					Bottom	6.0	27.4 27.0	27.2	8.1 8.1	8.1	22.5 23.1	22.8	72.8 73.0	72.9	5.3 5.3	5.3	5.3	3.3 3.4	3.4		3.4 2.7	3.1	
15-Jun-16	Sunny	Moderate	15:45	6.2	Surface	1.0	28.9 28.9	28.9	8.4 8.4	8.4	11.9 11.9	11.9	88.0 91.0	89.5	6.4 6.6	6.5	6.4	8.3 8.4	8.4	8.4	4.9 4.5	4.7	4.9
					Middle	3.1	28.5 28.5	28.5	8.3 8.3	8.3	14.3 14.3	14.3	86.0 89.6	87.8	6.2 6.3	6.2		8.5 8.2	8.4		5.4 4.5	5.0	
					Bottom	5.2	27.9 28.2	28.0	8.2 8.2	8.2	19.7 19.3	19.5	80.4 82.1	81.3	5.7 5.8	5.7	5.7	8.1 8.5	8.3		5.3 4.7	5.0	
17-Jun-16	Sunny	Moderate	17:28	6.3	Surface	1.0	29.4 29.0	29.2	8.4 8.4	8.4	11.2 11.7	11.5	81.2 81.6	81.4	5.8 5.9	5.9	5.8	6.3 6.5	6.4	6.6	3.4 3.2	3.3	4.0
					Middle	3.2	27.9 27.7	27.8	8.3 8.3	8.3	14.8 14.8	14.8	79.4 80.0	79.7	5.6 5.7	5.6		6.7 6.5	6.6		3.6 3.5	3.6	
					Bottom	5.3	27.7 27.4	27.6	8.2 8.2	8.2	20.2 20.3	20.3	75.2 73.9	74.6	5.4 5.4	5.4	5.4	6.7 6.8	6.8		4.4 5.8	5.1	
20-Jun-16	Sunny	Moderate	06:28	6.2	Surface	1.0	28.3 28.1	28.2	8.2 8.2	8.2	17.1 17.6	17.3	78.5 77.5	78.0	5.6 5.5	5.5	5.3	3.2 3.3	3.3	3.5	4.7 3.7	4.2	4.2
					Middle	3.1	27.0 27.1	27.1	8.1 8.1	8.1	23.3 22.2	22.8	71.6 71.8	71.7	5.0 5.1	5.0		3.2 3.3	3.3		4.5 4.0	4.3	
					Bottom	5.2	26.5 26.2	26.3	8.1 8.1	8.1	26.6 26.2	26.4	72.7 72.0	72.4	5.0 5.0	5.0	5.0	3.7 4.0	3.9		4.3 3.7	4.0	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS(Mf)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-Jun-16	Sunny	Moderate	07:54	7.0	Surface	1.0	28.6 28.1	28.4	8.3 8.3	8.3	16.0 16.1	16.0	81.4 74.7	78.1	5.8 5.2	5.5	5.4	3.9 4.0	4.0	4.1	3.5 4.2	3.9	4.0
					Middle	3.5	27.8 27.6	27.7	8.3 8.2	8.3	19.4 19.5	19.5	72.8 74.9	73.9	5.1 5.2	5.2		4.0 4.0	4.0		3.1 3.5	3.3	
					Bottom	6.0	25.7 26.2	25.9	8.1 8.2	8.2	30.2 29.5	29.9	73.7 70.9	72.3	5.2 5.0	5.1	5.1	4.2 4.1	4.2		5.1 4.2	4.7	
24-Jun-16	Sunny	Moderate	09:01	6.3	Surface	1.0	27.8 27.8	27.8	8.2 8.2	8.2	20.0 20.4	20.2	75.9 75.8	75.9	5.5 5.5	5.5	5.4	3.2 3.2	3.2	3.3	5.3 5.2	5.3	5.1
					Middle	3.2	27.1 27.5	27.3	8.1 8.2	8.2	24.8 21.3	23.1	71.6 74.1	72.9	5.1 5.4	5.2		3.2 3.1	3.2		5.4 5.6	5.5	
					Bottom	5.3	26.4 25.7	26.1	8.1 8.1	8.1	28.6 30.6	29.6	75.0 72.7	73.9	5.3 5.1	5.2	5.2	3.3 3.5	3.4		4.3 4.9	4.6	
27-Jun-16	Sunny	Moderate	11:37	6.5	Surface	1.0	28.6 28.2	28.4	8.4 8.4	8.4	21.2 21.5	21.3	88.0 91.1	89.6	6.1 6.2	6.2	6.1	4.1 4.3	4.2	4.5	4.1 4.3	4.2	4.5
					Middle	3.3	27.6 27.8	27.7	8.3 8.4	8.3	24.3 22.6	23.5	87.7 85.6	86.7	6.0 5.9	6.0		4.7 4.7	4.7		4.5 4.2	4.4	
					Bottom	5.5	27.5 27.9	27.7	8.3 8.3	8.3	24.4 24.2	24.3	82.6 87.2	84.9	5.7 6.0	5.9	5.9	4.5 4.5	4.5		4.7 4.9	4.8	
29-Jun-16	Sunny	Moderate	13:57	6.3	Surface	1.0	28.2 28.1	28.2	8.5 8.4	8.5	21.2 21.3	21.3	84.7 86.0	85.4	5.9 5.9	5.9	5.9	6.6 6.3	6.5	6.6	5.2 5.1	5.2	5.6
					Middle	3.2	27.6 27.6	27.6	8.4 8.4	8.4	23.5 22.8	23.2	84.7 83.9	84.3	5.9 5.8	5.9		6.6 6.5	6.6		5.6 5.9	5.8	
					Bottom	5.3	28.0 27.5	27.7	8.4 8.4	8.4	23.6 23.9	23.7	84.2 82.2	83.2	5.8 5.7	5.8	5.8	6.5 6.6	6.6		5.9 5.6	5.8	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	11:40	9.1	Surface	1.0	28.9 29.1	29.0	8.6 8.6	8.6	16.7 16.4	16.5	101.3 97.0	99.2	7.0 6.8	6.9	6.7	6.9 6.8	6.9	7.0	5.0 5.1	5.1	6.9
					Middle	4.6	27.1 27.1	27.1	8.4 8.4	8.4	25.3 24.8	25.0	95.1 92.0	93.6	6.7 6.3	6.5		7.0 7.0	7.0		8.3 8.2	8.3	
					Bottom	8.1	27.0 27.2	27.1	8.4 8.4	8.4	26.2 26.1	26.2	86.0 93.4	89.7	6.0 6.5	6.2	6.2	7.2 7.1	7.2		7.2 7.5	7.4	
3-Jun-16	Sunny	Moderate	12:17	8.3	Surface	1.0	29.2 29.5	29.4	8.5 8.5	8.5	16.6 15.9	16.3	123.2 120.8	122.0	8.6 8.4	8.5	8.4	9.2 8.7	9.0	10.1	8.1 7.6	7.9	8.2
					Middle	4.2	29.2 29.1	29.2	8.5 8.5	8.5	16.1 16.9	16.5	113.1 122.8	118.0	7.9 8.6	8.3		8.9 9.3	9.1		7.7 7.7	7.7	
					Bottom	7.3	29.0 29.3	29.2	8.5 8.5	8.5	16.6 16.4	16.5	121.2 124.4	122.8	8.5 8.7	8.6	8.6	12.2 12.1	12.2		9.8 8.2	9.0	
6-Jun-16	Cloudy	Moderate	12:44	8.7	Surface	1.0	27.7 27.7	27.7	8.1 8.0	8.0	20.7 20.7	20.7	77.5 79.7	78.6	5.4 5.6	5.5	5.5	9.0 8.8	8.9	9.0	7.0 7.3	7.2	6.4
					Middle	4.4	27.7 27.7	27.7	8.0 8.0	8.0	21.1 21.2	21.1	77.0 77.7	77.4	5.4 5.4	5.4		8.7 8.9	8.8		6.1 5.4	5.8	
					Bottom	7.7	27.6 27.7	27.6	8.0 8.0	8.0	21.5 21.3	21.4	77.6 76.6	77.1	5.4 5.4	5.4	5.4	9.1 9.2	9.2		6.4 6.0	6.2	
8-Jun-16	Sunny	Moderate	14:06	8.6	Surface	1.0	28.1 28.2	28.1	8.5 8.6	8.5	19.8 19.7	19.8	77.1 77.6	77.4	5.4 5.4	5.4	5.4	4.7 4.5	4.6	5.0	6.2 6.4	6.3	6.1
					Middle	4.3	27.9 27.9	27.9	8.6 8.5	8.5	20.7 20.9	20.8	77.3 76.3	76.8	5.4 5.3	5.4		5.2 5.2	5.2		5.8 5.9	5.9	
					Bottom	7.6	27.9 28.0	27.9	8.6 8.5	8.6	21.2 21.1	21.1	75.7 75.7	75.7	5.3 5.3	5.3	5.3	5.3 5.2	5.3		6.0 6.0	6.0	
10-Jun-16	Rainy	Moderate	15:41	8.0	Surface	1.0	28.6 28.7	28.7	8.6 8.6	8.6	16.6 16.7	16.7	91.8 79.7	85.8	6.3 5.5	5.9	5.7	5.6 5.4	5.5	5.5	2.4 3.4	2.9	2.9
					Middle	4.0	27.4 27.4	27.4	8.5 8.5	8.5	22.8 22.5	22.7	73.8 79.9	76.9	5.2 5.6	5.4		5.4 5.6	5.5		2.5 3.7	3.1	
					Bottom	7.0	27.0 27.3	27.1	8.5 8.5	8.5	25.2 24.7	25.0	72.5 78.1	75.3	5.1 5.5	5.3	5.3	5.5 5.5	5.5		2.6 2.8	2.7	
13-Jun-16	Cloudy	Moderate	09:28	9.1	Surface	1.0	27.7 27.7	27.7	8.2 8.2	8.2	15.9 15.7	15.8	75.8 88.3	82.1	5.5 6.1	5.8	5.7	2.8 2.9	2.9	3.0	3.2 2.3	2.8	3.2
					Middle	4.6	27.1 26.9	27.0	8.1 8.1	8.1	24.1 24.2	24.1	81.1 75.5	78.3	5.8 5.2	5.5		3.0 2.9	3.0		3.0 3.2	3.1	
					Bottom	8.1	27.0 26.9	27.0	8.0 8.0	8.0	26.9 26.9	26.9	72.7 72.6	72.7	5.1 5.1	5.1	5.1	3.0 3.0	3.0		4.1 3.3	3.7	
15-Jun-16	Sunny	Moderate	11:26	8.3	Surface	1.0	28.9 28.9	28.9	8.3 8.3	8.3	14.1 14.2	14.2	83.9 82.4	83.2	5.6 5.9	5.7	5.4	5.2 5.1	5.2	5.4	5.3 5.2	5.3	5.9
					Middle	4.2	27.0 27.3	27.1	8.1 8.1	8.1	24.6 24.7	24.7	72.1 73.6	72.9	5.2 5.1	5.1		5.3 5.5	5.4		6.6 5.9	6.3	
					Bottom	7.3	27.0 26.6	26.8	8.1 8.0	8.1	31.2 31.4	31.3	70.2 68.8	69.5	4.8 4.7	4.8	4.8	5.4 5.5	5.5		6.4 5.9	6.2	
17-Jun-16	Sunny	Moderate	12:35	8.4	Surface	1.0	28.9 29.0	28.9	8.4 8.4	8.4	12.7 12.8	12.8	91.5 85.7	88.6	6.3 6.2	6.2	6.0	5.7 6.0	5.9	6.3	2.2 3.3	2.8	3.6
					Middle	4.2	26.4 26.5	26.4	8.1 8.1	8.1	28.6 29.4	29.0	81.7 79.2	80.5	5.9 5.5	5.7		6.3 6.6	6.5		3.3 3.9	3.6	
					Bottom	7.4	26.4 26.2	26.3	8.1 8.0	8.1	30.9 31.2	31.1	73.9 73.5	73.7	5.1 5.1	5.1	5.1	6.5 6.4	6.5		3.4 5.1	4.3	
20-Jun-16	Sunny	Moderate	11:32	8.3	Surface	1.0	28.5 28.5	28.5	8.4 8.4	8.4	16.9 17.0	16.9	88.7 86.6	87.7	6.3 5.9	6.1	5.7	7.6 7.9	7.8	8.0	7.0 7.8	7.4	7.8
					Middle	4.2	27.1 27.3	27.2	8.3 8.3	8.3	21.6 23.4	22.5	75.4 76.6	76.0	5.2 5.4	5.3		8.2 8.0	8.1		7.8 8.2	8.0	
					Bottom	7.3	27.8 27.0	27.4	8.3 8.3	8.3	24.5 25.0	24.7	73.3 72.2	72.8	5.1 5.1	5.1	5.1	8.3 8.0	8.2		8.0 8.0	8.0	

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

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-Jun-16	Sunny	Moderate	12:46	9.0	Surface	1.0	28.2 28.2	28.2	8.6 8.5	8.5	16.7 17.0	16.9	75.2 75.8	75.5	5.4 5.3	5.3	5.3	6.6 6.6	6.6	6.7	9.6 9.4	9.5	9.4
					Middle	4.5	27.8 26.4	27.1	8.5 8.4	8.5	23.5 23.1	23.3	74.1 74.8	74.5	5.2 5.3	5.3		6.6 6.6	6.6		8.7 9.6	9.2	
					Bottom	8.0	26.3 26.4	26.4	8.4 8.4	8.4	25.9 25.4	25.6	74.2 73.4	73.8	5.2 5.1	5.2	5.2	6.8 6.7	6.8		9.5 9.6	9.6	
24-Jun-16	Sunny	Moderate	14:05	8.4	Surface	1.0	28.6 28.5	28.5	8.4 8.4	8.4	19.2 19.2	19.2	82.1 82.3	82.2	5.7 5.7	5.7	5.7	8.3 8.8	8.6	9.0	8.0 8.4	8.2	9.1
					Middle	4.2	27.8 27.6	27.7	8.3 8.4	8.4	21.0 20.9	20.9	79.4 81.1	80.3	5.6 5.7	5.6		9.5 8.8	9.2		9.8 8.8	9.3	
					Bottom	7.4	27.8 27.9	27.8	8.4 8.3	8.4	21.4 21.2	21.3	87.0 81.5	84.3	6.1 5.7	5.9	5.9	8.9 9.5	9.2		9.6 9.9	9.8	
27-Jun-16	Sunny	Moderate	16:52	8.4	Surface	1.0	29.3 29.3	29.3	8.5 8.5	8.5	20.7 20.7	20.7	115.4 113.6	114.5	7.9 7.8	7.8	7.3	8.3 8.4	8.4	8.5	9.2 9.0	9.1	9.2
					Middle	4.2	28.5 28.9	28.7	8.4 8.4	8.4	22.2 21.9	22.0	94.9 102.0	98.5	6.6 7.0	6.8		8.5 8.5	8.5		9.5 8.8	9.2	
					Bottom	7.4	27.1 26.8	26.9	8.4 8.4	8.4	25.5 25.7	25.6	84.3 86.5	85.4	5.8 5.9	5.9	5.9	8.6 8.4	8.5		9.2 9.6	9.4	
29-Jun-16	Sunny	Moderate	09:47	8.0	Surface	1.0	28.3 28.4	28.4	8.4 8.4	8.4	20.5 20.2	20.3	80.3 81.2	80.8	5.6 5.7	5.6	5.4	7.7 7.6	7.7	7.6	6.1 6.4	6.3	6.4
					Middle	4.0	26.2 27.3	26.8	8.3 8.3	8.3	26.3 25.4	25.8	75.7 74.5	75.1	5.2 5.1	5.2		7.5 7.7	7.6		6.3 6.9	6.6	
					Bottom	7.0	26.0 26.0	26.0	8.3 8.3	8.3	28.5 28.5	28.5	73.2 72.9	73.1	5.1 5.0	5.1	5.1	7.5 7.7	7.6		6.7 5.6	6.2	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	14:19	9.1	Surface	1.0	29.3 29.2	29.3	8.8 8.8	8.8	16.1 16.1	16.1	117.9 110.5	114.2	8.3 7.8	8.0	7.7	5.4 5.3	5.4	5.5	7.2 7.5	7.4	8.4
					Middle	4.6	28.3 28.2	28.3	8.7 8.7	8.7	17.3 17.5	17.4	99.3 113.7	106.5	6.9 7.9	7.4		5.5 5.5	5.5		8.8 8.5	8.7	
					Bottom	8.1	27.6 27.7	27.7	8.7 8.7	8.7	21.6 21.7	21.7	97.5 104.1	100.8	6.9 7.4	7.1	7.1	5.5 5.7	5.6		9.4 8.7	9.1	
3-Jun-16	Sunny	Moderate	16:37	8.4	Surface	1.0	29.5 29.4	29.5	8.5 8.5	8.5	17.4 17.6	17.5	123.9 118.8	121.4	8.6 8.2	8.4	8.1	8.3 8.8	8.6	9.5	9.6 10.3	10.0	10.2
					Middle	4.2	29.0 28.9	28.9	8.5 8.5	8.5	18.3 18.7	18.5	109.3 115.3	112.3	7.6 8.0	7.8		10.1 9.7	9.9		9.8 8.8	9.3	
					Bottom	7.4	28.9 28.9	28.9	8.5 8.5	8.5	18.6 19.3	19.0	108.8 120.0	114.4	7.6 8.3	7.9	7.9	10.6 9.6	10.1		11.4 11.4	11.4	
6-Jun-16	Cloudy	Moderate	07:56	8.9	Surface	1.0	28.0 28.0	28.0	8.3 8.3	8.3	20.9 20.8	20.9	83.2 80.4	81.8	5.8 5.6	5.7	5.7	8.0 7.8	7.9	7.8	3.5 3.2	3.4	4.5
					Middle	4.5	28.0 27.9	28.0	8.3 8.3	8.3	21.4 21.6	21.5	81.0 79.3	80.2	5.6 5.5	5.6		7.8 7.8	7.8		4.9 5.0	5.0	
					Bottom	7.9	27.9 28.0	28.0	8.3 8.3	8.3	21.7 21.9	21.8	80.7 79.3	80.0	5.6 5.5	5.6	5.6	7.7 7.7	7.7		4.8 5.2	5.0	
8-Jun-16	Sunny	Moderate	09:19	8.9	Surface	1.0	28.0 28.0	28.0	8.2 8.2	8.2	17.9 17.8	17.8	79.5 81.8	80.7	5.6 5.7	5.7	5.7	4.2 4.1	4.2	4.2	5.8 5.2	5.5	5.6
					Middle	4.5	27.9 27.9	27.9	8.2 8.2	8.2	18.7 19.0	18.8	79.1 79.2	79.2	5.5 5.6	5.6		4.2 4.1	4.2		5.3 5.6	5.5	
					Bottom	7.9	27.8 27.9	27.8	8.1 8.2	8.2	21.8 21.7	21.7	78.1 78.0	78.1	5.5 5.5	5.5	5.5	4.2 4.3	4.3		5.4 6.1	5.8	
10-Jun-16	Sunny	Moderate	11:11	9.0	Surface	1.0	28.4 28.5	28.4	8.3 8.3	8.3	18.6 18.3	18.5	78.7 79.0	78.9	5.5 5.5	5.5	5.4	2.2 2.3	2.3	3.0	3.0 3.1	3.1	2.8
					Middle	4.5	27.8 27.9	27.8	8.2 8.2	8.2	20.9 21.8	21.3	76.4 75.1	75.8	5.3 5.2	5.2		3.3 3.3	3.3		2.4 3.1	2.8	
					Bottom	8.0	27.3 27.4	27.4	8.2 8.2	8.2	25.1 25.1	25.1	72.0 72.3	72.2	5.0 5.1	5.0	5.0	3.3 3.3	3.3		2.2 2.6	2.4	
13-Jun-16	Cloudy	Moderate	11:58	9.1	Surface	1.0	27.8 27.8	27.8	8.4 8.3	8.4	15.4 15.5	15.5	88.8 90.2	89.5	6.4 6.4	6.4	6.3	2.8 2.7	2.8	2.8	2.4 2.1	2.3	2.8
					Middle	4.6	27.1 27.0	27.0	8.2 8.2	8.2	22.4 21.8	22.1	88.3 86.3	87.3	6.3 6.1	6.2		2.8 2.8	2.8		3.6 3.0	3.3	
					Bottom	8.1	26.9 27.3	27.1	8.2 8.2	8.2	25.8 25.8	25.8	84.2 82.8	83.5	5.8 5.8	5.8	5.8	2.9 2.8	2.9		2.8 2.5	2.7	
15-Jun-16	Sunny	Moderate	14:57	8.7	Surface	1.0	28.9 28.8	28.9	8.5 8.5	8.5	13.2 13.8	13.5	85.4 85.1	85.3	6.1 5.8	5.9	5.6	7.5 7.6	7.6	7.5	4.8 5.0	4.9	4.9
					Middle	4.4	27.4 27.0	27.2	8.4 8.3	8.3	19.7 20.5	20.1	73.3 77.4	75.4	5.2 5.3	5.2		7.4 7.5	7.5		4.6 4.8	4.7	
					Bottom	7.7	26.8 27.0	26.9	8.3 8.3	8.3	27.6 28.2	27.9	71.7 71.9	71.8	5.1 5.1	5.1	5.1	7.4 7.3	7.4		4.3 5.8	5.1	
17-Jun-16	Sunny	Moderate	16:41	8.6	Surface	1.0	29.2 29.3	29.3	8.7 8.6	8.6	11.2 11.4	11.3	96.8 98.2	97.5	6.9 7.1	7.0	6.6	8.5 8.2	8.4	8.6	5.8 5.5	5.7	5.7
					Middle	4.3	27.0 26.8	26.9	8.5 8.4	8.4	21.1 21.5	21.3	85.4 86.0	85.7	6.2 6.2	6.2		8.6 8.5	8.6		6.0 5.8	5.9	
					Bottom	7.6	26.6 26.6	26.6	8.4 8.3	8.4	25.8 26.2	26.0	77.1 76.5	76.8	5.4 5.3	5.3	5.3	8.8 8.7	8.8		5.5 5.2	5.4	
20-Jun-16	Sunny	Moderate	07:22	8.3	Surface	1.0	28.7 28.7	28.7	8.4 8.4	8.4	16.7 16.8	16.7	101.8 103.1	102.5	7.2 7.3	7.2	7.2	6.7 6.4	6.6	6.9	6.7 6.4	6.6	6.9
					Middle	4.2	28.5 28.5	28.5	8.4 8.4	8.4	18.7 18.2	18.5	101.7 100.3	101.0	7.1 7.0	7.1		7.0 7.2	7.1		7.2 7.8	7.5	
					Bottom	7.3	28.4 28.6	28.5	8.4 8.4	8.4	18.9 18.9	18.9	100.3 102.9	101.6	7.0 7.2	7.1	7.1	7.0 6.8	6.9		6.9 6.0	6.5	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	08:34	9.0	Surface	1.0	28.5 28.3	28.4	8.4 8.4	8.4	19.0 19.0	19.0	91.9 88.1	90.0	6.4 6.2	6.3	6.2	4.4 4.3	4.4	4.4	5.4 6.2	5.8	5.9
					Middle	4.5	28.1 28.0	28.1	8.4 8.3	8.4	21.3 21.2	21.2	85.8 89.7	87.8	5.9 6.2	6.1		4.3 4.4	4.4		5.8 5.5	5.7	
					Bottom	8.0	27.6 27.6	27.6	8.3 8.3	8.3	23.5 24.4	24.0	82.8 80.7	81.8	5.7 5.6	5.7	5.7	4.4 4.5	4.5		6.2 6.0	6.1	
24-Jun-16	Sunny	Moderate	09:57	8.4	Surface	1.0	28.6 28.7	28.7	8.3 8.3	8.3	18.5 18.4	18.5	83.3 85.8	84.6	5.8 6.0	5.9	5.6	5.6 5.2	5.4	6.2	3.5 3.4	3.5	4.4
					Middle	4.2	28.0 27.7	27.9	8.2 8.2	8.2	20.8 21.9	21.3	76.0 72.2	74.1	5.3 5.0	5.2		6.4 6.2	6.3		4.8 5.0	4.9	
					Bottom	7.4	27.6 27.7	27.7	8.2 8.2	8.2	22.8 22.4	22.6	73.8 76.3	75.1	5.1 5.3	5.2	5.2	7.1 6.9	7.0		4.3 5.4	4.9	
27-Jun-16	Sunny	Moderate	12:25	8.5	Surface	1.0	29.2 29.2	29.2	8.5 8.5	8.5	21.3 21.4	21.4	111.7 114.3	113.0	7.6 7.8	7.7	7.4	7.6 7.5	7.6	7.5	6.3 6.3	6.3	6.2
					Middle	4.3	27.9 27.8	27.8	8.4 8.4	8.4	24.8 24.7	24.7	101.0 102.9	102.0	6.9 7.0	7.0		7.4 7.2	7.3		6.4 6.4	6.4	
					Bottom	7.5	26.9 26.6	26.8	8.4 8.4	8.4	27.5 27.6	27.6	81.2 78.1	79.7	5.6 5.4	5.5	5.5	7.5 7.5	7.5		5.9 5.9	5.9	
29-Jun-16	Sunny	Moderate	13:11	8.7	Surface	1.0	29.0 29.0	29.0	8.4 8.4	8.4	19.2 19.1	19.2	87.7 90.8	89.3	6.1 6.3	6.2	5.9	7.5 7.4	7.5	7.5	5.2 5.9	5.6	6.0
					Middle	4.4	27.4 28.0	27.7	8.3 8.4	8.4	22.9 22.3	22.6	79.0 79.4	79.2	5.5 5.5	5.5		7.5 7.5	7.5		6.2 6.7	6.5	
					Bottom	7.7	26.2 26.4	26.3	8.3 8.3	8.3	26.7 26.3	26.5	70.4 69.1	69.8	4.9 4.8	4.8	4.8	7.7 7.4	7.6		5.2 6.4	5.8	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS7 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jun-16	Sunny	Moderate	11:27	3.3	Surface	1.0	28.9 28.9	28.9	8.6 8.6	8.6	17.3 17.2	17.3	114.1 106.7	110.4	8.0 7.5	7.7	7.7	6.8 7.0	6.9	7.1	4.8 4.9	4.9	5.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	28.7 28.9	28.8	8.6 8.6	8.6	17.2 17.0	17.1	102.7 109.6	106.2	7.2 7.7	7.5	7.5	7.3 7.1	7.2		5.3 5.1	5.2	
3-Jun-16	Sunny	Moderate	11:58	3.4	Surface	1.0	28.9 28.9	28.9	8.4 8.4	8.4	16.1 15.5	15.8	104.7 104.9	104.8	7.4 7.4	7.4	7.4	2.5 2.7	2.6	2.5	4.8 4.5	4.7	5.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	28.8 28.9	28.8	8.4 8.4	8.4	16.7 16.4	16.5	104.5 104.6	104.6	7.4 7.4	7.4	7.4	2.2 2.3	2.3		6.3 5.5	5.9	
6-Jun-16	Cloudy	Moderate	12:58	3.2	Surface	1.0	28.0 28.0	28.0	8.2 8.2	8.2	19.1 19.0	19.1	85.2 84.7	85.0	6.0 6.0	6.0	6.0	2.6 2.6	2.6	2.6	2.2 2.2	2.2	2.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	28.0 28.0	28.0	8.2 8.2	8.2	19.9 19.9	19.9	84.6 85.0	84.8	5.9 6.0	5.9	5.9	2.5 2.6	2.6		2.0 3.0	2.5	
8-Jun-16	Sunny	Moderate	14:20	3.2	Surface	1.0	28.5 28.5	28.5	8.4 8.4	8.4	19.0 19.0	19.0	86.4 86.0	86.2	6.0 6.0	6.0	6.0	1.8 1.8	1.8	1.9	5.1 4.9	5.0	5.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	28.4 28.4	28.4	8.4 8.4	8.4	19.8 19.6	19.7	86.1 85.7	85.9	6.0 6.0	6.0	6.0	1.9 1.8	1.9		6.2 6.6	6.4	
10-Jun-16	Rainy	Moderate	15:57	3.4	Surface	1.0	28.7 28.7	28.7	8.6 8.6	8.6	17.3 17.3	17.3	106.3 107.7	107.0	7.5 7.6	7.5	7.5	3.0 2.9	3.0	3.1	4.2 4.0	4.1	4.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	28.6 28.7	28.6	8.6 8.6	8.6	18.1 18.2	18.2	105.2 107.0	106.1	7.4 7.5	7.4	7.4	3.2 3.0	3.1		3.7 5.1	4.4	
13-Jun-16	Cloudy	Moderate	09:08	3.3	Surface	1.0	27.7 27.7	27.7	8.2 8.1	8.2	15.1 14.7	14.9	85.8 86.7	86.3	6.2 6.2	6.2	6.2	3.6 3.7	3.7	3.7	2.5 3.2	2.9	5.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	27.6 27.6	27.6	8.2 8.1	8.1	16.0 16.9	16.5	81.2 81.3	81.3	5.9 5.9	5.9	5.9	3.7 3.7	3.7		8.6 8.1	8.4	
15-Jun-16	Sunny	Moderate	11:10	3.3	Surface	1.0	28.5 28.4	28.5	8.2 8.2	8.2	14.6 14.8	14.7	79.4 79.8	79.6	5.7 5.7	5.7	5.7	8.6 8.5	8.6	8.6	5.6 5.8	5.7	5.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	27.8 28.3	28.1	8.1 8.1	8.1	17.9 18.6	18.2	78.4 79.9	79.2	5.6 5.6	5.6	5.6	8.5 8.4	8.5		5.8 6.0	5.9	
17-Jun-16	Sunny	Moderate	12:21	3.3	Surface	1.0	28.9 28.8	28.9	8.3 8.3	8.3	12.0 12.2	12.1	90.6 89.7	90.2	6.5 6.5	6.5	6.5	5.6 5.6	5.6	5.7	4.0 5.4	4.7	4.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	28.5 28.7	28.6	8.2 8.2	8.2	14.4 16.7	15.6	91.3 90.8	91.1	6.5 6.4	6.5	6.5	5.7 5.8	5.8		4.4 4.0	4.2	
20-Jun-16	Sunny	Moderate	11:47	3.4	Surface	1.0	28.7 29.0	28.9	8.4 8.4	8.4	17.8 17.2	17.5	110.1 114.5	112.3	7.7 8.0	7.9	7.9	8.8 8.9	8.9	9.1	7.0 7.4	7.2	7.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	28.7 28.5	28.6	8.4 8.3	8.3	18.0 19.3	18.6	106.8 109.4	108.1	7.5 7.6	7.6	7.6	9.0 9.5	9.3		7.2 7.2	7.2	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	12:59	3.5	Surface	1.0	28.3 28.2	28.2	8.4 8.4	8.4	18.1 18.3	18.2	83.4 83.7	83.6	5.9 5.9	5.9	5.9	7.0 7.0	7.0	7.1	8.4 7.5	8.0	8.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	28.2 28.3	28.2	8.4 8.4	8.4	18.5 18.1	18.3	83.3 83.4	83.4	5.9 5.9	5.9	5.9	7.1 7.0	7.1		9.3 8.9	9.1	
24-Jun-16	Sunny	Moderate	14:24	3.3	Surface	1.0	29.0 28.9	28.9	8.5 8.5	8.5	18.6 18.1	18.3	108.3 104.7	106.5	7.5 7.3	7.4	7.4	5.9 6.3	6.1	6.4	5.3 5.0	5.2	5.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	28.0 28.9	28.5	8.4 8.5	8.4	19.2 19.0	19.1	88.8 95.7	92.3	6.3 6.7	6.5	6.5	7.0 6.3	6.7		5.5 5.6	5.6	
27-Jun-16	Sunny	Moderate	17:05	3.2	Surface	1.0	30.0 30.0	30.0	8.5 8.5	8.5	20.1 20.1	20.1	150.8 149.5	150.2	10.2 10.2	10.2	10.2	5.6 5.9	5.8	5.8	8.2 7.6	7.9	7.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	29.5 29.9	29.7	8.5 8.5	8.5	21.2 20.9	21.0	141.2 142.2	141.7	9.6 9.7	9.6	9.6	5.8 5.8	5.8		8.2 7.2	7.7	
29-Jun-16	Sunny	Moderate	09:26	3.3	Surface	1.0	28.7 28.7	28.7	8.4 8.4	8.4	18.5 18.6	18.5	100.4 100.9	100.7	7.0 7.0	7.0	7.0	2.8 2.8	2.8	2.9	3.4 2.8	3.1	3.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	28.7 28.4	28.6	8.4 8.4	8.4	20.2 19.6	19.9	100.9 98.5	99.7	7.0 6.9	6.9	6.9	2.9 2.8	2.9		3.6 3.1	3.4	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS7 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jun-16	Sunny	Moderate	14:34	3.3	Surface	1.0	30.1 30.0	30.1	8.9 8.9	8.9	16.1 16.1	16.1	167.6 167.2	167.4	11.6 11.6	11.6	11.6	4.5 4.4	4.5	4.6	10.4 9.8	10.1	10.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	30.1 30.0	30.1	8.9 8.9	8.9	16.1 16.2	16.1	167.3 166.4	166.9	11.6 11.5	11.5	11.5	4.6 4.7	4.7		9.3 10.7	10.0	
3-Jun-16	Sunny	Moderate	16:56	3.3	Surface	1.0	29.8 29.4	29.6	8.5 8.5	8.5	17.2 17.3	17.2	128.7 121.5	125.1	8.9 8.4	8.7	8.7	14.5 14.8	14.7	15.2	9.8 9.7	9.8	11.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	29.4 29.1	29.2	8.5 8.5	8.5	18.3 18.9	18.6	125.5 122.0	123.8	8.7 8.4	8.6	8.6	15.7 15.5	15.6		14.4 13.6	14.0	
6-Jun-16	Cloudy	Moderate	07:38	3.4	Surface	1.0	28.0 28.0	28.0	8.3 8.3	8.3	19.2 19.2	19.2	87.1 86.2	86.7	6.1 6.1	6.1	6.1	2.8 2.7	2.8	2.8	3.5 3.7	3.6	3.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	28.0 27.9	27.9	8.3 8.3	8.3	19.4 19.6	19.5	86.7 85.8	86.3	6.1 6.0	6.1	6.1	2.8 2.8	2.8		3.9 3.7	3.8	
8-Jun-16	Sunny	Moderate	09:00	3.4	Surface	1.0	28.0 28.0	28.0	8.2 8.2	8.2	16.9 17.0	17.0	76.6 76.8	76.7	5.5 5.5	5.5	5.5	2.6 2.6	2.6	2.6	4.8 4.7	4.8	4.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	28.0 28.0	28.0	8.2 8.2	8.2	18.9 18.7	18.8	76.8 76.7	76.8	5.4 5.4	5.4	5.4	2.5 2.5	2.5		4.6 3.8	4.2	
10-Jun-16	Sunny	Moderate	10:53	3.6	Surface	1.0	28.2 28.2	28.2	8.3 8.3	8.3	18.7 18.7	18.7	86.7 85.9	86.3	6.1 6.1	6.1	6.1	2.8 3.0	2.9	2.9	5.1 5.0	5.1	5.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	28.1 28.1	28.1	8.3 8.3	8.3	18.9 19.3	19.1	86.4 87.3	86.9	6.1 6.1	6.1	6.1	2.9 2.8	2.9		5.4 4.6	5.0	
13-Jun-16	Cloudy	Moderate	12:14	3.4	Surface	1.0	27.9 28.0	28.0	8.2 8.2	8.2	16.4 16.2	16.3	82.6 82.5	82.6	5.9 5.9	5.9	5.9	2.2 2.2	2.2	2.3	2.2 2.6	2.4	2.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	28.0 27.9	28.0	8.2 8.2	8.2	16.2 16.8	16.5	82.5 82.4	82.5	5.9 5.9	5.9	5.9	2.4 2.3	2.4		2.5 2.5	2.5	
15-Jun-16	Sunny	Moderate	15:11	3.2	Surface	1.0	29.0 29.1	29.1	8.4 8.4	8.4	13.2 13.2	13.2	98.5 100.8	99.7	7.0 7.2	7.1	7.1	4.4 4.6	4.5	4.6	3.7 3.8	3.8	3.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	29.0 28.8	28.9	8.4 8.4	8.4	13.3 13.8	13.5	99.8 97.5	98.7	7.1 7.0	7.1	7.1	4.6 4.5	4.6		3.1 4.2	3.7	
17-Jun-16	Sunny	Moderate	16:57	3.2	Surface	1.0	29.9 29.5	29.7	8.6 8.6	8.6	10.9 11.0	10.9	113.6 114.0	113.8	8.1 8.2	8.1	8.1	4.7 4.9	4.8	4.8	3.8 3.1	3.5	4.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	29.6 28.7	29.2	8.6 8.5	8.6	12.8 13.2	13.0	114.5 117.3	115.9	8.1 8.4	8.3	8.3	4.8 4.8	4.8		4.0 5.8	4.9	
20-Jun-16	Sunny	Moderate	07:04	3.4	Surface	1.0	29.0 28.8	28.9	8.4 8.4	8.4	16.7 16.8	16.8	120.9 114.8	117.9	8.5 8.1	8.3	8.3	4.0 3.9	4.0	4.0	6.2 5.4	5.8	6.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	28.8 28.7	28.8	8.4 8.4	8.4	16.8 16.9	16.8	112.7 117.6	115.2	7.9 8.3	8.1	8.1	3.9 3.9	3.9		7.0 6.5	6.8	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	08:18	3.4	Surface	1.0	28.3 28.3	28.3	8.3 8.3	8.3	17.5 17.5	17.5	86.3 86.3	86.3	6.1 6.1	6.1	6.1	5.1 5.3	5.2	5.3	4.2 4.3	4.3	4.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	28.4 28.3	28.3	8.3 8.3	8.3	17.5 17.6	17.5	86.2 86.2	86.2	6.1 6.1	6.1	6.1	5.3 5.3	5.3		3.5 5.1	4.3	
24-Jun-16	Sunny	Moderate	09:37	3.5	Surface	1.0	28.2 28.3	28.3	8.2 8.2	8.2	18.6 18.5	18.6	77.0 77.2	77.1	5.4 5.4	5.4	5.4	7.6 7.1	7.4	7.4	5.2 5.6	5.4	5.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	28.1 28.1	28.1	8.2 8.2	8.2	19.0 19.8	19.4	76.1 77.2	76.7	5.4 5.4	5.4	5.4	7.2 7.3	7.3		6.2 5.6	5.9	
27-Jun-16	Sunny	Moderate	12:09	3.2	Surface	1.0	28.9 29.0	29.0	8.4 8.4	8.4	20.4 20.2	20.3	104.3 105.6	105.0	7.2 7.3	7.2	7.2	11.4 11.3	11.4	11.5	10.8 10.1	10.5	10.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	28.6 28.8	28.7	8.4 8.4	8.4	21.8 21.8	21.8	103.4 103.0	103.2	7.1 7.1	7.1	7.1	11.5 11.6	11.6		11.2 10.3	10.8	
29-Jun-16	Sunny	Moderate	13:28	3.2	Surface	1.0	28.7 29.1	28.9	8.5 8.5	8.5	19.4 19.3	19.4	95.7 102.4	99.1	6.7 7.1	6.9	6.9	3.8 3.7	3.8	3.8	4.2 4.0	4.1	4.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	29.0 27.5	28.3	8.5 8.4	8.4	19.3 21.9	20.6	98.7 94.2	96.5	6.8 6.5	6.7	6.7	3.9 3.7	3.8		4.8 5.7	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

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-Jun-16	Sunny	Moderate	10:50	3.3	Surface	1.0	29.2 29.2	29.2	8.6 8.7	8.6	15.9 16.0	16.0	136.9 141.3	139.1	9.6 9.9	9.8	9.8	6.5 6.6	6.6	6.7	5.4 5.1	5.3	5.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	29.2 29.2	29.2	8.6 8.6	8.6	16.0 16.0	16.0	119.6 139.1	129.4	8.4 9.8	9.1	9.1	6.6 6.8	6.7		6.0 6.1	6.1	
3-Jun-16	Sunny	Moderate	11:30	3.8	Surface	1.0	28.7 28.6	28.7	8.4 8.4	8.4	16.1 16.1	16.1	99.3 99.3	99.3	7.0 7.0	7.0	7.0	3.1 3.4	3.3	3.3	5.8 7.1	6.5	6.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	28.6 28.6	28.6	8.4 8.4	8.4	17.3 17.2	17.2	98.8 99.2	99.0	7.0 7.0	7.0	7.0	3.0 3.3	3.2		6.6 6.9	6.8	
6-Jun-16	Cloudy	Moderate	13:25	4.3	Surface	1.0	28.1 28.1	28.1	8.3 8.3	8.3	19.1 19.0	19.0	84.3 83.8	84.1	5.9 5.9	5.9	5.9	3.4 3.5	3.5	3.6	3.2 3.2	3.2	3.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	28.0 28.1	28.0	8.2 8.3	8.3	21.3 20.2	20.8	84.8 84.3	84.6	5.9 5.9	5.9	5.9	3.5 3.6	3.6		2.9 4.0	3.5	
8-Jun-16	Sunny	Moderate	14:43	3.9	Surface	1.0	28.7 28.6	28.6	8.3 8.3	8.3	17.6 17.6	17.6	87.6 87.6	87.6	6.1 6.2	6.2	6.2	2.1 2.2	2.2	2.3	3.0 3.6	3.3	3.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	28.5 28.2	28.3	8.3 8.3	8.3	20.3 21.0	20.6	87.6 88.9	88.3	6.1 6.2	6.1	6.1	2.3 2.3	2.3		3.7 3.0	3.4	
10-Jun-16	Rainy	Moderate	16:27	4.0	Surface	1.0	28.5 28.6	28.5	8.5 8.5	8.5	17.7 17.7	17.7	95.8 99.4	97.6	6.7 7.0	6.9	6.9	3.1 3.2	3.2	3.2	4.0 4.2	4.1	4.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	28.5 27.9	28.2	8.5 8.5	8.5	19.6 19.7	19.7	98.0 95.2	96.6	6.8 6.7	6.8	6.8	3.2 3.1	3.2		4.7 4.3	4.5	
13-Jun-16	Cloudy	Moderate	08:48	3.4	Surface	1.0	27.6 27.7	27.6	8.2 8.2	8.2	14.8 14.7	14.7	89.5 90.7	90.1	6.5 6.6	6.5	6.5	2.3 2.2	2.3	2.4	3.3 2.3	2.8	2.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	27.6 27.7	27.6	8.2 8.1	8.2	15.3 15.5	15.4	87.7 87.7	87.7	6.4 6.4	6.4	6.4	2.4 2.4	2.4		2.4 2.9	2.7	
15-Jun-16	Sunny	Moderate	10:50	4.1	Surface	1.0	29.0 28.7	28.8	8.3 8.3	8.3	12.7 13.6	13.1	90.7 84.3	87.5	6.5 6.1	6.3	6.3	6.6 6.6	6.6	6.6	4.6 3.8	4.2	4.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	28.3 28.2	28.3	8.2 8.2	8.2	18.3 18.3	18.3	85.6 81.8	83.7	6.0 5.8	5.9	5.9	6.5 6.6	6.6		4.5 4.6	4.6	
17-Jun-16	Sunny	Moderate	11:57	4.0	Surface	1.0	28.1 28.5	28.3	8.2 8.2	8.2	12.3 13.0	12.7	79.5 78.9	79.2	5.5 5.7	5.6	5.6	7.7 7.5	7.6	7.6	3.8 2.9	3.4	3.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	28.1 28.4	28.3	8.1 8.2	8.1	20.7 17.5	19.1	74.8 77.4	76.1	5.5 5.5	5.5	5.5	7.6 7.3	7.5		3.0 4.0	3.5	
20-Jun-16	Sunny	Moderate	12:17	3.8	Surface	1.0	28.4 28.4	28.4	8.3 8.3	8.3	17.3 17.3	17.3	97.5 96.3	96.9	6.9 6.8	6.9	6.9	4.2 4.3	4.3	4.3	6.6 6.5	6.6	6.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	28.4 28.0	28.2	8.3 8.3	8.3	18.9 18.5	18.7	98.9 101.0	100.0	6.9 7.1	7.0	7.0	4.3 4.1	4.2		7.0 6.4	6.7	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	13:23	3.5	Surface	1.0	28.9 28.9	28.9	8.5 8.5	8.5	16.9 17.0	17.0	125.4 122.8	124.1	8.8 8.6	8.7	8.7	4.6 4.6	4.6	4.7	7.3 7.8	7.6	7.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	29.0 29.0	29.0	8.5 8.5	8.5	17.5 17.5	17.5	123.4 122.0	122.7	8.7 8.6	8.6	8.6	4.8 4.6	4.7		7.9 7.5	7.7	
24-Jun-16	Sunny	Moderate	14:51	3.8	Surface	1.0	28.9 29.1	29.0	8.5 8.5	8.5	17.9 17.8	17.9	116.2 120.2	118.2	8.1 8.4	8.2	8.2	5.9 6.1	6.0	7.1	4.0 4.8	4.4	5.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	28.8 28.1	28.5	8.5 8.4	8.5	20.5 21.2	20.8	117.7 113.3	115.5	8.1 7.9	8.0	8.0	7.8 8.5	8.2		5.0 6.0	5.5	
27-Jun-16	Sunny	Moderate	17:28	3.9	Surface	1.0	29.1 28.9	29.0	8.4 8.4	8.4	20.7 20.9	20.8	123.4 120.3	121.9	8.4 8.3	8.4	8.4	14.5 14.6	14.6	14.7	8.6 8.8	8.7	9.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	28.7 28.0	28.4	8.3 8.3	8.3	22.1 22.4	22.3	108.1 108.1	108.1	7.4 7.5	7.4	7.4	14.8 14.5	14.7		9.0 9.7	9.4	
29-Jun-16	Sunny	Moderate	09:02	4.1	Surface	1.0	28.7 28.5	28.6	8.4 8.4	8.4	19.2 19.3	19.2	95.7 95.8	95.8	6.7 6.7	6.7	6.7	7.7 7.7	7.7	7.7	3.7 3.6	3.7	3.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	28.5 28.0	28.3	8.4 8.3	8.3	22.7 23.7	23.2	96.9 90.9	93.9	6.6 6.2	6.4	6.4	7.6 7.8	7.7		2.9 3.6	3.3	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	15:01	3.4	Surface	1.0	29.1 29.0	29.0	8.7 8.7	8.7	15.9 16.0	15.9	124.0 120.3	122.2	8.7 8.5	8.6	8.6	9.9 10.0	10.0	10.1	5.3 5.0	5.2	5.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	29.1 29.1	29.1	8.7 8.7	8.7	15.8 15.9	15.9	122.2 115.6	118.9	8.6 8.1	8.4	8.4	10.1 10.0	10.1		5.2 5.4	5.3	
3-Jun-16	Sunny	Moderate	17:26	3.7	Surface	1.0	29.5 29.5	29.5	8.5 8.5	8.5	17.0 17.0	17.0	134.9 136.3	135.6	9.4 9.5	9.4	9.4	10.3 10.3	10.3	10.4	7.0 6.8	6.9	7.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	29.5 29.3	29.4	8.5 8.5	8.5	17.0 17.1	17.1	135.8 133.6	134.7	9.4 9.3	9.4	9.4	10.3 10.5	10.4		6.0 8.0	7.0	
6-Jun-16	Cloudy	Moderate	07:17	4.1	Surface	1.0	28.1 28.1	28.1	8.3 8.3	8.3	19.4 19.5	19.5	82.3 83.6	83.0	5.8 5.9	5.8	5.8	2.8 3.0	2.9	3.0	3.2 2.6	2.9	2.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	28.1 28.1	28.1	8.3 8.3	8.3	20.4 20.6	20.5	82.8 85.6	84.2	5.8 6.0	5.9	5.9	3.0 3.1	3.1		3.0 2.8	2.9	
8-Jun-16	Sunny	Moderate	08:38	4.3	Surface	1.0	28.0 28.0	28.0	8.2 8.2	8.2	16.9 17.0	17.0	78.5 75.1	76.8	5.5 5.3	5.4	5.4	6.2 6.1	6.2	6.2	5.6 5.4	5.5	5.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	28.0 27.9	28.0	8.2 8.2	8.2	18.7 19.1	18.9	74.3 75.9	75.1	5.3 5.4	5.4	5.4	6.3 6.1	6.2		5.4 5.9	5.7	
10-Jun-16	Sunny	Moderate	10:29	4.3	Surface	1.0	28.1 28.1	28.1	8.3 8.3	8.3	17.5 17.9	17.7	77.3 76.5	76.9	5.5 5.4	5.4	5.4	1.3 1.4	1.4	1.4	3.0 2.1	2.6	2.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	28.1 27.8	27.9	8.2 8.2	8.2	21.0 21.0	21.0	77.0 78.5	77.8	5.4 5.5	5.4	5.4	1.3 1.3	1.3		2.3 2.3	2.3	
13-Jun-16	Cloudy	Moderate	12:38	3.3	Surface	1.0	28.0 28.1	28.1	8.2 8.2	8.2	14.5 14.5	14.5	88.4 88.7	88.6	6.4 6.4	6.4	6.4	3.2 3.0	3.1	3.1	3.7 4.5	4.1	3.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	28.1 28.0	28.0	8.2 8.2	8.2	14.5 14.7	14.6	88.5 88.2	88.4	6.4 6.4	6.4	6.4	3.0 3.2	3.1		3.6 3.8	3.7	
15-Jun-16	Sunny	Moderate	15:37	4.1	Surface	1.0	28.8 28.8	28.8	8.3 8.3	8.3	13.3 13.4	13.3	92.9 93.1	93.0	6.7 6.7	6.7	6.7	11.5 11.4	11.5	11.5	12.0 10.2	11.1	11.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	28.8 28.7	28.8	8.3 8.3	8.3	13.6 13.8	13.7	93.0 94.3	93.7	6.7 6.8	6.7	6.7	11.4 11.6	11.5		11.6 11.6	11.6	
17-Jun-16	Sunny	Moderate	17:19	4.1	Surface	1.0	29.5 29.3	29.4	8.5 8.5	8.5	11.6 11.6	11.6	107.8 105.0	106.4	7.7 7.5	7.6	7.6	7.5 7.6	7.6	7.7	4.4 5.3	4.9	4.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	29.3 29.3	29.3	8.5 8.4	8.5	12.3 13.7	13.0	108.7 107.0	107.9	7.8 7.6	7.7	7.7	7.8 7.6	7.7		5.0 4.0	4.5	
20-Jun-16	Sunny	Moderate	06:38	3.8	Surface	1.0	28.4 28.3	28.4	8.2 8.2	8.2	16.2 16.3	16.3	89.9 87.5	88.7	6.4 6.2	6.3	6.3	5.0 5.4	5.2	5.3	4.2 4.1	4.2	4.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	27.9 28.4	28.2	8.2 8.2	8.2	18.4 17.9	18.2	89.7 88.8	89.3	6.4 6.3	6.3	6.3	5.3 5.2	5.3		5.8 5.1	5.5	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	08:00	3.3	Surface	1.0	28.2 28.1	28.2	8.3 8.3	8.3	18.0 18.3	18.1	91.9 84.5	88.2	6.5 6.0	6.2	6.2	6.4 6.4	6.4	6.5	4.0 4.4	4.2	4.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	28.2 28.2	28.2	8.3 8.3	8.3	18.6 18.2	18.4	86.3 83.0	84.7	6.1 5.9	6.0	6.0	6.6 6.4	6.5		4.0 4.4	4.2	
24-Jun-16	Sunny	Moderate	09:11	3.9	Surface	1.0	28.3 28.3	28.3	8.2 8.2	8.2	18.4 18.4	18.4	79.8 78.9	79.4	5.6 5.6	5.6	5.6	7.1 6.8	7.0	7.2	5.2 5.8	5.5	5.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	28.1 28.2	28.2	8.2 8.2	8.2	19.4 19.7	19.5	80.9 79.5	80.2	5.7 5.6	5.6	5.6	7.7 7.1	7.4		5.7 6.0	5.9	
27-Jun-16	Sunny	Moderate	11:44	4.0	Surface	1.0	28.2 28.1	28.2	8.4 8.4	8.4	21.4 21.4	21.4	87.2 84.6	85.9	6.0 5.9	5.9	5.9	13.4 13.5	13.5	13.4	9.0 9.0	9.0	9.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	28.0 28.0	28.0	8.4 8.3	8.3	22.4 22.4	22.4	85.8 84.7	85.3	6.0 5.9	5.9	5.9	13.2 13.2	13.2		9.6 9.8	9.7	
29-Jun-16	Sunny	Moderate	13:49	4.1	Surface	1.0	28.7 28.5	28.6	8.5 8.5	8.5	20.7 20.8	20.7	98.5 96.5	97.5	6.8 6.7	6.7	6.7	8.5 8.6	8.6	8.6	10.1 10.3	10.2	10.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	28.6 27.9	28.3	8.5 8.4	8.4	22.3 23.1	22.7	98.3 98.7	98.5	6.7 6.8	6.8	6.8	8.7 8.5	8.6		11.9 11.3	11.6	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	10:30	11.3	Surface	1.0	28.4 28.4	28.4	8.5 8.4	8.5	13.4 13.5	13.4	88.6 90.3	89.5	6.4 6.5	6.5	6.3	2.5 2.5	2.5	2.6	3.7 3.9	3.8	3.3
					Middle	5.7	27.6 27.8	27.7	8.3 8.3	8.3	18.7 19.5	19.1	83.8 84.3	84.1	6.0 6.0	6.0		2.6 2.5	2.6		2.8 2.6	2.7	
					Bottom	10.3	27.4 27.2	27.3	8.2 8.2	8.2	25.9 25.7	25.8	86.9 86.6	86.8	5.9 6.0	5.9	5.9	2.7 2.8	2.8		3.0 3.6	3.3	
3-Jun-16	Sunny	Moderate	11:08	11.4	Surface	1.0	28.7 28.6	28.7	8.5 8.5	8.5	15.2 15.2	15.2	93.4 94.3	93.9	6.6 6.7	6.7	6.5	3.4 3.6	3.5	3.8	5.4 5.0	5.2	6.5
					Middle	5.7	27.8 28.1	27.9	8.4 8.4	8.4	21.6 20.9	21.2	88.8 92.7	90.8	6.2 6.5	6.3		4.1 4.0	4.1		7.0 7.1	7.1	
					Bottom	10.4	27.9 28.4	28.1	8.4 8.4	8.4	22.4 22.6	22.5	92.0 94.8	93.4	6.4 6.5	6.4	6.4	4.0 3.8	3.9		7.6 6.8	7.2	
6-Jun-16	Cloudy	Moderate	13:41	11.0	Surface	1.0	27.9 27.9	27.9	8.3 8.3	8.3	19.8 20.0	19.9	78.3 78.5	78.4	5.5 5.5	5.5	5.4	3.6 3.6	3.6	3.6	3.2 4.4	3.8	3.6
					Middle	5.5	27.5 27.4	27.5	8.3 8.3	8.3	21.7 22.0	21.9	78.3 77.6	78.0	5.4 5.3	5.3		3.5 3.6	3.6		3.9 3.7	3.8	
					Bottom	10.0	27.1 27.3	27.2	8.2 8.2	8.2	28.6 28.8	28.7	75.3 76.5	75.9	5.3 5.3	5.3	5.3	3.6 3.7	3.7		3.0 3.1	3.1	
8-Jun-16	Sunny	Moderate	14:57	10.7	Surface	1.0	28.1 28.1	28.1	8.3 8.3	8.3	19.6 19.8	19.7	75.8 83.5	79.7	5.3 5.7	5.5	5.4	2.1 2.2	2.2	2.2	3.9 3.3	3.6	3.6
					Middle	5.4	27.2 27.3	27.3	8.3 8.3	8.3	23.0 22.4	22.7	78.8 75.3	77.1	5.5 5.1	5.3		2.1 2.1	2.1		3.9 4.0	4.0	
					Bottom	9.7	27.0 27.1	27.0	8.2 8.2	8.2	28.6 28.6	28.6	77.4 71.9	74.7	5.4 5.0	5.2	5.2	2.1 2.3	2.2		2.6 4.0	3.3	
10-Jun-16	Rainy	Moderate	16:41	10.1	Surface	1.0	28.5 28.5	28.5	8.4 8.4	8.4	18.2 18.3	18.2	82.1 80.6	81.4	5.7 5.7	5.7	5.6	1.6 1.6	1.6	1.8	4.3 4.3	4.3	3.7
					Middle	5.1	27.2 27.0	27.1	8.3 8.3	8.3	23.9 24.5	24.2	73.1 81.5	77.3	5.1 5.6	5.4		1.8 1.8	1.8		3.5 3.6	3.6	
					Bottom	9.1	26.9 26.6	26.8	8.3 8.2	8.3	26.9 26.9	26.9	74.6 69.9	72.3	5.2 4.8	5.0	5.0	1.9 1.8	1.9		2.8 3.6	3.2	
13-Jun-16	Cloudy	Moderate	08:31	11.0	Surface	1.0	27.7 27.6	27.7	8.3 8.3	8.3	12.6 12.7	12.7	87.3 81.1	84.2	6.4 5.9	6.2	5.8	3.0 3.2	3.1	3.2	3.1 3.5	3.3	3.3
					Middle	5.5	27.3 27.2	27.2	8.2 8.2	8.2	19.0 19.2	19.1	80.9 76.6	78.8	5.6 5.3	5.4		3.2 3.1	3.2		3.2 3.3	3.3	
					Bottom	10.0	26.3 26.1	26.2	8.0 8.0	8.0	28.8 28.9	28.9	72.3 74.9	73.6	5.2 5.3	5.3	5.3	3.3 3.3	3.3		4.2 2.5	3.4	
15-Jun-16	Sunny	Moderate	10:33	10.6	Surface	1.0	28.8 28.5	28.6	8.4 8.3	8.4	10.2 11.5	10.8	78.6 77.4	78.0	5.7 5.6	5.7	5.4	4.7 4.7	4.7	4.8	6.3 4.6	5.5	5.9
					Middle	5.3	27.9 27.8	27.9	8.2 8.2	8.2	17.3 17.3	17.3	73.4 70.7	72.1	5.0 5.0	5.0		4.8 4.8	4.8		5.7 7.0	6.4	
					Bottom	9.6	26.1 25.7	25.9	8.0 8.0	8.0	30.4 31.2	30.8	70.6 70.2	70.4	5.0 5.0	5.0	5.0	4.7 4.8	4.8		5.7 6.1	5.9	
17-Jun-16	Sunny	Moderate	11:43	10.2	Surface	1.0	28.1 28.2	28.1	8.3 8.3	8.3	11.9 10.9	11.4	76.7 76.8	76.8	5.6 5.7	5.6	5.5	5.1 5.2	5.2	6.0	4.0 3.4	3.7	4.1
					Middle	5.1	26.7 27.4	27.0	8.1 8.2	8.1	19.7 18.0	18.8	76.3 78.5	77.4	5.3 5.4	5.4		6.4 6.3	6.4		4.6 5.0	4.8	
					Bottom	9.2	25.5 25.6	25.6	8.0 8.0	8.0	32.1 32.2	32.2	70.9 71.7	71.3	5.1 5.2	5.2	5.2	6.5 6.2	6.4		3.3 4.0	3.7	
20-Jun-16	Sunny	Moderate	12:37	10.6	Surface	1.0	28.5 28.5	28.5	8.3 8.3	8.3	15.8 15.7	15.8	82.8 82.7	82.8	5.9 5.9	5.9	5.6	4.2 3.9	4.1	4.0	6.9 6.7	6.8	6.4
					Middle	5.3	27.0 27.0	27.0	8.2 8.1	8.2	23.7 23.3	23.5	76.1 77.0	76.6	5.3 5.4	5.3		3.8 3.9	3.9		6.6 5.3	6.0	
					Bottom	9.6	26.0 26.4	26.2	8.1 8.1	8.1	26.1 25.9	26.0	77.8 82.3	80.1	5.5 5.7	5.6	5.6	4.0 3.9	4.0		6.5 6.5	6.5	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	13:37	10.9	Surface	1.0	28.6 28.6	28.6	8.5 8.4	8.4	15.5 16.6	16.1	81.7 82.4	82.1	5.8 5.8	5.8	5.6	4.7 4.5	4.6	4.8	4.7 5.2	5.0	6.2
					Middle	5.5	27.1 27.7	27.4	8.3 8.4	8.4	20.5 20.1	20.3	77.4 75.0	76.2	5.4 5.3	5.3		4.7 4.8	4.8		6.5 5.9	6.2	
					Bottom	9.9	25.9 26.0	26.0	8.3 8.3	8.3	28.0 28.3	28.2	74.1 74.3	74.2	5.1 5.3	5.2	5.2	5.0 5.0	5.0		7.0 8.0	7.5	
24-Jun-16	Sunny	Moderate	15:16	10.6	Surface	1.0	28.6 28.7	28.7	8.3 8.3	8.3	18.9 18.7	18.8	80.8 79.5	80.2	5.6 5.5	5.6	5.4	4.6 4.6	4.6	5.5	5.3 5.9	5.6	5.6
					Middle	5.3	26.3 26.4	26.3	8.2 8.2	8.2	26.0 26.5	26.3	72.8 73.4	73.1	5.1 5.1	5.1		6.0 5.8	5.9		5.7 5.9	5.8	
					Bottom	9.6	26.3 26.4	26.3	8.2 8.2	8.2	27.2 26.9	27.1	75.5 77.4	76.5	5.2 5.4	5.3	5.3	6.0 5.7	5.9		5.4 5.3	5.4	
27-Jun-16	Sunny	Moderate	17:42	10.6	Surface	1.0	29.0 28.9	29.0	8.4 8.3	8.3	21.1 21.2	21.2	103.7 109.2	106.5	7.1 7.5	7.3	7.0	4.3 4.6	4.5	4.5	5.4 6.0	5.7	6.1
					Middle	5.3	28.2 26.5	27.3	8.3 8.3	8.3	22.6 25.8	24.2	93.3 101.5	97.4	6.4 7.0	6.7		4.5 4.6	4.6		5.9 6.3	6.1	
					Bottom	9.6	26.5 26.4	26.4	8.3 8.3	8.3	28.0 28.0	28.0	79.8 85.2	82.5	5.6 5.9	5.7	5.7	4.4 4.5	4.5		6.4 6.3	6.4	
29-Jun-16	Sunny	Moderate	08:50	10.1	Surface	1.0	28.0 28.0	28.0	8.4 8.3	8.3	20.4 20.5	20.4	76.7 76.9	76.8	5.4 5.4	5.4	5.3	3.5 3.6	3.6	3.7	2.1 3.1	2.6	3.0
					Middle	5.1	27.0 27.7	27.4	8.3 8.3	8.3	24.6 25.4	25.0	74.5 75.4	75.0	5.1 5.2	5.1		3.8 3.8	3.8		3.4 3.1	3.3	
					Bottom	9.1	26.3 26.2	26.2	8.2 8.3	8.2	28.6 28.8	28.7	72.6 70.7	71.7	5.0 4.9	5.0	5.0	3.7 3.8	3.8		2.7 3.5	3.1	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	15:15	11.0	Surface	1.0	29.5 29.3	29.4	8.7 8.7	8.7	14.3 14.4	14.3	119.3 109.3	114.3	8.4 7.7	8.1	7.9	2.5 2.7	2.6	2.8	3.5 3.8	3.7	4.4
					Middle	5.5	27.8 27.8	27.8	8.5 8.5	8.5	18.7 17.7	18.2	99.4 118.1	108.8	7.1 8.1	7.6		2.8 2.7	2.8		4.8 3.9	4.4	
					Bottom	10.0	27.2 27.7	27.5	8.4 8.5	8.5	25.6 24.5	25.1	99.3 107.3	103.3	7.0 7.6	7.3	7.3	3.1 3.0	3.1		4.6 5.3	5.0	
3-Jun-16	Sunny	Moderate	17:50	11.3	Surface	1.0	29.3 29.5	29.4	8.5 8.5	8.5	17.0 16.8	16.9	111.8 117.4	114.6	7.8 8.2	8.0	7.4	4.5 4.6	4.6	3.7	7.8 8.6	8.2	9.3
					Middle	5.7	28.1 28.2	28.2	8.4 8.4	8.4	21.6 21.6	21.6	95.5 100.8	98.2	6.6 7.0	6.8		2.9 2.8	2.9		9.0 9.0	9.0	
					Bottom	10.3	28.1 28.4	28.2	8.4 8.4	8.4	21.7 21.6	21.6	104.4 110.9	107.7	7.2 7.7	7.4	7.4	3.7 3.5	3.6		10.9 10.2	10.6	
6-Jun-16	Cloudy	Moderate	07:03	10.0	Surface	1.0	27.7 27.7	27.7	8.3 8.3	8.3	21.8 22.4	22.1	76.3 77.2	76.8	5.3 5.3	5.3	5.3	2.3 2.2	2.3	2.2	2.5 2.7	2.6	2.6
					Middle	5.0	27.1 27.1	27.1	8.2 8.2	8.2	28.5 28.6	28.6	75.5 76.7	76.1	5.1 5.2	5.2		2.2 2.2	2.2		2.8 2.4	2.6	
					Bottom	9.0	27.3 27.0	27.2	8.2 8.1	8.1	29.6 30.0	29.8	74.7 75.1	74.9	5.1 5.1	5.1	5.1	2.2 2.2	2.2		2.8 2.3	2.6	
8-Jun-16	Sunny	Moderate	08:23	10.9	Surface	1.0	27.9 27.9	27.9	8.3 8.3	8.3	16.3 16.8	16.5	77.7 76.4	77.1	5.7 5.6	5.6	5.6	2.5 2.6	2.6	3.0	3.9 4.6	4.3	4.4
					Middle	5.5	27.7 27.6	27.7	8.3 8.2	8.3	19.5 19.3	19.4	77.1 75.7	76.4	5.5 5.5	5.5		3.2 3.2	3.2		4.0 4.5	4.3	
					Bottom	9.9	27.1 27.2	27.2	8.2 8.1	8.2	25.9 26.0	25.9	76.1 75.4	75.8	5.5 5.4	5.4	5.4	3.2 3.3	3.3		4.4 4.6	4.5	
10-Jun-16	Sunny	Moderate	10:10	11.9	Surface	1.0	28.2 28.1	28.2	8.3 8.3	8.3	18.4 18.3	18.3	73.5 72.9	73.2	5.2 5.1	5.1	5.1	3.4 3.2	3.3	3.6	2.2 3.7	3.0	3.3
					Middle	6.0	27.3 27.3	27.3	8.3 8.2	8.3	22.1 23.1	22.6	72.5 72.1	72.3	5.0 5.0	5.0		3.6 3.6	3.6		3.3 3.2	3.3	
					Bottom	10.9	26.6 26.7	26.6	8.2 8.2	8.2	28.8 28.7	28.8	70.7 71.2	71.0	4.9 4.9	4.9	4.9	3.7 3.8	3.8		3.6 3.7	3.7	
13-Jun-16	Cloudy	Moderate	12:54	11.1	Surface	1.0	28.3 28.3	28.3	8.3 8.3	8.3	12.2 12.3	12.2	84.2 84.5	84.4	6.1 6.1	6.1	5.9	3.3 3.5	3.4	3.5	3.9 3.6	3.8	3.1
					Middle	5.6	27.0 27.3	27.2	8.1 8.1	8.1	20.2 20.1	20.1	80.6 81.2	80.9	5.5 5.6	5.6		3.3 3.5	3.4		3.2 2.1	2.7	
					Bottom	10.1	26.1 26.3	26.2	8.0 8.0	8.0	30.2 30.1	30.1	74.2 74.4	74.3	5.3 5.3	5.3	5.3	3.5 3.6	3.6		2.9 2.6	2.8	
15-Jun-16	Sunny	Moderate	15:52	10.4	Surface	1.0	28.9 29.0	29.0	8.4 8.4	8.4	12.3 12.5	12.4	82.3 84.4	83.4	5.9 6.1	6.0	5.8	5.3 5.4	5.4	5.7	5.6 5.4	5.5	5.5
					Middle	5.2	28.1 27.8	28.0	8.3 8.3	8.3	20.7 20.0	20.4	80.8 76.0	78.4	5.6 5.3	5.5		5.7 5.8	5.8		5.8 5.4	5.6	
					Bottom	9.4	25.7 26.5	26.1	8.1 8.1	8.1	28.9 25.7	27.3	69.1 73.5	71.3	4.9 5.3	5.1	5.1	5.8 5.8	5.8		6.0 4.8	5.4	
17-Jun-16	Sunny	Moderate	17:34	10.5	Surface	1.0	29.4 29.4	29.4	8.4 8.4	8.4	11.8 11.9	11.8	82.4 87.9	85.2	5.9 6.3	6.1	5.8	6.4 6.2	6.3	6.6	5.1 4.2	4.7	5.3
					Middle	5.3	27.9 27.8	27.8	8.3 8.3	8.3	19.5 18.2	18.8	80.9 76.9	78.9	5.6 5.3	5.4		6.6 6.7	6.7		6.1 6.1	6.1	
					Bottom	9.5	26.1 25.8	26.0	8.1 8.1	8.1	29.6 30.4	30.0	67.5 71.2	69.4	4.8 5.0	4.9	4.9	6.8 6.7	6.8		4.7 5.4	5.1	
20-Jun-16	Sunny	Moderate	06:14	10.7	Surface	1.0	28.0 27.9	27.9	8.3 8.2	8.2	18.9 18.9	18.9	76.7 74.3	75.5	5.4 5.3	5.3	5.2	3.6 3.6	3.6	3.8	3.5 3.6	3.6	4.2
					Middle	5.4	26.1 26.7	26.4	8.1 8.2	8.2	24.9 25.2	25.1	72.7 74.2	73.5	5.1 5.2	5.1		3.8 3.9	3.9		4.0 4.8	4.4	
					Bottom	9.7	26.3 25.4	25.9	8.1 8.1	8.1	29.9 31.4	30.6	75.1 79.3	77.2	5.1 5.4	5.3	5.3	3.7 4.1	3.9		4.8 4.6	4.7	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	07:43	11.2	Surface	1.0	27.3 27.6	27.5	8.4 8.4	8.4	20.1 19.9	20.0	76.8 78.0	77.4	5.3 5.4	5.4	5.3	4.0 3.8	3.9	4.0	3.9 3.5	3.7	5.4
					Middle	5.6	26.8 26.8	26.8	8.3 8.3	8.3	23.9 24.0	24.0	74.8 72.9	73.9	5.2 5.1	5.1		4.0 4.0	4.0		4.9 3.7	4.3	
					Bottom	10.2	24.8 24.7	24.8	8.2 8.2	8.2	33.5 33.4	33.5	71.7 71.8	71.8	5.0 5.0	5.0	5.0	4.2 4.2	4.2		7.9 8.2	8.1	
24-Jun-16	Sunny	Moderate	08:50	10.8	Surface	1.0	27.8 27.9	27.8	8.2 8.2	8.2	20.3 19.9	20.1	74.6 75.5	75.1	5.4 5.5	5.4	5.3	3.2 3.2	3.2	3.5	6.7 6.0	6.4	6.1
					Middle	5.4	25.3 25.0	25.1	8.1 8.1	8.1	31.2 31.9	31.6	73.5 73.1	73.3	5.2 5.2	5.2		3.5 3.8	3.7		6.8 7.2	7.0	
					Bottom	9.8	25.0 25.2	25.1	8.0 8.1	8.0	32.3 32.1	32.2	71.1 71.4	71.3	5.0 5.1	5.0	5.0	3.7 3.4	3.6		4.8 5.2	5.0	
27-Jun-16	Sunny	Moderate	11:29	10.3	Surface	1.0	28.3 28.3	28.3	8.4 8.4	8.4	21.2 21.2	21.2	87.9 90.2	89.1	6.1 6.2	6.2	6.0	4.1 4.1	4.1	4.2	4.8 4.8	4.8	4.8
					Middle	5.2	27.7 27.7	27.7	8.4 8.3	8.4	22.8 22.9	22.8	82.0 84.1	83.1	5.7 5.8	5.7		4.2 4.2	4.2		4.6 4.3	4.5	
					Bottom	9.3	27.0 27.1	27.1	8.3 8.3	8.3	26.3 26.2	26.3	81.9 83.2	82.6	5.6 5.8	5.7	5.7	4.2 4.4	4.3		5.1 5.3	5.2	
29-Jun-16	Sunny	Moderate	14:07	10.7	Surface	1.0	28.6 28.5	28.5	8.4 8.4	8.4	21.1 21.1	21.1	83.0 83.3	83.2	5.7 5.8	5.7	5.6	4.4 4.5	4.5	5.2	4.9 5.3	5.1	5.6
					Middle	5.4	26.6 26.9	26.7	8.4 8.4	8.4	25.4 25.3	25.3	79.6 76.0	77.8	5.5 5.3	5.4		5.6 5.5	5.6		5.7 6.1	5.9	
					Bottom	9.7	26.2 26.6	26.4	8.3 8.4	8.3	28.9 26.7	27.8	74.4 72.1	73.3	5.2 5.0	5.1	5.1	5.7 5.5	5.6		5.9 5.9	5.9	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	-	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	9.0	-	-		-	-	
					Middle	0.8	29.1 29.1	29.1	8.6 8.6	8.6	16.6 16.6	16.6	128.1 127.9	128.0	9.0 9.0	9.0		6.8 6.7	6.8	6.8	4.6 4.0	4.3	4.3
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
3-Jun-16	Sunny	Moderate	-	1.8	Surface	-	-	-	-	-	-	-	-	-	-	-	9.4	-	-		-	-	
					Middle	0.9	29.5 29.5	29.5	8.5 8.5	8.5	16.8 16.8	16.8	134.8 136.0	135.4	9.4 9.5	9.4		6.2 6.2	6.2	6.2	6.1 4.8	5.5	5.5
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
6-Jun-16	Cloudy	Moderate	-	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	5.9	-	-		-	-	
					Middle	0.7	27.8 27.8	27.8	8.1 8.0	8.0	20.5 20.6	20.5	83.2 85.4	84.3	5.8 6.0	5.9		5.9 5.7	5.8	5.8	8.0 8.2	8.1	8.1
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
8-Jun-16	Sunny	Moderate	-	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	5.9	-	-		-	-	
					Middle	0.7	28.1 28.1	28.1	8.7 8.6	8.7	19.3 19.1	19.2	82.1 84.5	83.3	5.8 5.9	5.9		3.2 3.1	3.2	3.2	3.6 4.0	3.8	3.8
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
10-Jun-16	Rainy	Moderate	-	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	7.6	-	-		-	-	
					Middle	0.7	28.8 28.8	28.8	8.7 8.7	8.7	15.7 16.0	15.9	104.4 108.9	106.7	7.4 7.7	7.6		2.4 2.3	2.4	2.4	4.2 4.4	4.3	4.3
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
13-Jun-16	Cloudy	Moderate	-	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	5.9	-	-		-	-	
					Middle	0.8	27.8 27.8	27.8	8.2 8.2	8.2	16.1 16.2	16.1	81.9 82.2	82.1	5.9 5.9	5.9		2.6 2.9	2.8	2.8	3.8 3.2	3.5	3.5
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
15-Jun-16	Sunny	Moderate	-	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	6.8	-	-		-	-	
					Middle	0.7	29.0 29.0	29.0	8.3 8.3	8.3	14.1 14.1	14.1	94.7 95.4	95.1	6.7 6.8	6.8		4.5 4.7	4.6	4.6	9.8 9.7	9.8	9.8
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
17-Jun-16	Sunny	Moderate	-	1.2	Surface	-	-	-	-	-	-	-	-	-	-	-	7.2	-	-		-	-	
					Middle	0.6	29.2 29.2	29.2	8.4 8.4	8.4	12.4 12.4	12.4	98.8 101.0	99.9	7.1 7.2	7.2		4.8 4.9	4.9	4.9	4.9 6.0	5.5	5.5
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
20-Jun-16	Sunny	Moderate	-	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	6.7	-	-		-	-	
					Middle	0.8	28.6 28.6	28.6	8.5 8.5	8.5	16.0 15.6	15.8	95.5 94.2	94.9	6.8 6.7	6.7		5.3 5.2	5.3	5.3	4.6 3.9	4.3	4.3
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR3 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jun-16	Sunny	Moderate	-	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	6.3	-	-	6.6	-	-	6.9
					Middle	0.8	28.6 28.5	28.6	8.7 8.7	8.7	15.6 15.8	15.7	88.7 87.7	88.2	6.3 6.2	6.3		6.5 6.6	6.6		7.0 6.7	6.9	
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
24-Jun-16	Sunny	Moderate	-	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	6.0	-	-	6.6	-	-	10.0
					Middle	0.8	28.4 28.3	28.4	8.4 8.4	8.4	18.0 17.9	18.0	84.4 84.9	84.7	5.9 6.0	6.0		6.6 6.6	6.6		10.4 9.6	10.0	
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
27-Jun-16	Sunny	Moderate	-	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	9.4	-	-	7.1	-	-	8.3
					Middle	0.8	29.5 29.5	29.5	8.5 8.5	8.5	19.5 19.5	19.5	138.0 137.8	137.9	9.5 9.4	9.4		6.9 7.2	7.1		8.2 8.4	8.3	
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
29-Jun-16	Sunny	Moderate	-	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	5.9	-	-	5.6	-	-	6.6
					Middle	0.8	28.3 28.2	28.3	8.3 8.3	8.3	20.5 20.8	20.7	85.6 83.9	84.8	5.9 5.8	5.9		5.5 5.7	5.6		6.5 6.6	6.6	
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.
CS4 and CS(Mf)3 are considered as upstream contol stations of mid-ebb tide. The averaged turbidity and suspended solid values of these stations will be used for determination of Action and Limit Levels.

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR3 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (^{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-Jun-16	Sunny	Moderate	-	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	9.9	-	-		-	-	
					Middle	0.7	29.7	29.7	8.8	8.8	15.2	15.2	138.1	141.6	9.7	9.9		5.2	5.2	5.2	9.2	9.1	9.1
							29.7		8.9		15.2		145.0		10.1			5.2			9.0		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
3-Jun-16	Sunny	Moderate	-	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	8.1	-	-		-	-	
					Middle	0.8	29.9	30.0	8.4	8.4	16.2	16.0	116.0	117.2	8.0	8.1		7.2	6.9	6.9	10.6	10.3	10.3
							30.1		8.4		15.8		118.3		8.2			6.5			10.0		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
6-Jun-16	Cloudy	Moderate	-	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	5.6	-	-		-	-	
					Middle	0.8	28.0	28.0	8.3	8.3	20.8	20.9	80.9	80.8	5.6	5.6		5.6	5.6	5.6	5.9	5.8	5.8
							28.0		8.3		20.9		80.7		5.6			5.6			5.7		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
8-Jun-16	Sunny	Moderate	-	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	5.7	-	-		-	-	
					Middle	0.7	28.0	28.0	8.2	8.2	17.9	17.9	81.0	81.1	5.7	5.7		3.1	3.1	3.1	6.1	5.9	5.9
							28.0		8.2		17.9		81.2		5.8			3.1			5.6		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
10-Jun-16	Sunny	Moderate	-	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	6.6	-	-		-	-	
					Middle	0.7	28.4	28.5	8.3	8.3	18.5	18.4	94.5	94.6	6.6	6.6		2.4	2.4	2.4	2.4	3.4	3.4
							28.6		8.3		18.4		94.7		6.6			2.4			4.3		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
13-Jun-16	Cloudy	Moderate	-	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	6.4	-	-		-	-	
					Middle	0.8	27.8	27.8	8.5	8.5	15.0	15.0	89.9	88.5	6.5	6.4		2.6	2.7	2.7	4.0	4.2	4.2
							27.8		8.4		15.0		87.1		6.3			2.7			4.4		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
15-Jun-16	Sunny	Moderate	-	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	6.6	-	-		-	-	
					Middle	0.7	28.8	28.8	8.6	8.6	13.2	13.2	92.0	92.1	6.6	6.6		5.0	5.0	5.0	6.9	6.6	6.6
							28.8		8.6		13.2		92.2		6.6			5.0			6.2		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
17-Jun-16	Sunny	Moderate	-	1.2	Surface	-	-	-	-	-	-	-	-	-	-	-	7.6	-	-		-	-	
					Middle	0.6	29.3	29.3	8.7	8.7	10.7	10.6	107.4	105.9	7.8	7.6		4.5	4.6	4.6	4.9	4.8	4.8
							29.3		8.7		10.6		104.3		7.5			4.6			4.7		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
20-Jun-16	Sunny	Moderate	-	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	7.7	-	-		-	-	
					Middle	0.8	28.8	28.7	8.4	8.4	16.9	17.0	109.2	109.4	7.7	7.7		5.5	5.7	5.7	8.5	8.4	8.4
							28.7		8.4		17.1		109.5		7.7			5.9			8.2		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR3 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jun-16	Sunny	Moderate	-	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	7.5	-	-	4.2	-	-	5.8
					Middle	0.8	28.7 28.7	28.7	8.4 8.4	8.4	17.7 17.7	17.7	106.1 106.7	106.4	7.4 7.5	7.5		4.2 4.2	4.2		5.3 6.3	5.8	
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
24-Jun-16	Sunny	Moderate	-	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	7.4	-	-	4.1	-	-	5.3
					Middle	0.8	28.9 28.8	28.9	8.4 8.4	8.4	18.4 18.4	18.4	107.3 105.9	106.6	7.5 7.4	7.4		3.9 4.3	4.1		5.6 5.0	5.3	
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
27-Jun-16	Sunny	Moderate	-	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	8.5	-	-	4.2	-	-	5.8
					Middle	0.7	29.3 29.3	29.3	8.5 8.5	8.5	21.3 21.4	21.4	130.2 127.1	128.7	8.6 8.3	8.5		4.1 4.3	4.2		5.2 6.4	5.8	
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
29-Jun-16	Sunny	Moderate	-	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	7.2	-	-	4.2	-	-	4.9
					Middle	0.8	29.0 29.0	29.0	8.4 8.4	8.4	18.4 18.2	18.3	104.4 102.5	103.5	7.3 7.1	7.2		4.1 4.2	4.2		5.0 4.8	4.9	
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.
CS6, CSA and CS(Mf)5 are considered as upstream contol stations of mid-flood tide. The averaged turbidity and suspended solid values of these stations will be used for determination of Action and Limit Levels.

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

Appendix J - Marine Water Quality Monitoring Results

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

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jun-16	Sunny	Moderate	11:01	3.4	Surface	1.0	29.1 29.0	29.0	8.6 8.7	8.6	15.0 15.0	15.0	116.5 112.2	114.4	8.2 7.9	8.1	8.1	5.6 5.8	5.7	6.0	6.2 5.9	6.1	6.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	29.1 29.0	29.0	8.6 8.7	8.7	15.0 15.1	15.1	114.3 106.5	110.4	8.1 7.5	7.8	7.8	6.2 6.1	6.2		7.9 6.7	7.3	
3-Jun-16	Sunny	Moderate	11:41	3.7	Surface	1.0	28.7 28.7	28.7	8.4 8.4	8.4	16.8 16.4	16.6	99.4 99.1	99.3	7.0 7.0	7.0	7.0	2.6 2.4	2.5	2.7	4.0 5.3	4.7	5.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	28.6 28.7	28.6	8.4 8.4	8.4	17.3 17.4	17.3	98.9 99.2	99.1	7.0 7.0	7.0	7.0	2.8 3.0	2.9		6.1 4.7	5.4	
6-Jun-16	Cloudy	Moderate	13:18	4.0	Surface	1.0	28.1 28.0	28.0	8.2 8.2	8.2	19.3 19.5	19.4	88.8 86.9	87.9	6.2 6.1	6.2	6.2	3.0 3.1	3.1	3.1	2.9 2.2	2.6	2.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	28.0 28.0	28.0	8.2 8.2	8.2	19.7 20.1	19.9	91.9 87.8	89.9	6.5 6.1	6.3	6.3	3.0 3.2	3.1		2.1 2.2	2.2	
8-Jun-16	Sunny	Moderate	14:37	3.6	Surface	1.0	28.3 28.2	28.3	8.3 8.3	8.3	18.2 18.7	18.5	86.6 86.9	86.8	6.1 6.1	6.1	6.1	2.8 2.6	2.7	2.7	3.3 2.7	3.0	2.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	28.2 28.0	28.1	8.3 8.3	8.3	19.0 20.9	20.0	85.5 84.6	85.1	6.0 5.9	6.0	6.0	2.7 2.5	2.6		2.7 2.5	2.6	
10-Jun-16	Rainy	Moderate	16:19	4.0	Surface	1.0	28.4 28.6	28.5	8.5 8.5	8.5	17.7 17.6	17.6	101.0 97.0	99.0	7.1 6.8	7.0	7.0	3.5 3.6	3.6	3.6	3.7 2.8	3.3	3.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	28.0 28.5	28.3	8.5 8.5	8.5	19.6 19.1	19.3	94.1 100.7	97.4	6.6 7.0	6.8	6.8	3.6 3.6	3.6		3.6 4.0	3.8	
13-Jun-16	Cloudy	Moderate	08:54	3.3	Surface	1.0	27.6 27.7	27.7	8.2 8.2	8.2	14.2 14.3	14.2	84.8 84.9	84.9	6.2 6.2	6.2	6.2	2.4 2.3	2.4	2.4	3.0 3.6	3.3	3.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	27.7 27.6	27.7	8.2 8.1	8.1	15.1 15.2	15.2	84.8 84.8	84.8	6.1 6.1	6.1	6.1	2.4 2.4	2.4		2.4 2.9	2.7	
15-Jun-16	Sunny	Moderate	10:56	3.7	Surface	1.0	28.9 29.0	28.9	8.3 8.3	8.3	12.7 12.8	12.8	87.3 92.2	89.8	6.3 6.6	6.4	6.4	7.7 7.7	7.7	7.8	7.4 7.2	7.3	7.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	28.7 28.4	28.6	8.2 8.2	8.2	16.1 16.2	16.2	89.3 85.5	87.4	6.3 6.1	6.2	6.2	7.7 7.8	7.8		7.4 6.3	6.9	
17-Jun-16	Sunny	Moderate	12:06	3.8	Surface	1.0	28.5 28.6	28.6	8.2 8.2	8.2	12.8 13.0	12.9	76.2 77.6	76.9	5.5 5.6	5.6	5.6	7.3 7.3	7.3	7.4	3.1 2.8	3.0	3.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	28.2 28.0	28.1	8.1 8.1	8.1	18.5 17.4	17.9	77.9 72.6	75.3	5.5 5.2	5.3	5.3	7.4 7.3	7.4		4.5 4.8	4.7	
20-Jun-16	Sunny	Moderate	12:07	3.8	Surface	1.0	28.4 28.4	28.4	8.4 8.3	8.4	17.3 17.4	17.3	93.9 91.5	92.7	6.6 6.5	6.5	6.5	4.3 4.1	4.2	4.3	6.0 6.3	6.2	6.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	28.3 28.0	28.1	8.4 8.3	8.3	19.5 19.4	19.4	98.1 92.5	95.3	6.9 6.5	6.7	6.7	4.4 4.3	4.4		6.8 5.4	6.1	

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

Appendix J - Marine Water Quality Monitoring Results

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

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jun-16	Sunny	Moderate	13:17	3.3	Surface	1.0	29.1 29.2	29.2	8.5 8.5	8.5	16.6 16.6	16.6	113.7 122.4	118.1	8.0 8.6	8.3	8.3	4.8 4.6	4.7	4.9	8.0 7.8	7.9	7.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	29.0 28.8	28.9	8.5 8.4	8.4	17.6 17.2	17.4	118.3 108.2	113.3	8.3 7.6	7.9	7.9	4.9 5.0	5.0		8.2 7.5	7.9	
24-Jun-16	Sunny	Moderate	14:40	3.8	Surface	1.0	28.9 28.9	28.9	8.5 8.5	8.5	17.8 17.8	17.8	112.2 111.4	111.8	7.8 7.8	7.8	7.8	7.5 6.7	7.1	7.3	6.7 6.4	6.6	6.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	28.8 28.2	28.5	8.5 8.4	8.5	20.1 20.6	20.3	109.7 105.5	107.6	7.6 7.3	7.5	7.5	7.2 7.8	7.5		7.2 6.4	6.8	
27-Jun-16	Sunny	Moderate	17:23	3.5	Surface	1.0	29.3 29.3	29.3	8.4 8.4	8.4	20.4 20.4	20.4	144.7 148.4	146.6	9.9 10.1	10.0	10.0	13.5 13.5	13.5	13.5	6.6 6.1	6.4	7.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	28.8 29.1	28.9	8.4 8.4	8.4	21.3 21.9	21.6	135.4 136.9	136.2	9.3 9.4	9.3	9.3	13.2 13.8	13.5		8.2 8.7	8.5	
29-Jun-16	Sunny	Moderate	09:09	3.7	Surface	1.0	28.4 28.5	28.4	8.4 8.4	8.4	19.3 19.3	19.3	90.9 92.6	91.8	6.4 6.5	6.4	6.4	6.7 6.5	6.6	6.6	5.5 5.3	5.4	6.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	27.6 28.5	28.1	8.3 8.4	8.4	23.3 23.1	23.2	92.4 92.6	92.5	6.4 6.3	6.4	6.4	6.5 6.5	6.5		6.6 8.1	7.4	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	14:55	3.2	Surface	1.0	29.3 29.3	29.3	8.8 8.8	8.8	15.0 15.0	15.0	133.5 134.0	133.8	9.4 9.5	9.4	9.4	9.9 9.8	9.9	10.0	7.5 8.2	7.9	9.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	29.1 29.2	29.2	8.9 8.8	8.8	15.8 16.0	15.9	128.4 133.9	131.2	9.0 9.4	9.2	9.2	10.0 9.9	10.0		10.1 10.0	10.1	
3-Jun-16	Sunny	Moderate	17:13	3.7	Surface	1.0	29.6 29.5	29.5	8.6 8.5	8.6	16.9 17.0	16.9	124.8 131.3	128.1	8.7 9.1	8.9	8.9	9.3 9.7	9.5	9.4	8.2 8.3	8.3	8.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	29.4 29.4	29.4	8.5 8.6	8.6	17.0 16.9	16.9	129.4 125.5	127.5	9.0 8.8	8.9	8.9	9.5 8.8	9.2		8.4 9.6	9.0	
6-Jun-16	Cloudy	Moderate	07:21	3.7	Surface	1.0	28.1 28.1	28.1	8.3 8.3	8.3	18.9 18.9	18.9	81.2 81.4	81.3	5.7 5.7	5.7	5.7	2.6 2.6	2.6	2.6	2.1 2.5	2.3	2.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	28.1 28.1	28.1	8.3 8.3	8.3	20.4 20.2	20.3	81.1 81.3	81.2	5.7 5.7	5.7	5.7	2.5 2.6	2.6		3.3 2.5	2.9	
8-Jun-16	Sunny	Moderate	08:47	3.9	Surface	1.0	28.0 28.0	28.0	8.2 8.2	8.2	17.4 17.4	17.4	72.1 72.3	72.2	5.1 5.1	5.1	5.1	6.7 6.6	6.7	6.7	5.1 5.8	5.5	5.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	28.0 28.0	28.0	8.2 8.2	8.2	18.8 18.8	18.8	72.4 72.1	72.3	5.1 5.1	5.1	5.1	6.7 6.6	6.7		6.1 5.9	6.0	
10-Jun-16	Sunny	Moderate	10:36	3.7	Surface	1.0	28.3 28.3	28.3	8.2 8.3	8.2	17.3 17.4	17.4	76.4 76.1	76.3	5.4 5.4	5.4	5.4	2.1 2.1	2.1	2.2	2.6 2.5	2.6	2.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	27.8 28.1	27.9	8.2 8.2	8.2	20.8 20.8	20.8	75.0 76.4	75.7	5.3 5.3	5.3	5.3	2.2 2.2	2.2		2.8 2.2	2.5	
13-Jun-16	Cloudy	Moderate	12:31	3.3	Surface	1.0	28.0 28.0	28.0	8.2 8.3	8.3	14.5 14.4	14.5	89.0 89.1	89.1	6.4 6.4	6.4	6.4	3.1 3.0	3.1	3.2	3.1 3.3	3.2	3.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	28.1 27.9	28.0	8.3 8.3	8.3	14.4 14.9	14.6	89.0 88.9	89.0	6.4 6.4	6.4	6.4	3.2 3.2	3.2		3.9 2.2	3.1	
15-Jun-16	Sunny	Moderate	15:30	3.8	Surface	1.0	28.9 28.9	28.9	8.4 8.3	8.4	13.3 13.3	13.3	94.0 93.5	93.8	6.7 6.7	6.7	6.7	11.4 11.5	11.5	11.5	12.3 10.1	11.2	11.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	28.7 28.8	28.7	8.4 8.3	8.3	13.9 13.8	13.8	92.5 93.7	93.1	6.6 6.7	6.7	6.7	11.2 11.5	11.4		10.2 11.6	10.9	
17-Jun-16	Sunny	Moderate	17:12	3.8	Surface	1.0	29.4 29.3	29.4	8.5 8.5	8.5	11.6 12.0	11.8	103.3 101.4	102.4	7.4 7.3	7.3	7.3	9.4 9.2	9.3	9.5	7.2 8.1	7.7	7.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	29.3 29.1	29.2	8.5 8.5	8.5	12.4 12.8	12.6	101.9 99.3	100.6	7.3 7.1	7.2	7.2	9.7 9.5	9.6		7.4 6.3	6.9	
20-Jun-16	Sunny	Moderate	06:47	3.7	Surface	1.0	28.4 28.3	28.3	8.2 8.2	8.2	16.4 16.5	16.4	86.8 86.7	86.8	6.2 6.2	6.2	6.2	4.0 4.3	4.2	4.4	4.9 4.8	4.9	5.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	28.3 27.8	28.1	8.2 8.1	8.2	18.3 18.5	18.4	88.1 81.6	84.9	6.2 5.8	6.0	6.0	4.3 4.6	4.5		5.7 5.1	5.4	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	08:07	3.3	Surface	1.0	28.2 28.2	28.2	8.3 8.3	8.3	18.1 18.1	18.1	80.5 80.8	80.7	5.7 5.7	5.7	5.7	7.7 7.8	7.8	7.9	5.5 5.1	5.3	5.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	28.2 28.1	28.1	8.3 8.2	8.3	18.1 18.4	18.2	80.7 80.5	80.6	5.7 5.7	5.7	5.7	7.9 8.0	8.0		5.0 5.1	5.1	
24-Jun-16	Sunny	Moderate	09:20	3.7	Surface	1.0	28.2 28.2	28.2	8.2 8.2	8.2	18.4 18.4	18.4	77.2 77.2	77.2	5.4 5.4	5.4	5.4	6.5 6.3	6.4	6.6	6.7 6.4	6.6	7.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	28.1 28.2	28.2	8.2 8.2	8.2	19.3 19.4	19.4	77.8 77.4	77.6	5.5 5.4	5.4	5.4	7.1 6.5	6.8		9.0 8.2	8.6	
27-Jun-16	Sunny	Moderate	11:51	3.7	Surface	1.0	28.5 28.3	28.4	8.4 8.3	8.4	20.7 21.2	20.9	87.9 86.3	87.1	6.1 6.0	6.0	6.0	11.5 11.0	11.3	11.4	15.7 15.5	15.6	15.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	28.0 28.2	28.1	8.3 8.3	8.3	22.4 22.2	22.3	84.7 86.3	85.5	5.9 6.0	5.9	5.9	11.2 11.5	11.4		16.4 15.9	16.2	
29-Jun-16	Sunny	Moderate	13:41	3.8	Surface	1.0	28.9 28.7	28.8	8.5 8.5	8.5	20.5 20.6	20.6	101.8 101.7	101.8	7.0 7.0	7.0	7.0	9.4 9.5	9.5	9.5	12.1 11.6	11.9	11.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	28.7 28.2	28.5	8.5 8.5	8.5	22.0 22.2	22.1	102.5 98.5	100.5	7.0 6.8	6.9	6.9	9.5 9.5	9.5		11.1 12.6	11.9	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	10:10	5.1	Surface	1.0	28.5 28.4	28.5	8.4 8.4	8.4	11.1 11.1	11.1	97.0 95.2	96.1	7.1 7.0	7.0	7.0	7.1 7.2	7.2	7.3	2.6 3.4	3.0	3.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	28.4 28.1	28.3	8.3 8.2	8.3	15.7 16.0	15.8	96.1 95.3	95.7	6.9 6.8	6.8	6.8	7.3 7.4	7.4		3.5 3.3	3.4	
3-Jun-16	Sunny	Moderate	11:56	5.2	Surface	1.0	28.7 28.8	28.8	8.5 8.5	8.5	14.6 14.6	14.6	100.3 99.1	99.7	7.2 7.1	7.1	7.1	3.4 3.5	3.5	3.5	2.8 3.2	3.0	3.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.2	28.3 28.6	28.5	8.4 8.4	8.4	18.5 20.3	19.4	96.5 100.7	98.6	6.8 7.0	6.9	6.9	3.5 3.4	3.5		4.4 3.7	4.1	
6-Jun-16	Cloudy	Moderate	13:19	5.2	Surface	1.0	27.8 27.7	27.8	8.2 8.2	8.2	17.5 20.0	18.7	93.1 85.6	89.4	6.6 6.1	6.3	6.3	2.5 2.4	2.5	2.7	3.1 3.2	3.2	3.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.2	27.8 27.7	27.7	8.3 8.2	8.2	16.4 20.0	18.2	80.3 78.1	79.2	5.7 5.6	5.6	5.6	2.8 2.8	2.8		3.2 3.2	3.2	
8-Jun-16	Sunny	Moderate	14:50	5.2	Surface	1.0	28.7 28.7	28.7	8.3 8.3	8.3	13.5 13.6	13.6	87.4 85.7	86.6	6.4 6.2	6.3	6.3	1.4 1.2	1.3	1.3	2.3 2.2	2.3	2.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.2	28.5 28.5	28.5	8.2 8.2	8.2	15.8 15.7	15.7	89.5 85.8	87.7	6.5 6.2	6.3	6.3	1.3 1.2	1.3		2.8 3.5	3.2	
10-Jun-16	Rainy	Moderate	16:26	5.1	Surface	1.0	29.0 28.6	28.8	8.4 8.3	8.4	15.3 16.5	15.9	76.0 75.9	76.0	5.9 5.9	5.9	5.9	2.5 2.8	2.7	2.8	2.1 2.2	2.2	2.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	27.4 27.9	27.7	8.2 8.3	8.2	23.2 22.6	22.9	74.9 75.4	75.2	5.9 5.9	5.9	5.9	2.8 2.7	2.8		2.2 2.5	2.4	
13-Jun-16	Cloudy	Moderate	08:01	4.9	Surface	1.0	27.8 27.9	27.9	8.1 8.1	8.1	18.5 18.4	18.5	83.3 83.1	83.2	6.2 6.2	6.2	6.2	3.7 3.7	3.7	3.9	4.3 5.1	4.7	4.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.9	27.8 27.8	27.8	8.1 8.1	8.1	19.4 19.1	19.3	81.5 80.3	80.9	6.0 6.0	6.0	6.0	3.9 4.0	4.0		4.4 3.3	3.9	
15-Jun-16	Sunny	Moderate	11:00	5.1	Surface	1.0	28.6 28.5	28.6	8.2 8.2	8.2	8.4 8.3	8.3	74.3 75.2	74.8	5.5 5.6	5.5	5.5	5.7 5.6	5.7	5.9	5.2 4.7	5.0	5.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	27.4 27.4	27.4	7.8 7.8	7.8	20.4 20.5	20.4	74.4 76.1	75.3	5.3 5.3	5.3	5.3	6.0 5.9	6.0		5.0 4.8	4.9	
17-Jun-16	Sunny	Moderate	11:32	4.7	Surface	1.0	28.5 28.9	28.7	8.1 8.1	8.1	7.9 8.0	8.0	77.8 76.2	77.0	5.8 5.6	5.7	5.7	5.6 5.8	5.7	5.6	4.1 4.2	4.2	4.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.7	28.3 27.7	28.0	7.9 7.8	7.9	17.0 20.9	19.0	78.8 79.7	79.3	5.6 5.6	5.6	5.6	5.4 5.6	5.5		4.9 5.7	5.3	
20-Jun-16	Sunny	Moderate	12:37	5.3	Surface	1.0	27.9 28.3	28.1	8.0 8.1	8.1	20.0 19.1	19.6	75.4 74.4	74.9	5.4 5.5	5.5	5.5	4.1 4.2	4.2	4.3	4.4 5.2	4.8	4.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.3	27.8 27.9	27.9	7.9 7.9	7.9	24.2 23.1	23.6	74.6 72.7	73.7	5.3 5.4	5.3	5.3	4.2 4.3	4.3		4.6 5.0	4.8	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR5 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jun-16	Sunny	Moderate	14:53	5.2	Surface	1.0	29.3 29.2	29.2	8.2 8.2	8.2	9.5 9.5	9.5	75.8 76.0	75.9	5.8 5.7	5.7	5.7	7.3 7.1	7.2	7.5	3.5 3.4	3.5	3.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.2	27.2 27.6	27.4	8.0 8.0	8.0	20.4 20.3	20.3	75.8 76.8	76.3	5.7 5.8	5.7	5.7	7.8 7.5	7.7		3.7 3.5	3.6	
24-Jun-16	Sunny	Moderate	15:02	5.3	Surface	1.0	28.9 28.7	28.8	8.2 8.1	8.2	19.0 18.3	18.7	82.1 81.8	82.0	5.9 5.8	5.8	5.8	3.4 3.3	3.4	3.5	4.8 6.2	5.5	5.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.3	28.5 28.5	28.5	8.1 8.1	8.1	16.6 16.2	16.4	79.8 78.6	79.2	5.7 5.6	5.6	5.6	3.5 3.6	3.6		5.2 5.7	5.5	
27-Jun-16	Sunny	Moderate	17:33	5.3	Surface	1.0	28.9 29.9	29.4	8.4 8.4	8.4	17.4 15.2	16.3	96.8 94.1	95.5	6.8 6.6	6.7	6.7	2.9 3.0	3.0	2.9	3.4 4.3	3.9	4.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.3	28.0 28.0	28.0	8.4 8.3	8.3	20.2 20.7	20.5	97.4 96.2	96.8	6.8 6.7	6.8	6.8	2.7 2.7	2.7		3.8 4.7	4.3	
29-Jun-16	Sunny	Moderate	08:20	5.3	Surface	1.0	27.9 28.4	28.2	8.3 8.3	8.3	16.9 16.7	16.8	76.6 81.4	79.0	5.5 5.8	5.6	5.6	3.1 3.1	3.1	3.2	5.4 5.3	5.4	5.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.3	27.4 28.0	27.7	8.2 8.2	8.2	21.4 21.1	21.2	73.7 76.3	75.0	5.2 5.3	5.3	5.3	3.2 3.1	3.2		5.4 4.7	5.1	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	15:41	5.2	Surface	1.0	29.0 28.8	28.9	8.5 8.4	8.4	12.3 12.3	12.3	100.3 101.5	100.9	7.2 7.3	7.3	7.3	6.8 6.8	6.8	6.8	4.6 4.2	4.4	4.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.2	28.1 28.6	28.3	8.4 8.4	8.4	16.8 16.6	16.7	94.2 102.5	98.4	6.7 7.3	7.0	7.0	6.7 6.8	6.8		4.1 3.2	3.7	
3-Jun-16	Sunny	Moderate	17:43	5.3	Surface	1.0	29.3 29.3	29.3	8.5 8.5	8.5	13.6 13.5	13.5	107.2 107.4	107.3	7.6 7.6	7.6	7.6	1.8 1.9	1.9	1.9	3.0 3.8	3.4	3.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.3	28.8 28.8	28.8	8.4 8.4	8.4	16.3 16.3	16.3	103.4 108.3	105.9	7.3 7.7	7.5	7.5	1.9 1.9	1.9		2.4 3.7	3.1	
6-Jun-16	Cloudy	Moderate	07:17	5.4	Surface	1.0	27.7 27.8	27.7	8.3 8.3	8.3	19.2 19.4	19.3	75.9 76.2	76.1	5.4 5.4	5.4	5.4	5.3 5.4	5.4	5.5	2.6 2.2	2.4	2.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.4	27.6 27.6	27.6	8.2 8.2	8.2	24.5 24.6	24.5	76.0 76.9	76.5	5.2 5.3	5.3	5.3	5.6 5.5	5.6		2.5 3.3	2.9	
8-Jun-16	Sunny	Moderate	07:31	5.1	Surface	1.0	27.8 27.8	27.8	8.2 8.2	8.2	16.9 16.4	16.6	76.9 76.3	76.6	5.6 5.6	5.6	5.6	1.5 1.5	1.5	1.6	2.7 2.8	2.8	2.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	27.7 27.8	27.8	8.2 8.2	8.2	20.4 20.3	20.3	76.3 76.9	76.6	5.5 5.5	5.5	5.5	1.6 1.5	1.6		2.0 3.0	2.5	
10-Jun-16	Sunny	Moderate	10:04	5.2	Surface	1.0	27.9 28.0	27.9	8.2 8.2	8.2	15.8 16.0	15.9	75.9 75.7	75.8	5.8 5.7	5.7	5.7	2.1 2.1	2.1	2.2	5.9 5.7	5.8	5.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.2	27.8 27.7	27.7	8.1 8.1	8.1	22.7 22.8	22.8	75.8 75.2	75.5	5.7 5.7	5.7	5.7	2.4 2.2	2.3		5.2 6.2	5.7	
13-Jun-16	Cloudy	Moderate	13:41	5.1	Surface	1.0	27.7 28.0	27.9	8.0 8.1	8.1	18.2 18.2	18.2	83.9 85.8	84.9	6.2 6.3	6.2	6.2	3.6 3.6	3.6	3.8	2.3 3.4	2.9	2.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	28.1 28.0	28.0	8.1 8.1	8.1	20.6 21.1	20.9	80.4 80.8	80.6	6.0 6.0	6.0	6.0	3.9 3.8	3.9		2.2 2.6	2.4	
15-Jun-16	Sunny	Moderate	16:19	5.0	Surface	1.0	28.9 28.9	28.9	8.2 8.2	8.2	5.9 6.0	5.9	89.1 88.7	88.9	6.7 6.6	6.6	6.6	7.3 7.1	7.2	6.5	6.7 6.9	6.8	6.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.0	28.6 28.6	28.6	8.1 8.1	8.1	9.6 9.6	9.6	88.8 88.1	88.5	6.5 6.5	6.5	6.5	5.9 5.7	5.8		6.9 6.5	6.7	
17-Jun-16	Sunny	Moderate	17:39	5.1	Surface	1.0	29.0 28.7	28.9	8.2 8.1	8.2	7.8 8.3	8.1	80.4 84.3	82.4	5.7 5.9	5.8	5.8	7.5 7.3	7.4	7.2	7.2 6.9	7.1	6.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	27.9 27.7	27.8	7.7 7.8	7.8	19.2 19.9	19.6	76.8 80.1	78.5	5.7 5.9	5.8	5.8	7.2 6.7	7.0		6.1 7.2	6.7	
20-Jun-16	Sunny	Moderate	06:30	5.5	Surface	1.0	27.1 27.3	27.2	8.1 8.0	8.1	24.5 24.4	24.5	72.1 72.5	72.3	5.1 5.2	5.2	5.2	5.3 5.3	5.3	5.4	3.8 2.5	3.2	3.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	26.8 27.3	27.0	7.9 8.0	8.0	31.3 30.2	30.7	70.5 69.0	69.8	5.1 5.1	5.1	5.1	5.4 5.5	5.5		3.5 4.0	3.8	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR5 - Mid-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-Jun-16	Sunny	Moderate	07:32	5.1	Surface	1.0	28.0 28.0	28.0	8.3 8.2	8.3	12.9 13.0	13.0	72.3 72.2	72.3	5.7 5.7	5.7	5.7	7.0 6.7	6.9	7.8	5.8 5.9	5.9	6.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	26.7 26.8	26.7	8.1 8.1	8.1	22.7 23.6	23.1	72.0 71.8	71.9	5.7 5.7	5.7	5.7	8.4 8.8	8.6		7.2 7.3	7.3	
24-Jun-16	Sunny	Moderate	08:51	5.5	Surface	1.0	27.9 27.7	27.8	8.2 8.2	8.2	16.4 17.5	17.0	74.3 74.4	74.4	5.3 5.3	5.3	5.3	4.7 4.8	4.8	4.9	5.5 6.4	6.0	6.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	27.5 28.0	27.8	8.1 8.1	8.1	20.3 19.4	19.9	72.5 73.3	72.9	5.2 5.2	5.2	5.2	4.9 4.9	4.9		6.3 6.9	6.6	
27-Jun-16	Sunny	Moderate	11:33	5.0	Surface	1.0	28.3 28.3	28.3	8.3 8.3	8.3	18.7 17.5	18.1	94.9 95.2	95.1	6.7 6.7	6.7	6.7	3.3 3.4	3.4	3.4	5.2 5.8	5.5	5.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.0	27.9 27.8	27.9	8.3 8.3	8.3	22.6 22.3	22.5	95.4 96.4	95.9	6.6 6.7	6.6	6.6	3.4 3.4	3.4		5.1 5.2	5.2	
29-Jun-16	Sunny	Moderate	13:58	5.3	Surface	1.0	27.5 27.7	27.6	8.3 8.3	8.3	19.1 19.1	19.1	82.6 77.0	79.8	5.8 5.4	5.6	5.6	3.0 3.1	3.1	3.1	4.6 4.2	4.4	4.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.3	27.1 27.8	27.4	8.2 8.3	8.3	22.8 22.4	22.6	74.7 75.8	75.3	5.3 5.3	5.3	5.3	3.0 3.1	3.1		4.0 3.1	3.6	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	11:07	4.1	Surface	1.0	28.7 28.7	28.7	8.4 8.4	8.4	10.7 10.8	10.8	98.8 97.9	98.4	7.2 7.1	7.2	7.2	7.3 7.3	7.3	7.4	4.1 3.3	3.7	3.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	28.6 28.5	28.6	8.3 8.3	8.3	16.3 16.1	16.2	98.9 96.5	97.7	7.0 6.9	6.9	6.9	7.5 7.3	7.4		3.0 3.4	3.2	
3-Jun-16	Sunny	Moderate	12:50	4.1	Surface	1.0	28.7 28.7	28.7	8.5 8.5	8.5	14.6 14.6	14.6	99.2 99.0	99.1	7.1 7.1	7.1	7.1	3.8 3.8	3.8	3.8	2.2 2.2	2.2	2.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	28.3 28.2	28.3	8.4 8.4	8.4	19.1 18.1	18.6	99.0 100.6	99.8	6.9 7.1	7.0	7.0	3.7 3.6	3.7		3.2 2.3	2.8	
6-Jun-16	Cloudy	Moderate	12:28	4.2	Surface	1.0	27.7 27.7	27.7	7.9 7.9	7.9	18.4 17.7	18.0	80.3 82.1	81.2	5.7 5.8	5.8	5.8	3.2 3.1	3.2	3.4	2.6 2.1	2.4	2.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	27.7 27.7	27.7	7.8 7.9	7.8	20.3 19.2	19.7	79.6 80.8	80.2	5.7 5.7	5.7	5.7	3.5 3.4	3.5		3.4 2.8	3.1	
8-Jun-16	Sunny	Moderate	13:56	4.1	Surface	1.0	28.6 28.6	28.6	8.2 8.2	8.2	13.9 13.8	13.8	86.7 86.9	86.8	6.3 6.3	6.3	6.3	1.6 1.5	1.6	1.5	4.3 3.9	4.1	3.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	28.6 28.6	28.6	8.2 8.2	8.2	14.0 14.1	14.1	86.6 86.7	86.7	6.3 6.3	6.3	6.3	1.3 1.3	1.3		4.0 2.8	3.4	
10-Jun-16	Rainy	Moderate	15:33	4.3	Surface	1.0	28.7 28.4	28.5	8.3 8.3	8.3	14.6 14.7	14.6	72.5 72.2	72.4	5.5 5.5	5.5	5.5	2.0 2.1	2.1	2.1	3.9 3.6	3.8	4.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	28.2 28.5	28.3	8.2 8.3	8.3	18.7 18.7	18.7	71.2 72.6	71.9	5.4 5.5	5.5	5.5	2.1 2.0	2.1		3.6 4.8	4.2	
13-Jun-16	Cloudy	Moderate	08:53	4.2	Surface	1.0	28.0 27.9	28.0	8.1 8.1	8.1	17.9 17.9	17.9	84.1 84.4	84.3	6.3 6.3	6.3	6.3	4.1 4.2	4.2	4.3	4.9 5.1	5.0	4.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	27.9 27.9	27.9	8.1 8.1	8.1	17.9 18.0	18.0	83.6 83.6	83.6	6.2 6.2	6.2	6.2	4.3 4.3	4.3		3.8 4.6	4.2	
15-Jun-16	Sunny	Moderate	11:36	4.0	Surface	1.0	28.9 28.9	28.9	8.2 8.1	8.1	6.6 6.7	6.7	87.7 86.0	86.9	6.5 6.4	6.5	6.5	7.2 7.2	7.2	7.6	6.0 6.3	6.2	6.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	28.3 28.3	28.3	7.9 8.0	8.0	10.5 10.6	10.6	85.1 84.4	84.8	6.3 6.2	6.2	6.2	7.9 7.8	7.9		6.0 6.8	6.4	
17-Jun-16	Sunny	Moderate	12:25	4.1	Surface	1.0	28.5 28.5	28.5	8.1 8.1	8.1	9.2 9.1	9.2	79.9 81.1	80.5	5.9 6.0	5.9	5.9	6.2 6.2	6.2	6.2	5.0 5.6	5.3	5.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	28.5 28.4	28.4	8.0 8.1	8.0	9.7 9.8	9.8	80.5 77.5	79.0	5.9 5.7	5.8	5.8	6.2 5.9	6.1		6.1 5.4	5.8	
20-Jun-16	Sunny	Moderate	11:41	4.3	Surface	1.0	27.9 27.8	27.8	8.1 8.0	8.0	18.6 20.1	19.4	76.1 76.4	76.3	5.3 5.3	5.3	5.3	3.7 3.8	3.8	3.9	4.0 4.4	4.2	4.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	27.6 27.6	27.6	7.9 7.9	7.9	26.1 23.9	25.0	75.3 75.8	75.6	5.2 5.2	5.2	5.2	3.9 3.9	3.9		4.6 3.8	4.2	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	13:59	4.1	Surface	1.0	29.1 29.1	29.1	8.2 8.2	8.2	9.7 9.8	9.7	73.0 73.0	73.0	5.5 5.5	5.5	5.5	4.1 4.2	4.2	4.2	5.3 4.3	4.8	5.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	29.1 28.8	28.9	8.2 8.2	8.2	10.1 10.6	10.3	73.2 72.4	72.8	5.5 5.4	5.5	5.5	4.2 3.9	4.1		5.3 6.1	5.7	
24-Jun-16	Sunny	Moderate	14:11	3.9	Surface	1.0	28.2 28.2	28.2	8.2 8.2	8.2	18.2 18.2	18.2	73.4 72.5	73.0	5.2 5.2	5.2	5.2	4.2 4.2	4.2	4.3	5.2 5.0	5.1	5.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	27.7 27.8	27.8	8.1 8.1	8.1	19.3 19.5	19.4	71.8 71.8	71.8	5.2 5.1	5.1	5.1	4.4 4.3	4.4		5.5 5.6	5.6	
27-Jun-16	Sunny	Moderate	16:42	4.0	Surface	1.0	30.1 30.0	30.0	8.4 8.3	8.4	14.9 14.9	14.9	99.8 96.9	98.4	7.0 6.8	6.9	6.9	3.1 3.1	3.1	3.0	3.0 4.0	3.5	3.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	28.1 28.0	28.1	8.3 8.2	8.3	19.2 19.6	19.4	98.2 93.7	96.0	6.9 6.6	6.7	6.7	3.0 2.8	2.9		3.4 4.6	4.0	
29-Jun-16	Sunny	Moderate	09:00	5.2	Surface	1.0	28.5 28.5	28.5	8.3 8.3	8.3	16.6 16.4	16.5	80.5 85.9	83.2	5.7 6.0	5.9	5.9	2.9 3.0	3.0	3.0	4.0 4.0	4.0	4.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.2	27.1 27.2	27.1	8.2 8.2	8.2	22.8 23.0	22.9	76.8 79.0	77.9	5.5 5.5	5.5	5.5	3.0 3.0	3.0		4.2 5.3	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

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-Jun-16	Sunny	Moderate	14:48	4.1	Surface	1.0	29.3 29.2	29.2	8.4 8.4	8.4	11.4 11.3	11.4	99.8 97.7	98.8	7.2 7.0	7.1	7.1	7.8 7.5	7.7	7.7	4.2 4.4	4.3	4.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	28.0 28.1	28.0	8.3 8.3	8.3	20.1 17.3	18.7	101.3 101.9	101.6	7.1 7.2	7.2	7.2	7.9 7.4	7.7		4.4 5.1	4.8	
3-Jun-16	Sunny	Moderate	16:48	4.3	Surface	1.0	29.4 29.5	29.4	8.5 8.5	8.5	12.4 11.9	12.1	104.3 103.9	104.1	7.4 7.4	7.4	7.4	2.2 2.2	2.2	2.2	3.7 3.9	3.8	3.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	29.0 29.2	29.1	8.4 8.4	8.4	14.4 14.2	14.3	104.1 104.1	104.1	7.4 7.4	7.4	7.4	2.2 2.1	2.2		4.1 3.4	3.8	
6-Jun-16	Cloudy	Moderate	08:20	4.2	Surface	1.0	27.8 27.8	27.8	8.4 8.4	8.4	16.5 17.0	16.8	80.0 79.4	79.7	5.7 5.7	5.7	5.7	2.2 2.2	2.2	2.4	2.7 2.1	2.4	2.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	27.7 27.6	27.7	8.3 8.2	8.3	20.9 24.2	22.5	78.3 79.7	79.0	5.5 5.5	5.5	5.5	2.4 2.5	2.5		2.0 2.1	2.1	
8-Jun-16	Sunny	Moderate	08:22	3.8	Surface	1.0	27.8 27.8	27.8	8.2 8.2	8.2	17.4 17.3	17.4	73.9 74.2	74.1	5.4 5.4	5.4	5.4	2.3 2.3	2.3	2.9	2.6 2.8	2.7	3.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	27.6 27.6	27.6	8.1 8.1	8.1	19.8 19.8	19.8	74.3 74.0	74.2	5.4 5.3	5.3	5.3	3.3 3.4	3.4		3.3 3.1	3.2	
10-Jun-16	Sunny	Moderate	10:56	4.2	Surface	1.0	28.0 27.8	27.9	8.2 8.2	8.2	16.8 17.1	17.0	71.4 70.9	71.2	5.4 5.4	5.4	5.4	2.0 2.3	2.2	2.4	4.1 4.3	4.2	4.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	27.9 27.7	27.8	8.2 8.1	8.1	19.5 22.0	20.7	71.1 70.5	70.8	5.4 5.4	5.4	5.4	2.5 2.5	2.5		4.1 3.4	3.8	
13-Jun-16	Cloudy	Moderate	12:51	4.3	Surface	1.0	28.0 28.0	28.0	8.2 8.1	8.2	17.5 17.5	17.5	83.4 83.5	83.5	6.2 6.2	6.2	6.2	4.4 4.4	4.4	4.5	3.5 3.7	3.6	3.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	27.9 27.8	27.8	8.1 8.1	8.1	18.8 17.8	18.3	83.1 82.8	83.0	6.2 6.2	6.2	6.2	4.5 4.6	4.6		2.7 3.0	2.9	
15-Jun-16	Sunny	Moderate	15:38	4.1	Surface	1.0	28.9 28.9	28.9	8.3 8.2	8.2	5.4 5.4	5.4	81.3 81.1	81.2	6.1 6.1	6.1	6.1	8.0 7.8	7.9	7.4	7.3 7.3	7.3	7.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	28.2 28.2	28.2	7.9 8.0	7.9	10.8 10.7	10.8	81.0 78.8	79.9	5.9 5.8	5.9	5.9	7.1 6.6	6.9		7.8 8.0	7.9	
17-Jun-16	Sunny	Moderate	16:48	4.3	Surface	1.0	29.1 29.1	29.1	8.1 8.1	8.1	6.7 6.9	6.8	78.4 78.4	78.4	5.8 5.8	5.8	5.8	8.4 8.5	8.5	8.4	7.4 6.3	6.9	7.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	28.8 28.7	28.8	8.0 7.9	8.0	10.3 10.1	10.2	78.6 78.4	78.5	5.7 5.7	5.7	5.7	8.3 8.0	8.2		7.7 7.1	7.4	
20-Jun-16	Sunny	Moderate	07:28	4.4	Surface	1.0	28.1 28.0	28.0	8.1 8.1	8.1	17.4 18.2	17.8	75.4 75.2	75.3	5.4 5.4	5.4	5.4	3.7 3.7	3.7	3.8	4.9 5.0	5.0	4.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.4	28.0 27.4	27.7	7.9 7.8	7.8	25.3 25.8	25.5	74.7 72.8	73.8	5.3 5.4	5.3	5.3	3.9 3.8	3.9		4.8 4.6	4.7	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR6 - Mid-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-Jun-16	Sunny	Moderate	08:23	4.4	Surface	1.0	27.5 27.5	27.5	8.2 8.2	8.2	16.0 16.2	16.1	72.7 72.7	72.7	5.7 5.7	5.7	5.7	8.3 8.5	8.4	9.1	5.3 5.4	5.4	5.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.4	26.7 27.0	26.9	8.1 8.1	8.1	21.7 21.3	21.5	72.2 73.3	72.8	5.7 5.8	5.7	5.7	10.1 9.4	9.8		5.5 4.9	5.2	
24-Jun-16	Sunny	Moderate	09:41	4.1	Surface	1.0	27.3 27.8	27.6	8.1 8.1	8.1	18.3 18.5	18.4	74.5 74.1	74.3	5.3 5.3	5.3	5.3	6.1 6.0	6.1	6.3	5.9 6.0	6.0	6.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	26.9 26.8	26.9	8.1 8.0	8.0	22.1 22.6	22.3	73.8 73.9	73.9	5.2 5.2	5.2	5.2	6.3 6.4	6.4		7.0 7.2	7.1	
27-Jun-16	Sunny	Moderate	12:24	3.9	Surface	1.0	28.5 28.0	28.3	8.3 8.2	8.3	16.0 19.5	17.7	81.0 80.6	80.8	5.6 5.7	5.7	5.7	4.5 4.3	4.4	5.0	4.4 4.7	4.6	4.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	28.0 27.7	27.8	8.2 8.2	8.2	21.0 20.0	20.5	79.4 75.7	77.6	5.6 5.3	5.5	5.5	5.3 5.8	5.6		4.6 4.4	4.5	
29-Jun-16	Sunny	Moderate	13:07	5.2	Surface	1.0	27.9 27.7	27.8	8.2 8.2	8.2	17.8 18.2	18.0	78.2 73.5	75.9	5.5 5.2	5.3	5.3	3.0 3.2	3.1	3.2	4.1 2.8	3.5	3.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.2	27.5 27.1	27.3	8.1 8.1	8.1	22.5 22.7	22.6	71.2 71.7	71.5	5.1 5.0	5.0	5.0	3.2 3.3	3.3		2.6 4.1	3.4	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	09:40	4.1	Surface	1.0	28.5 28.6	28.6	8.3 8.3	8.3	10.6 10.6	10.6	98.7 98.6	98.7	7.2 7.2	7.2	7.2	7.2 7.0	7.1	7.2	3.7 3.0	3.4	3.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	28.3 28.3	28.3	8.3 8.2	8.2	14.6 14.9	14.8	98.7 97.9	98.3	7.1 7.0	7.1	7.1	7.3 7.0	7.2		2.7 3.0	2.9	
3-Jun-16	Sunny	Moderate	11:26	4.4	Surface	1.0	28.8 28.8	28.8	8.5 8.4	8.5	14.6 14.6	14.6	100.6 102.2	101.4	7.2 7.3	7.2	7.2	4.3 4.4	4.4	4.4	7.1 7.9	7.5	8.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.4	28.2 28.7	28.4	8.4 8.4	8.4	17.8 18.0	17.9	99.6 101.8	100.7	7.0 7.1	7.1	7.1	4.3 4.2	4.3		9.4 7.9	8.7	
6-Jun-16	Cloudy	Moderate	13:53	4.3	Surface	1.0	27.8 27.8	27.8	8.3 8.3	8.3	17.9 17.4	17.7	82.2 82.0	82.1	5.8 5.8	5.8	5.8	1.3 1.2	1.3	1.4	2.0 2.4	2.2	2.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	27.7 27.7	27.7	8.2 8.2	8.2	18.8 18.3	18.6	81.9 82.1	82.0	5.8 5.8	5.8	5.8	1.4 1.5	1.5		3.0 2.9	3.0	
8-Jun-16	Sunny	Moderate	15:17	4.3	Surface	1.0	28.3 28.5	28.4	8.3 8.3	8.3	14.9 14.6	14.8	83.0 82.9	83.0	6.1 6.0	6.0	6.0	1.2 1.3	1.3	1.3	2.9 2.6	2.8	2.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	28.2 28.0	28.1	8.2 8.2	8.2	17.8 16.6	17.2	83.4 79.9	81.7	6.0 5.8	5.9	5.9	1.3 1.2	1.3		2.2 2.5	2.4	
10-Jun-16	Rainy	Moderate	16:52	4.1	Surface	1.0	28.2 28.2	28.2	8.3 8.3	8.3	20.6 17.3	19.0	81.2 77.7	79.5	6.3 6.1	6.2	6.2	2.1 2.0	2.1	2.2	2.0 2.7	2.4	2.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	27.2 27.3	27.3	8.2 8.2	8.2	23.5 23.4	23.5	80.1 73.8	77.0	6.2 5.8	6.0	6.0	2.3 2.1	2.2		2.6 2.6	2.6	
13-Jun-16	Cloudy	Moderate	07:24	4.0	Surface	1.0	27.8 27.4	27.6	8.0 8.1	8.1	18.9 22.4	20.7	77.8 79.0	78.4	5.8 5.7	5.7	5.7	2.9 2.9	2.9	3.0	3.5 2.4	3.0	3.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	27.5 27.4	27.4	8.1 8.0	8.0	23.3 23.3	23.3	74.5 71.7	73.1	5.4 5.2	5.3	5.3	3.1 3.1	3.1		2.6 3.9	3.3	
15-Jun-16	Sunny	Moderate	10:32	3.8	Surface	1.0	29.0 29.0	29.0	8.1 8.1	8.1	7.3 7.3	7.3	91.3 91.9	91.6	6.8 6.8	6.8	6.8	5.7 5.7	5.7	5.7	5.4 5.9	5.7	5.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	28.4 28.3	28.4	8.0 8.0	8.0	10.5 10.4	10.5	90.0 89.3	89.7	6.6 6.6	6.6	6.6	5.6 5.5	5.6		5.2 6.3	5.8	
17-Jun-16	Sunny	Moderate	11:05	3.9	Surface	1.0	28.5 28.4	28.5	8.2 8.1	8.2	8.2 9.0	8.6	80.4 79.3	79.9	6.0 5.9	5.9	5.9	4.8 4.7	4.8	4.7	3.9 4.1	4.0	3.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	28.0 28.2	28.1	8.0 8.0	8.0	13.3 11.8	12.5	81.6 79.6	80.6	5.9 5.8	5.9	5.9	4.5 4.5	4.5		2.8 2.7	2.8	
20-Jun-16	Sunny	Moderate	13:10	4.2	Surface	1.0	28.2 27.9	28.1	8.0 7.9	8.0	20.9 21.4	21.2	72.6 72.9	72.8	5.3 5.4	5.3	5.3	3.2 3.2	3.2	3.4	5.2 5.2	5.2	5.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	28.1 27.9	28.0	8.0 7.9	8.0	22.3 22.9	22.6	72.6 72.6	72.6	5.3 5.2	5.2	5.2	3.4 3.5	3.5		5.0 4.5	4.8	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	15:18	4.0	Surface	1.0	28.4 28.8	28.6	8.2 8.2	8.2	10.4 10.3	10.4	75.4 75.4	75.4	5.9 5.9	5.9	5.9	3.6 3.6	3.6	3.6	5.4 5.5	5.5	4.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	27.9 28.2	28.0	8.1 8.1	8.1	13.8 14.8	14.3	74.9 75.3	75.1	5.8 5.8	5.8	5.8	3.6 3.5	3.6		4.7 3.9	4.3	
24-Jun-16	Sunny	Moderate	15:33	4.3	Surface	1.0	29.5 29.6	29.6	8.2 8.2	8.2	17.2 17.2	17.2	80.6 80.8	80.7	5.8 5.7	5.7	5.7	3.4 3.3	3.4	3.5	6.4 6.1	6.3	6.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	28.2 28.2	28.2	8.1 8.1	8.1	16.8 17.3	17.0	79.3 80.6	80.0	5.6 5.7	5.6	5.6	3.6 3.5	3.6		5.5 6.0	5.8	
27-Jun-16	Sunny	Moderate	17:56	3.7	Surface	1.0	30.2 29.7	30.0	8.4 8.4	8.4	15.5 16.2	15.9	101.7 102.2	102.0	7.0 7.1	7.1	7.1	3.0 3.1	3.1	2.9	4.0 4.3	4.2	4.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	28.3 28.2	28.3	8.4 8.4	8.4	19.1 19.2	19.1	101.6 100.6	101.1	7.1 7.1	7.1	7.1	2.7 2.7	2.7		4.3 4.0	4.2	
29-Jun-16	Sunny	Moderate	07:50	5.1	Surface	1.0	28.4 28.2	28.3	8.3 8.3	8.3	16.4 16.5	16.4	84.7 76.8	80.8	6.0 5.5	5.7	5.7	3.0 2.9	3.0	3.1	3.4 2.9	3.2	3.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	27.4 27.3	27.4	8.2 8.2	8.2	21.4 21.3	21.3	75.0 71.5	73.3	5.3 5.0	5.2	5.2	3.0 3.1	3.1		2.6 3.4	3.0	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR7 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jun-16	Sunny	Moderate	16:07	4.0	Surface	1.0	29.0 28.8	28.9	8.5 8.5	8.5	11.0 11.0	11.0	110.8 107.3	109.1	8.0 7.8	7.9	7.9	8.6 8.5	8.6	8.7	2.8 3.0	2.9	4.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	28.7 28.7	28.7	8.4 8.4	8.4	17.7 18.4	18.0	113.3 110.1	111.7	8.0 7.7	7.8	7.8	8.5 8.8	8.7		4.9 5.1	5.0	
3-Jun-16	Sunny	Moderate	18:19	4.2	Surface	1.0	29.6 29.5	29.6	8.6 8.6	8.6	14.0 14.1	14.1	135.1 134.8	135.0	9.5 9.5	9.5	9.5	2.6 2.6	2.6	2.7	3.7 2.8	3.3	3.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	29.6 29.6	29.6	8.5 8.5	8.5	15.8 15.4	15.6	136.5 133.4	135.0	9.5 9.3	9.4	9.4	2.6 2.7	2.7		3.8 3.9	3.9	
6-Jun-16	Cloudy	Moderate	06:45	4.4	Surface	1.0	27.9 27.9	27.9	8.1 8.1	8.1	18.6 19.2	18.9	86.2 86.4	86.3	6.1 6.2	6.1	6.1	3.3 3.2	3.3	3.4	2.8 2.7	2.8	3.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.4	27.8 27.9	27.8	8.0 8.1	8.1	20.2 19.6	19.9	83.9 82.1	83.0	5.9 5.8	5.9	5.9	3.5 3.4	3.5		2.8 3.3	3.1	
8-Jun-16	Sunny	Moderate	07:05	4.2	Surface	1.0	27.9 27.8	27.9	8.1 8.1	8.1	16.4 16.8	16.6	77.8 76.9	77.4	5.6 5.6	5.6	5.6	7.6 8.1	7.9	8.5	5.1 4.9	5.0	4.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	27.5 27.6	27.6	8.1 8.1	8.1	20.9 19.7	20.3	77.2 75.3	76.3	5.5 5.3	5.4	5.4	9.3 8.8	9.1		4.6 4.2	4.4	
10-Jun-16	Sunny	Moderate	09:38	4.1	Surface	1.0	27.9 28.0	28.0	8.2 8.2	8.2	16.0 16.1	16.1	76.1 76.2	76.2	5.8 5.8	5.8	5.8	2.3 2.2	2.3	2.3	3.2 3.2	3.2	3.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	27.7 27.9	27.8	8.2 8.1	8.2	21.2 23.5	22.4	75.2 76.2	75.7	5.7 5.7	5.7	5.7	2.2 2.2	2.2		3.0 2.6	2.8	
13-Jun-16	Cloudy	Moderate	14:12	4.1	Surface	1.0	28.1 27.9	28.0	8.2 8.1	8.1	18.6 18.6	18.6	83.6 83.9	83.8	6.2 6.0	6.1	6.1	3.2 3.2	3.2	3.3	3.1 4.3	3.7	3.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	27.8 27.7	27.7	8.0 8.0	8.0	22.8 24.6	23.7	81.3 80.1	80.7	5.9 5.9	5.9	5.9	3.3 3.4	3.4		3.5 3.5	3.5	
15-Jun-16	Sunny	Moderate	16:48	3.9	Surface	1.0	28.9 28.9	28.9	8.2 8.2	8.2	5.7 5.8	5.7	93.1 93.4	93.3	7.0 7.0	7.0	7.0	7.2 7.0	7.1	6.9	7.0 7.1	7.1	7.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	28.8 28.8	28.8	8.0 8.0	8.0	9.0 8.9	8.9	92.8 93.0	92.9	6.8 6.9	6.8	6.8	6.7 6.7	6.7		7.3 7.4	7.4	
17-Jun-16	Sunny	Moderate	18:04	4.1	Surface	1.0	28.9 28.9	28.9	8.1 8.1	8.1	8.0 8.3	8.1	85.0 84.9	85.0	6.3 6.3	6.3	6.3	6.8 6.7	6.8	6.8	4.1 4.4	4.3	5.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	28.9 28.9	28.9	8.1 8.1	8.1	9.4 9.3	9.4	84.6 84.6	84.6	6.2 6.2	6.2	6.2	6.6 6.7	6.7		5.8 5.7	5.8	
20-Jun-16	Sunny	Moderate	05:56	4.4	Surface	1.0	28.1 28.0	28.0	8.2 8.3	8.3	19.6 19.2	19.4	78.2 78.8	78.5	5.7 5.7	5.7	5.7	4.8 4.9	4.9	5.0	4.9 4.7	4.8	5.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.4	26.6 26.5	26.5	8.2 8.1	8.1	23.0 24.1	23.6	75.9 75.5	75.7	5.3 5.5	5.4	5.4	5.0 5.1	5.1		5.1 5.5	5.3	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	07:06	4.1	Surface	1.0	27.4 27.4	27.4	8.1 8.1	8.1	18.6 18.5	18.5	74.5 76.6	75.6	5.7 5.9	5.8	5.8	5.6 5.4	5.5	6.2	3.7 3.6	3.7	3.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	27.0 26.7	26.9	8.1 8.1	8.1	22.9 22.0	22.4	75.3 78.2	76.8	5.8 6.0	5.9	5.9	6.8 6.7	6.8		3.4 3.7	3.6	
24-Jun-16	Sunny	Moderate	08:21	4.3	Surface	1.0	28.4 27.9	28.1	8.2 8.2	8.2	16.6 17.0	16.8	81.9 82.0	82.0	5.8 5.8	5.8	5.8	4.6 4.5	4.6	4.7	7.7 8.0	7.9	7.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	28.0 27.9	28.0	8.1 8.1	8.1	17.1 18.8	17.9	80.9 78.5	79.7	5.7 5.6	5.7	5.7	4.8 4.8	4.8		7.8 7.2	7.5	
27-Jun-16	Sunny	Moderate	11:09	4.1	Surface	1.0	28.6 28.5	28.6	8.3 8.3	8.3	19.0 19.0	19.0	108.2 105.6	106.9	7.5 7.4	7.5	7.5	5.2 5.3	5.3	5.9	4.5 4.6	4.6	5.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	28.4 28.1	28.3	8.3 8.3	8.3	20.7 21.3	21.0	107.8 106.0	106.9	7.5 7.4	7.4	7.4	6.3 6.6	6.5		4.7 6.3	5.5	
29-Jun-16	Sunny	Moderate	14:27	5.2	Surface	1.0	27.4 27.5	27.4	8.3 8.3	8.3	20.7 21.6	21.1	81.5 81.9	81.7	5.7 5.7	5.7	5.7	4.9 5.1	5.0	5.1	7.0 6.6	6.8	7.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.2	27.4 27.1	27.3	8.3 8.3	8.3	23.1 23.4	23.3	81.5 80.1	80.8	5.7 5.6	5.6	5.6	5.0 5.1	5.1		7.8 7.9	7.9	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR10A - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jun-16	Sunny	Moderate	09:31	6.2	Surface	1.0	28.3 28.4	28.4	8.4 8.4	8.4	14.0 13.9	14.0	96.7 97.1	96.9	7.0 7.0	7.0	7.0	2.0 2.1	2.1	2.1	4.2 5.4	4.8	5.2
					Middle	3.1	28.4 28.2	28.3	8.4 8.3	8.3	13.9 14.3	14.1	96.8 96.5	96.7	7.0 7.0	7.0		2.1 2.0	2.1		5.4 5.3	5.4	
					Bottom	5.2	28.0 28.3	28.2	8.2 8.3	8.3	15.9 17.7	16.8	96.4 96.6	96.5	6.9 6.8	6.9	6.9	2.2 2.2	2.2		5.2 5.4	5.3	
3-Jun-16	Sunny	Moderate	10:02	6.6	Surface	1.0	28.7 28.7	28.7	8.4 8.4	8.4	17.1 17.0	17.1	101.5 100.9	101.2	7.1 7.1	7.1	7.1	2.6 2.6	2.6	3.0	2.9 2.7	2.8	3.0
					Middle	3.3	28.5 28.6	28.6	8.4 8.4	8.4	17.7 17.8	17.7	99.8 100.6	100.2	7.0 7.1	7.0		3.2 3.0	3.1		2.5 2.2	2.4	
					Bottom	5.6	28.4 28.3	28.4	8.3 8.3	8.3	20.4 20.7	20.5	100.8 100.2	100.5	7.0 7.0	7.0	7.0	3.2 3.4	3.3		3.5 3.8	3.7	
6-Jun-16	Cloudy	Moderate	14:31	6.5	Surface	1.0	27.8 27.8	27.8	8.3 8.3	8.3	20.5 20.4	20.5	81.3 82.5	81.9	5.7 5.8	5.7	5.7	1.5 1.4	1.5	1.4	2.9 2.9	2.9	2.6
					Middle	3.3	27.8 27.7	27.8	8.3 8.3	8.3	20.7 20.7	20.7	82.0 80.2	81.1	5.8 5.6	5.7		1.4 1.4	1.4		2.2 2.3	2.3	
					Bottom	5.5	27.6 27.8	27.7	8.3 8.3	8.3	22.0 22.3	22.1	80.1 81.9	81.0	5.6 5.7	5.6	5.6	1.4 1.4	1.4		2.9 2.3	2.6	
8-Jun-16	Sunny	Moderate	15:58	6.6	Surface	1.0	28.6 28.7	28.7	8.3 8.4	8.4	17.8 17.5	17.7	79.3 79.2	79.3	5.6 5.6	5.6	5.5	1.1 1.0	1.1	1.2	2.0 3.8	2.9	3.6
					Middle	3.3	28.0 28.5	28.3	8.3 8.3	8.3	19.0 18.8	18.9	78.2 78.3	78.3	5.4 5.4	5.4		1.2 1.2	1.2		2.6 3.5	3.1	
					Bottom	5.6	27.9 27.3	27.6	8.3 8.2	8.3	25.4 25.7	25.6	76.9 77.4	77.2	5.3 5.4	5.4	5.4	1.2 1.2	1.2		5.3 4.5	4.9	
10-Jun-16	Rainy	Moderate	17:41	6.4	Surface	1.0	28.6 28.7	28.7	8.4 8.4	8.4	18.4 17.5	17.9	89.5 88.7	89.1	6.3 6.2	6.2	6.1	1.2 1.3	1.3	1.2	2.6 3.7	3.2	3.2
					Middle	3.2	28.4 28.3	28.4	8.4 8.4	8.4	18.9 18.9	18.9	87.5 85.2	86.4	6.1 6.0	6.0		1.2 1.2	1.2		2.9 3.0	3.0	
					Bottom	5.4	27.9 28.1	28.0	8.3 8.3	8.3	20.8 20.7	20.8	85.1 87.1	86.1	6.0 6.1	6.0	6.0	1.2 1.2	1.2		3.0 3.5	3.3	
13-Jun-16	Cloudy	Moderate	07:30	6.1	Surface	1.0	27.5 27.6	27.5	8.2 8.2	8.2	13.1 13.0	13.1	74.0 73.7	73.9	5.4 5.4	5.4	5.4	2.6 2.5	2.6	2.8	3.0 2.9	3.0	3.3
					Middle	3.1	27.2 27.1	27.1	8.1 8.1	8.1	14.2 14.7	14.5	73.1 73.3	73.2	5.3 5.3	5.3		2.8 2.7	2.8		3.5 3.8	3.7	
					Bottom	5.1	27.1 27.0	27.1	8.0 8.0	8.0	21.0 21.0	21.0	72.3 72.6	72.5	5.2 5.2	5.2	5.2	2.8 2.9	2.9		3.3 3.0	3.2	
15-Jun-16	Sunny	Moderate	09:21	6.5	Surface	1.0	28.6 28.5	28.6	8.2 8.1	8.2	10.7 10.9	10.8	82.4 82.8	82.6	6.0 6.1	6.0	5.9	5.2 5.5	5.4	5.3	4.7 4.9	4.8	4.1
					Middle	3.3	28.1 28.0	28.1	8.1 8.1	8.1	13.7 12.6	13.1	80.0 82.2	81.1	5.7 6.0	5.8		5.3 5.1	5.2		4.4 3.3	3.9	
					Bottom	5.5	27.4 28.1	27.8	8.1 8.0	8.1	23.4 21.9	22.7	79.3 81.5	80.4	5.6 5.7	5.6	5.6	5.2 5.1	5.2		4.1 3.3	3.7	
17-Jun-16	Sunny	Moderate	10:27	6.5	Surface	1.0	27.9 27.9	27.9	8.2 8.2	8.2	14.8 14.7	14.8	74.8 74.6	74.7	5.4 5.4	5.4	5.3	3.7 3.7	3.7	3.8	6.0 5.9	6.0	7.4
					Middle	3.3	27.4 27.5	27.5	8.1 8.1	8.1	18.3 18.4	18.3	74.1 74.4	74.3	5.2 5.3	5.2		3.8 3.7	3.8		6.1 6.0	6.1	
					Bottom	5.5	27.4 26.7	27.1	8.0 8.0	8.0	23.3 24.1	23.7	73.7 73.3	73.5	5.2 5.2	5.2	5.2	3.8 3.7	3.8		9.5 10.8	10.2	
20-Jun-16	Sunny	Moderate	13:42	6.4	Surface	1.0	28.4 28.5	28.5	8.2 8.2	8.2	14.5 14.2	14.3	79.1 78.3	78.7	5.7 5.6	5.6	5.5	4.8 4.7	4.8	4.6	4.8 4.2	4.5	4.9
					Middle	3.2	27.7 27.9	27.8	8.1 8.1	8.1	18.1 17.7	17.9	76.3 77.3	76.8	5.4 5.5	5.4		4.7 4.7	4.7		4.5 4.4	4.5	
					Bottom	5.4	26.1 28.0	27.0	8.0 8.1	8.1	25.4 25.9	25.6	73.3 78.1	75.7	5.3 5.5	5.4	5.4	4.4 4.2	4.3		6.2 5.0	5.6	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	14:23	6.7	Surface	1.0	28.2 28.2	28.2	8.3 8.3	8.3	17.9 17.4	17.7	77.7 77.6	77.7	5.5 5.5	5.5	5.4	5.1 5.3	5.2	5.3	4.5 5.5	5.0	4.9
					Middle	3.4	28.1 28.1	28.1	8.3 8.3	8.3	18.7 18.8	18.7	75.5 75.7	75.6	5.3 5.3	5.3		5.3 5.3	5.3		5.8 5.0	5.4	
					Bottom	5.7	27.8 27.8	27.8	8.3 8.3	8.3	22.1 18.8	20.5	74.3 73.6	74.0	5.2 5.2	5.2	5.2	5.4 5.5	5.5		5.0 3.7	4.4	
24-Jun-16	Sunny	Moderate	16:07	6.7	Surface	1.0	28.8 28.7	28.8	8.3 8.3	8.3	19.3 19.6	19.5	80.1 81.4	80.8	5.6 5.7	5.6	5.4	4.5 4.3	4.4	4.9	5.3 3.9	4.6	5.7
					Middle	3.4	28.3 28.3	28.3	8.3 8.3	8.3	20.5 20.6	20.5	73.3 75.4	74.4	5.1 5.2	5.2		5.4 5.2	5.3		4.3 5.2	4.8	
					Bottom	5.7	26.6 26.4	26.5	8.2 8.2	8.2	26.5 26.7	26.6	79.2 74.2	76.7	5.5 5.1	5.3	5.3	5.0 5.0	5.0		6.9 8.7	7.8	
27-Jun-16	Sunny	Moderate	18:32	6.5	Surface	1.0	29.2 29.3	29.3	8.5 8.5	8.5	19.9 19.7	19.8	108.0 104.7	106.4	7.4 7.2	7.3	7.2	3.0 3.0	3.0	3.1	4.2 3.9	4.1	4.1
					Middle	3.3	28.8 28.2	28.5	8.4 8.4	8.4	22.7 23.1	22.9	99.8 102.9	101.4	6.9 7.1	7.0		3.3 3.1	3.2		4.4 3.9	4.2	
					Bottom	5.5	27.9 26.6	27.3	8.4 8.4	8.4	24.9 26.3	25.6	95.4 99.2	97.3	6.5 6.8	6.7	6.7	3.2 3.2	3.2		3.5 4.2	3.9	
29-Jun-16	Sunny	Moderate	07:51	6.6	Surface	1.0	28.0 28.1	28.1	8.3 8.3	8.3	19.1 19.1	19.1	85.7 86.8	86.3	6.0 6.1	6.1	6.0	2.6 2.5	2.6	2.7	2.9 2.6	2.8	3.0
					Middle	3.3	27.5 27.6	27.6	8.2 8.2	8.2	21.5 21.5	21.5	83.9 86.3	85.1	5.9 6.0	5.9		2.7 2.6	2.7		3.3 3.3	3.3	
					Bottom	5.6	27.7 27.3	27.5	8.2 8.2	8.2	24.8 25.3	25.1	85.3 83.7	84.5	5.9 5.9	5.9	5.9	2.6 2.7	2.7		2.8 2.8	2.8	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR10A - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jun-16	Sunny	Moderate	16:08	6.1	Surface	1.0	29.0 28.6	28.8	8.6 8.6	8.6	12.8 12.9	12.8	103.7 108.5	106.1	7.4 7.5	7.5	7.4	1.7 1.7	1.7	1.7	2.5 2.4	2.5	2.7
					Middle	3.1	27.9 27.9	27.9	8.5 8.5	8.5	14.2 15.5	14.8	103.6 100.5	102.1	7.5 7.0	7.2		1.7 1.7	1.7		2.8 3.0	2.9	
					Bottom	5.1	27.8 27.6	27.7	8.5 8.4	8.4	22.9 22.9	22.9	100.9 96.6	98.8	7.3 7.0	7.1	7.1	1.7 1.8	1.8		2.7 2.7	2.7	
3-Jun-16	Sunny	Moderate	18:50	6.9	Surface	1.0	29.5 29.5	29.5	8.5 8.5	8.5	15.3 15.3	15.3	110.3 113.4	111.9	7.7 8.0	7.8	7.3	2.2 2.3	2.3	2.7	4.4 3.6	4.0	4.8
					Middle	3.5	29.0 28.9	28.9	8.5 8.5	8.5	16.6 16.4	16.5	95.0 94.4	94.7	6.7 6.6	6.7		2.6 2.8	2.7		3.1 4.5	3.8	
					Bottom	5.9	27.5 27.7	27.6	8.3 8.3	8.3	26.4 26.3	26.4	99.1 97.7	98.4	6.8 6.6	6.7	6.7	3.1 3.2	3.2		5.8 7.2	6.5	
6-Jun-16	Cloudy	Moderate	06:12	6.4	Surface	1.0	27.6 27.4	27.5	8.4 8.4	8.4	23.3 25.7	24.5	75.5 75.9	75.7	5.2 5.1	5.2	5.1	1.3 1.3	1.3	1.3	2.9 2.4	2.7	2.6
					Middle	3.2	27.0 27.2	27.1	8.3 8.4	8.4	30.0 28.9	29.4	75.1 74.8	75.0	5.0 5.0	5.0		1.3 1.3	1.3		2.2 2.3	2.3	
					Bottom	5.4	27.0 26.7	26.8	8.3 8.3	8.3	31.6 31.7	31.6	73.6 74.2	73.9	5.0 5.0	5.0	5.0	1.3 1.3	1.3		3.3 2.2	2.8	
8-Jun-16	Sunny	Moderate	07:32	6.7	Surface	1.0	27.8 27.8	27.8	8.2 8.2	8.2	18.9 18.9	18.9	77.0 76.4	76.7	5.6 5.6	5.6	5.6	1.1 1.1	1.1	1.2	2.4 2.3	2.4	2.3
					Middle	3.4	27.5 27.6	27.6	8.2 8.2	8.2	20.8 20.6	20.7	76.3 74.9	75.6	5.5 5.4	5.5		1.1 1.2	1.2		2.1 2.3	2.2	
					Bottom	5.7	27.4 26.7	27.0	8.1 8.1	8.1	26.7 28.2	27.5	76.1 73.4	74.8	5.4 5.2	5.3	5.3	1.1 1.2	1.2		2.1 2.7	2.4	
10-Jun-16	Sunny	Moderate	09:02	6.5	Surface	1.0	27.9 27.9	27.9	8.2 8.2	8.2	18.3 18.5	18.4	74.9 73.6	74.3	5.3 5.2	5.3	5.2	1.8 1.7	1.8	1.8	3.1 2.8	3.0	3.2
					Middle	3.3	27.5 27.6	27.5	8.1 8.1	8.1	21.4 20.9	21.2	71.4 74.0	72.7	5.0 5.1	5.1		1.8 1.7	1.8		3.4 3.6	3.5	
					Bottom	5.5	27.6 26.9	27.3	8.1 8.0	8.1	23.4 27.5	25.5	73.2 72.3	72.8	5.1 5.0	5.0	5.0	1.7 1.8	1.8		3.4 2.8	3.1	
13-Jun-16	Cloudy	Moderate	13:47	6.2	Surface	1.0	28.0 27.2	27.6	8.3 8.2	8.3	12.3 12.3	12.3	77.4 73.3	75.4	5.7 5.2	5.4	5.4	2.3 2.0	2.2	2.3	3.1 3.1	3.1	3.8
					Middle	3.1	27.4 27.0	27.2	8.2 8.1	8.2	19.5 20.1	19.8	74.2 70.5	72.4	5.4 5.1	5.3		2.4 2.2	2.3		4.4 3.1	3.8	
					Bottom	5.2	27.2 26.9	27.0	8.2 8.0	8.1	22.5 23.8	23.2	74.2 70.1	72.2	5.3 5.1	5.2	5.2	2.4 2.4	2.4		5.0 4.2	4.6	
15-Jun-16	Sunny	Moderate	17:03	6.6	Surface	1.0	29.0 29.0	29.0	8.4 8.4	8.4	11.2 11.2	11.2	86.5 91.3	88.9	6.3 6.6	6.4	6.3	4.5 4.5	4.5	4.4	3.8 4.0	3.9	3.5
					Middle	3.3	28.9 28.6	28.7	8.4 8.4	8.4	11.4 12.1	11.7	84.3 89.2	86.8	6.1 6.2	6.2		4.2 4.4	4.3		2.8 3.9	3.4	
					Bottom	5.6	27.1 26.8	27.0	8.2 8.1	8.2	24.0 25.1	24.6	82.0 77.8	79.9	5.7 5.6	5.7	5.7	4.4 4.5	4.5		3.0 3.1	3.1	
17-Jun-16	Sunny	Moderate	18:40	6.4	Surface	1.0	28.9 28.8	28.9	8.4 8.4	8.4	11.8 11.9	11.8	78.7 80.1	79.4	5.7 5.8	5.7	5.5	3.5 3.5	3.5	3.5	3.6 4.0	3.8	4.2
					Middle	3.2	27.6 27.1	27.4	8.2 8.2	8.2	17.5 19.0	18.3	77.4 74.1	75.8	5.4 5.1	5.2		3.5 3.6	3.6		3.2 4.8	4.0	
					Bottom	5.4	26.8 26.5	26.7	8.1 8.1	8.1	26.3 26.6	26.4	67.1 70.4	68.8	4.8 5.0	4.9	4.9	3.5 3.5	3.5		4.1 5.5	4.8	
20-Jun-16	Sunny	Moderate	05:15	6.3	Surface	1.0	27.3 27.1	27.2	8.3 8.2	8.2	22.4 22.6	22.5	75.5 75.3	75.4	5.3 5.3	5.3	5.2	2.6 2.7	2.7	2.8	5.1 5.8	5.5	5.4
					Middle	3.2	26.2 27.1	26.7	8.2 8.3	8.2	25.8 23.5	24.6	73.2 73.3	73.3	5.1 5.1	5.1		2.9 2.8	2.9		5.6 5.6	5.6	
					Bottom	5.3	25.0 25.7	25.4	8.2 8.2	8.2	28.6 30.7	29.7	71.7 75.0	73.4	5.0 5.1	5.1	5.1	3.0 2.8	2.9		4.9 5.3	5.1	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR10A - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jun-16	Sunny	Moderate	07:02	6.7	Surface	1.0	26.9 26.9	26.9	8.3 8.3	8.3	23.2 23.5	23.3	77.4 75.6	76.5	5.4 5.3	5.3	5.3	3.3 3.0	3.2	3.2	3.0 3.5	3.3	3.8
					Middle	3.4	25.5 25.5	25.5	8.2 8.2	8.2	26.8 26.9	26.8	75.4 73.5	74.5	5.2 5.2	5.2		3.0 3.3	3.2		2.9 4.3	3.6	
					Bottom	5.7	25.0 25.3	25.2	8.2 8.2	8.2	31.3 31.5	31.4	72.8 72.4	72.6	5.1 5.0	5.1	5.1	3.2 3.3	3.3		4.5 4.7	4.6	
24-Jun-16	Sunny	Moderate	07:51	6.6	Surface	1.0	27.4 27.4	27.4	7.9 8.0	8.0	22.5 22.5	22.5	75.7 75.9	75.8	5.4 5.5	5.4	5.4	2.5 2.7	2.6	2.6	5.1 4.4	4.8	5.4
					Middle	3.3	26.7 26.9	26.8	7.9 7.9	7.9	25.0 24.8	24.9	73.2 74.1	73.7	5.3 5.3	5.3		2.5 2.6	2.6		6.3 6.3	6.3	
					Bottom	5.6	26.3 26.6	26.4	7.9 7.9	7.9	27.7 27.1	27.4	74.9 73.7	74.3	5.3 5.2	5.3	5.3	2.5 2.7	2.6		5.2 5.1	5.2	
27-Jun-16	Sunny	Moderate	10:41	6.6	Surface	1.0	28.2 28.0	28.1	8.2 8.2	8.2	21.2 21.1	21.1	85.2 83.8	84.5	5.9 5.8	5.9	5.9	2.7 2.6	2.7	2.6	4.1 3.2	3.7	3.9
					Middle	3.3	27.5 27.6	27.5	8.2 8.2	8.2	24.0 24.0	24.0	83.5 84.5	84.0	5.8 5.8	5.8		2.5 2.6	2.6		3.7 3.5	3.6	
					Bottom	5.6	26.7 27.7	27.2	8.1 8.2	8.2	26.6 25.4	26.0	81.6 82.9	82.3	5.6 5.7	5.7	5.7	2.6 2.6	2.6		5.0 3.5	4.3	
29-Jun-16	Sunny	Moderate	15:05	6.6	Surface	1.0	27.6 27.6	27.6	8.4 8.4	8.4	23.0 22.9	22.9	81.0 80.1	80.6	5.6 5.6	5.6	5.6	3.2 3.0	3.1	3.4	4.3 4.1	4.2	4.3
					Middle	3.3	27.2 27.3	27.2	8.4 8.4	8.4	24.1 24.2	24.1	79.2 79.8	79.5	5.5 5.5	5.5		3.5 3.6	3.6		3.1 4.0	3.6	
					Bottom	5.6	26.9 26.9	26.9	8.3 8.3	8.3	26.3 26.5	26.4	77.1 76.9	77.0	5.3 5.3	5.3	5.3	3.5 3.5	3.5		5.4 4.6	5.0	

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

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

Appendix J - Marine Water Quality Monitoring Results

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

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (^{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-Jun-16	Sunny	Moderate	09:22	4.9	Surface	1.0	28.4 28.5	28.5	8.4 8.4	8.4	13.9 13.6	13.8	99.0 98.9	99.0	7.1 7.1	7.1	7.1	2.0 2.0	2.0	2.2	3.9 2.9	3.4	3.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.9	28.4 28.4	28.4	8.4 8.5	8.4	14.1 14.3	14.2	98.7 98.4	98.6	7.1 7.1	7.1	7.1	2.3 2.2	2.3		2.8 3.2	3.0	
3-Jun-16	Sunny	Moderate	09:49	5.1	Surface	1.0	28.7 28.7	28.7	8.3 8.3	8.3	17.3 17.3	17.3	102.4 102.1	102.3	7.2 7.2	7.2	7.2	2.3 2.4	2.4	2.4	2.6 3.6	3.1	3.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	28.7 28.7	28.7	8.3 8.2	8.3	18.0 18.2	18.1	101.1 101.9	101.5	7.1 7.1	7.1	7.1	2.5 2.3	2.4		3.2 3.1	3.2	
6-Jun-16	Cloudy	Moderate	14:41	5.0	Surface	1.0	27.8 27.8	27.8	8.3 8.3	8.3	20.5 20.6	20.5	83.6 83.4	83.5	5.9 5.8	5.9	5.9	1.7 1.7	1.7	1.8	2.0 2.4	2.2	2.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.0	27.8 27.8	27.8	8.3 8.3	8.3	20.8 20.6	20.7	83.2 83.4	83.3	5.8 5.8	5.8	5.8	1.7 1.8	1.8		2.9 3.0	3.0	
8-Jun-16	Sunny	Moderate	16:09	5.3	Surface	1.0	28.6 28.5	28.6	8.3 8.3	8.3	18.1 18.2	18.2	80.1 76.5	78.3	5.6 5.4	5.5	5.5	1.5 1.6	1.6	1.6	3.3 2.9	3.1	3.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.3	28.2 27.2	27.7	8.3 8.2	8.2	20.3 25.1	22.7	77.9 77.4	77.7	5.4 5.3	5.4	5.4	1.4 1.5	1.5		3.9 2.3	3.1	
10-Jun-16	Rainy	Moderate	17:51	5.0	Surface	1.0	28.7 28.6	28.6	8.4 8.4	8.4	17.8 18.1	18.0	92.8 90.9	91.9	6.5 6.4	6.4	6.4	1.4 1.5	1.5	1.5	2.9 4.1	3.5	3.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.0	28.6 28.5	28.6	8.4 8.4	8.4	18.9 19.3	19.1	91.9 90.2	91.1	6.4 6.3	6.3	6.3	1.4 1.5	1.5		2.8 3.7	3.3	
13-Jun-16	Cloudy	Moderate	07:24	5.2	Surface	1.0	27.4 27.4	27.4	8.3 8.4	8.3	13.2 13.1	13.2	76.0 79.4	77.7	5.5 5.6	5.6	5.6	2.5 2.6	2.6	2.7	2.6 2.9	2.8	2.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.2	27.2 27.3	27.3	8.2 8.2	8.2	20.5 20.4	20.4	76.8 75.1	76.0	5.6 5.4	5.5	5.5	2.8 2.8	2.8		2.7 2.1	2.4	
15-Jun-16	Sunny	Moderate	09:11	4.8	Surface	1.0	28.6 28.7	28.7	8.1 8.1	8.1	10.9 10.8	10.9	86.8 86.3	86.6	6.3 6.3	6.3	6.3	5.8 5.8	5.8	5.8	4.6 5.0	4.8	4.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.8	28.3 28.6	28.4	8.0 8.0	8.0	14.5 14.3	14.4	85.3 86.5	85.9	6.1 6.2	6.2	6.2	5.8 5.7	5.8		4.9 4.9	4.9	
17-Jun-16	Sunny	Moderate	10:16	5.3	Surface	1.0	27.8 27.6	27.7	8.2 8.2	8.2	14.8 15.6	15.2	76.7 78.4	77.6	5.6 5.7	5.6	5.6	3.8 3.8	3.8	3.8	6.5 7.0	6.8	6.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.3	27.5 27.5	27.5	8.1 8.1	8.1	19.8 19.9	19.8	78.9 76.8	77.9	5.6 5.4	5.5	5.5	3.6 3.7	3.7		6.1 6.5	6.3	
20-Jun-16	Sunny	Moderate	13:53	5.1	Surface	1.0	28.4 28.6	28.5	8.1 8.1	8.1	13.6 14.5	14.1	81.2 81.1	81.2	5.9 5.8	5.8	5.8	4.6 4.6	4.6	4.5	4.0 3.4	3.7	3.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	28.2 28.3	28.3	8.0 8.1	8.0	17.8 17.4	17.6	80.6 80.7	80.7	5.7 5.7	5.7	5.7	4.3 4.5	4.4		2.6 4.9	3.8	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at 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-Jun-16	Sunny	Moderate	14:31	5.1	Surface	1.0	28.4 28.4	28.4	8.3 8.3	8.3	17.8 17.8	17.8	81.8 81.3	81.6	5.8 5.7	5.7	5.7	5.1 5.1	5.1	5.2	3.6 3.8	3.7	4.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	28.4 28.4	28.4	8.3 8.3	8.3	18.0 17.9	17.9	80.8 81.5	81.2	5.7 5.7	5.7	5.7	5.2 5.2	5.2		3.7 4.9	4.3	
24-Jun-16	Sunny	Moderate	16:19	5.4	Surface	1.0	29.3 28.9	29.1	8.3 8.3	8.3	18.4 18.6	18.5	80.0 82.1	81.1	5.5 5.7	5.6	5.6	4.1 4.1	4.1	4.2	4.4 5.0	4.7	5.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.4	28.5 27.2	27.8	8.3 8.2	8.2	21.4 24.4	22.9	80.9 80.5	80.7	5.6 5.6	5.6	5.6	4.3 4.1	4.2		6.0 5.8	5.9	
27-Jun-16	Sunny	Moderate	18:41	5.1	Surface	1.0	29.1 29.0	29.0	8.5 8.4	8.5	20.4 20.5	20.4	101.7 102.8	102.3	7.0 7.1	7.0	7.0	3.1 2.9	3.0	3.1	3.9 3.7	3.8	3.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	27.7 27.6	27.7	8.4 8.4	8.4	23.9 24.0	23.9	104.5 100.3	102.4	7.2 6.9	7.1	7.1	3.0 3.1	3.1		4.1 3.1	3.6	
29-Jun-16	Sunny	Moderate	07:41	5.0	Surface	1.0	28.2 28.0	28.1	8.2 8.2	8.2	19.8 19.6	19.7	90.4 89.3	89.9	6.3 6.3	6.3	6.3	2.3 2.2	2.3	2.4	6.1 6.2	6.2	5.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.0	27.8 27.8	27.8	8.2 8.1	8.1	22.1 22.6	22.4	89.5 90.6	90.1	6.2 6.3	6.2	6.2	2.3 2.4	2.4		5.3 5.8	5.6	

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

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

Appendix J - Marine Water Quality Monitoring Results

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

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jun-16	Sunny	Moderate	16:16	4.6	Surface	1.0	29.1 28.8	29.0	8.6 8.6	8.6	12.9 13.0	12.9	117.9 116.2	117.1	8.4 8.3	8.4	8.4	1.7 1.6	1.7	1.8	2.3 2.0	2.2	3.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.6	29.1 28.5	28.8	8.6 8.5	8.6	14.3 15.5	14.9	116.1 114.5	115.3	8.2 8.2	8.2	8.2	1.8 1.7	1.8		4.8 4.0	4.4	
3-Jun-16	Sunny	Moderate	19:03	5.1	Surface	1.0	29.4 29.5	29.4	8.5 8.5	8.5	15.4 15.4	15.4	112.4 118.8	115.6	7.9 8.3	8.1	8.1	2.0 2.1	2.1	2.1	5.3 5.4	5.4	7.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	28.9 28.3	28.6	8.4 8.4	8.4	20.9 20.1	20.5	114.6 107.7	111.2	7.9 7.5	7.7	7.7	2.0 1.9	2.0		8.4 9.0	8.7	
6-Jun-16	Cloudy	Moderate	06:02	4.7	Surface	1.0	27.6 27.4	27.5	8.5 8.4	8.4	25.6 25.4	25.5	77.8 76.3	77.1	5.3 5.2	5.3	5.3	1.4 1.4	1.4	1.5	2.8 2.4	2.6	2.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.7	26.9 26.8	26.8	8.4 8.4	8.4	30.7 30.9	30.8	75.8 77.5	76.7	5.1 5.2	5.2	5.2	1.5 1.4	1.5		2.2 3.1	2.7	
8-Jun-16	Sunny	Moderate	07:21	5.4	Surface	1.0	27.5 27.5	27.5	8.2 8.2	8.2	20.8 20.6	20.7	81.9 76.9	79.4	5.7 5.6	5.7	5.7	1.2 1.2	1.2	1.2	3.0 2.4	2.7	2.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.4	27.2 27.3	27.3	8.1 8.1	8.1	27.0 28.5	27.8	78.4 77.5	78.0	5.7 5.4	5.5	5.5	1.1 1.1	1.1		2.6 2.5	2.6	
10-Jun-16	Sunny	Moderate	08:53	4.9	Surface	1.0	27.7 27.7	27.7	8.2 8.2	8.2	19.3 19.2	19.2	74.0 74.8	74.4	5.2 5.3	5.3	5.3	1.8 1.6	1.7	1.7	2.7 2.7	2.7	2.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.9	27.3 27.7	27.5	8.1 8.1	8.1	24.0 23.3	23.7	73.3 74.4	73.9	5.1 5.2	5.1	5.1	1.8 1.6	1.7		2.1 2.9	2.5	
13-Jun-16	Cloudy	Moderate	13:56	5.3	Surface	1.0	27.6 27.5	27.6	8.2 8.2	8.2	12.5 12.6	12.5	77.3 77.2	77.3	5.7 5.6	5.7	5.7	2.2 2.1	2.2	2.2	4.9 5.1	5.0	4.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.3	27.3 27.8	27.6	8.1 8.2	8.1	19.1 18.6	18.8	76.4 77.1	76.8	5.5 5.5	5.5	5.5	2.2 2.2	2.2		3.7 4.3	4.0	
15-Jun-16	Sunny	Moderate	17:12	5.0	Surface	1.0	28.7 28.9	28.8	8.4 8.4	8.4	11.1 11.0	11.1	90.7 94.7	92.7	6.6 6.9	6.7	6.7	4.5 4.6	4.6	4.6	3.2 3.4	3.3	3.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.0	28.8 27.9	28.3	8.3 8.2	8.3	13.2 13.6	13.4	93.1 92.2	92.7	6.7 6.5	6.6	6.6	4.6 4.4	4.5		3.7 3.5	3.6	
17-Jun-16	Sunny	Moderate	18:51	4.9	Surface	1.0	28.8 28.7	28.8	8.4 8.3	8.4	11.9 12.0	11.9	83.4 86.2	84.8	5.9 6.1	6.0	6.0	3.9 4.0	4.0	4.0	4.3 4.1	4.2	4.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.9	26.6 27.9	27.2	8.1 8.3	8.2	21.8 19.8	20.8	72.6 75.3	74.0	5.2 5.4	5.3	5.3	3.9 4.0	4.0		3.5 3.9	3.7	
20-Jun-16	Sunny	Moderate	05:04	5.2	Surface	1.0	27.2 27.1	27.2	8.4 8.4	8.4	20.6 21.0	20.8	82.3 79.2	80.8	5.8 5.6	5.7	5.7	2.3 2.5	2.4	2.7	5.4 5.0	5.2	5.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.2	25.7 26.5	26.1	8.4 8.4	8.4	27.7 26.7	27.2	85.1 79.9	82.5	5.9 5.5	5.7	5.7	2.8 3.0	2.9		5.1 5.5	5.3	

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

Appendix J - Marine Water Quality Monitoring Results

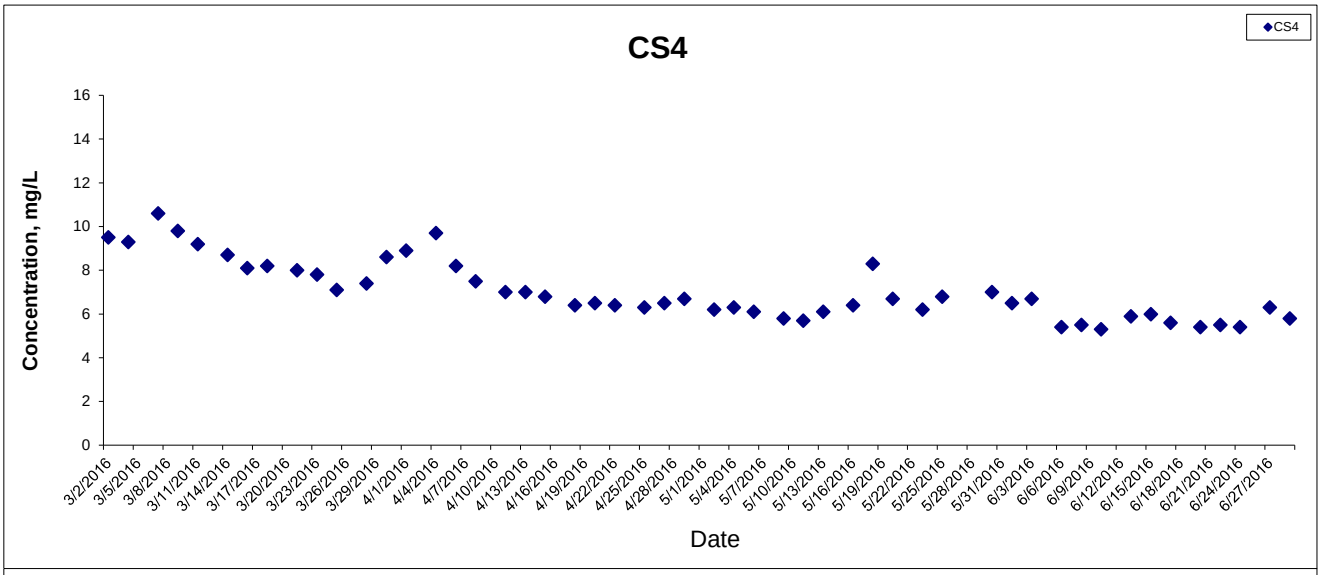
Water Quality Monitoring Results at SR10B(N) - Mid-FloodTide

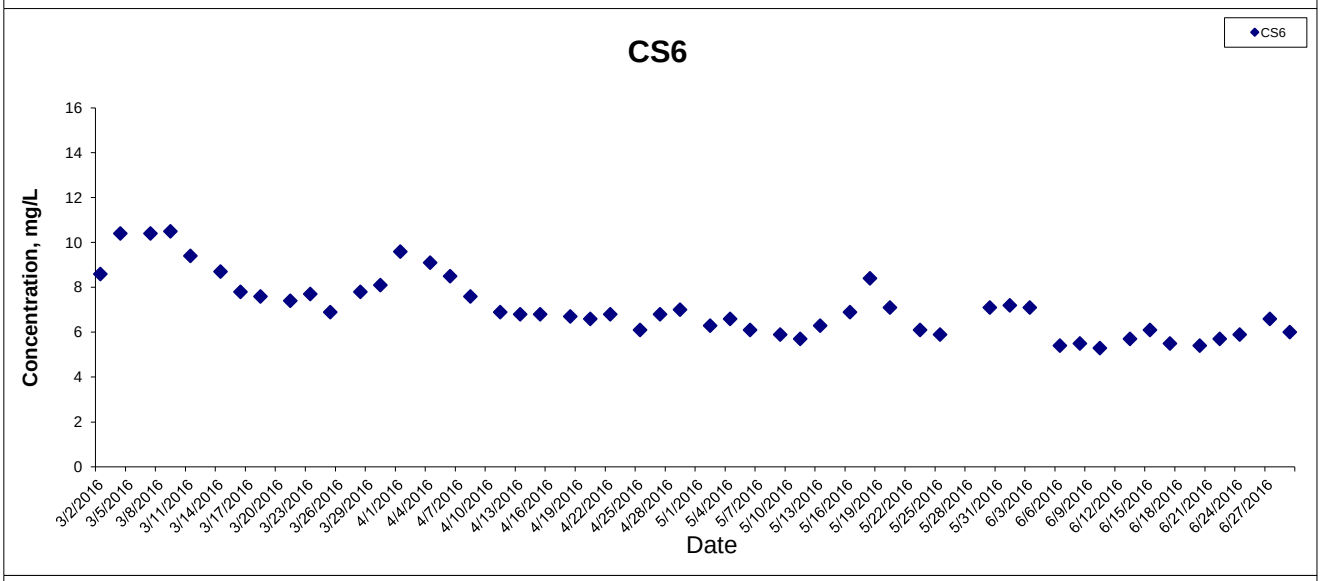
Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jun-16	Sunny	Moderate	06:56	5.2	Surface	1.0	26.8 27.0	26.9	8.3 8.3	8.3	24.9 24.5	24.7	83.0 77.0	80.0	5.7 5.4	5.5	5.5	3.0 2.9	3.0	3.1	4.4 4.1	4.3	4.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.2	26.7 26.5	26.6	8.3 8.3	8.3	28.0 29.2	28.6	76.9 78.6	77.8	5.3 5.5	5.4	5.4	3.0 3.3	3.2		4.6 3.7	4.2	
24-Jun-16	Sunny	Moderate	07:36	5.1	Surface	1.0	28.0 27.9	27.9	8.0 8.0	8.0	20.0 20.4	20.2	81.4 84.7	83.1	5.9 6.1	6.0	6.0	2.7 2.6	2.7	2.7	3.8 3.5	3.7	3.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	27.3 27.1	27.2	7.9 7.9	7.9	23.8 24.3	24.1	81.5 82.4	82.0	5.8 5.7	5.8	5.8	2.7 2.6	2.7		3.3 3.4	3.4	
27-Jun-16	Sunny	Moderate	10:31	5.0	Surface	1.0	28.1 27.9	28.0	8.1 8.1	8.1	22.0 22.0	22.0	83.4 85.4	84.4	5.8 5.9	5.8	5.8	2.7 2.8	2.8	2.8	4.4 4.8	4.6	4.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.0	28.1 27.4	27.7	8.1 8.0	8.1	24.7 25.6	25.2	84.9 82.5	83.7	5.8 5.7	5.7	5.7	2.8 2.7	2.8		4.6 5.0	4.8	
29-Jun-16	Sunny	Moderate	15:16	5.5	Surface	1.0	27.4 27.4	27.4	8.4 8.4	8.4	23.0 23.0	23.0	81.5 81.0	81.3	5.7 5.6	5.7	5.7	2.8 2.9	2.9	2.9	5.2 5.4	5.3	5.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	27.4 27.1	27.2	8.4 8.3	8.4	25.1 25.8	25.5	81.6 81.9	81.8	5.6 5.6	5.6	5.6	2.8 2.8	2.8		5.6 4.5	5.1	

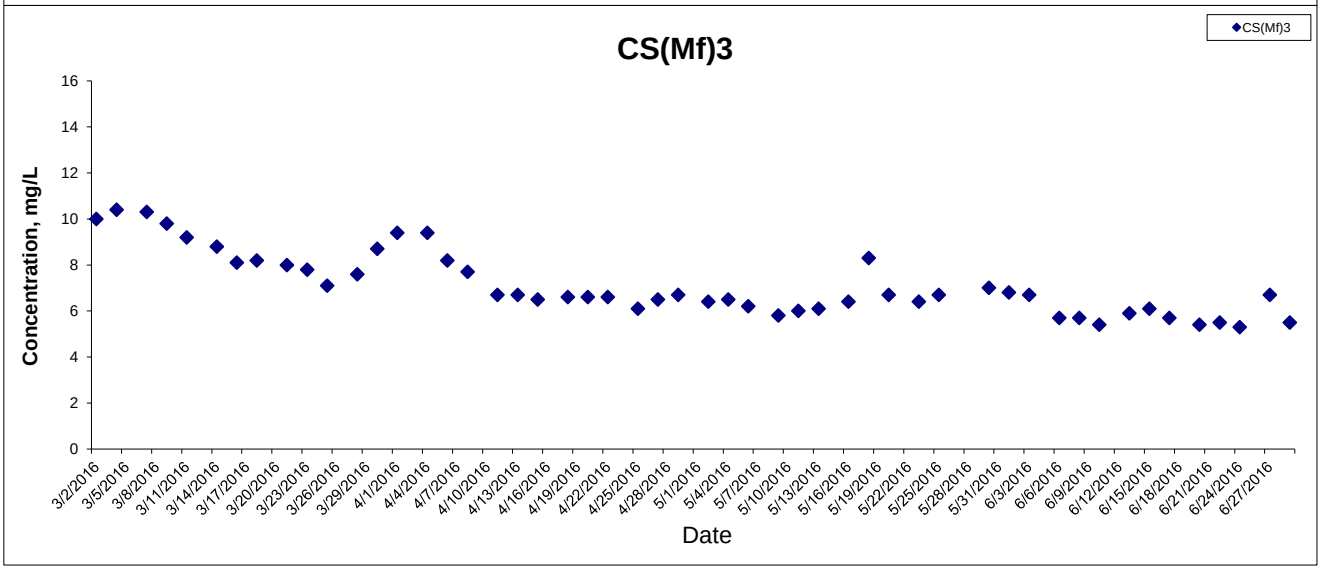
Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

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

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







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

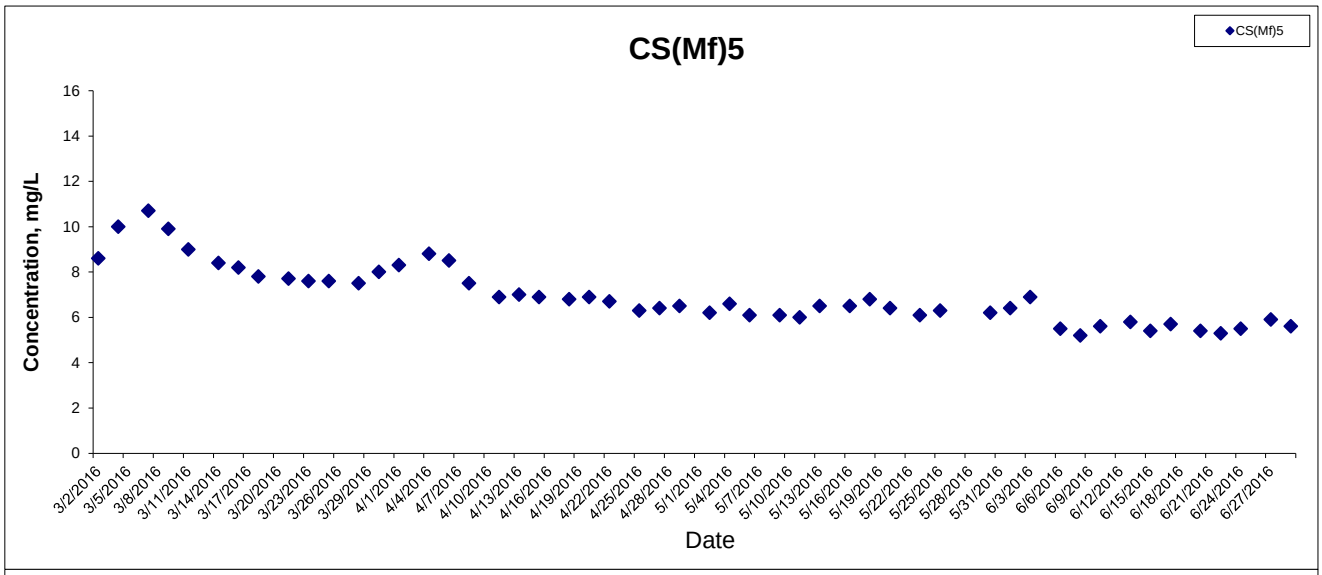
AECOM

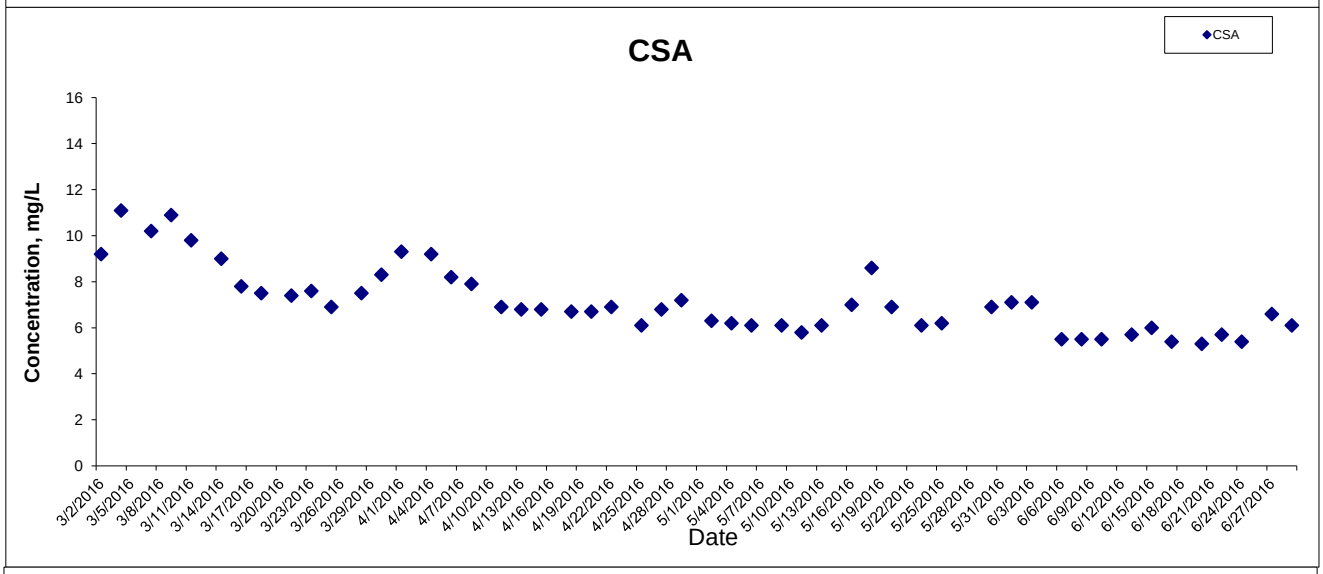
Graphical Presentation of Impact Water Quality Monitoring Results

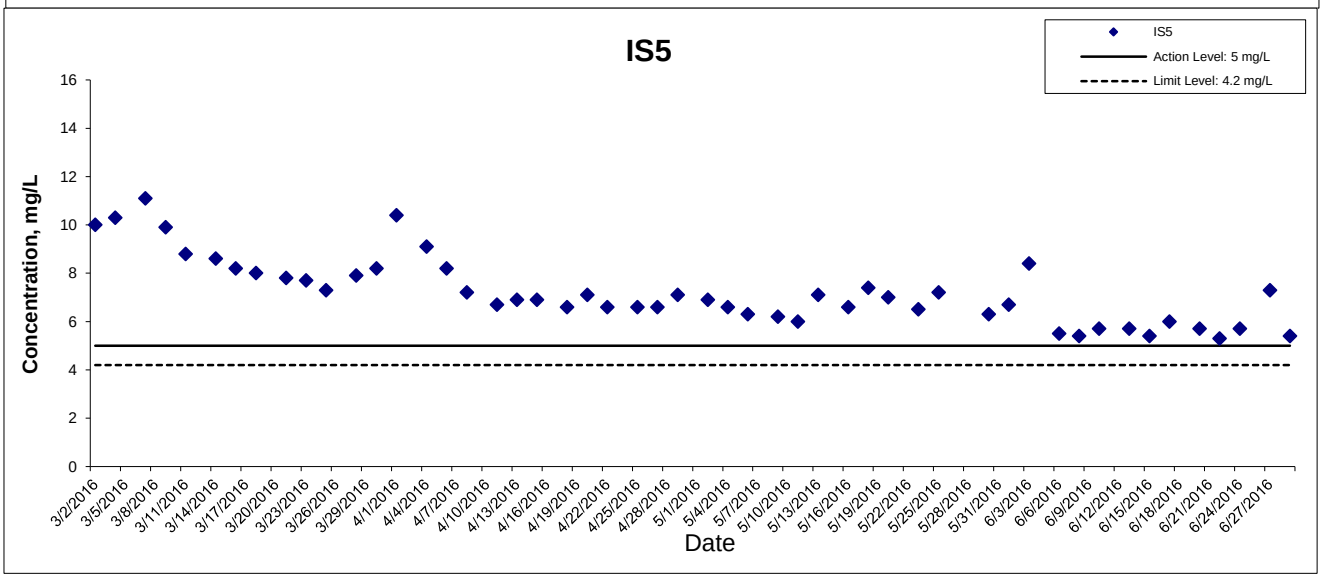
Project No.: 60249820 **Date: July 2016**

Appendix J

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

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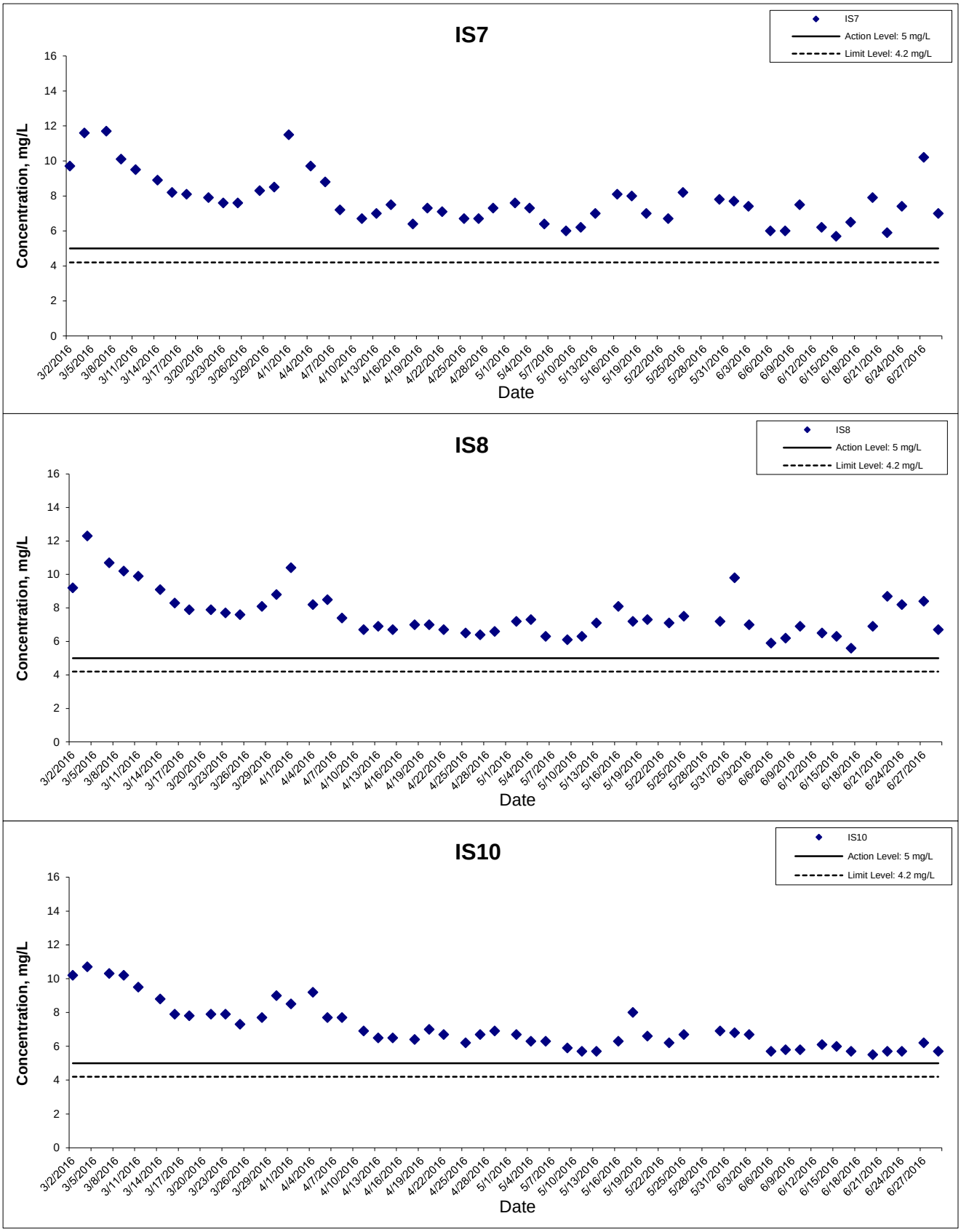
Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



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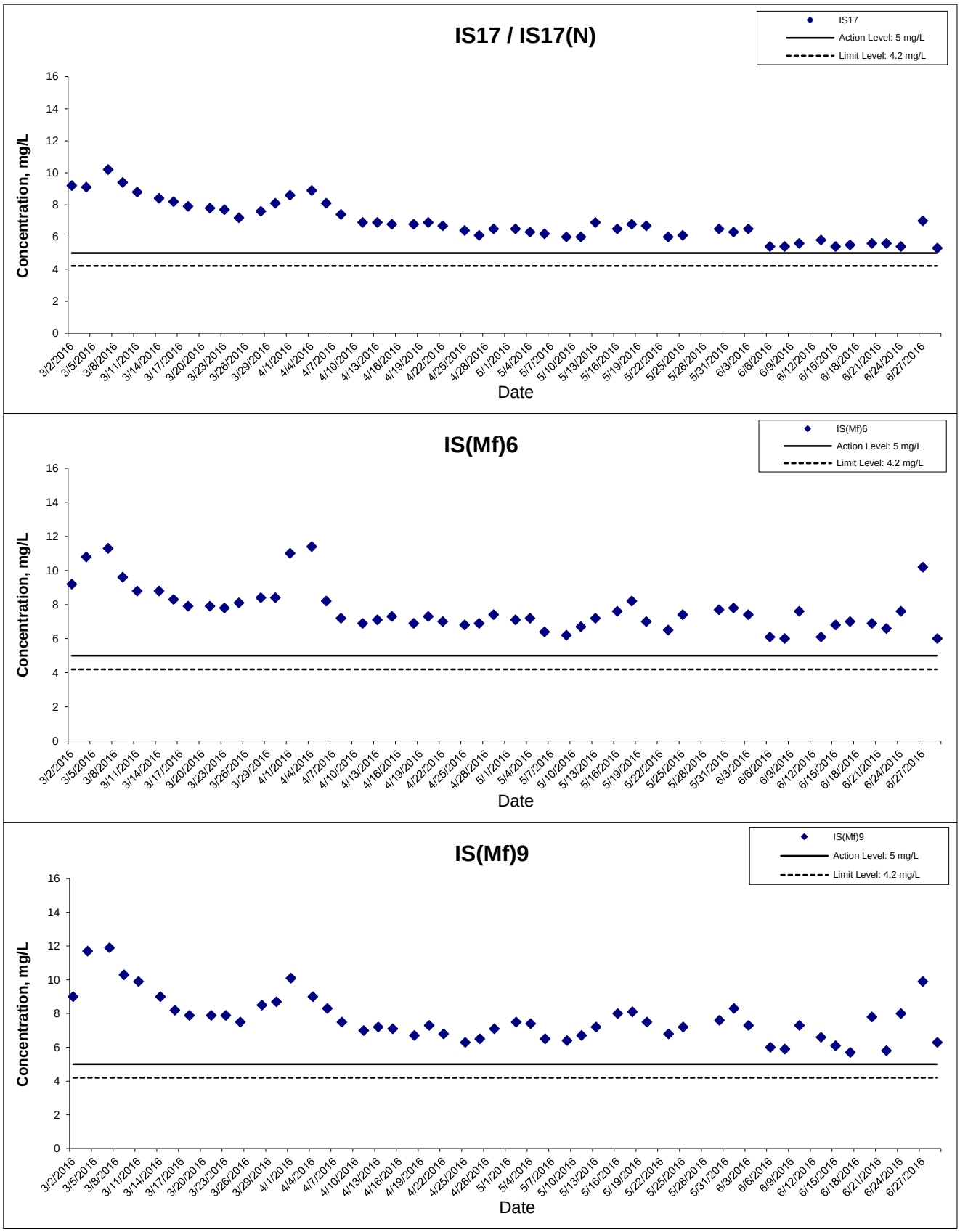
Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



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HONG KONG BOUNDARY CROSSING FACILITIES
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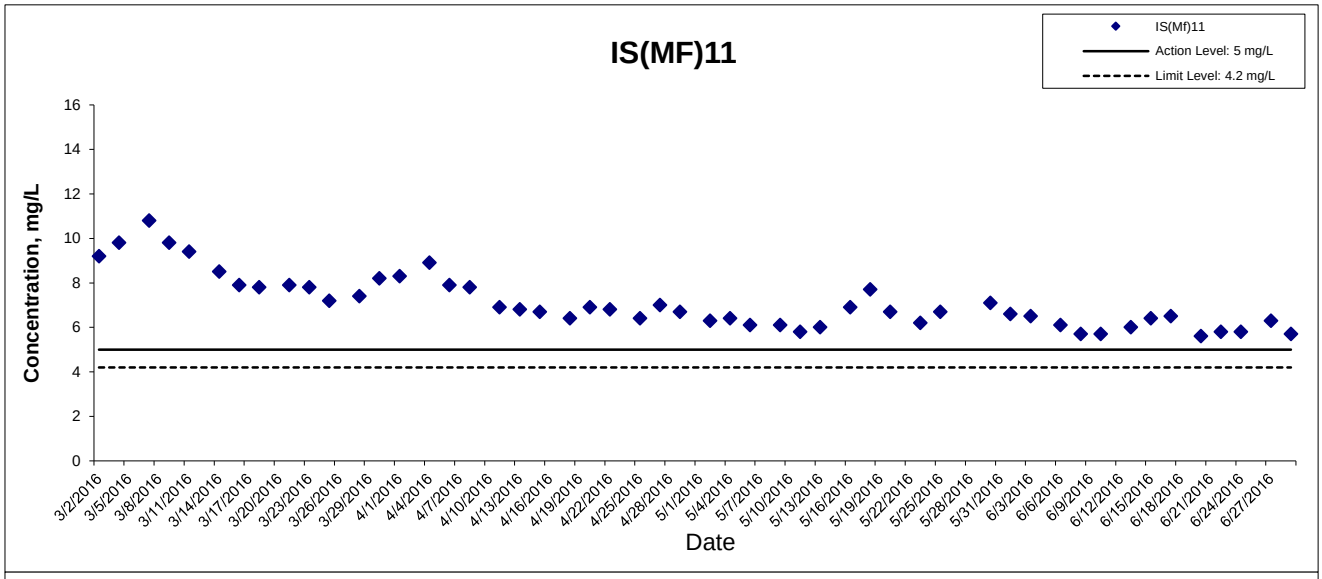

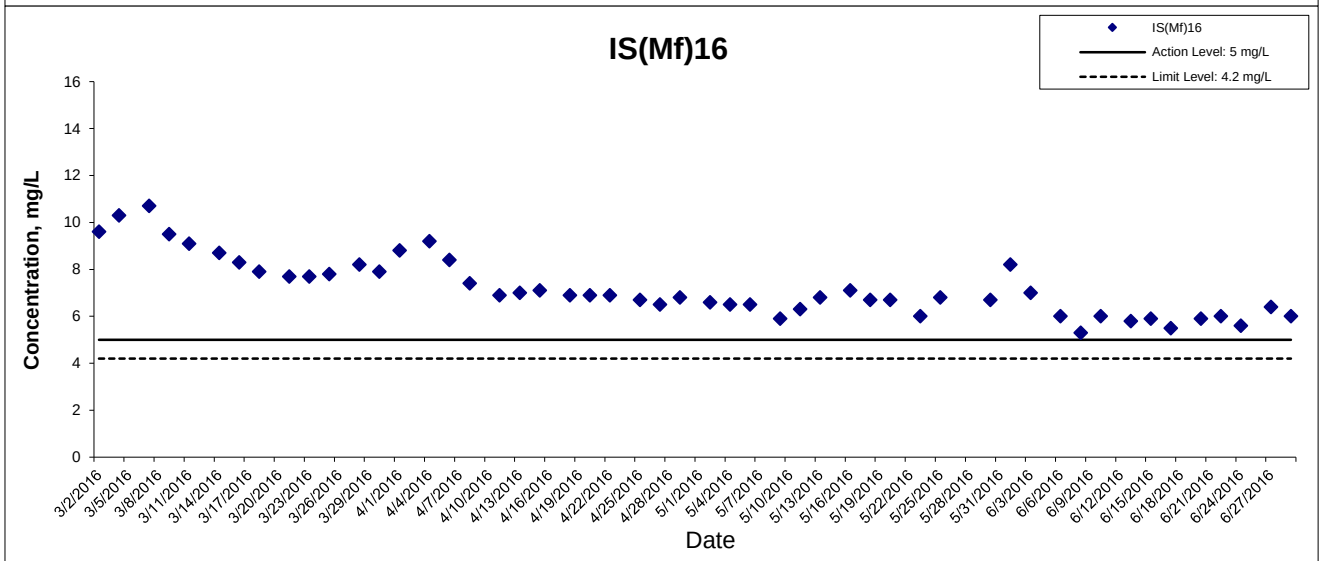

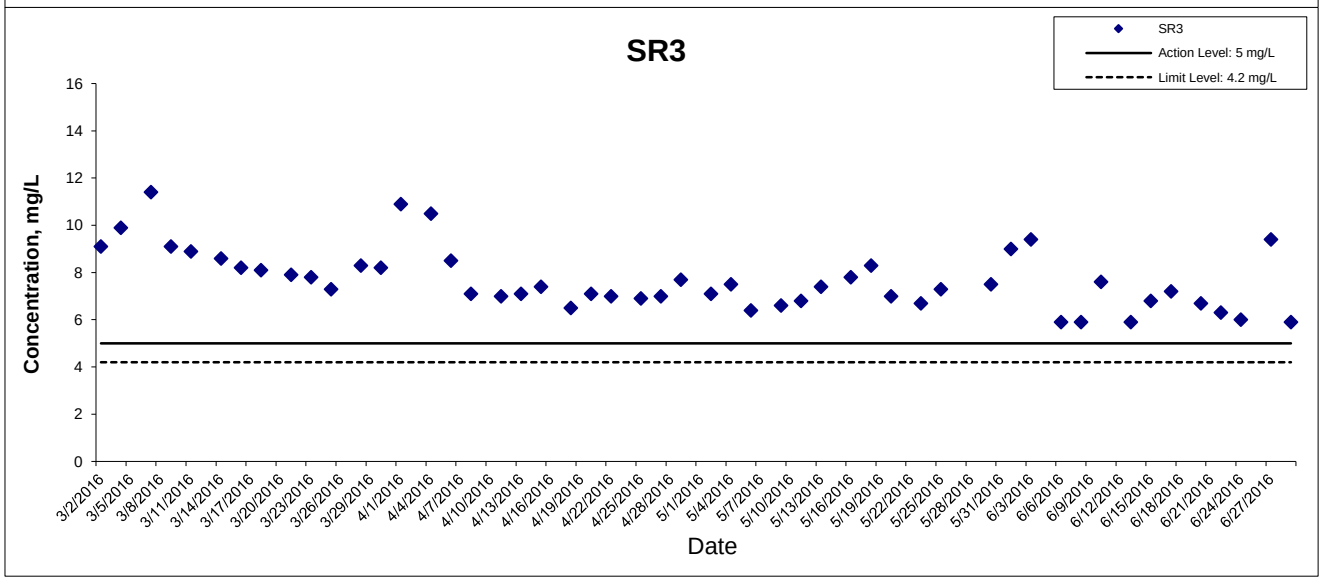

HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS

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Graphical Presentation of Impact Water Quality Monitoring Results

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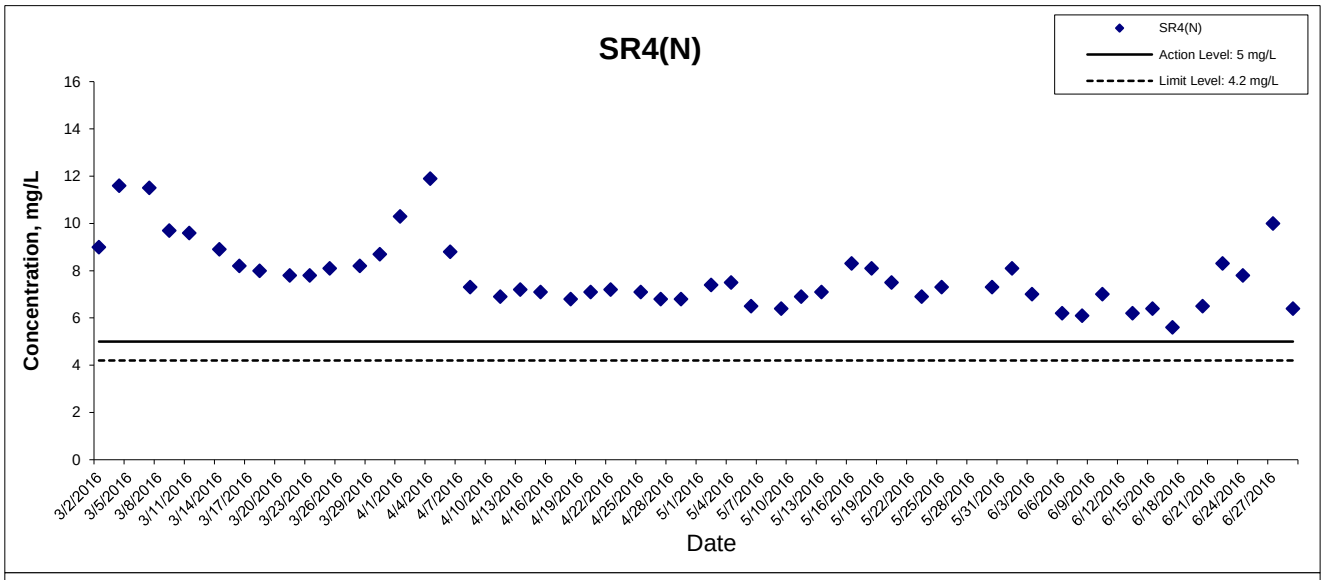

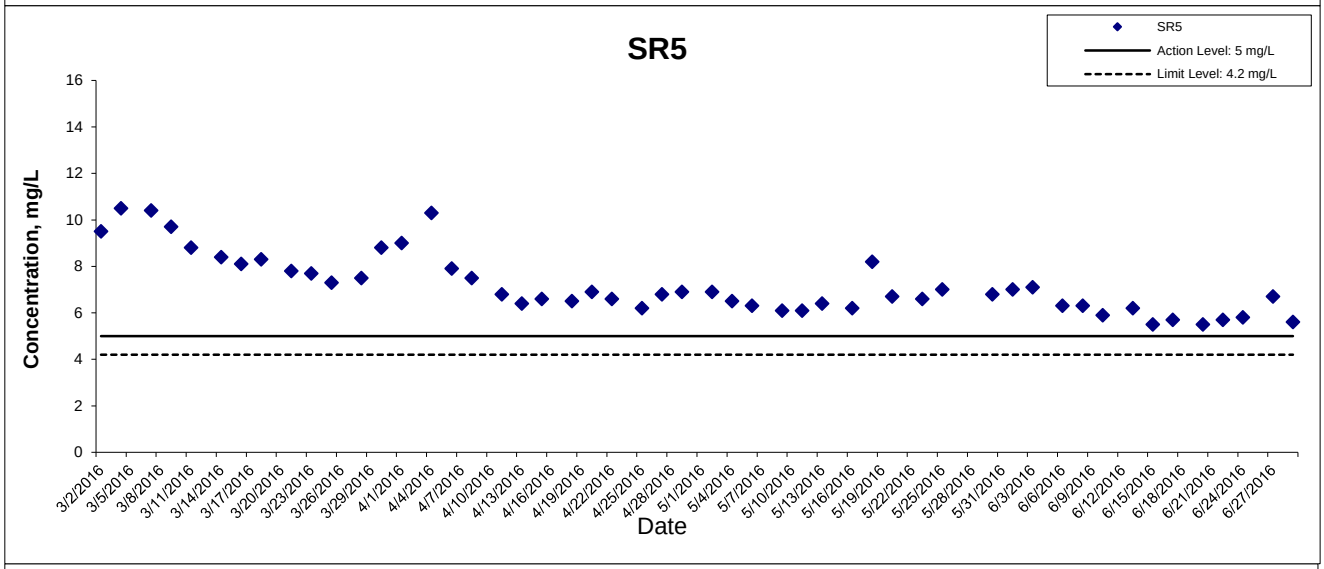

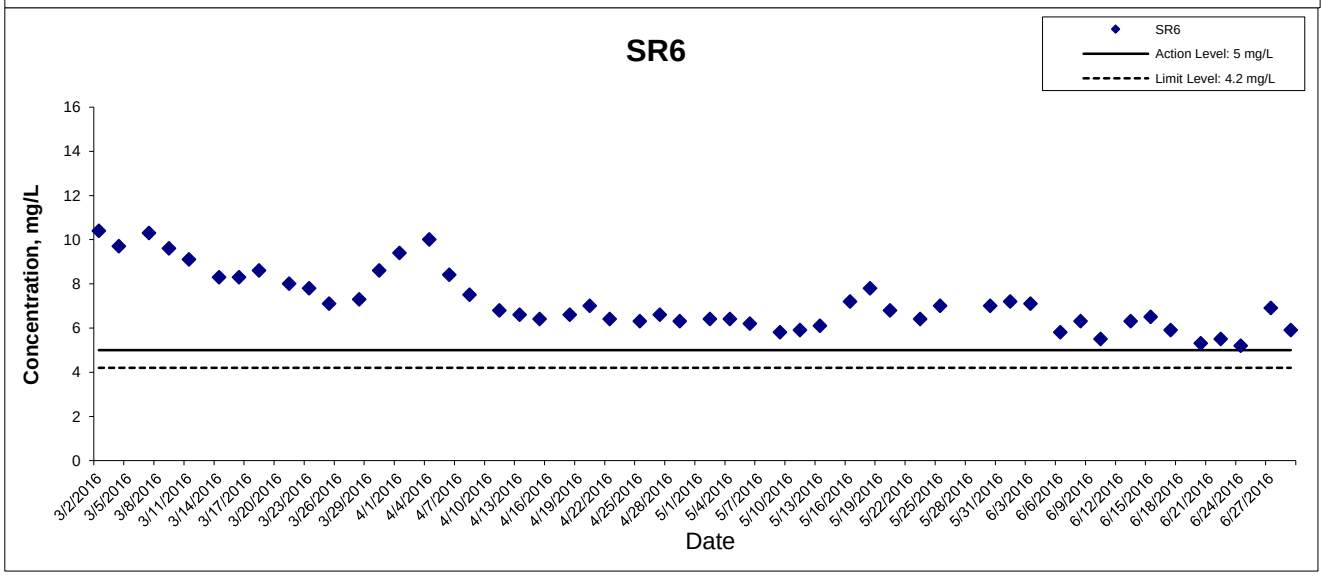

HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
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Graphical Presentation of Impact Water Quality Monitoring Results

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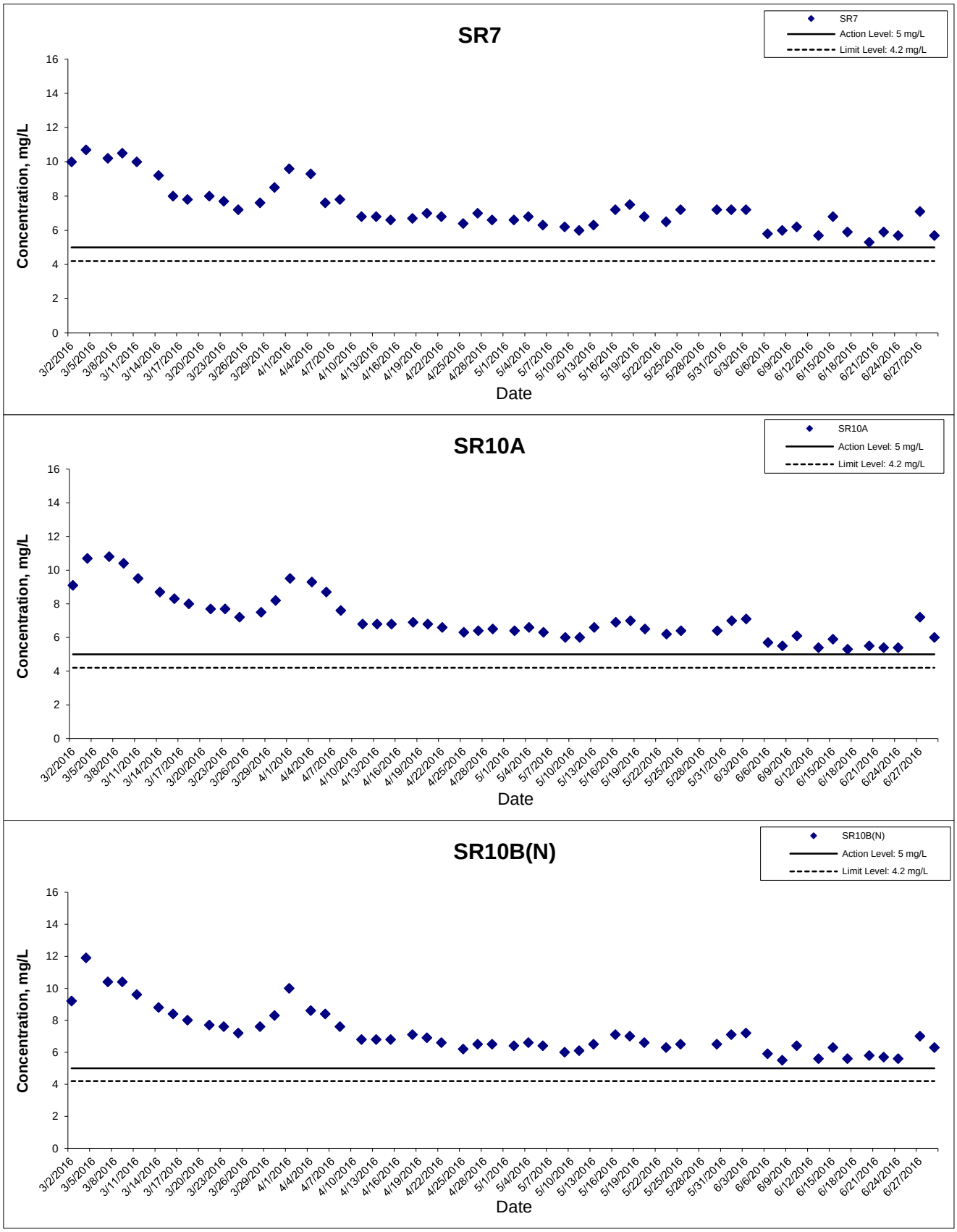

HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
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Graphical Presentation of Impact Water Quality Monitoring Results

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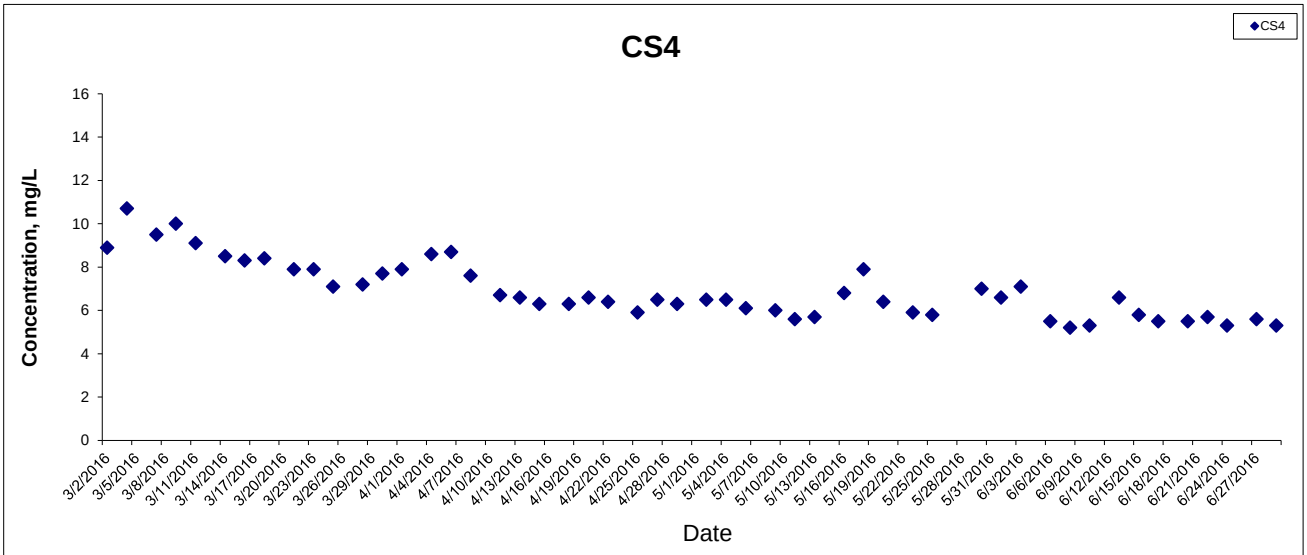
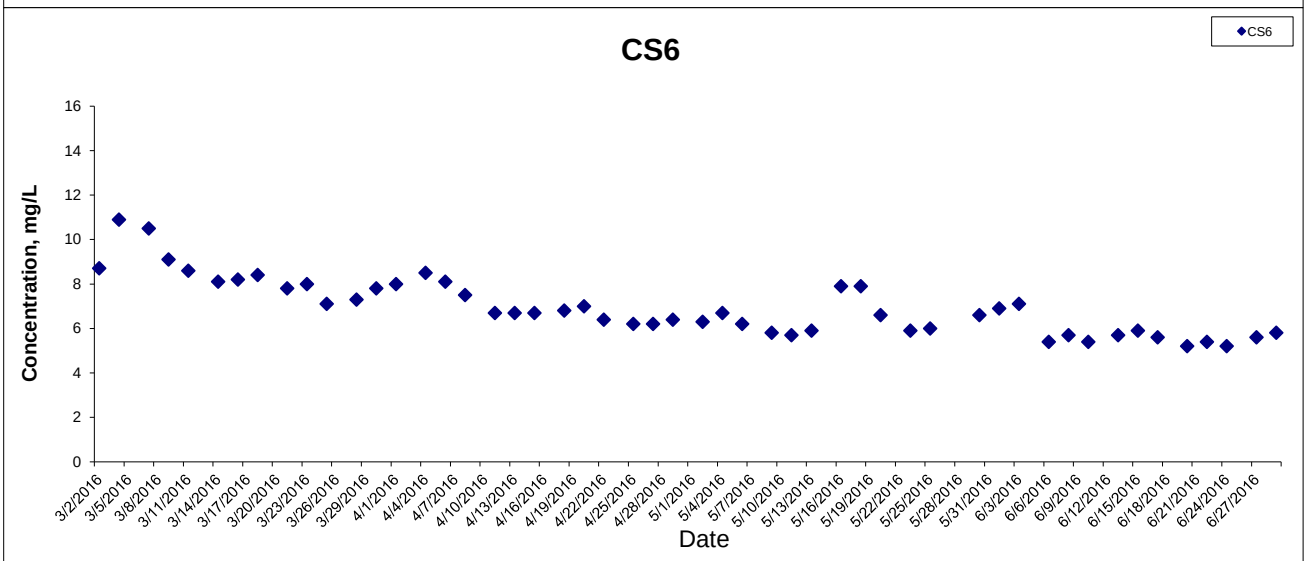
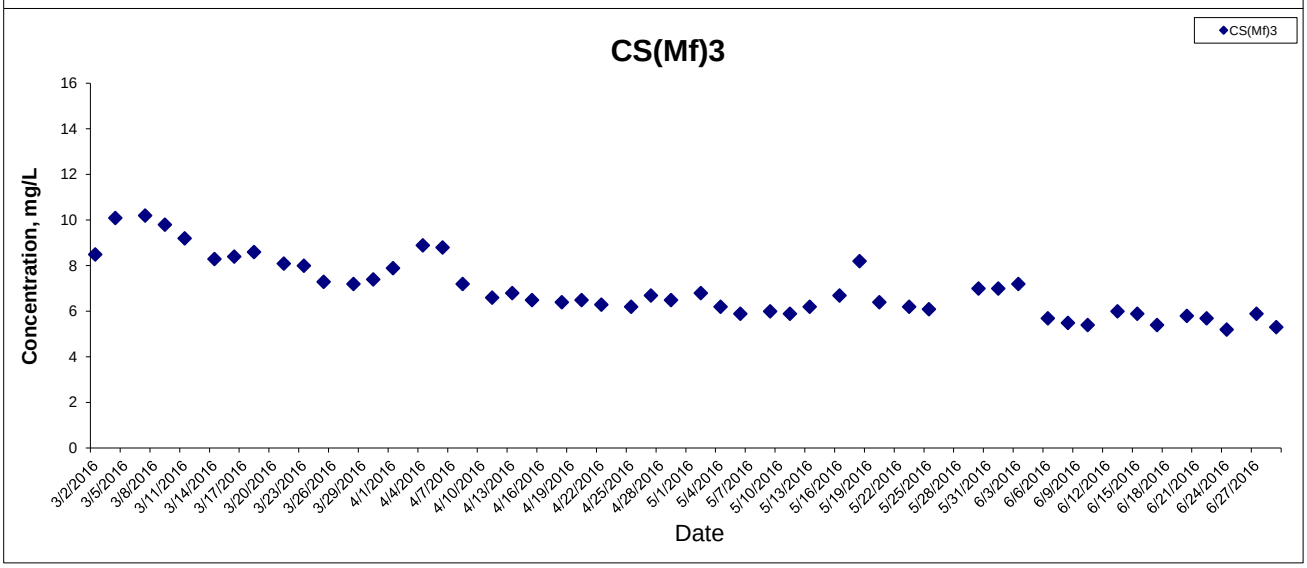
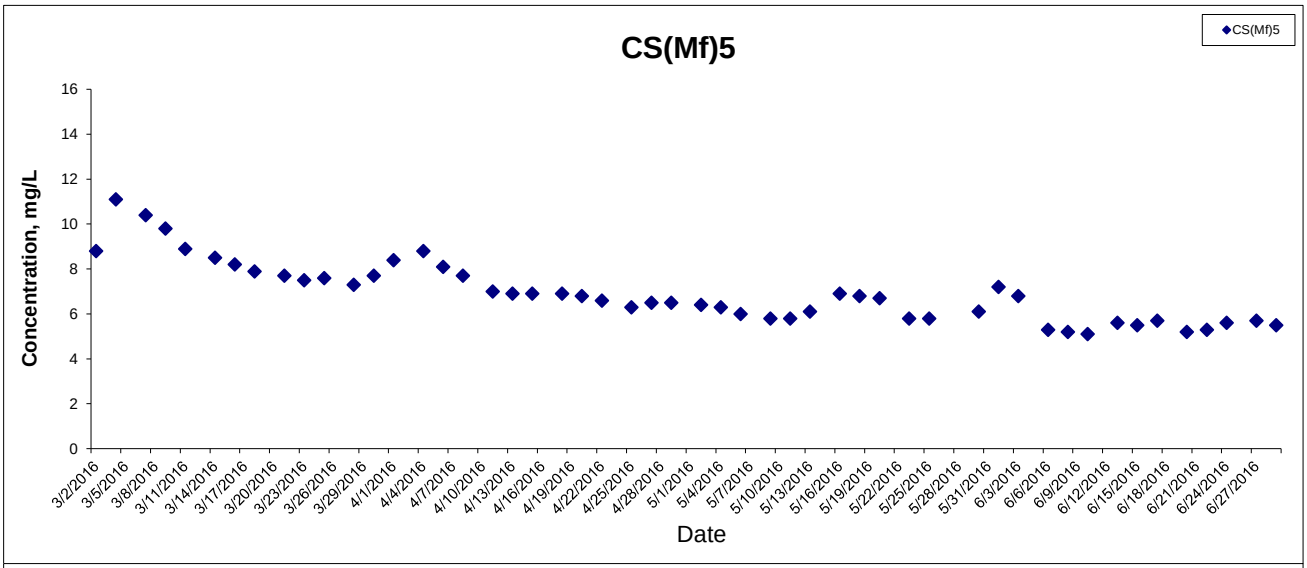
Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide

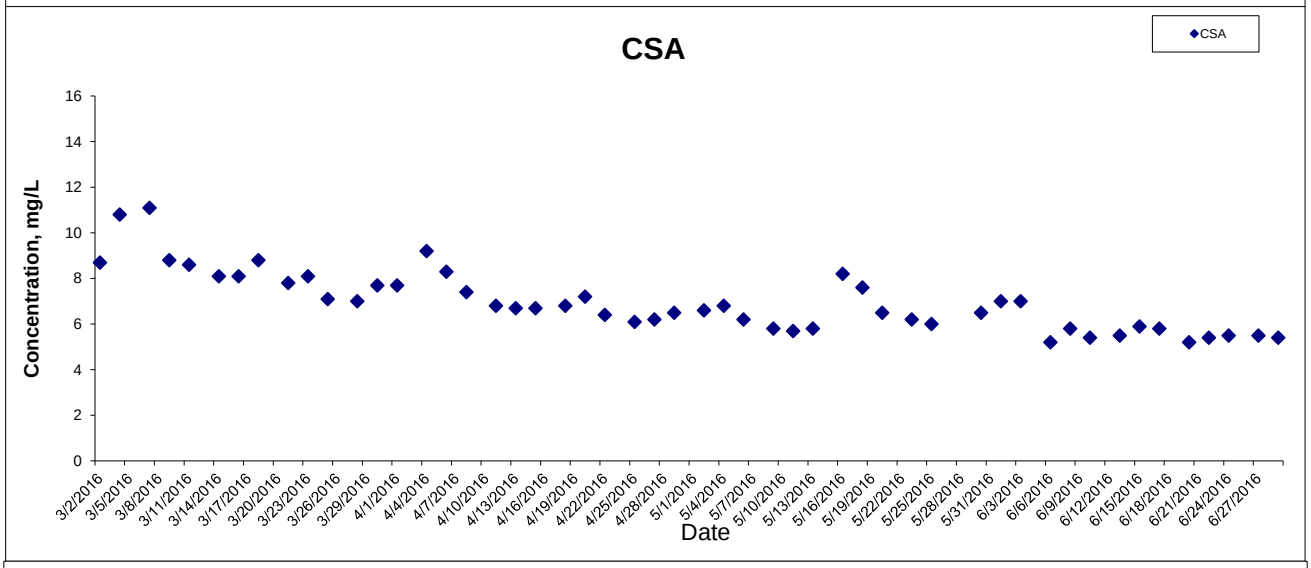


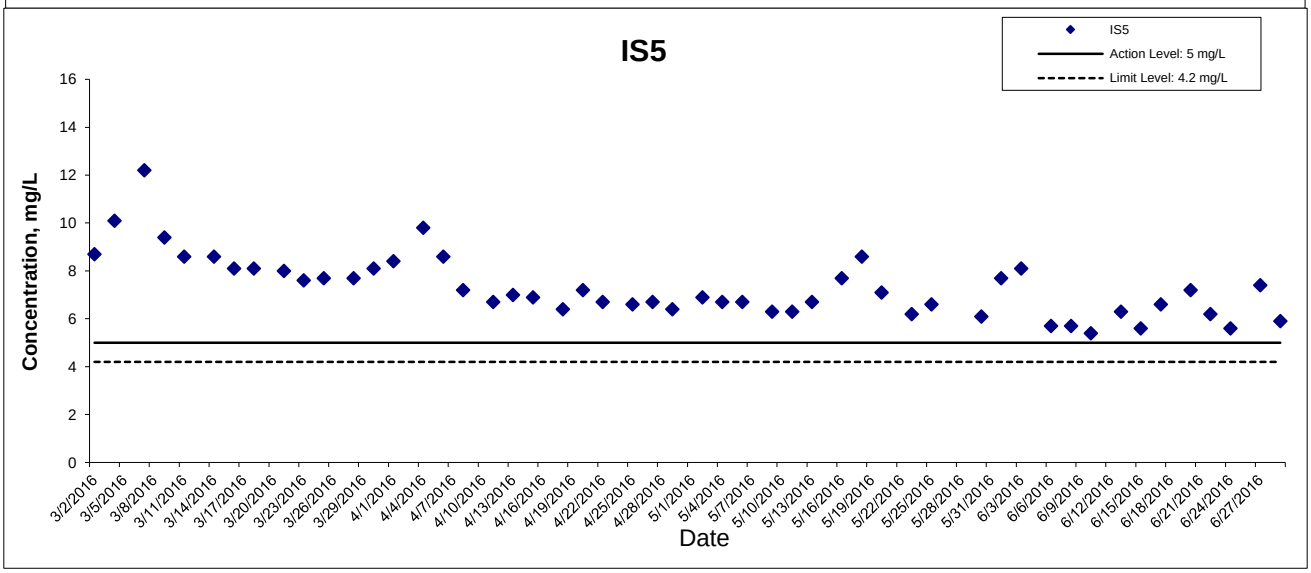




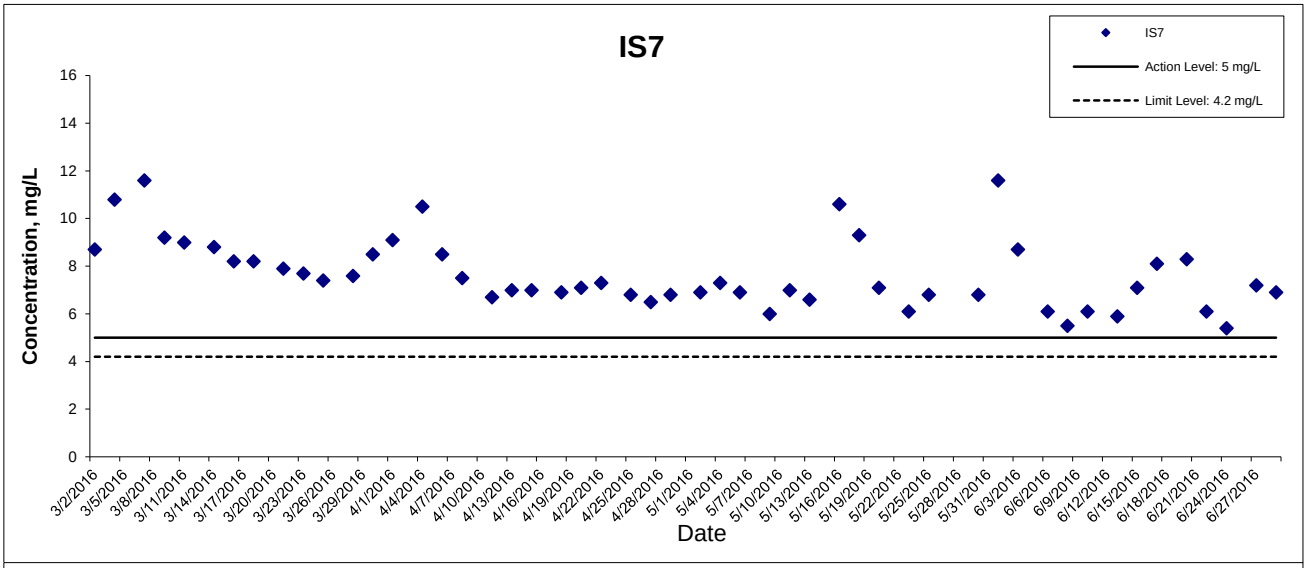
Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide

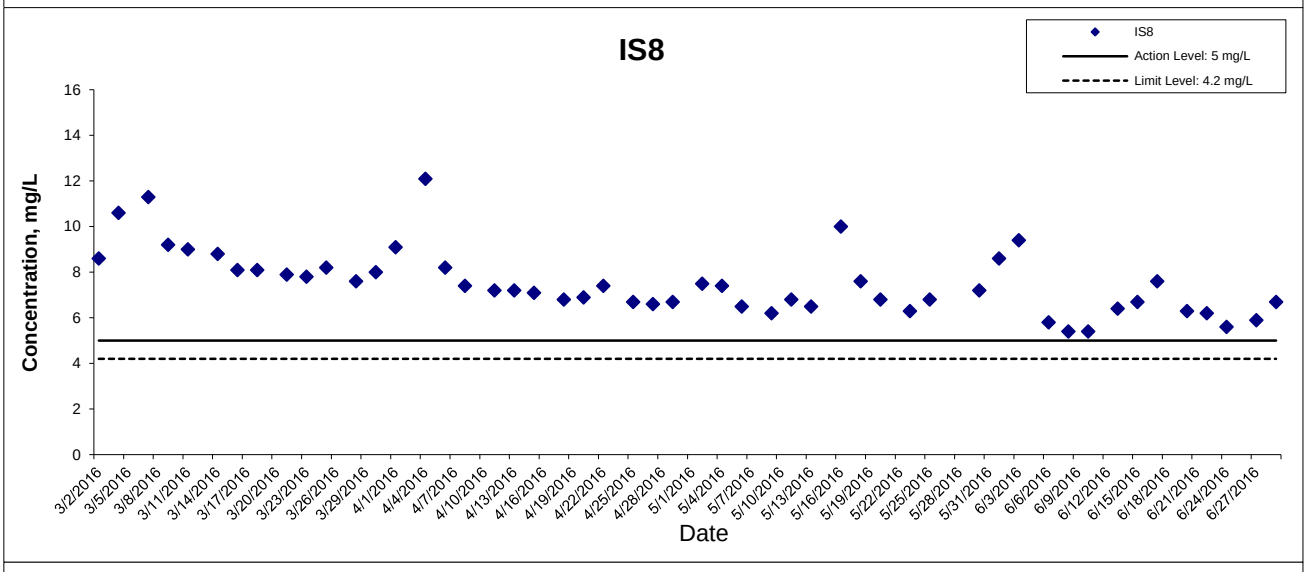


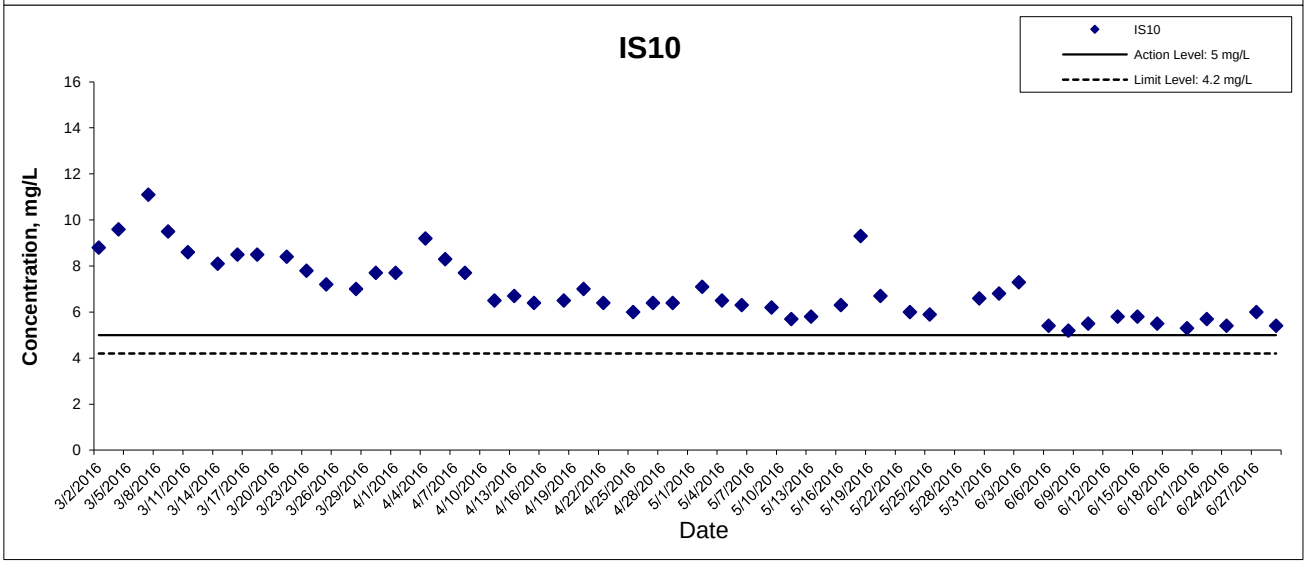




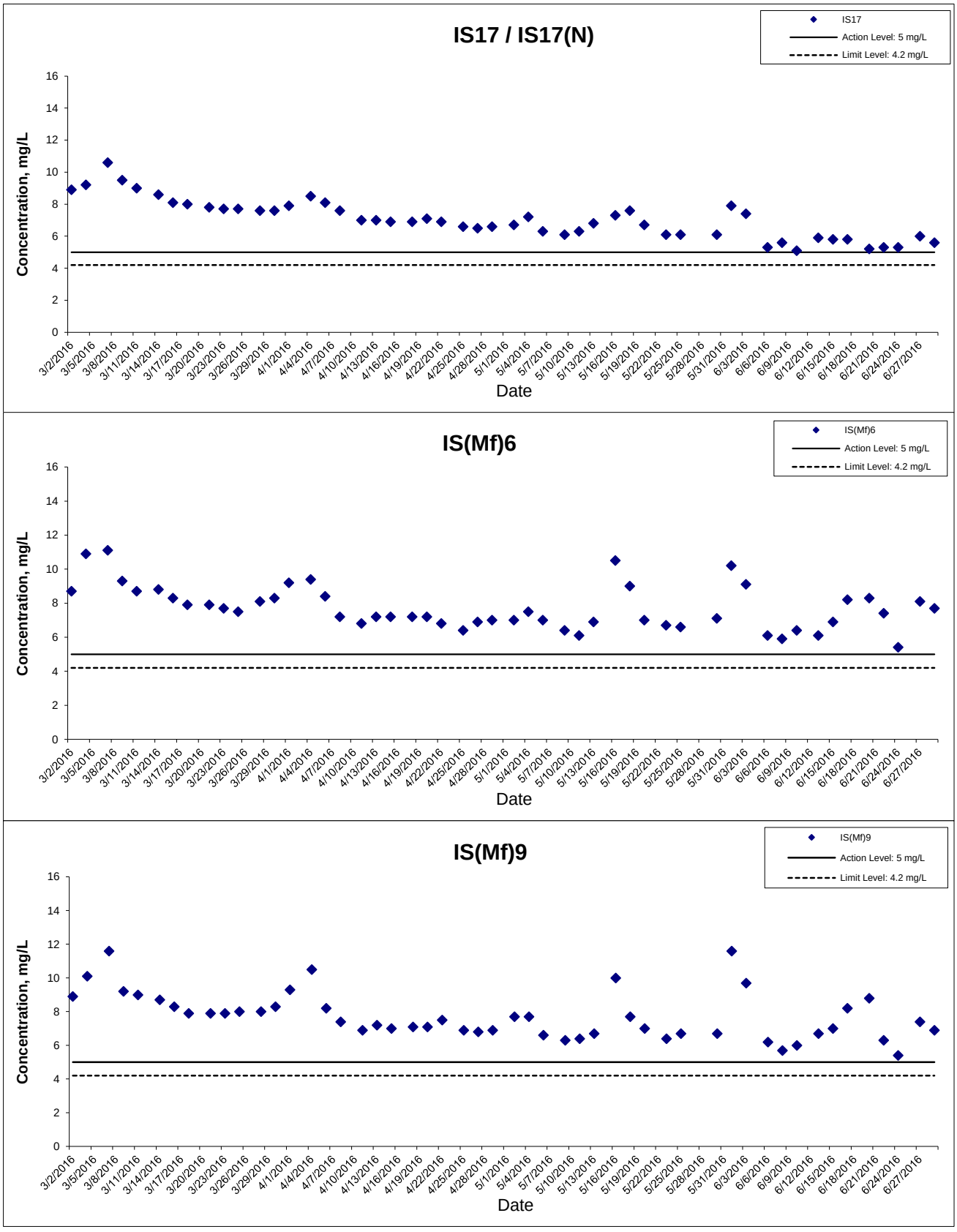
Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



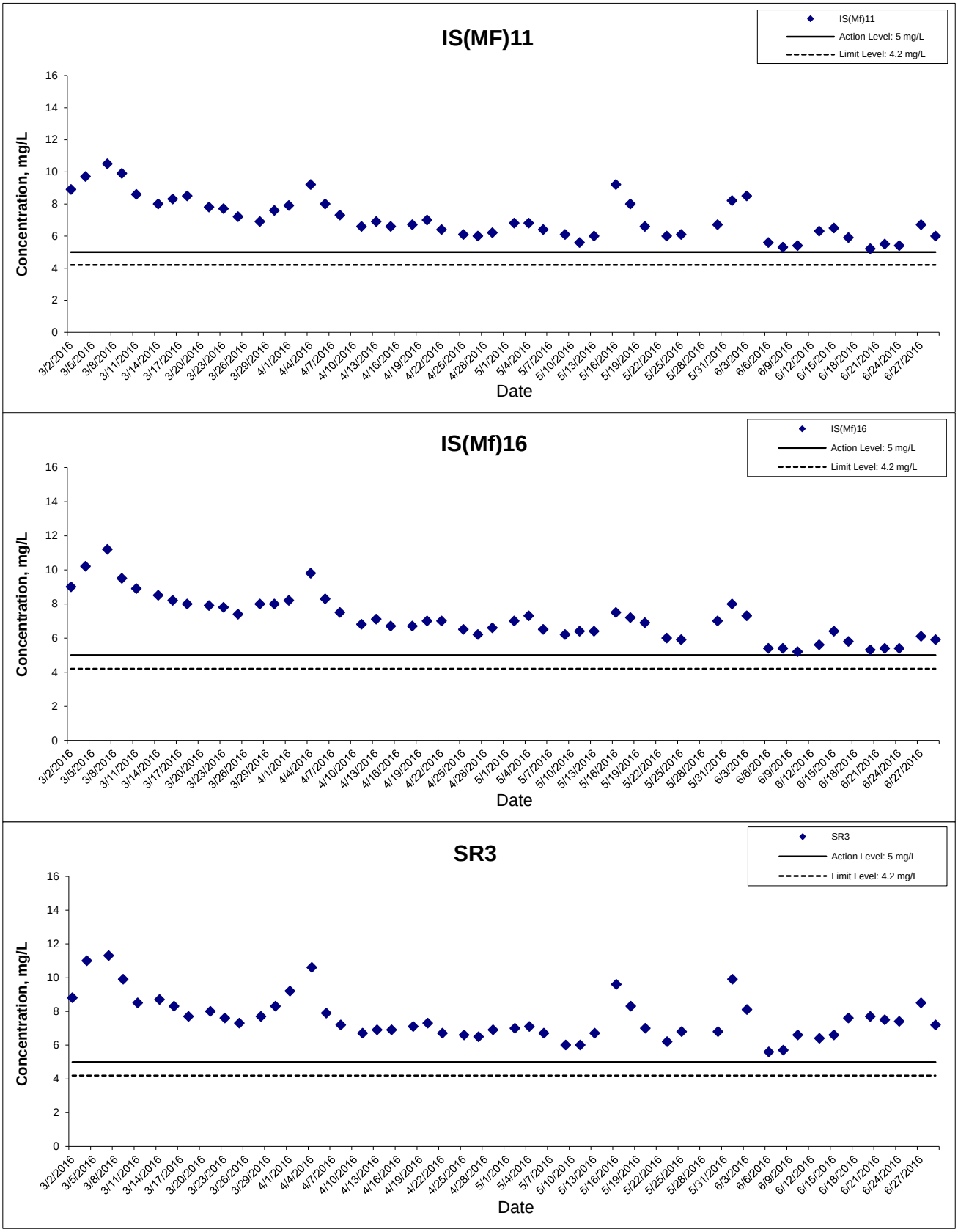




Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



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



HONG KONG - ZHUHAI - MACAO BRIDGE
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Graphical Presentation of Impact Water Quality Monitoring Results

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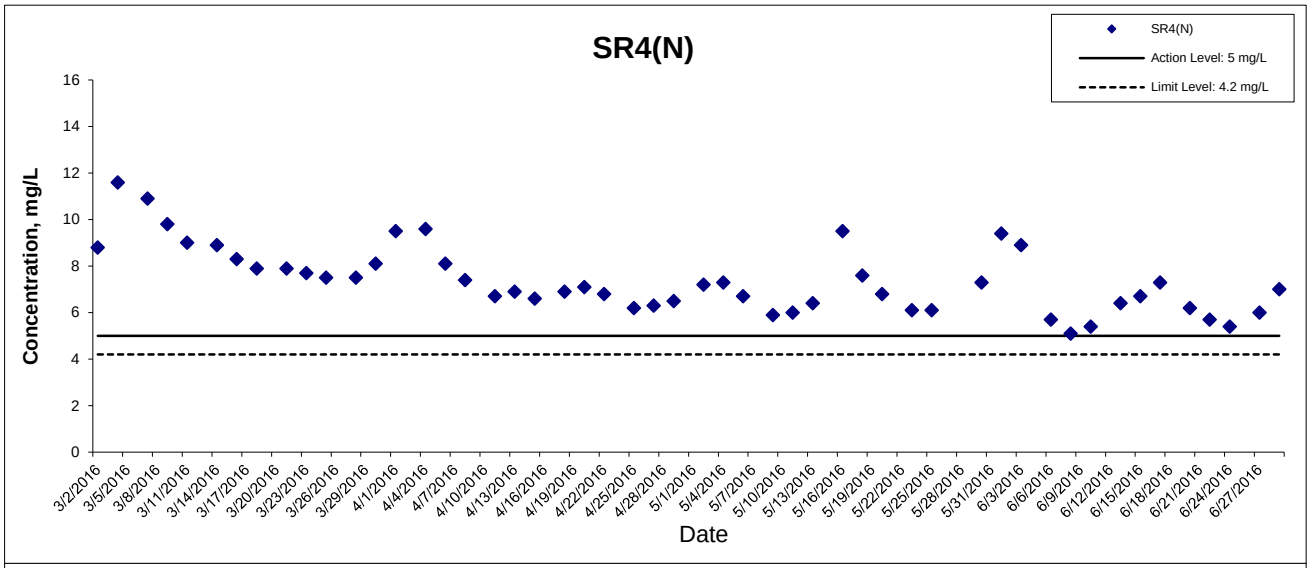
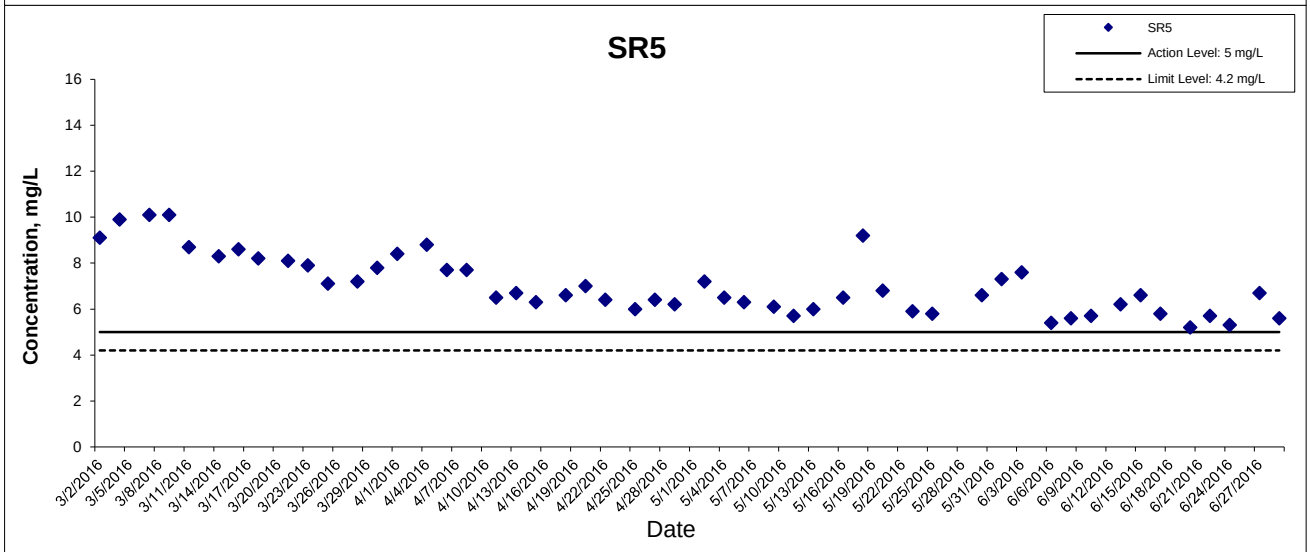
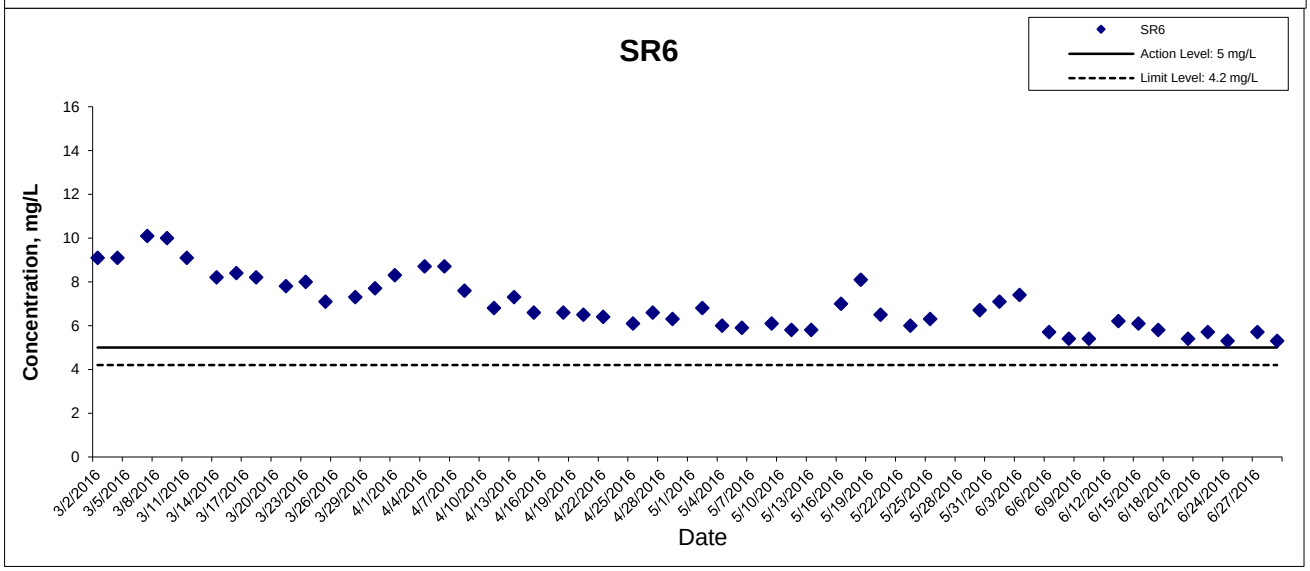
Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide







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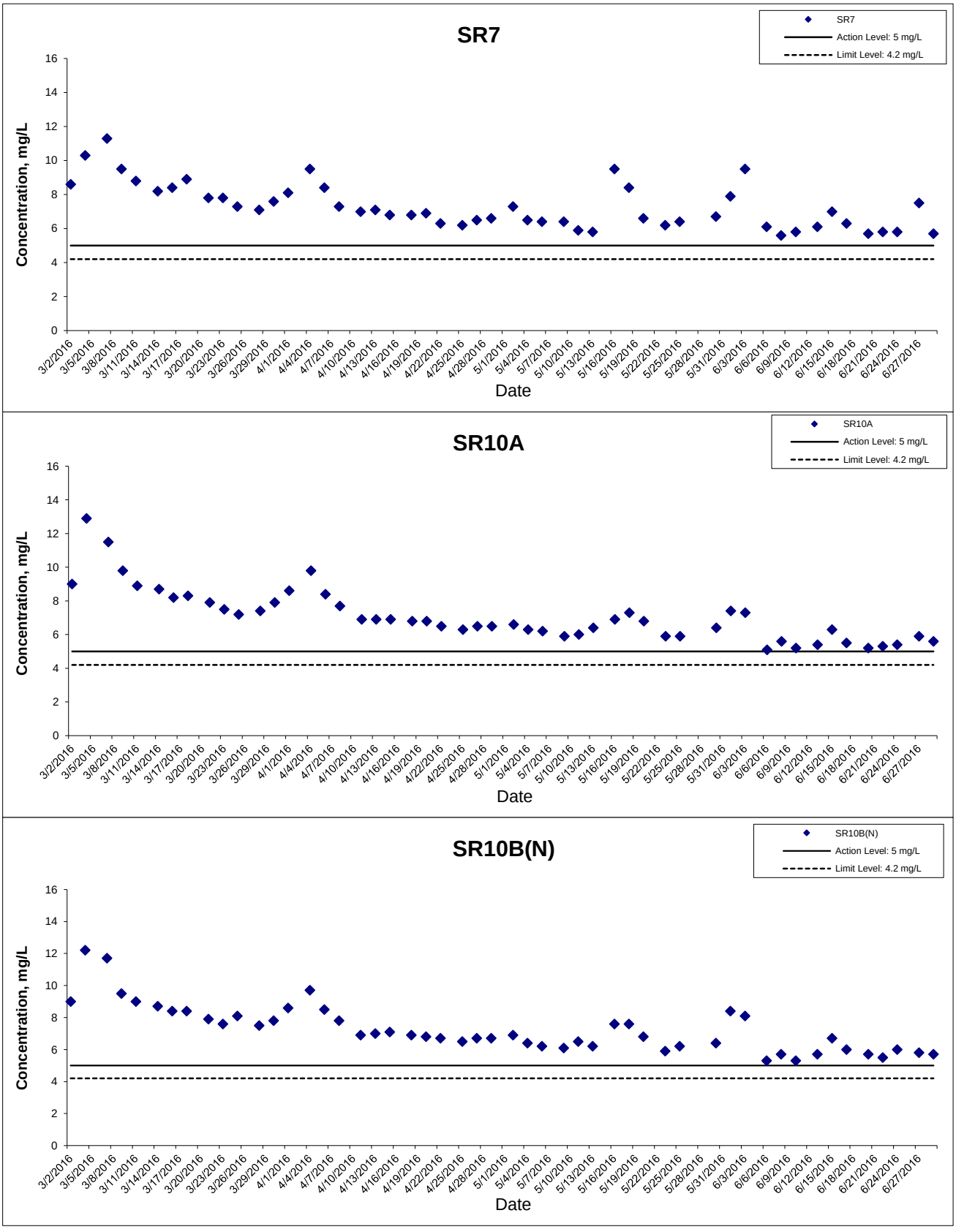

HONG KONG - ZHUHAI - MACAO BRIDGE
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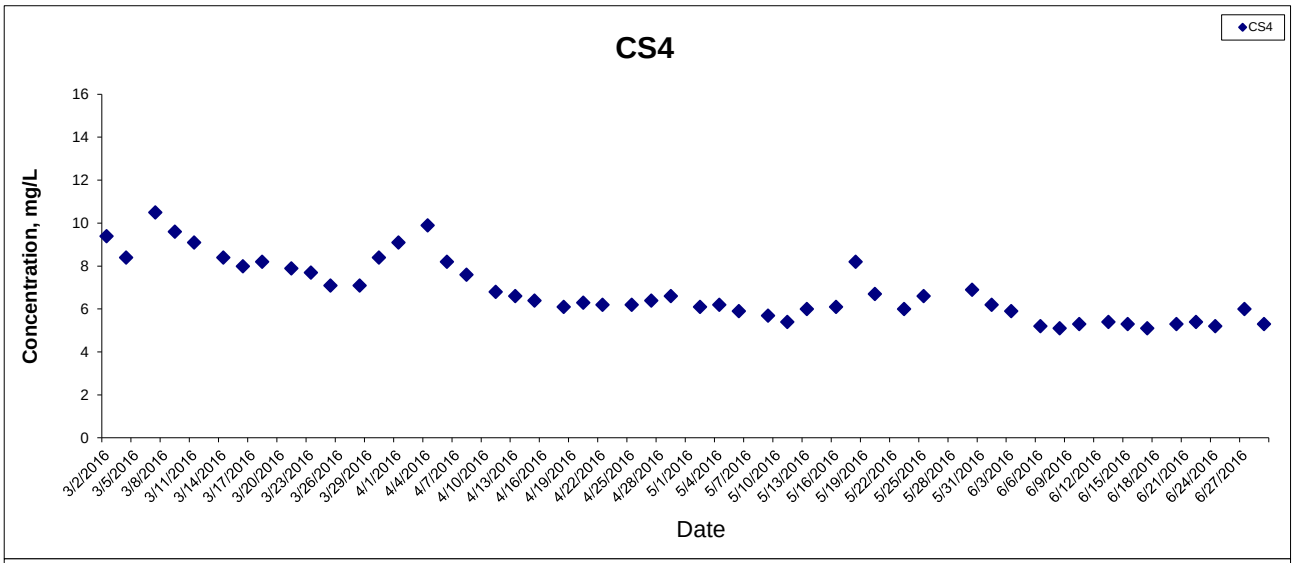
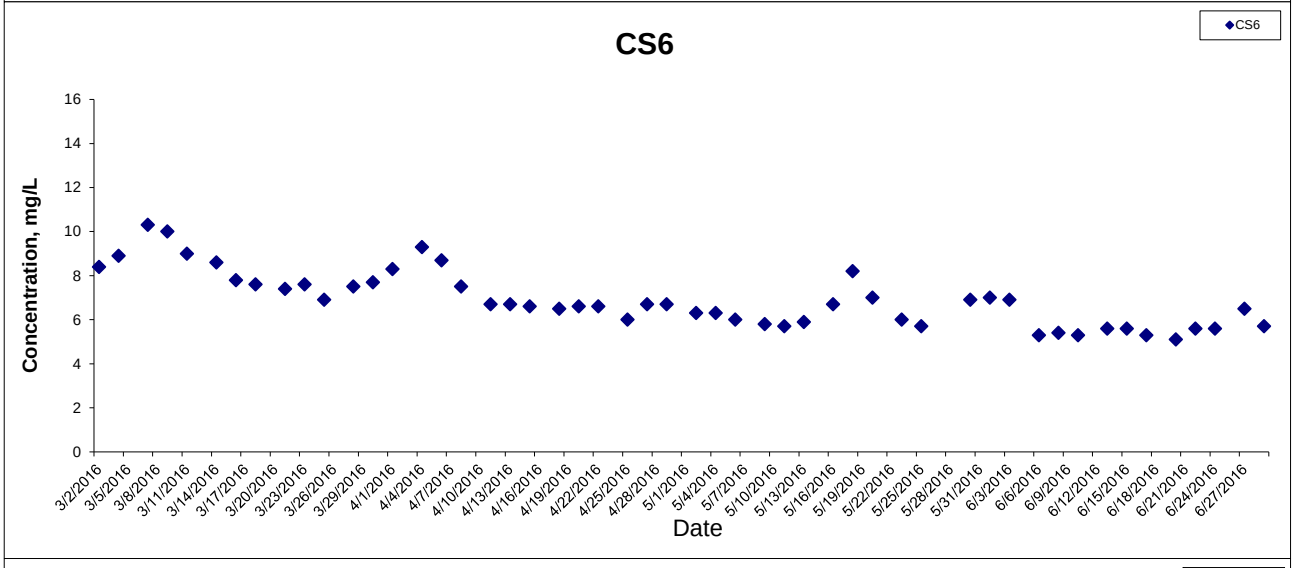
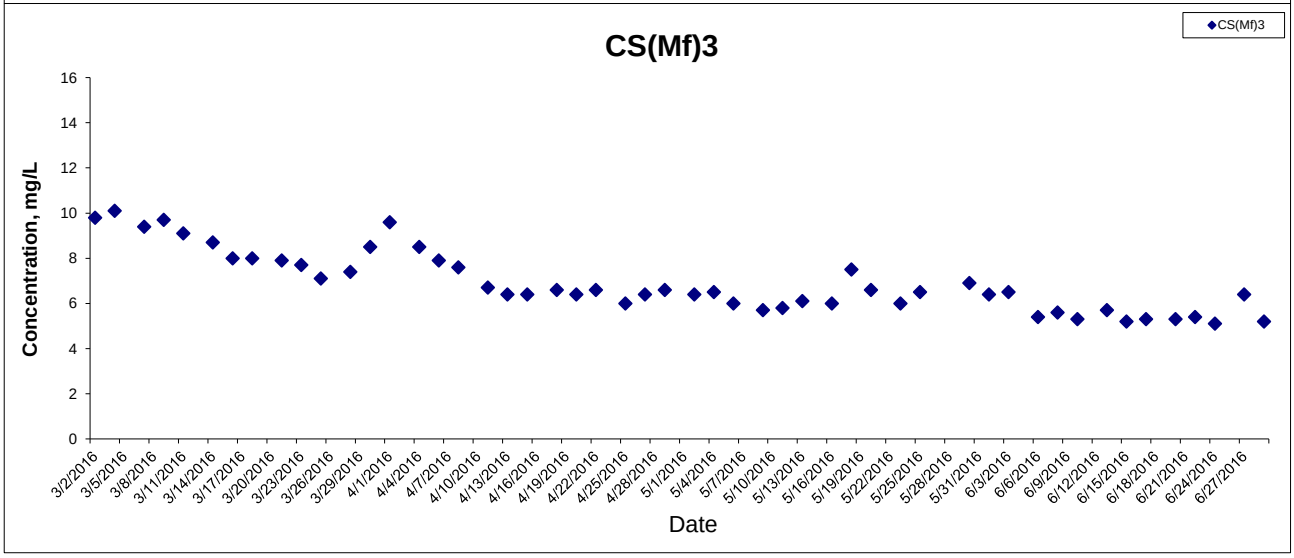
Appendix J

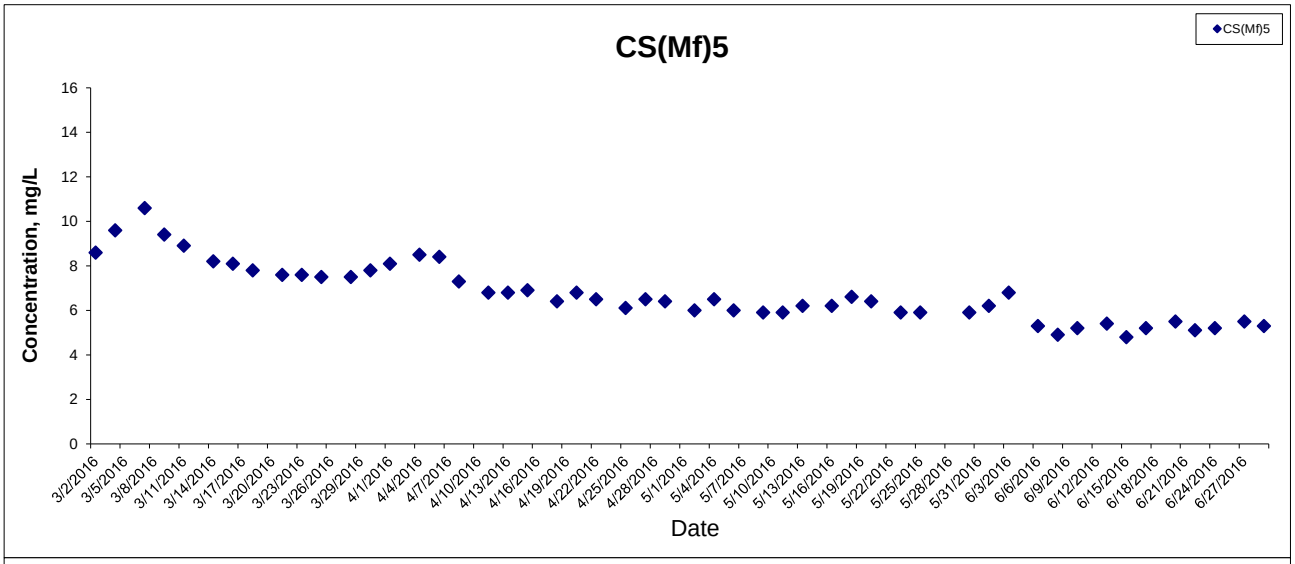
Dissolved Oxygen (Bottom) at Mid-Ebb Tide

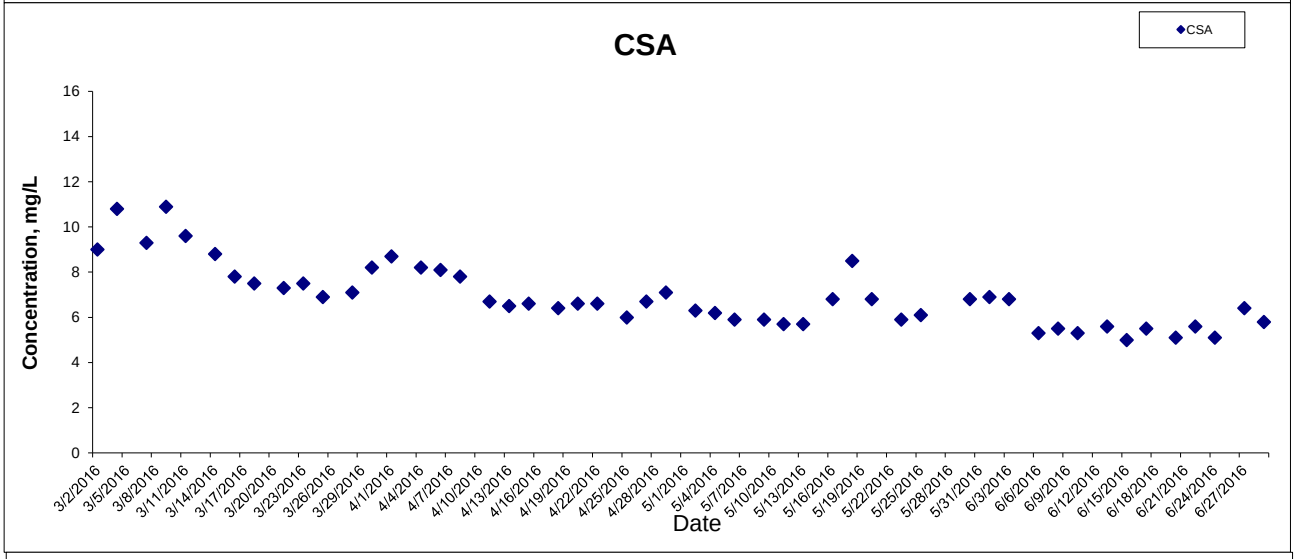


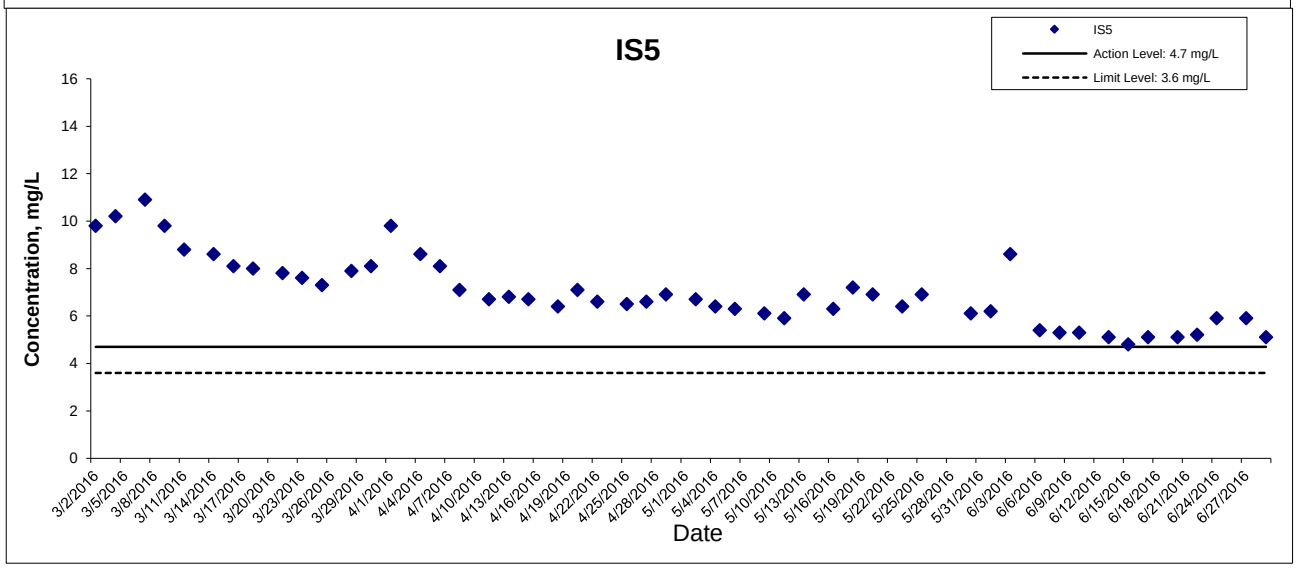




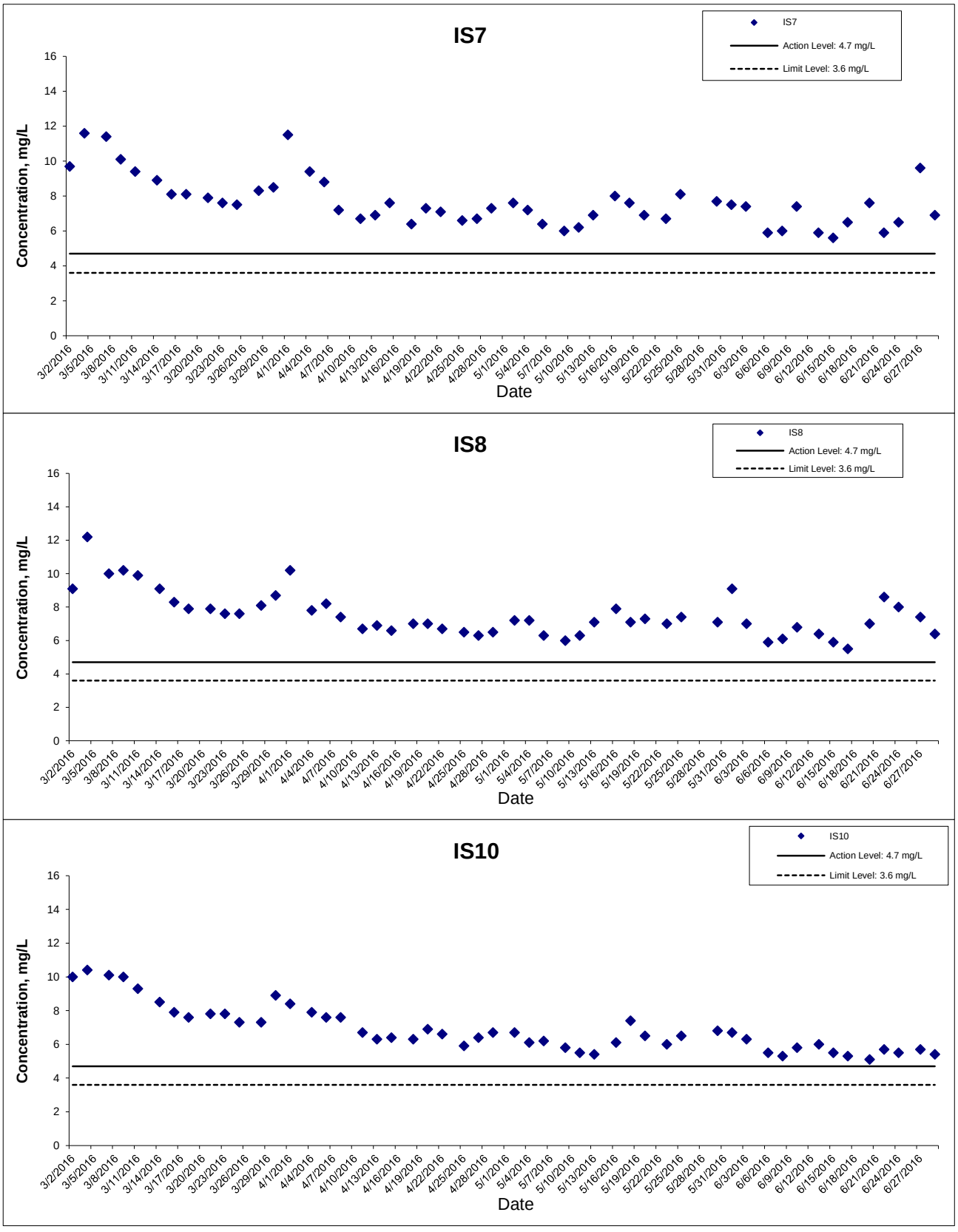
Dissolved Oxygen (Bottom) at Mid-Ebb Tide



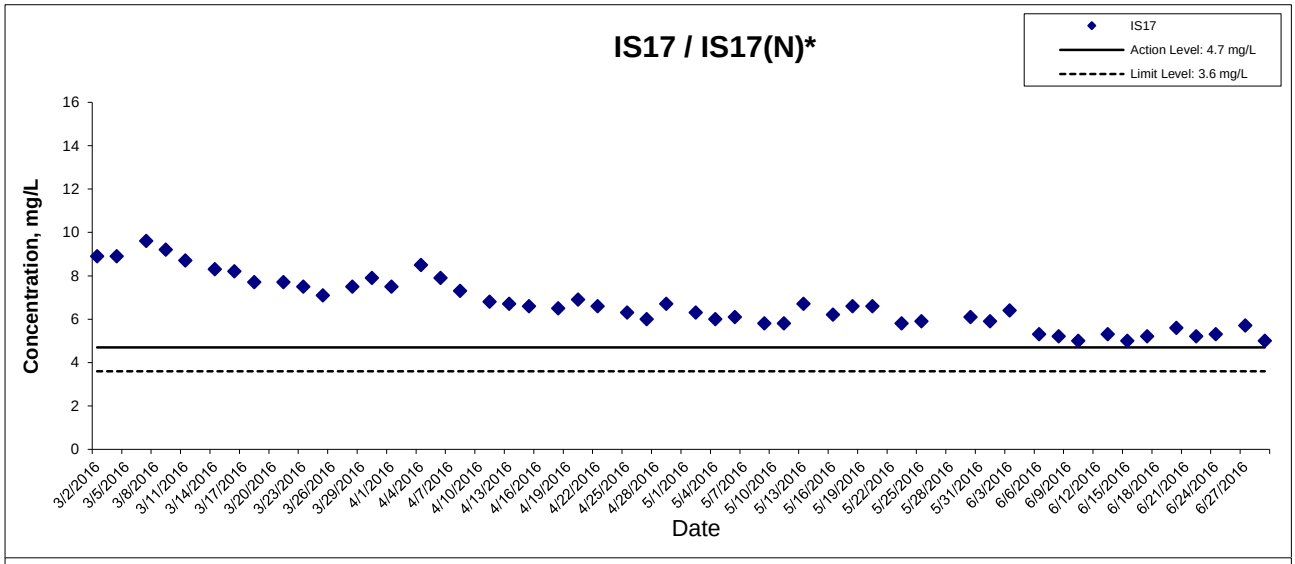


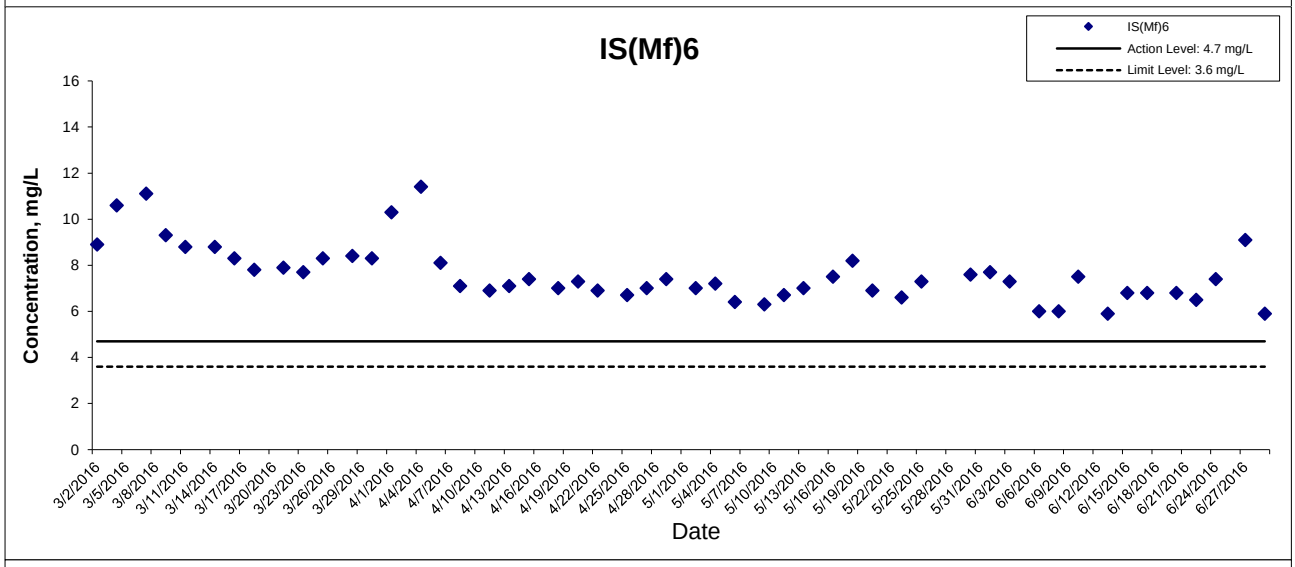


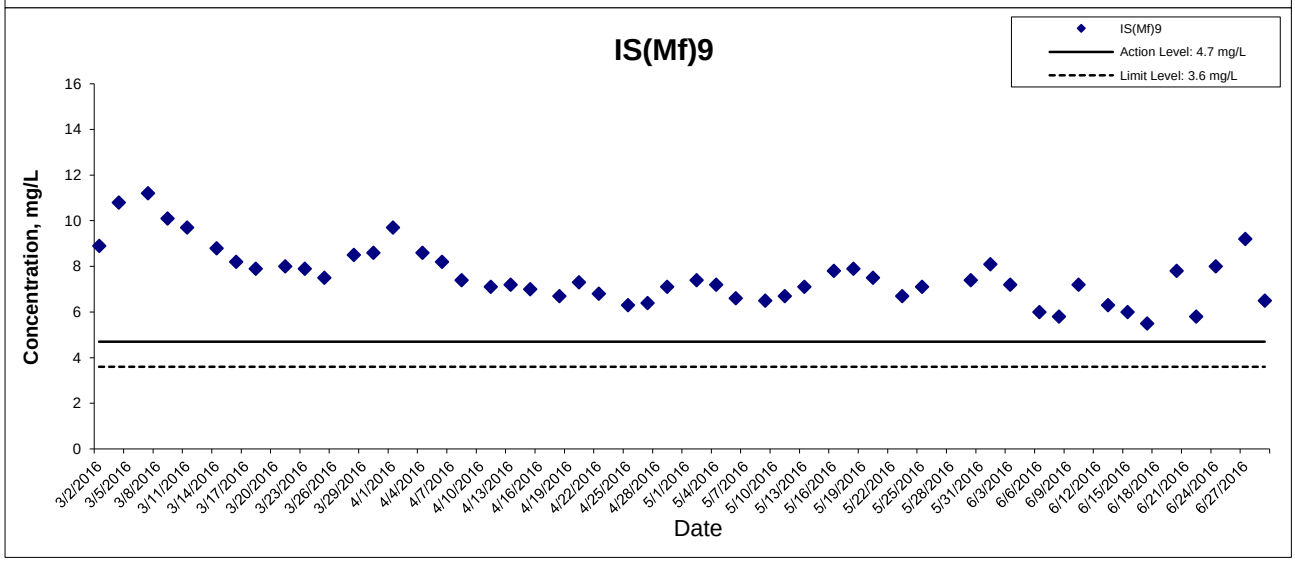
Dissolved Oxygen (Bottom) at Mid-Ebb Tide



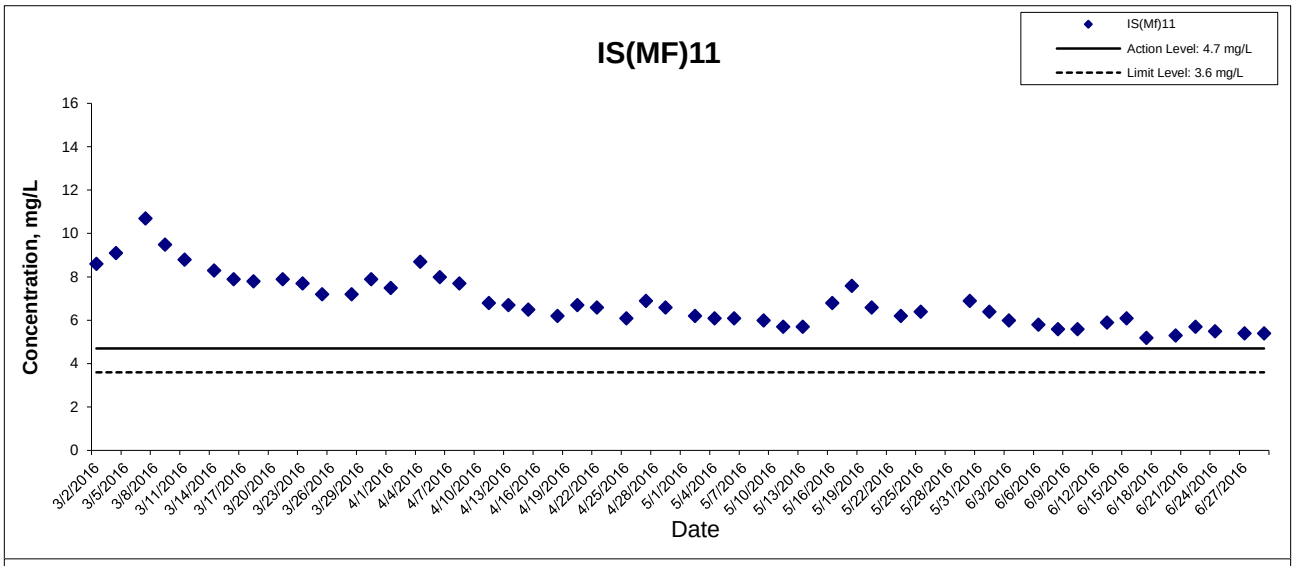
Dissolved Oxygen (Bottom) at Mid-Ebb Tide

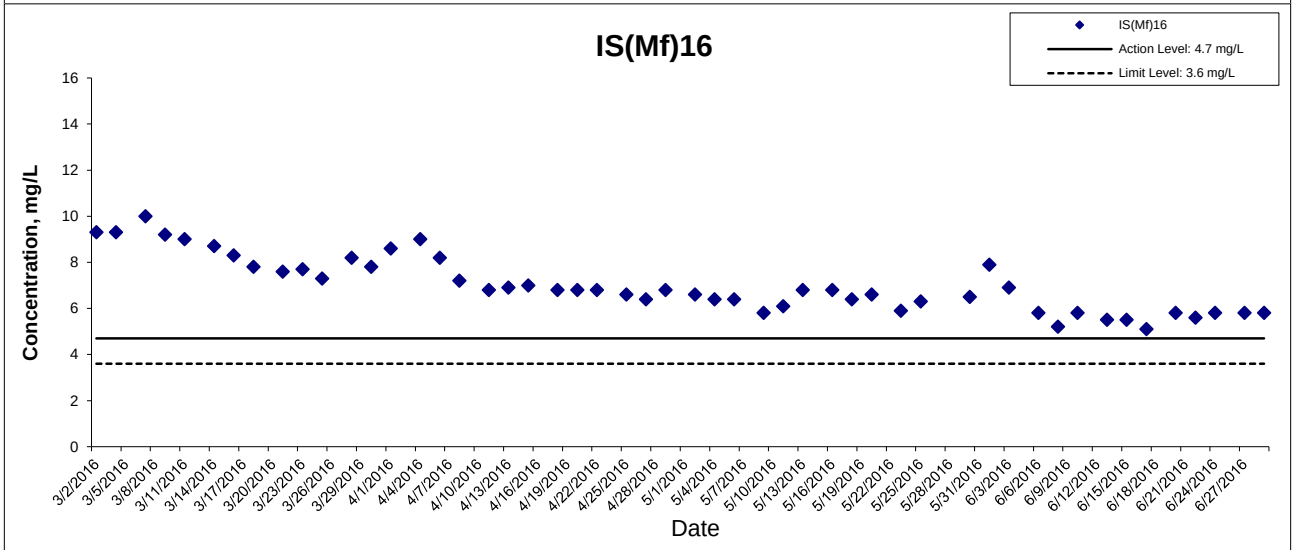


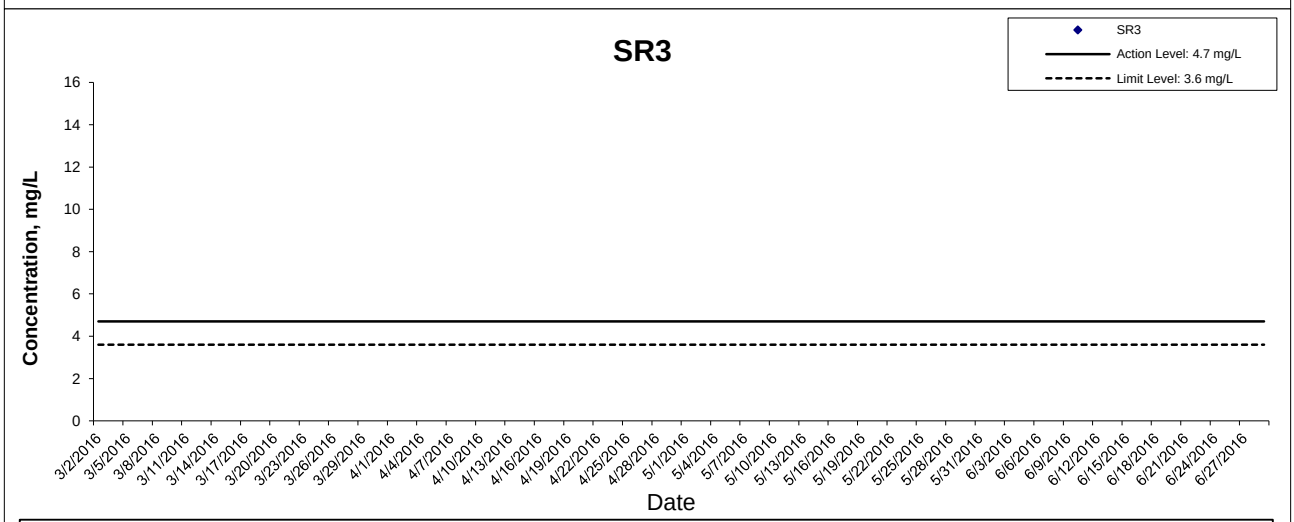




Dissolved Oxygen (Bottom) at Mid-Ebb Tide

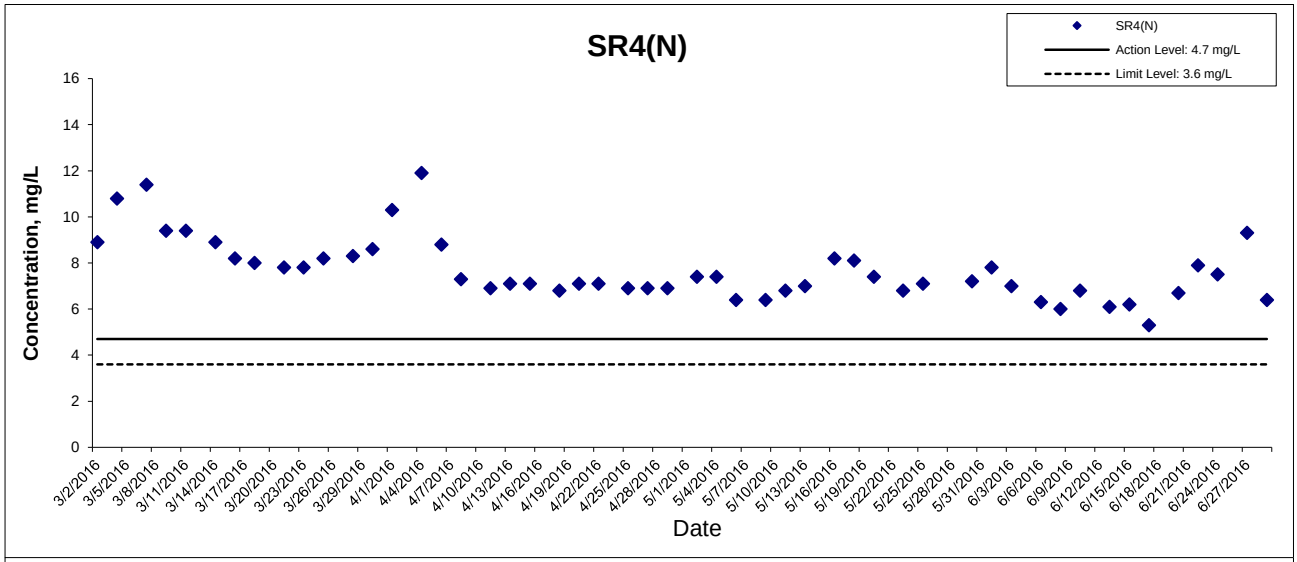


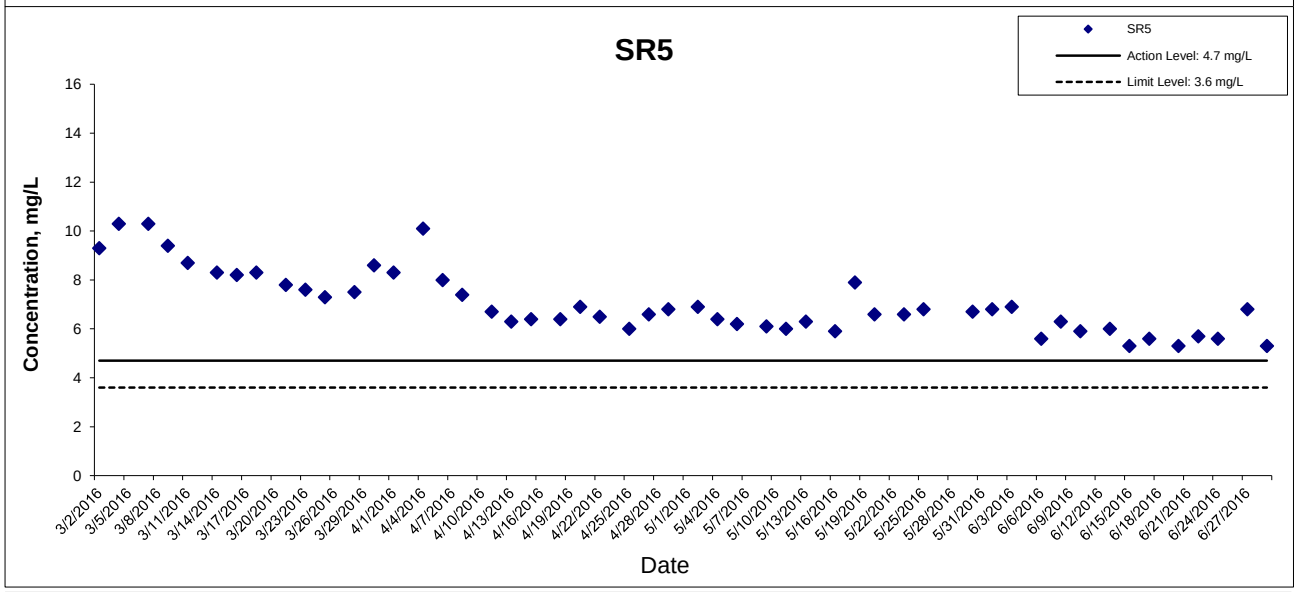


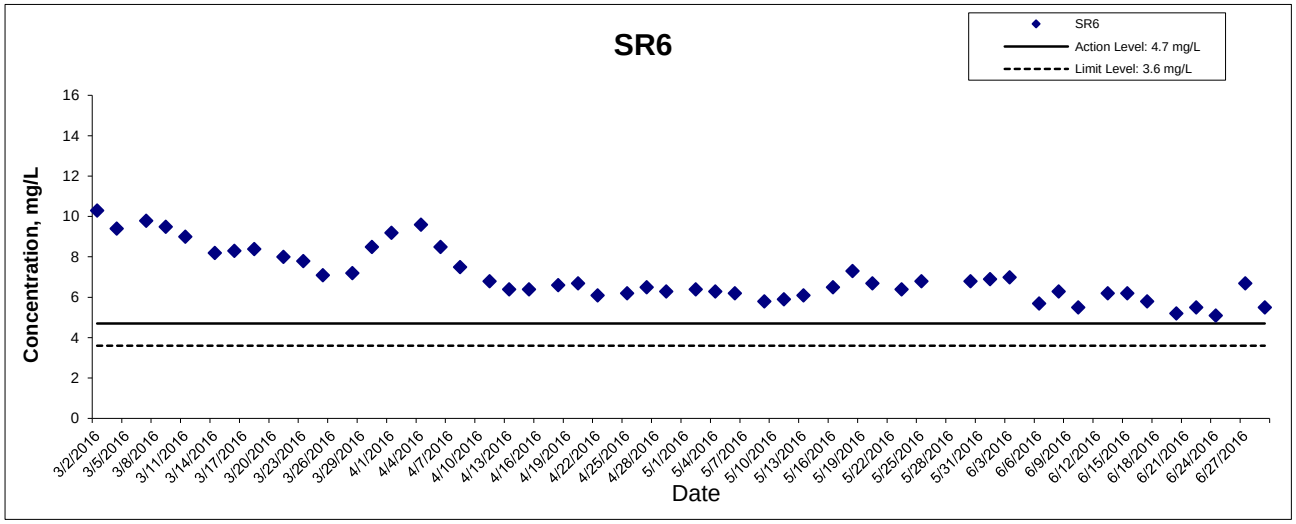


As the measured water depths were less than 3 m during all monitoring days, water samples are collected at mid-depth only .

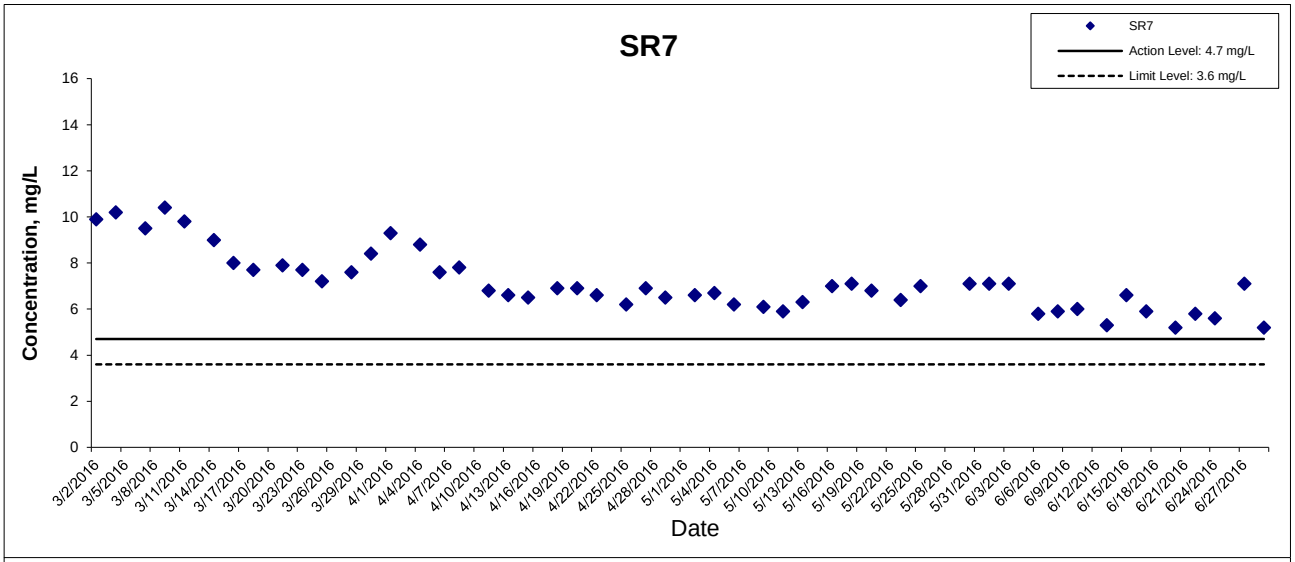
Dissolved Oxygen (Bottom) at Mid-Ebb Tide

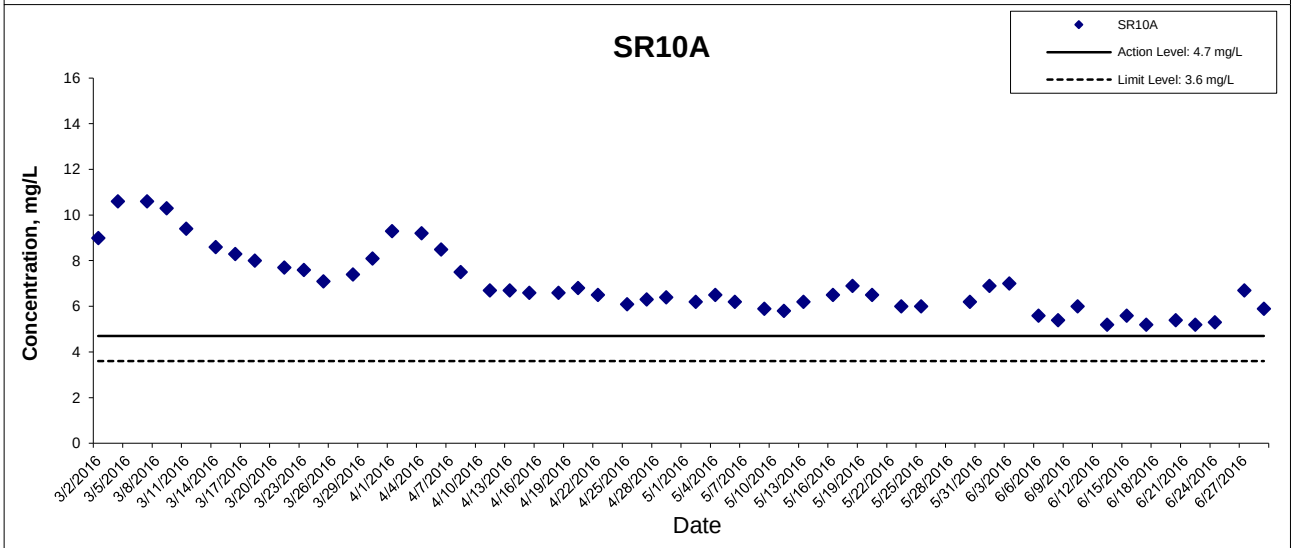


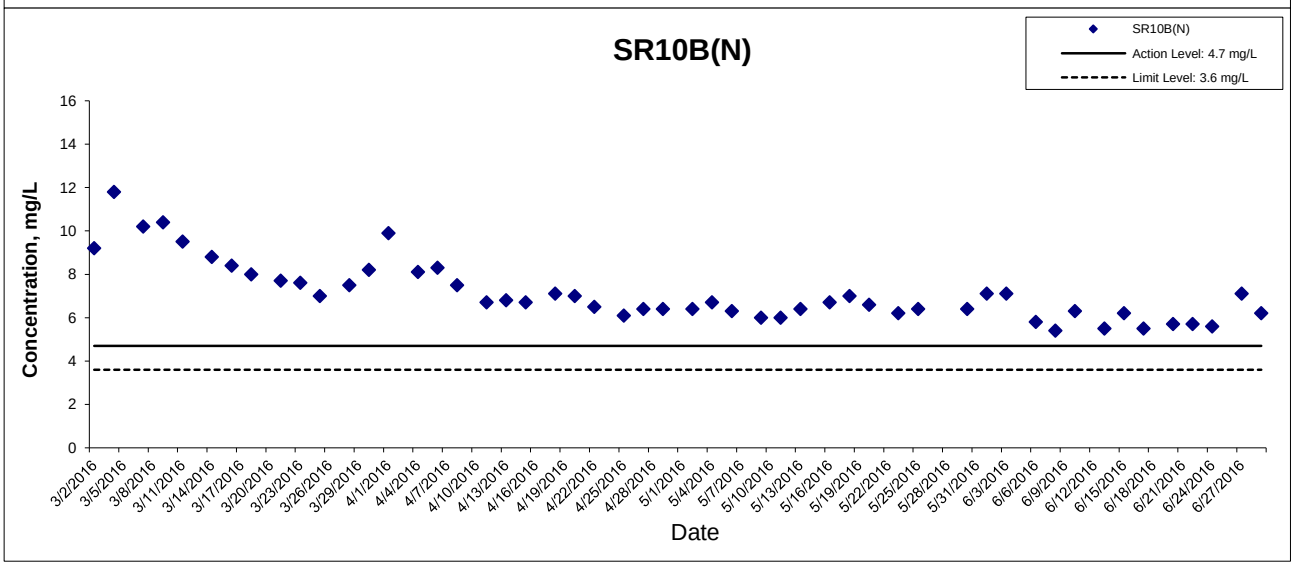




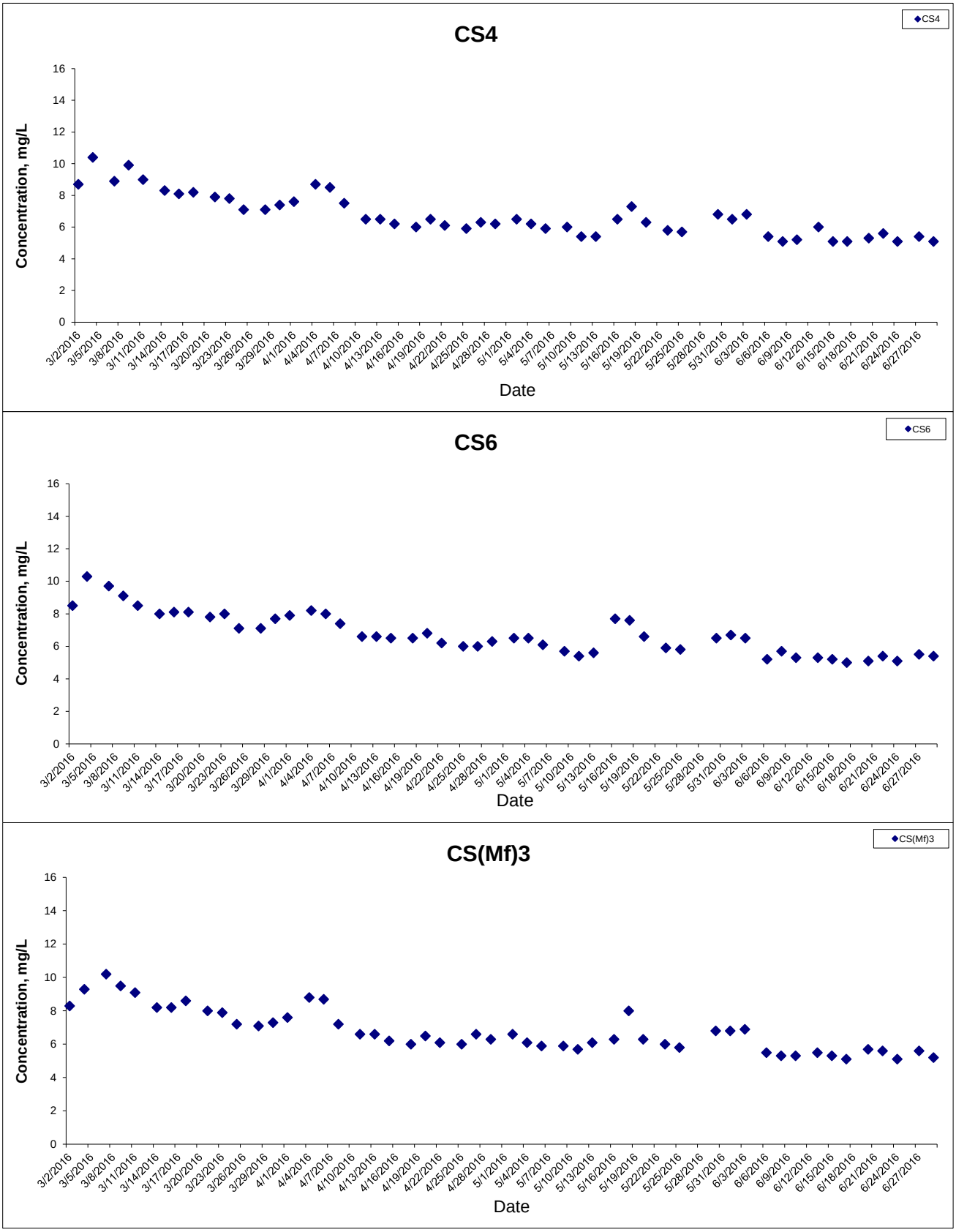
Dissolved Oxygen (Bottom) at Mid-Ebb Tide



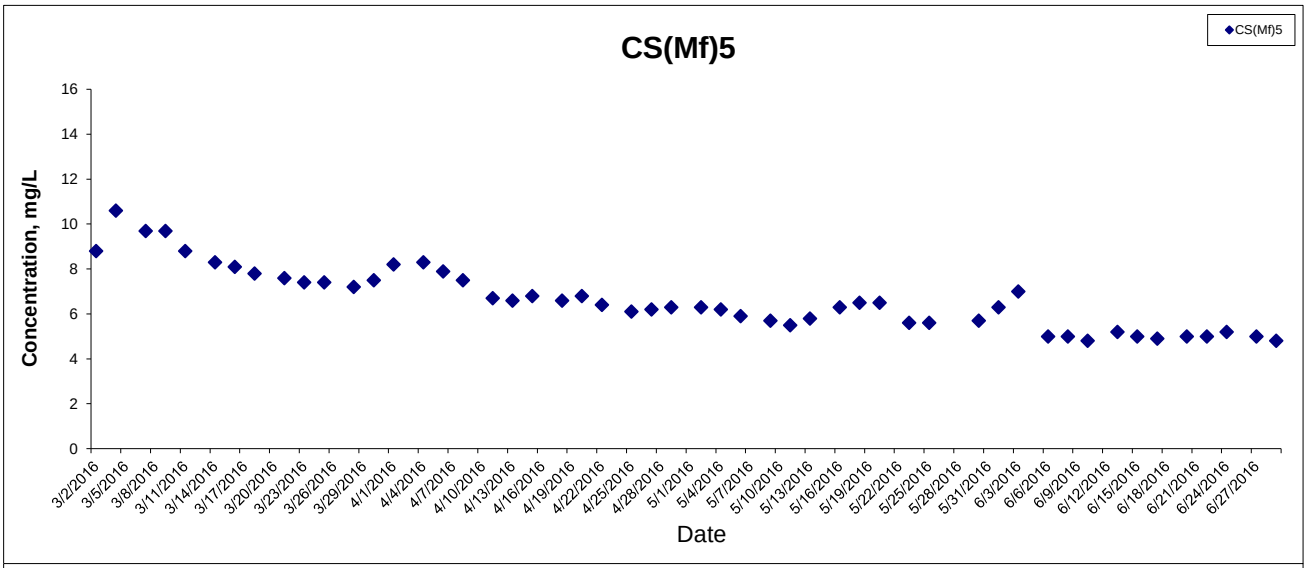


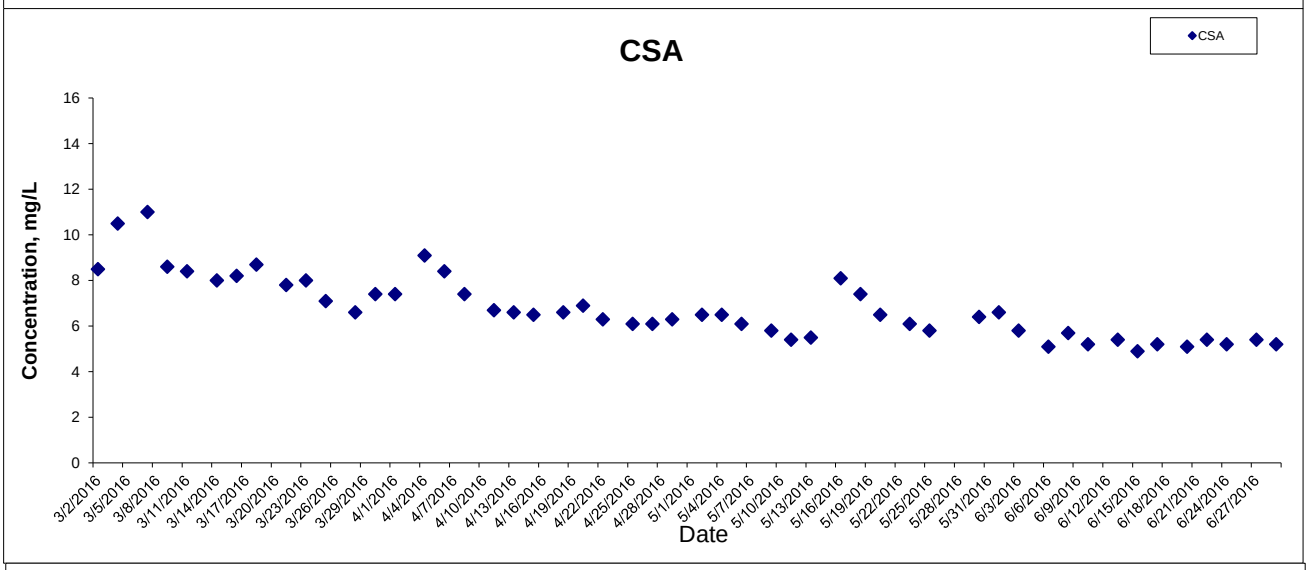


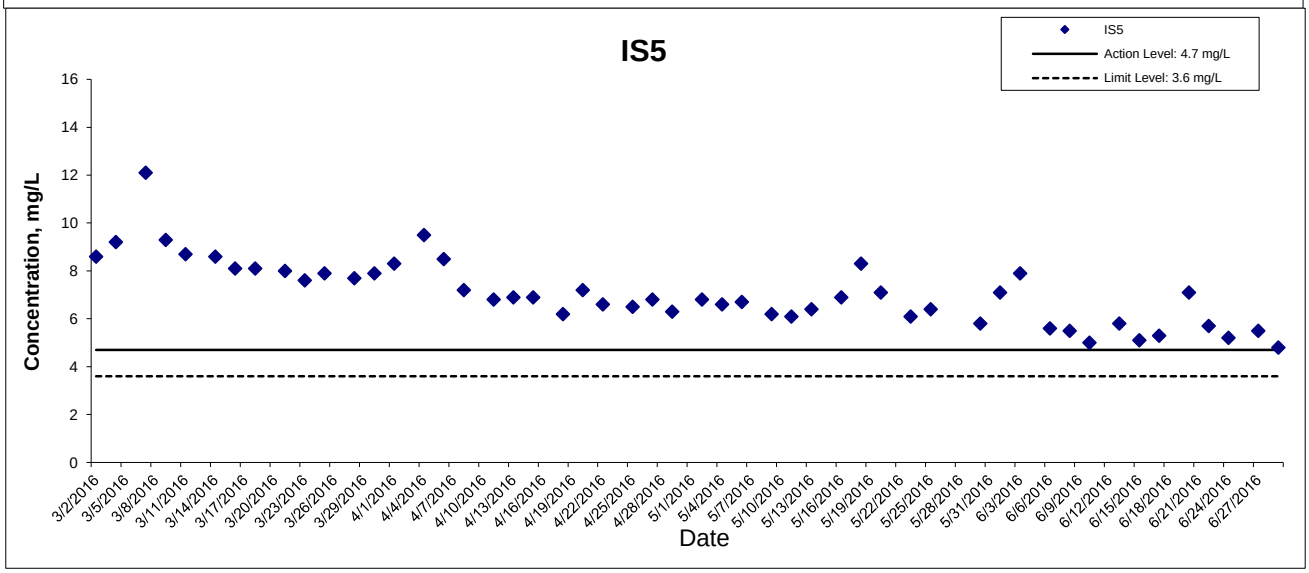
Dissolved Oxygen (Bottom) at Mid-Flood Tide



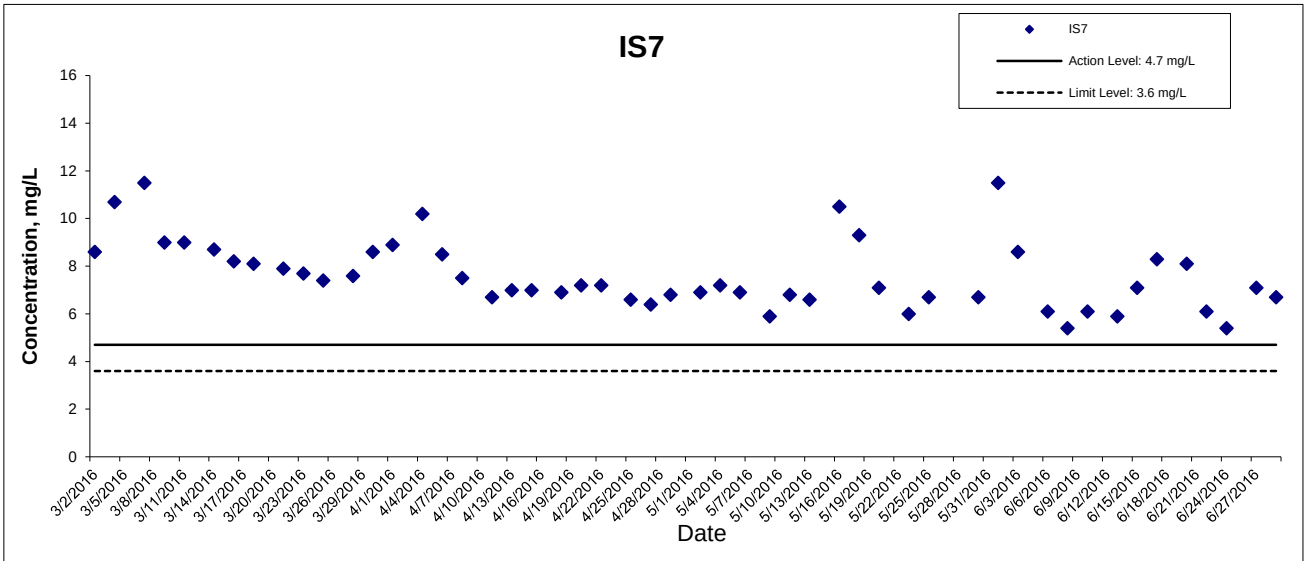
Dissolved Oxygen (Bottom) at Mid-Flood Tide

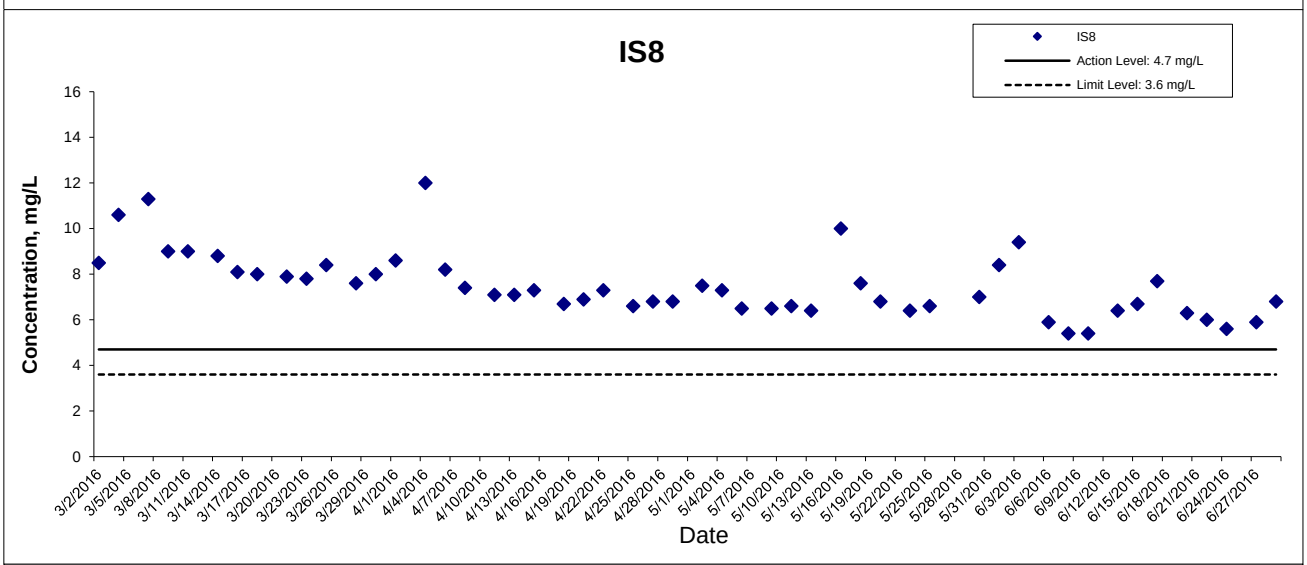


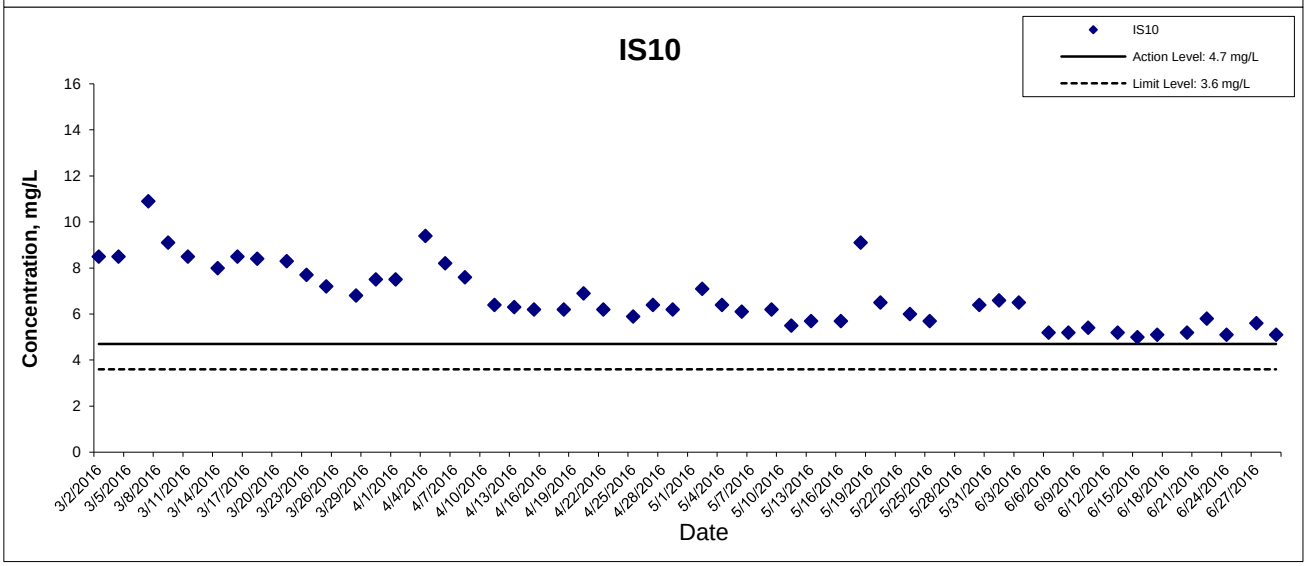




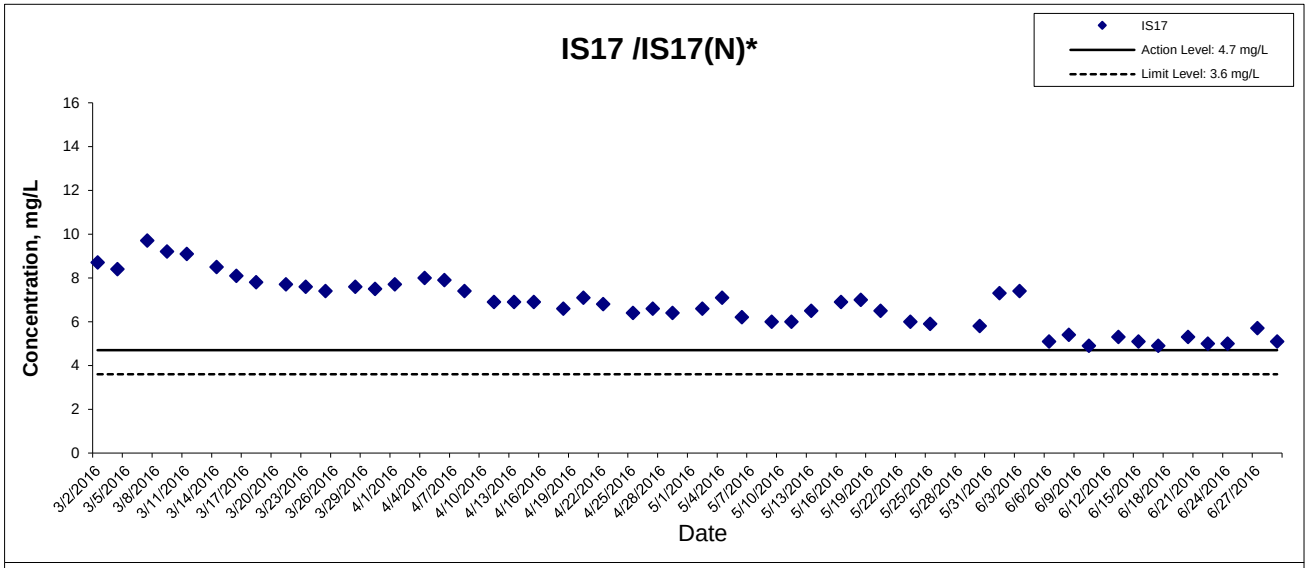
Dissolved Oxygen (Bottom) at Mid-Flood Tide

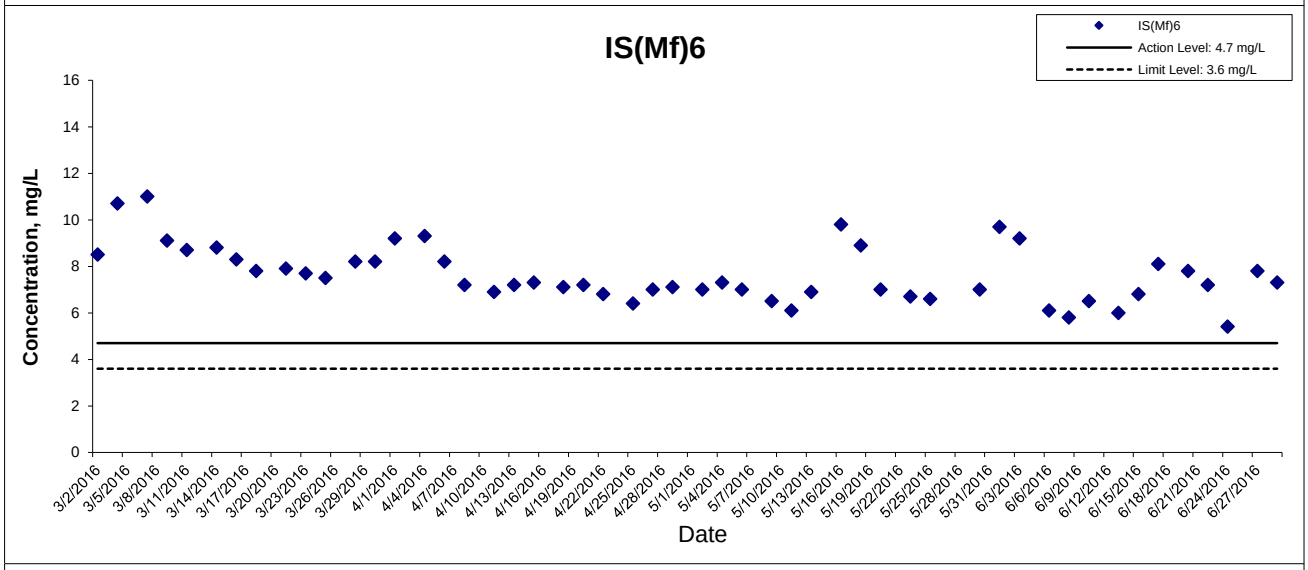


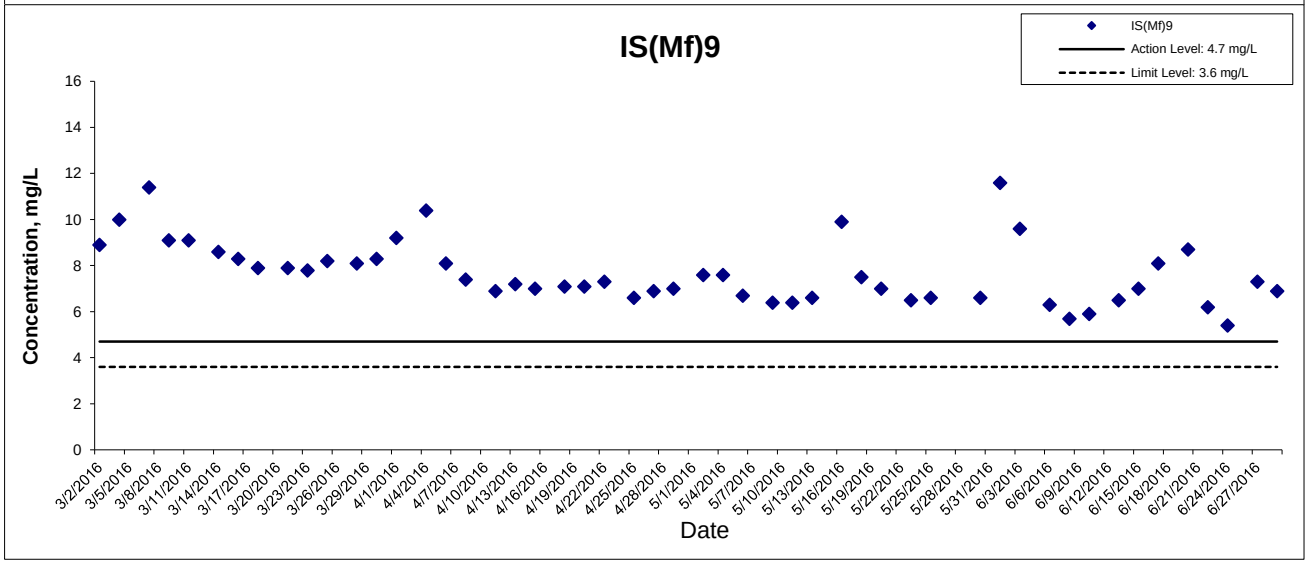




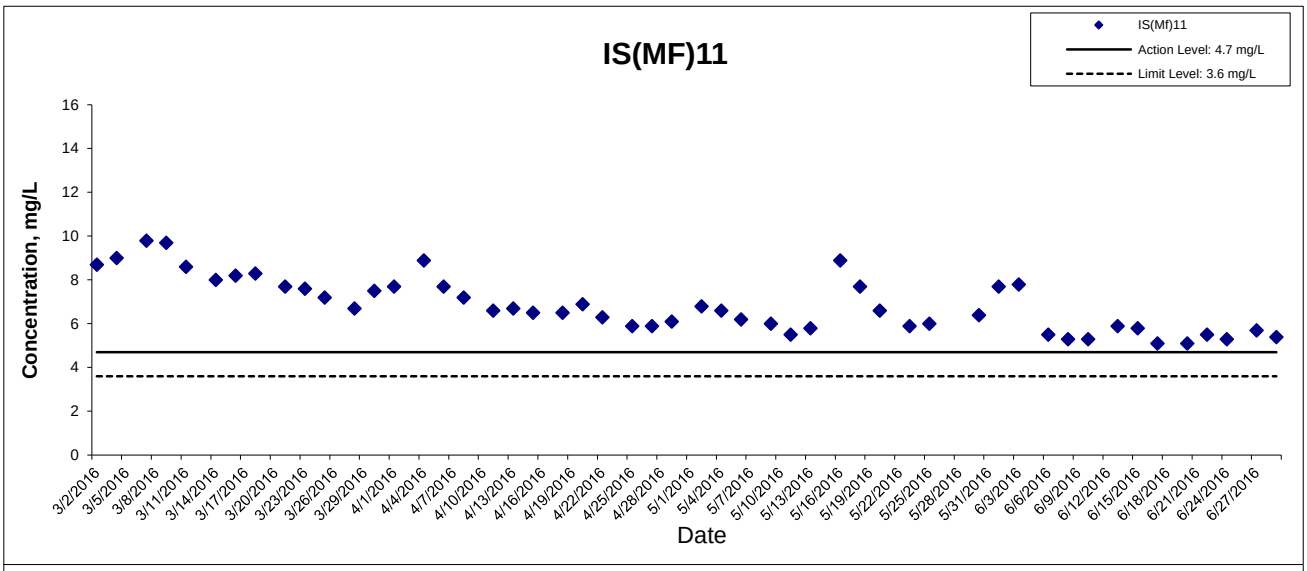
Dissolved Oxygen (Bottom) at Mid-Flood Tide

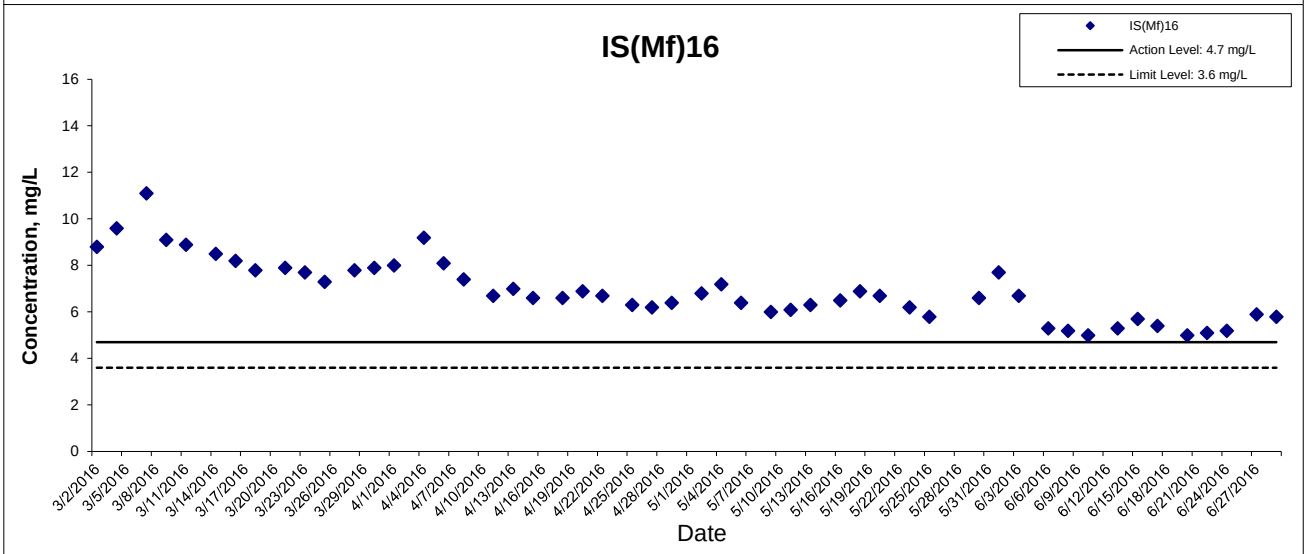


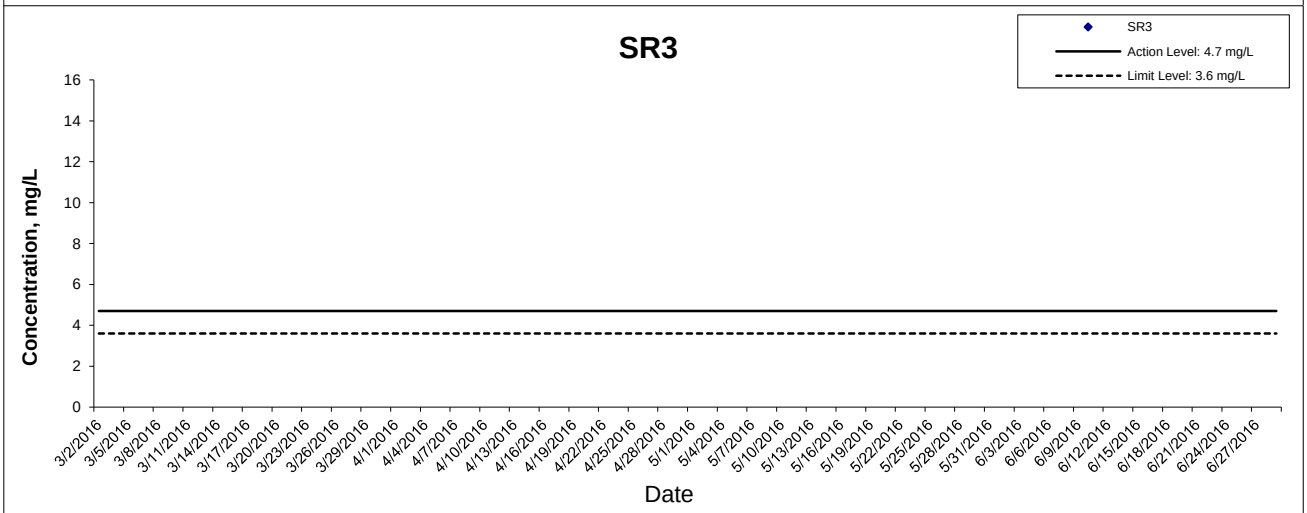




Dissolved Oxygen (Bottom) at Mid-Flood Tide







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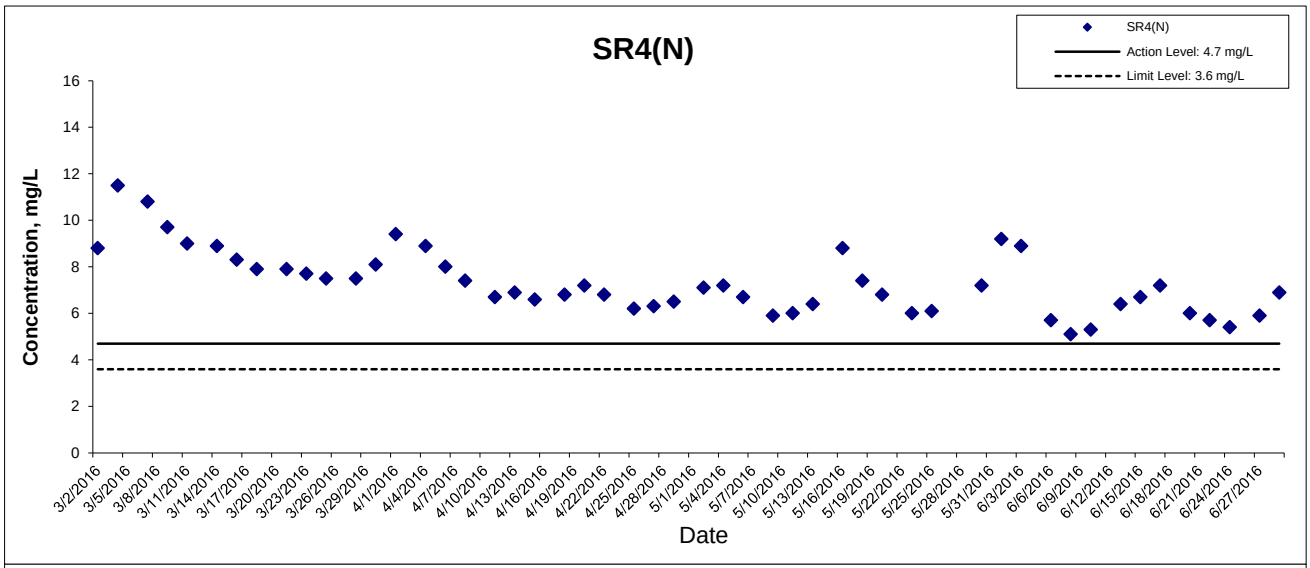
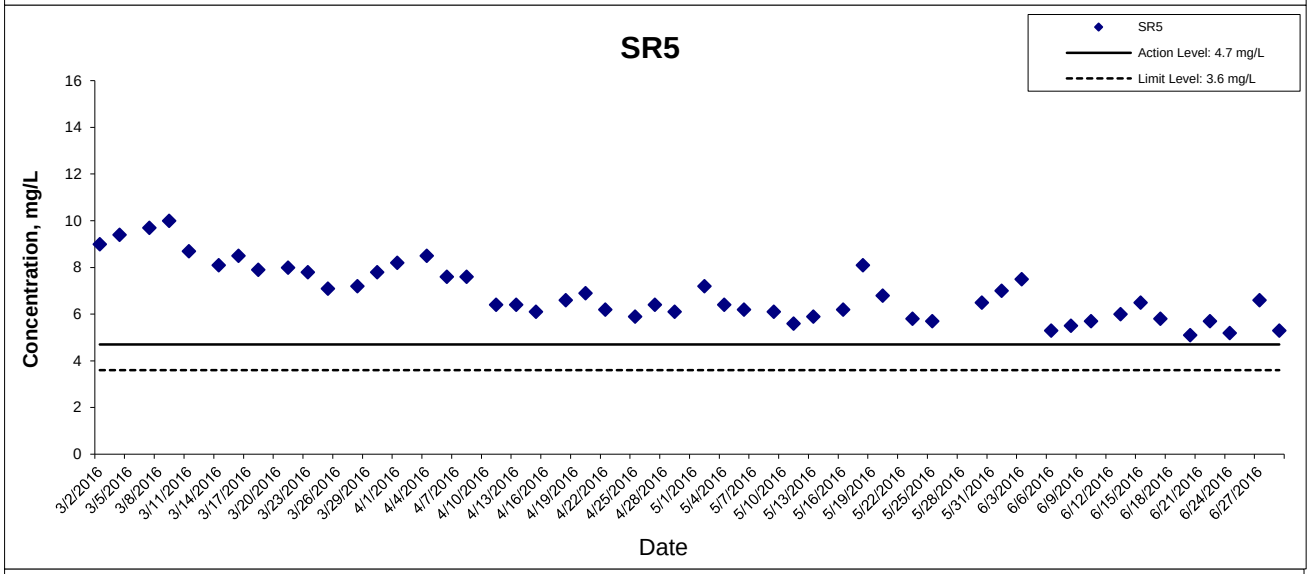
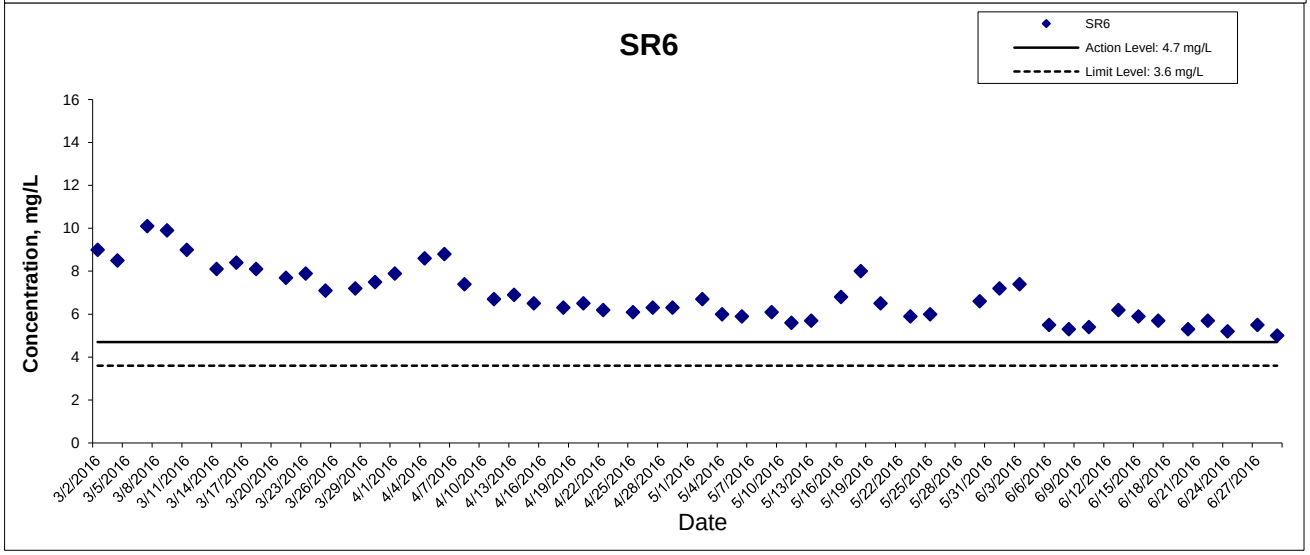
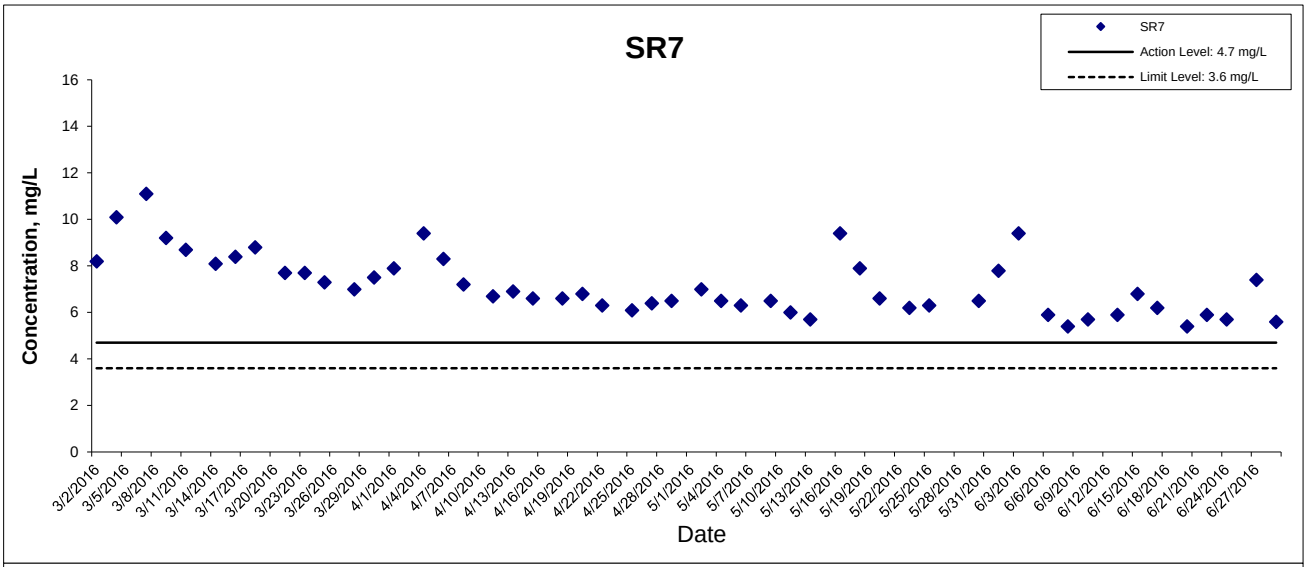
Dissolved Oxygen (Bottom) at Mid-Flood Tide

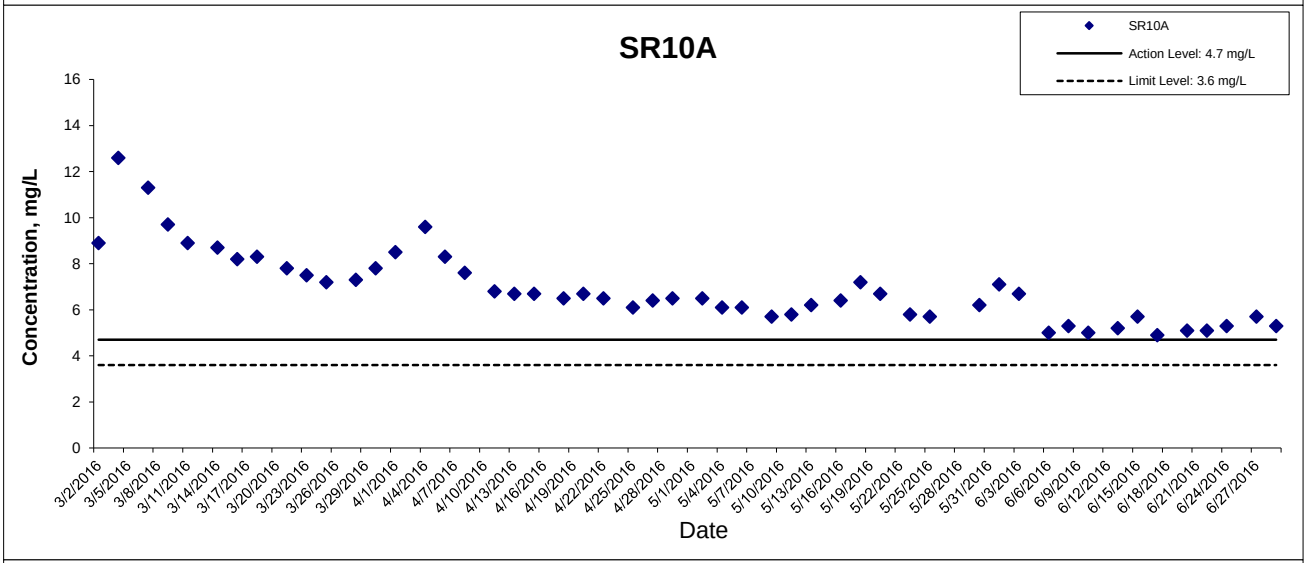


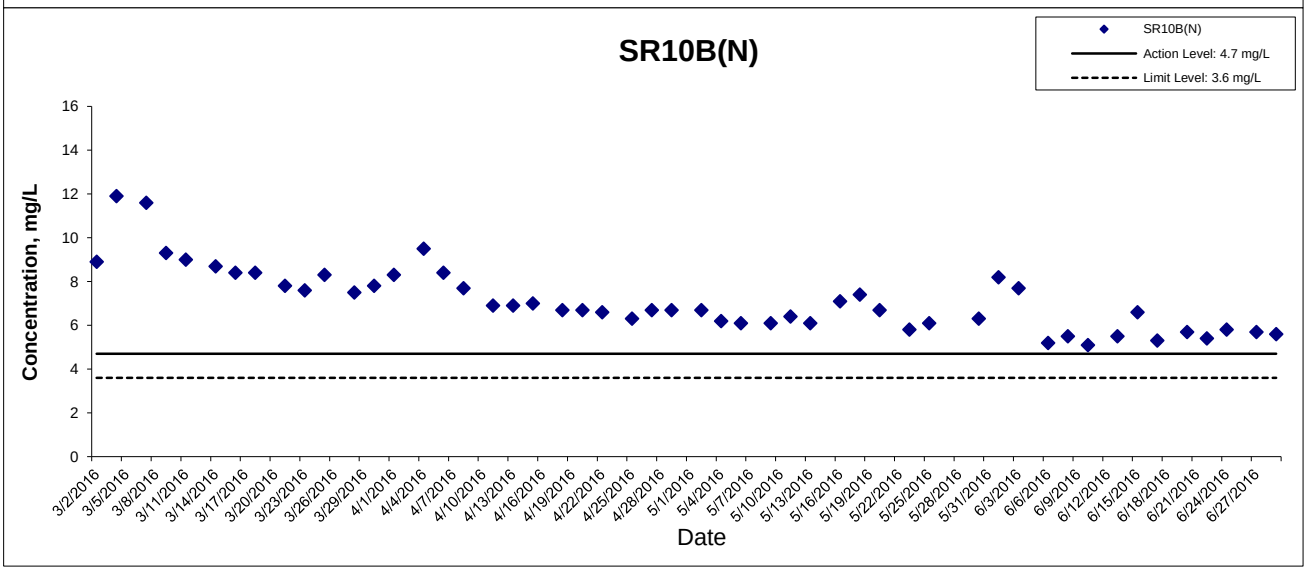




Dissolved Oxygen (Bottom) at Mid-Flood Tide







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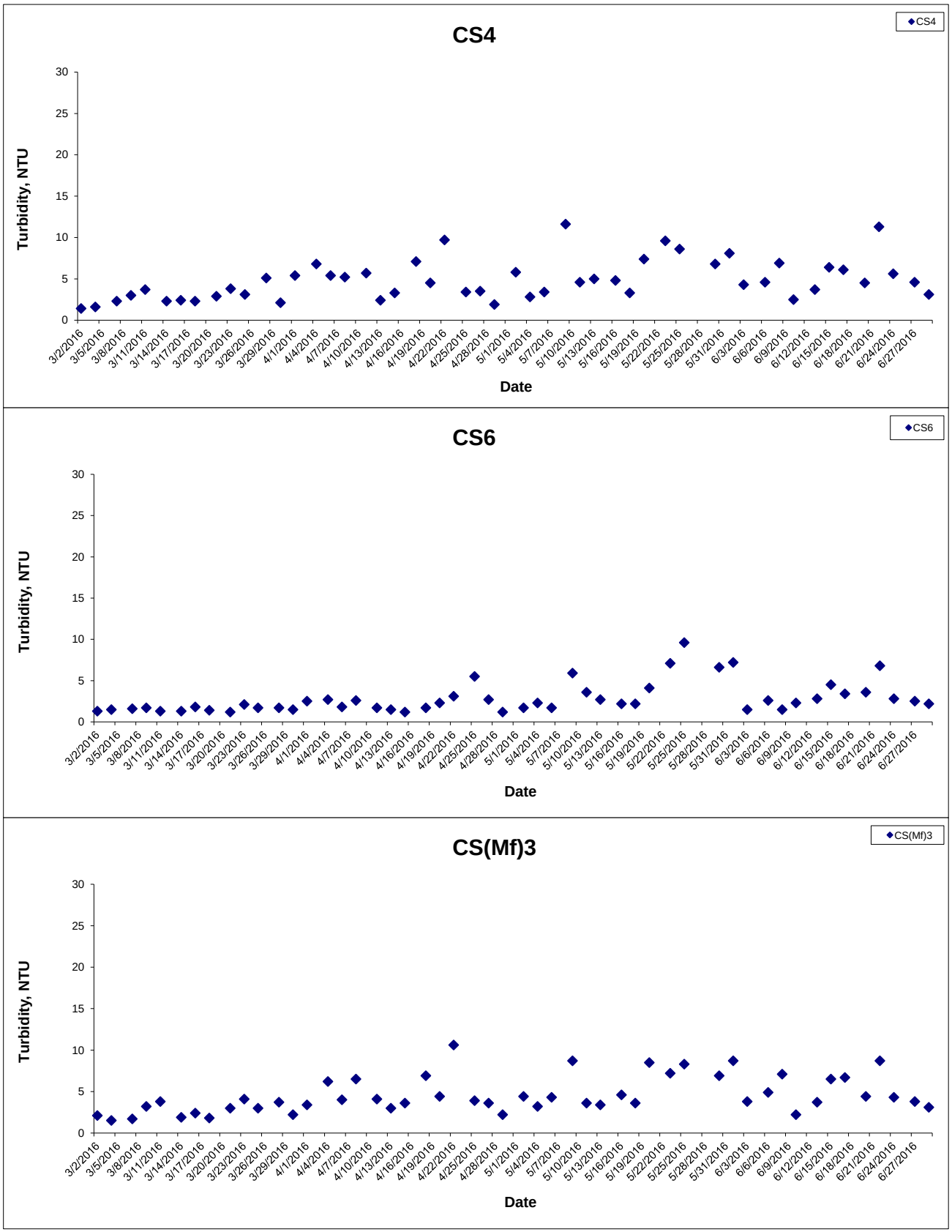
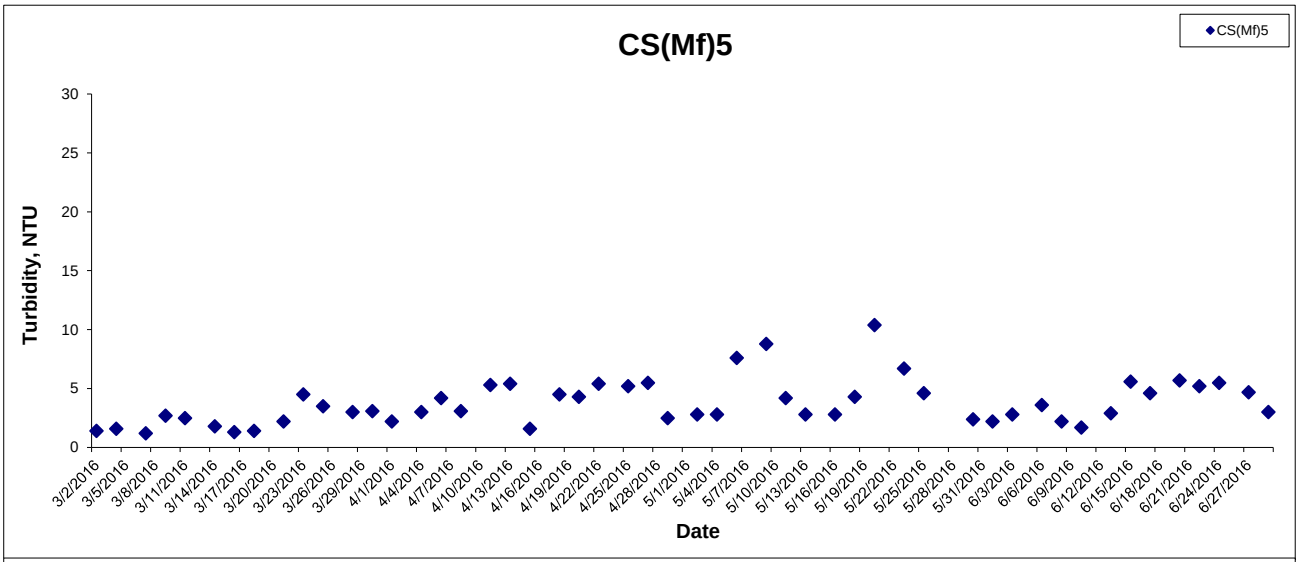
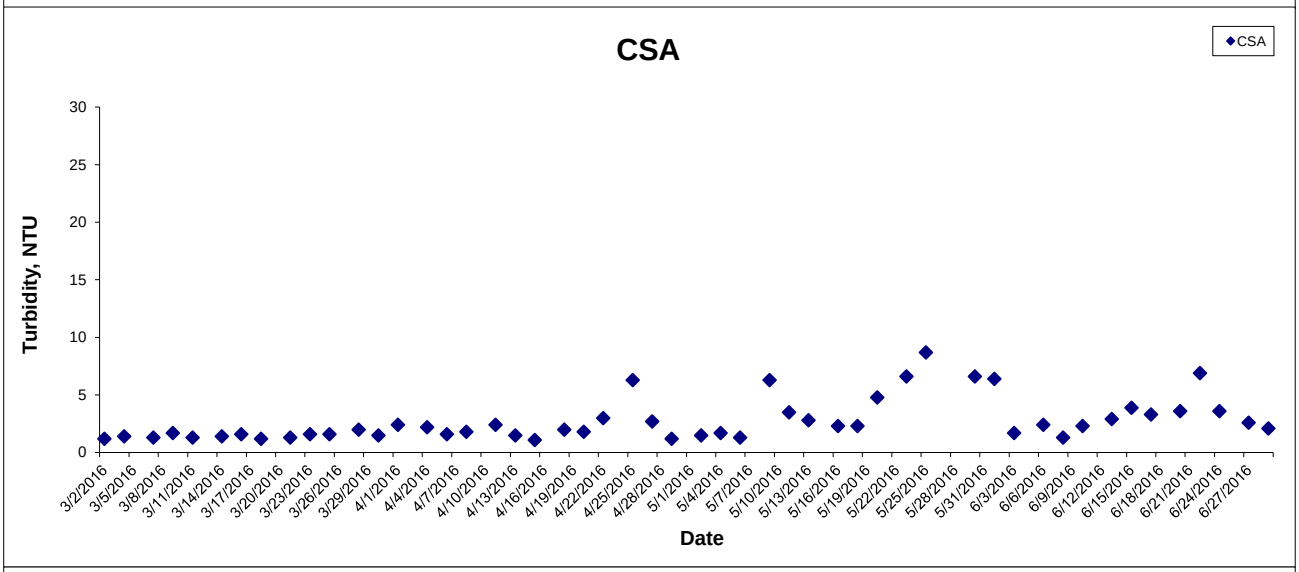
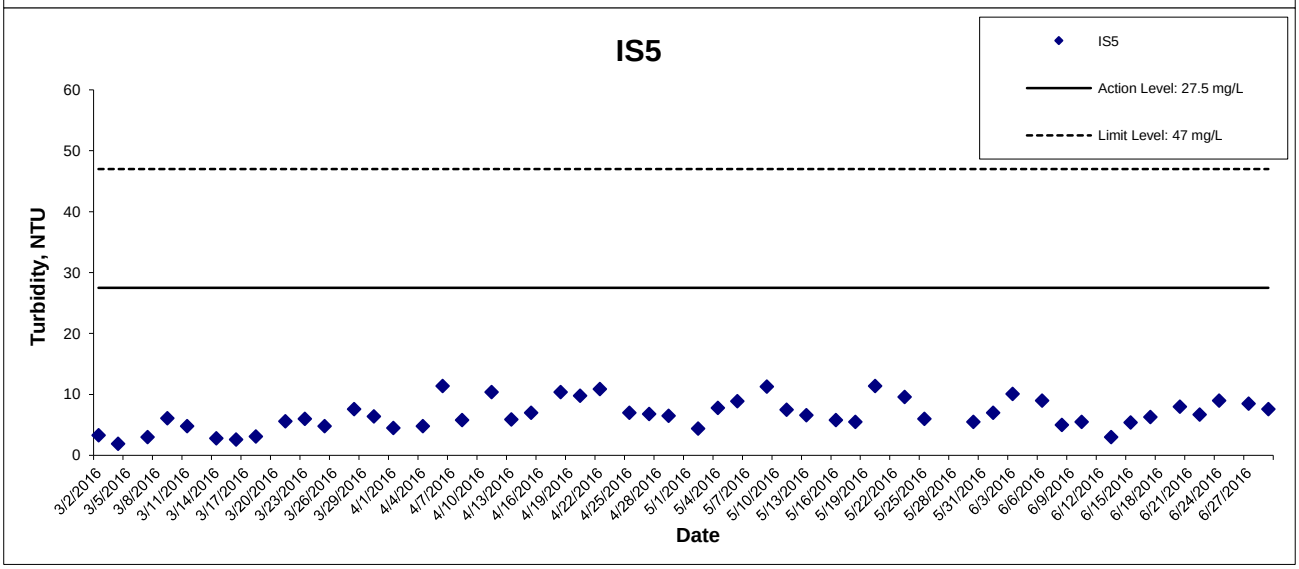
Turbidity at Mid-Ebb Tide



Turbidity at Mid-Ebb Tide







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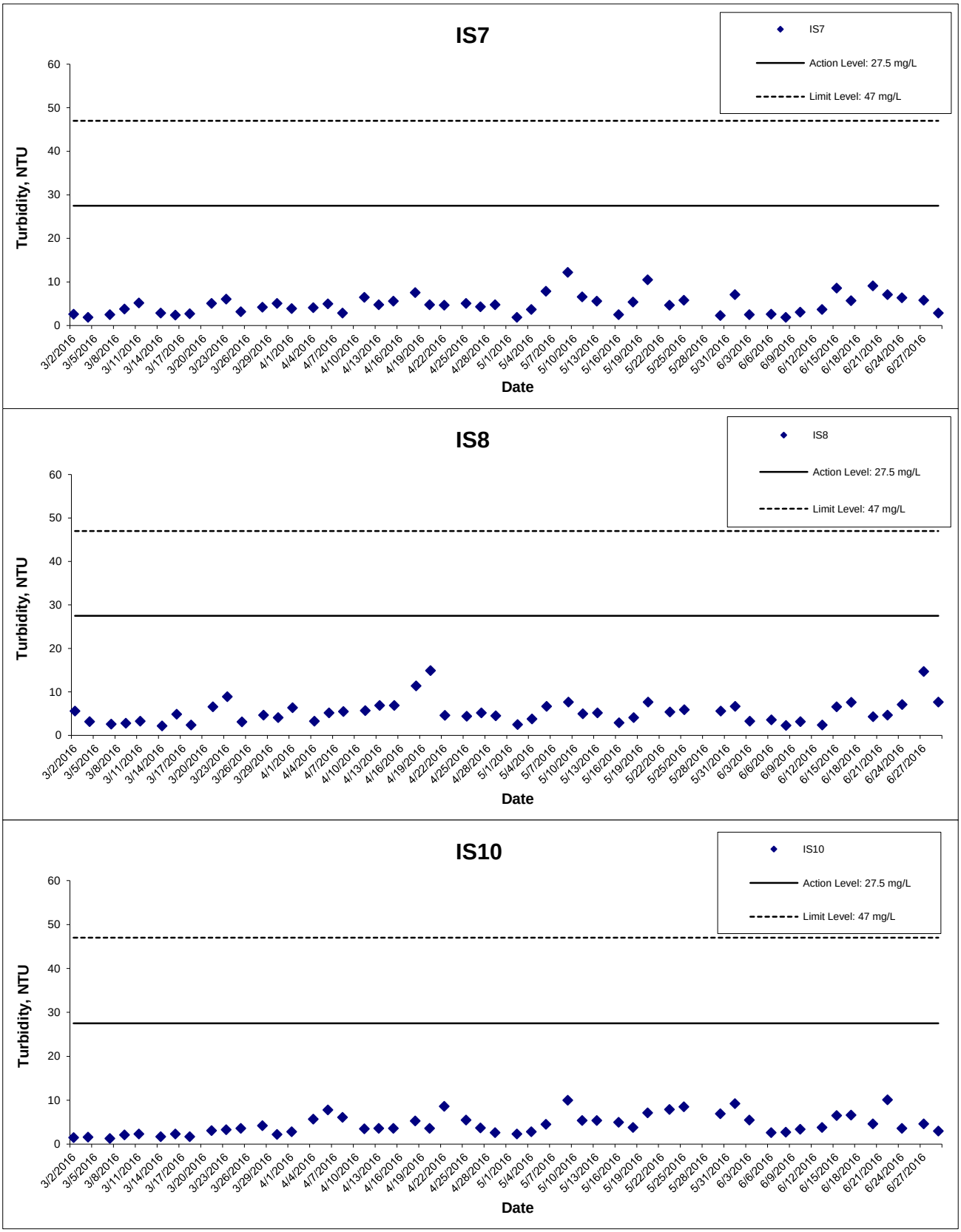
Turbidity at Mid-Ebb Tide



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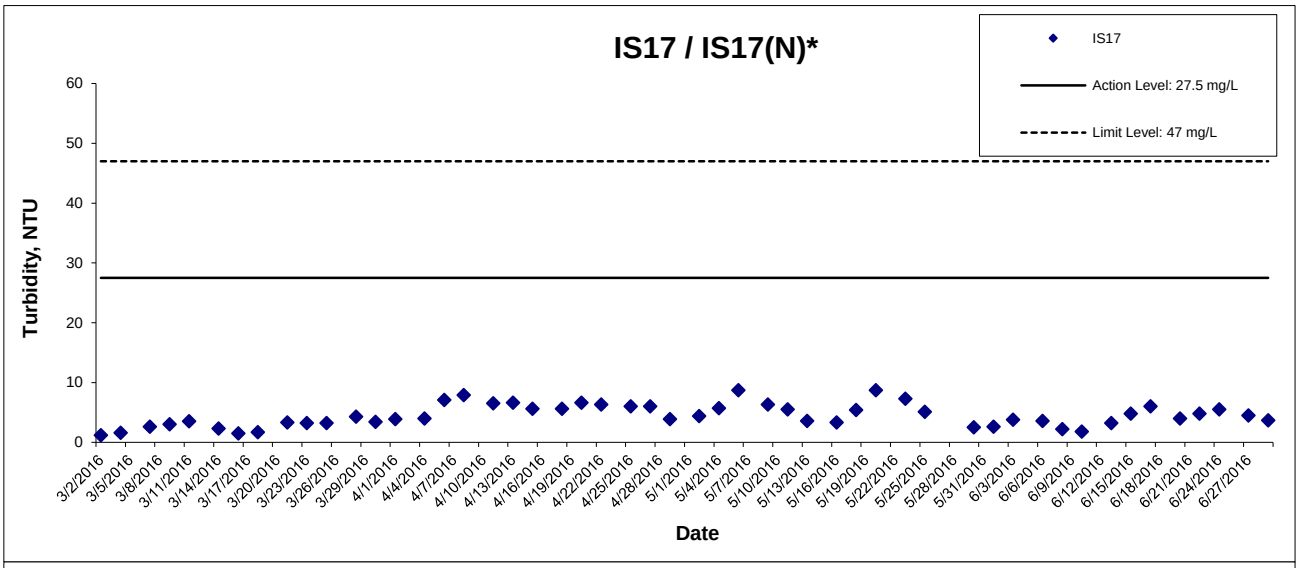
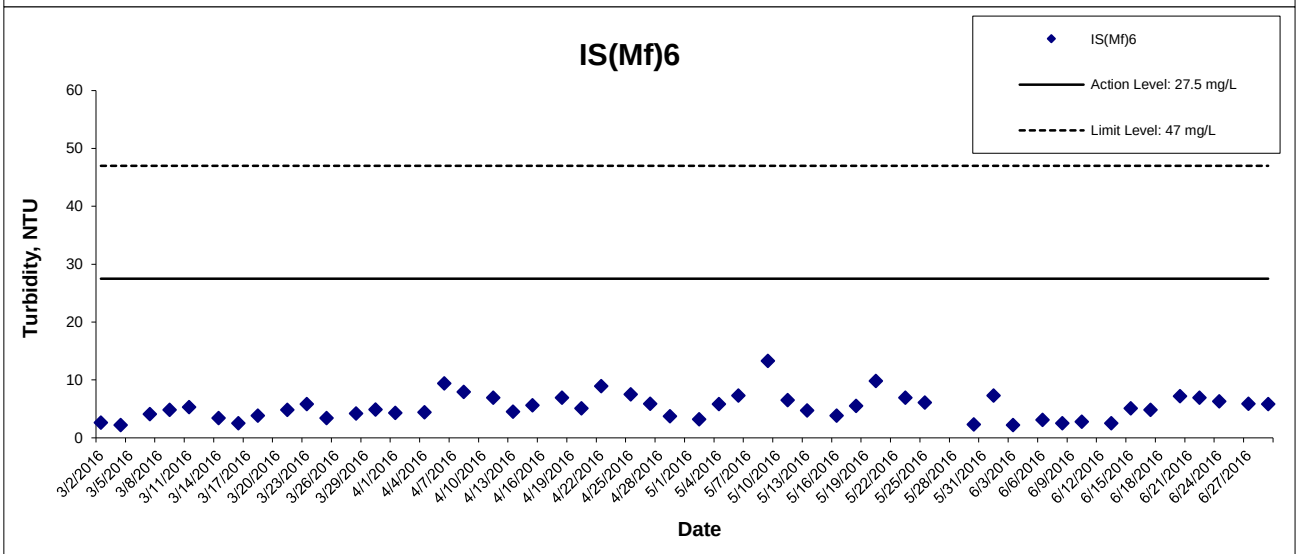
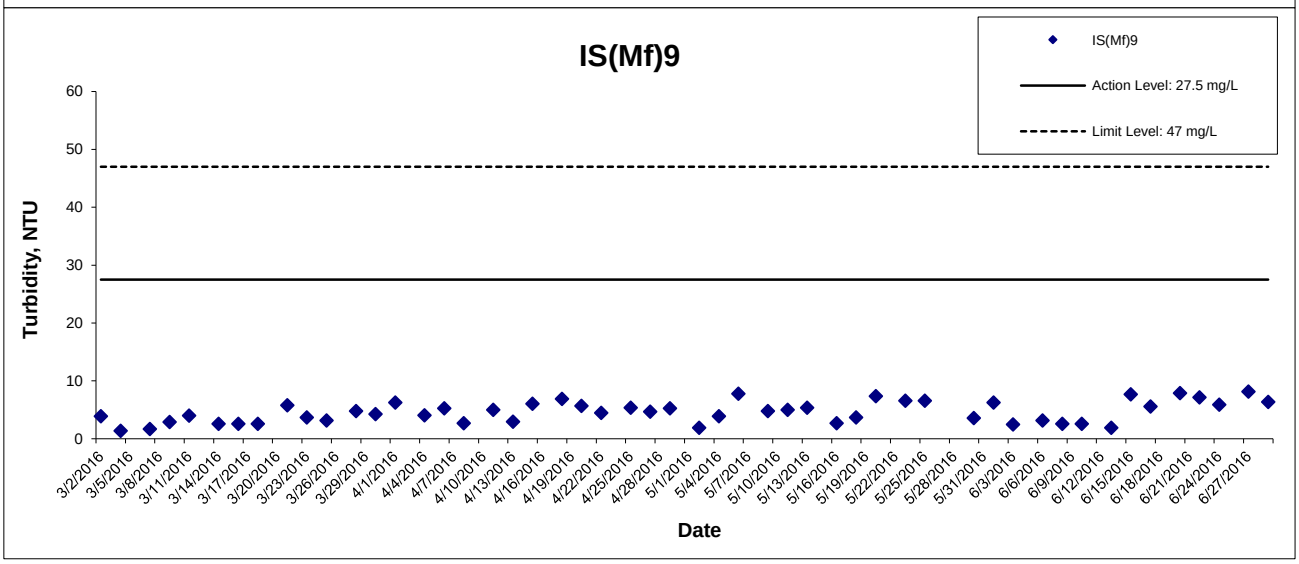
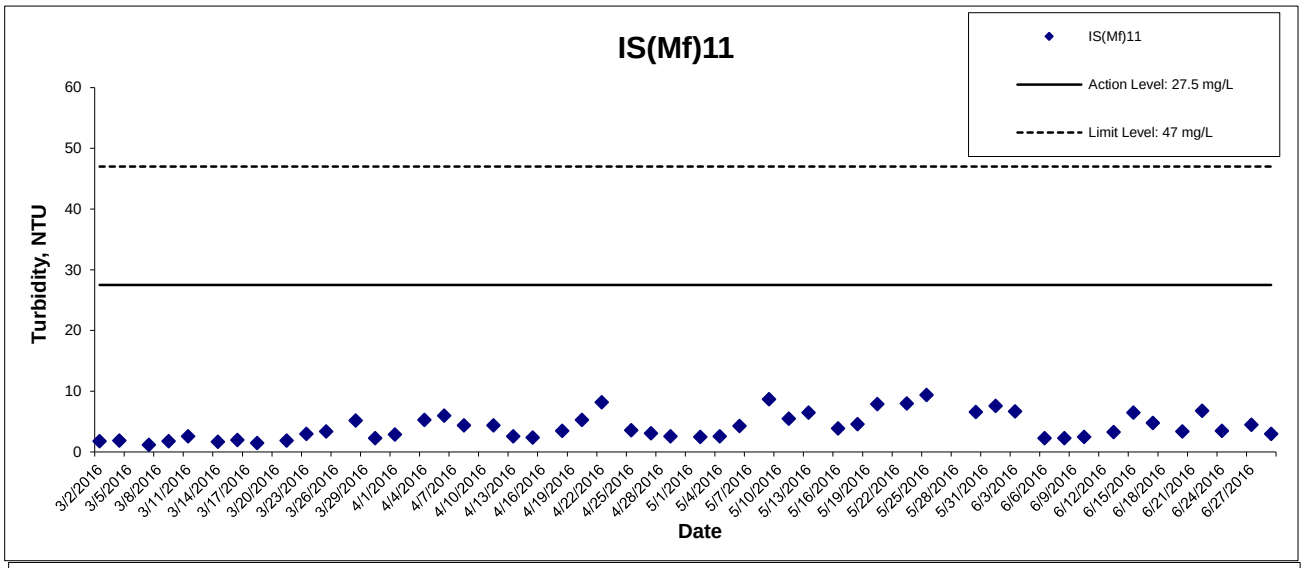
Turbidity at Mid-Ebb Tide

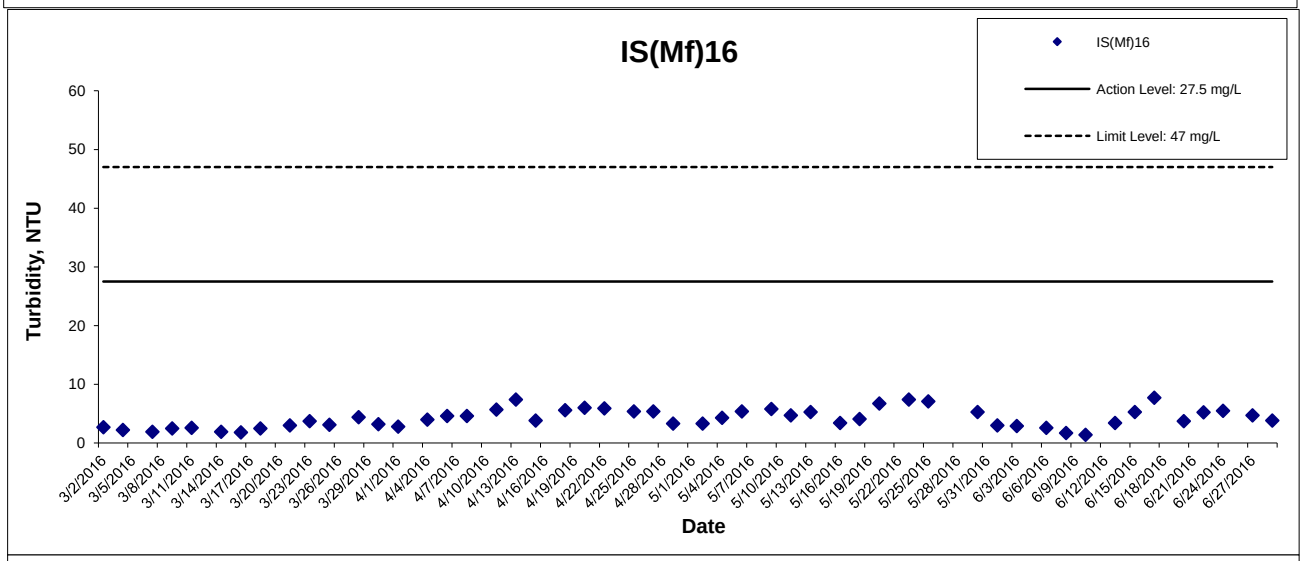


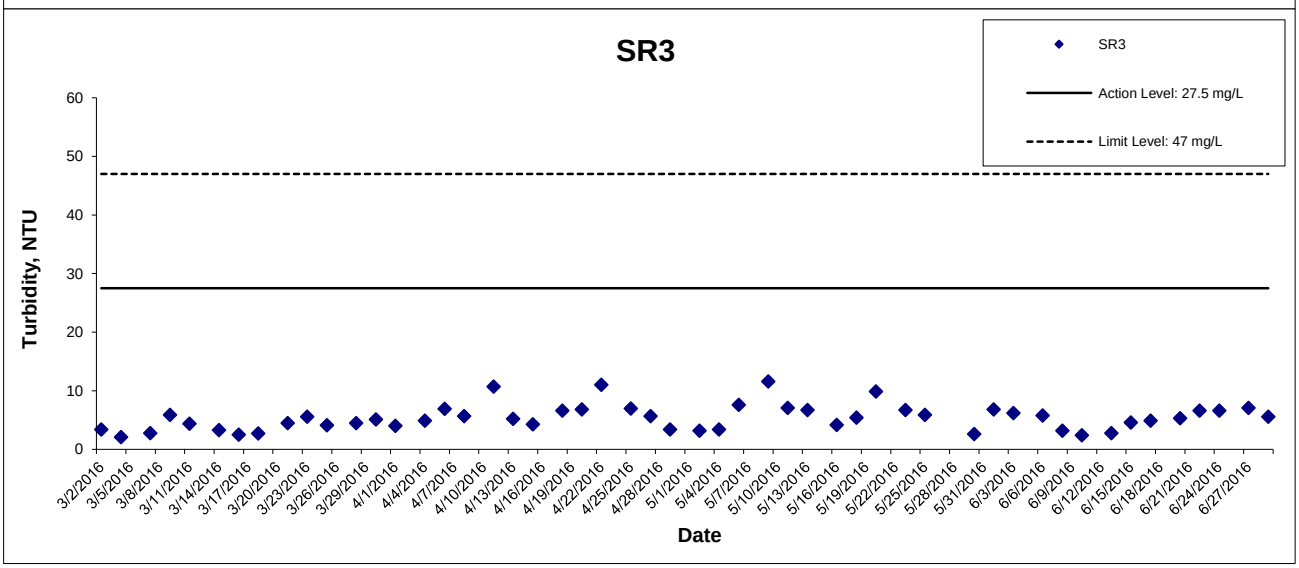




Turbidity at Mid-Ebb Tide







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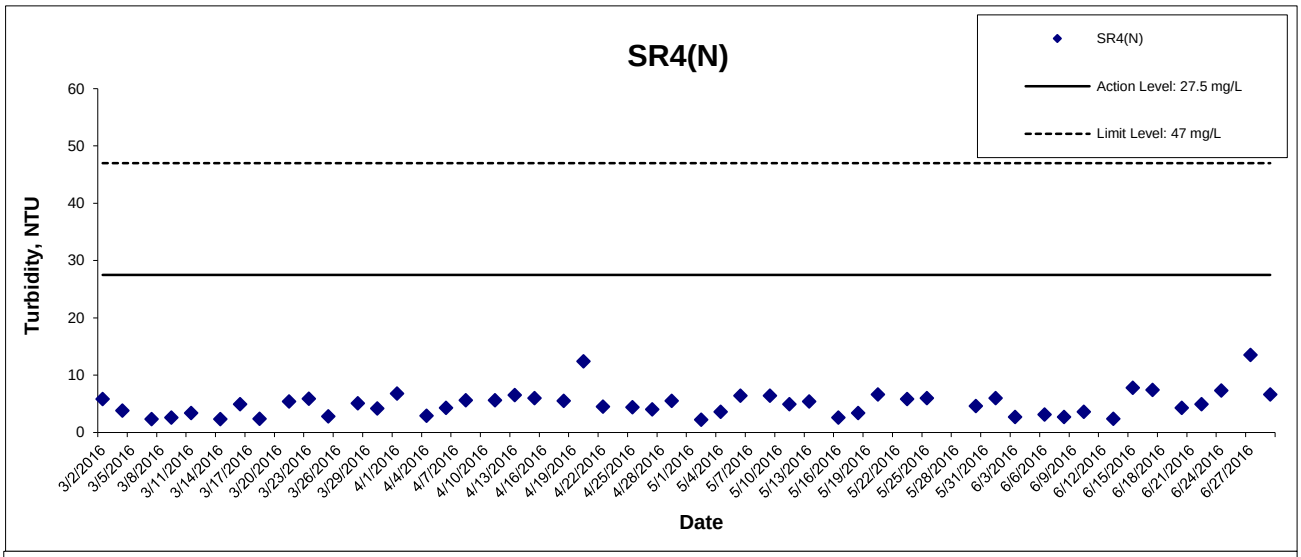
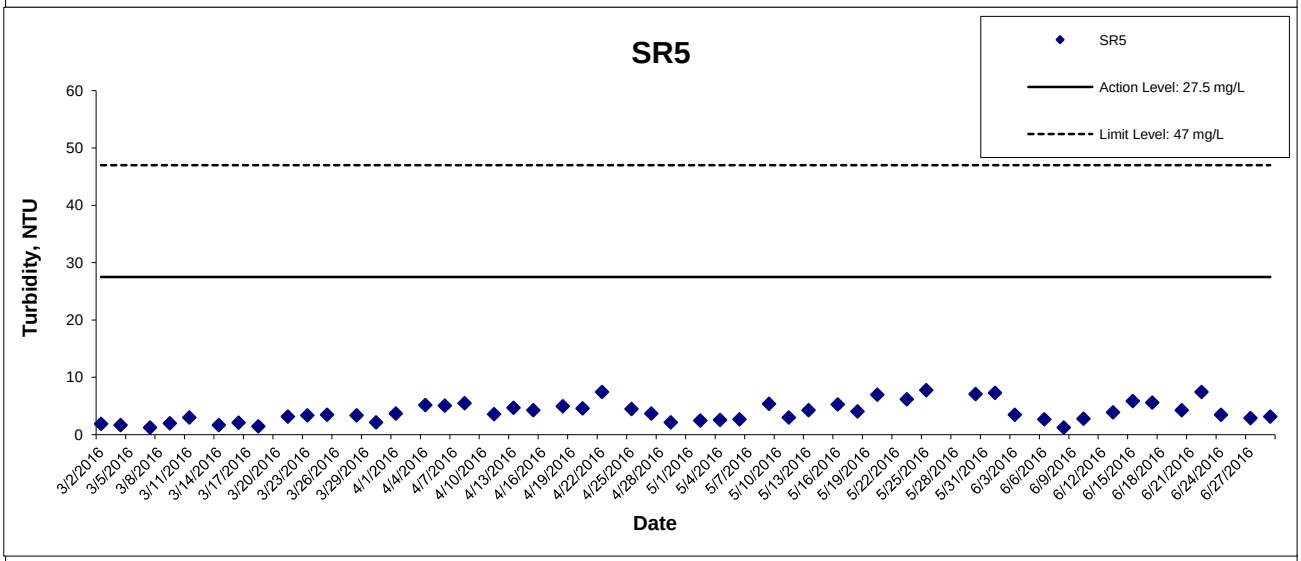
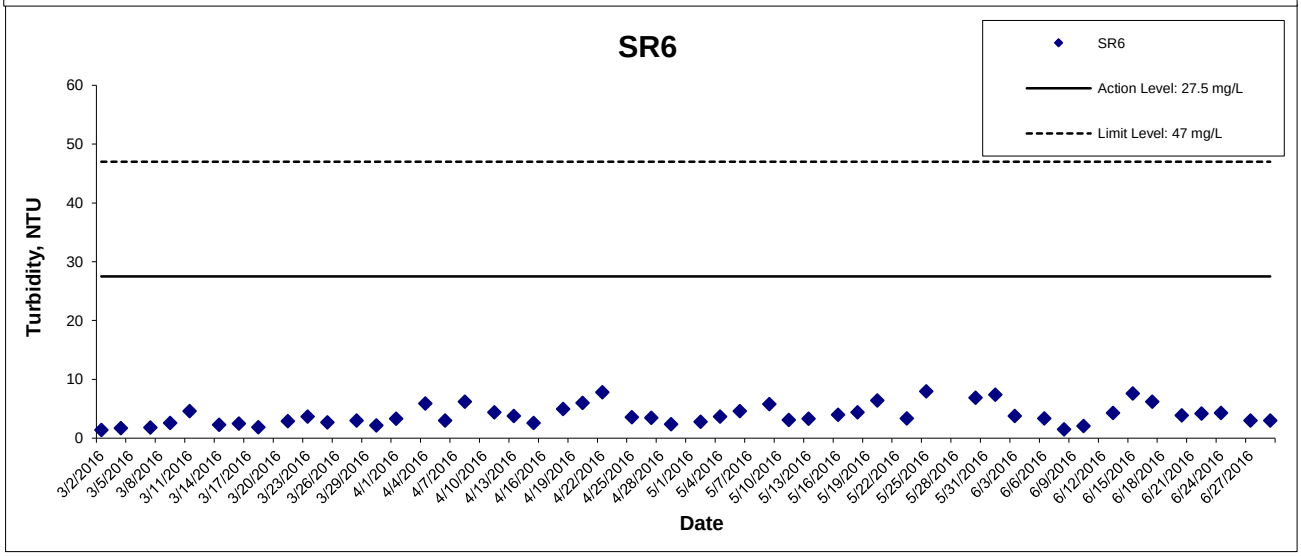
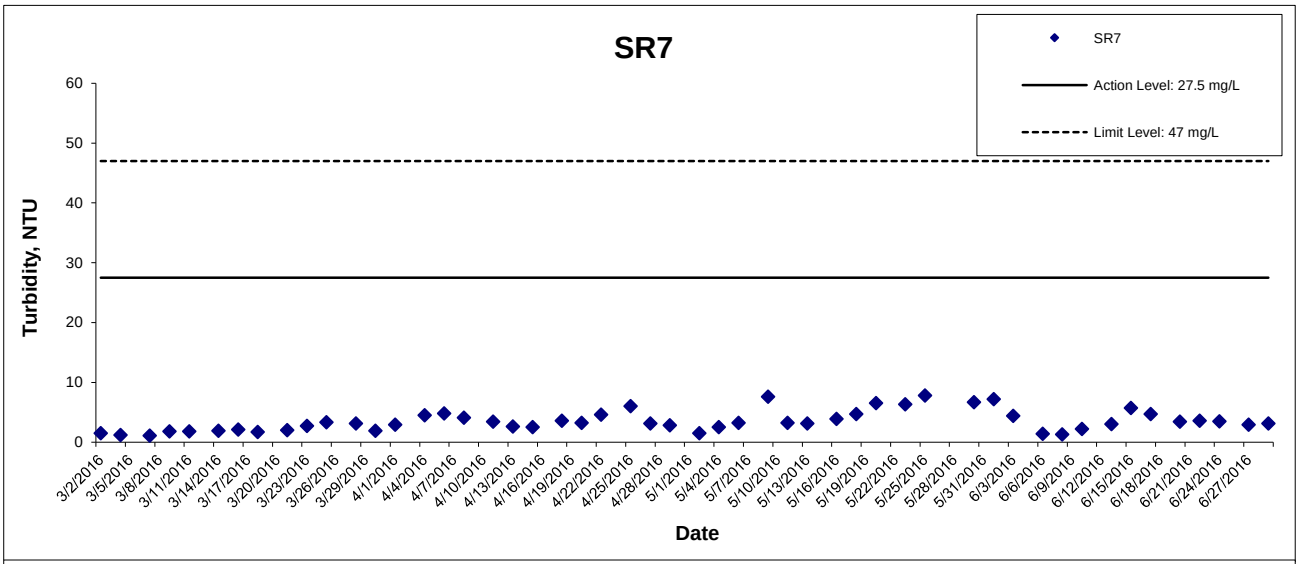
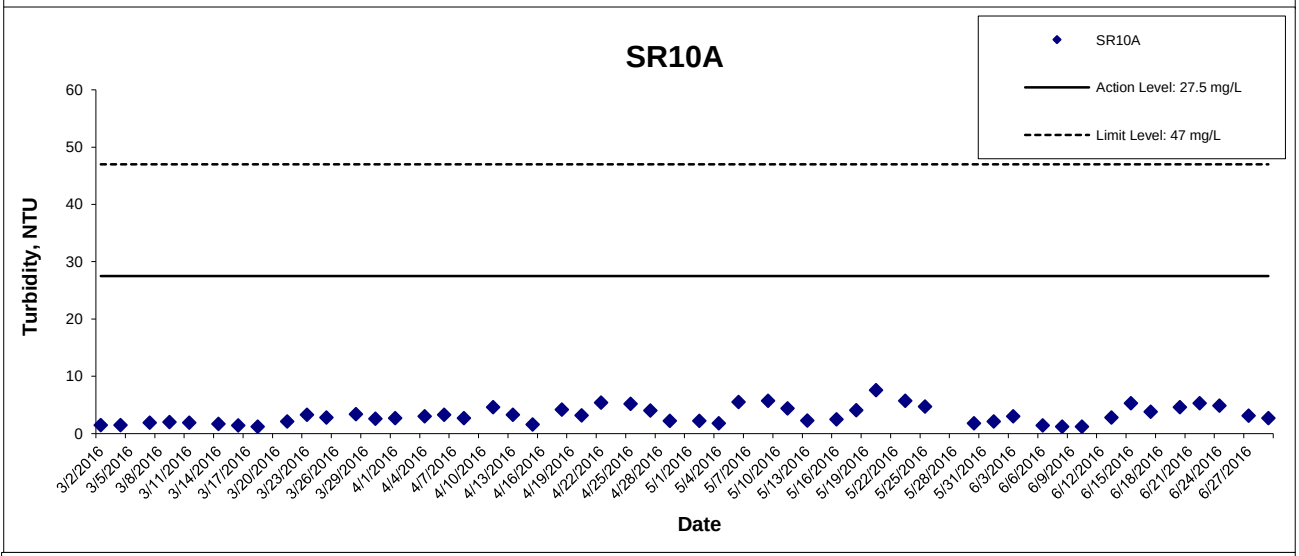


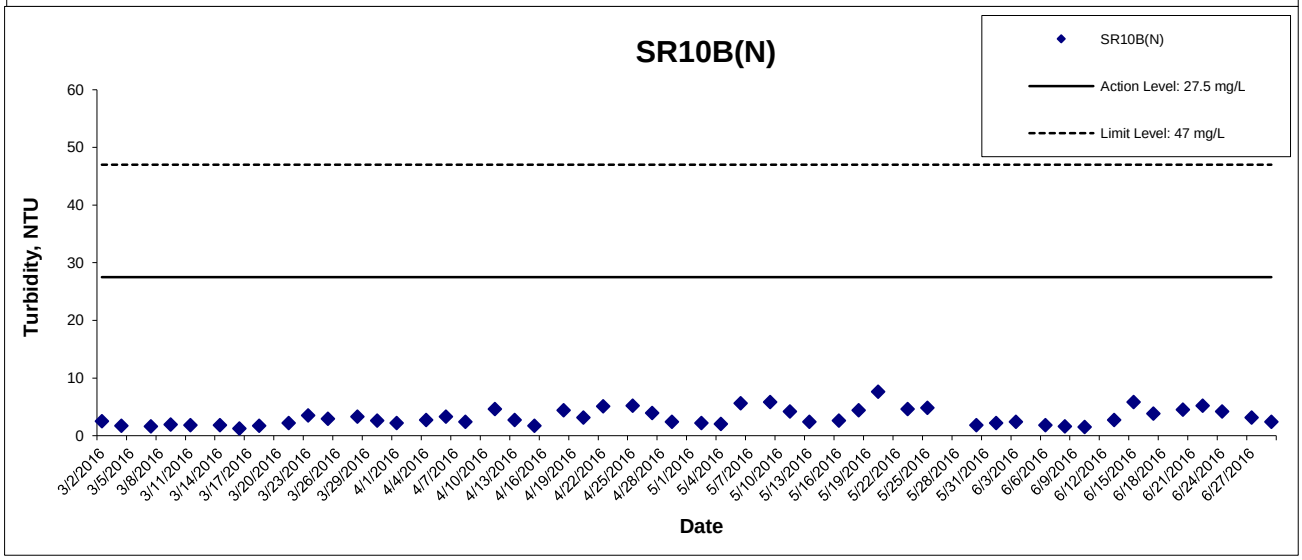




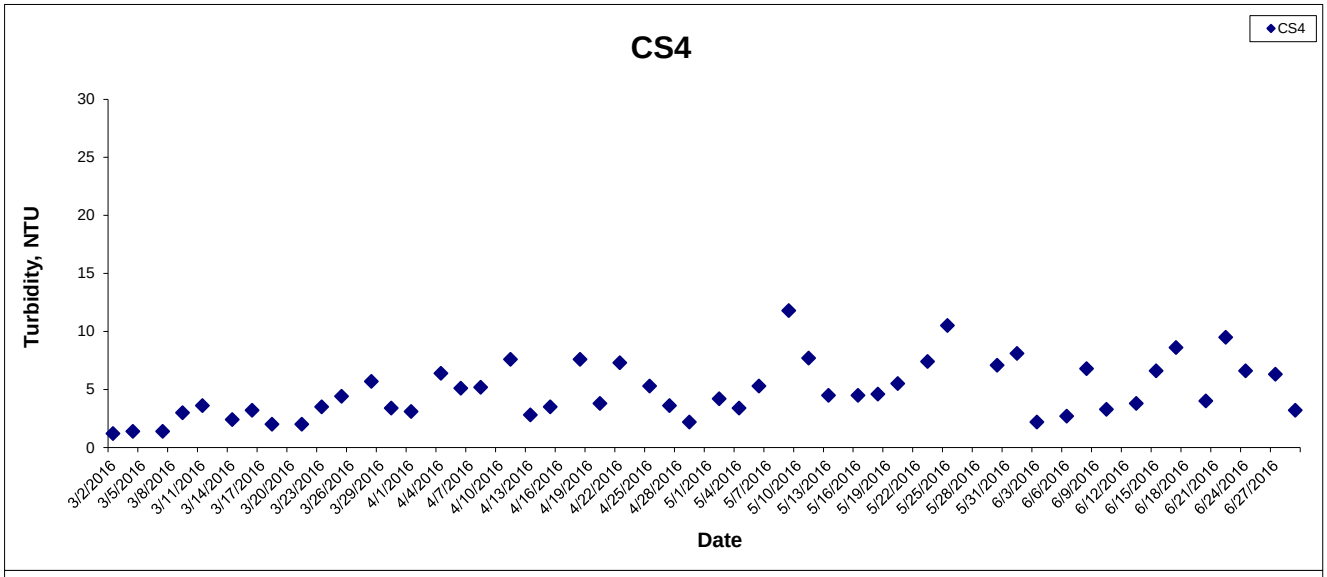
Turbidity at Mid-Ebb Tide

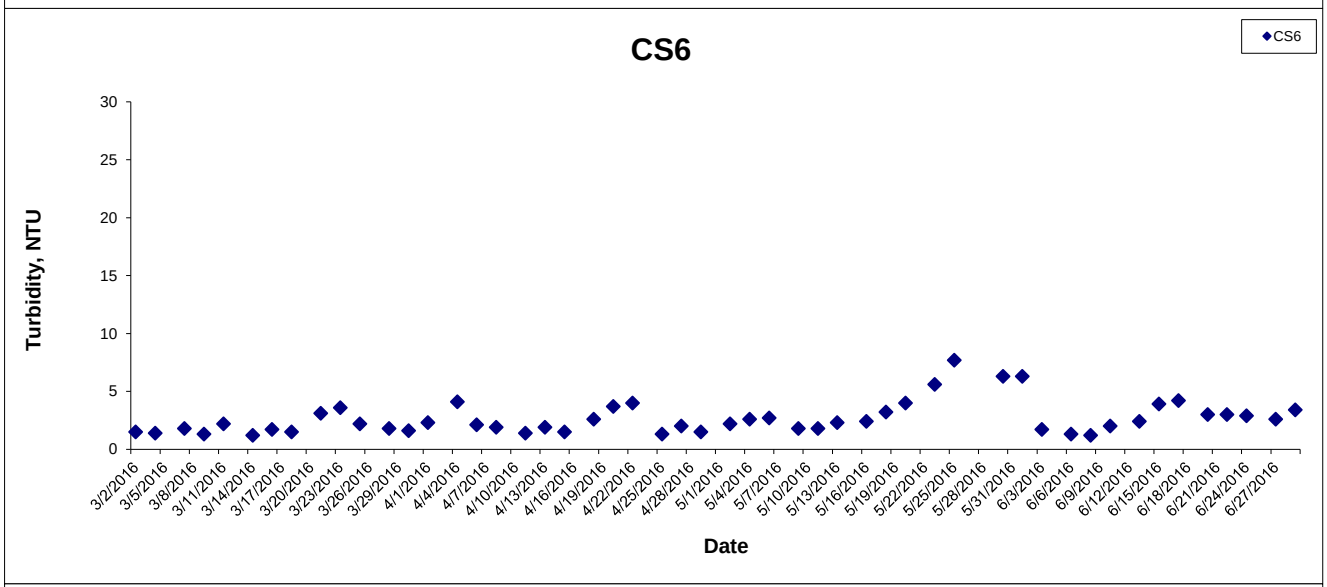


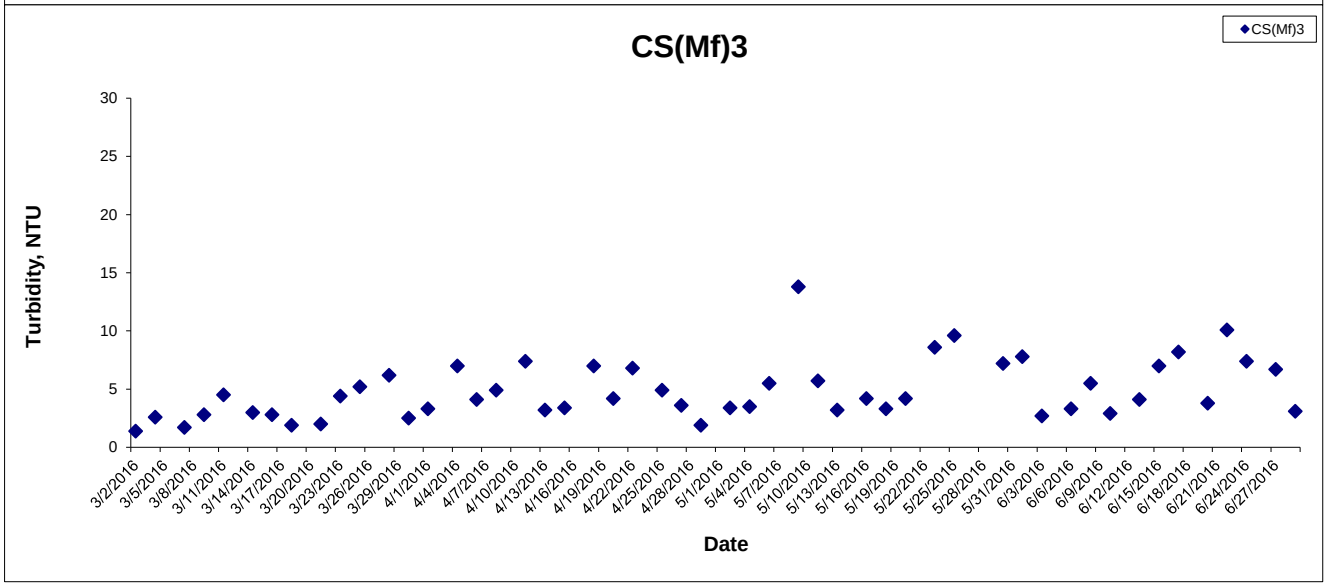




Turbidity at Mid-Flood Tide







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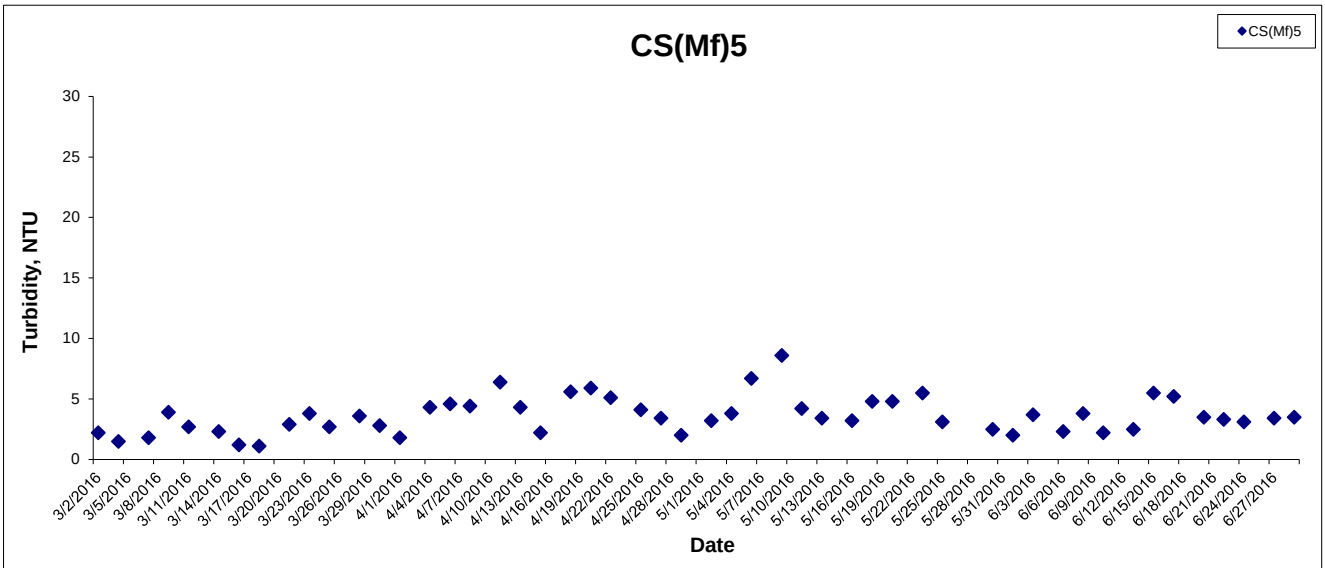
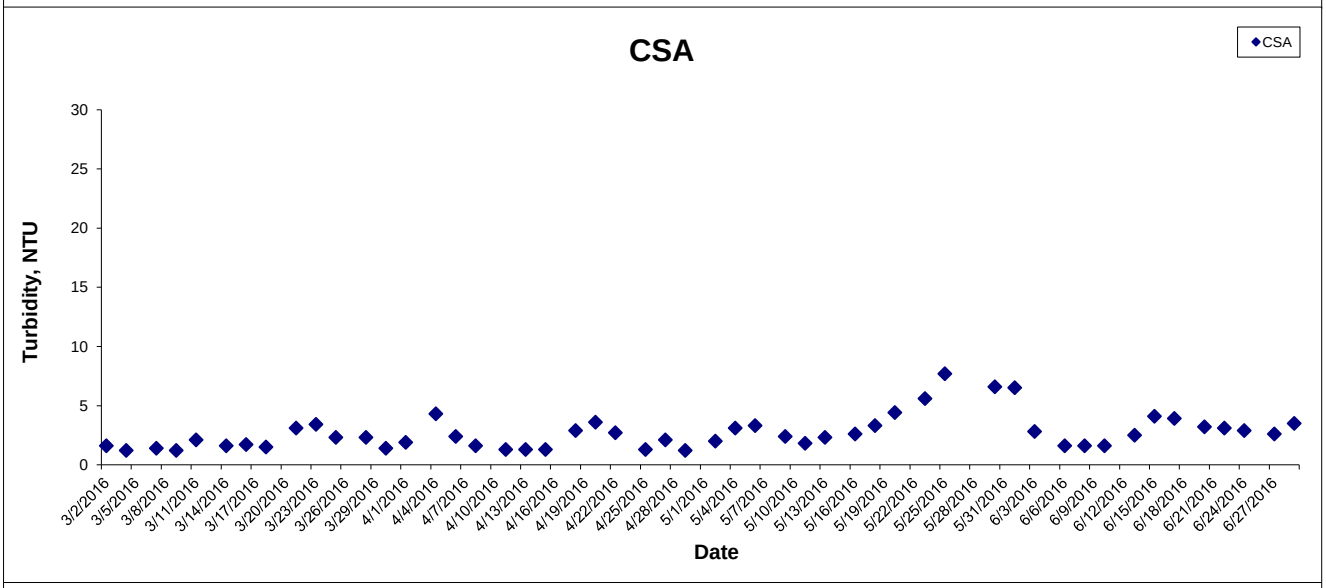
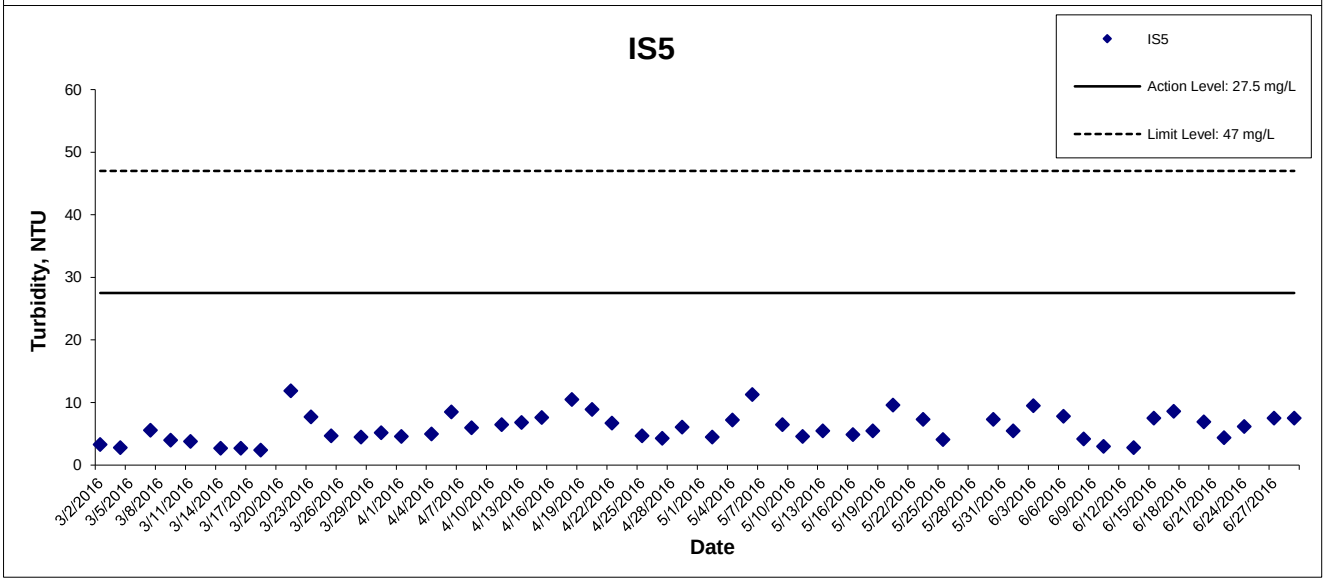
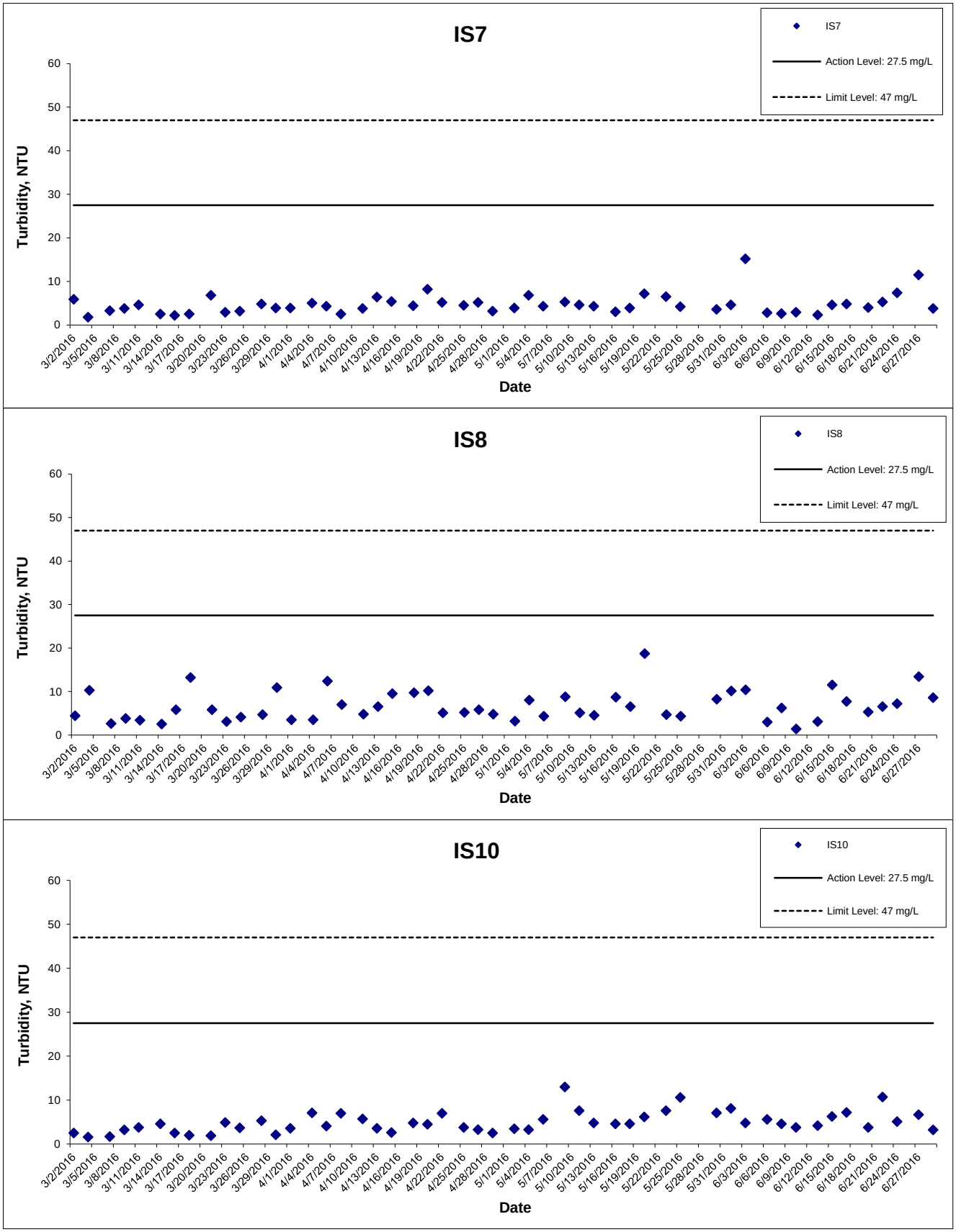






Turbidity at Mid-Flood Tide



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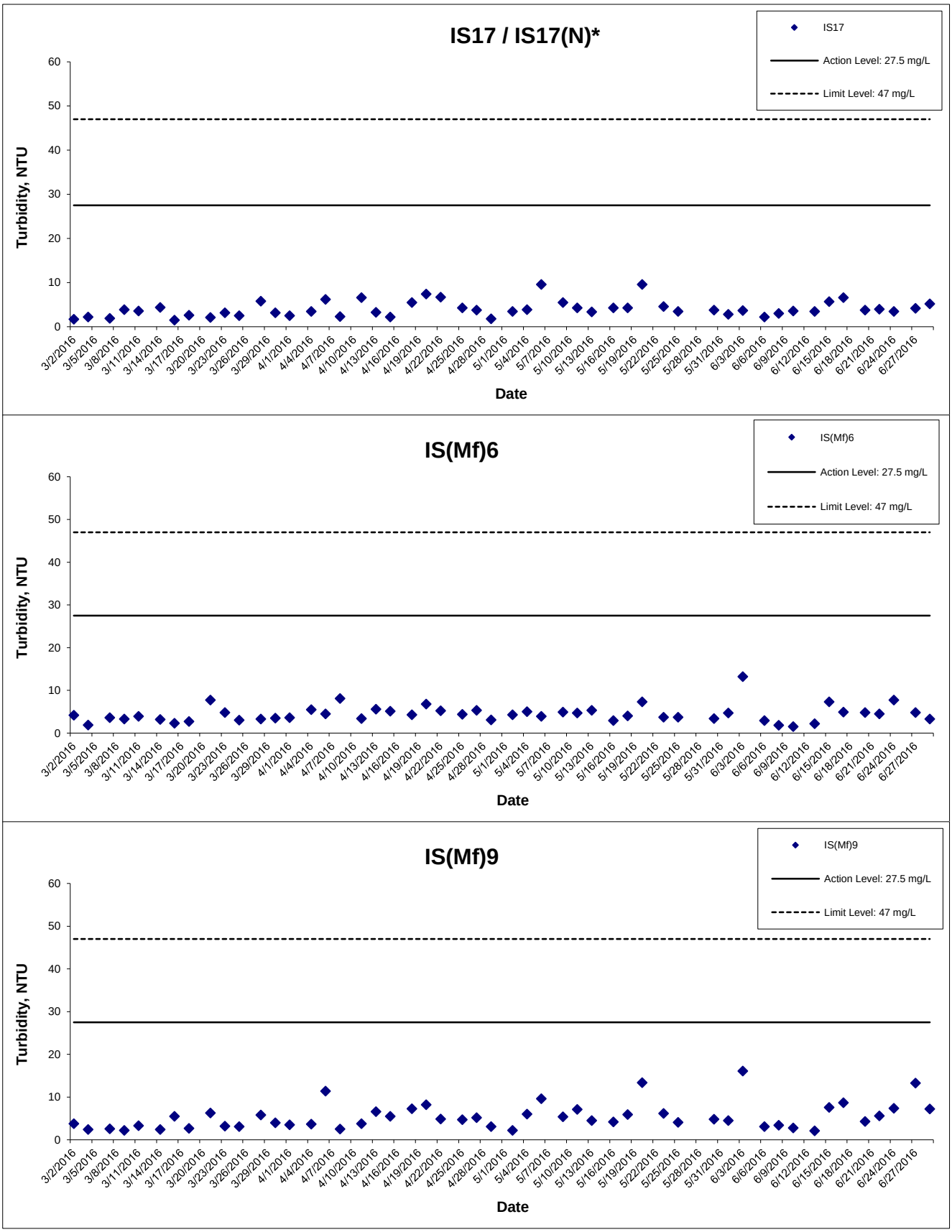

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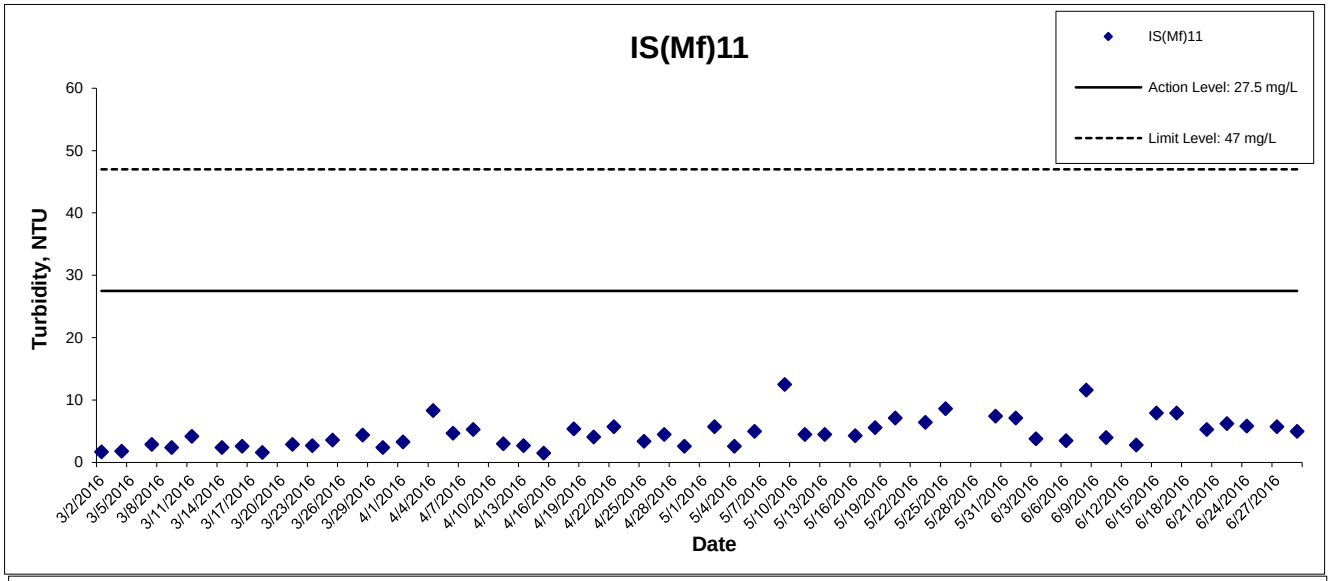

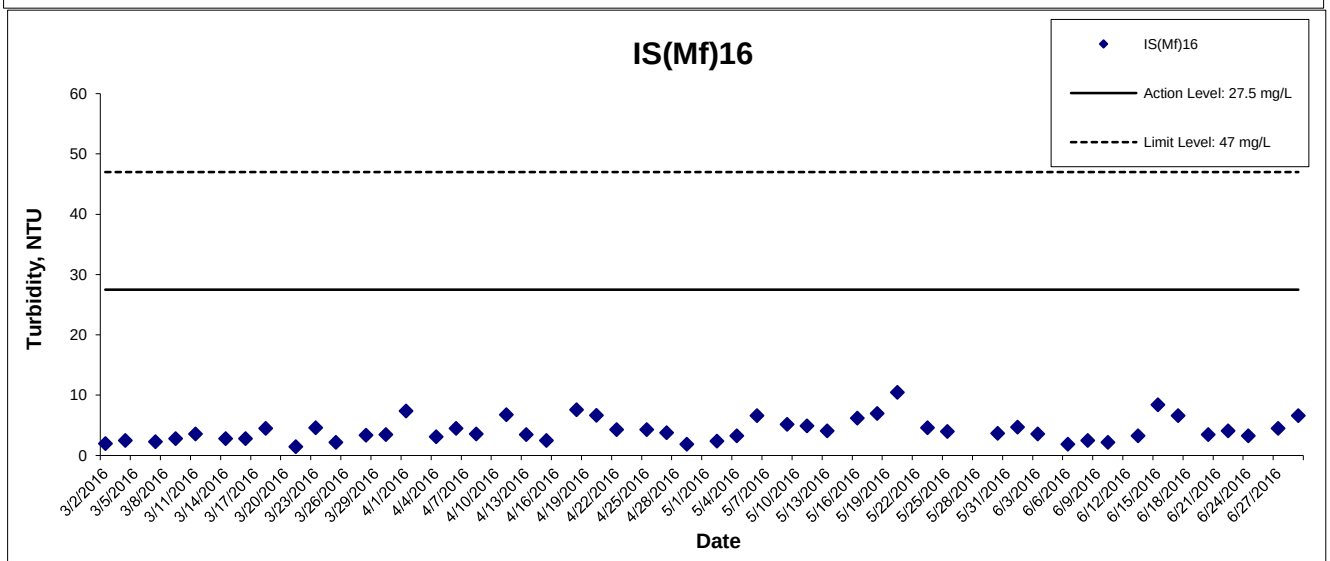

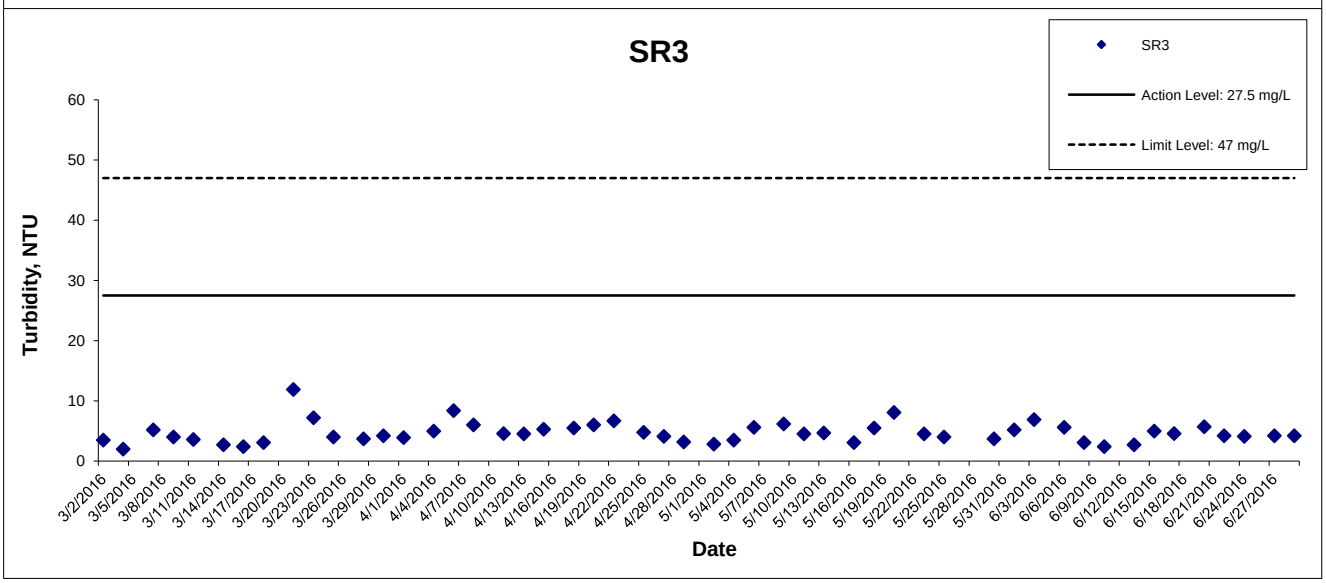

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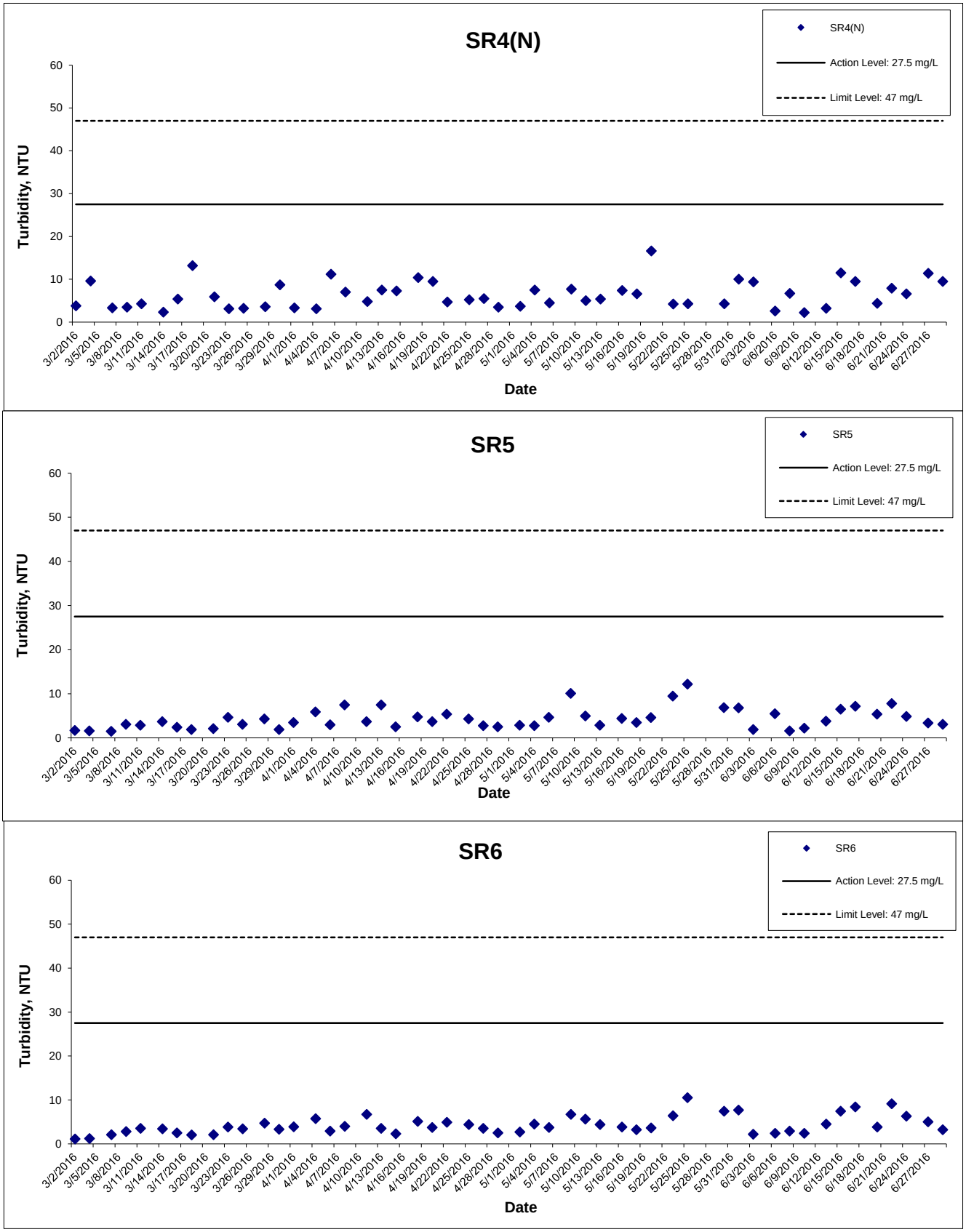

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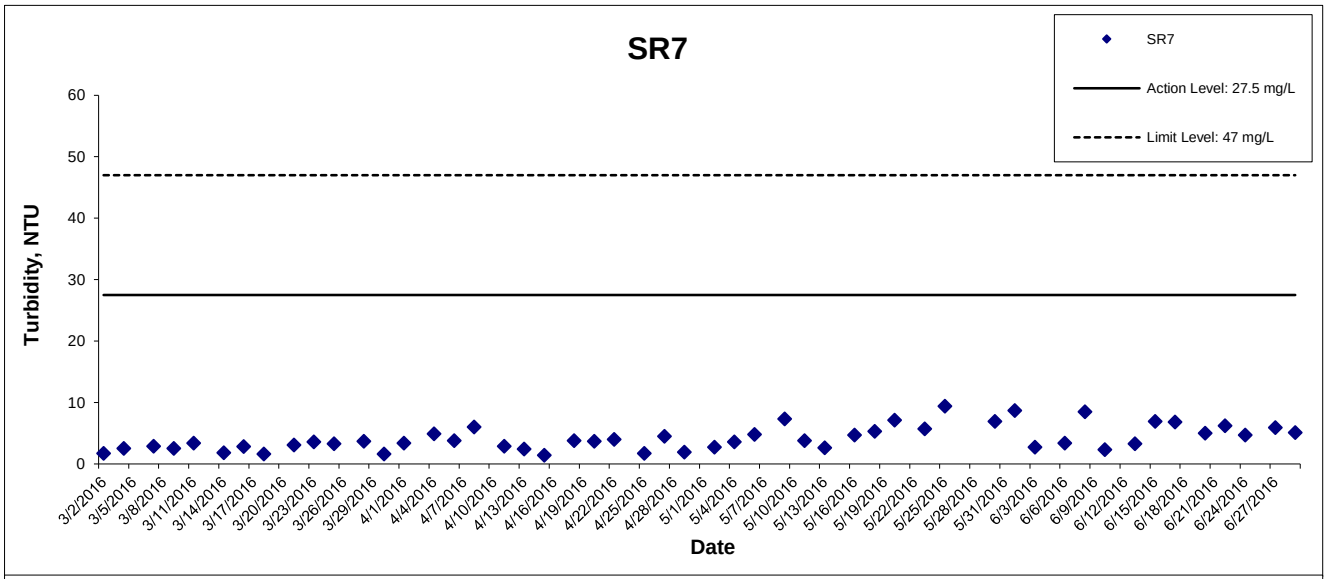
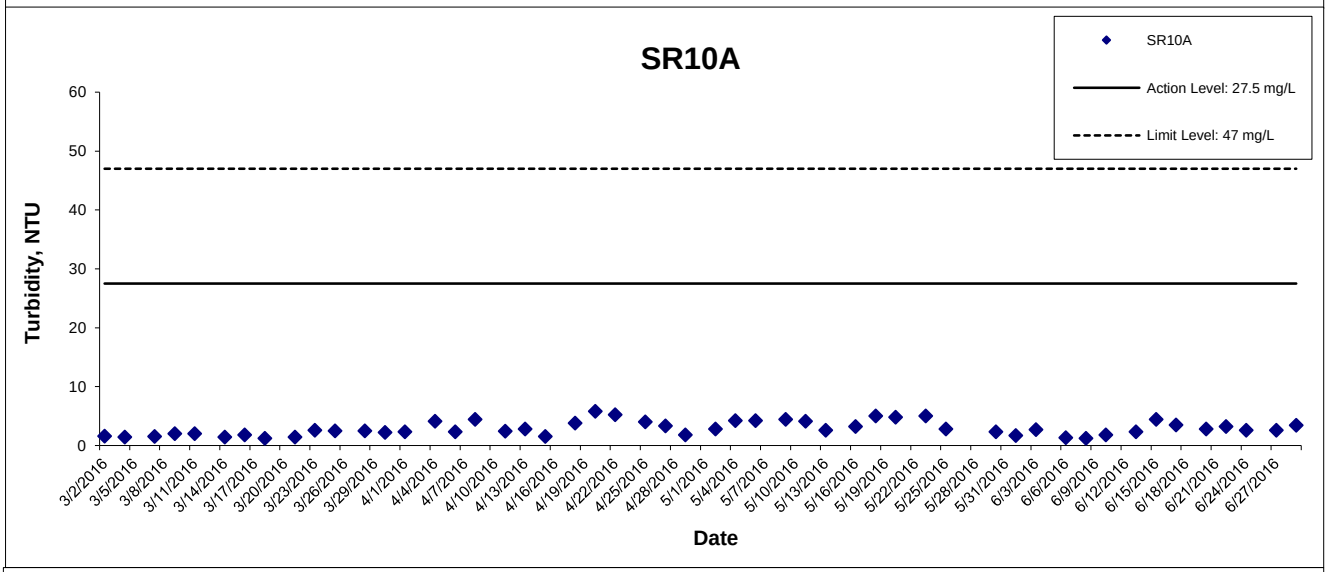
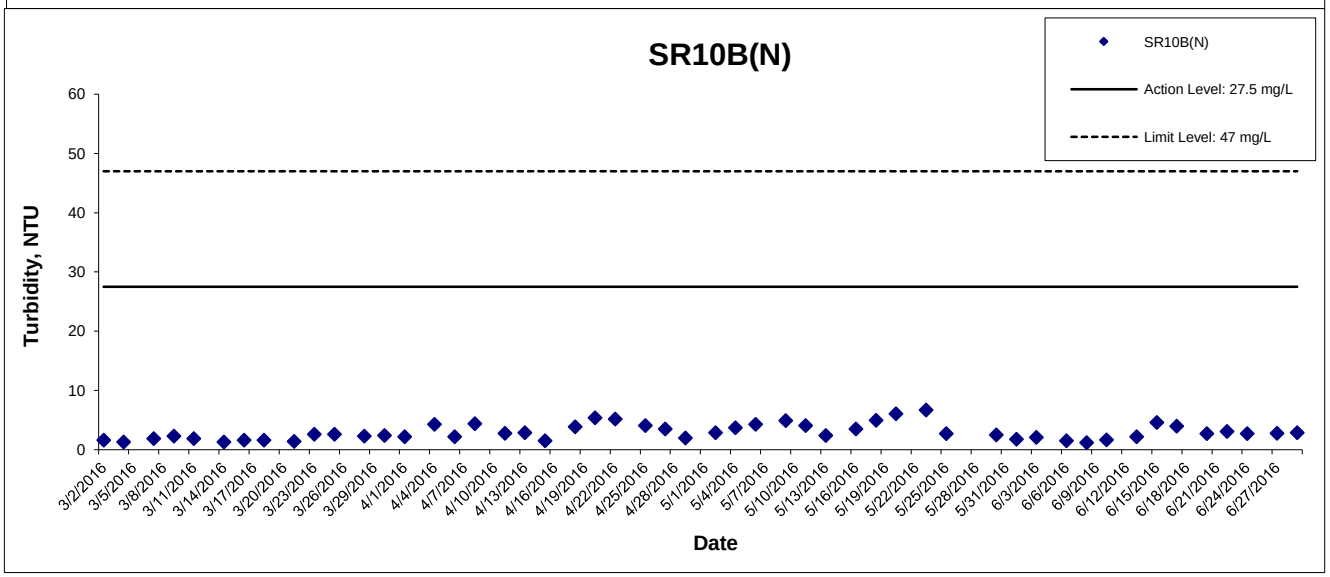
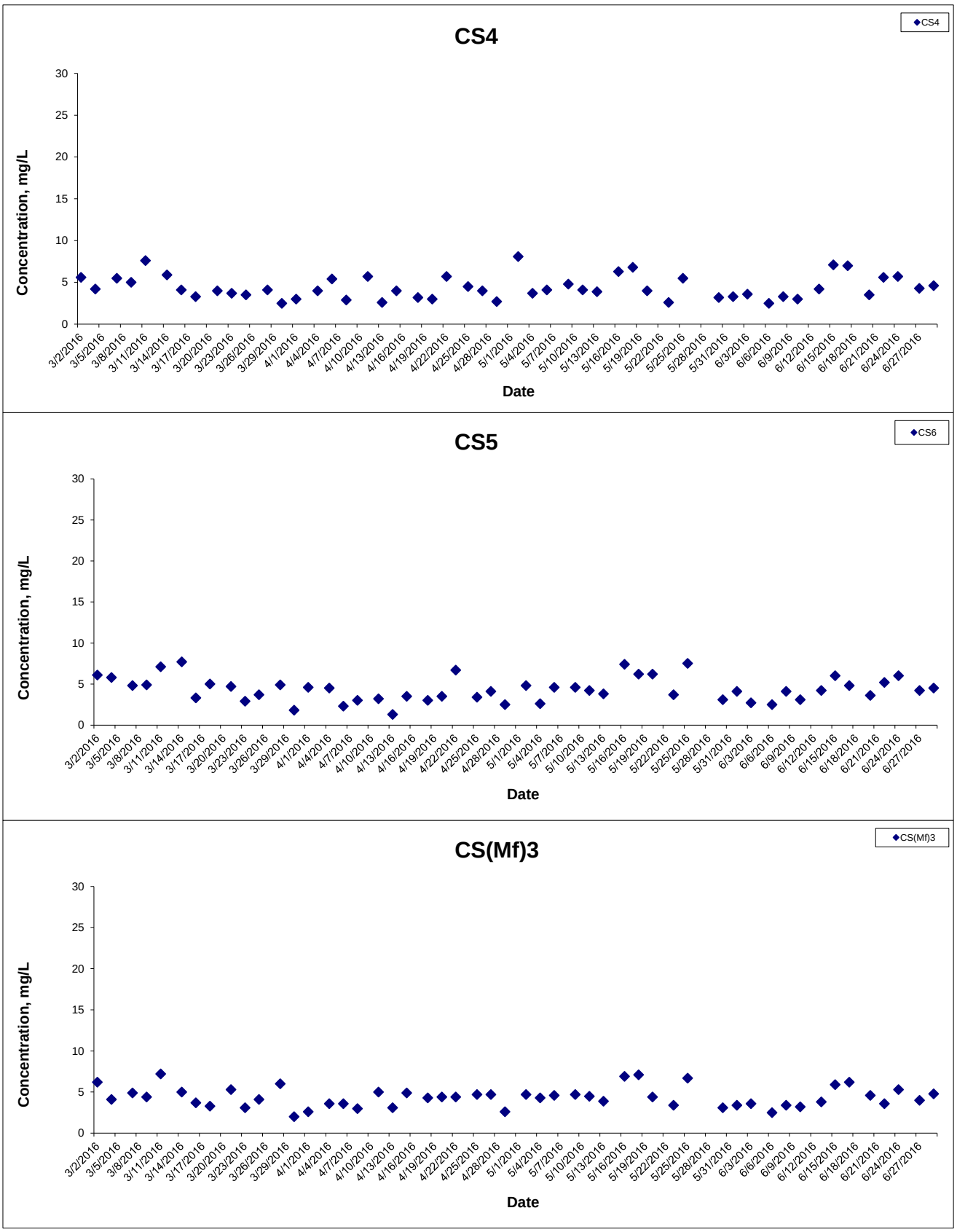






Suspended Solids at Mid-Ebb Tide



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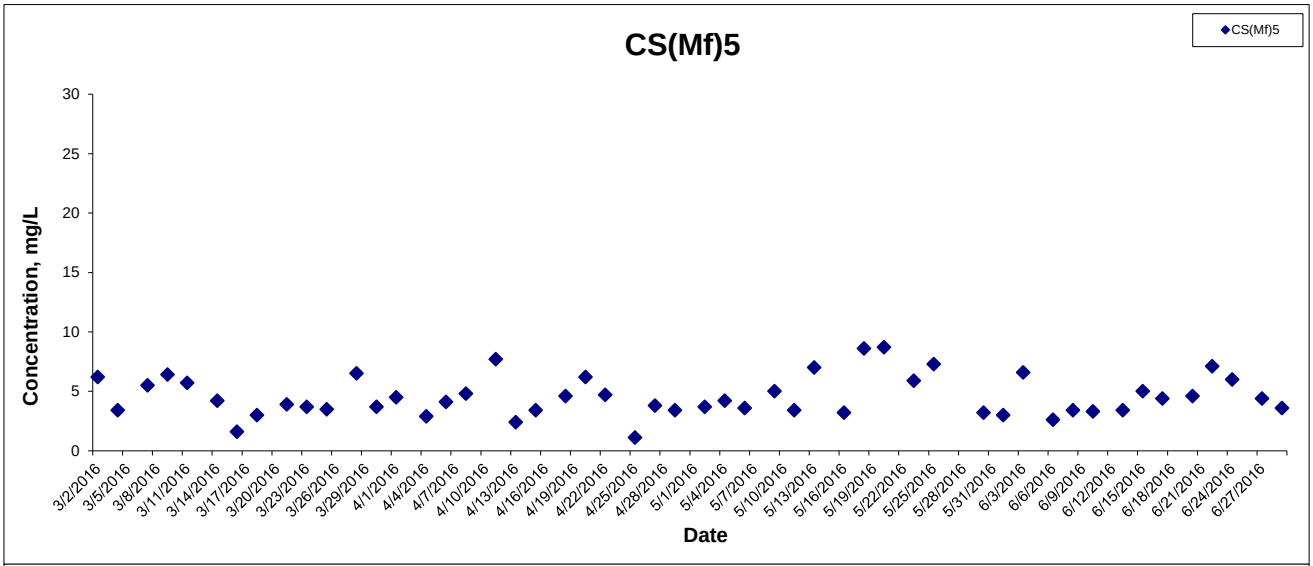

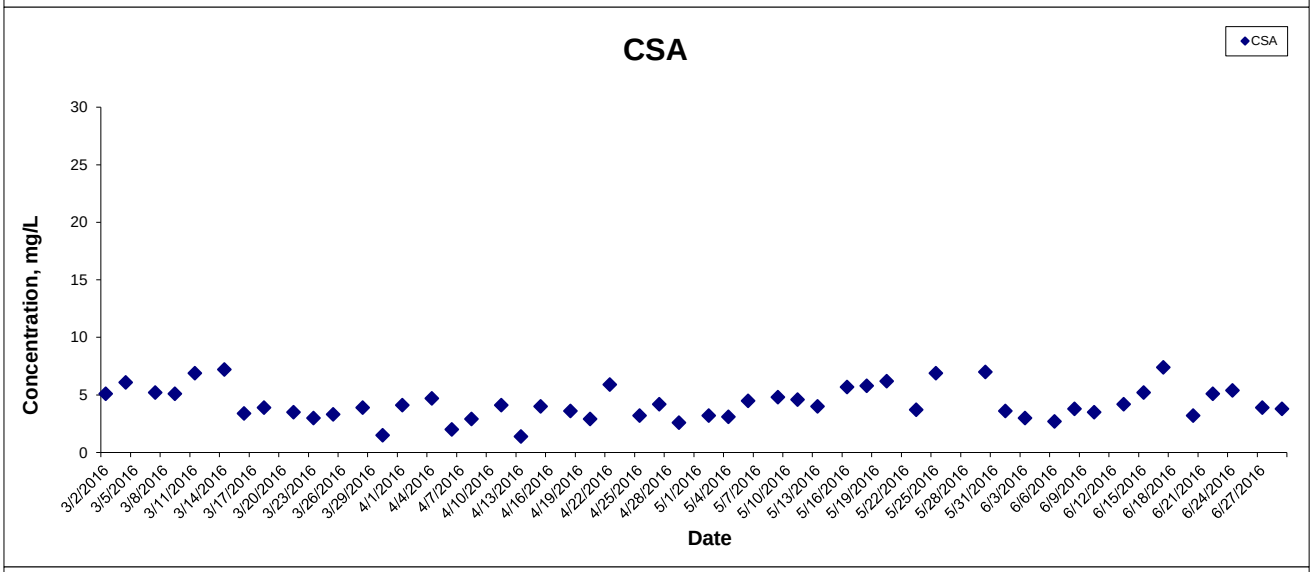

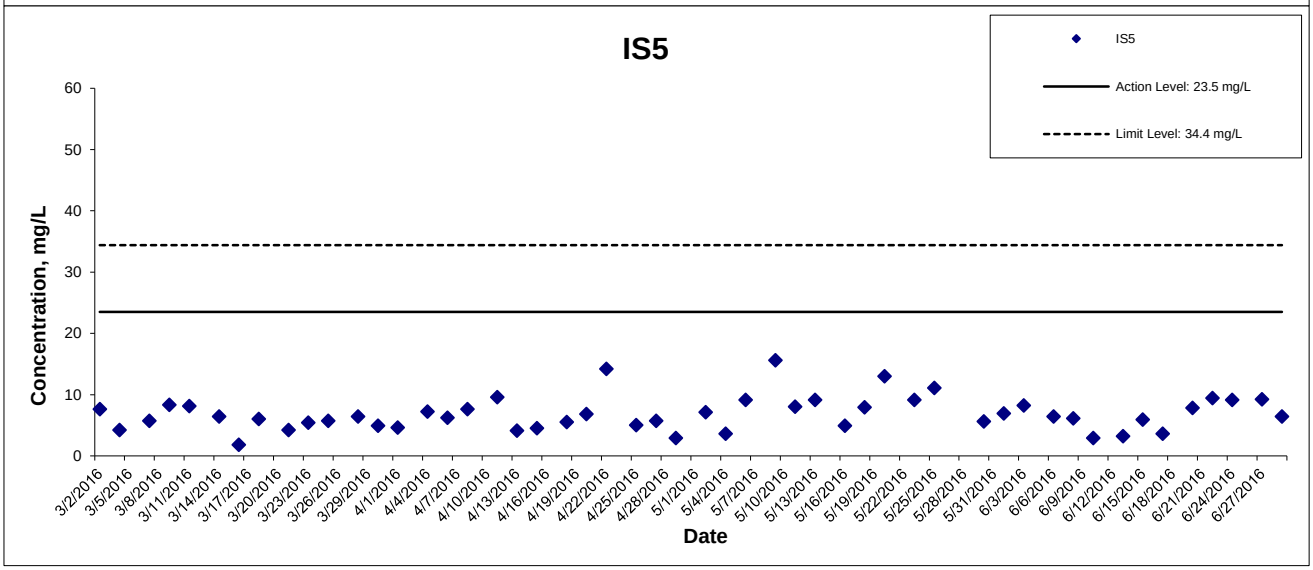

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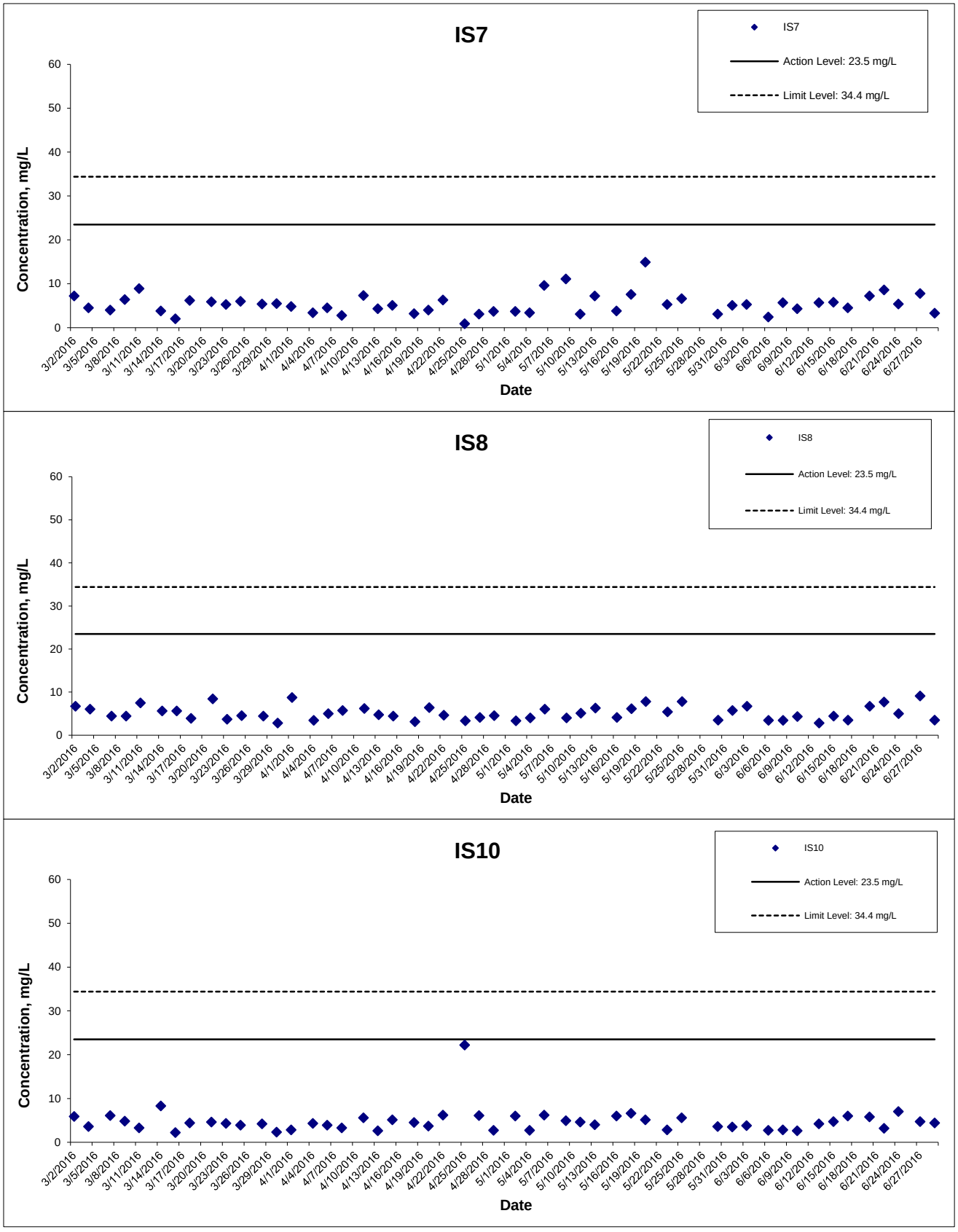

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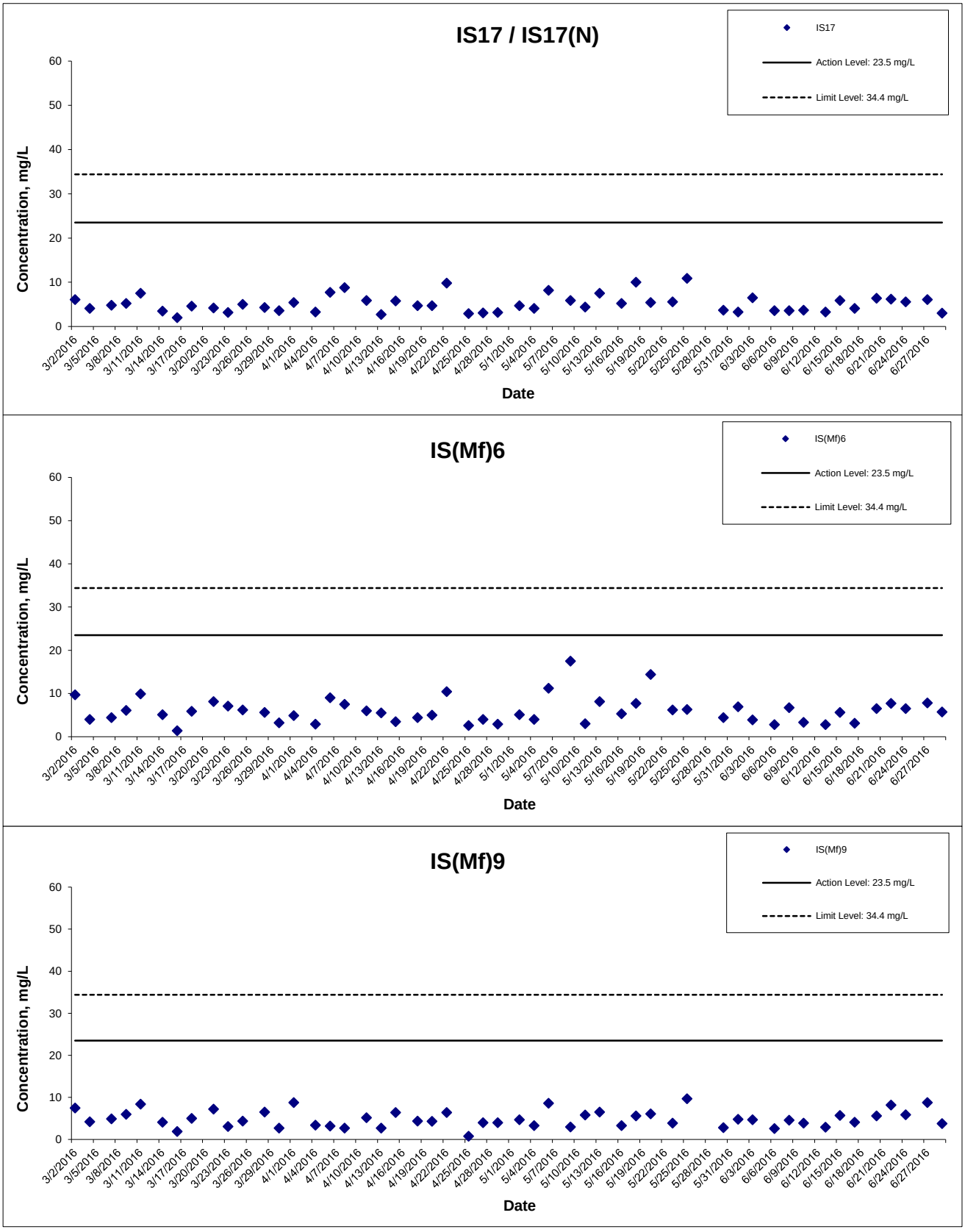

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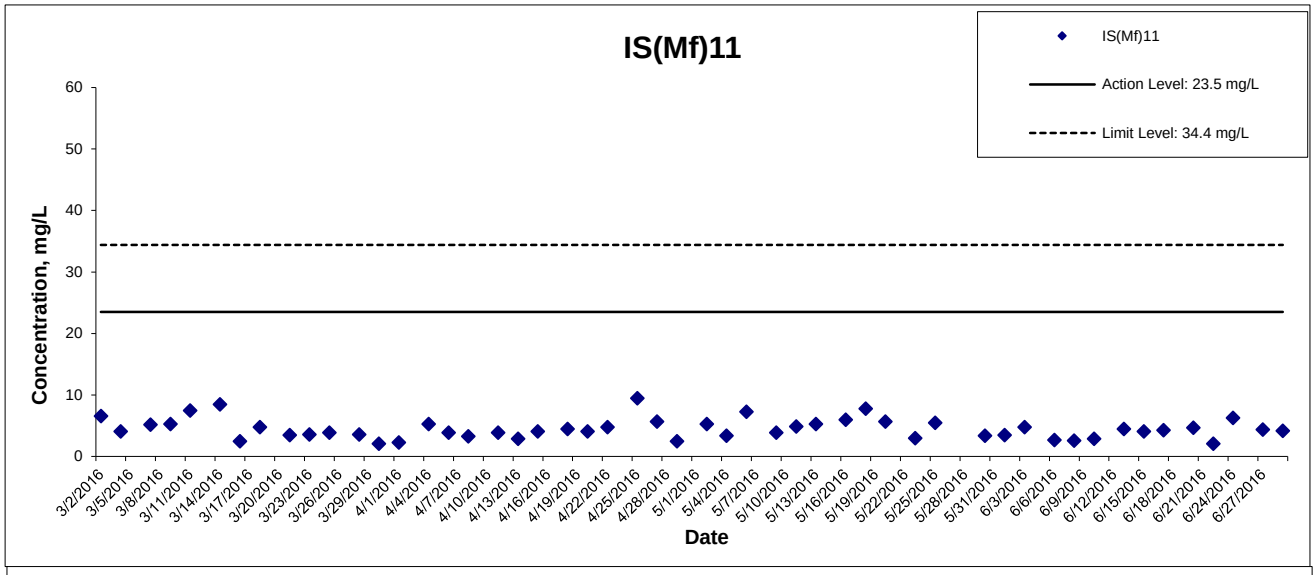

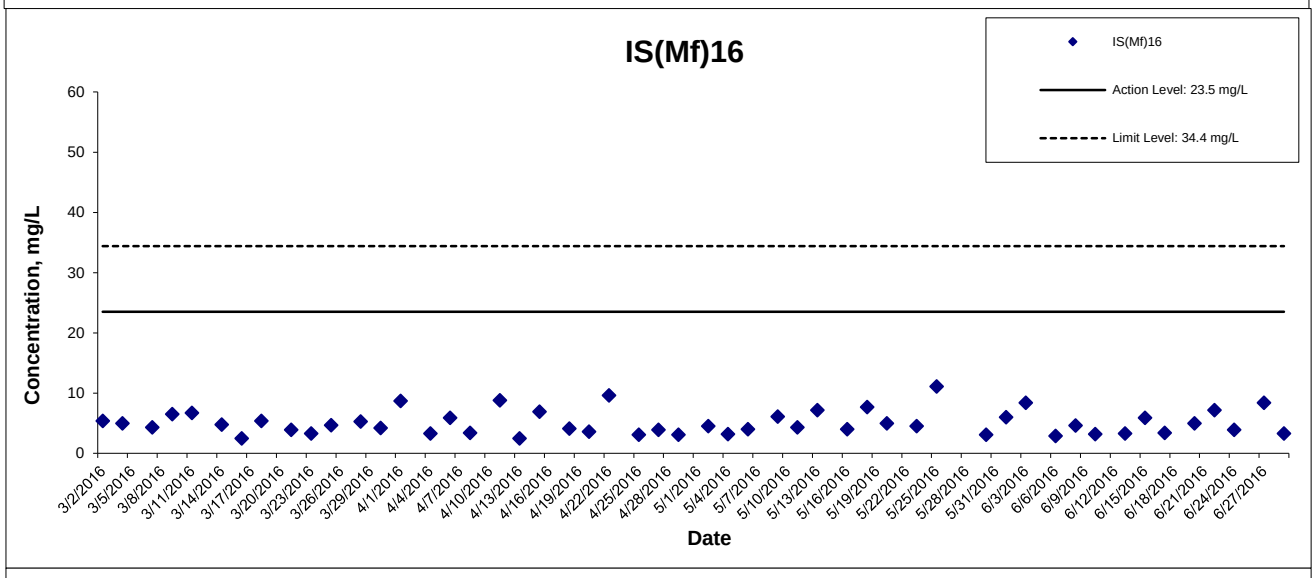

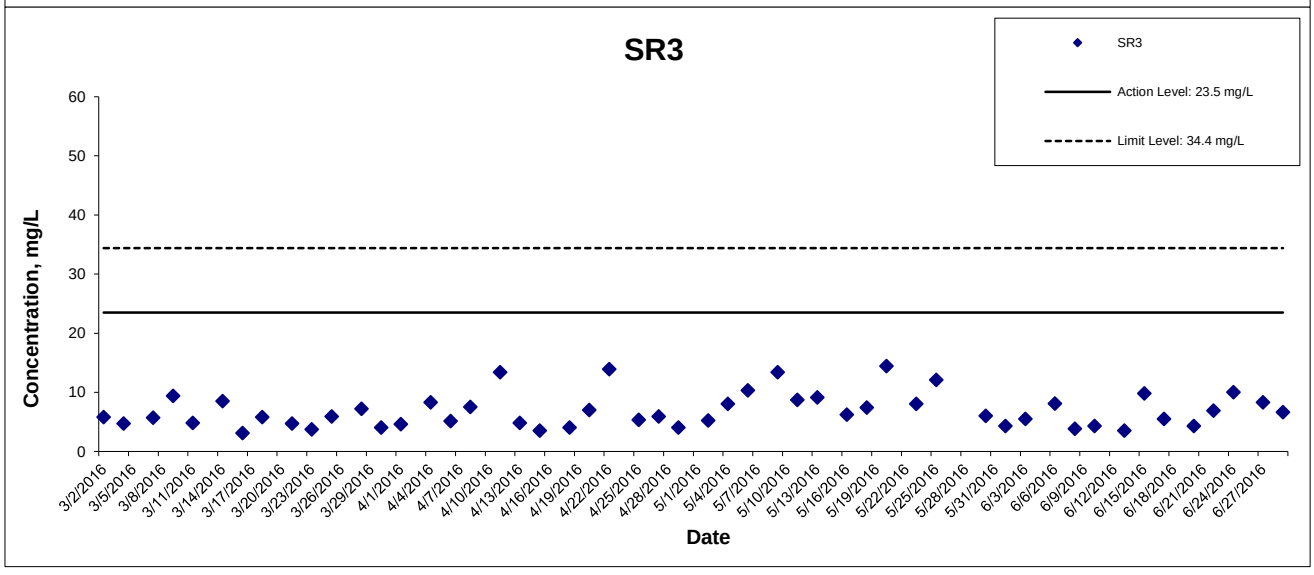

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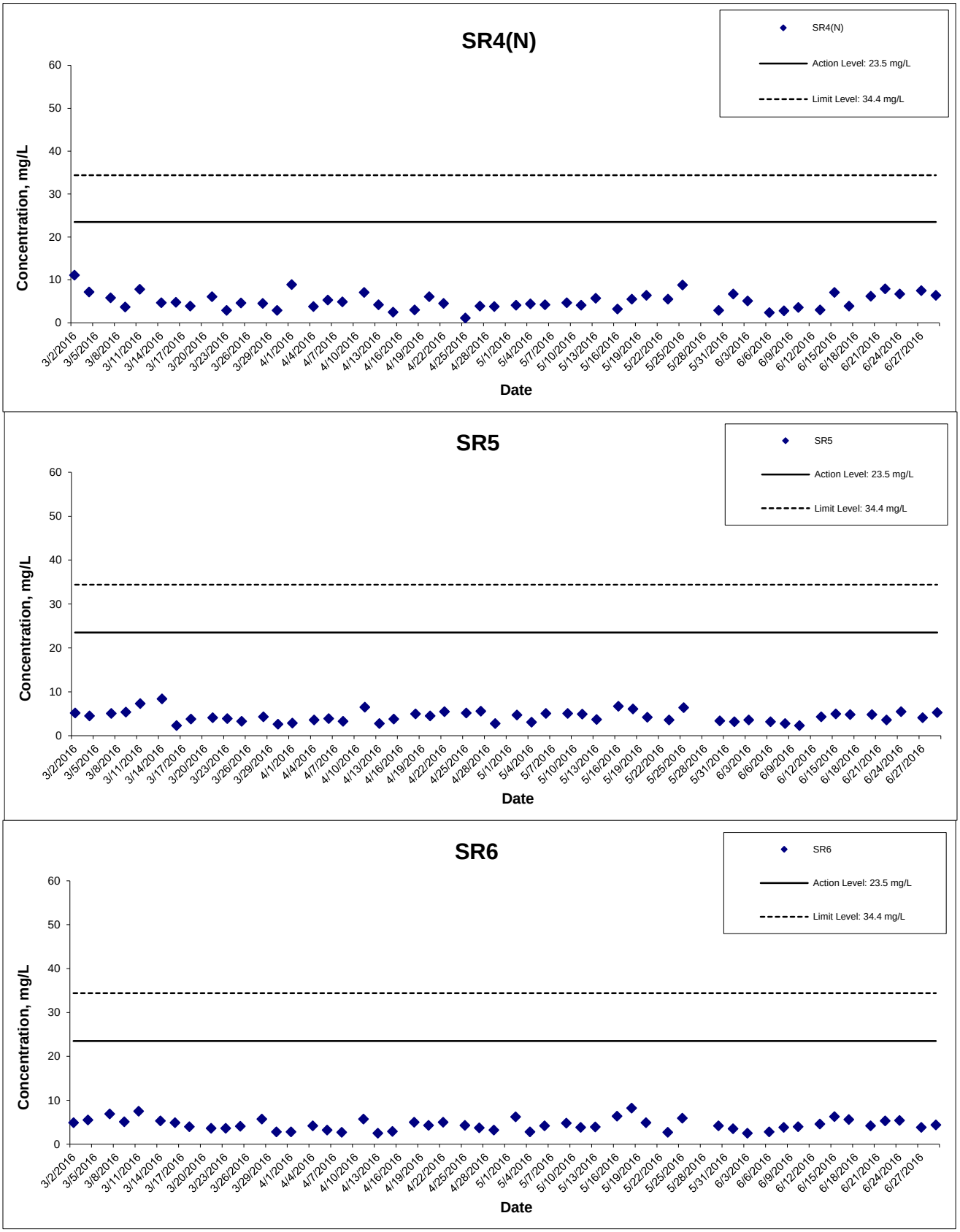

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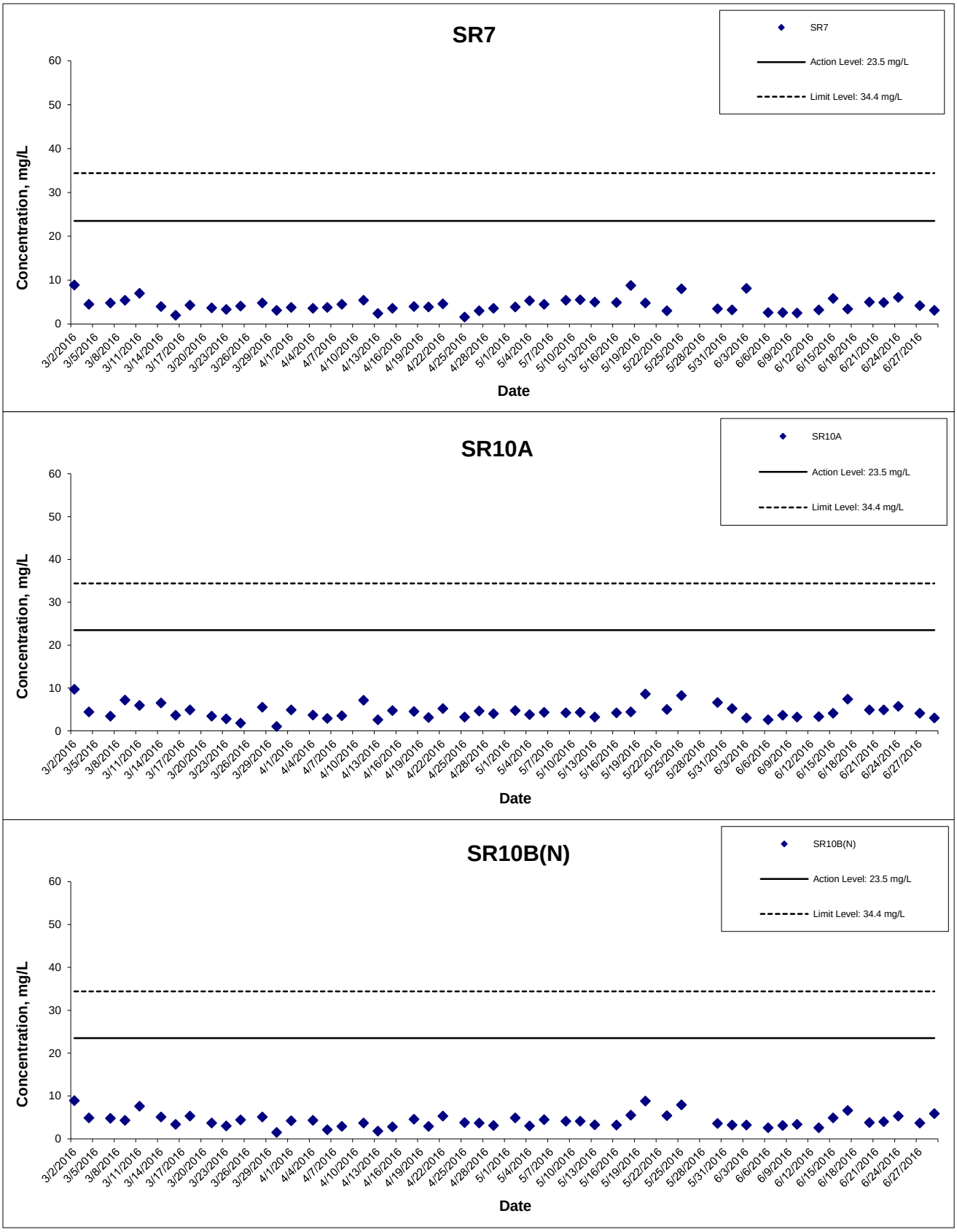

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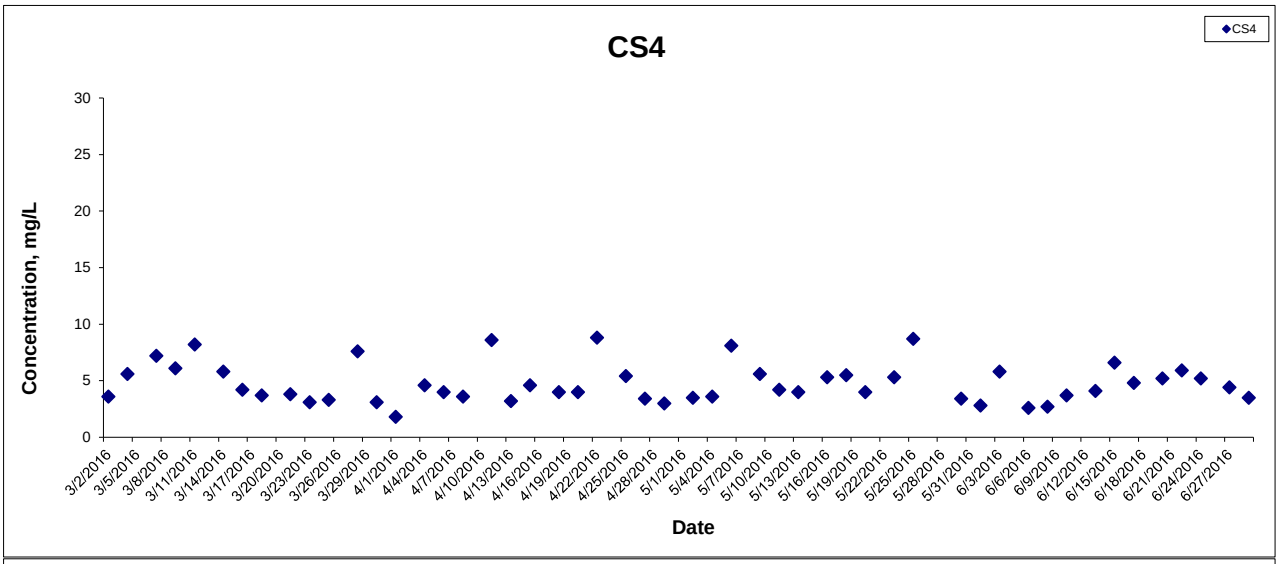

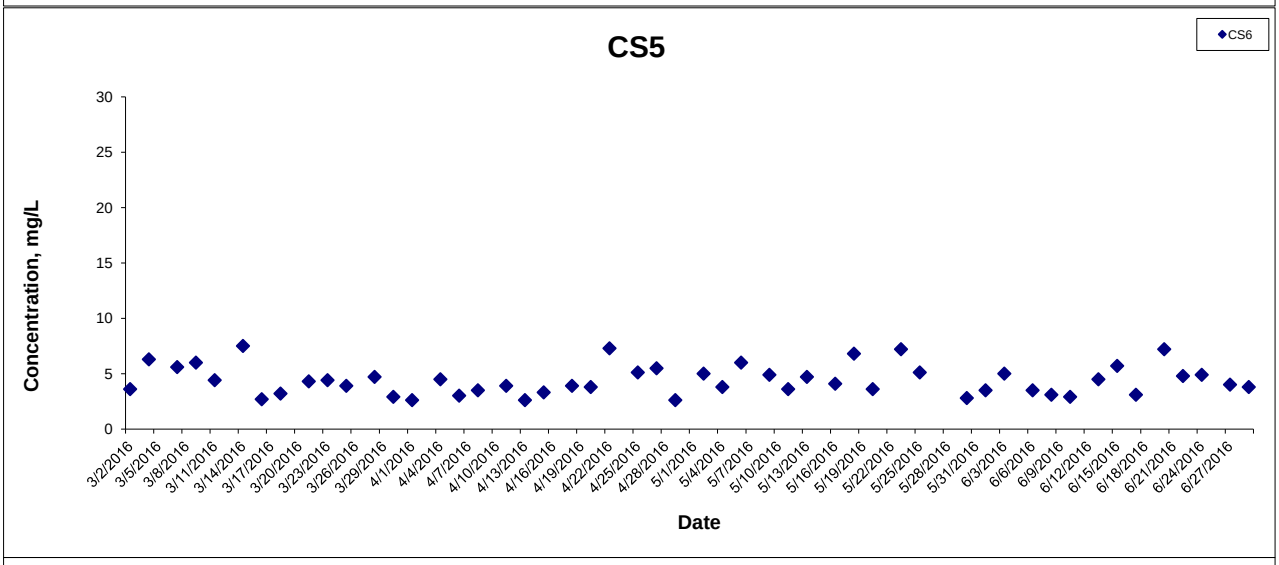

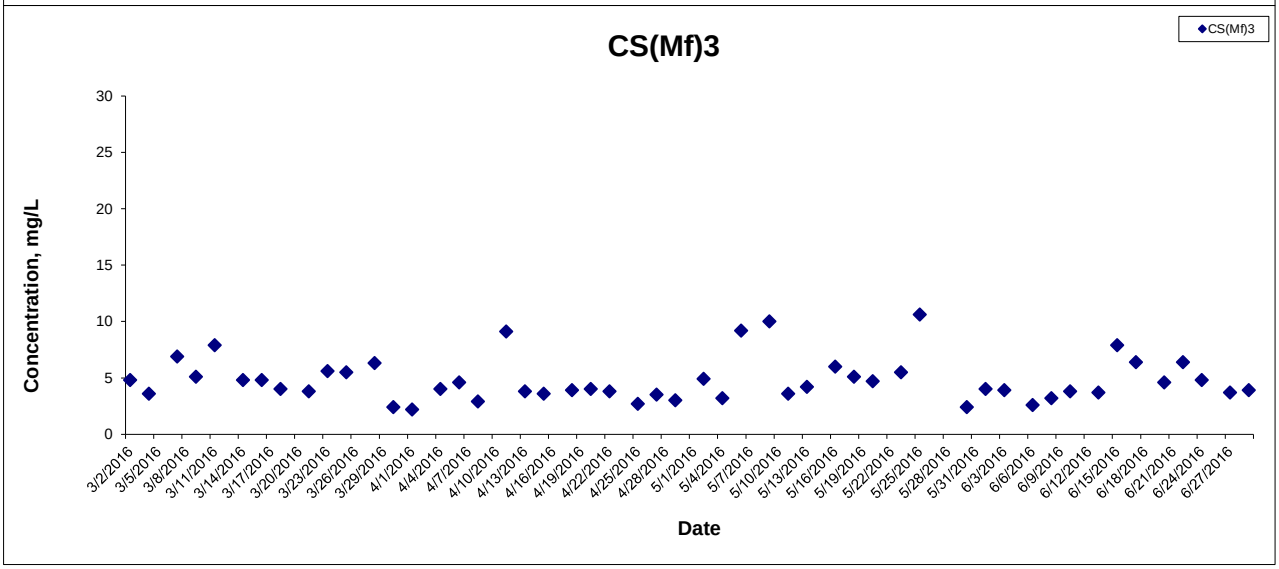

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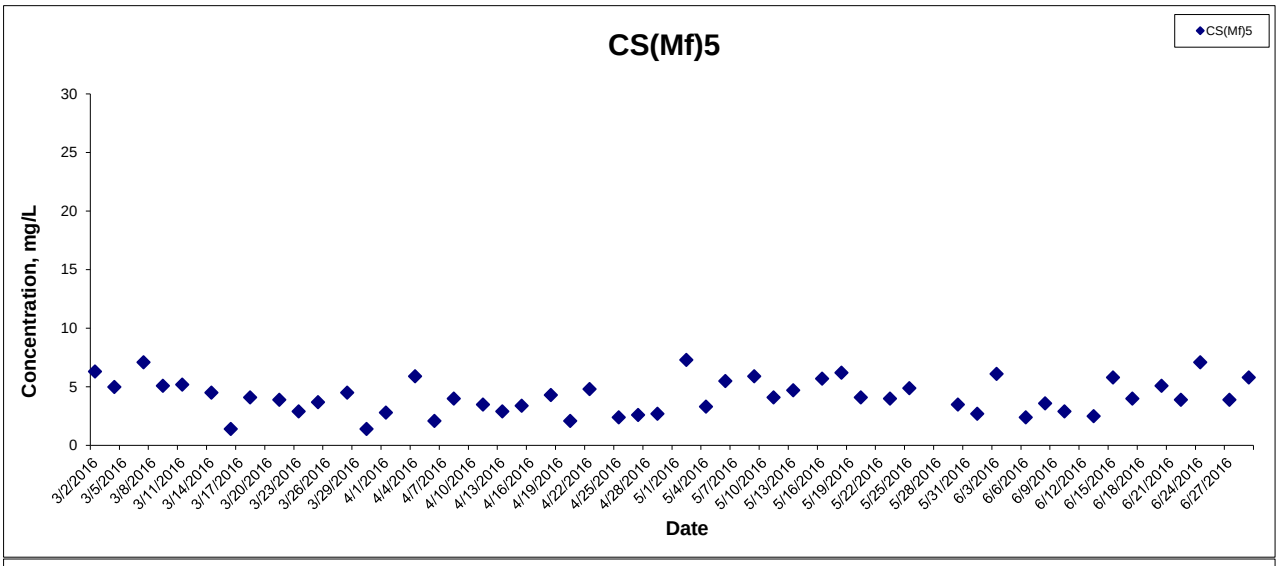

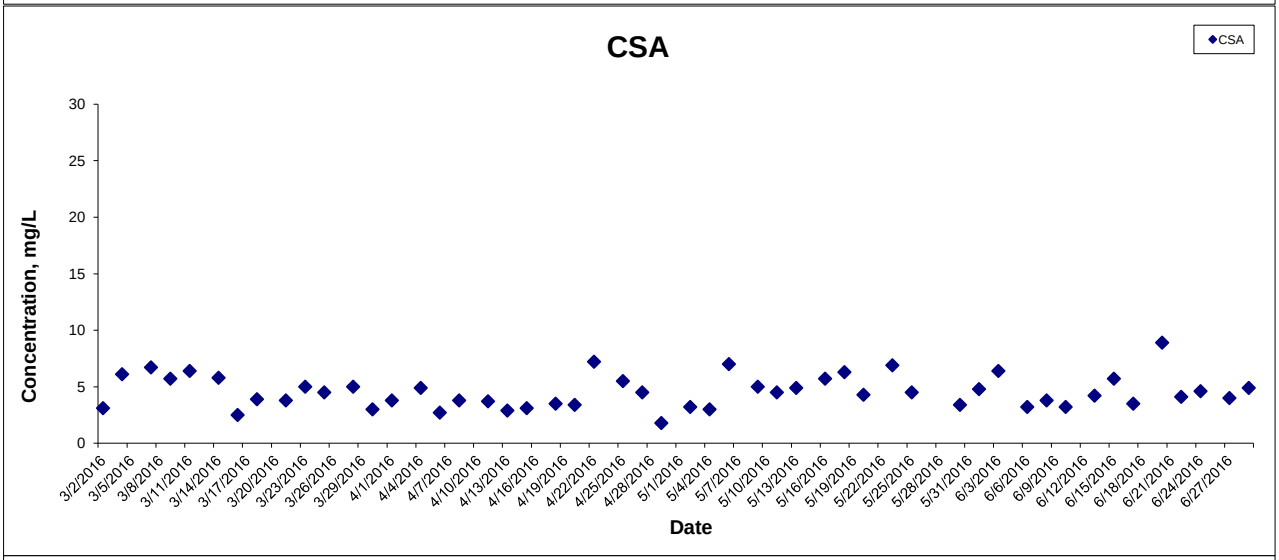

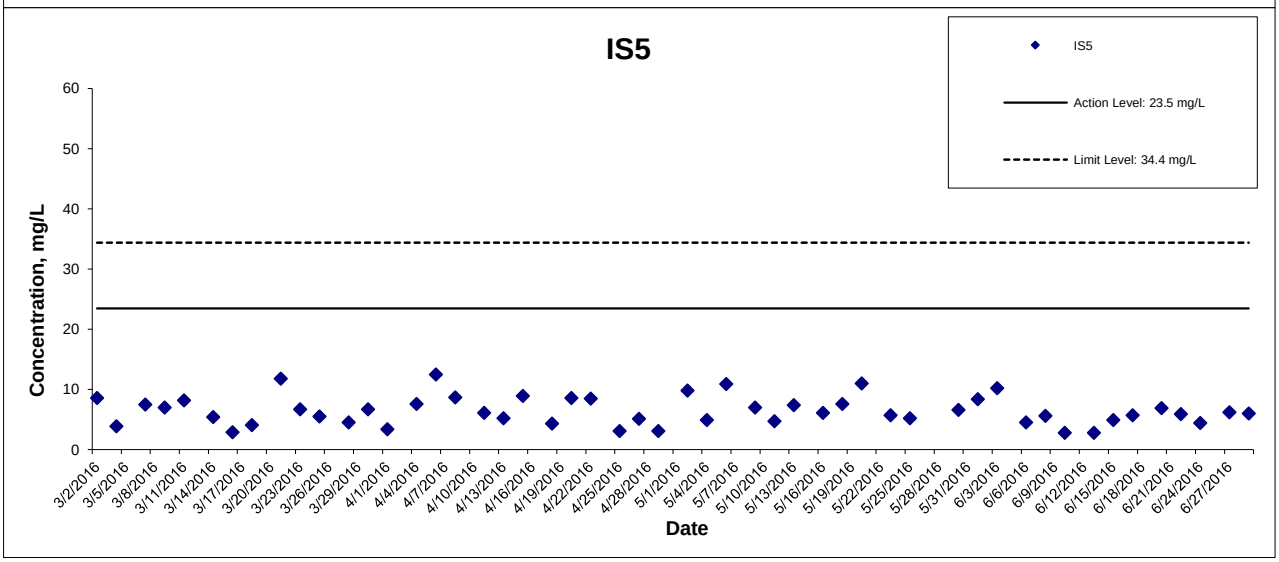

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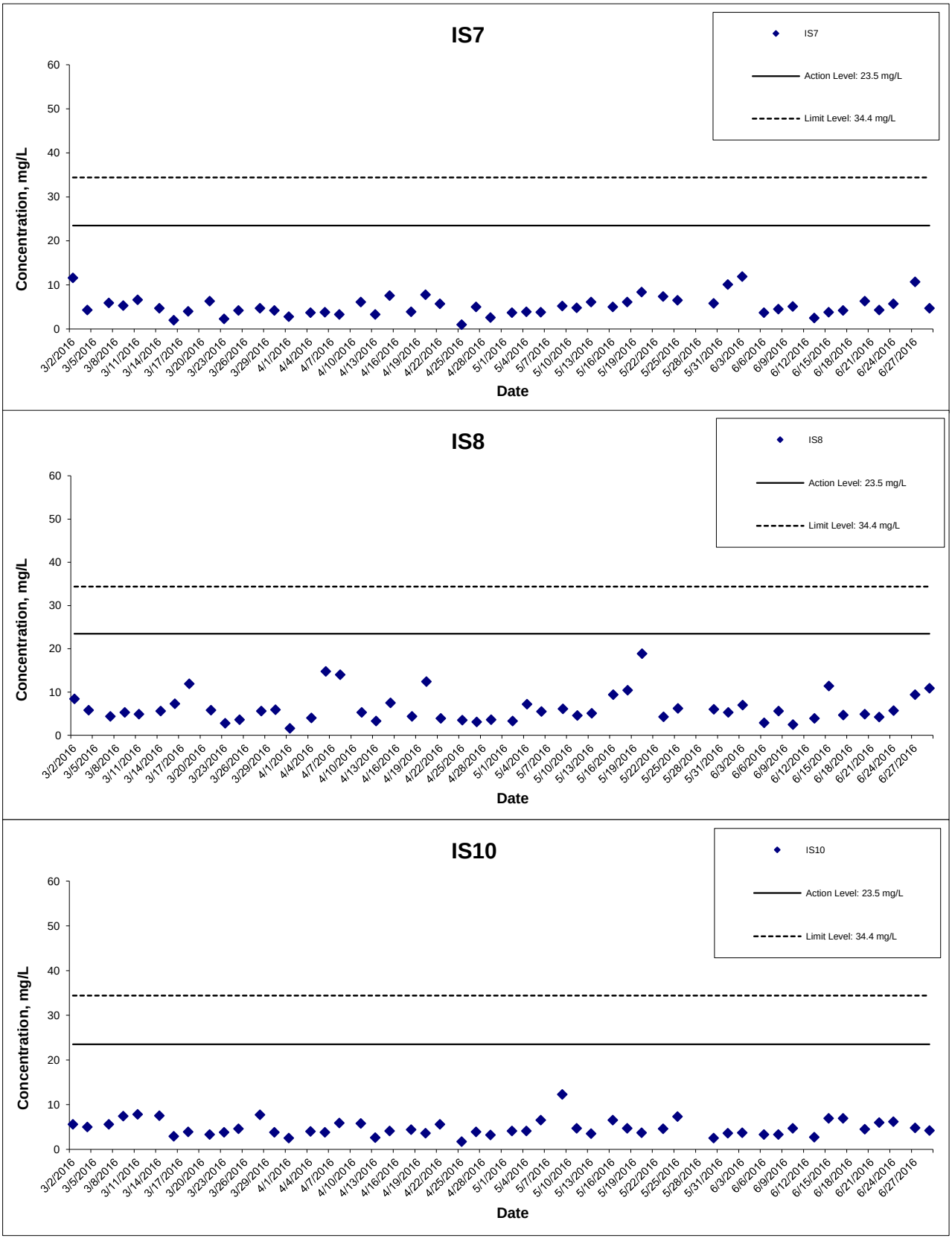

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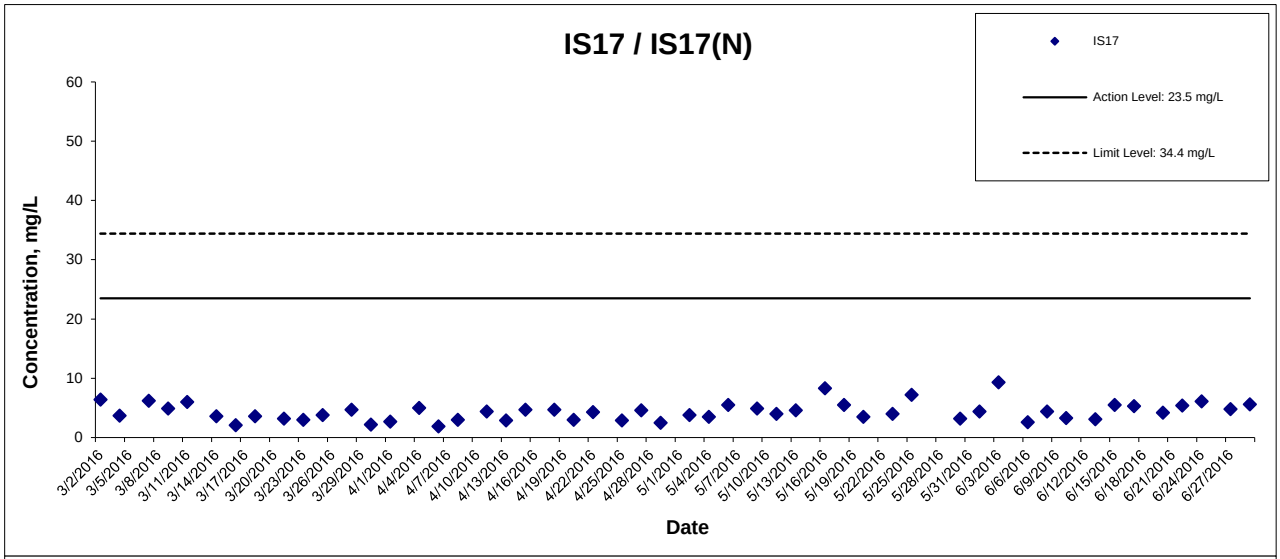

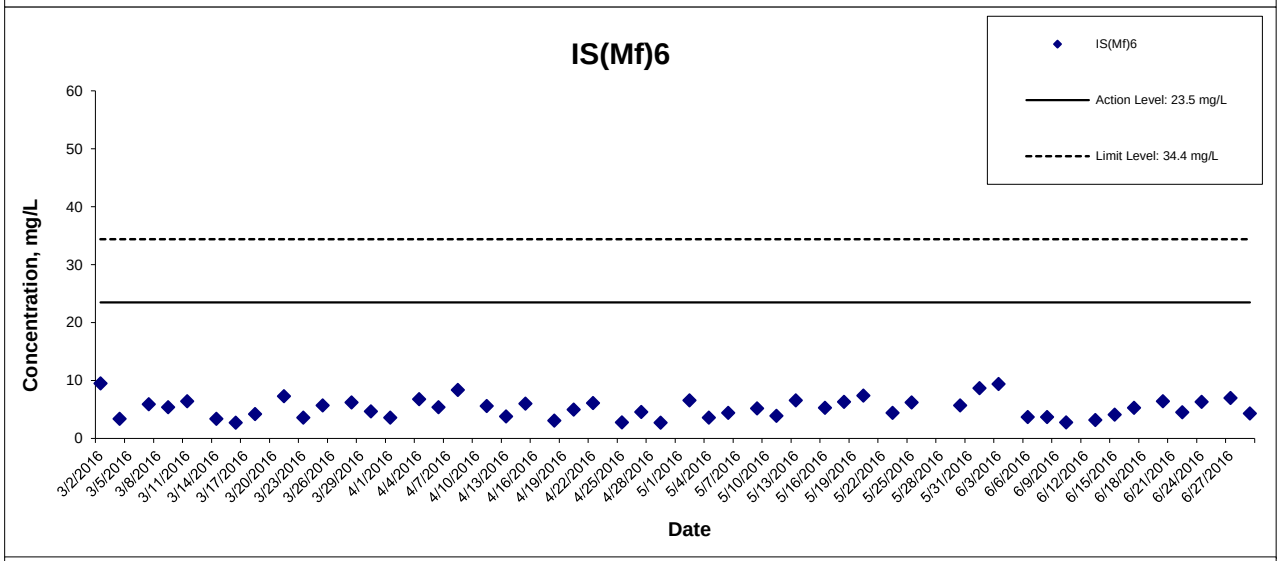

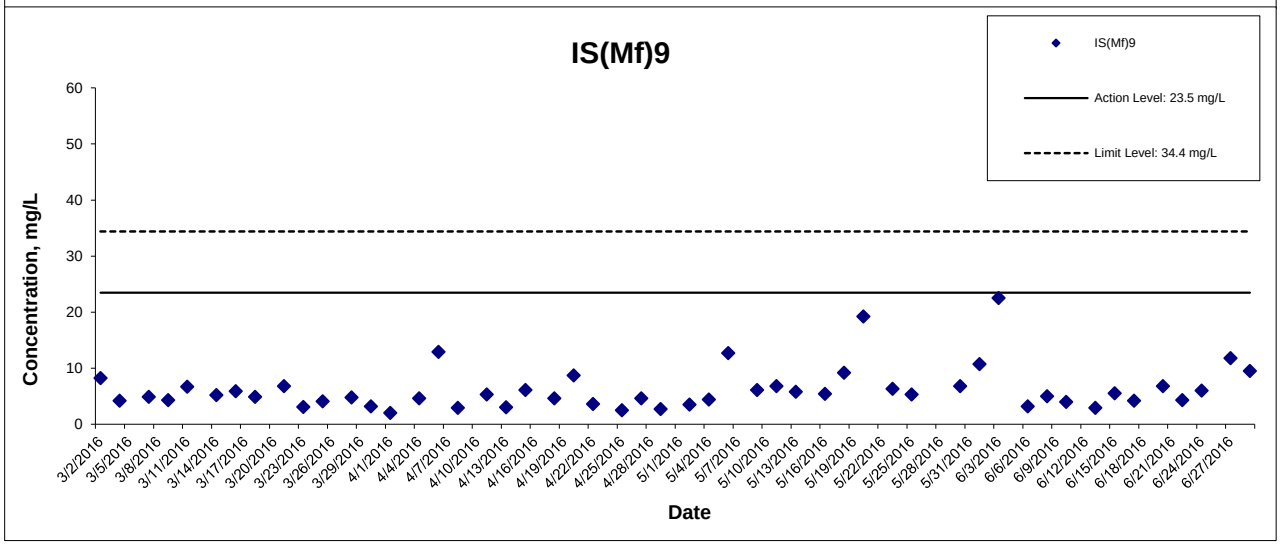

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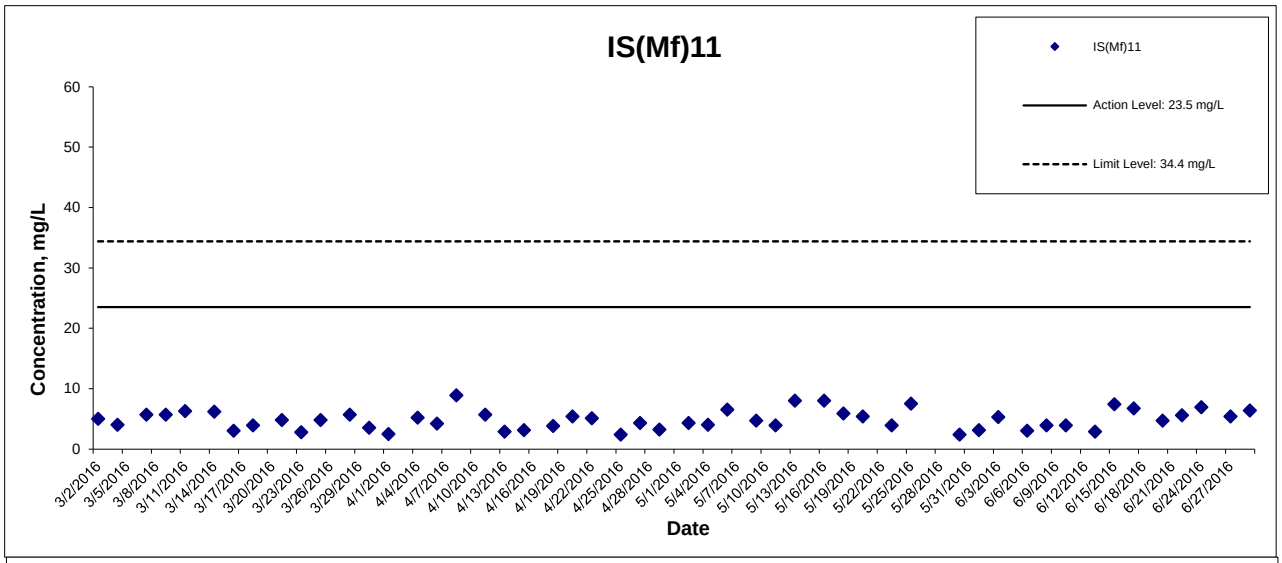

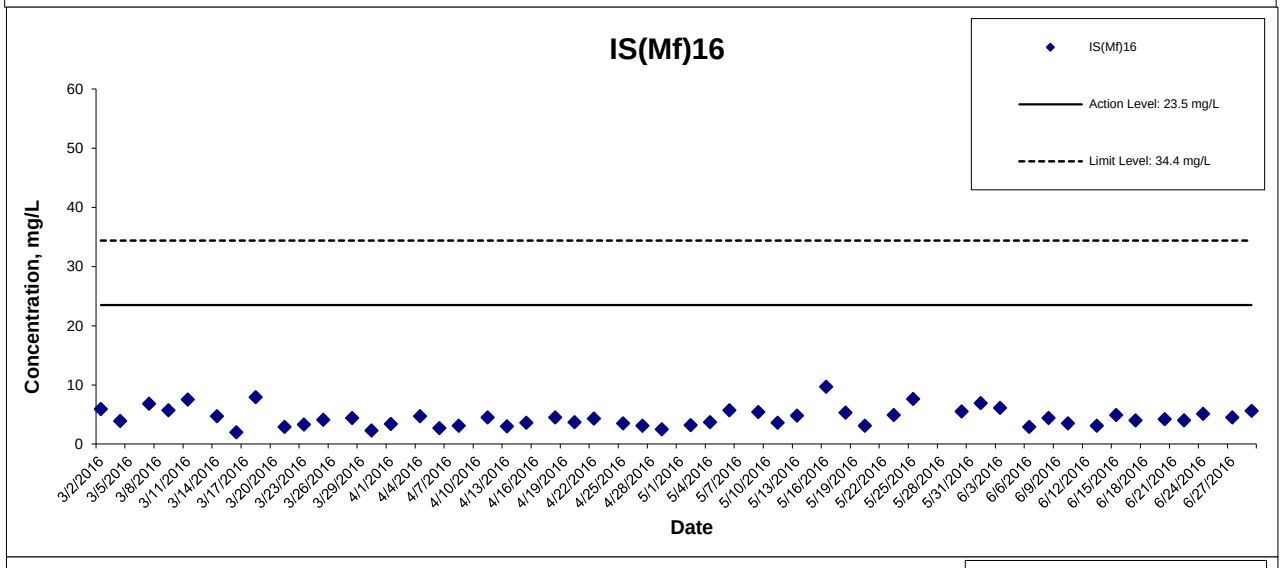

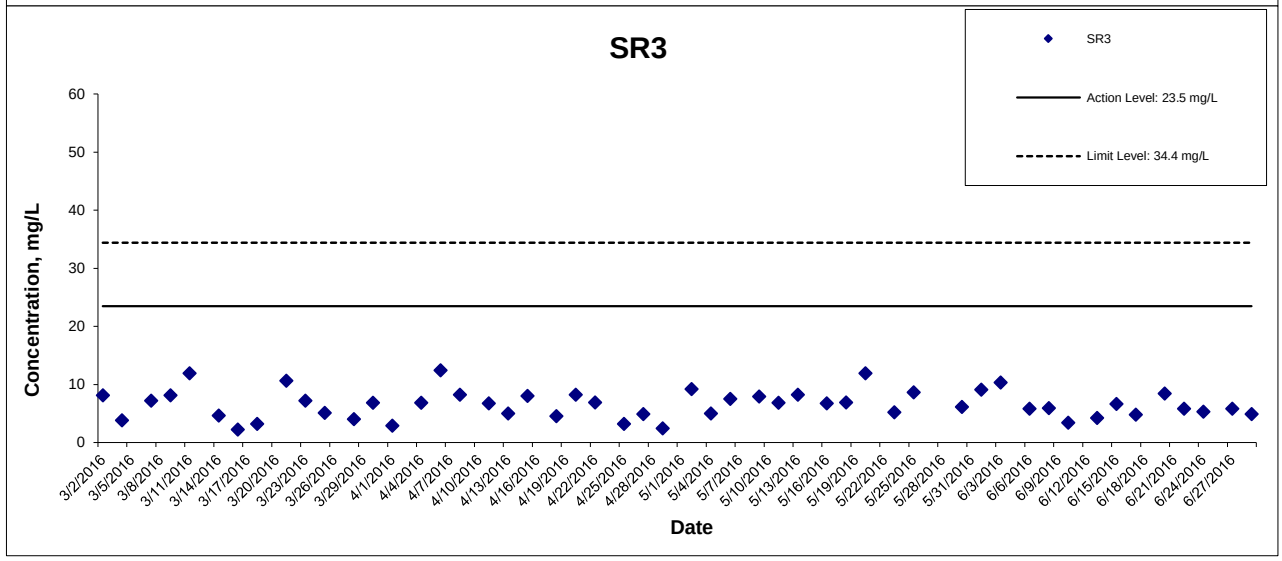

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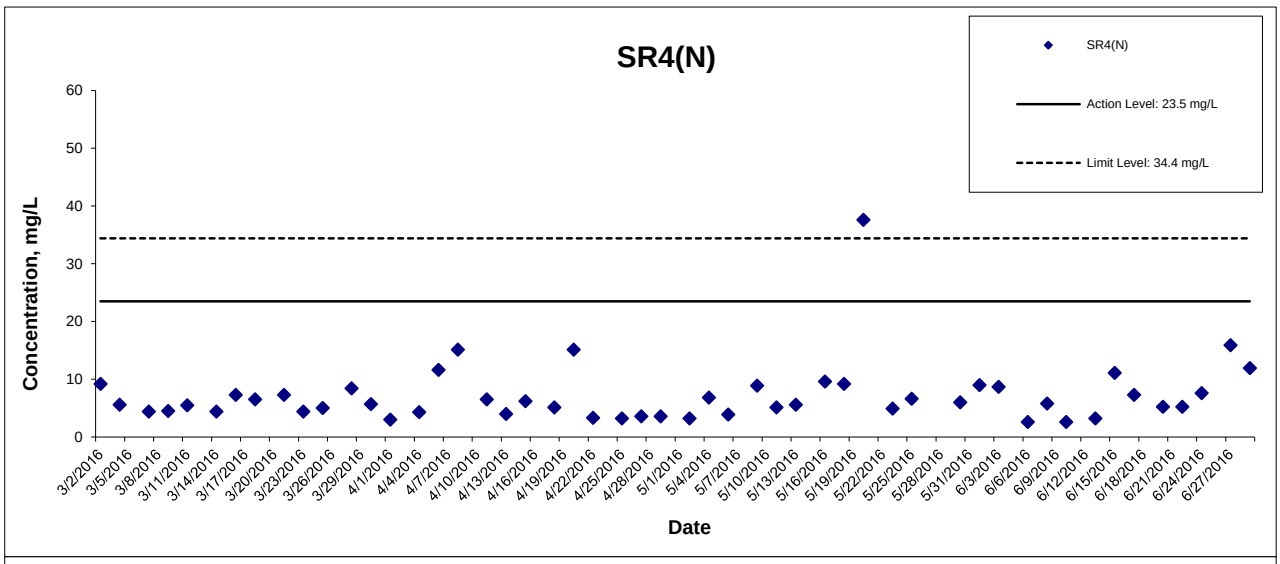
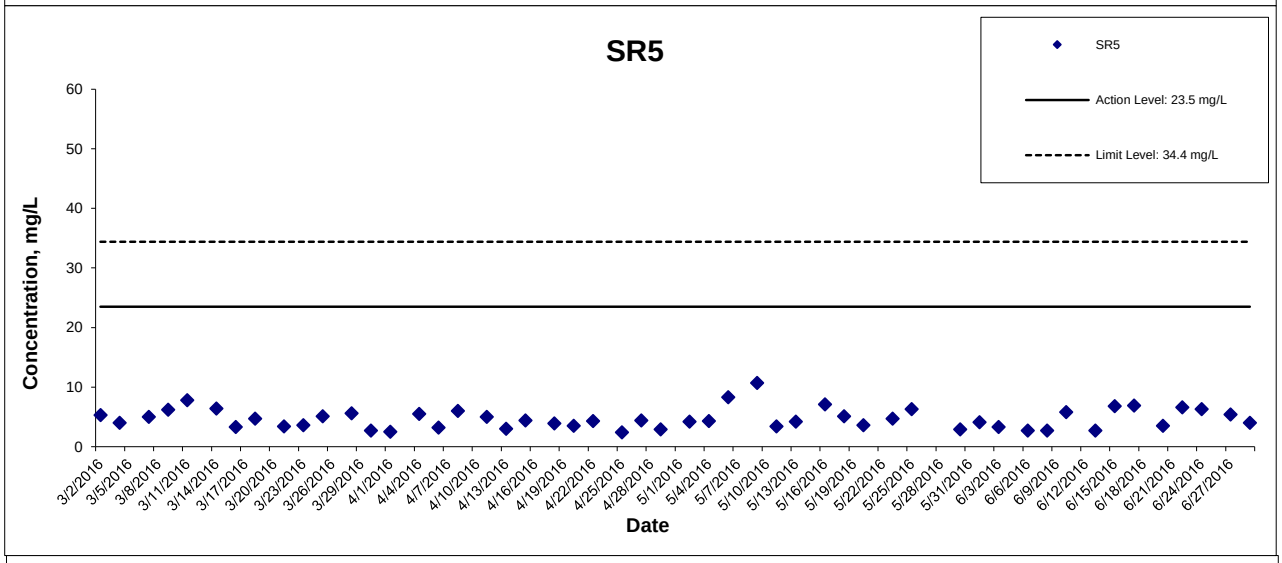
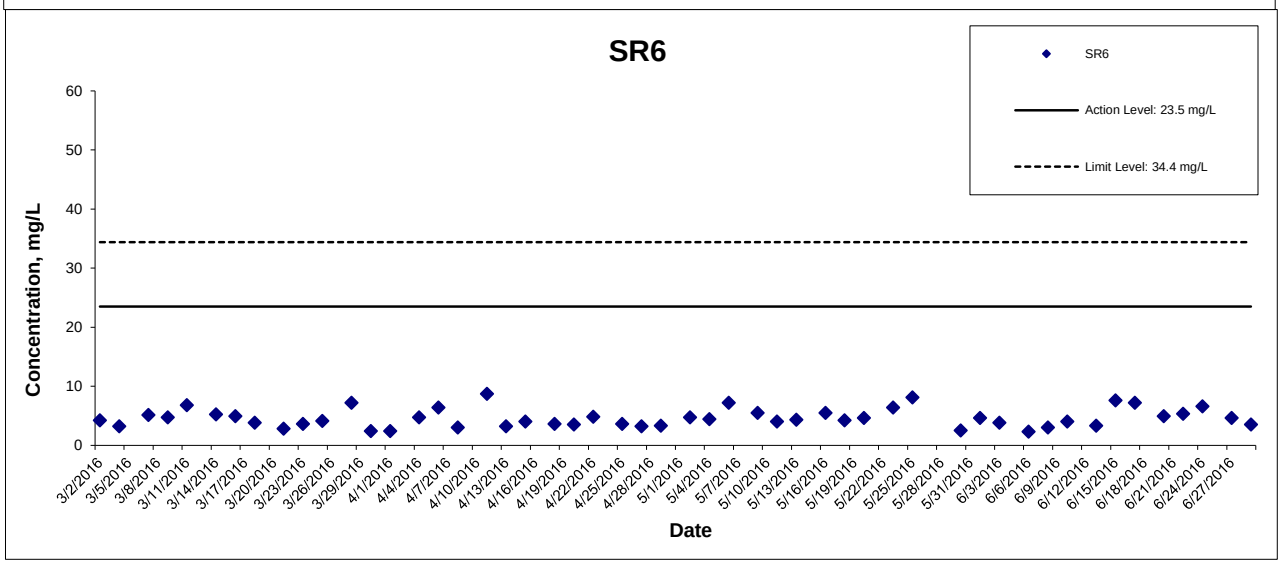
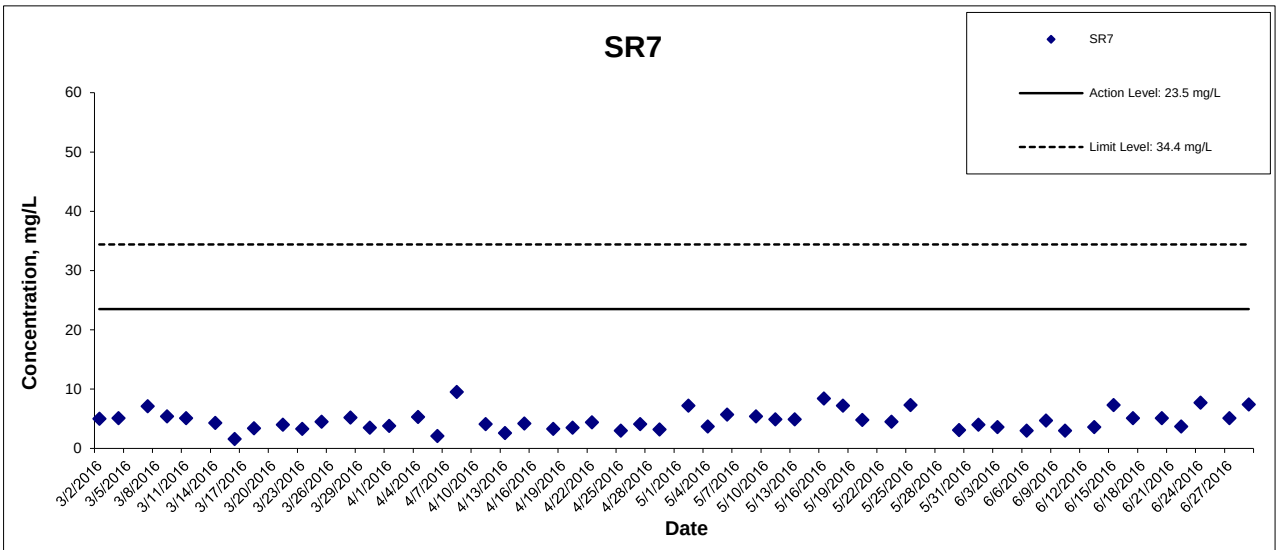
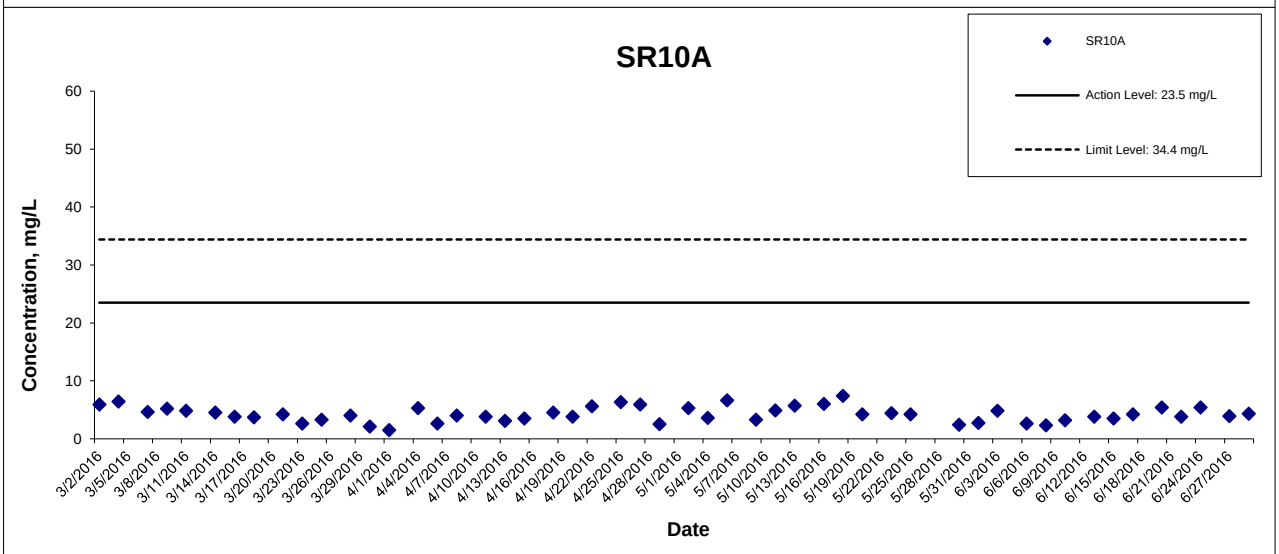


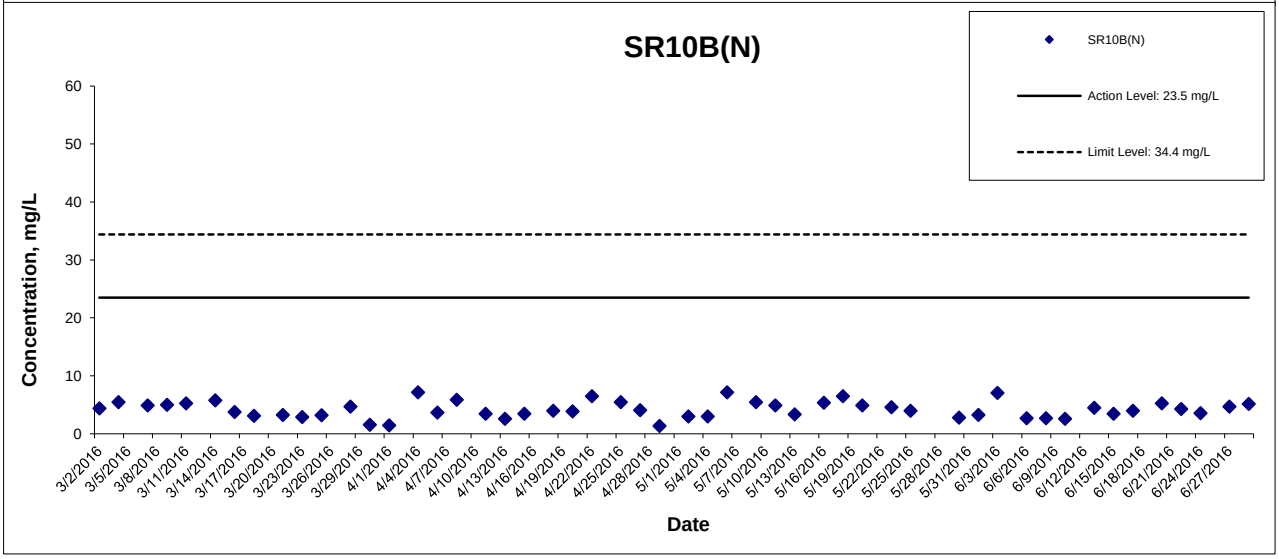




Suspended Solids at Mid-Flood Tide







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

Graphical Presentation of Impact Water Quality Monitoring Results

Project No.: 60249820 **Date: July 2016**

Appendix J

Appendix K Impact Dolphin Monitoring Survey Sighting Summary

Table 1 Impact Dolphin Monitoring Survey Sighting Table

Project	Contract	Date	Sighting No.	Time	Group Size	Area	Beaufort	PSD	Effort	Type	Northing	Easting	Season	Boat Association
HKBCF	HY/2010/02	06-Jun-16	1261	09:30:32	5	WL*	1	N/A	Opp	Impact	813401.3	803229.5	Summer	No
HKBCF	HY/2010/02	21-Jun-16	1266	11:50:57	1	NWL	2	0	On	Impact	828457.0	807793.0	Summer	No
HKBCF	HY/2010/02	21-Jun-16	1267	12:04:44	3	NWL	2	0	On	Impact	828540.1	807793.1	Summer	No
HKBCF	HY/2010/02	21-Jun-16	1268	12:17:29	1	NWL	2	N/A	Opp	Impact	829153.0	807505.9	Summer	No

* Group of dolphin was sighted at WL area while vessel based dolphin monitoring was conducted in NWL

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
PS = Purse Seine trawler (active)
HT = Hang Trawler (not active but sorting fish and cleaning nets)
GN = Gill Net

Annex I

May 2016
Photo Identification Information

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
HZMB 134		23/05/2016	1251	NWL
HZMB 133		23/05/2016	1249	NWL
HZMB 132		23/05/2016	1244	NWL
HZMB 131		22/03/2016	1215	NWL
HZMB 130		04/02/2016	1199	NWL
HZMB 129		07/01/2016	1189	NWL
		22/10/2015	1156	NWL
		07/09/2015	1143	NWL
		25/08/2015	1138	NWL
HZMB 128		03/01/2015	1056	NWL
HZMB 127		03/01/2015	1056	NWL
HZMB 126		23/05/2016	1244	NWL
		23/02/2015	1068	NWL
		03/01/2015	1054	NWL
HZMB 125		07/03/2016	1208	NWL
		13/10/2014	1019	NWL
HZMB 124		22/09/2014	1005	NWL
HZMB 123		25/08/2014	998	NWL
HZMB 122		22/10/2015	1156	NWL
		04/08/2014	989	NWL
HZMB 121		14/07/2014	968	NWL
HZMB 120		31/05/2014	951	NWL
HZMB 119		19/04/2014	940	NWL
HZMB 118		06/01/2014	890	NWL
HZMB 117		17/06/2014	964	NWL
		06/01/2014	888	NWL
HZMB 116		25/08/2014	999	NWL
HZMB 115		14/07/2014	972	NWL
		14/07/2014	971	NWL
		26/12/2013	879	NWL
		26/12/2013	879	NWL
HZMB 114		05/11/2015	1162	NWL
		24/10/2013	827	NWL
HZMB 113		24/10/2013	827	NWL
HZMB 112		15/10/2013	815	NWL

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
HZMB 111		15/10/2013	815	NWL
HZMB 110		18/01/2016	1193	NWL
		15/10/2013	812	NWL
HZMB 108		11/06/2015	1118	NWL
		30/08/2013	780	NEL
HZMB 107		28/07/2015	1126	NWL
		13/10/2014	1019	NWL
		31/05/2014	951	NWL
		21/08/2013	770	NWL
HZMB 106		21/08/2013	769	NWL
HZMB 105		31/05/2014	951	NWL
		08/07/2013	711	NWL
HZMB 104		08/07/2013	711	NWL
HZMB 103		08/07/2013	711	NWL
HZMB 102		08/07/2013	706	NWL
HZMB 101		08/07/2013	706	NWL
HZMB 100		08/07/2013	706	NWL
HZMB 099		13/06/2013	681	NWL
		13/06/2013	680	NWL
HZMB 098	NL104	23/02/2015	1077	NWL
		18/12/2014	1044	NWL
		04/08/2014	992	NWL
		06/01/2014	888	NWL
		02/11/2013	849	NWL
		02/11/2013	845	NWL
		24/10/2013	831	NWL
		08/07/2013	711	NWL
		24/05/2013	659	NWL
		07/11/2011	Baseline	NWL
		05/11/2011	Baseline	NWL
		05/11/2011	Baseline	NWL
		02/11/2011	Baseline	NWL
		28/10/2011	Baseline	NWL
		23/09/2011	Baseline	NWL
		16/09/2011	Baseline	NWL
HZMB 097		09/05/2013	647	NWL

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
HZMB 096		01/04/2013	621	NWL
HZMB 095		30/08/2013	780	NEL
		25/06/2013	697	NWL
		13/06/2013	682	NWL
		01/04/2013	621	NWL
HZMB 094		13/10/2014	1019	NWL
		31/05/2014	954	NWL
		17/02/2014	910	NWL
		26/06/2013	703	NWL
		25/06/2013	698	NWL
		18/03/2013	601	NWL
HZMB 093		24/05/2013	657	NWL
		21/02/2013	587	NWL
HZMB 092		20/04/2015	1097	NWL
		21/02/2013	589	NWL
		15/02/2013	581	NWL
HZMB 091		15/02/2013	579	NWL
HZMB 090		25/06/2013	697	NWL
		13/06/2013	682	NWL
		15/02/2013	579	NWL
HZMB 089		15/02/2013	579	NWL
HZMB 088		15/02/2013	579	NWL
HZMB 087		15/02/2013	579	NWL
HZMB 086	NL242	19/03/2015	1086	NWL
		09/05/2013	642	NWL
		15/02/2013	579	NWL
		10/10/2011	Baseline	NWL
HZMB 085		13/10/2014	1019	NWL
		31/05/2014	954	NWL
HZMB 084		26/06/2013	703	NWL
		15/02/2013	579	NWL
		14/02/2013	575	NWL
HZMB 083	NL136	01/12/2015	1180	NWL
		11/05/2015	1104	NWL
		19/12/2013	863	NWL
		28/03/2013	607	NWL

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
		15/02/2013	579	NWL
		28/01/2013	568	NWL
		28/01/2013	564	NWL
		19/04/2012	267	NWL
		28/10/2011	Baseline	NWL
		28/10/2011	Baseline	NWL
		10/10/2011	Baseline	NEL
		06/09/2011	Baseline	NWL
HZMB 082		20/10/2014	1024	NWL
		21/02/2013	587	NWL
		15/02/2013	579	NWL
		28/01/2013	563	NWL
HZMB 081		28/01/2013	559	NWL
		28/01/2013	557	NWL
HZMB 080		28/01/2013	556	NWL
HZMB 079		28/01/2013	556	NWL
HZMB 078		15/02/2013	579	NWL
		08/01/2013	552	NWL
HZMB 077		26/12/2013	878	NWL
		08/07/2013	706	NWL
		11/12/2012	541	NWL
HZMB 076		08/07/2013	706	NWL
		11/12/2012	541	NWL
HZMB 075		06/12/2012	525	NEL
HZMB 074		09/05/2013	647	NWL
		01/04/2013	623	NWL
		01/04/2013	621	NWL
		21/02/2013	594	NEL
		10/12/2012	529	NEL
		06/12/2012	525	NEL
HZMB 073		09/05/2013	647	NWL
		01/04/2013	623	NWL
		01/04/2013	621	NWL
		21/02/2013	594	NEL
		10/12/2012	529	NEL
		06/12/2012	525	NEL

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
HZMB 072		24/10/2012	476	NWL
HZMB 071		24/10/2012	475	NWL
		12/10/2012	466	NWL
HZMB 070		24/10/2012	476	NWL
HZMB 069		04/06/2015	1116	NWL
		21/08/2013	774	NWL
		08/07/2013	711	NWL
		24/10/2012	476	NWL
HZMB 068		20/10/2014	1025	NWL
		01/11/2013	839	NWL
		24/10/2012	476	NWL
HZMB 067		24/10/2012	475	NWL
HZMB 066	NL93	28/01/2013	559	NWL
		11/12/2012	537	NWL
		24/10/2012	475	NWL
		12/10/2012	466	NWL
		07/11/2011	Baseline	NWL
		05/11/2011	Baseline	NWL
HZMB 064		19/03/2015	1086	NWL
		17/06/2014	964	NWL
		09/05/2013	647	NWL
		28/01/2013	561	NWL
		24/10/2012	475	NWL
		12/10/2012	466	NWL
HZMB 063		09/05/2013	647	NWL
		12/10/2012	466	NWL
HZMB 062		06/12/2012	525	NEL
		11/10/2012	457	NWL
HZMB 060		18/09/2012	447	NWL
HZMB 059		21/02/2013	591	NWL
		18/09/2012	445	NWL
HZMB 057		18/09/2012	440	NWL
HZMB 056		18/09/2012	442	NWL
		05/09/2012	433	NEL
HZMB 055		04/09/2012	425	NWL
HZMB 054	CH34	12/05/2016	1238	NWL

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
		01/12/2015	1180	NWL
		20/04/2015	1097	NWL
		15/01/2015	1062	NWL
		31/05/2014	953	NWL
		06/01/2014	888	NWL
		07/11/2013	854	NWL
		02/11/2013	845	NWL
		24/10/2013	831	NWL
		30/08/2013	780	NEL
		08/07/2013	711	NWL
		18/09/2013	448	NWL
		05/09/2012	432	NEL
		07/11/2011	Baseline	NWL
		05/11/2011	Baseline	NWL
		02/11/2011	Baseline	NWL
		01/11/2011	Baseline	NEL
		01/11/2011	Baseline	NEL
		28/10/2011	Baseline	NWL
		06/10/2011	Baseline	NWL
HZMB 053		04/09/2012	425	NWL
HZMB 052		04/09/2012	423	NWL
HZMB 051	NL213	11/05/2015	1104	NWL
		04/08/2014	989	NWL
		09/05/2013	644	NWL
		01/04/2013	622	NWL
		15/02/2013	582	NWL
		15/02/2013	581	NWL
		28/01/2013	559	NWL
		28/01/2013	556	NWL
		04/09/2012	422	NWL
HZMB 050		14/07/2014	971	NWL
		10/01/2014	900	NWL
		06/01/2014	888	NWL
		15/02/2013	579	NWL
		04/09/2012	421	NWL
HZMB 049		09/10/2015	1151	NWL

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
		29/07/2014	982	NWL
		03/09/2012	419	NWL
HZMB 048		03/09/2012	419	NWL
HZMB 047		28/04/2015	1100	NWL
		03/09/2012	412	NWL
HZMB 046		03/09/2012	412	NWL
HZMB 045		23/05/2016	1249	NWL
		17/02/2014	910	NWL
		13/06/2013	682	NWL
		15/02/2013	579	NWL
		01/11/2012	495	NWL
HZMB 044	NL98	23/05/2016	1247	NWL
		18/01/2016	1194	NWL
		13/10/2014	1019	NWL
		17/02/2014	910	NWL
		19/12/2013	864	NWL
		02/11/2013	845	NWL
		01/11/2013	842	NWL
		15/10/2013	819	NWL
		09/05/2013	648	NWL
		09/05/2013	647	NWL
		01/04/2013	623	NWL
		01/04/2013	621	NWL
		15/02/2013	579	NWL
		01/11/2012	495	NWL
		07/11/2011	Baseline	NWL
		06/11/2011	Baseline	NEL
		01/11/2011	Baseline	NEL
		06/10/2011	Baseline	NEL
HZMB 043		03/09/2012	407	NWL
HZMB 042	NL260	22/10/2015	1156	NWL
		19/12/2013	863	NWL
		01/11/2012	495	NWL
		07/11/2011	Baseline	NWL
HZMB 041	NL24	05/06/2014	960	NEL
		17/02/2014	910	NWL

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
		02/11/2013	845	NWL
		09/05/2013	648	NWL
		09/05/2013	647	NWL
		01/04/2013	623	NWL
		01/04/2013	621	NWL
		15/02/2013	579	NWL
		01/11/2012	495	NWL
		06/11/2011	Baseline	NEL
		05/11/2011	Baseline	NWL
		05/11/2011	Baseline	NWL
		10/10/2011	Baseline	NWL
HZMB 040		17/02/2014	910	NWL
		06/01/2014	893	NWL
		15/10/2013	821	NWL
		08/07/2013	714	NWL
		08/07/2013	711	NWL
		21/02/2013	589	NWL
		01/11/2012	493	NWL
HZMB 038		23/05/2016	1246	NWL
		01/11/2012	490	NWL
HZMB 037		01/11/2012	490	NWL
HZMB 036		03/09/2012	407	NWL
		01/11/2012	490	NWL
HZMB 035		15/02/2013	579	NWL
		01/11/2012	490	NWL
HZMB 034		01/11/2012	493	NWL
HZMB 028		17/11/2014	1035	NWL
		01/04/2013	625	NWL
		06/08/2012	373	NWL
HZMB 027		19/12/2013	863	NWL
		15/02/2013	579	NWL
		28/01/2013	568	NWL
		28/01/2013	564	NWL
		14/06/2012	299	NWL
HZMB 026		13/10/2014	1018	NWL
		25/06/2013	697	NWL

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
		09/05/2013	642	NWL
		28/01/2013	561	NWL
		13/06/2012	295	NEL
HZMB 025		22/02/2013	596	NEL
		21/02/2013	591	NWL
		06/12/2012	525	NEL
		11/10/2012	457	NWL
		13/06/2012	295	NEL
HZMB 024		18/03/2013	601	NWL
		13/06/2012	295	NEL
HZMB 023		09/10/2015	1153	NWL
		09/10/2015	1152	NWL
		20/04/2015	1097	NWL
		18/12/2014	1044	NWL
		17/11/2014	1035	NWL
		06/01/2014	888	NWL
		08/07/2013	715	NWL
		08/07/2013	711	NWL
		01/04/2013	619	NWL
		21/02/2013	589	NWL
		15/02/2013	579	NWL
		10/07/2012	330	NWL
HZMB 022		21/04/2016	1219	NWL
		07/09/2015	1143	NWL
		20/04/2015	1097	NWL
		18/12/2014	1044	NWL
		17/11/2014	1035	NWL
		04/08/2014	991	NWL
		06/01/2014	888	NWL
		24/10/2013	827	NWL
		08/07/2013	715	NWL
		08/07/2013	711	NWL
		01/04/2013	619	NWL
		21/02/2013	589	NWL
		15/02/2013	579	NWL
		10/07/2012	330	NWL

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
HZMB 021	NL37	22/03/2016	1215	NWL
		10/07/2012	330	NWL
		16/09/2011	Baseline	NWL
HZMB 020		10/07/2012	330	NWL
HZMB 019		10/07/2012	330	NWL
HZMB 018		17/02/2014	910	NWL
		09/05/2013	647	NWL
		21/02/2013	594	NEL
		10/12/2012	529	NEL
		10/07/2012	330	NWL
HZMB 017		10/07/2012	330	NWL
HZMB 016		08/07/2013	706	NWL
		11/12/2012	539	NWL
		18/09/2012	446	NWL
		04/09/2012	421	NWL
		10/07/2012	330	NWL
HZMB 015		10/07/2012	330	NEL
HZMB 014	NL176	25/08/2015	1139	NWL
		26/12/2013	880	NWL
		06/08/2012	373	NWL
		13/06/2012	295	NEL
		06/11/2011	Baseline	NEL
		01/11/2011	Baseline	NEL
		01/11/2011	Baseline	NEL
HZMB 013		28/05/2012	281	NWL
HZMB 012		28/05/2012	281	NWL
HZMB 011	EL01	22/02/2013	597	NEL
		21/02/2013	592	NEL
		14/02/2013	572	NEL
		06/11/2012	517	NEL
		19/09/2012	452	NWL
		31/03/2012	261	NEL
		02/11/2011	Baseline	NWL
		01/11/2011	Baseline	NEL
HZMB 009		19/03/2015	1084	NWL
		28/05/2012	281	NWL

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
HZMB 008		06/07/2015	1122	NWL
		28/05/2012	281	NWL
HZMB 007	NL246	10/12/2012	529	NEL
		06/11/2011	Baseline	NEL
		16/09/2011	Baseline	NWL
HZMB 006		22/10/2015	1158	NWL
		21/02/2013	594	NEL
		11/12/2012	539	NWL
		01/11/2012	495	NWL
		29/03/2012	250	NWL
HZMB 005		09/02/2015	1070	NWL
		09/02/2015	1069	NWL
		09/11/2013	860	NWL
		07/11/2013	858	NWL
		15/10/2013	813	NWL
		10/12/2012	532	NWL
		06/08/2012	374	NWL
		28/05/2012	287	NWL
HZMB 004		28/07/2015	1126	NWL
		04/09/2012	421	NWL
		31/03/2012	262	NWL
HZMB 003	NL179	15/10/2013	812	NWL
		25/06/2013	697	NWL
		10/12/2012	529	NEL
		31/03/2012	261	NWL
		06/11/2011	Baseline	NEL
		16/09/2011	Baseline	NWL
HZMB 002	WL111	31/05/2014	951	NWL
		26/12/2013	878	NWL
		19/12/2013	863	NWL
		01/11/2013	839	NWL
		15/10/2013	819	NWL
		24/09/2013	798	NWL
		14/02/2013	573	NWL
		11/12/2012	536	NWL
		11/12/2012	535	NWL

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
		12/10/2012	466	NWL
		24/10/2012	475	NWL
		28/05/2012	281	NWL
		29/03/2012	250	NWL
		02/11/2011	Baseline	NWL
HZMB 001	WL46	23/05/2016	1251	NWL
		25/08/2014	997	NWL
		21/08/2013	771	NWL
		13/06/2013	681	NWL
		01/04/2013	617	NWL
		14/02/2013	573	NWL
		29/03/2012	250	NWL
	CH98	02/11/2011	Baseline	NWL
	NL11	02/11/2011	Baseline	NWL
		07/11/2011	Baseline	NWL
	NL12	02/11/2011	Baseline	NWL
	NL33	23/09/2011	Baseline	NWL
		01/11/2011	Baseline	NEL
		05/11/2011	Baseline	NWL
		07/11/2011	Baseline	NWL
	NL46	28/10/2011	Baseline	NWL
	CH153	11/10/2011	Baseline	NWL
	NL48	07/11/2001	Baseline	NWL
		02/11/2011	Baseline	NWL
		16/09/2011	Baseline	NWL
	NL75	16/09/2011	Baseline	NWL
		16/09/2011	Baseline	NWL
		01/11/2011	Baseline	NEL
	NL80	02/11/2011	Baseline	NWL
	NL118	06/09/2011	Baseline	NWL
	NL120	06/11/2011	Baseline	NEL
		10/10/2011	Baseline	NWL
	NL123	06/11/2011	Baseline	NEL
		10/10/2011	Baseline	NWL
		06/10/2011	Baseline	NWL
	NL139	01/11/2011	Baseline	NEL

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
		10/10/2011	Baseline	NEL
		16/09/2011	Baseline	NWL
	NL165	05/11/2011	Baseline	NWL
		02/11/2011	Baseline	NWL
	NL170	06/10/2011	Baseline	NEL
	NL188	07/11/2011	Baseline	NWL
		01/11/2011	Baseline	NWL
		28/10/2011	Baseline	NWL
	NL191	07/09/2011	Baseline	NWL
	NL202	07/11/2011	Baseline	NWL
		28/10/2011	Baseline	NWL
	NL210	07/11/2011	Baseline	NWL
		05/11/2011	Baseline	NWL
		02/11/2011	Baseline	NWL
		07/09/2011	Baseline	NWL
	NL214	05/11/2011	Baseline	NWL
		02/11/2011	Baseline	NWL
		28/10/2011	Baseline	NWL
	NL220	10/10/2011	Baseline	NEL
	NL224	28/10/2011	Baseline	NWL
	NL226	05/11/2011	Baseline	NWL
		17/10/2011	Baseline	WL
	NL230	02/11/2011	Baseline	NWL
		17/10/2011	Baseline	WL
	NL233	28/10/2011	Baseline	NWL
		06/10/2011	Baseline	NWL
		16/09/2011	Baseline	NWL
	NL241	07/11/2011	Baseline	NWL
		02/11/2011	Baseline	NWL
		16/09/2011	Baseline	NWL
	NL244	01/11/2011	Baseline	NEL
		01/11/2011	Baseline	NWL
		05/09/2011	Baseline	WL
	NL256	02/11/2011	Baseline	NWL
	NL258	16/09/2011	Baseline	NWL
		05/09/2011	Baseline	WL

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
	NL259	07/11/2011	Baseline	NWL
	NL261	01/11/2011	Baseline	NEL
	NL264	06/11/2011	Baseline	NEL
		06/10/2011	Baseline	NEL
		23/09/2011	Baseline	NWL
	NL269	02/11/2011	Baseline	NWL
	NL272	05/11/2011	Baseline	NWL
		02/11/2011	Baseline	NWL
		28/10/2011	Baseline	NWL
		16/09/2011	Baseline	NWL
	NL278	02/11/2011	Baseline	NWL
	NL279	02/11/2011	Baseline	NWL
	SL42	02/11/2011	Baseline	NWL
	SL43	28/10/2011	Baseline	NWL
	WL04	05/11/2011	Baseline	NWL
		02/11/2011	Baseline	NWL
		17/10/2011	Baseline	WL
		10/10/2011	Baseline	NWL
		16/09/2011	Baseline	NWL
	WL05	01/11/2011	Baseline	NEL
		01/11/2011	Baseline	NEL
	WL11	07/11/2011	Baseline	NWL
	WL25	17/10/2011	Baseline	WL
		23/09/2011	Baseline	WL
		16/09/2011	Baseline	NWL
	WL88	02/11/2011	Baseline	WL
		16/09/2011	Baseline	NWL
	WL116	16/09/2011	Baseline	NWL
	WL124	02/11/2011	Baseline	NWL
	WL156	28/10/2011	Baseline	NWL
		23/09/2011	Baseline	WL
	WL162	16/09/2011	Baseline	NWL
	NL275	23/09/2011	Baseline	WL
	SL48	02/11/2011	Baseline	WL
		17/10/2011	Baseline	WL
		23/09/2011	Baseline	WL

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
	CH108	02/11/2011	Baseline	WL
		02/11/2011	Baseline	WL
	CH157	02/11/2011	Baseline	WL
	NL206	07/10/2011	Baseline	WL
	WL28	23/09/2011	Baseline	WL
	WL42	02/11/2011	Baseline	WL
		05/09/2011	Baseline	WL
	WL47	17/10/2011	Baseline	WL
	WL61	17/10/2011	Baseline	WL
		23/09/2011	Baseline	WL
	WL66	07/11/2011	Baseline	WL
	WL68	05/09/2011	Baseline	WL
		05/09/2011	Baseline	WL
	WL72	02/11/2011	Baseline	WL
		02/11/2011	Baseline	WL
		23/09/2011	Baseline	WL
	WL87	23/09/2011	Baseline	WL
	WL88	02/11/2011	Baseline	WL
		16/09/2011	Baseline	WL
	WL116	16/09/2011	Baseline	WL
	WL118	02/11/2011	Baseline	WL
		02/11/2011	Baseline	WL
	WL123	02/11/2011	Baseline	WL
	WL124	02/11/2011	Baseline	WL
	WL128	07/11/2011	Baseline	WL
		02/11/2011	Baseline	WL
	WL131	02/11/2011	Baseline	WL
		02/11/2011	Baseline	WL
		23/09/2011	Baseline	WL
	WL132	23/09/2011	Baseline	WL
	WL137	02/11/2011	Baseline	WL
	WL138	02/11/2011	Baseline	WL
	WL144	02/11/2011	Baseline	WL
	WL145	05/09/2011	Baseline	WL
	WL146	17/10/2011	Baseline	WL
	WL153	07/11/2011	Baseline	WL

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
	WL157	23/09/2011	Baseline	WL
	WL158	23/09/2011	Baseline	WL
	WL163	07/11/2011	Baseline	WL
		02/11/2011	Baseline	WL
	WL165	17/10/2011	Baseline	WL
	WL167	17/10/2011	Baseline	WL
	WL170	07/11/2011	Baseline	WL
	WL171	28/10/2011	Baseline	WL

HZMB 001 LL 2016-05-23_12-40-28 MED

HZMB 038 2016-05-23_11-24-45_01 MED

HZMB 044 2016-05-23_11-39-48 MED

HZMB 045 2016-05-23_12-07-07_01 MED

HZMB 054 LL 2016-05-12_13-22-19 MED

HZMB 126 2016-05-23_10-26-49 MED

HZMB 132 2016-05-23_10-49-54_01 MED

HZMB 132 2016-05-23_10-53-54 MED

HZMB 133 LL 2016-05-23_12-14-02_01 MED

HZMB 134 LL 2016-05-23_12-35-03 MED

HZMB 134 LL 2016-05-23_12-37-35 MED

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; 6. Repeat review to ensure all the	1. Check monitoring data submitted by ET and Contractor; 2. Discuss monitoring results and findings with the ET and the Contractor; 3. Attend the meeting to discuss with ET, ER/SOR and Contractor the necessity of additional dolphin monitoring and any other potential mitigation measures. 4. Review proposals for additional monitoring and any other mitigation measures submitted by ET and Contractor and	1. Attend the meeting to discuss with ET, IEC and Contractor the necessity of additional dolphin monitoring and any other potential mitigation measures. 2. If ER/SOR is satisfied with the proposals for additional dolphin monitoring and/or any other mitigation measures submitted by ET and Contractor and verified by IEC, ER/SOR to signify the agreement in writing on such proposals and any other mitigation measures. 3. Supervise the implementation	1. Inform the ER/SOR and confirm notification of the non-compliance in writing; 2. Attend the meeting to discuss with ET, IEC and ER/SOR the necessity of additional dolphin monitoring and any other potential mitigation measures. 3. Jointly submit with ET to IEC a proposal of additional dolphin monitoring and/or any other mitigation measures when necessary. 4. Implement the agreed additional dolphin monitoring and/or any other mitigation

	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.	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.	of additional monitoring and/or any other mitigation measures.	measures.

China Harbour Engineering Company Limited

Monthly Summary Waste Flow Table for June / 2016 (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	Surplus Surcharge exported to Macau	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 '000m^3)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000 m^3)
Jan-16	0.0000	0.0000	0.0000	3.0720	0.0000	0.0000	52.4729	0.0000	0.2520	0.0000	0.8000	0.0520
Feb-16	0.0000	0.0000	0.0000	6.3366	0.0000	0.0000	6.1333	0.0000	0.0000	6.0800	0.0000	0.0520
Mar-16	0.0000	0.0000	0.0000	56.1071	0.0000	0.0000	38.3187	0.0000	0.3080	0.0000	0.0000	0.0520
Apr-16	0.0000	0.0000	0.0000	47.2724	3.5710	0.0000	18.7380	0.0000	0.2240	0.0000	0.0000	0.3662
May-16	0.0000	0.0000	0.0000	24.8600	93.8100	0.0000	45.2723	0.0000	0.0000	0.0000	0.0000	0.0715
Jun-16	0.0000	0.1560	0.0000	29.1938	96.1830	0.0000	27.8820	0.0000	0.0000	0.0000	0.0000	0.0650
Sub-total	0.0000	0.1560	0.0000	166.8419	193.5640	0.0000	188.8172	0.0000	0.7840	6.0800	0.8000	0.6587
Jul-16												
Aug-16												
Sep-16												
Oct-16												
Nov-16												
Dec-16												
Total	0.0000	0.1560	0.0000	166.8419	193.5640	0.0000	188.8172	0.0000	0.7840	6.0800	0.8000	0.6587

Notes: (1) Broken concrete for recycling into aggregates.

(2) Plastics refer to plastic bottles / containers / sheets / foam / barrier 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	-	2
	Limit	-	3
Dolphin Monitoring	Action	-	-
	Limit	-	-

Remarks: Exceedances which are not project-related are not presented in this table.

Cumulative statistics on 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	-	-	-	-	35
Notification of summons	-	-	-	-	2
Successful Prosecutions	-	-	-	-	2